# 1AC Round 1 UCO Baylor CW AFF VS Witch DS Neg

#### Plan: The United States Department of Defense should procure small modular reactors for use on military bases in the United States.

### Advantage 1 is islanding

#### Current DOD efforts at getting off the grid fail because of lack of coordination.

GAO ‘09

(Government Accountability Office, “Defense Critical Infrastructure:” <http://www.gao.gov/assets/300/297169.html>, SEH)

**DOD's** most critical assets are vulnerable to disruptions in electrical ¶ power supplies, but DOD lacks sufficient information to determine the ¶ full extent of the risks and vulnerabilities these assets face. **All** 34 ¶ **of these most critical assets require electricity continuously to** ¶ **support their military missions**, and 31 of them rely on commercial ¶ power grids--which the Defense Science Board Task Force on DOD Energy ¶ Strategy has characterized as increasingly fragile and vulnerable--as ¶ their primary source of electricity. DOD Instruction 3020.45 requires ¶ DOD to conduct vulnerability assessments on all its most critical ¶ assets at least once every 3 years. Also, ASD(HD&ASA) has requested the ¶ U.S. Army Corps of Engineers--which serves as the Defense Critical ¶ Infrastructure Program's Defense Infrastructure Sector Lead Agent for ¶ Public Works--to conduct preliminary technical analyses of DOD ¶ installation infrastructure (including electrical power infrastructure) ¶ to support the teams conducting Defense Critical Infrastructure Program ¶ vulnerability assessments on the most critical assets. ¶ \* As of June 2009, and according to ASD(HD&ASA) and the Joint Staff, ¶ DOD had conducted Defense Critical Infrastructure Program vulnerability ¶ assessments on 14 of the 34 most critical assets.[Footnote 18] **DOD has** ¶ **not conducted the remaining assessments** because it did not identify the ¶ most critical assets until October 2008. To comply with the ¶ instruction, DOD would have to complete Defense Critical Infrastructure ¶ Program vulnerability assessments on all most critical assets by ¶ October 2011. ¶ \* **DOD has neither conducted, nor developed additional guidelines and** ¶ **time frames for conducting, these vulnerability assessments on any of** ¶ **the five non-DOD-owned most critical assets located in the United** ¶ **States or foreign countries,** citing security concerns and political ¶ sensitivities. ¶ \* **The U.S. Army Corps of Engineers has not completed the preliminary** ¶ **technical analyses requested because it has not yet received** ¶ **infrastructure-related information regarding the networks, assets,** ¶ **points of service, and inter-and intradependencies related to** ¶ **electrical power systems that it requires from the military services.** ¶ \* **Although DOD is in the process of developing guidelines, it does not** ¶ **systematically coordinate Defense Critical Infrastructure Program** ¶ **vulnerability assessment processes and guidelines with those of other,** ¶ **complementary DOD mission assurance programs--including force** ¶ **protection; antiterrorism; information assurance; continuity of** ¶ **operations; chemical, biological, radiological, nuclear, and high-** ¶ **explosive defense; readiness; and installation preparedness**--that also ¶ examine electrical power vulnerabilities of the most critical assets, ¶ because DOD has not established specific guidelines for such systematic ¶ coordination. ¶ \* The 10 Defense Critical Infrastructure Program vulnerability ¶ assessments we reviewed did not explicitly consider assets' ¶ vulnerabilities to longer-term (i.e., of up to several weeks' duration) ¶ electrical power disruptions[Footnote 19] on a mission-specific basis, ¶ as DOD has not developed explicit Defense Critical Infrastructure ¶ Program benchmarks for assessing electrical power vulnerabilities ¶ associated with longer-term electrical power disruptions. ¶ With more comprehensive knowledge of the most critical assets' risks ¶ and vulnerabilities to electrical power disruptions, DOD can better ¶ avoid compromising crucial DOD-wide missions during electrical power ¶ disruptions. This additional information may also improve DOD's ability ¶ to effectively prioritize funding needed to address identified risks ¶ and vulnerabilities of its most critical assets to electrical power ¶ disruptions. ¶ **While DOD has taken some steps toward assuring the availability of its** ¶ **electrical power supplies to its most critical assets, it lacks a** ¶ **mechanism for tracking the implementation of future Defense Critical** ¶ **Infrastructure Program risk management decisions and responses, and its** ¶ **coordination with local electricity providers has been limited**. From ¶ August 2005 through October 2008, DOD issued Defense Critical ¶ Infrastructure Program guidance for identifying critical assets, ¶ assessing their vulnerabilities, and making risk management decisions ¶ about those vulnerabilities. In addition, DOD has conducted various ¶ types of vulnerability assessments--including Defense Critical ¶ Infrastructure Program vulnerability assessments, Joint Staff ¶ Integrated Vulnerability Assessments, and other mission assurance- ¶ related assessments--on 24 of the most critical assets, including ¶ multiple assessments on some of the same assets. According to the ¶ survey, these Defense Critical Infrastructure Program and other DOD ¶ vulnerability assessments have identified various electrical power ¶ vulnerabilities for 10 of the assets. DOD has also coordinated with ¶ other federal agencies--including DHS, DOE, and the Federal Energy ¶ Regulatory Commission--and industry organizations in an effort intended ¶ to assure the availability of electrical power supplies to the most ¶ critical assets. **However, ASD(**HD&ASA)--which has responsibility for ¶ overseeing the implementation of actions for the remediation, ¶ mitigation, or acceptance of risks to DOD critical assets--**has not yet** ¶ **developed a mechanism to track the implementation of future Defense** ¶ **Critical Infrastructure Program risk management decisions, along with** ¶ **responses intended to address risks and vulnerabilities identified for** ¶ **the most critical assets. Without such information, DOD cannot** ¶ **comprehensively determine whether asset owners are taking the necessary** ¶ **steps to address identified risks and vulnerabilities of all of the** ¶ **most critical assets to electrical power disruptions**. In addition, ¶ Defense Critical Infrastructure Program guidance encourages ¶ coordination between DOD installations with critical assets and their ¶ respective public utilities, including electricity providers, in order ¶ to remediate risks involving those utilities--for example, by ¶ discussing potential changes in service agreements with those ¶ utilities. However, according to our survey results, such coordination ¶ with local electricity providers has occurred for only 7 of DOD's 34 ¶ most critical assets. As a result, DOD may not be taking advantage of ¶ available expertise on electrical power issues from such providers. ¶ **Without increased coordination between more DOD installations with** ¶ **critical assets and their respective local electricity providers, DOD** ¶ **potentially limits the risk mitigation or remediation options available** ¶ **to it for addressing the vulnerabilities of its most critical assets to** ¶ **electrical power disruptions.**

#### Grid disruptions are inevitable- only SMR’s can solve

Robitaille 12

(George, Department of Army Civilian, United States Army War College, “Small Modular Reactors: The Army’s Secure Source of Energy?” 21-03-2012, 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.

#### Al Qaeda can and will pull off a cyber-attack – Al Qaeda video proves

Cloherty ‘12

(Jack Cloherty is the lead producer for the Justice Department/Homeland Security beat at World News. “Virtual Terrorism: Al Qaeda Video Calls for 'Electronic Jihad'” May 22, 2012 accessed online September 15, 2012 at http://abcnews.go.com/Politics/cyber-terrorism-al-qaeda-video-calls-electronic-jihad/story?id=16407875#.UFS0p42PVe-, TSW)

Al Qaeda may be turning its destructive attention to cyber-warfare against the United States. In a chilling video, an al Qaeda operative calls for "electronic jihad" against the United States, and compares vulnerabilities in vital American computer networks to the flaws in aviation security before the 9/11 attack.¶ The al Qaeda video calls upon the "covert mujahidin" to launch cyber attacks against the U.S. networks of both government and critical infrastructure, including the electric grid. The video was obtained by the FBI last year, and released today by the Senate Committee on Homeland Security and Governmental Affairs.¶ "This is the clearest evidence we've seen that al Qaeda and other terrorist groups want to attack the cyber systems of our critical infrastructure," Homeland Security and Governmental Affairs Committee Chairman Joe Lieberman, I-Conn., said in a statement.¶ "This video is troubling as it urges al Qaeda adherents to launch a cyber attack on America," said Sen. Susan Collins, R-Maine, the ranking member on the committee. "It's clear that al Qaeda is exploring all means to do us harm and this is evidence that our critical infrastructure is a target."¶ ¶ Dept. of Homeland Security¶ In this screenshot obtained by the FBI, an Al... View Full Size¶ ¶ If Israel Attacks Iran Watch Video¶ The national security community says the threat of cyber attack is real, and the gap between terrorist aspirations and capability is closing. The senior intelligence official at Cyber Command, Rear Adm. Samuel Cox, has said al Qaeda operatives are seeking the capability to stage cyber attacks against U.S. networks and terrorists could purchase the capabilities to do so from expert criminal hackers.¶ Increasing evidence also suggests that Iran is looking to commit cyber attacks against the United States, according to testimony last month before the House Committee on Homeland Security. Iran's sponsorship of terrorist groups takes on a new dimension in cyberspace, where it could develop a powerful cyber weapon and pass it on to a terrorist group..¶ Lieberman is using the al Qaeda video to underline what he says is the need for new legislation..¶ "Congress needs to act now to protect the American public from a possible devastating attack on our electric grid, water delivery systems, or financial networks," he said. "As numerous, bipartisan national security experts have said, minimum cyber security standards for those networks are necessary to protect our national and economic security. That is why the Senate needs to act on our bipartisan Cyber Security Act that requires minimum security performance requirements for key critical infrastructure cyber networks."¶ The Homeland Security Committee says the Department of Homeland Security received more than 50,000 reports of cyber intrusions or attempted intrusions since October, an increase of 10,000 reports over the same period the previous year.

#### Grid outage risks terrorism - takes out surveillance

Defense Science Board ‘08

(The DSB is a Federal ¶ Advisory Committee established to provide independent advice to the Secretary of ¶ Defense, “More Fight – Less Fuel” <http://www.acq.osd.mil/dsb/reports/ADA477619.pdf>, SEH)

**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.** About 85% of the energy infrastructure upon which DoD ¶ depends is commercially owned, **and 99% of the electrical energy DoD installations** ¶ **consume originates outside the fence.**¶ 3¶ As noted below, however, the grid 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. ¶ 2.3.1 State of the Grid ¶ The U.S.-Canadian electric grid is very efficient and cost effective but its design metric ¶ is efficiency more than resiliency. As a consequence, it is vulnerable to natural disaster or deliberate attack. The Task Force received several briefings from the Mission ¶ Assurance Division at Dahlgren (MAD), the Department of Energy and the utility ¶ industry. Based on these briefings, the Task Force is concerned about the condition of ¶ the grid and the ability to effect timely repairs. ¶ This concern extends not only to the complete dependency of critical national security ¶ missions on the grid, but also to its centrality to all facets of the nation’s economic life. ¶ To appreciate the seriousness of the impacts of an extended disruption, consider the ¶ 2003 Northeast blackout. At around 4:15pm EST on August 14, 2003 about 50 million ¶ people living in a 9,300 square mile area in the U.S. and Canada lost electrical power. ¶ More than 500 generating units at 265 power plants shut down during the outage, 22 of ¶ which were nuclear. Those plants took about two weeks to regain full capacity, and lost ¶ an average of more than half their capacity for 12 days. The shutdown was in part ¶ precautionary in nature. If an imbalance between load and supply occurs, power lines ¶ grow longer and sag from overheating and other hardware can fail. These imbalances ¶ can damage equipment that is hard-to-repair, requires long lead time to produce and is ¶ expensive. So, the grid quickly disconnects itself when a threatening imbalance is ¶ detected. Nuclear plants are required for safety reasons to shut down when the grid ¶ they’re connected to is de-energized.¶ 4¶ A U.S.-Canada Task Force found the main cause of the blackout to be the failure of a ¶ utility in Ohio to properly trim trees near a power line, causing the first in what became a ¶ set of cascading failures.¶ 5¶ Secretary of Energy Spencer Abraham said there would be ¶ no punishment for the utility because current U.S. law does not require electric reliability ¶ standards. However, the Energy Policy Act of 2005 (EPAct 2005) gave the Federal ¶ Energy Regulatory Commission (FERC) new authority to direct the industry to develop ¶ reliability standards. It directs FERC to designate an Electric Reliability Organization ¶ (ERO) to develop and propose reliability standards, which only after agreement by the ¶ industry become mandatory. The ERO chosen by the FERC is a volunteer, industry run ¶ organization. While FERC oversight of industry developed standards is an ¶ improvement over the previous situation, the Task Force remains concerned that FERC ¶ may be unable to reduce the risk to critical DoD missions to acceptable levels in a ¶ reasonable timeframe. ¶ **Some have argued that the August 2003 incident shows that the protections built into** ¶ **the grid worked. Within several hours electricity was restored to many areas, though a** ¶ **few areas waited nearly a week. However, the incident highlights how easily the power** ¶ **grid could be taken down. Also, quick restoration was possible because no significant** ¶ **equipment was damaged, something that might not occur in future incidents**. **Further,** ¶ **during the blackout most systems failed that would detect unauthorized border** ¶ **crossings, port landings, or unauthorized access to vulnerable sites. Future such blackouts could be exploited for terrorist activity, with potentially far more catastrophic** ¶ **results**. ¶ These risks exist elsewhere than in the U.S. For example, on September 28, 2003 Italy ¶ experienced the largest of a series of blackouts suffered through that year, affecting a ¶ total of 56 million people, and spilling into Switzerland.¶ 6¶ It was also the most serious ¶ blackout in Italy in 20 years. DoD installations located outside the continental United ¶ States (OCONUS) are dependent on the commercial grids serving their locations. ¶ Security of their power supplies and continuation of their missions is as important as ¶ within the U.S.

#### Surveillance key to stop bioterror – Characterize and effective response

NSB ‘12  
(National Strategy for Biosurveillance, July 31, 2012 Accessed online August 24, 2012 at http://www.whitehouse.gov/sites/default/files/National\_Strategy\_for\_Biosurveillance\_July\_2012.pdf)

A well-integrated, national biosurveillance enterprise is a national security imperative . Our ability to ¶ detect quickly and characterize a potential incident of national significance that affects human, animal, ¶ or plant health is of paramount importance . Rapid detection and enhanced situational awareness are ¶ critical to saving lives and improving incident outcomes, whether the result of a bioterror attack or other ¶ weapons of mass destruction (WMD) threat, an emerging infectious disease, pandemic, environmental ¶ disaster, or a food-borne illness . Beyond our need to protect domestic interests, and because health ¶ threats transcend national borders, the United States also plays a vital role within an international ¶ network of biosurveillance centers across the globe.

