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## plan

#### The United States Federal Government should obtain, through alternative financing, electricity from small modular reactors for military facilities in the United States.

## dod adv

#### DoD bases are vulnerable to grid disruptions which destroys command infrastructure – 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.

#### Those communication breakdowns go nuclear

Andres and Breetz 11

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

#### China will shut down the US grid and annex Taiwan – global nuclear war

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(Glenn – Defense Analyst @ Popular Mechanics, “How Vulnerable is U.S. Infrastructure to a Major Cyber Attack?” October 1, 2009, http://www.popularmechanics.com/technology/military/4307521)

The next world war **might not start with a bang, but with a blackout**. An enemy could send a few lines of code to control computers at key power plants, causing equipment to overheat and melt down, plunging sectors of the U.S. and Canadian grid into darkness. Trains could roll to a stop on their tracks, while airport landing lights wink out and the few traffic lights that remain active blink at random. In the silence and darkness, citizens may panic, or they may just sit tight and wait for it all to reboot. Either way, much of the country would be blind and unresponsive to outside events. **And that might be the enemy's objective: Divert America's attention while mounting an offensive against another country.** Pentagon planners have long understood the danger of cyber attacks on U.S. military networks. Indeed, the Defense Department's Global Information Grid is one of the most frequently targeted computer networks on Earth. But the cat-and-mouse game of information espionage on military networks is not the only digital threat that keeps national-security experts up at night. There is a growing concern over the vulnerability of far more tangible assets essential to the economy and well-being of American citizens. Much of the critical infrastructure that keeps the country humming--water-treatment facilities, refineries, pipelines, dams, the electrical grid--is operated using a hodgepodge of technologies known as industrial control systems. Like banks and telecommunications networks, which are also generally considered critical infrastructure, these industrial facilities and utilities are owned by private companies that are responsible for maintaining their own security. **But many of the control systems in the industrial world were installed years ago with few or no cyber-security features**. That wasn't a big problem when these systems were self-contained. But in the past two decades, many of these controls have been patched into company computer networks, which are themselves linked to the Internet. And when it comes to computer security, a good rule of thumb is that any device that is computer-controlled and networked is vulnerable to hacking. Bad-guy hackers pulling the plug on public utilities is a common theme of Hollywood films, including 2007's Live Free or Die Hard, but such scenarios present more than a mere fictional scare to U.S. intelligence officials. According to Melissa Hathaway, cyber-coordination executive for the Office of the Director of National Intelligence, the list of potential adversaries in a cyber attack is long, ranging from disgruntled employees to criminals to hostile nations. Most experts agree that China and Russia routinely probe our industrial networks, looking for information and vulnerabilities to use as leverage in any potential dispute. James Lewis, a cyber-security expert for the policy think tank Center for Strategic and International Studies (CSIS), says that although cyber warfare couldn't cripple the U.S., it could serve as an effective military tactic. "If I were China, and I were going to invade Taiwan," he says, "and I needed to complete the conquest in seven days, then it's an attractive option to turn off all the electricity, screw up the banks and so on." Could the entire U.S. grid be taken down in such an attack? "The honest answer is that we don't know," Lewis says. "And I don't like that answer."

#### Unification causes south china sea conflict

Nancy Bernkopf Tucker, The Washington Quarterly, If Taiwan Chooses Unification, Should the United States Care?, SUMMER 2002.

In practical terms, concern about a future threat from China encompasses the strategic advantages that unification with Taiwan would bring to Beijing. Probably more significant than any other factor, by eliminating China’s needs to build toward a hostile takeover of Taiwan, to protect itself from Taiwan, and to plan for a potential conflict with the United States over Taiwan, unification could release a significant percentage of China’s resources. The People’s Liberation Army (PLA) would be free to change its priorities, redeploy its forces, and reconceptualize its strategic objectives. For Washington, this change means a less predictable, more flexible, and potentially less-burdened opponent, though one still noted for its lack of transparency. Beijing’s recovery of Taiwan could in fact lead to a more significant projection of Chinese naval and air power beyond coastal waters. With the continuing need to manage a maritime frontier that includes disputed interests in the South China Sea, China might be tempted to contest the U.S. military presence in the region and strive for greater force-projection capabilities. Although China has pledged that Taiwan under “one country, two systems” will retain its own autonomous military and that the PLA will not station units on the island, no absolute guarantees are protecting crucial sea lanes carrying oil and other sensitive goods past Taiwan. Commercial channels from the South China Sea do not generally pass through the Taiwan Strait but do parallel the east coast of Taiwan, coming as close as 75 nautical miles, as ships travel north toward Japan, Korea, and Russia. These transportation routes would be more vulnerable to interruption by China if Taiwan were under Beijing’s control. Indeed, China has at times been less than scrupulous about respecting international waters. Angered by Canberra’s support for Washington in the EP-3 spy plane crisis in 2001, China harassed an Australian naval flotilla, claiming it had intruded into Chinese waters as it sailed through the Taiwan Strait, even though the strait is an international waterway under the United Nations Law of the Sea Convention.8 As former U.S. ambassador to China James R. Lilley has noted, Taiwan “is the cork in China’s bottle.” China’s reclamation of Taiwan would “end what China feels to be a blockade on its abilities to control its surrounding seas.” With Taiwan in mainland hands, Lilley observes, Beijing could diminish the potential vulnerability it feels because “as much as 50 percent of China’s economy depends on foreign trade, about 90 percent of which is transported by ship.”9 In addition, the enhancement of Beijing’s maritime security would almost certainly alarm Japanese military planners. A Chinese presence along Japan’s shipping routes and abutting its Ryukyu island chain would risk giving Beijing an opportunity to “strangle the world’s second-largest economy.” Further, China would gain greater proximity to disputed oil and natural gas fields in the Senkaku/Diaoyutai area. During the 1996 Taiwan Strait crisis, when Tokyo and Washington were revising their defense agreements to clarify mutual obligations, China’s aggressive use of missiles led the normally cautious Japanese to agree to a tougher set of commitments than first intended. Tokyo sought to make clear to Beijing that neither intimidating Taiwan nor disturbing the peace in areas around Japan was acceptable.

#### Nuclear war

Wittner 11 (Lawrence S. Wittner, Emeritus Professor of History at the State University of New York/Albany, Wittner is the author of eight books, the editor or co-editor of another four, and the author of over 250 published articles and book reviews. From 1984 to 1987, he edited Peace & Change, a journal of peace research., 11/28/2011, "Is a Nuclear War With China Possible?", [www.huntingtonnews.net/14446](http://www.huntingtonnews.net/14446))

While nuclear weapons exist, there remains a danger that they will be used. After all, for centuries national conflicts have led to wars, with nations employing their deadliest weapons. The current deterioration of U.S. relations with China might end up providing us with yet another example of this phenomenon. The gathering tension between the United States and China is clear enough. Disturbed by China’s growing economic and military strength, the U.S. government recently challenged China’s claims in the South China Sea, increased the U.S. military presence in Australia, and deepened U.S. military ties with other nations in the Pacific region. According to Secretary of State Hillary Clinton, the United States was “asserting our own position as a Pacific power.” But need this lead to nuclear war? Not necessarily. And yet, there are signs that it could. After all, both the United States and China possess large numbers of nuclear weapons. The U.S. government threatened to attack China with nuclear weapons during the Korean War and, later, during the conflict over the future of China’s offshore islands, Quemoy and Matsu. In the midst of the latter confrontation, President Dwight Eisenhower declared publicly, and chillingly, that U.S. nuclear weapons would “be used just exactly as you would use a bullet or anything else.” Of course, China didn’t have nuclear weapons then. Now that it does, perhaps the behavior of national leaders will be more temperate. But the loose nuclear threats of U.S. and Soviet government officials during the Cold War, when both nations had vast nuclear arsenals, should convince us that, even as the military ante is raised, nuclear saber-rattling persists. Some pundits argue that nuclear weapons prevent wars between nuclear-armed nations; and, admittedly, there haven’t been very many—at least not yet. But the Kargil War of 1999, between nuclear-armed India and nuclear-armed Pakistan, should convince us that such wars can occur. Indeed, in that case, the conflict almost slipped into a nuclear war. Pakistan’s foreign secretary threatened that, if the war escalated, his country felt free to use “any weapon” in its arsenal. During the conflict, Pakistan did move nuclear weapons toward its border, while India, it is claimed, readied its own nuclear missiles for an attack on Pakistan. At the least, though, don’t nuclear weapons deter a nuclear attack? Do they? Obviously, NATO leaders didn’t feel deterred, for, throughout the Cold War, NATO’s strategy was to respond to a Soviet conventional military attack on Western Europe by launching a Western nuclear attack on the nuclear-armed Soviet Union. Furthermore, if U.S. government officials really believed that nuclear deterrence worked, they would not have resorted to championing “Star Wars” and its modern variant, national missile defense. Why are these vastly expensive—and probably unworkable—military defense systems needed if other nuclear powers are deterred from attacking by U.S. nuclear might? Of course, the bottom line for those Americans convinced that nuclear weapons safeguard them from a Chinese nuclear attack might be that the U.S. nuclear arsenal is far greater than its Chinese counterpart. Today, it is estimated that the U.S. government possesses over five thousand nuclear warheads, while the Chinese government has a total inventory of roughly three hundred. Moreover, only about forty of these Chinese nuclear weapons can reach the United States. Surely the United States would “win” any nuclear war with China. But what would that “victory” entail? A nuclear attack by China would immediately slaughter at least 10 million Americans in a great storm of blast and fire, while leaving many more dying horribly of sickness and radiation poisoning. The Chinese death toll in a nuclear war would be far higher. Both nations would be reduced to smoldering, radioactive wastelands. Also, radioactive debris sent aloft by the nuclear explosions would blot out the sun and bring on a “nuclear winter” around the globe—destroying agriculture, creating worldwide famine, and generating chaos and destruction. Moreover, in another decade the extent of this catastrophe would be far worse. The Chinese government is currently expanding its nuclear arsenal, and by the year 2020 it is expected to more than double its number of nuclear weapons that can hit the United States. The U.S. government, in turn, has plans to spend hundreds of billions of dollars “modernizing” its nuclear weapons and nuclear production facilities over the next decade. To avert the enormous disaster of a U.S.-China nuclear war, there are two obvious actions that can be taken. The first is to get rid of nuclear weapons, as the nuclear powers have agreed to do but thus far have resisted doing. The second, conducted while the nuclear disarmament process is occurring, is to improve U.S.-China relations. If the American and Chinese people are interested in ensuring their survival and that of the world, they should be working to encourage these policies.

#### Deterrence by denial is key

Bonnie Glaser, CSIS Freeman Chair in China Studies, 4/13/12, Pivot to Asia: Prepare for Unintended Consequences, http://csis.org/files/publication/120413\_gf\_glaser.pdf

Under the current administration, the pendulum in U.S. policy toward China has swung from attempting to cooperate with China on global problems to pushing back against Chinese assertiveness and challenges to international laws and norms. Getting tougher with Beijing was necessary, but it has also created unintended consequences that the next administration, either a second Obama team or a Republican lineup, will have to contend with.

The Obama administration’s initial policy in 2009 raised fears in many Asian capitals of a G2 condominium that would make decisions over the heads of others. Those concerns were unwarranted and short lived. Beijing interpreted the U.S. approach as weakness, which, along with China’s economic success and America’s struggles, led to a year of Chinese hubris that manifested itself in a series of intimidating actions in China’s neighborhood. Subsequent entreaties by regional states to counterbalance China increased U.S. attention to the Asia-Pacific region. Now, the U.S. Asia “pivot” has prompted Chinese anxiety about U.S. containment and heightened regional worries about intensified U.S.-China strategic competition.

In the run-up to the leadership transition that will take place at China’s 18th Party Congress this fall, Beijing is inwardly focused and unlikely to act on its fears. However, 2013 could see a shift in Chinese foreign policy based on the new leadership’s judgment that it must respond to a U.S. strategy that seeks to prevent China’s reemergence as a great power.

Signs of a potential harsh reaction are already detectable. The U.S. Asia pivot has triggered an outpouring of anti-American sentiment in China that will increase pressure on China’s incoming leadership to stand up to the United States. Nationalistic voices are calling for military countermeasures to the bolstering of America’s military posture in the region and the new U.S. defense strategic guidelines. For example, an article published in China’s Global Times, a jingoistic newspaper owned by the Communist Party mouthpiece People’s Daily, called for China to strengthen its long-range strike capabilities.

Deng Xiaoping’s guideline to keep a low profile in the international arena, designed more than two decades ago to cope with uncertainty produced by the collapse of the Soviet bloc, is increasingly seen by China’s elite and public as irrelevant and even harmful to the task of defending Chinese ever-expanding “core interests.” Some voices are calling for closer alignment with Moscow and promoting the BRICS grouping (Brazil, Russia, India, and China) as a new “pole” in the international arena to strengthen the emerging powers against the West.

Xi Jinping, who will assume the helm as China’s new leader later this year, will be under pressure from many domestic constituencies to more forcefully defend Chinese interests in the international arena. Seeking to quickly consolidate his power and enhance the legitimacy of the Communist Party, Xi and his newly installed Politburo Standing Committee colleagues may be more willing than their predecessors to test drive a policy that is more confrontational.

The U.S. response to a more muscular Chinese foreign and military policy, should it appear, will have to be carefully calibrated. Ignoring greater Chinese assertiveness would fuel the belief—already emerging in China and elsewhere— that the United States is in inexorable decline. History shows that when great powers falter, China does not hesitate to seize the opportunity to advance its interests, especially in the South China Sea. As American forces withdrew from Vietnam in the mid-1970s, the Chinese grabbed the Paracel Islands from Saigon. Similarly, when the Soviet Union withdrew from Vietnam’s Cam Ranh Bay and the United States terminated its base agreement with the Philippines, China quietly occupied Mischief Reef to the dismay of Manila.

Yet a hostile and overbearing U.S. response would confirm Chinese suspicions that the United States seeks to contain its rise, which could cement the emergence of a U.S.-China Cold War. In addition, it would further alarm regional states who seek at all costs to avoid having to choose between the United States and China.

U.S. policy will need to combine firmness with subtlety. A strategy will need to be shaped that protects regional stability and reassures China’s neighbors, but also avoids greater U.S.- China strategic competition and the classic security dilemma, wherein each side believes that growing capabilities reflect hostile intent and responds by producing that reality. Sustained attention and commitment of sufficient resources to the Asia- Pacific region will be key to assuaging the doubts of regional friends and allies about U.S. staying power. The United States also will need to maintain the military capabilities necessary to deter Chinese aggression.

#### SMR’s “island” bases by providing constant reliable power

King 11

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

Having a reliable source of electricity is critically important for many DoD installations. Fort Meade, Maryland, which hosts the National Security Agency’s power intensive computers, is an example of where electricity is mission critical. Installations need to be more robust against interruptions caused by natural forces or intentional attack. Most installations currently rely on the commercial electricity grid and backup generators. Reliance on generators presents some limitations. A building dedicated generator only provides electricity to a specific building when there is a power outage. Typically, diesel standby generators have an availability of 85 percent when operated for more than 24 hours [38]. Most DoD installations keep less than a 5-day supply of fuel. Small nuclear power plants could contribute to electrical energy surety and survivability. Having nuclear power plants networked with the grid and other backup generating systems 5 could give DoD installations higher power availability during extended utility power outages and more days of utility-independent operation. Existing large commercial nuclear power plants have an availability of over 90 percent. When a small nuclear power plant is networked with existing backup generating systems and the grid, overall availability values could be as high as 99.6 percent [39]. Since proposed small reactors have long refueling intervals (from 4 to 30 years), if power from the commercial grid became unavailable, a small reactor could provide years of electrical power independent of the commercial grid [4]. Power assurance to DoD installations also involves three infrastructure aspects of electricity delivery: electrical power transmission, electricity distribution, and electricity control (of distribution and transmission). Electric power transmission is the bulk transfer of electrical energy from generating plants to substations located near population centers. Electricity distribution networks carry electricity from the substations to consumers. Electricity control is the management of switches and connections to control the flow of electricity through transmission and distribution networks. Typically, transmission lines transfer electricity at high voltages over long distances to minimize loss; electricity distribution systems carry medium voltages. For electrical power transmission, very little additional infrastructure is required to incorporate small nuclear power plants because they would be located on or near the DoD installation being serviced. However, redundancy in transmission lines would make the overall network more robust. Electricity control capabilities, such as self-healing 6 and optimization of assets to increase operational efficiency, could improve overall power availability; however, they are not necessary for the integration of small nuclear power plants. Key components for improving electricity control include advanced electricity meters and electricity meter data management. These tools are needed in order to establish islanding, a condition in which a portion of the utility system, which contains both load and generation, is isolated from the remainder of the utility system and continues to operate. Since the power generation capacities of small nuclear power plants are larger than required for most DoD bases, islanding could extend to adjacent communities if sufficient technical upgrades were performed to systems outside of the installation. This contributes to DoD missions because civilians and service members working on the installation often live with their families in adjacent communities. The power would ensure that critical services such as emergency response, waste water treatment, and hospitals could be maintained.

#### DoD bypasses regulatory hurdles and safety hazards

Loudermilk 11

Micah J. Loudermilk, Research Associate for the Energy & Environmental Security Policy program with the Institute for National Strategic Studies at National Defense University, 5/31/11, Small Nuclear Reactors and US Energy Security: Concepts, Capabilities, and Costs, [www.ensec.org/index.php?option=com\_content&view=article&id=314:small-nuclear-reactors-and-us-energy-security-concepts-capabilities-and-costs&catid=116:content0411&Itemid=375](http://www.ensec.org/index.php?option=com_content&view=article&id=314:small-nuclear-reactors-and-us-energy-security-concepts-capabilities-and-costs&catid=116:content0411&Itemid=375)

Path forward: Department of Defense as first-mover Problematically, despite the immense energy security benefits that would accompany the wide-scale adoption of small modular reactors in the US, with a difficult regulatory environment, anti-nuclear lobbying groups, skeptical public opinion, and of course the recent Fukushima accident, the nuclear industry faces a tough road in the battle for new reactors. While President Obama and Energy Secretary Chu have demonstrated support for nuclear advancement on the SMR front, progress will prove difficult. However, a potential route exists by which small reactors may more easily become a reality: the US military. The US Navy has successfully managed, without accident, over 500 small reactors on-board its ships and submarines throughout 50 years of nuclear operations. At the same time, serious concern exists, highlighted by the Defense Science Board Task Force in 2008, that US military bases are tied to, and almost entirely dependent upon, the fragile civilian electrical grid for 99% of its electricity consumption. To protect military bases’ power supplies and the nation’s military assets housed on these domestic installations, the Board recommended a strategy of “islanding” the energy supplies for military installations, thus ensuring their security and availability in a crisis or conflict that disrupts the nation’s grid or energy supplies. DOD has sought to achieve this through decreased energy consumption and renewable technologies placed on bases, but these endeavors will not go nearly far enough in achieving the department’s objectives. However, by placing small reactors on domestic US military bases, DOD could solve its own energy security quandary—providing assured supplies of secure and constant energy both to bases and possibly the surrounding civilian areas as well. Concerns over reactor safety and security are alleviated by the security already present on installations and the military’s long history of successfully operating nuclear reactors without incident. Unlike reactors on-board ships, small reactors housed on domestic bases would undoubtedly be subject to Nuclear Regulatory Commission (NRC) regulation and certification, however, with strong military backing, adoption of the reactors may prove significantly easier than would otherwise be possible. Additionally, as the reactors become integrated on military facilities, general fears over the use and expansion of nuclear power will ease, creating inroads for widespread adoption of the technology at the private utility level. Finally, and perhaps most importantly, action by DOD as a “first mover” on small reactor technology will preserve America’s badly struggling and nearly extinct nuclear energy industry. The US possesses a wealth of knowledge and technological expertise on SMRs and has an opportunity to take a leading role in its adoption worldwide. With the domestic nuclear industry largely dormant for three decades, the US is at risk of losing its position as the global leader in the international nuclear energy market. If the current trend continues, the US will reach a point in the future where it is forced to import nuclear technologies from other countries—a point echoed by Secretary Chu in his push for nuclear power expansion. Action by the military to install reactors on domestic bases will guarantee the short-term survival of the US nuclear industry and will work to solidify long-term support for nuclear energy. Conclusions In the end, small modular reactors present a viable path forward for both the expansion of nuclear power in the US and also for enhanced US energy security. Offering highly safe, secure, and proliferation-resistant designs, SMRs have the potential to bring carbon-free baseload distributed power across the United States. Small reactors measure up with, and even exceed, large nuclear reactors on questions of safety and possibly on the financial (cost) front as well. SMRs carry many of the benefits of both large-scale nuclear energy generation and renewable energy technologies. At the same time, they can reduce US dependence on fossil fuels for electricity production—moving the US ahead on carbon dioxide and GHG reduction goals and setting a global example. While domestic hurdles within the nuclear regulatory environment domestically have proven nearly impossible to overcome since Three Mile Island, military adoption of small reactors on its bases would provide energy security for the nation’s military forces and may create the inroads necessary to advance the technology broadly and eventually lead to their wide-scale adoption.