#### Numerous attempts prove

Wagner 9/11

(Dr. Abraham R. Wagner is a Professor of International and Public Affairs at the ¶ Arnold A. Saltzman Institute of War & Peace Studies at Columbia University. “Counter-Terrorism Technologies -- Taking Stock on 9/11” 09/11/2012 2:13 pm accessed online September 11, 2012 at <http://www.huffingtonpost.com/abraham-r-wagner/counterterrorism-technolo_b_1874521.html>, TSW)

On this 11th anniversary of the 9/11 attacks, it makes sense to take stock of where the nation has progressed in its effort to deter and combat future terrorist attacks, both at home and abroad. The 9/11 attacks came as a shock, and have rightfully come to be regarded as a major U.S. intelligence failure. In the aftermath, the nation undertook significant organizational reforms designed to enable more effective intelligence and law enforcement operations against evolving terrorist threats. The country also looked to see what science, engineering and technology could do to help addresses these threats.¶ Technology has long been the nation's strong suit. Americans tend to believe that where there is a problem, there must certainly be a solution and it most likely involves technology and money. During the decade that followed 9/11, billions of dollars were spent on a vast range of programs and technologies in the name of counter-terrorism. For the first two years after 9/11, I joined with other scientists and engineers at the Department of Defense and the Intelligence Community in efforts to identify the most promising approaches to the problem. Ultimately we found that there was no magic bullet or perfect solution to this thorny problem, but were able to suggest a range of investments that could be made to address the evolving terrorist threat.¶ An honest assessment of these investments in counter-terrorism technologies reveals that the results have been mixed -- as one might well expect. A combination of greatly improved intelligence and law enforcement personnel have employed some of the better technologies with considerable success. Indeed, some 45 terrorist plots have been stopped and others deterred. How much of this has been simply luck and how much can be traced to any new technology program is a matter of debate, and there are clearly examples of both that can be found.¶ One area where technology has made a significant contribution has been in new systems to aid in intelligence and surveillance against terrorist operations. While terrorists may hold to an eighth century ideology, they have not been reluctant to employ 21st century communications and information technologies. They have utilized the Internet and cell phones for a number of purposes, and at the time of 9/11 the nation was in need of systems to intercept and sort out terrorist communications. While highly sensitive, public disclosures about several key programs show that considerable progress has been made in this critical area, giving the intelligence agencies some key tools in locating terrorists and stopping their plots. Aside from communications intercept, a new area of "data mining" has also shown considerable promise in locating terrorists and their plots.¶ At the same time, several of key surveillance programs used for counter-terrorism have come under fire from civil liberties groups as being unconstitutional violations of the Fourth Amendment privacy protections, and others. Critics of the Bush Administration saw this as "running roughshod over the Constitution." Even now there are still federal court challenges to laws such as the 2008 FISA Amendments Act and others that have enabled counter-terrorist efforts since 9/11. Ultimately a balance needs to be struck between the essential needs for intelligence to thwart future attacks and protected privacy rights, but as yet it remains an unsettled area where the Supreme Court will need to rule at some future point in time.¶ Less controversial have been efforts over the past decade to employ new information technologies to what has been termed the Information Sharing Environment -- collaborative efforts to best utilize available intelligence and other data among the various federal, state and local agencies with counter-terrorism responsibilities. While certainly some progress has been made over the past 11 years, the net result is largely a national embarrassment, and clearly a triumph of politics over physics. The information and communications technologies are all well-developed, but multiple bureaucracies have generated a set of plans and an even larger set of excuses as to why the fundamental problems in this area remain to be solved.

#### Terrorists can obtain Bio-weapons and will use them – Syria Demise

Blair ‘12

(Charles P. Blair joined FAS in June 2010. He is the Senior Fellow on State and Non-State Threats. Born and raised in Los Alamos, New Mexico, Mr. Blair was an exchange student in Moscow in the mid-1980s, witnessing firsthand the closing salvos of the Cold War. Since the end of that era, Mr. Blair has worked on issues relating to the diffusion and diversification of weapons of mass destruction (WMD) in the context of proliferation amid the rise of mass casualty terrorism incidents and the centripetal and centrifugal elements of globalization. Mr. Blair’s work focuses on state and violent non-state actors (VNSA) – amid a dystopic and increasingly tribal world. “Fearful of a nuclear Iran? The real WMD nightmare is Syria” 1 MARCH 2012 accessed online August 22, 2012 at http://www.thebulletin.org/web-edition/op-eds/fearful-of-nuclear-iran-the-real-wmd-nightmare-syria)

As possible military action against Iran's suspected nuclear weapons program looms large in the public arena, far more international concern should be directed toward Syria and its weapons of mass destruction. When the Syrian uprising began more than a year ago, few predicted the regime of President Bashar al-Assad would ever teeter toward collapse. Now, though, the demise of Damascus's current leadership appears inevitable, and Syria's revolution will likely be an unpredictable, protracted, and grim affair. Some see similarities with Libya's civil war, during which persistent fears revolved around terrorist seizure of Libyan chemical weapons, or the Qaddafi regime's use of them against insurgents. Those fears turned out to be unfounded.¶ But the Libyan chemical stockpile consisted of several tons of aging mustard gas leaking from a half-dozen canisters that would have been impossible to utilize as weapons. Syria likely has one of the largest and most sophisticated chemical weapon programs in the world. Moreover, Syria may also possess an offensive biological weapons capability that Libya did not.¶ While it is uncertain whether the Syrian regime would consider using WMD against its domestic opponents, Syrian insurgents, unlike many of their Libyan counterparts, are increasingly sectarian and radicalized; indeed, many observers fear the uprising is being "hijacked" by jihadists. Terrorist groups active in the Syrian uprising have already demonstrated little compunction about the acquisition and use of WMD. In short, should Syria devolve into full-blown civil-war, the security of its WMD should be of profound concern, as sectarian insurgents and Islamist terrorist groups may stand poised to seize chemical and perhaps even biological weapons.¶ An enormous unconventional arsenal. Syria's chemical weapons stockpile is thought to be massive. One of only eight nations that is not a member of the Chemical Weapons Convention -- an arms control agreement that outlaws the production, possession, and use of chemical weapons -- Syria has a chemical arsenal that includes several hundred tons of blistering agents along with likely large stockpiles of deadly nerve agents, including VX, the most toxic of all chemical weapons. At least four large chemical weapon production facilities exist. Additionally, Syria likely stores its deadly chemical weapons at dozens of facilities throughout the fractious country. In contrast to Libya's unusable chemical stockpile, analysts emphasize that Syrian chemical agents are weaponized and deliverable. Insurgents and terrorists with past or present connections to the military might feasibly be able to effectively disseminate chemical agents over large populations. (The Global Security Newswire recently asserted that "[t]he Assad regime is thought to possess between 100 and 200 Scud missiles carrying warheads loaded with sarin nerve agent. The government is also believed to have several hundred tons of sarin agent and mustard gas stockpiled that could be used in air-dropped bombs and artillery shells, according to information compiled by the James Martin Center.")¶ Given its robust chemical weapons arsenal and its perceived need to deter Israel, Syria has long been suspected of having an active biological weapons program. Despite signing the Biological Weapons and Toxins Convention in 1972 (the treaty prohibits the development, production, and stockpiling of biological and toxin weapons), Syria never ratified the treaty. Some experts contend that any Syrian biological weapons program has not moved beyond the research and development phase. Still, Syria's biotechnical infrastructure undoubtedly has the capability to develop numerous biological weapon agents. After Israel destroyed a clandestine Syrian nuclear reactor in September 2007, Damascus may have accelerated its chemical and biological weapons programs.¶ It's hard to guard WMD when a government collapses. Although the United States and its allies are reportedly monitoring Syria's chemical weapons, recent history warns that securing them from theft or transfer is an extraordinary challenge. For example, during Operation Iraqi Freedom, more than 330 metric tons of military-grade high explosives vanished from Iraq's Al-Qaqaa military installation. Almost 200 tons of the most powerful of Iraq's high-explosives, HMX -- used by some states to detonate nuclear weapons -- was under International Atomic Energy Agency seal. Many tons of Al-Qaqaa's sealed HMX reportedly went missing in the early days of the war in Iraq. Forensic tests later revealed that some of these military-grade explosives were subsequently employed against US and coalition forces.¶ Even with a nationwide presence of 200,000 coalition troops, several other sensitive military sites were also looted, including Iraq's main nuclear complex, Tuwaitha. Should centralized authority crumble in Syria, it seems highly unlikely that the country's 50 chemical storage and manufacturing facilities -- and, possibly, biological weapon repositories -- can be secured. The US Defense Department recently estimated that it would take more than 75,000 US military personnel to guard Syria's chemical weapons. This is, of course, if they could arrive before any WMD were transferred or looted -- a highly unlikely prospect.¶ Complicating any efforts to secure Syria's WMD, post-Assad, are its porous borders. With Syria's government distracted by internal revolt and US forces now fully out of Iraq, it is plausible that stolen chemical or biological weapons could find their way across the Syrian border into Iraq. Similarly, Syrian WMD could be smuggled into southern Turkey, Jordan, Lebanon, the West Bank, Israel, and, potentially, the United States and Europe.¶ At least six formal terrorist organizations have long maintained personnel within Syria. Three of these groups -- Hamas, Hizbollah, and Palestinian Islamic Jihad -- have already attempted to acquire or use chemical or biological agents, or both. Perhaps more troubling, Al Qaeda-affiliated fighters from Iraq have streamed into Syria, acting, in part, on orders from Al Qaeda leader Ayman al-Zawahiri. In the past, Al Qaeda-in-Iraq fighters attempted to use chemical weapons, most notably attacks that sought to release large clouds of chlorine gas. The entry of Al Qaeda and other jihadist groups into the Syrian crisis underscores its increasingly sectarian manifestation. Nearly 40 percent of Syria's population consists of members of minority communities. Syria's ruling Alawite regime, a branch of Shia Islam, is considered heretical by many of Syria's majority Sunni Muslims -- even those who are not jihadists. Alawites, Druze, Kurds, and Christians could all become targets for WMD-armed Sunni jihadists. Similarly, Shiite radicals could conceivably employ WMD agents against Syria's Sunnis.¶ Religious fanaticism and WMD. Evidence of growing religious fanaticism is also reflected in recent Syrian suicide attacks. Since last December, at least five suicide attacks occurred in Syria. In the 40 years preceding, only two suicide attacks were recorded. Al Qaeda-linked mujahidin are believed to be responsible for all of these recent attacks. Civil wars are often the most violent and unpredictable manifestations of war. With expanding sectarian divisions, the use of seized WMD in Syria's uprising is plausible. To the extent that religious extremists believe that they are doing God's bidding, fundamentally any action they undertake is justified, no matter how abhorrent, since the "divine" ends are believed to legitimize PDF the means.¶ The situation in Syria is unprecedented. Never before has a WMD-armed country fallen into civil war. All states in the region stand poised to lose if these weapons find their way outside of Syria. The best possible outcome, in terms of controlling Syria's enormous WMD arsenal, would be for Assad to maintain power, but such an outcome seems increasingly implausible. And there is painfully little evidence that democratic forces are likely to take over in Syria. Even if they do eventually triumph, it will take months or years to consolidate control over the entire country.¶ If chaos ensues in Syria, the United States cannot go it alone in securing hundreds of tons of Syrian WMD. Regional leaders -- including some, such as Sunni Saudi Arabia and Shiite Iran, that are now backing the insurgency and the regime, respectively -- must come together and begin planning to avert a dispersion of Syrian chemical or biological weapons that would threaten everyone, of any political or religious persuasion, in the Middle East and around the world.

#### Bioterror sweeps the planet – psychological, economic impact and ease of spread

Lilliefors ‘12

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As many as a dozen other nations have pursued or developed offensive biological weapons programs since the treaty came into effect, U.S. officials believe, including North Korea, China, Iran and Syria. But perhaps more troubling is the fact that it has become easier for potential terrorists to obtain biological weapons. As Secretary of State Hillary Clinton said at the Biological and Toxin Weapons Convention Review Conference in Geneva last December (the seventh such international conference since the treaty was signed): “Unfortunately, the ability of terrorists and other non-state actors to develop these weapons is growing.” So, too, apparently, is their desire to do so. In 2010, for instance, al-Qaeda in the Arabian Peninsula called for “brothers with degrees in microbiology or chemistry to develop a weapon of mass destruction.” The world community remains focused on potential nuclear threats—from Iran to North Korea to Pakistan—even though a biological attack could be just as devastating, and more unpredictable. This was the message that Ellen Tauscher, undersecretary of state for Arms Control and International Security, took to the 2009 annual meeting of the States Parties to the Biological Weapons Convention. Tauscher warned that “… a major biological weapons attack on one of the world’s major cities could cause as much death and economic and psychological damage as a nuclear attack.” Her comments came in conjunction with President Obama’s National Strategy for Countering Biological Threats, which set a platform for identifying and responding to possible bio-attacks. This new national strategy was clearly a step in the right direction, updating some of the objectives and principles of the 1972 treaty (which now has 165 signatories). But a more robust international dialogue on improving global health security—something akin to the nuclear threat dialogue—is still sorely needed. To understand how insidiously disruptive even a small-scale biological event could be, we need only look at the anthrax attacks of September and October 2001. Several letters containing anthrax spores were mailed anonymously to news organizations and two United States senators. Five people died as a result, 17 others were infected. Congress was paralyzed and the country was on high alert for weeks—although the heightened concern was mostly transitory. The federal investigation into the attacks went on for more than eight years without an arrest. The case was finally closed in 2010, a year and a half after the FBI’s major suspect, a government bio-defense researcher named Brice Ivins, killed himself.¶ The potential for an “anonymous” event is one of the most frightening aspects of the increasingly complex biological threat. As new diseases emerge, as the life sciences grow more sophisticated and as globalization draws everyone closer together, there are simply more ways that a deadly virus could get loose than there were even a few years ago. It is possible that a deadly pathogen could sweep the planet and we would never know for certain if it was naturally occurring, accidental, a terror attack or something deliberately let loose by a deranged scientist—which is what the FBI believes happened with the anthrax attacks of 2001. As President Obama said recently, “We must come together to prevent and detect and fight every kind of biological danger, whether it’s a pandemic like H1N1 or a terrorist threat or a terrible disease.”

Extinction

Ochs 2

**(**Richard, Naturalist – Grand Teton National park with Masters in Natural Resource Management – Rutgers, “Biological Weapons must be abolished immediately” 6-9, http://www.freefromterror.net/other\_articles/abolish.html)

Of all the weapons of mass destruction, the genetically engineered biological weapons, many without a known cure or vaccine, are an extreme danger to the continued survival of life on earth. Any perceived military value or deterrence pales in comparison to the great risk these weapons pose just sitting in vials in laboratories. While a "nuclear winter," resulting from a massive exchange of nuclear weapons, could also kill off most of life on earth and severely compromise the health of future generations, they are easier to control. Biological weapons, on the other hand, can get out of control very easily, as the recent anthrax attacks has demonstrated. There is no way to guarantee the security of these doomsday weapons because very tiny amounts can be stolen or accidentally released and then grow or be grown to horrendous proportions. The Black Death of the Middle Ages would be small in comparison to the potential damage bioweapons could cause. Abolition of chemical weapons is less of a priority because, while they can also kill millions of people outright, their persistence in the environment would be less than nuclear or biological agents or more localized. Hence, chemical weapons would have a lesser effect on future generations of innocent people and the natural environment. Like the Holocaust, once a localized chemical extermination is over, it is over. With nuclear and biological weapons, the killing will probably never end. Radioactive elements last tens of thousands of years and will keep causing cancers virtually forever. Potentially worse than that, bio-engineered agents by the hundreds with no known cure could wreck even greater calamity on the human race than could persistent radiation. AIDS and ebola viruses are just a small example of recently emerging plagues with no known cure or vaccine. Can we imagine hundreds of such plagues? HUMAN EXTINCTION IS NOW POSSIBLE.

### Advantage 2 is Water

#### Water scarcity coming now - it's a threat multiplier enflames hotspots in Egypt and Central Asia - their defense isn't predictive

**Dinar et al 10/18**

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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.

#### Only SMR’s solve

IAEA 7

“Economics of Nuclear Desalination: New Developments and Site Specific Studies”, July, <http://www-pub.iaea.org/MTCD/publications/PDF/te_1561_web.pdf>

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 litres/day/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.¶ 1.3.3. Environmental impact of desalination by fossil fuelled energy sources¶ Desalination is an energy intensive process. A future desalination strategy based only on the use of fossil fuelled systems is not sustainable: Fossil fuel reserves are finite and must be conserved for more important uses such as transport, petrochemical industry etc. Besides, the demands for desalted water would continue increasing as population grows and standards of living improve. Conservation measures such as the modernisation of water networks to minimise leakages, the recycling of used water etc. will certainly reduce the future water demands slightly but they would not be able to halt the dissemination of desalination plants and consequently of the fossil fuelled based systems for the production of needed electricity and heat.¶ The following paragraphs illustrate the damaging consequences of such a policy by taking the example of the Mediterranean region.¶ Following the recent “Blue Plan” [2], the total available natural water resources (1), based on the statistics from 1990 to 1998, in the principle countries of the Mediterranean region, are as shown in Table 2.¶ The projected demands (3) for the year 2025 [31] are also included in Table 1.¶ It is obvious that available natural water resources would rather decrease in 2025 because of increased pollution, over exploitation and other human activities. However, to keep matters simple, it would be supposed that they would remain at the same level as in 1998.¶ It can be observed that, in 2025, the total projected water deficit (balance) in the Mediterranean region would of the order of 294 km3/per year.¶ Not all this required capacity would be met by desalination plants. Current contribution of desalination is of the order of 1 to 2 %. If it is supposed that in 2025, this contribution would be about 2.5 %, then the total required desalting capacity would be 7.3 km3/year (20.1 million m3/day).¶ According to the EC ExternE study2, the total emissions of GHG per MW(e).h of electricity produced by representative fossil fuelled power plants in France, are as presented in Table 3.¶ The specific heat and electricity consumptions of three main desalination plants are given in Table 4, [3].¶ The data presented in the above Tables allows to calculate the approximate3 total GHG emissions produced by the fossil fuelled plants and the three desalination plants.¶ Results for a total desalting capacity of 20.1 million m3/day are presented in Table 5.¶ It can thus be concluded that for a desalting capacity of 20.1 million m3/day in the Mediterranean region alone, required in 2025, one would produce, depending upon the energy source and the desalination process used,¶ 13 to 264 million tonnes/year of CO2.¶ 1350 to 1 310 000 tonnes/year of SOx.¶ 21 100 to 540 000 tonnes/year of NOx.¶ 1190 to 40 000 tonnes/year of particles.¶ The potential levels of GHG and particle emissions on the world scale could then be more than double these figures.¶ These could naturally be avoided through the use of nuclear energy.

#### Key to deescalate conflicts

Palley ‘11

Reese Palley, 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.”

#### Indo-Pak water scarcity’s coming – causes escalatory disputes

Priyadarshi 12

Nitish Priyadarshi 12, lecturer in the department of environment and water management at Ranchi University in India, “War for water is not a far cry”, June 16, <http://www.cleangangaportal.org/node/44>

Such is the deep nexus between water and global warming that the increased frequency of climate change-driven extreme weather events like hurricanes, droughts and flooding, along with the projected rise of ocean levels, is likely to spur greater interstate and intrastate migration- especially of the poor and the vulnerable- from delta and coastal regions to the hinterland.¶ As the planet warms, water grow scarcer. Global warming will endanger the monsoon, which effects much greater than those of drought alone-particularly in India given that 70 percent of India’s rainfall comes from the monsoon.¶ The declining snow cover and receding glaciers in the Himalayan state of Jammu and Kashmir could trigger renewed hostilities between India and Pakistan, neighbouring states in the South Asian region that are at odds on a host of issues.¶ The two countries share the Indus River, one of the longest rivers in the world. The river rises in southwestern Tibet and flows northwest through the Himalayas. It crosses into the Kashmir region, meandering to the Indian and Pakistani administered areas of the territory.¶ Pakistan and India have long been embroiled in a territorial dispute over Kashmir, but have so far managed to uphold a World Bank-mediated Indus Water Treaty (IWT) that provides mechanisms for resolving disputes over water sharing. Any drastic reduction in the availability of water in the region has the potential of causing a war between the hostile south Asian neighbors.¶ The Indus water system is the lifeline for Pakistan, as 75 to 80 percent of water flows to Pakistan as melt from the Himalayan glaciers. This glacier melt forms the backbone of irrigation network in Pakistan, with 90 percent of agricultural land being fed by the vastly spread irrigation network in Pakistan, one of the largest in the world. Any disruption of water flow would cause a grave impact on agriculture produce in Pakistan.¶ The Indus Waters Treaty is a water-sharing treaty between the Republic of India and Islamic Republic of Pakistan, brokered by the World Bank (then the International Bank for Reconstruction and Development). The treaty was signed in Karachi on September 19, 1960 by Indian Prime Minister Jawaharlal Nehru and President of Pakistan Mohammad Ayub Khan. The treaty was a result of Pakistani fear that since the source rivers of the Indus basin were in India, it could potentially create droughts and famines in Pakistan, especially at times of war. However, India did not revoke the treaty during any of three later Indo-Pakistani Wars.¶ Until now, the Indus Water Treaty has worked well, but the impact of climate change would test the sanctity of this treaty. Under the treaty signed in 1960, the two countries also share five tributaries of the Indus river, namely, Jhelum, Chenab, Ravi, Beas and Sutlej. The agreement grants Pakistan exclusive rights over waters from the Indus and its westward-flowing tributaries, the Jhelum and Chenab, while the Ravi, Beas and Sutlej rivers were allocated for India’s use.¶ Transboundary water sharing between India and Pakistan will become an extremely difficult proposition as surface water would become a scarce commodity with the depletion of water reserves up in the mountains.¶ The sharing of the Ganges waters is a long-standing issue between India and Bangladesh over the appropriate allocation and development of the water resources of the Ganges River that flows from northern India into Bangladesh. The issue has remained a subject of conflict for almost 35 years, with several bilateral agreements and rounds of talks failing to produce results.

#### Goes nuclear

Zahoor ‘11

(Musharaf, is researcher at Department of Nuclear Politics, National Defence University, Islamabad, “Water crisis can trigger nuclear war in South Asia,” <http://www.siasat.pk/forum/showthread.php?77008-Water-Crisis-can-Trigger-Nuclear-War-in-South-Asia>, AM)

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 Ganga 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 Ganga 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 Ganga 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 A-symmetry 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.

#### Indo-Pak war causes extinction

Chaffin ‘11

Greg Chaffin 11, Research Assistant at Foreign Policy in Focus, July 8, 2011, “Reorienting U.S. Security Strategy in South Asia,” online: http://www.fpif.org/articles/reorienting\_us\_security\_strategy\_in\_south\_asia

The greatest threat to regional security (although curiously not at the top of most lists of U.S. regional concerns) is the possibility that increased India-Pakistan tension will erupt into all-out war that could quickly escalate into a nuclear exchange. Indeed, in just the past two decades, the two neighbors have come perilously close to war on several occasions. India and Pakistan remain the most likely belligerents in the world to engage in nuclear war. ¶ Due to an Indian preponderance of conventional forces, Pakistan would have a strong incentive to use its nuclear arsenal very early on before a routing of its military installations and weaker conventional forces. In the event of conflict, Pakistan’s only chance of survival would be the early use of its nuclear arsenal to inflict unacceptable damage to Indian military and (much more likely) civilian targets. By raising the stakes to unacceptable levels, Pakistan would hope that India would step away from the brink. However, it is equally likely that India would respond in kind, with escalation ensuing. Neither state possesses tactical nuclear weapons, but both possess scores of city-sized bombs like those used on Hiroshima and Nagasaki. ¶ Furthermore, as more damage was inflicted (or as the result of a decapitating strike), command and control elements would be disabled, leaving individual commanders to respond in an environment increasingly clouded by the fog of war and decreasing the likelihood that either government (what would be left of them) would be able to guarantee that their forces would follow a negotiated settlement or phased reduction in hostilities. As a result any such conflict would likely continue to escalate until one side incurred an unacceptable or wholly debilitating level of injury or exhausted its nuclear arsenal. ¶ A nuclear conflict in the subcontinent would have disastrous effects on the world as a whole. In a January 2010 paper published in Scientific American, climatology professors Alan Robock and Owen Brian Toon forecast the global repercussions of a regional nuclear war. Their results are strikingly similar to those of studies conducted in 1980 that conclude that a nuclear war between the United States and the Soviet Union would result in a catastrophic and prolonged nuclear winter, which could very well place the survival of the human race in jeopardy. In their study, Robock and Toon use computer models to simulate the effect of a nuclear exchange between India and Pakistan in which each were to use roughly half their existing arsenals (50 apiece). Since Indian and Pakistani nuclear devices are strategic rather than tactical, the likely targets would be major population centers. Owing to the population densities of urban centers in both nations, the number of direct casualties could climb as high as 20 million. ¶ The fallout of such an exchange would not merely be limited to the immediate area. First, the detonation of a large number of nuclear devices would propel as much as seven million metric tons of ash, soot, smoke, and debris as high as the lower stratosphere. Owing to their small size (less than a tenth of a micron) and a lack of precipitation at this altitude, ash particles would remain aloft for as long as a decade, during which time the world would remain perpetually overcast. Furthermore, these particles would soak up heat from the sun, generating intense heat in the upper atmosphere that would severely damage the earth’s ozone layer. The inability of sunlight to penetrate through the smoke and dust would lead to global cooling by as much as 2.3 degrees Fahrenheit. This shift in global temperature would lead to more drought, worldwide food shortages, and widespread political upheaval.¶ Although the likelihood of this doomsday scenario remains relatively low, the consequences are dire enough to warrant greater U.S. and international attention. Furthermore, due to the ongoing conflict over Kashmir and the deep animus held between India and Pakistan, it might not take much to set them off. Indeed, following the successful U.S. raid on bin Laden’s compound, several members of India’s security apparatus along with conservative politicians have argued that India should emulate the SEAL Team Six raid and launch their own cross-border incursions to nab or kill anti-Indian terrorists, either preemptively or after the fact. Such provocative action could very well lead to all-out war between the two that could quickly escalate.

#### No diplomacy or institutions

Radin 10

Adam Radin 10, masters in security studies from the naval postgraduate school, “the security implications of water: prospects for instability or cooperation in south and central asia”, March, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA518674>

Water, an issue so important to numerous facets of each state’s economy and overall stability, must not be left to loosely observed and nonbinding agreements. Tajikistan has even gone as far as to appeal to the United Nations General Assembly to focus on the “Central Asia water dilemma.”142 In a region that is still developing, and where the government’s survival rely more on its relations with it people versus its regional neighbors, domestic needs will continue to trump international cooperation. As Linn notes in his plan, the need for global actors to take an active role is likely needed in order for sustained cooperation. Additionally, this also provides an opportunity for Russia to actively insert itself through diplomacy and infrastructural investments, seeing that they still consider the CARs under their sphere of influence.143¶ The chapter presents a contrasting case study to South Asia, as in Central Asia water is not viewed as a regional security issue, but in terms of fulfilling short-term domestic needs. Without the looming threat of conflict or significant retribution from regional neighbors, cooperation is consistently undervalued and abandoned once domestic pressures increase. The problem with this pattern is that resources will likely continue to deteriorate and the CARs will continue to be dependent on each other to provide water and energy. Without sustained and flexible cooperation, the region at the very least will see greater stresses on government to provide for their populations, leading to domestic and potential regional instability.

#### SMRs get exported

Rosner and Goldberg 11

Robert Rosner, Stephen Goldberg, Energy Policy Institute at Chicago, The Harris School of Public Policy Studies, November 2011, SMALL MODULAR REACTORS –KEY TO FUTURE NUCLEAR POWER GENERATION IN THE U.S., <https://epic.sites.uchicago.edu/sites/epic.uchicago.edu/files/uploads/EPICSMRWhitePaperFinalcopy.pdf>

Previous studies have documented the potential for a significant export market for U.S. SMRs, mainly in lesser developed countries that do not have the demand or infrastructure to accommodate GW-scale LWRs. Clearly, the economics of SMR deployment depends not only on the cost of SMR modules, but also on the substantial upgrades in all facets of infrastructure requirements, particularly in the safety and security areas, that would have to be made, and as exemplified by the ongoing efforts in this direction by the United Arab Emirates (and, in particular, by Abu Dhabi). This is a substantial undertaking for these less developed countries. Thus, such applications may be an attractive market opportunity for FOAK SMR plants, even if the cost of such plants may not have yet achieved all of the learning benefits.¶ The Department of Commerce has launched the Civil Nuclear Trade Initiative, which seeks to identify the key trade policy challenges and the most significant commercial opportunities. The Initiative encompasses all aspects of the U.S. nuclear industry, and, as part of this effort, the Department identified 27 countries as “markets of interest” for new nuclear expansion. A recent Commerce Department report identified that “SMRs can be a solution for certain markets that have smaller and less robust electricity grids and limited investment capacity.” Studies performed by Argonne National Laboratory suggest that SMRs would appear to be a feasible power option for countries that have grid capacity of 2,000-3,000 MW. Exports of SMR technology also could play an important role in furthering non-proliferation policy objectives. The design of SMR nuclear fuel management systems, such as encapsulation of the fuel, may have non-proliferation benefits that merit further assessment. Also, the development of an SMR export industry would be step toward a U.S.-centric, bundled reliable fuel services.

### Solvency

#### Military procurement- solves commercial use and islanding- avoid regulation

Andres and Loudermilk 10

(Richard B. Andres, 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, Micah J, Research Associate for the Energy & Environmental Security Policy program with the Institute for National Strategic Studies at National Defense University, “Small Reactors and the Military’s Role in Securing America’s Nuclear IndustryPosted” <http://robertmayer.wordpress.com/2010/08/28/small-reactors-and-the-militarys-role-in-securing-americas-nuclear-industryposted/>, SEH)

Unlike private industry, **the military does not face the same regulatory and congressional hurdles to constructing reactors and would have an easier time in adopting them for use**. **By integrating small nuclear reactors as power sources for domestic U.S. military bases, three potential energy dilemmas are solved at the same time**. First, by incorporating small reactors at its bases, **the military addresses its own energy security quandary**. **The military has recently sought to “island” its bases in the U.S. -protecting them from grid outages**, be they accidental or intentional. **The Department of Defense has promoted this endeavor through lowering energy consumption on bases and searching for renewable power alternatives, but these measures alone will prove insufficient**. **Small reactors provide sufficient energy output to power military installations** and in some cases surrounding civilian population centers.¶ **Secondly, as the reactors become integrated on military facilities, the stigma on the nuclear power industry will ease and inroads will be created for the adoption of small-scale reactors as a viable source of energy. Private industry and the public will see that nuclear reactors can indeed be utilized safely and effectively, resulting in a renewed push toward the expansion of nuclear power**. Although many of the same hurdles will still be in place, **a shift in public opinion and a stronger effort by utilities, coupled with the demonstrated success of small reactors on military bases, could prove the catalysts necessary for the federal government and the NRC to take more aggressive action**.¶ Finally, while new reactors are not likely in the near future**, the military’s actions will preserve, for a while longer, the badly ailing domestic nuclear energy industry. Nuclear power is here to stay around the globe, and the United States has an opportunity to take a leading role in supplying the world’s nuclear energy and reactor technology.** With the U.S. nuclear industry dormant for three decades, much of the attention, technology, and talent have concentrated overseas in countries with a strong interest in nuclear technology. Without the United States as a player in the nuclear energy market, it has little say over safety regulations of reactors or the potential risks of proliferation **from the expansion of nuclear energy. If the current trend continues, the U.S. will reach a point where it is forced to import nuclear technology and reactors from other countries. Action by the military to install reactors on domestic bases will both guarantee the survival of the American nuclear industry in the short term, and work to solidify support for it in the long run.**¶ Ultimately**, between small-scale nuclear reactors and the U.S. military, the capability exists to revitalize America’s sleeping nuclear industry and promoting energy security and clean energy production**. The reactors offer the ability to power domestic military bases, small towns, and other remote locations detached from the energy grid. Furthermore, reactor sites can house multiple units, allowing for greater energy production – rivaling even large reactors. **Small reactors offer numerous benefits to the United States and a path initiated by the military presents a realistic route by which their adoption can be achieved.**