## water

#### Global water scarcity’s inevitable – causes war and kills billions

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>

The battles of yesterday were fought over land. Those of today are over energy. But the battles of tomorrow may be over water. Along with population growth and increasing per capita water consumption, massive pollution of the world's surface water systems has placed a great strain on remaining supplies of clean fresh water. Global deforestation, destruction of wetlands, dumping of pesticides and fertilizer into waterways, and global warming are all taking a terrible toll on the Earth's fragile water system.

The combination of increasing demand and shrinking supply has attracted the interest of global corporations who want to sell water for a profit. The water industry is touted by the World Bank as a potential trillion-dollar industry. Water has become the “blue gold” of the 21st century.

In many parts of the world, one major river supplies water to multiple countries. Climate change, pollution and population growth are putting a significant strain on supplies. In some areas renewable water reserves are in danger of dropping below the 500 cubic meters per person per year considered a minimum for a functioning society.

In recent times, several studies around the globe show that climatic change is likely to impact significantly upon freshwater resources availability. In India, demand for water has already increased manifold over the years due to urbanization, agriculture expansion, increasing population, rapid industrialization and economic development. At present, changes in cropping pattern and land-use pattern, over-exploitation of water storage and changes in irrigation and drainage are modifying the hydrological cycle in many climate regions and river basins of India.

Due to warming and climate change rainfall trend has been badly affected worldwide. This change has adversely affected the groundwater recharge.

Water scarcity is expected to become an even more important problem than it is today.

In a case study of Jharkhand state of India groundwater recharging is mainly dependent on rainfall. Though Jharkhand receives sufficient amount of rainfall (900 to 1400 mm/year) but from last several years the rainfall pattern is very erratic. From last two years Ranchi city the capital of Jharkhand state received sufficient rainfall but distribution of rainfall was not uniform. It rained heavily just for two to three days in the month of August and September which resulted in heavy runoff and less infiltration affecting groundwater level.

The process of urbanization and industrialization from last 20 years has caused changes in the water table of Jharkhand State of India as a result of decreased recharge and increased withdrawal. Many of the small ponds which were main source of water in the surrounding areas are now filled for different construction purpose affecting the water table.

By 2100, water scarcity could impact between 1.1 and 3.2 billion people, says a leaked draft of an Intergovernmental Panel on Climate Change (IPCC) report due to be published in April 2007. The report focuses on the consequences of global warming and options for adapting to them. In February 2007 the panel released a report on the scientific basis of climate change.

The IPCC predicts critical water shortages in China and Australia, as well as parts of Europe and the United States. Africa and poor countries such as Bangladesh would be most affected because they were least able to cope with drought.

Major cities worldwide may face a water shortage crisis by 2050 if relevant governments don't react quickly. The water shortage will mostly affect basic daily needs such as drinking, cooking, bathing and washing clothes, and the poor residents of the world's major cities in developing countries are the ones who will suffer most.

"By 2050, big cities that will not have enough water available nearby include Beijing, New Delhi, Mexico City, Lagos and Tehran. China and India will be particularly hard hit unless significant new efforts are taken by their cities,".

There are several principal manifestations of the water crisis.

1. Inadequate access to safe drinking water for about 884 million people.

2. Inadequate access to water for sanitation and waste disposal for 2.5 billion people.

3. Groundwater over drafting (excessive use) leading to diminished agricultural yields.

4. Overuse and pollution of water resources harming biodiversity.

5. Regional conflicts over scarce water resources sometimes resulting in warfare.

Potential Hot Spots:

Egypt: A coalition led by Ethiopia is challenging old agreements that allow Egypt to use more than 50 percent of the Nile’s flow. Without the river, all of Egypt would be desert.

Eastern Europe: Decades of pollution have fouled the Danube, leaving down-stream countries, such as Hungary and the Republic of Moldova, scrambling to find new sources of water.

Middle East: The Jordan River, racked by drought and diverted by Israeli, Syrian and the Jordanian dams, has lost 95 percent of its former flow.

Former Soviet Union: The Aral sea, at one time the world’s fourth largest inland sea, has lost 75 percent of its water because of diversion programs begun in the 1960s.

There are many other countries of the world that are severely impacted with regard to human health and inadequate drinking water. The following is a partial list of some of the countries with significant populations (numerical population of affected population listed) whose only consumption is of contaminated water:

 Sudan: 12.3 million

 Venezuela: 5.0 million

 Ethiopia: 2.7 million

 Tunisia: 2.1 million

 Cuba :1.3 million

#### Those wars go global

Reilly ‘2

(Kristie, Editor for In These Times, a nonprofit, independent, national magazine published in Chicago. We’ve been around since 1976, fighting for corporate accountability and progressive government. In other words, a better world, “NOT A DROP TO DRINK,” <http://www.inthesetimes.com/issue/26/25/culture1.shtml>)

\*Cites environmental thinker and activist Vandana Shiva Maude Barlow and Tony Clarke—probably North America’s foremost water experts

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

#### And nuclear

Weiner ‘90

(Jonathan, Visiting Professor of Molecular Biology at Princeton University. The Next One Hundred Years: Shaping the Fate of Our Living Earth, p. 214)

If we do not destroy ourselves with the A-bomb and the H-bomb, then we may destroy ourselves with the C-bomb, the Change Bomb. And in a world as interlinked as ours, one explosion may lead to the other. Already in the Middle East, from North Africa to the Persian Gulf and from the Nile to the Euphrates, tensions over dwindling water supplies and rising populations are reaching what many experts describe as a flashpoint. A climate shift in the single battle-scarred nexus might trigger international tensions that will unleash some of the 60,000 nuclear warheads the world has stockpiled since Trinity.

#### Water scarcity causes Central Asian war

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>

That's been a constant dilemma for the Central Asian states since they became independent after the Soviet break-up.

Much of Central Asia's water flows from the mountains of Kyrgyzstan and Tajikistan, leaving downstream countries Uzbekistan, Kazakhstan, and Turkmenistan dependent and worried about the effects of planned hydropower plants upstream.

Tashkent fears that those two countries' use of water from Central Asia's two great rivers -- the Syr Darya and Amu Darya -- to generate power will diminish the amount reaching Uzbekistan, whose 28 million inhabitants to make up Central Asia's largest population.

After the collapse of communism in the 1990s, a dispute arose between Hungary and Slovakia over a project to dam the Danube River. It was the first of its type heard by the International Court of Justice and highlighted the difficulty for the Court to resolve such issues decisively. There are 17 European countries directly reliant on water from the Danube so there is clear potential for conflict if any of these countries act selfishly.

Experts worry that dwindling water supplies could likely result in regional conflicts in the future. For example, in oil-and-gas rich Central Asia, the upstream countries of Kyrgyzstan and Tajikistan hold 90 percent of the region's water resources, while Uzbekistan, the largest consumer of water in the region, is located downstream.

#### Extinction

**Blank 2k** [Stephen J. - Expert on the Soviet Bloc for the Strategic Studies Institute, “American Grand Strategy and the Transcaspian Region”, World Affairs. 9-22]

Thus many structural conditions for conventional war or protracted ethnic conflict where third parties intervene now exist in the Transcaucasus and Central Asia. The outbreak of violence by disaffected Islamic elements, the drug trade, the Chechen wars, and the unresolved ethnopolitical conflicts that dot the region, not to mention the undemocratic and unbalanced distribution of income across corrupt governments, provide plenty of tinder for future fires. Many Third World conflicts generated by local structural factors also have great potential for unintended escalation. Big powers often feel obliged to rescue their proxies and proteges. One or another big power may fail to grasp the stakes for the other side since interests here are not as clear as in Europe. Hence commitments involving the use of nuclear weapons or perhaps even conventional war to prevent defeat of a client are not well established or clear as in Europe. For instance, in 1993 Turkish noises about intervening on behalf of Azerbaijan induced Russian leaders to threaten a nuclear war in that case. Precisely because Turkey is a NATO ally but probably could not prevail in a long war against Russia, or if it could, would conceivably trigger a potential nuclear blow (not a small possibility given the erratic nature of Russia's declared nuclear strategies), the danger of major war is higher here than almost everywhere else in the CIS or the "arc of crisis" from the Balkans to China. As Richard Betts has observed, The greatest danger lies in areas where (1) the potential for serious instability is high; (2) both superpowers perceive vital interests; (3) neither recognizes that the other's perceived interest or commitment is as great as its own; (4) both have the capability to inject conventional forces; and (5) neither has willing proxies capable of settling the situation.(77)

#### No diplomacy or institutions

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.

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

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.

#### 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**.”

#### It’s economically viable

Gamini Seneviratne 7, Nuclear News’s Vienna Correspondent, “Research projects show nuclear

desalination economical”, April, <http://www.ans.org/pubs/magazines/nn/docs/2007-4-3.pdf>

The desalination of seawater using nuclear power is cost-effective compared with other primary energies, according to researchers in 10 countries who have studied various options at specific sites in their own countries. Their findings show nuclear to be at least competitive in all cases.

Researchers from Argentina, China, Egypt, France, India, Korea, Pakistan, Russia, Syria, and the United States focused on the economics of producing potable water by using various desalination technologies and energy sources at particular sites. The participants followed an agreed procedure throughout a coordinated research project (CRP), Economics of Nuclear Desalination— New Developments and Site-specific Studies, set up by the International Atomic Energy Agency. The findings of the studies, carried out over three years and ending in November 2006, are included in a technical document (IAEA-TECDOC) already at the printer.

“There is a dire shortage of fresh water for drinking in many countries already, and when you realize that 70 percent of the planet is covered with water but only 2.5 percent of that is fresh water, it is hardly surprising,” Ibrahim Khamis, who heads the IAEA’s desalination unit, told Nuclear News. He added that 70 percent of that fresh water is frozen in the polar icecaps and Greenland, and most of the rest is in soil moisture, inaccessible underground aquifers, or comes as heavy rain that is difficult to capture. “So only some 0.008 percent, about 70 000 km3, is readily available, and even that is very unevenly distributed.”