#### DOD key- prevents unfavorable lock-in

Andres and Breetz 11

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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 demonstration effects, technological interdependence, network 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 market. 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 designs. On one hand, Matthew Bunn and Martin Malin 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 settings in which they can be used, and it is quite possible 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.**

#### SMRs deployable soon

DOC 11

(“The Commercial Outlook for¶ U.S. Small Modular Nuclear¶ Reactors” <http://www.trade.gov/publications/pdfs/the-commercial-outlook-for-us-small-modular-nuclear-reactors.pdf>, SEH)

Although SMRs have significant potential and ¶ the market for their deployment is growing, their ¶ designs must still go through the technical and ¶ regulatory processes necessary to ensure that ¶ they can be safely and securely deployed. Lightwater technology–based SMRs may not be ready ¶ for deployment in the United States for at least ¶ a decade, and advanced designs might be even ¶ further off**.** **Light-water SMRs and SMRs that have** ¶ **undergone significant testing are the most likely** ¶ **candidates for near-term deployment, because** ¶ **they are most similar to existing reactors that** ¶ **have certified designs and significant operating** ¶ **histories**. NuScale is on track to submit its reactor ¶ design to the NRC by 2012, as is Babcock & Wilcox ¶ for its mPower design. In addition, GE-Hitachi, ¶ which already completed an NRC preapplication ¶ review for its PRISM reactor in 1994, plans to submit its PRISM design for certification in 2012. ¶ With fierce competition for commercial deployment of U.S. SMRs anticipated, the U.S. government is accelerating its efforts to support the ¶ licensing of new reactor designs. The fiscal year ¶ 2011 budget request for the Department of Energy ¶ includes $39 million for a program to support ¶ design certification of SMRs for commercial deployment, as well as a research and development ¶ portfolio that will address the technology development needs of both near- and longer-term SMRs. ¶ **The Department of Energy is also in discussions** ¶ **with several U.S. companies to facilitate the lightwater SMR design certification by the NRC within** ¶ **a reasonable timeframe.** The department also ¶ continues to support research and development ¶ efforts toward advanced reactor designs through ¶ the Advanced Reactor Concepts program, which ¶ focuses on metal-cooled reactor technologies.

#### SMRs are cost-effective, safe, and can be quickly deployed

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/](http://www.gizmag.com/small-modular-nuclear-reactors/20860/)

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

# 2AC Block – REE, Elec, Case

**Relations inevitable under Romney – no policy change and co-op outweighs**

**CQ Weekly 9-10**

“U.S.-Russia Reset: From Diplomacy to Reset,”

President Obamaentered office pledging to “reset” America’s troubled relations with Russia. But despite some tangible successes, including a new nuclear arms reduction treaty and increased sanctions on Iran, Democrats on the campaign trail are hardly touting their breakthroughs with Moscow. Indeed, Republicans and their presidential nominee, Mitt Romney, have used relations with Russia as one of their few consistent foreign policy attack lines against the White House.¶ The campaign rhetoric reinforces what has been a reality for months: **The once-celebrated reset is over**, with Vladimir V. Putin’s recoronation as Russia’s president in May the most visible symbol. New **divisions over the Syrian uprising, Russia’s human rights record and missile defense** — combined with shifting political circumstances in both the United States and Russia **— have soured diplomacy between the two nations.**¶ **But overheated rhetoric** out of Moscow and Washington aside, the **two nations still have an incentive to cooperate on critical security and economic issues, including** the **Afghanistan** War **and trade**. Beyond the battle for the White House, how Congress balances collaboration on these issues with complaints about Putin’s heavy-handed policies will help determine just how frigid the relationship becomes. Republicans have promised to take a harder line with Russia if they win control of the Senate and the White House, but **as** GOP Sen. John **McCain** of Arizona **observes, it’s in nobody’s interest to “reignite the Cold War**.”¶ Now that Russia has joined the World Trade Organization, the renewed tension is playing out in the trade arena. Without legislation to normalize trade relations, U.S. companies are unable to take advantage of eased access to Russian markets. Republicans have urged the White House to lean on Democrats to support the necessary changes. House Ways and Means Chairman Dave Camp of Michigan, in announcing a June hearing on Russia’s accession to the WTO, said he wanted to see the “administration’s active engagement on all of the issues” related to U.S. trade with Russia.¶ The White House, however, wants to avoid an awkward public debate. “The House leadership was obviously goading Obama to come out and make more statements in support of the legislation,” says Carroll Colley, a Russia analyst at the Eurasia Group, a political-risk consulting company. However, with Putin at Russia’s helm, no politician “wants to step out and advocate anything vis-à-vis Russia” right now, he says.¶ Andrew Kuchins, director of the Center for Strategic and International Studies’ Russia program, agrees. “Russia’s just kind of a stinker right now,” Kuchins says, pointing to its widely criticized crackdown on the anti-Putin female punk band Pussy Riot and its continued support of strongman Bashar al-Assad’s bloody war against dissidents in Syria.¶ Russia’s recent actions have complicated the push in Congress to normalize trade relations, a high priority for both the U.S. business community and the Obama administration. To do so, Congress must remove Russia from a list of countries facing U.S. trade restrictions under the Jackson-Vanik amendment to a 1974 trade law. The amendment was intended to punish the Soviet Union and other Eastern bloc countries for restricting Jewish emigration, an issue long since resolved.¶ On both the right and the left, critics of Russia’s human rights record have insisted that any legislation normalizing trade must include a component to penalize those who have violated human rights in Russia. The enormous anti-Putin political protests last fall and the ensuing government crackdown have only strengthened their hand.¶ To win the support of such critics, pro-trade House and Senate leaders have agreed to add language from a separate bill, named for the Russian lawyer and anti-corruption activist Sergei Magnitsky, who died in police custody in 2009. The bill would establish a freeze on the travel and assets of human rights violators from Russia or, in some versions, anywhere in the world. House leaders told the business community it would hold a vote on the trade normalization bill this week, but it’s not clear whether they have enough votes to win passage. The political sensitivity around anything that looks to be supporting Russia and Putin in the heat of campaign season may force a delay until after the election.¶ ‘Where They Park Their Cash’¶ Russians are eager to gain preferential trade status with the United States, but they’re irate about the language in the Magnitsky bill. The main concern in Moscow, according to Colley, is that Europe might adopt a similar law. “That’s where Russians vacation, and that’s where they park their cash,” he says. “This is a priority for them.”¶ Colley predicts considerable blowback from Moscow if the Magnitsky language becomes law. “It’s unclear how that will manifest itself,” he says, but he could imagine Russia making life difficult for American citizens who seek visas or for U.S. businesses that operate there.¶ The conflict in Syria is also a “big, big variable” in U.S. relations with Russia, Kuchins says. Members of Congress have, through various bills, blasted Russia’s continued support of Assad. For example, both chambers included language in their fiscal 2013 defense authorization bills that would bar funding for additional U.S. military purchases of Russian-made Rosoboronexport helicopters, which are used in Afghanistan, because that arms manufacturer also sells attack helicopters to the Assad regime.¶ One House-passed amendment to the fiscal 2013 Defense appropriations bill would go so far as to prohibit funds for nuclear nonproliferation activities with Russia unless Moscow demonstrates that it has worked to reduce weapons proliferation.¶ And after a short lull, missile defense is raising hackles in both capitals. The Obama administration tamped down a long-running dispute with Moscow on the subject when it announced, in 2009, alterations to U.S. plans for an anti-ballistic missile shield in Eastern Europe. In 2010, NATO kicked off talks with Russia on potential areas of cooperation on missile defense. Those talks, however, have stalled, and Russian saber rattling has increased; in recent months, Kremlin officials have publicly threatened to junk the New START pact and take military action if they don’t get their way.¶ In the United States, Republicans have made clear that missile defense is one of their priorities. The House in July passed an amendment to the defense policy bill that would prohibit funds from being used to share with Russia classified information about missile defense systems. Even if Obama is elected to another term, he may not have much flexibility in dealing with missile defense, given how closely GOP lawmakers are watching the issue. And if Republicans take over the White House, heightened confrontation with Russia on missile defense is a near-certainty.¶ Several Accomplishments¶ Despite the rising tensions, Obama’s approach to Russia “resulted in a number of agreements that served U.S. foreign and national security policy” over the past three years, Kuchins says. These include New START, a pact creating NATO transit corridors to Afghanistan through Russia and Moscow’s acquiescence to a strict new set of United Nations sanctions against Iran.¶ Those sanctions have yet to deter Iran from continuing its nuclear enrichment program. But as part of the “P5 plus one” — the group comprising the five permanent members of the U.N. Security Council, plus Germany — Russia remains an active player in efforts to resolve the standoff diplomatically.¶ Also, Russia has a major incentive to help stabilize Afghanistan — which is more or less in its backyard — as NATO troops withdraw over the next two years.¶ And even though Republican congressional opposition makes new arms control agreements in the next few years unlikely, **GOP lawmakers have signaled that, should they take control of Congress and the White House, they aren’t particularly interested in curbing existing treaties**. **Under those pacts, Russia and the United States continue to work together to destroy and safeguard nuclear, chemical and biological weapons.**¶ Richard G. Lugar, the Senate’s retiring arms control sage, recently visited Russia, Georgia and Ukraine to observe some of those efforts. He is pushing for the United States and Russia to extend what is known as the “umbrella agreement,” an executive initiative that underpins the Cooperative Threat Reduction Program, in which the United States and the former Soviet Republics work together to dismantle excess weapons of mass destruction. (The program is also known as Nunn-Lugar, after the Indiana Republican and his former colleague Sen. Sam Nunn, a Georgia Democrat.)¶ The agreement, which has been extended before, expires in 2013. Lugar says that “a good number of other deadly weapons of mass destruction” — which the United States is ready to help Russia destroy — remains.¶ He worries that the increasingly heated rhetoric between Washington and Moscow could hamper such cooperation. Quoting retired diplomat Thomas R. Pickering, Lugar notes that the two countries have “been sort of kicking each other in the shins” in recent months. “The problem is, if there is too much kicking in the shins and so forth, people become unhappy with each other,” he says.¶ “Taking the perspective of the safety of the American people or the safety of the world, we better move past that,” Lugar adds. “The missiles we saw being cut up are not theoretical.”

#### Current SMR technology is well established- Navy ships

Freed 10

(Josh, Director of the Third Way Clean Energy Program, Elizabeth Horwitz is a Policy Advisor at Third Way’s Clean Energy ¶ Program, Jeremy Ershow was formerly a Policy ¶ Advisor at Third Way, “Thinking Small On Nuclear Power” http://content.thirdway.org/publications/340/Third\_Way\_Idea\_Brief\_-\_Thinking\_Small\_On\_Nuclear\_Power.pdf, SEH)

The light water technology that current SMRs use is well-established; ¶ American manufacturers have designed and built small, light water reactors for ¶ 60 years to fuel the Navy’s carriers and submarines.¶ 29¶ While advanced reactor ¶ technology is further off, innovation is necessary to complete the transition to ¶ clean energy. Advanced reactor technologies are promising technologies that ¶ we need to invest in today

#### 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.

## K

#### 1. Case is a disad to the K.

#### a) Cyber attack coming in the next 3 years and grid will go down that’s huff 12 and robitaille ‘12 that takes out surveillance capabilities which are preventing terrorists in the squo that’s Defense Science Board ’08 and wagner 9/11 and we can’t get off the grid because of lack of coordination that’s GAO ’09 means guaranteed extinction from bioterror attack with the weapons terrorists groups obtain from Syria that’s Blair 12 and Lilliefors ’12

#### 3. Perm do the plan and all non-mutually exclusive parts of the alternative

#### 4. Perm: do both. If the alternative solves then it can solve any residual links to the perm.

#### 5. Perm do the plan and the alt in all other instances. Either the alt only rejects the aff and can’t overcome the squo or the alt can and the perm shields the link.

#### 6. Either the alt doesn’t do the aff and then the case is a disad to the alternative, or it does the aff and is a floating pic which are bad for fairness and education

#### Managerialism is necessary to prevent global extinction –processes of environmental destruction are unstoppable without intervention

Dr Neil Levy 1999. Fellow of the Centre for Applied Philosophy and Public Ethics at Charles Sturt University. “Discourses of the Environment” p. 215

If the ‘technological fix’ is unlikely to be more successful than strategies of limitation of our uses of resources, we are nevertheless unable to simply leave the environment as it is. There is a real and pressing need for more, and more accurate, technical and scientific information about the non-human world. For we are faced with a situation in which the processes we have already set in train will continue to impact upon that world, and therefore us, for centuries. It is therefore necessary, not only to stop cutting down the rain forests, but to develop real, concrete proposals for action, to reverse, or at least limit, the effects of our previous interventions. More over, there is another reason why our behaviour towards the non-human cannot simply be a matter of leaving it as it is, at least in so far as our goals are not only environmental but also involve social justice. For if we simply preserve what remains to us of wilderness, of the countryside and of park land, we also preserve patterns of very unequal access to their resources and their consolations (Soper 1995: 207). In fact, we risk exacerbating these inequalities. It is no us, but the poor of Brazil, who will bear the brunt of the misery which would result form a strictly enforced policy of leaving the Amazonian rain forest untouched, in the absence of alternative means of providing for their livelihood. It is the development of policies to provide such ecologically sustainable alternative which we require, as well as the development of technical means for replacing our current greenhouse gas-emitting sources of energy. Such policies and proposals for concrete action must be formulated by ecologists, environmentalist, people with expertise concerning the functioning of ecosystems and the impacts which our actions have upon them. Such proposals are, therefore, very much the province for Foucault’s specific intellectual, the one who works ‘within specific sectors, at the precise points where their won conditions of life or work situate them’ (Foucault 1980g: 126). For who could be more fittingly described as ‘the strategists of life and death’ than these environmentalists? After the end of the Cold War, it is in this sphere, more than any other, that man’s ‘politics places his existence as a living being in question’ (Foucault 1976: 143). For it is in facing the consequences of our intervention in the non-human world that the fate of our species, and of those with whom we share this planet, will be decided.

#### The alt is violent, causes passivity, and makes exploitation worse

Graham ‘99

(Phil, Graduate School of Management, University of Queensland, Heidegger’s Hippies: A dissenting voice on the “problem of the subject” in cyberspace, Identities in Action! 1999, <http://www.philgraham.net/HH_conf.pdf>)

Societies should get worried when Wagner’s music becomes popular because it usually means that distorted interpretations of Nietzsche’s philosophy are not far away. Existentialists create problems about what is, especially identity (Heidegger 1947). Existentialism inevitably leads to an authoritarian worldview: this, my Dionysian world of the eternally self-creating, the eternally self-destroying, this mystery world of twofold voluptuous delight, my “beyond good and evil,” without a goal, unless the joy of the circle itself is a goal; without will, unless a ring feels good will towards itself – do you want a name for this world? A solution to all its riddles? A light for you, too, you best-concealed, strongest, most intrepid, most midnightly men? – This world is the will to power – and nothing besides! And you yourselves are also this will to power – and nothing besides! (Nietzsche 1967/1997). Armed with a volume of Nietzsche**,** some considerable oratory skills, several Wagner records, and an existentialist University Rector in the form of Martin Heidegger, Hitler managed some truly astoundingfeats of strategic identity engineering (cf. Bullock, 1991). Upon being appointed to the Freiberg University, Heidegger pronounced the end of thought, history, ideology, and civilisation: ‘No dogmas and ideas will any longer be the laws of your being**.** The Fuhrer himself, and he alone, is the present and future reality for Germany’ (in Bullock 1991: 345). Heidegger signed up to an ideology-free politics: Hitler’s ‘Third Way’ (Eatwell 1997). The idealised identity, the new symbol of mythological worship, Nietzsche’s European Superman, was to rule from that day hence. Hitler took control of the means of propaganda: the media; the means of mental production: the education system; the means of violence: the police, army, and prison system; and pandered to the means of material production: industry and agriculture; and proclaimed a New beginning and a New world order. He ordered Germany to look forward into the next thousand years and forget the past. Heidegger and existentialism remain influential to this day, and history remains bunk (e.g. Giddens4, 1991, Chapt. 2). Giddens’s claims that ‘humans live in circumstances of … existential contradiction’, and that ‘subjective death’ and ‘biological death’ are somehow unrelated, is a an ultimately repressive abstraction: from that perspective, life is merely a series of subjective deaths, as if death were the ultimate motor of life itself (cf. Adorno 1964/1973). History is, in fact, the simple and straightforward answer to the “problem of the subject”. “The problem” is also a handy device for confusing, entertaining, and selling trash to the masses. By emphasising the problem of the ‘ontological self’ (Giddens 1991: 49), informationalism and ‘consumerism’ confines the navel-gazing, ‘narcissistic’ masses to a permanent present which they self-consciously sacrifice for a Utopian future (cf. Adorno 1973: 303; Hitchens 1999; Lasch 1984: 25-59). Meanwhile transnational businesses go about their work, ~~raping~~ [ruining] the environment**;** swindling each other and whole nations**;** and inflicting populations with declining wages, declining working conditions, and declining social security**.** Slavery is once again on the increase (Castells, 1998; Graham, 1999; ILO, 1998). There is no “problem of the subject”, just as there is no “global society”; there is only the mass amnesia of utopian propaganda, the strains of which have historically accompanied revolutions in communication technologies. Each person’s identity is, quite simply, their subjective account of a unique and objective history of interactions within the objective social and material environments they inhabit, create, and inherit. The identity of each person is their most intimate historical information, and they are its material expression: each person is a record of their own history at any given time. Thus, each person is a recognisably material, identifiable entity: an identity**.** This is their condition. People are not theoretical entities; they are people. As such, they have an intrinsic identity with an intrinsic value. No amount of theory or propaganda will make it go away. The widespread multilateral attempts to prop up consumer society and **hypercapitalism** as a valid and useful means of sustainable growth, indeed, as the path to an inevitable, international democratic Utopia, are already showing their disatrous cracks. The “problem” of subjective death threatens to give way, once again, to unprecedented mass slaughter. The numbed condition of a narcissistic society, rooted in a permanent “now”, a blissful state of Heideggerian Dasein, threatens to wake up to a world in which “subjective death” and ontology are the least of all worries.

#### Debates about ontology are irrelevant to real world policy debates – pragmatism is more effective at facilitating social change

David McClean. 2001. philosopher, writer and business consultant, conducted graduate work in philosophy at NYU. “The cultural left and the limits of social hope” http://www.american-philosophy.org/archives/past\_conference\_programs/pc2001/Discussion%20papers/david\_mcclean.htm

There is a lot of philosophical prose on the general subject of social justice. Some of this is quite good, and some of it is quite bad. What distinguishes the good from the bad is not merely the level of erudition. Displays of high erudition are gratuitously reflected in much of the writing by those, for example, still clinging to Marxian ontology and is often just a useful smokescreen which shrouds a near total disconnect from empirical reality. This kind of political writing likes to make a lot of references to other obscure, jargon-laden essays and tedious books written by other true believers - the crowd that takes the fusion of Marxian and Freudian private fantasies seriously. Nor is it the lack of scholarship that makes this prose bad. Much of it is well "supported" by footnotes referencing a lode of other works, some of which are actually quite good. Rather, what makes this prose bad is its utter lack of relevance to extant and critical policy debates, the passage of actual laws, and the amendment of existing regulations that might actually do some good for someone else. The writers of this bad prose are too interested in our arrival at some social place wherein we will finally emerge from our "inauthentic" state into something called "reality." Most of this stuff, of course, comes from those steeped in the Continental tradition (particularly post-Kant). While that tradition has much to offer and has helped shape my own philosophical sensibilities, it is anything but useful when it comes to truly relevant philosophical analysis, and no self-respecting Pragmatist can really take seriously the strong poetry of formations like "authenticity looming on the ever remote horizons of fetishization." What Pragmatists see instead is the hope that we can fix some of the social ills that face us if we treat policy and reform as more important than Spirit and Utopia.

#### Perm: solves

#### Only by combining methods can we avoid fragmentation and facilitate real political change to prevent planetary extinction – even if the perm risks cooption the apocalyptic imagery of the aff is rejuvenating to ecocriticism

JL Schatz. 2012. Professor of English and Feminist Evolutionary Studies & Director of Debate at Binghamton University. The Importance of Apocalypse: The Value of End-Of-The-World Politics While Advancing Ecocriticism. Journal of Ecocriticism: A New Journal of Nature, Society and Literature. 4(2)

There are three things ecocriticism must keep in mind to retain its effectiveness in the poststructuralist era. First and foremost ecocritics must not allow their infighting over tactics and academic maneuvers to become debilitating. Ecocritics have enough on their plate fighting dominant political institutions. To never directly take up arms against ecologically destructive practices will merely cede potential avenues of resistance while we fight amongst ourselves. We must take from those ecocritics we partially disagree with what we can and then operate from a different platform so as to always be spectral in our resistance. Adopting varied tactics enables an ecological coalition centered on the connectedness that arises from the belief that we all have a shared stake in the planet. Awakening to our collective stake in the environment can overcome the illusionary boundaries of the nation-­‐state, species, or even sentience. Every molecule of the Earth’s ecology is interconnected. When one part dies we all stand on the brink of extinction. For ecocriticism to embrace this interconnection it must not erect borders between different approaches so long as the foundation of the struggle is premised upon the commons of our universe. Unfortunately, “what characterizes much campus left discourse is a substitution of moral rhetoric about evil policies[, leaving] ... absent ... a sober reckoning with the preoccupations and opinions of the vast majority of Americans ... who do not believe that the discourse of ‘anti-­‐imperialism’ speaks to their lives” (Isaac). As a result, there is a need for ecocritics to not just speak to the choir that mostly already agrees with them. They must also speak to the populations who don’t intuitively see the link between imperialism, technology, and capitalism with environmental destruction. Apocalyptic rhetoric can do precisely that because of its underlying tenant of self-­preservation. The above point is absolutely crucial because ecocriticism cannot be effective if its focus never goes beyond the individual alone. No single person is the entire ecology so no individual can save it. While each individual undoubtedly impacts the environment and can cause change, no large scale transformation can take place if we never inspire collective action. In evolutionary terms, ideas, thoughts, and actions must be passed on in order to survive. For that to happen it takes a combined effort, even though it can start by a single mutation. Luke reminds us that the typical consumer does not control the critical aspects of his or her existence[.] ... The absurd claim that average consumers only need to shop, bicycle, or garden their way to an ecological future merely moves most of the responsibility and much of the blame away from the institutional centers of power whose decisions actually maintain the wasteful, careless ways of material exchange[. It also] ... ignores how corporate capital, big government, and professional experts pushed the practices of ... affluent society ... as a political strategy to sustain economic growth, forestall mass discontent, and empower scientific authority. People did choose to live this way, but their choices were made from a very narrow array of alternatives presented to them as rigidly structured, prepackaged menus of very limited options. (Luke, 1997: 127-­‐128) In turn, ecocritics must not displace the blame away from current hegemonic structures by calling on individuals to act alone. Instead ecocriticism must articulate its arguments to influence change in both institutions of power and the very people whose mindsets make up the current collective. Many environmental groups have been able to do precisely that. For instance, “NGOs and social movements active in global civil society have ... introduce[ed] ... dystopian scenarios ... as rhetorical devices that act as ‘wake-­up calls’... to jolt citizens out of their complacency and ... foster ... public deliberation about the potential cataclysms facing humankind” (Kurasawa 464). Ecocritics must not cut down such NGOs for adopting end-­of-­the-­world tactics even though their rhetoric might get co-opted when specific policies get enacted. Secondly, ecocriticism must never forget that what they do is politics. There are two implications to this. On the one hand it means that activists who directly lobby the government should not denounce the academically-oriented ecocritic for struggling within the academy. On the other hand it means that those who denounce the managerial tendencies that come along with governmental policies shouldn’t condemn activists who operate within the system. Instead of attacking one another, ecocritics should understand opposing discourses and ontologies as part of a spectral strategy that works against the environmental imperialism of the status-quo. We should take each opportunity for its fullest even in the face of failure. Once we acknowledge the virtual inevitability of co-optation the emphasis should be on creating successive struggles from a variety of standpoints. Captain Paul Watson, for instance, does not merely pack up his flagship the Steve Irwin and head home after the Japanese whaling season ends. He goes on to fight for seals, dolphins, and a number of other animals all the while participating within a larger discourse surrounding planetary ecology. Not all of Watson’s tactics have been successful. Neither has anyone else’s. However, that doesn’t mean we should give up. Quite the opposite. For example, just because revolutionaries like Che Guevara have been turned into trendy t-­‐shirts, fueling the industries of capitalism, doesn’t mean he shouldn’t have fought against imperialism in the first place. In the same way, just because environmental activists are inevitably going to fall victim to constructing an image of the planet on the brink of extinction, it doesn’t mean that we should discount their battles against such destruction. Their counter constructions enable a contestation over what it means to be human in relationship to the rest of the world. Absent these counter narratives only a singular construction of anthropocentric managerial domination would exist. A consequence to this second point is that the willingness to continually deploy different tactics is more powerful for ecocriticism than coming up with the perfect strategy. That way even when we become co-opted in one place we are already struggling from somewhere else. In turn, ecocriticism should focus on the underlying motivations that compel others to act in order to determine which ecocritics to be allies with. Through this way human beings can repair the willed manipulation inherent in calculative thinking and realize a patient equanimity toward Life. It is only in the context of this reawakened sense of the unity of life that revolutionary action gains an authentic basis. It is the engagement with “the Other” that shows the ELF actions are truly about defense of plant and animal life, and they demonstrate genuine liberation concerns that typically are trapped within Enframing. That is to say, ELF (and similar) actions, show themselves as part of a ... profound solidarity ... [that] serves as a general basis for a post-­‐Enframing, post-­‐capitalist order, an ecological, not a capitalist society. (Best and Nocella 83) This shift allows ecocriticism to formulate ever-­‐greater coalitions while at the same time preventing a descent into moral relativism. We can still utilize political action by eco-activists and NGOs such as PETA and Greenpeace productively, even if they result in reformist managerialism, so long as the sole focus doesn’t fall upon a singular tactic. Only a profound orientation of solidarity will ever have the hopes of succeeding. Everything we do is deeply political and we must understand that in acting or in thinking we necessarily impact the world. Uniting behind images of planetary omnicide holds the potential to collectively bring us together by awakening humanity to its shared stake in the global environment. Third, and most importantly, ecocritics must adopt tactics that can most effectively influence other people without proscribing end goals. By this I mean that ecocritics must use those tools that can appeal to the masses while simultaneously making their appeals in such a way as not to force a choice upon them. Apocalyptic imagery is ideal for this task. It appeals to notions of shared planetary concerns that serve as motivation for others to act, even without fully knowing how the apocalypse can truly be averted. By creating a compelling urge to do something that arises out of the image of planetary annihilation ecocriticism can influence a variety of people to take up arms through a multitude of techniques. Society as a whole will never mobilize to halt the very practices that threaten life without such compelling inspiration. When ecocriticism helps other people see how certain actions risk their very survival it will enable our planet to evolve differently. So long as ecocriticism never gives up on the struggle, even if this different direction may bring new scenarios of apocalypse, humanity as a species can continually evolve its patterns and behaviors to advert extinction. This is not to say we will live forever. Rather it is to say that as a species we can continue to exist in harmony with the lives all around us and give our deaths meaning. Ultimately, it is through imagining the end of the world that we will be able to envision how to save it.

#### Securitizing energy production is key to solve climate change

Guri Bang. 2010. Center for International Climate and Environmental Research in Norway. Energy security and climate change concerns: Triggers for energy policy change in the United States? Energy Policy. 38: 1645-1653.

These examples of debates in Congress show that in a situation with increased public concerns about both energy security and climate change, energy policy is a field that potentially can include a bipartisan agenda where compromise can be found. It provides a new framing of the climate change issue that can attract support from a new set of actors involved in the decision making process, including both politicians and interest groups. However, if energy security policy is considered without taking carbon emissions into account the result will not necessarily be a more environmentally sustainable policy. By allowing emission intensive policy alternatives onto the agenda, the established energy policy majority can avoid problem redefinition, and continue to promote their preferred policy solutions. For instance, if gasoline is replaced with CTL fuel from coal plants without installed sequestration technology, that would result in less dependence on imported oil but increased GHG emissions. Still, energy security concerns could potentially lead to focus on policy solutions that would have a second-order effect for mitigating climate change. Efforts to get cost-effective renewable energy technologies to the market, or to develop carbon sequestration technologies, or build nuclear power plants that can replace fossil fuels like coal, will lead to fewer GHG emissions. But reduced emissions will not necessarily be the most important rationale behind the policy change. Rather, the rationale will be to heighten energy security and avoid high energy costs, and if that also affects emissions and climate policy then it can be used as a political benefit. Having a second-order rationale can in some cases make a vote in favor of new policy solutions easier to endure or survive for politicians. In other words, the effects for reducing GHG emissions can be used by politicians to underscore the importance of policy change, to secure support from the part of the public concerned about global warming, and from environ- mental NGOs and other interest groups that support emission cuts. If that part of the public is not very large, such rationalizing will be less important and the choice of policy solution can be affected. The potential for finding a policy compromise to change energy policy radically in a less fossil fuels based direction is, therefore, limited because high energy security concerns will not be enough by itself to redefine the perceived need for a major energy policy change away from fossil fuels. Without the inclusion on the policy agenda of concerns about climate change, proponents of new, environmentally sustainable policy solutions may not be able to attract enough support to overturn the political majority opposed to change, and therefore policy changes will not necessarily come about as direct renewal of federal climate policy but rather as incremental energy policy change that would at best not increase GHG emissions.