According to Khamis, recent statistics show 2.3 billion people living in water stressed areas, 1.7 billion of them in areas where the availability is on average less than 1000 m3 a year. Given human population growth and the increasing demands of industry and agriculture, the projections point to a continuously worsening situation, even if the effects of global warming are not taken into account. Khamis said he foresaw a time when nuclear power will be sought for desalination rather than for electricity generation, at least in some specific regions of the world such as the Middle East. “You can live without electricity for quite a long time; without water, only a matter of days.” The U.S. study, which was undertaken by Argonne National Laboratory (ANL), notes that “the need for fresh water, high-purity water, and other grades of water for various domestic, industrial, and agricultural applications is ever increasing in the United States.” Demand is driven mainly by population, as well as continuous economic and technological growth, and it is predicted that more than an additional 60 billion m3 of water a year will be needed for municipal and light industrial uses by the year 2020. An additional 11–19 liters per day per person will be needed to generate hydrogen, should transportation be based mainly on hydrogen-powered vehicles in the future. “Cogeneration of water and power could offer a major portion of the additional water needed, in addition to providing much needed energy for maintaining sustainable development and growth,” the ANL report says.

The IAEA report says that desalinating seawater is not the only solution under discussion for remedying the water scarcity, but it is an important one. There are essentially two methods: distillation using heat, and the use of membranes and electricity directly. The two main distillation modes, known as multistage flash (MSF) and multieffect distillation (MED), both involve heating seawater to produce steam, followed by evaporation, condensation, and, finally, pure water collection. The method using membranes, which is called reverse osmosis (RO), uses electricity to create a pressure differential across a semipermeable membrane, allowing fresh water to pass through to the low-pressure side, and leaving salty seawater on the high-pressure side.

Desalination plant capacity worldwide is close to 40 million m3 today, mostly by distillation using fossil energy, and mostly in the Middle East and North Africa. Nuclear desalination has so far been exclusively for use within the nuclear power plants themselves, except at the Soviet-built BN-350 fast reactor in Aktau, Kazakhstan, which supplied potable water to local communities until it was shut down in 1999.

Currently, only India supplies nuclear desalinated water outside the plant site. Having earlier used MSF to get plant-use water, it has also integrated RO to the desalination unit at its Kalpakkam pressurized heavy-water reactor (PHWR) in Chenai, and it has begun (experimentally) supplying some water outside the power station. Pakistan has begun a similar project at its Karachi nuclear power plant (KANUPP) to couple a 1600 m3/day MED unit to the nuclear plant, which earlier operated a 454 m3/day RO facility for plant use.

Fresh water is needed for many purposes. Saudi Arabia alone already irrigates crops with desalinated water. A number of countries, notably Egypt, the Persian Gulf States, Israel, Jordan, and Libya, depend on the technology to maintain tourism. Khamis said nuclear desalination has been held back by two key factors: economics, and the unavailability of reactors of appropriate size.

The CRP addressed the former, comparing cost performance between reactor plus desalination method combinations. The perception that nuclear is less cost-effective than other energy sources was repudiated by the studies.

The report says that the country case studies “have shown that in general, the nuclear desalination costs can vary from $0.5 to $0.94/m3 for RO, from $0.6 to $0.96/m3 for MED, and from $1.18 to $1.48/m3 for MSF plants. All nuclear options are economically attractive as compared with the gas turbine combined-cycle–based desalination systems, as long as gas prices remain higher than $150/toe [metric tons oil equivalent] or $21/bbl [barrel].”

## solvency

#### DoD acquisition of SMR’s ensures rapid military adoption

Andres and Breetz 11

Richard 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, and Hanna Breetz, doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, Small Nuclear Reactorsfor Military Installations:Capabilities, Costs, andTechnological Implications, [www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf](http://www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf)

Thus far, this paper has reviewed two of DOD’s most pressing energy vulnerabilities—grid insecurity and fuel convoys—and explored how they could be addressed by small reactors. We acknowledge that there are many uncertainties and risks associated with these reactors. On the other hand, failing to pursue these technologies raises its own set of risks for DOD, which we review in this section: first, small reactors may fail to be commercialized in the United States; second, the designs that get locked in by the private market may not be optimal for DOD’s needs; and third, expertise on small reactors may become concentrated in foreign countries. By taking an early “first mover” role in the small reactor market, DOD could mitigate these risks and secure the long-term availability and appropriateness of these technologies for U.S. military applications. The “Valley of Death.” Given the promise that small reactors hold for military installations and mobility, DOD has a compelling interest in ensuring that they make the leap from paper to production. However, if DOD does not provide an initial demonstration and market, there is a chance that the U.S. small reactor industry may never get off the ground. The leap from the laboratory to the marketplace is so difficult to bridge that it is widely referred to as the “Valley of Death.” Many promising technologies are never commercialized due to a variety of market failures— including technical and financial uncertainties, information asymmetries, capital market imperfections, transaction costs, and environmental and security externalities— that impede financing and early adoption and can lock innovative technologies out of the marketplace. 28 In such cases, the Government can help a worthy technology to bridge the Valley of Death by accepting the first mover costs and demonstrating the technology’s scientific and economic viability.29 [FOOTNOTE 29: There are numerous actions that the Federal Government could take, such as conducting or funding research and development, stimulating private investment, demonstrating technology, mandating adoption, and guaranteeing markets. Military procurement is thus only one option, but it has often played a decisive role in technology development and is likely to be the catalyst for the U.S. small reactor industry. See Vernon W. Ruttan, Is War Necessary for Economic Growth? (New York: Oxford University Press, 2006); Kira R. Fabrizio and David C. Mowery, “The Federal Role in Financing Major Inventions: Information Technology during the Postwar Period,” in Financing Innovation in the United States, 1870 to the Present, ed. Naomi R. Lamoreaux and Kenneth L. Sokoloff (Cambridge, MA: The MIT Press, 2007), 283–316.] Historically, nuclear power has been “the most clear-cut example . . . of an important general-purpose technology that in the absence of military and defense related procurement would not have been developed at all.”30 **Government involvement is likely to be crucial for innovative, next-generation nuclear technology** as well. Despite the widespread revival of interest in nuclear energy, Daniel Ingersoll has argued that radically innovative designs face an uphill battle, as “the high capital cost of nuclear plants and the painful lessons learned during the first nuclear era have created a prevailing fear of first-of-a-kind designs.”31 In addition, Massachusetts Institute of Technology reports on the Future of Nuclear Power called for the Government to provide modest “first mover” assistance to the private sector due to several barriers that have hindered the nuclear renaissance, such as securing high up-front costs of site-banking, gaining NRC certification for new technologies, and demonstrating technical viability.32 It is possible, of course, that small reactors will achieve commercialization without DOD assistance. As discussed above, they have garnered increasing attention in the energy community. Several analysts have even argued that small reactors could play a key role in the second nuclear era, given that they may be the only reactors within the means of many U.S. utilities and developing countries.33 However, given the tremendous regulatory hurdles and technical and financial uncertainties, it appears far from certain that the U.S. small reactor industry will take off. If DOD wants to ensure that small reactors are available in the future, then it should pursue a leadership role now. Technological Lock-in. A second risk is that if small reactors do reach the market without DOD assistance, the designs that succeed may not be optimal for DOD’s applications. Due to a variety of positive feedback and increasing returns to adoption (including 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.** Domestic Nuclear Expertise. From the perspective of larger national security issues, if DOD does not catalyze the small reactor industry, there is a risk that expertise in small reactors could become dominated by foreign companies. A 2008 Defense Intelligence Agency report warned that the United States will become totally dependent on foreign governments for future commercial nuclear power unless the military acts as the prime mover to reinvigorate this critical energy technology with small, distributed power reactors.38 Several of the most prominent small reactor concepts rely on technologies perfected at Federally funded laboratories and research programs, including the Hyperion Power Module (Los Alamos National Laboratory), NuScale (DOE-sponsored research at Oregon State University), IRIS (initiated as a DOE-sponsored project), Small and Transportable Reactor (Lawrence Livermore National Laboratory), and Small, Sealed, Transportable, Autonomous Reactor (developed by a team including the Argonne, Lawrence Livermore, and Los Alamos National Laboratories). However, there are scores of competing designs under development from over a dozen countries. If DOD does not act early to support the U.S. small reactor industry, there is a chance that the industry could be dominated by foreign companies. Along with other negative consequences, the decline of the U.S. nuclear industry decreases the NRC’s influence on the technology that supplies the world’s rapidly expanding demand for nuclear energy. Unless U.S. companies begin to retake global market share, in coming decades France, China, South Korea, and Russia will dictate standards on nuclear reactor reliability, performance, and **proliferation resistance**.

#### Alternative financing arrangements reduce costs and spur unique development

Fitzpatrick, Freed and Eyoan, 11

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

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

#### SMR’s are super cost-effective and safe

Ioannis N. Kessides and Vladimir Kuznetsov 12, Ioannis is a researcher for the Development Research Group at the World Bank, Vladimir is a consultant for the World Bank, “Small Modular Reactors for Enhancing Energy Security in Developing Countries”, August 14, Sustainability 2012, 4(8), 1806-1832