#### Extinction- tipping point

Dyer ‘12

London-based independent journalist, PhD from King's College London, citing UC Berkeley scientists (Gwynne, "Tick, tock to mass extinction date," The Press, 6-19-12, l/n, accessed 8-15-12, mss)

Meanwhile, a team of respected scientists warn that life on Earth may be on the way to an irreversible "tipping point". Sure. Heard that one before, too. Last month one of the world's two leading scientific journals, Nature, published a paper, "Approaching a state shift in Earth's biosphere," pointing out that more than 40 per cent of the Earth's land is already used for human needs. With the human population set to grow by a further two billion by 2050, that figure could soon exceed 50 per cent. "It really will be a new world, biologically, at that point," said the paper's lead author, Professor Anthony Barnofsky of the University of California, Berkeley. But Barnofsky doesn't go into the details of what kind of new world it might be. Scientists hardly ever do in public, for fear of being seen as panic-mongers. Besides, it's a relatively new hypothesis, but it's a pretty convincing one, and it should be more widely understood. Here's how bad it could get. The scientific consensus is that we are still on track for 3 degrees C of warming by 2100, but that's just warming caused by human greenhouse- gas emissions. The problem is that +3 degrees is well past the point where the major feedbacks kick in: natural phenomena triggered by our warming, like melting permafrost and the loss of Arctic sea-ice cover, that will add to the heating and that we cannot turn off. The trigger is actually around 2C (3.5 degrees F) higher average global temperature. After that we lose control of the process: ending our own carbon- dioxide emissions would no longer be enough to stop the warming. We may end up trapped on an escalator heading up to +6C (+10.5F), with no way of getting off. And +6C gives you the **mass extinction**. There have been five mass extinctions in the past 500 million years, when 50 per cent or more of the species then existing on the Earth vanished, but until recently the only people taking any interest in this were paleontologists, not climate scientists. They did wonder what had caused the extinctions, but the best answer they could come up was "climate change". It wasn't a very good answer. Why would a warmer or colder planet kill off all those species? The warming was caused by massive volcanic eruptions dumping huge quantities of carbon dioxide in the atmosphere for tens of thousands of years. But it was very gradual and the animals and plants had plenty of time to migrate to climatic zones that still suited them. (That's exactly what happened more recently in the Ice Age, as the glaciers repeatedly covered whole continents and then retreated again.) There had to be a more convincing kill mechanism than that. The paleontologists found one when they discovered that a giant asteroid struck the planet 65 million years ago, just at the time when the dinosaurs died out in the most recent of the great extinctions. So they went looking for evidence of huge asteroid strikes at the time of the other extinction events. They found none. What they discovered was that there was indeed major warming at the time of all the other extinctions - and that the warming had radically changed the oceans. The currents that carry oxygen- rich cold water down to the depths shifted so that they were bringing down oxygen- poor warm water instead, and gradually the depths of the oceans became anoxic: the deep waters no longer had any oxygen. When that happens, the sulfur bacteria that normally live in the silt (because oxygen is poison to them) come out of hiding and begin to multiply. Eventually they rise all the way to the surface over the whole ocean, killing all the oxygen-breathing life. The ocean also starts emitting enormous amounts of lethal hydrogen sulfide gas that destroy the ozone layer and directly poison land- dwelling species. This has happened many times in the Earth's history.

#### AND, ENVIRONMENTAL SECURITIZATION IS INCREASING IN THE SQUO WHICH NO UNIQUE RISK OF THEIR IMPACT – ONLY A RISK THE ALT TRIGGERS A UNIQUE DISAD BY DESTROYING THE METHOD OF ENABLING SOLUTIONS TO DISEASE AND ENVIRONMENTAL DESTRUCTION.

LeBoeuf and Broughton 2k8

[aline and emma, “securitization of health and environmental issues: process and effects. A research outline”, may, Insitut Francais des Relations Internationales publication online, junior research fellow at IFRI, MA in International Relations from London School of Economics and Political Science]

Be it HIV/AIDS, avian influenza, climate change, etc., many health and environmental issues are now commonplace in international news, political debates, and even global policy arenas like the United Nations Security Council. However, not so many years ago, those subjects were still taken to be secondary, technical issues having to be dealt with at the national level, with the rare occasion when international cooperation was prescribed. Why did the worlds of health and environment become so important in the national and international policy agendas? This article posits that such a development is the result of a growing conceptualisation of health and environmental issues as security issues. From the moment an issue is perceived to have potentially negative implications on “our” security – because it results in too many deaths, or inflicts too much damage, for instance, it takes on increased significance and importance; we will be more inclined to devote part of our limited resources to our own protection against this perceived threat. As a result, actions, albeit only declaratory, will often be taken. At the heart of our research lies a fundamental interest that is not geared towards the process through which a health or environmental issue *becomes* a security issue – what, as many others, we call here the process of “securitization” – but towards the impacts, the consequences and the effects of this process. As such, the three-year research programme that we are launching with this working paper will focus on the *impacts* of the securitization process.1 Before one can start working on the impact of a particular object of study, one must first understand the very nature of this object. This paper thus puts forward a description and an analysis of the process of securitization of health and environment, and sets the stage for our future work on the effects of this securitization.

Health and environmental issues have been increasingly “securitized” in the last twenty years. In other words, they have increasingly been considered as security issues. This securitization process has had many effects, one of which being that it contributed to raise the stakes of several issues linked to global health and the environment, like HIV/AIDS or global warming. It also encouraged the development of new policies, the creation of new agencies, institutions, norms, or governance options to try to solve these issues.

#### AND, ENVIRONMENTAL SECURITIZATION IS INEVITABLE – GLOBAL WARMING MAKES PEOPLE REACT TO RESOURCE SCARCITY CONCERNS, NO MATTER HOW EPISTEMOLOGICALLY FLAWED, THE ALT CAN’T CHANGE PERCEPTION.

CHALECKI 2K7

[Elizabeth, “environmental security: a case study of climate change”, pacific institute for studies in development, environment and safety, Asst. Professor in the International Studies Program at Boston College<http://www.pacinst.org/reports/environment_and_security/env_security_and_climate_change.pdf>]

Climate change will mean more natural disasters as a result of shifting weather and precipitation patterns. The Midwest will face a greater risk of tornadoes and riverine floods, the Gulf Coast and other shorelines will face a greater risk of high seas and hurricanes, and (due to changes in amount and timing of precipitation) the West will face greater risk of wildfires. These disasters will change the readiness of the military by forcing the reallocation of troops away from combat operations toward disaster relief. In addition, countries less able to cope with natural disasters will likely face large numbers of refugees, either internally or from nearby countries. As they compete with the local population for scarce resources, civil and ethnic unrest may require peacekeeping troops.

#### AND, THE U.S. LEADS THE WORLD IN SECURITIZATION – ALT CAN’T OVERCOME CULTURAL AND GOVERNMENTAL POWER ACCRUED THROUGH SECURITY. WE MUST USE SECURITY’S POWER STRATEGICALLY RATHER THAN ABANDON IT.

LeBoeuf and Broughton 2k8

[aline and emma, “securitization of health and environmental issues: process and effects. A research outline”, may, Insitut Francais des Relations Internationales publication online, junior research fellow at IFRI, MA in International Relations from London School of Economics and Political Science]

The United States, with an obvious “national security” approach, have [sic][has] clearly been the leading state actor in health and environmental securitization. This leadership position could be attributed to the sheer size of the International Relations and security research field in the U.S., and its privileged position and relationship with administrations and policy- makers. The securitization of health and environmental issues took hold in the U.S. specifically during the Clinton administration – possibly on account of the need to find “new” issues to justify the maintenance of Cold War levels of State expenditures. Environment was first mentioned as a security issue in Bush’s 1991 *National Security Strategy* (NSS), which states that “we must arrange Earth’s natural resources in ways that protect the potential for growth and opportunity for present and future generations.”33 In his 1994 NSS, Clinton declared that “environmental degradation” was a security risk.34 During his term, he also emphasised that infectious diseases, especially HIV/AIDS, posed “a threat to US national security because of its catastrophic social consequences, particularly in the developing world.”35 Since then, health and environment have remained on the U.S. security agenda but always as secondary security issues, especially when compared to the importance given to other threats, such as terrorism.

## Elections

#### Case outweighs

#### Disease spread through a bioterror outweighs all your impacts that’s 1AC lilliefors ‘12

#### SMRs publically popular – easier to explain safety features.

NEA ‘08

(Nuclear Energy Agency, “Why SMRs are being developed”, Brief 7,)

SMRs seem to respond well to these requirements, because they allow for design simplification and for introduction of new features, such as passive components and processes that avoid the need for early action by the operator in an abnormal situation. The design of some SMRs also makes it possible to set clearer and more precise safety criteria that may be easier for the public to understand, for example the exclusion of any possibility of a radioactive release to the environment. Some experts contend that the engineering principles are more readily explainable to the non-specialist, which should improve public acceptance.

#### No link DoD shields the plan

Gardner ‘12

Tim, correspondent for Reuters “Obama seeks clean energy, pipeline funds in budget,” Feb 13th, <http://www.reuters.com/article/2012/02/13/us-usa-budget-energy-idUSTRE81C17V20120213>

The White House put more focus on clean energy in the DOD program as it seeks to put the Solyndra controversy behind it. Including funding for clean energy in the Pentagon’s budget could help shield the administration from Republicans who say the government should not be in the business of picking technologies. Few lawmakers would argue the country does not need to reduce the energy dependency of military aircraft, tanks and ships.

#### New Military Base Spending is popular

Bloomberg 9/4

(Danielle Ivory, “Virginia Leads Swing States at Risk Over Cliff: BGOV Barometer” <http://www.bloomberg.com/news/2012-09-04/virginia-leads-swing-states-at-risk-over-cliff-bgov-barometer.html>, SHE)

For some swing-state voters, the presidential election may come down to who they want holding the net if their economies go over the fiscal cliff.¶ The BGOV Barometer shows that the battlegrounds of Virginia, Colorado and Pennsylvania are among 19 states and the District of Columbia that depended on U.S. government contracts for more than 3 percent of their 2011 gross domestic product. The states are vulnerable to $1.2 trillion in automatic 10-year budget reductions, called sequestration, that will begin in January if Congress and the White House fail to agree on a deficit-reduction plan. ¶ President Barack Obama and his Republican challenger, Mitt Romney , need the 42 electoral votes represented by Virginia, Colorado and Pennsylvania as they compete for the 270 it takes to win. Their lines of attack on the automatic cuts, which along with tax increases make up the fiscal cliff, may help determine the outcome in those swing states.¶ “It’s going to increasingly become an issue in this election,” said Todd Harrison , a senior fellow at the Center for Strategic and Budgetary Assessments in Washington. “Both sides want to run against sequestration.¶ “Maybe that’s what this boils down to,” Harrison said in an interview. “Whose approach do you prefer for avoiding sequestration?”¶ The government spent more than $500 billion on federal contracts in 2011. Agencies awarded $58.9 billion in orders that year for work performed in Virginia.¶ ‘Tentacles Everywhere’¶ Federal awards represented 14 percent of the economy in the state, home to the Pentagon and headquarters of top federal contractors such as McLean-based SAIC Inc. (SAI) The company was the top recipient of awards in Virginia, receiving $3 billion for work in the state. SAIC performs computer and engineering services for agencies including the Department of Defense .¶ Federal awards support economies outside the state, so a contract in Virginia might have implications for a lawyer or consultant in Ohio or Texas, Ric Brown, the state’s finance secretary, said in an interview. “It has tentacles everywhere,” he said.¶ Contractors performing work in Colorado won $10.2 billion in U.S. awards last year, which represented 3.8 percent of the state’s economy. Lockheed Martin Corp. (LMT), based in Bethesda, Maryland , won the most in contracts, $2.41 billion, for work in the state. The company is the No. 1 U.S. defense contractor.¶ ‘Held Hostage’¶ Agencies last year awarded $17.7 billion in contracts for work in Pennsylvania. The state relied on the awards for 3.1 percent of its economy. Bechtel Group, based in San Francisco , was the top recipient of contracts in the state with $1.99 billion in awards.¶ The three swing states also have direct federal employees and military bases that require additional government funding. Nevada, Florida, Wisconsin, Ohio and Iowa -- swing states with 69 electoral votes -- may be less vulnerable because they derived less than 3 percent of their economy from federal contracts.

#### The squo has already triggered the link

#### Obama has pushed SMRs

Kramer ‘12

(David J. Kramer was educated at Tufts University, receiving his B.A. in Soviet Studies and Political Science, and then at Harvard University, receiving his M.A. in Soviet Studies. “Romney, Obama surrogates spell out candidates’ energy policies” September 2012 Accessed online at http://www.physicstoday.org/resource/1/phtoad/v65/i9/p20\_s10, TSW)

The Obama administration’s support for nuclear power is evident from the $7 billion loan guarantee from DOE to back construction of two new reactors at an existing nuclear power plant in Georgia, Reicher noted. “There’s serious money going into small modular reactors and serious policy work going on in how to reform the licensing process” at the Nuclear Regulatory Commission to expedite approval.

#### And Obama has already made a budget stance means any voters that would have switch already did.

#### Romney can’t turn this into a win—he’s already come out in support of nuclear

Wood 9/13/12

Elisa, energy columnist for AOL, “What Obama and Romney Don't Say About Energy,” <http://energy.aol.com/2012/09/13/what-obama-and-romney-dont-say-about-energy/>, AM

Fossil fuels and renewable energy have become touchy topics in this election, with challenger Mitt Romney painting President Barack Obama as too hard on the first and too fanciful about the second – and Obama saying Romney is out of touch with energy's future. But two other significant resources, nuclear power and energy efficiency, are evoking scant debate. What gives? Nuclear energy supplies about 20 percent of US electricity, and just 18 months ago dominated the news because of Japan's Fukushima Daiichi disaster – yet neither candidate has said much about it so far on the campaign trail. Romney mentioned nuclear power only seven times in his recently released white paper, while he brought up oil 150 times. Even wind power did better with 10 mentions. He pushes for less regulatory obstruction of new nuclear plants, but says the same about other forms of energy. Obama's campaign website highlights the grants made by his administration to 70 universities for research into nuclear reactor design and safety. But while it is easy to find his ideas on wind, solar, coal, natural gas and oil, it takes a few more clicks to get to nuclear energy. The Nuclear Energy Institute declined to discuss the candidates' positions pre-election. However, NEI's summer newsletter said that both "Obama and Romney support the use of nuclear energy and the development of new reactors."

#### Voters won’t change their minds- new study proves

Bartles 9-21

Larry is Professor of Political Science at Vanderbilt, “There go the Undecided Voters,” <http://themonkeycage.org/blog/2012/09/21/there-go-the-undecided-voters/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+themonkeycagefeed+%28The+Monkey+Cage%29&utm_content=Google+Reader>

Lynn Vavreck has an informative piece on the New York Times Campaign Stops blog today tracing shifts in presidential voting intentions from late 2011 through early September. The data are from the Cooperative Campaign Analysis Project, which interviewed nearly 44,000 people last December and has subsequently been reinterviewing 1,000 per week. (Top monkey John Sides is a collaborator in the CCAP study, and I received access to some of these data for an earlier Campaign Stops post that Vavreck and I wrote together.)¶ Through most of the spring and early summer, more than half of the survey respondents who were undecided last December were still declining to choose a candidate, with the rest breaking slightly for Mitt Romney over Barack Obama. Since around mid-June, more of these previously undecided voters have begun to commit, with Obama gaining and, in the last few weeks, surpassing Romney among those who were originally undecided. According to Vavreck, “These decisions seem largely to have been motivated by party identification.”¶ Meanwhile, both candidates have managed to retain the vast majority of prospective voters who supported them last December. Over the course of 2012, Obama has held 96% of those who supported him in 2011 and added 3% of those who originally said they would vote Republican. For his part, Romney has held 94% of those who intended to vote Republican and added 2% of those who intended to vote for Obama. (Vavreck notes that the 2008 CCAP study found almost as much stability in candidate preferences, with Obama holding 90% of his early supporters and John McCain holding 92% of his.)¶ To readers versed in election studies, these findings will seem very reminiscent of those from the first scholarly analysis of campaign effects: “conversion is, by far, the least frequent result and activation the second most frequent manifest effect of the campaign.” However, whereas Lazarsfeld and his colleagues in 1940 studied 600 prospective voters in Erie County, Ohio, Vavreck and her colleagues in 2012 have 44,000 nationwide. That’s real scientific progress.

#### Energy is irrelevant

Wang 9/27/12

Herman, writer for The Barrel, a Platts energy forecasting blog, “Even with US gasoline prices at a higher number, energy isn’t a big deal in White House race,” <http://blogs.platts.com/2012/09/27/energy_campaign/>, AM

The respected polling firm Gallup asked voters in August what the most important issue facing the country was, and only 1% cited energy. That’s down sharply from the 25% of poll respondents who cited energy as the top issue in the days before the 2008 election, in which Republicans coined the rallying cry “Drill, baby, drill!” in response to high oil and gasoline prices. This time around, the economy, unemployment, general dissatisfaction with government and health care are greater concerns for voters, said Frank Newport, editor in chief of The Gallup Poll. Energy “doesn’t show up when we [ask voters] to tell us in your own words why you’re voting for the candidates,” he said. “We just don’t see much evidence that it’s a high top-of-mind issue in the campaign.”

#### The public loves nuclear—newest polling and be skeptical of their link authors

Westenhaus 9/30/12

Brian, editor of the popular energy technology site New Energy and Fuel, “Confidence in Nuclear Power is on the Rise Again,” <http://oilprice.com/Alternative-Energy/Nuclear-Power/Confidence-in-Nuclear-Power-is-on-the-Rise-Again.html>, AM

The Nuclear Energy Institute announced a September telephone survey in a press release suggesting almost two thirds of U.S. adults favor the use of nuclear energy as one of the ways to provide electricity in the United States. This latest survey found that Americans strongly favoring nuclear energy outnumber those strongly opposed by a two-to-one ratio, 29% versus 14%. The new numbers improve on a poll conducted in September 2011, six months after the Fukushima accident, when 62% of American favored nuclear energy, with 35% opposed. The new survey shows confidence is improving. Just over three quarters of respondents agree that nuclear energy facilities operating in the United States are ‘safe and secure,’ while only 19% think they are not. Eighty percent of Americans opposed to 16% believe “we should learn the lessons from the Japanese accident and continue to develop advanced nuclear energy plants to meet America’s growing electricity demand.” In a shock to the political system and the anti nuclear crowd a large majority (81%) of those surveyed favor the renewal of operating licenses of facilities that continue to meet federal safety standards, while 74% believe electric utilities should prepare now so they will be ready to build new nuclear power plants in the next decade if needed.

#### Silvers bad- non-falsifiable and switches last second to increase accuracy

Jacobson 10/29

(William A, Associate Clinical Professor, Cornell Law School, “If Nate Silver cannot be wrong, how can he be right?” <http://legalinsurrection.com/2012/10/if-nate-silver-cannot-be-wrong-how-can-he-be-right/>, SEH)

Silver cannot be wrong because his model, whatever it is, merely puts a likelihood of success on the election. Silver’s model could predict a 75% chance of an Obama win, but if Romney wins the model was not wrong because his model allowed for a 25% chance of a Romney win.¶ If Silver cannot be wrong, how can he be right? Heads he wins, tails you lose. Calling all philosophy majors!¶ I’ll leave you with this. My first experience with Silver-mania was in his pre-NY Times days, when he was covering the Coakley-Brown race. According to Wikipedia, Silver’s 538 model was pure genius:¶ FiveThirtyEight writers Schaller, Gelman, and Silver also gave extensive coverage to the January 19, 2010 Massachusetts special election to the U.S. Senate. The “538 model” once again aggregated the disparate polls to correctly predict that the Republican Scott Brown would win.[40]¶ The source in the footnote was Silver’s January 18, 2010 blog entry, 538 Model Posits Brown as 3:1 Favorite posted at 5:26 p.m. the day before the election.¶ Well, yeah, duh, about 14 hours before the polls opened Silver joined the rest of the world in predicting a Brown win, but he was consistently predicting doom for Brown and was the last person to jump on board.

#### Romney wins- swing states

Examiner 10/31

(Dean Chambers, “Mitt Romney leads in three swing states by unskewed data from Quinnipiac polls” <http://www.examiner.com/article/mitt-romney-leads-three-swing-states-by-unskewed-data-from-quinnipiac-polls>, SEH)

Three state level polls of likely voters in Florida, Ohio and Virginia released today by CBS News/NYT/Quinnipiac are heavily skewed and show President Obama leading over Mitt Romney. The polls shows Obama leading by one percent in Florida, five percent in Ohio and two percent in Virginia. Other recent surveys, that have been far less skewed, have shown Romney leading in all three of the states, including a recent Rasmussen survey showing Romney leading 50 percent to 48 percent in Ohio.¶ Obama's approval to disapproval ratings in these polls, despite the level they are skewed, are 49 percent to 48 in Florida, 50 percent to 47 percent in Ohio and 49 percent to 49 percent in Virginia. Generally, an incumbent president needs at least 51 percent approval to win a state, and President Obama is below that level in all three of these states. Those who disapprove of an incumbent president are highly likely to vote for the challenger. These numbers show that Obama is highly unlikely to win these states.

#### Romney leading Ohio

Groening 10/31

(Chad, onenewsnow, “POLL: ROMNEY TAKES LEAD IN OHIO” <http://www.onenewsnow.com/politics-govt/2012/10/31/poll-romney-takes-lead-in-ohio>, SEH)

According to Rasmussen Reports, the Republican challenger has a two-point lead in The Buckeye State. The latest phone survey of likely Ohio voters shows Romney with 50 percent support and Obama with 48 percent. The state's Electoral College projections, however, remain a toss-up.

## CP

#### Blue Ribbon Comission was already formed

USDOE 1/31

<http://energy.gov/sites/prod/files/1-31-12%20SEAB%20Meeting%20Minutes.pdf> Summary Minutes of the US Department of Energy (DOE) Secretary of Energy Advisory Board Public Meeting Committee Members: William Perry, Chair; Ralph Cicerone; John Deutch; Nicholas Donofrio; Michael McQuade; Arthur Rosenfeld; Steven Westly; Dan Yergin Date and Time: 8:30 AM- 3:30 PM, January 31, 2012 Location: Department of Energy Forrestal Building, 1000 Independence Avenue, SW, Washington, DC 20585 Purpose: Meeting of the Secretary of Energy Advisory Board SEAB Staff: Alyssa Morrissey, Deputy Designated Federal Officer DOE Staff: Secretary Steven Chu; Deputy Secretary Daniel Poneman; Renee Stone, Senior Advisor; Richard Kauffman, Senior Advisor; Ramamoorthy Ramesh, SunShot Director; Minh Le, Solar Energy Technologies Program Chief Engineer; Rachel Tronstein, Deputy SunShot Director; Dave Howell, Hybrid and Electric Systems Team Leader; David Danielson, ARPA-E Program Director; Lauren Azar, Senior Advisor.

Meeting Summary: SEAB members heard opening remarks from Secretary Chu. During the first half of the day, the Board heard presentations from DOE staff, including a presentation on renewable energy and energy efficiency financing from Senior Advisor Richard Kauffman, an overview of the SunShot initiative from SunShot Director Ramamoorthy Ramesh, and an overview of the batteries tech team from Dave Howell. The Board heard updates from the Building Efficiency Subcommittee, and a Subcommittee on small modular reactors was established. Just before lunch, the Board heard from the Chairs of the Blue Ribbon Commission, General Brent Scowcroft and Congressman Lee Hamilton. The last session of the meeting was a presentation on transmission from Senior Advisor Lauren Azar.

#### Creation of Commission links to politics and court strikes down

Frist & Breux ‘10

Bill is the former Senate Majority Leader and John is a former Senator from Tennessee, “Keep Medicare in Congress’ Hands,” <http://www.politico.com/news/stories/0310/34658.html>

For all intents and purposes, the board would have the power to influence and rewrite nearly all aspects of Medicare. While independent commissions and boards have sometimes played important policymaking roles, Congress has refrained from giving them this degree of power. It represents a dangerous surrender of authority by the elected representatives of the American people. The Constitution, after all, explicitly reserves “all legislative powers” to Congress. Courts have repeatedly found that it can’t even surrender these powers to the president — much less to an independent board. Most significantly, in 1998, the Supreme Court ruled a 1996 “line item veto” law unconstitutional because it allowed the president to reject specific spending or tax provisions and mandated congressional supermajority votes to overturn these partial vetoes. In fact, the line-item veto was less far-reaching than the proposed advisory board. While the 1996 measure simply allowed the president to reject certain types of spending or tax provisions, the board will have the effective power to rewrite the law. Neither of us can understand how the proposed board could pass constitutional muster if the line-item veto did not.

#### Our interp is that counterplans must be textually and functionally competitive: Counterplan isn’t because it merely adds a delay mechanism to the implementation of the plan

#### Functionally only is bad

#### A. Steals 9 minutes of 1AC offense

#### B. Unpredictable- there is an infinite number of subsets to pick out of and can always find an arbitrary reason to delay- they justify cp’s like ‘do plan after the election’ which are impossible to get offense against

#### C. Education- wrecks larger discussion of policy, skirts debate about topic implementation, and leads to a race to the bottom of finding the most obscure act to PIC out of

#### Perm do the counterplan

#### Its not Severance

#### Resolved means by vote

Webster’s Revised Unabridged Dictionary, 1998 (dictionary.com)

Resolved:

5. To express, as an opinion or determination, by resolution and vote; to declare or decide by a formal vote; -- followed by a clause; as, the house resolved (or, it was resolved by the house) that no money should be apropriated (or, to appropriate no money).

#### Also, the colon is meaningless –

Webster’s Guide to Grammar and Writing – 2k (<http://ccc.commnet.edu/grammar/marks/colon.htm>)

Use of a colon before a list or an explanation that is preceded by a clause that can stand by itself. Think of the colon as a gate, inviting one to go on… If the introductory phrase preceding the colon is very brief and the clause following the colon represents the real business of the sentence, begin the clause after the colon with a capital letter.

#### Should means desirable or recommended, not mandatory

Words and Phrases, 2002 (“Words and Phrases: Permanent Edition” Vol. 39 Set to Signed. Pub. By Thomson West. P. 372-373)

Or. 1952. Where safety regulation for sawmill industry providing that a two by two inch guard rail should be installed at extreme outer edge of walkways adjacent to sorting tables was immediately preceded by other regulations in which word “shall” instead of “should” was used, and word “should” did not appear to be result of inadvertent use in particular regulation, use of word “should” was intended to convey idea that particular precaution involved was desirable and recommended, but not mandatory. ORS 654.005 et seq.----Baldassarre v. West Oregon Lumber Co., 239 P.2d 839, 193 Or. 556.---Labor & Emp. 2857

#### Perm do the counterplan and do the plan regardless of the outcome. If they say yes, nothing happens. If they say no, case is a disad. Timeframe perm is justified because the counterplan introduces the element.

#### DoD empirically does not implement energy policy recommendations

**DSB 8**

Defense Science Board Task Force on DoD Energy Strategy, Feb 2008, More Figh -Less Fuel, www.acq.osd.mil/dsb/reports/ADA477619.pdf

Finding #1: The recommendations from the 2001 Defense Science Board Task Force Report “More Capable Warfighting Through Reduced Fuel Burden” have not been implemented.

The principal finding of the 2001 DSB report was that DoD systematically underestimates the cost of fuel to its tactical forces by failing to recognize the costs of the support structure and the protection necessary to bring that fuel to the systems that use it. As a consequence, significant warfighting, logistics and monetary benefits are available from making weapons systems more fuel-efficient, but those benefits are not valued or emphasized in DoD’s requirements and acquisition processes. The report found that the requirements process does not require energy efficiency in deployed systems, the acquisition process does not value it, so the PPBES process cannot not provide it visibility when considering investment decisions.

These findings remain valid today. Few of the recommendations of that study have been implemented to date. Those that have begun; making energy efficiency a selective Key Performance Parameter in system design, and using the fully burdened cost of fuel in life cycle costing of alternative systems; are in their early stages of implementation. Focused leadership will be required to complete the recommendations of the 2001 study and similar recommendations made herein.

## 2AC

#### Rare earth mineral low prices inevitable- Chinese manufacturing industry pressure and their impacts are non-unique

Onstad 12

(Eric, Deputy Editor in Charge, Commodities, EMEA at [Thomson Reuters](http://uk.linkedin.com/company/thomson-reuters_1400?trk=ppro_cprof)EMEA Mining Correspondent at [Thomson Reuters](http://uk.linkedin.com/company/thomson-reuters_1400?trk=ppro_cprof), “Analysis: Rare earth prices to erode on fresh supply, China,” 9/19/2012, <http://www.reuters.com/article/2012/09/19/us-rareearths-outlook-idUSBRE88I0O020120919>)

Prices of the 17 elements used in technologies such as smartphones and hybrid cars soared last year by hundreds of percent after China clamped down on exports. Hot money flowed into an illiquid sector but later departed, causing a crash.¶ Lanthanum, used in rechargeable batteries for hybrid autos and in night-vision goggles, rocketed 26-fold from $5.15 a kg in January 2010 to a peak of $140 in June 2011. Although it has slid to $20.50, the price is still well above earlier lows.¶ The market has steadied in recent months, but new output from U.S. Molycorp ([MCP.N](http://www.reuters.com/finance/stocks/overview?symbol=MCP.N)) and Australia's Lynas Corp ([LYC.AX](http://www.reuters.com/finance/stocks/overview?symbol=LYC.AX)) is likely to pressure prices, especially those of "light" rare earths which are not as scarce as their "heavy" cousins.¶ Weaker economic growth in China is also weighing on the market since the world's second largest economy not only produces over 90 percent of global rare earths, but is the biggest consumer of the materials.¶ "Prices will continue to drop so long as Chinese GDP continues to face downward pressures on the manufacturing side," said Michael Silver, chief executive of American Elements, which buys rare earths from China.¶ China's slowdown - rather than a trade complaint filed by Western nations - is expected to prompt some relaxation of Beijing's tough export controls, Silver added.¶ In August, China announced new export quotas on rare earth elements (REE), which increased the yearly figure by 2.7 percent.¶ "This is the first time in five years that the REE quota has increased and is the highest in three years, which is seen as a slight negative as excess supply would put pressure on prices," analyst Carolyn Dennis of Toronto-based Dundee Capital Markets said in a note to clients.

#### The WTO guarantees U.S. access to Chinese REE- no shortages

Bosco 12

David Bosco 1-30, assistant professor at American University's School of International Service, January 30, 2012, “WTO rules against China on 'rare earth' minerals,” online: <http://bosco.foreignpolicy.com/posts/2012/01/30/wto_rules_against_china_on_rare_earth_minerals>

The World Trade Organization's appellate body [ruled today](http://www.google.com/hostednews/afp/article/ALeqM5iQWDjbSMV_bSItDoHNC6x4tq31qA?docId=CNG.fab869aea95c0cb3ce801070fba43334.271) that China's restrictions on the export of certain key minerals was illegal:¶ The World Trade Organization on Monday upheld its ruling that Chinese restrictions on key raw material exports broke trade rules following an appeal by Beijing.¶ China must bring its duty and export quota measures on elements including magnesium and zinc into line with its WTO obligations, an appeal body said.¶ The WTO found in favour of the United States, European Union and Mexico in July following a complaint that China had failed to meet the promises it made when joining the body.¶ U.S. trade officials--who have made targeting Chinese trade practices a focus of their work-- immediately [celebrated the ruling](http://www.ustr.gov/about-us/press-office/press-releases/2012/january/ambassador-kirk-announces-us-victory-challenge-chi):¶ The Obama Administration will continue to ensure that China and every other country play by the rules so that U.S. workers and companies can compete and succeed on a level playing field. During his State of the Union Address last week, the President laid out a blueprint for an economy that’s built to last – an economy built with the renewed strength of American manufacturing. Today’s decision ensures that core manufacturing industries in this country can get the materials they need to produce and compete on a level playing field.