SMRs offer a number of advantages that can potentially offset the overnight cost penalty that they suffer relative to large reactors. Indeed, several characteristics of their proposed designs can serve to overcome some of the key barriers that have inhibited the growth of nuclear power. These characteristics include [23,24]: \* • Reduced construction duration. The smaller size, lower power, and simpler design of SMRs allow for greater modularization, standardization, and factory fabrication of components and modules. Use of factory-fabricated modules simplifies the on-site construction activities and greatly reduces the amount of field work required to assemble the components into an operational plant. As a result, the construction duration of SMRs could be significantly shorter compared to large reactors leading to important economies in the cost of financing. \* • Investment scalability and flexibility. In contrast to conventional large-scale nuclear plants, due to their smaller size and shorter construction lead-times SMRs could be added one at a time in a cluster of modules or in dispersed and remote locations. Thus capacity expansion can be more flexible and adaptive to changing market conditions. The sizing, temporal and spatial flexibility of SMR deployment have important implications for the perceived investment risks (and hence the cost of capital) and financial costs of new nuclear build. Today’s gigawatt-plus reactors require substantial up-front investment—in excess of US$ 4 billion. Given the size of the up-front capital requirements (compared to the total capitalization of most utilities) and length of their construction time, new large-scale nuclear plants could be viewed as “bet the farm” endeavors for most utilities making these investments. SMR total capital investment costs, on the other hand, are an order of magnitude lower—in the hundreds of millions of dollars range as opposed to the billions of dollars range for larger reactors. These smaller investments can be more easily financed, especially in small countries with limited financial resources. SMR deployment with just-in-time incremental capacity additions would normally lead to a more favorable expenditure/cash flow profile relative to a single large reactor with the same aggregate capacity—even if we assume that the total time required to emplace the two alternative infrastructures is the same. This is because when several SMRs are built and deployed sequentially, the early reactors will begin operating and generating revenue while the remaining ones are being constructed. In the case of a large reactor comprising one large block of capacity addition, no revenues are generated until all of the investment expenditures are made. Thus the staggered build of SMRs could minimize the negative cash flow of deployment when compared to emplacing a single large reactor of equivalent power [25]. \* • Better power plant capacity and grid matching. In countries with small and weak grids, the addition of a large power plant (1000 MW(e) or more) can lead to grid stability problems—the general “rule of thumb” is that the unit size of a power plant should not exceed 10 percent of the overall electricity system capacity [11]. The incremental capacity expansion associated with SMR deployment, on the other hand, could help meet increasing power demand while avoiding grid instability problems. \* • Factory fabrication and mass production economies. SMR designs are engineered to be pre-fabricated and mass-produced in factories, rather than built on-site. Factory fabrication of components and modules for shipment and installation in the field with almost Lego-style assembly is generally cheaper than on-site fabrication. Relative to today’s gigawatt-plus reactors, SMRs benefit more from factory fabrication economies because they can have a greater proportion of factory made components. In fact, some SMRs could be manufactured and fully assembled at the factory, and then transported to the deployment site. Moreover, SMRs can benefit from the “economies of multiples” that accrue to mass production of components in a factory with supply-chain management. \* • Learning effects and co-siting economies. Building reactors in a series can lead to significant per-unit cost reductions. This is because the fabrication of many SMR modules on plant assembly lines facilitates the optimization of manufacturing and assembly processes. Lessons learned from the construction of each module can be passed along in the form of productivity gains or other cost savings (e.g., lower labor requirements, shorter and more efficiently organized assembly lines) in successive units (Figure 6). Moreover, additional learning effects can be realized from the construction of successive units on the same site. Thus multi-module clustering could lead to learning curve acceleration. Since more SMRs are deployed for the same amount of aggregate power as a large reactor, these learning effects can potentially play a much more important role for SMRs than for large reactors [26]. Also, sites incorporating multiple modules may require smaller operator and security staffing. \* • Design simplification. Many SMRs offer significant design simplifications relative to large-scale reactors utilizing the same technology. This is accomplished thorough the adoption of certain design features that are specific to smaller reactors. For example, fewer and simpler safety features are needed in SMRs with integral design of the primary circuit (i.e., with an in vessel location of steam generators and no large diameter piping) that effectively eliminates large break LOCA. Clearly one of the main factors negatively affecting the competitiveness of small reactors is economies of scale—SMRs can have substantially higher specific capital costs as compared to large-scale reactors. However, SMRs offer advantages that can potentially offset this size penalty. As it was noted above, SMRs may enjoy significant economic benefits due to shorter construction duration, accelerated learning effects and co-siting economies, temporal and sizing flexibility of deployment, and design simplification. When these factors are properly taken into account, then the fact that smaller reactors have higher specific capital costs due to economies of scale does not necessarily imply that the effective (per unit) capital costs (or the levelized unit electricity cost) for a combination of such reactors will be higher in comparison to a single large nuclear plant of equivalent capacity [22,25]. In a recent study, Mycoff et al. [22] provide a comparative assessment of the capital costs per unit of installed capacity of an SMR-based power station comprising of four 300 MW(e) units that are built sequentially and a single large reactor of 1200 MW(e). They employ a generic mode to quantify the impacts of: (1) economies of scale; (2) multiple units; (3) learning effects; (4) construction schedule; (5) unit timing; and (6) plant design (Figure 7). To estimate the impact of economies of scale, Mycoff et al. [22] assume a scaling factor n = 0.6 and that the two plants are comparable in design and characteristics—i.e., that the single large reactor is scaled down in its entirety to ¼ of its size. According to the standard scaling function, the hypothetical overnight cost (per unit of installed capacity) of the SMR-based power station will be 74 percent higher compared to a single large-scale reactor. Based on various studies in the literature, the authors posit that the combined impact of multiple units and learning effects is a 22 percent reduction in specific capital costs for the SMR-based station. To quantify the impact of construction schedule, the authors assume that the construction times of the large reactor and the SMR units are five and three years respectively. The shorter construction duration results in a 5 percent savings for the SMRs. Temporal flexibility (four sequentially deployed SMRs with the first going into operation at the same time as the large reactor and the rest every 9 months thereafter) and design simplification led to 5 and 15 percent reductions in specific capital costs respectively for the SMRs. When all these factors are combined, the SMR-based station suffers a specific capital cost disadvantage of only 4 percent as compared to the single large reactor of the same capacity. Thus, the economics of SMRs challenges the widely held belief that nuclear reactors are characterized by significant economies of scale [19].

#### DoD installations are key – market pull

Jeffrey **Marqusee 12**, Executive Director of the Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) at the Department of Defense, “Military Installations and Energy Technology Innovation”, March, <http://bipartisanpolicy.org/sites/default/files/Energy%20Innovation%20at%20DoD.pdf>

The key reason that DoD cannot passively rely on the private sector to provide a suite of new, cost-effective energy technologies is the difficulty of the transition from research and development to full deployment. Many have noted this challenge; it is often described as the “Valley of Death,” a term widely used in the early and mid-1990s to describe the obstacles to commercialization and deployment of environmental technologies. DoD’s environmental technology demonstration program, the Environmental Security Technology Certification Program (ESTCP), was created to overcome that hurdle. Why can’t DoD rely on the Department of Energy (DOE) to solve the commercialization and deployment problem? DOE has a mixed record in this area. Reasons for past failures at DOE are: 1) the lack of a market within DOE for the technologies; 2) overly optimistic engineering estimates; 3) lack of attention to potential economic or market failures; 4) a disconnect between business practices at DOE and commercial practices, which leads to demonstration results that are not credible in the private sector; and 5) programs completely driven by a technology “push,” rather than a mix of technology push and market-driven pull.81 Many of these issues can be viewed as arising from the first: the lack of a market within DOE. Since DOE is neither the ultimate supplier nor buyer of these technologies at the deployment scale, it is not surprising that there are challenges in creating a system that can bring technologies across the Valley of Death. DoD’s market size allows it to play a critical role in overcoming this challenge for the energy technologies the department’s installations require, as it has for environmental technologies. In addressing the barriers energy technologies face, and understanding the role DoD installations can play, it is important to understand the type and character of technologies that DoD installations need. Energy technologies span a wide spectrum in costs, complexities, size, and market forces. Installation energy technologies are just a subset of the field, but one that is critical in meeting the nation’s and DoD’s energy challenges. DOE, in its recent strategic plans and quadrennial technology review, has laid out the following taxonomy (figure 3.5): It is useful to divide these energy technologies into two rough classes based on the nature of the market and the characteristics of deployment decisions. There are technologies whose capital costs at full scale are very high, for which a modest number of players will play a key role in implementation decisions. Examples include utility-scale energy generation, large-scale carbon sequestration, commercial production of alternative fuels, nextgeneration utility-grid-level technologies, and manufacturing of new transportation platforms. Some of these technologies produce products (e.g., fuel and power from the local utility) that DoD installations buy as commodities, but DoD does not expect to buy the underlying technology. A second but no less important class of energy technologies are those that will be widely distributed upon implementation, and the decisions to deploy them at scale will be made by thousands, if not millions, of decision makers. These include: 1) Technologies to support improved energy efficiency and conservation in buildings; 2) Local renewable or distributed energy generation; and 3) Local energy control and management technologies. Decisions on implementing these technologies will be made in a distributed sense and involve tens of thousands of individual decision makers if they are ever to reach large-scale deployment. These are the energy technologies that DoD installations will be buying, either directly through appropriated funds or in partnership with third-party financing through mechanisms such as Energy Saving Performance Contracts (ESPCs) or Power Purchase Agreements (PPAs). In the DOE taxonomy shown above, these distributed installation energy technologies cover the demand space on building and industrial efficiency, portions of the supply space for clean electricity when restricted to distributed generation scale, and a critical portion in the middle where microgrids and their relationship to energy storage and electric vehicles reside.

#### Plenty of expertise

Armond Cohen 12, Executive Director of the Clean Air Task Force, “DoD: A Model for Energy Innovation?”, May 29, <http://www.catf.us/blogs/ahead/2012/05/29/dod-a-model-for-energy-innovation/>

Unlike most other agencies, including the Energy Department, the Pentagon is the ultimate customer for the new technology it helps create, spending some $200 billion each year on R&D and procurement. The implications of DoD’s role as customer have not been widely appreciated, as: · DoD, uniquely in government, supports multi-year, billion-dollar “end to end” innovation efforts that produce technology that is continuously tested, deployed and refined on bases and in the field, providing real world feedback that leads to increases in performance and reductions in cost. By contrast, most of the federal government’s civilian energy innovation efforts involve research loosely connected at best with the few commercialization efforts that it supports. · DoD and its contractors know how to bring together multiple innovations to achieve system-level advances leading to big performance gains (examples range from nuclear submarines to unmanned aircraft to large-scale information systems). This systems approach is precisely what is needed to advance clean energy technologies. · Relatively stable, multi-year funding allows the Pentagon to pursue “long cycle” innovation that is necessary for large, capital- intensive technologies and supports a highly capable contractor base that can respond to changing national security demands. · The Pentagon’s scope and budget has allowed it to experiment with new and creative innovation tools such as the well-known Defense Advanced Projects Research Agency, which has produced extraordinary technological breakthroughs; and the Environmental Security Technology Certification Program, which develops and demonstrates cost-effective improvements in environmental and energy technologies for military installations and equipment. · Because of DoD’s size and demands for performance and reliability, it is unique among government and private sector organizations as a demonstration test-bed. Smart-grid technologies and advanced energy management systems for buildings are already poised to benefit from this aspect of the Pentagon’s innovation system. · DoD has collaborated effectively with other federal agencies, including the Department of Energy and its predecessors (for example, to advance nuclear energy technologies). Continuing competition and cooperation between DoD and DOE will spur energy innovation.  DoD’s innovation capabilities can enhance U.S. national security, improve U.S. international competitiveness, and spur global energy restructuring and greenhouse gas emissions reductions. At the same time, while providing enormous opportunities to develop and test energy efficiency technologies and small scale distributed energy appropriate to forward bases, the Pentagon is unlikely to become an all-purpose hub for advancing all categories of clean-energy technologies, because its energy innovation activities will be sustainable only where they can support the nation’s defense capabilities. Therefore, many other large-scale technologies that are of great importance to improving the environment, such as carbon-free central station generation or zero carbon transportation, may not as easily fit with DoD’s mission. Possible exceptions might include small modular nuclear reactors that can be used for producing independent, non-grid power at military bases, or, conceivably, zero-carbon liquid fuels other than anything resembling current generation biofuels.

#### No workforce shortage

ITA 11

(International Trade Administration, “The Commercial Outlook for U.S. Small Modular Nuclear Reactors” Manufacturing and Services Competitiveness Report, February 2011, US Department of Commerce)

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 (for 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 localiza-tion that is typically necessary for building larger reactors

## link uq

#### DoE just massively increased SMR incentives, but it fails

DoD Energy Blog, 2/16/11, Good Things in Small Packages:Small Reactors for Military Power Good Things in Small Packages:Small Reactors for Military Power, dodenergy.blogspot.com/2011/02/good-things-in-small-packagessmall.html

They conclude that DOD should lead the charge for small reactors to meet their own needs as well as to make sure that the US leads that industry’s development. When first written the paper mentioned that most of the technology was stymied somewhere between the drawing board and production. But there is good news in the President’s 2011 Budget for nukes. The New York Times reported that the budget contains $500 million over five years for DOE to complete two designs and secure National Regulatory Commission (NRC) approval. The reactors will be built entirely in a factory and trucked to the site, like “modular homes”. Sounds just like what Dr. Andres ordered. **Only problem is that $500 million is only about half of the cost to get to NRC approval. Actual production is in the $2 billion neighborhood**, and that is a pricey neighborhood. Enter Amory Lovins. Amory has often derided the cost for nuclear power as an unnecessary expenditure. His argument is that micropower is the way of the future, not big honking gigawatt nuclear power plants. Although there has been a resurgence in the interest in nuclear power, **it is still difficult to find private investments willing to underwrite the expense**. Maybe the development of small nukes for national security reasons will lead to cost effective small nukes for distributed micropower nationwide. Small reactors for FOBs are more problematic. Even Bagram only needs about 25 MW with other FOBS being smaller. Security will be the first concern. If someone tries a smash and grab at Fort Hood they have to go through a couple of armored divisions and have a long way to got to get away. Kabul to Peshawar is only 128 miles. Cost shouldn’t be an overriding factor in considering secure power, but even at a 75% cost reduction in production, half a billion for 25MW is a bit much. Of course if you could produce a 300MW system, Bagram could air condition Kabul! The real soft power. My buddy, T.C. the fighter pilot, would tell you that DOD's mission is to fight and win the Nation's wars, not spark business recovery. DOD needs to focus on conserving energy. “Reducing the consumption at Miramar by 50% might save a lot of fuel and money, but I'd rather reduce consumption by 50% at PB Jugroom even though the savings in gallons and dollars are tiny.” Reducing demand reduces risk. All that being said, it may well be worth DOE and DOD efforts to explore the potential. It is something that may be beyond the means of commercial entities, but not government (See China). If there is going to be a market here, let us not be left behind as we have been with other alternative energy production means.

#### And there are 3 demo projects in progress, but no incentives

ANA 12

(Alliance for Nuclear Accountability, “ Documents Reveal Time-line and Plans for “Small Modular Reactors” (SMRs) at the Savannah River Site (SRS) Unrealistic and Promise no Funding” June 8, 2012, <http://www.ananuclear.org/Issues/PlutoniumFuelMOX/tabid/75/articleType/ArticleView/articleId/558/Default.aspx>)

“While SRS may superficially appear to present certain attractive aspects for the location of SMRs, the site has not had experience with operation of nuclear reactors in over twenty years and has no current expertise in reactor operation,” said Clements. “While DOE is set to chose two SMR designs to fund for further development, SRS affirms that no construction funds will be provided, leaving vendors with the difficult and perhaps insurmountable task to find private funding for SMR construction.”

Two of the three separate “Memoranda of Agreement” for three different and still hypothetical SMR designs include deployment timelines which are already admitted by DOE to be inaccurate since they were signed less than six months ago.

#### Taiwan shootouts go nuclear

Glaser, Professor of Political Science and International Affairs – George Washington University, ‘11

(Charles, “Will China’s Rise Lead to War?” *Foreign Affairs* Vol. 9 Iss. 2, March/April)

THE PROSPECTS for avoiding intense military competition and war may be good, but growth in China's power may nevertheless require some changes in U.S. foreign policy that Washington will find disagreeable--particularly regarding Taiwan. Although it lost control of Taiwan during the Chinese Civil War more than six decades ago, China still considers Taiwan to be part of its homeland, and unification remains a key political goal for Beijing. China has made clear that it will use force if Taiwan declares independence, and much of China's conventional military buildup has been dedicated to increasing its ability to coerce Taiwan and reducing the United States' ability to intervene. Because China places such high value on Taiwan and because the United States and China--whatever they might formally agree to--have such different attitudes regarding the legitimacy of the status quo, the issue poses special dangers and challenges for the U.S.-Chinese relationship, placing it in a different category than Japan or South Korea.

A crisis over Taiwan could fairly easily escalate to nuclear war, because each step along the way might well seem rational to the actors involved. Current U.S. policy is designed to reduce the probability that Taiwan will declare independence and to make clear that the United States will not come to Taiwan's aid if it does. Nevertheless, the United States would find itself under pressure to protect Taiwan against any sort of attack, no matter how it originated. Given the different interests and perceptions of the various parties and the limited control Washington has over Taipei's behavior, a crisis could unfold in which the United States found itself following events rather than leading them.

Such dangers have been around for decades, but ongoing improvements in China's military capabilities may make Beijing more willing to escalate a Taiwan crisis. In addition to its improved conventional capabilities, China is modernizing its nuclear forces to increase their ability to survive and retaliate following a large-scale U.S. attack. Standard deterrence theory holds that Washington's current ability to destroy most or all of China's nuclear force enhances its bargaining position. China's nuclear modernization might remove that check on Chinese action, leading Beijing to behave more boldly in future crises than it has in past ones. A U.S. attempt to preserve its ability to defend Taiwan, meanwhile, could fuel a conventional and nuclear arms race. Enhancements to U.S. offensive targeting capabilities and strategic ballistic missile defenses might be interpreted by China as a signal of malign U.S. motives, leading to further Chinese military efforts and a general poisoning of U.S.-Chinese relations.

# 2AC

## heg bad

#### Pursuit of hegemony’s locked-in

Zach Dorfman 12, assistant editor of Ethics and International Affairs, the journal of the Carnegie Council, and co-editor of the Montreal Review, “What We Talk About When We Talk About Isolationism”, May 18, <http://dissentmagazine.org/online.php?id=605>

The rise of China notwithstanding, the United States remains the world’s sole superpower. Its military (and, to a considerable extent, political) hegemony extends not just over North America or even the Western hemisphere, but also Europe, large swaths of Asia, and Africa. Its interests are global; nothing is outside its potential sphere of influence. There are an estimated 660 to 900 American military bases in roughly forty countries worldwide, although figures on the matter are notoriously difficult to ascertain, largely because of subterfuge on the part of the military. According to official data there are active-duty U.S. military personnel in 148 countries, or over 75 percent of the world’s states. The United States checks Russian power in Europe and Chinese power in South Korea and Japan and Iranian power in Iraq, Afghanistan, and Turkey. In order to maintain a frigid peace between Israel and Egypt, the American government hands the former $2.7 billion in military aid every year, and the latter $1.3 billion. It also gives Pakistan more than $400 million dollars in military aid annually (not including counterinsurgency operations, which would drive the total far higher), Jordan roughly $200 million, and Colombia over $55 million.

U.S. long-term military commitments are also manifold. It is one of the five permanent members of the UN Security Council, the only institution legally permitted to sanction the use of force to combat “threats to international peace and security.” In 1949 the United States helped found NATO, the first peacetime military alliance extending beyond North and South America in U.S. history, which now has twenty-eight member states. The United States also has a trilateral defense treaty with Australia and New Zealand, and bilateral mutual defense treaties with Japan, Taiwan, the Philippines, and South Korea. It is this sort of reach that led Madeleine Albright to call the United States the sole “indispensible power” on the world stage.

The idea that global military dominance and political hegemony is in the U.S. national interest—and the world’s interest—is generally taken for granted domestically. Opposition to it is limited to the libertarian Right and anti-imperialist Left, both groups on the margins of mainstream political discourse. Today, American supremacy is assumed rather than argued for: in an age of tremendous political division, it is a bipartisan first principle of foreign policy, a presupposition. In this area at least, one wishes for a little less agreement.

In Promise and Peril: America at the Dawn of a Global Age, Christopher McKnight Nichols provides an erudite account of a period before such a consensus existed, when ideas about America’s role on the world stage were fundamentally contested. As this year’s presidential election approaches, each side will portray the difference between the candidates’ positions on foreign policy as immense. Revisiting Promise and Peril shows us just how narrow the American worldview has become, and how our public discourse has become narrower still.

Nichols focuses on the years between 1890 and 1940, during America’s initial ascent as a global power. He gives special attention to the formative debates surrounding the Spanish-American War, U.S. entry into the First World War, and potential U.S. membership in the League of Nations—debates that were constitutive of larger battles over the nature of American society and its fragile political institutions and freedoms. During this period, foreign and domestic policy were often linked as part of a cohesive political vision for the country. Nichols illustrates this through intellectual profiles of some of the period’s most influential figures, including senators Henry Cabot Lodge and William Borah, socialist leader Eugene Debs, philosopher and psychologist William James, journalist Randolph Bourne, and the peace activist Emily Balch. Each of them interpreted isolationism and internationalism in distinct ways, sometimes deploying the concepts more for rhetorical purposes than as cornerstones of a particular worldview.

Today, isolationism is often portrayed as intellectually bankrupt, a redoubt for idealists, nationalists, xenophobes, and fools. Yet the term now used as a political epithet has deep roots in American political culture. Isolationist principles can be traced back to George Washington’s farewell address, during which he urged his countrymen to steer clear of “foreign entanglements” while actively seeking nonbinding commercial ties. (Whether economic commitments do in fact entail political commitments is another matter.) Thomas Jefferson echoed this sentiment when he urged for “commerce with all nations, [and] alliance with none.” Even the Monroe Doctrine, in which the United States declared itself the regional hegemon and demanded noninterference from European states in the Western hemisphere, was often viewed as a means of isolating the United States from Europe and its messy alliance system.

In Nichols’s telling, however, modern isolationism was born from the debates surrounding the Spanish-American War and the U.S. annexation of the Philippines. Here isolationism began to take on a much more explicitly anti-imperialist bent. Progressive isolationists such as William James found U.S. policy in the Philippines—which it had “liberated” from Spanish rule just to fight a bloody counterinsurgency against Philippine nationalists—anathema to American democratic traditions and ideas about national self-determination.