#### REE mining and supply increasing- California mountain pass and other new mines outside US prevents bottle neck

Burnett 12

(H.Sterling, PhD Applied Philosophy, Senior Fellow and lead analyst of the National Center for Policy Analysis' E-Team -- one of the largest collections of energy and environmental policy experts and scientists, “Finding Sources of Rare Earths beyond China,”

Mountain Pass: An American Rare Earth Mine. California’s Mountain Pass, the only mine in America dedicated to rare earths, closed in 2002 due to environmental problems and low prices. After spending an estimated $500 million on state-of-the-art equipment and significant environmental upgrades, it has reopened under new management.9 Molycorp, the owner, will mine only a handful of rare earth minerals, but it hopes to produce 20,000 tons per year by 2012. By contrast, China produced 124,000 tons of rare earths in 2009.¶ Mountain Pass formerly produced rare earths from the tailings of historical rare earth operations. Molycorp previously estimated Mountain Pass contained more than 2.24 billion pounds of rare oxides. However, based on mining fresh ore and new exploratory drilling, Molycorp now estimates there are 36 percent more reserves — a total of 2.94 billion pounds. The company says it hopes to increase production to 40,000 tons of rare earths per year in the near future.10¶ Globally, the number of new projects to explore for and develop rare earths has exploded in recent years. As of April 2012, Hatch found that 429 rare earth projects outside of China and India were being developed by 261 different companies in 37 different countries.11¶ Clearly, not all projects are equal. Some are being developed based on a handful of samples, while others have proven mineral reserves. There will never be mineral-resource estimates for most of these projects, and even fewer will become profitable ventures. The number and diversity, however, indicates that the so-called “rare earths crisis” is theoretically solvable.¶ Absent government ownership or funding, potential mineral resources must be estimated before these projects can be funded. Of the 429 projects mentioned above, as of April 2012, 36 projects have been either been formally defined as a mineral resource or reserve under standard industry guidelines, or were previously mined.12 These rare earth projects are most likely to become productive. The 36 projects include12 operations in Canada, seven in Sub-Saharan Africa, six in Australia, four in the United States, three in Greenland, and one each in Sweden, Kyrgyzstan, Turkey and Brazil.¶ These operations, plus new mines in China and India, will provide the new supplies of rare earths needed for critical industries.

#### The U.S. is incentivizing domestic production---will cause self-sufficiency

Humphries 12

Marc Humphries 11, Specialist in Energy Policy at the Congressional Research Service, June 8, 2012, “Rare Earth Elements: The Global Supply Chain,” online: <http://www.fas.org/sgp/crs/natsec/R41347.pdf>

¶ The concentration of rare earth elements (REEs) production in China raises the important issue of ¶ supply vulnerability. REEs are used for many commercial applications including new energy ¶ technologies, electronic devices, automobiles, and national security applications. Is the U.S. ¶ vulnerable to supply disruptions? Are these elements essential to U.S. national security and ¶ economic well-being? ¶ The examination of REEs for new energy technologies reveals a concentrated and complex global ¶ supply chain and numerous end-use applications. Placing the REE supply chain in the global ¶ context is unavoidable. The current goal of U.S. mineral policy is to promote an adequate, stable, ¶ and reliable supply of materials for U.S. national security, economic well-being, and industrial ¶ production. U.S. mineral policy emphasizes developing domestic supplies of critical materials ¶ and encourages the domestic private sector to produce and process those materials.¶ 1¶ But some ¶ raw materials do not exist in economic quantities in the United States, and processing, ¶ manufacturing, and other downstream ventures in the United States may not be cost competitive ¶ with facilities in other regions of the world. However, there may be public policies enacted or ¶ executive branch measures taken to offset the U.S. disadvantage of its potentially higher cost ¶ operations. The private sector may achieve lower cost operations with technology breakthroughs. ¶ Based on this policy framework, the Congress and the Administration are discussing the impact ¶ of China’s near-monopoly position in rare earth elements and a range of potential federal ¶ investments that would support the development of a vertically integrated rare earth supply chain ¶ in the United States.¶

# 1AR - 2NR was REE, Case

### Grid

#### They read more defense on bioterror but extend liliefors ’12

#### bioterror does cause Extinction

Ochs 2

**(**Richard, Naturalist – Grand Teton National park with Masters in Natural Resource Management – Rutgers, “Biological Weapons must be abolished immediately” 6-9, http://www.freefromterror.net/other\_articles/abolish.html)

Of all the weapons of mass destruction, the genetically engineered biological weapons, many without a known cure or vaccine, are an extreme danger to the continued survival of life on earth. Any perceived military value or deterrence pales in comparison to the great risk these weapons pose just sitting in vials in laboratories. While a "nuclear winter," resulting from a massive exchange of nuclear weapons, could also kill off most of life on earth and severely compromise the health of future generations, they are easier to control. Biological weapons, on the other hand, can get out of control very easily, as the recent anthrax attacks has demonstrated. There is no way to guarantee the security of these doomsday weapons because very tiny amounts can be stolen or accidentally released and then grow or be grown to horrendous proportions. The Black Death of the Middle Ages would be small in comparison to the potential damage bioweapons could cause. Abolition of chemical weapons is less of a priority because, while they can also kill millions of people outright, their persistence in the environment would be less than nuclear or biological agents or more localized. Hence, chemical weapons would have a lesser effect on future generations of innocent people and the natural environment. Like the Holocaust, once a localized chemical extermination is over, it is over. With nuclear and biological weapons, the killing will probably never end. Radioactive elements last tens of thousands of years and will keep causing cancers virtually forever. Potentially worse than that, bio-engineered agents by the hundreds with no known cure could wreck even greater calamity on the human race than could persistent radiation. AIDS and ebola viruses are just a small example of recently emerging plagues with no known cure or vaccine. Can we imagine hundreds of such plagues? HUMAN EXTINCTION IS NOW POSSIBLE.

### Case

#### We have expertise – Navy hired 700 nuclear engineers and new projects spark interest

Wheeler 10/12

(Brian graduated from Northeastern State University in Tahlequah, Okla., in 2005 with a Bachelor’s degree in Mass Communication. He majored in Journalism and minored in Speech Communication. Since graduation, Brian has worked as a newspaper reporter, a magazine freelance writer and most recently as a television news photojournalist and web reporter. Working in television taught Brian how to complete stories in a short time span with breaking news occurring daily. After three years in T.V. news, he joined the PennWell publishing team in March 2010.¶ Brian serves as Editor of Nuclear Power International and Senior Editor of Power Engineering. He also serves as a committee member for the Nuclear Power International Conference and Exhibition and COAL-GEN. “Special Report: Nuclear Power Executive Roundtable” Oct 12, 2012 <http://www.power-eng.com/articles/2012/10/special-report-nuclear-power-executive-roundtable.html>, TSW)

Cheri also mentioned the Navy agreement signed in August in Atlanta. I just got an email stating that 11 officers coming out of the Navy are looking for jobs in the nuclear industry. That’s the first of many, I believe to facilitate the workforce development in our industry.¶ Ashley: We have actually seen a definite resurgence of interest in the nuclear industry. That, and our workload has enabled us to hire about 700 engineers to support our nuclear business line over the past two years. About 25 percent of those were college hires. It wasn’t that long ago when we couldn’t really interest a college hire to come into the nuclear industry. That has changed.¶ There is a strong interest in terms of young engineers taking a more active role in the nuclear industry. At Bechtel, we have over 250 active members in North America Young Generation Nuclear. Those are mostly young engineers and professional under the age of 35. It is very active, and we see that as a developing group that is going to be the future of our industry. In June, we hosted a conference for the Mid-Atlantic region of NAYGN that included about 20 different chapters. Individuals from various companies came to Bechtel Power’s Frederick, Md. office, and participated on their own time. It started Friday night and it was over the weekend. That shows the enthusiasm that this group has for commercial nuclear. I am very optimistic that if we can keep them interested, we can build the next generation of engineers.¶ We also have nearly 200 members of Women in Nuclear and, once again, that shows the diversity of nuclear engineers and gives me reason for optimism. That is one of Bechtel’s strongest missions: preparing the future generation to not only take over supporting the operation of our existing fleet, but also the design and construction of new plants.¶

#### Current manufacturing capability can switch to SMR

U.S. Department of Commerce International Trade Administration 11

(“The Commercial Outlook for¶ U.S. Small Modular Nuclear¶ Reactors” <http://www.trade.gov/publications/pdfs/the-commercial-outlook-for-us-small-modular-nuclear-reactors.pdf>, SEH)

Impact of SMRs on U.S. Job ¶ Creation¶ **A serious obstacle to the resurgence of traditional ¶ nuclear power in the United States is the eroded ¶ domestic manufacturing capacity for the major ¶ nuclear components. A robust program of building SMRs, however, could make use of existing ¶ domestic capacity that is already capable of completely constructing most proposed SMR designs. ¶ SMRs would not require the ultra-heavy forgings ¶ that currently can only be made overseas**. **U.S. ¶ suppliers say that firms could retool using existing ¶ capabilities and resources and could source most ¶ of the components of SMRs here in the United ¶ States**. This ability could mean tremendous new ¶ commercial opportunities for U.S. firms and ¶ workers. ¶ **A substantial SMR deployment program in the ¶ United States could result in the creation of many ¶ new jobs in manufacturing, engineering, transportation, construction (f**or site preparation and ¶ installation) and craft labor, professional services, ¶ and ongoing plant operations. As SMR manufacturers prove their designs in the domestic market, ¶ they will likely consider export opportunities. The ¶ modular nature of SMRs and their relative portability means that locating export-oriented SMR ¶ manufacturing and assembly could make sense ¶ for U.S. companies, as opposed to the localization that is typically necessary for building larger ¶ reactors.

### Elections

#### Ohio supports SMRs –energy needs and high tech jobs

EBR 7/26

(Energy Business Review (EBR) “B&W prepares for small modular reactor studies in Ohio” 26 July 2012 <http://nuclear.energy-business-review.com/news/bw-prepares-for-small-modular-reactor-studies-in-ohio-260712>, TSW)

FirstEnergy Corporation, a Babcock & Wilcox Company (B&W) subsidiary and Generation mPower has inked an agreement for studies on the potential deployment of a small modular nuclear reactor at the former’s site in Ohio, US.¶ B&W mPower will generate 180MW of electricity and will be a fully underground containment structure.¶ The companies will collaborate to perform an independent financial review of mPower economics, evaluate alternative potential sites for construction of B&W mPower plants and complete a preliminary pre-licensing analysis.¶ The study will also assess the need and timing for prospective deployment of B&W mPower plants in the FirstEnergy generation fleet.¶ FirstEnergy Generation president and chief nuclear officer James H. Lash said, "Completing these studies will help us determine how B&W small modular reactors may be part of our long term generation planning."¶ "This agreement between FirstEnergy and Generation mPower represents another significant step towards making Ohio a hub for advanced manufacturing and next-generation energy,"¶ Ohio Senator Rob Portman said, "One or more small modular reactors in our state could not only provide this energy need, but would continue to support advanced energy careers in Ohio.¶ "I applaud FirstEnergy and Generation mPower for their commitment to advanced energy development and our nation's energy security," Rob added.

#### Conceded Romney is just a harde talker can’t actually do anything no risk of their impact CQ weekly evidence

### REE

#### New deposits near the coast of Japan are sufficient to meet all need and extraction feasible

Reuters 11

(Reuter New York Times News, “Huge rare earth deposits found in Pacific: Japan experts,” 7/4/2011, <http://www.reuters.com/article/2011/07/04/us-rareearth-japan-idUSTRE76300320110704>)

Vast deposits of rare earth minerals, crucial in making high-tech electronics products, have been found on the floor of the Pacific Ocean and can be readily extracted, Japanese scientists said on Monday.¶ "The deposits have a heavy concentration of rare earths. Just one square kilometer (0.4 square mile) of deposits will be able to provide one-fifth of the current global annual consumption," said Yasuhiro Kato, an associate professor of earth science at the University of Tokyo.¶ The discovery was made by a team led by Kato and including researchers from the [Japan](http://www.reuters.com/places/japan) Agency for Marine-Earth Science and Technology.¶ They found the minerals in sea mud extracted from depths of 3,500 to 6,000 meters (11,500-20,000 ft) below the ocean surface at 78 locations. One-third of the sites yielded rich contents of rare earths and the metal yttrium, Kato said in a telephone interview.¶ The deposits are in international waters in an area stretching east and west of Hawaii, as well as east of Tahiti in French Polynesia, he said.¶ He estimated rare earths contained in the deposits amounted to 80 to 100 billion metric tons, compared to global reserves currently confirmed by the U.S. Geological Survey of just 110 million tonnes that have been found mainly in [China](http://www.reuters.com/places/china), Russia and other former Soviet countries, and the United States.¶ Details of the discovery were published on Monday in the online version of British journal Nature Geoscience.¶ The level of uranium and thorium -- radioactive ingredients that are usually contained in such deposits that can pose environmental hazards -- was found to be one-fifth of those in deposits on land, Kato said.¶ A chronic shortage of rare earths, vital for making a range of high-technology electronics, magnets and batteries, has encouraged mining projects for them in recent years.¶ China, which accounts for 97 percent of global rare earth supplies, has been tightening trade in the strategic metals, sparking an explosion in prices.¶ Japan, which accounts for a third of global demand, has been stung badly, and has been looking to diversify its supply sources, particularly of heavy rare earths such as dysprosium used in magnets.¶ Kato said the sea mud was especially rich in heavier rare earths such as gadolinium, lutetium, terbium and dysprosium.¶ "These are used to manufacture flat-screen TVs, LED (light-emitting diode) valves, and hybrid cars," he said.¶ Extracting the deposits requires pumping up material from the ocean floor. "Sea mud can be brought up to ships and we can extract rare earths right there using simple acid leaching," he said.¶ "Using diluted acid, the process is fast, and within a few hours we can extract 80-90 percent of rare earths from the mud."¶ The team found that sites close to Hawaii and Tahiti were especially rich in rare earths, he said.¶

#### New Japanese discoveries in Pacific Ocean destroy China’s monopoly

HSN 11

Homeland Security News Wire, July 7, 2011, “Japanese discovery could undermine China's rare earth dominance,” online: <http://www.homelandsecuritynewswire.com/japanese-discovery-could-undermine-chinas-rare-earth-dominance>

A new discovery by Japanese researchers could break China’s stranglehold over rare Earth metals.¶ Japanese geologists say they have [found](http://www.bbc.co.uk/news/world-asia-pacific-14009910) large deposits of rare Earth minerals on the floor of the Pacific Ocean. It is estimated that the mud of the Pacific Ocean contains 100 billion tons of rare Earth elements.¶ If geologists are able to mine for the minerals in a cost effective way, analysts believe this discovery could undermine China’s dominance. Currently, 97 percent of rare Earth metals are produced in China, but in recent years the country has imposed strict quotas and limited exports disrupting the global supply chain.¶ Yasuhiro Kato, an associate professor of earth science at the University of Tokyo and the leader of the team that discovered the rare earth stores, said, “The deposits have a heavy concentration of rare earths. Just one square kilometer (0.4 square mile) of deposits will be able to provide one-fifth of the current global annual consumption.”¶ The minerals were found in sea mud in seventy-eight locations at depths of 11,500 to 20,000 feet below the ocean’s surface. The deposits are primarily located in international waters east and west of Hawaii and east of Tahiti.¶ The discovery has already touched off a race as companies scramble to obtain licenses to mine for these minerals deep below the Pacific Ocean. So far Nautilus, a mining company, has been the first to obtain a license to mine the ocean floor around Papua New Guinea.¶