As Promise and Peril shows, however, “cosmopolitan isolationists” like James never called for “cultural, economic, or complete political separation from the rest of the world.” Rather, they wanted the United States to engage with other nations peacefully and without pretensions of domination. They saw the United States as a potential force for good in the world, but they also placed great value on neutrality and non-entanglement, and wanted America to focus on creating a more just domestic order. James’s anti-imperialism was directly related to his fear of the effects of “bigness.” He argued forcefully against all concentrations of power, especially those between business, political, and military interests. He knew that such vested interests would grow larger and more difficult to control if America became an overseas empire.

Others, such as “isolationist imperialist” Henry Cabot Lodge, the powerful senator from Massachusetts, argued that fighting the Spanish-American War and annexing the Philippines were isolationist actions to their core. First, banishing the Spanish from the Caribbean comported with the Monroe Doctrine; second, adding colonies such as the Philippines would lead to greater economic growth without exposing the United States to the vicissitudes of outside trade. Prior to the Spanish-American War, many feared that the American economy’s rapid growth would lead to a surplus of domestic goods and cause an economic disaster. New markets needed to be opened, and the best way to do so was to dominate a given market—that is, a country—politically. Lodge’s defense of this “large policy” was public and, by today’s standards, quite bald. Other proponents of this policy included Teddy Roosevelt (who also believed that war was good for the national character) and a significant portion of the business class. For Lodge and Roosevelt, “isolationism” meant what is commonly referred to today as “unilateralism”: the ability for the United States to do what it wants, when it wants.

Other “isolationists” espoused principles that we would today call internationalist. Randolph Bourne, a precocious journalist working for the New Republic, passionately opposed American entry into the First World War, much to the detriment of his writing career. He argued that hypernationalism would cause lasting damage to the American social fabric. He was especially repulsed by wartime campaigns to Americanize immigrants. Bourne instead envisioned a “transnational America”: a place that, because of its distinct cultural and political traditions and ethnic diversity, could become an example to the rest of the world. Its respect for plurality at home could influence other countries by example, but also by allowing it to mediate international disputes without becoming a party to them. Bourne wanted an America fully engaged with the world, but not embroiled in military conflicts or alliances.

This was also the case for William Borah, the progressive Republican senator from Idaho. Borah was an agrarian populist and something of a Jeffersonian: he believed axiomatically in local democracy and rejected many forms of federal encroachment. He was opposed to extensive immigration, but not “anti-immigrant.” Borah thought that America was strengthened by its complex ethnic makeup and that an imbalance tilted toward one group or another would have deleterious effects. But it is his famously isolationist foreign policy views for which Borah is best known. As Nichols writes:

He was consistent in an anti-imperialist stance against U.S. domination abroad; yet he was ambivalent in cases involving what he saw as involving obvious national interest….He also without fail argued that any open-ended military alliances were to be avoided at all costs, while arguing that to minimize war abroad as well as conflict at home should always be a top priority for American politicians.

Borah thus cautiously supported entry into the First World War on national interest grounds, but also led a group of senators known as “the irreconcilables” in their successful effort to prevent U.S. entry into the League of Nations. His paramount concern was the collective security agreement in the organization’s charter: he would not assent to a treaty that stipulated that the United States would be obligated to intervene in wars between distant powers where the country had no serious interest at stake.

Borah possessed an alternative vision for a more just and pacific international order. Less than a decade after he helped scuttle American accession to the League, he helped pass the Kellogg-Briand Pact (1928) in a nearly unanimous Senate vote. More than sixty states eventually became party to the pact, which outlawed war between its signatories and required them to settle their disputes through peaceful means. Today, realists sneer at the idealism of Kellogg-Briand, but the Senate was aware of the pact’s limitations and carved out clear exceptions for cases of national defense. Some supporters believed that, if nothing else, the law would help strengthen an emerging international norm against war. (Given what followed, this seems like a sad exercise in wish-fulfillment.) Unlike the League of Nations charter, the treaty faced almost no opposition from the isolationist bloc in the Senate, since it did not require the United States to enter into a collective security agreement or abrogate its sovereignty. This was a kind of internationalism Borah and his irreconcilables could proudly support.

The United States today looks very different from the country in which Borah, let alone William James, lived, both domestically (where political and civil freedoms have been extended to women, African Americans, and gays and lesbians) and internationally (with its leading role in many global institutions). But different strains of isolationism persist. Newt Gingrich has argued for a policy of total “energy independence” (in other words, domestic drilling) while fulminating against President Obama for “bowing” to the Saudi king. While recently driving through an agricultural region of rural Colorado, I saw a giant roadside billboard calling for American withdrawal from the UN.

Yet in the last decade, the Republican Party, with the partial exception of its Ron Paul/libertarian faction, has veered into such a belligerent unilateralism that its graybeards—one of whom, Senator Richard Lugar of Indiana, just lost a primary to a far-right challenger partly because of his reasonableness on foreign affairs—were barely able to ensure Senate ratification of a key nuclear arms reduction treaty with Russia. Many of these same people desire a unilateral war with Iran.

And it isn’t just Republicans. Drone attacks have intensified in Yemen, Pakistan, and elsewhere under the Obama administration. Massive troop deployments continue unabated. We spend over $600 billion dollars a year on our military budget; the next largest is China’s, at “only” around $100 billion. Administrations come and go, but the national security state appears here to stay.

#### Status quo solves—Obama has moved to multilateralism on Libya and beyond. The UN is back, and other nations are following the US lead!

**World Outline**, postgraduate student in international affairs at King’s College, **1/24**/2012

[“How valuable is multilateral diplomacy in a post-9/11 world?,” http://worldoutline.wordpress.com/2012/01/24/how-valuable-is-multilateral-diplomacy-in-a-post-911-world/]

At the turn of the last century, 189 world leaders convened at the Millennium Summit and approved the Millennium Declaration which outlined eight specific goals that the United Nations was to achieve by 2015.[4] Yet, just a year later the 9/11 terrorist attacks tilted the world upon its head. The Security Council was rallied into action after the attacks and unanimously backed the United States against the threat which had caused so much devastation.[5] However, a wounded United States became increasingly relentless and unilateral in their ‘War on Terror’; when the Security Council refused to authorise a US attack upon an allegedly nuclear-armed Iraq, the United States, led by George. W. Bush, launched the assault anyway without UN approval.[6] This has been referred to as the ‘crisis of multilateralism’, as the United States undermined the very institution of which it is the biggest financial contributor and the most influential player.[7] If the founding member of the UN was refusing to follow the guidelines of the institution then why should other states follow the rules? This act set a worrying precedent for the rest of the world and, as Kofi Annan asserted, ‘undermined confidence in the possibility of collective responses to our common problems’.[8] Other instances of American unilateralism are Bush’s abstention from the Human Rights Council, his refusal to sign the Kyoto Protocol and the US departure from the Comprehensive Test Ban Treaty. The United States was losing sight of the benefits that multilateral diplomacy has to offer. However, the arrival of Barack Obama at the Oval Office has **revived multilateral values within US foreign policy**. The Obama administration has realised that it must now engage with the UN and this has marked a ‘**transitional moment in the history of multilateralism**’.[9] In his 2010 National Security Strategy, Obama acknowledged the fact that the US had been successful after the Second World War by pursuing their interests within multilateral forums such as the United Nations and not outside of them.[10] The global financial crisis of 2008 and the European Union’s sovereign debt crisis have demonstrated just how interdependent the economies of the western world are and these crises have created an age of austerity in which multilateralism is needed more than ever before.[11] The US has overstretched its resources and is now currently winding down two wars in Afghanistan and Iraq; they have realised that they simply do not have the means to conduct their foreign affairs exclusively anymore. **Clear indications of Washington’s improved multilateral engagement with the UN** since Obama’s inauguration, **and the changing attitude in US foreign policy**, are the economic sanctions negotiated over Iran, Obama’s decision for the US to join the Human Rights Council and, more specifically, its participation in the recent Libya mission. In Libya, the US provided support for the mission, yet played a subdued role in the campaign, allowing its European counterparts to take the lead. In contrast to his predecessor, Obama is displaying pragmatism rather than sentimentalism in his search for partners, making alliances in order to adapt to the emerging multipolar world; this is typified by Obama’s recent visit to the Asia-Pacific and his tour of South America (Brazil, Chile and El Salvador) in 2010. For the time being, US unipolarity looks to be a thing of the past; its **foreign policy is changing from Bush’s unilateralism at the start of the century to a more multilateral approach at the beginning of a new decade** under Obama.[12] This is the **correct precedent** that the most powerful nation in the world should be setting for other states to follow. The fact that the US is now engaging with the UN to counter global problems has restored the credibility that the UN had lost after the Iraq debacle and, by setting this example, **other nations will follow suit** and the international community as a whole can only benefit. From this change in US foreign policy, it is clear that multilateral diplomacy is of more value today than it was a decade ago.

## allouche

Tir ‘10

(Jaroslav, PhD, University of Illinois, Urbana-Champaign, 2001) Dr. Tir's specialty is international relations, with a focus on causes and management of armed conflicts. His research spans the topics of territorial disputes, environmental conflict and security, domestic and ethnic conflict, and diversionary theory of war. Dr. Tir's work has been published in outlets such as the American Journal of Political Science, Journal of Politics, Journal of Conflict Resolution, Journal of Peace Research, International Studies Quarterly, Conflict Management and Peace Science, and others, and Douglas, assistant professor in the Department of International Affairs in the School of Public and International Affairs at the University of Georgia, “Coping with the Consequences of Climate Change: International Institutions as Strategies for Mitigating Conflict over Water Resources,” AM)

In terms of the possible consequences of climate change for international security, one of the primary effects to consider is the anticipated increase in localized water stress. According to IPCC estimates, altered weather patterns due to climate change will increase the incidence and severity of droughts in many regions of the world, particularly regions that are already arid. Aside from the direct effect of reduced precipitation, other sources of freshwater will be affected. Shrinking glaciers will reduce the seasonal replenishment of many rivers due to reduced glacial melt during the dry season. Saltwater intrusion into river deltas and underground depositories will also reduce the quality of many sources of freshwater. The combination of some or all of these effects will be to reduce the availability of water in many geographic locations. The manner in which water scarcity induced by climate change is most likely to jeopardize international security will be to damage the relations between those states that share a source of freshwater. Rivers, lakes, and underground aquifers that cross international boundaries are often the subject of conflicting utilization, as is typical of common pool resources. The value that states place on these water sources can be expected to increase as climate change amplifies water scarcity. Water stress can thus magnify the effect that these water sources have on international tensions. This could contribute to an increased risk of armed conflict through both direct and indirect mechanisms. First, the greater value that states place on water during conditions of scarcity will increase the likelihood of international disputes over transboundary water sources. In response to reduced rainfall from climate change, states will likely increase their consumption of other sources of freshwater. As is the case for common pool resources, increased unilateral consumption of a transboundary water source by one user decreases the amount available to others. Furthermore, the political reaction to diversion will be more severe under conditions of increased scarcity, because it will be occurring at a time when water willbe more valuable for all other riparian states. Wolf and Postel (2001) note that the primary circumstance in which international conflict emerges over the issue of water is when an upstream riparian engages in large unilateral diversions. These issues were highlighted during a recent visit by the UN Secretary-General Ban Ki-moon to the Aral Sea. The lake has already shrunk by 90% due to water diversion,damming, and irrigation projects on rivers that feed it. In addition to the ecological disaster, the competition for remaining water among Kazakhstan, Uzbekistan, and Turkmenistan “could become increasingly heated as global warming and rising population further reduce the amount of water availableper capita” (Heintz, 2010). Even when scarcity doesn‟t prompt new river diversion projects, the increased demand for water can lead to disagreements by making states more likely to object to the current behavior of other riparians. The diversion of a river for human consumption, industrial use, power generation, agriculture, and other activities that were previously acceptable politically will become objectionable after the total volume of that river has diminished due to climate change. These problems will be compounded when the externalities of the common pool resource are asymmetric, as in the case of rivers for which there are clear upstream and downstream states.

#### Allouche agrees that water causes wars – he just think they’ll stay small

Allouche 11, research Fellow – water supply and sanitation @ Institute for Development Studies, frmr professor – MIT (Jeremy, “The sustainability and resilience of global water and food systems: Political analysis of the interplay between security, resource scarcity, political systems and global trade,” Food Policy, Vol. 36 Supplement 1, p. S3-S8, January)

Overall, it seems clear that perceived resource scarcity is not an adequate explanation for war at the international level. At the national level, water and food insecurity are relatively important factors in the causes of civil wars. At the local level, water scarcity and food insecurity may lead to local political instability and sometimes violent forms of conflict. Armed conflict creates situation of emergency food and water insecurity and has a long-term impact on post-conflict societies. In the near future, it seems that despite climate change, international resource wars are unlikely and resource allocation will be settled through diplomatic negotiation and perhaps most importantly international trade as will be discussed in the next section.

#### Water scarcity causes Nile wars

Rotberg 7/2/10

<http://www.boston.com/bostonglobe/editorial_opinion/oped/articles/2010/07/02/the_threat_of_a_water_war/>

Robert I. Rotberg (Born: April 11, 1935) is an American who served as President emeritus of the World Peace Foundation (1993-2010). An American professor in governance and foreign affairs, he was director of the Program on Intrastate Conflict, Conflict Prevention, and Conflict Resolution at Harvard University's John F. Kennedy School of Government (1999-2010), and has served in administrative positions at Tufts University and Lafayette College. In 2003-2004, he served as a member of the Secretary of State's Advisory Panel on Africa, and was a Presidential appointee to the Council of the National Endowment for the Humanities. In 2007 at the Kennedy School, he directed the establishment of the Index for African Governance, to help evaluate leaders for the Mo Ibrahim Prize for Achievement in African Leadership, awarded annually by the Mo Ibrahim Foundation. A trustee of Oberlin College, Rotberg is a visiting professor at the College of Europe in Bruges, Belgium.

NATIONS FIGHT over water, especially when access is curtailed or threatened, and there are the ingredients for a battle over the 4,100-mile long Nile River. Egypt and Sudan have counted on the abundance of the Nile’s life-giving flow. Now upstream nations want to keep more of the abundance for themselves. Ethiopia, Uganda, Kenya, Tanzania, Congo, Burundi, and Rwanda are asserting their rights to more of the river’s relentless flow. Washington needs to intervene to forestall hostilities between the countries. Britain conquered Uganda and Kenya in the 19th century in part to protect the precious Nile waters from being diverted away from their critical possession of Egypt, the Suez Canal, and the Red Sea route to India. Without the yearly sustaining floods of the Nile, agriculture and settlement in the valley of the river from Luxor to Cairo and Alexandria would have been impossible. When Britain in the 1920s controlled all of the waters of the Nile, bar those sluicing down the Blue Nile from Ethiopia, it signed a pact that gave Egypt and Sudan rights to nearly 75 percent of its annual flow. This 1929 agreement was confirmed in 1959, after Egypt and the Sudan had broken from Britain but while the East African countries were still colonies. A new 2010 Cooperative Framework Agreement, now signed by most of the key upstream abutters, would give all riparian states (including the Congo, where a stream that flows into Lake Tanganyika is the acknowledged Nile source) equal access to the resources of the river. That would give preference to large scale upstream energy and industrial, as well as long-time agricultural and irrigation uses. Egypt and Sudan have refused to sign the new agreement, despite years of discussions and many heated meetings. Given climate change, the drying up of water sources everywhere in Africa and the world, Egypt, which is guaranteed 56 billion of the annual flow of 84 billion cubic meters of Nile water each year, hardly wants to lose even a drop of its allocation. Nor does Sudan, guaranteed 15 billion cubic meters. About 300 million people depend on the waters of the Nile. The upstream countries, with still growing populations, believe that their socio-economic development has long been unfairly constrained by Egypt’s colonial-era lock on the river. Ethiopia and Uganda have not been able to support agricultural schemes. Nor have they been able fully to harness the river or its tributaries for industry and power. Both have suffered from major hydroelectric shortages in recent years. Egypt has declared the continued surge of the Nile waters a “red line’’ that affects its “national security.’’ There is discussion in Egypt about the use of air power to threaten upstream offenders, especially if Ethiopia becomes too demanding. In theory, Ethiopia could divert much of the Blue Nile to its own uses. Or Ethiopia and others could charge Egypt for water that has largely escaped modern pricing. Egypt is sufficiently disturbed by Ethiopia’s potentially aggressive water designs that it has recently made friends with Eritrea, Ethiopia’s arch enemy. In 1998, Ethiopia and Eritrea went to war over slices of insignificant mountainous territory. Although the shooting ended in 2000, a peace settlement handed down by the World Court in 2006 has still not been observed by both sides. If Egypt attacks Ethiopia, Eritrea might join in. Egyptian generals claim that Israel is on the other side, helping the upstream nations by encouraging their thirst for water and by financing the construction of four hydroelectric projects in Ethiopia. All these issues provide conditions for a war over water.

#### Goes global

Glick 7

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

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

## t

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

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

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

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

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

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

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

## states

#### Perm do both means states fund DoD purchasing – otherwise they don’t fiat power gets to the bases

**GAO 9**, “Defense Infrastructure: DOD Needs to Take Actions to Address Challenges in Meeting Federal

Renewable Energy Goals”, December, <http://www.gao.gov/assets/300/299755.html>

DOD has also joined with private sector entities, entering into various types of arrangements to develop renewable energy projects. Because these different arrangements with the private sector provide DOD with an alternative to using only up-front appropriations to fund renewable energy projects, we refer to these arrangements as alternative financing approaches. For the purposes of this report, we define an alternative financing approach as any funding arrangement other than projects in which total project costs are funded only through full up- front appropriations. DOD has entered into several different types of these approaches that have resulted in renewable energy projects.

#### Current acquisitions favor old tech – the plan’s signal is key

CNA 10, non-profit research organization that operates the Center for Naval Analyses and the Institute for Public Research, “Powering America’s Economy: Energy Innovation at the Crossroads of National Security Challenges”, July, <http://www.cna.org/sites/default/files/research/WEB%2007%2027%2010%20MAB%20Powering%20America%27s%20Economy.pdf>

In our final discussion, we consider the end of the innovation pipeline—deployment—and we look at how fine-tuning the incentives might help pull more innovative, new energy technologies through the pipeline. Energy use at installations is governed under a stricter rubric than operational energy: a variety of regulatory and legislative mandates have steered DOD toward lowering energy consumption, increasing use of renewables, and promoting conservation and energy efficiency. However, the adoption of new clean energy technologies is still hampered in key installation acquisition programs. To help achieve its energy goals, DOD often employs two mechanisms: the Energy Conservation Investment Program (ECIP) and Energy Savings Performance Contracts (ESPCs). The ECIP program is backed by Congressional appropriations (through military construction funding), and it is designed to allow installations to purchase technologies that save money through conserving energy [55]. The program is viewed widely as being successful, cited as saving more than two dollars for each dollar invested. ESPCs are contracting vehicles that allow DOD to invest in energy-related improvements without expending funds appropriated by Congress. Through ESPCs, DOD partners with private firms that make the energy improvements; in return, the firms’ investments are paid back through the energy savings. While these programs have improved installation energy use, as they are currently structured, they favor older technologies that are well-established on the commercial market. This is especially the case for ESPCs, which are inherently risk averse. The private sector firms that enter into these contracts only do so if they are guaranteed to make a profit; as such, the energy improvements are done so with tried-and-tested technologies whose payback schedules and energy savings are well-defined. Many of these investments are also made with small profit margins. As such, companies are not willing to take risks on these contracts by using new and perhaps unproven technologies. Altering these programs to reduce the advantages provided to already commercialized products will encourage the acquisition of more innovative technologies on installations. One change could include a guaranteed return on investment (similar to that given on older technologies) for those developers proposing cutting-edge technologies. Another change could include giving first preference to innovations that come from public/private partnerships (incubators, energy hubs, etc.). Given DOD’s size and the fact that installations mirror U.S. infrastructure, the use of innovative technologies on its installations provides a clear demand signal to the developer.

#### DOD bypasses and solves licensing lag.

CSPO 10, Consortium for Science, Policy and Outcomes at ASU, “four policy principles for energy innovation & climate change: a synthesis”, June, <http://www.catf.us/resources/publications/files/Synthesis.pdf>

Government purchase of new technologies is a powerful way to accelerate innovation through increased demand (Principle 3a). We explore how this principle can be applied by considering how the DoD could purchase new nuclear reactor designs to meet electric power needs for DoD bases and operations. Small modular nuclear power reactors (SMRs), which generate less than 300 MW of power (as compared to more typical reactors built in the 1000 MW range) are often listed as a potentially transformative energy technology. While typical traditional large-scale nuclear power plants can cost five to eight billion dollars, smaller nuclear reactors could be developed at smaller scale, thus not presenting a “bet the company” financial risk. SMRs could potentially be mass manufactured as standardized modules and then delivered to sites, which could significantly reduce costs per unit of installed capacity as compared to today’s large scale conventional reactor designs. It is likely that some advanced reactors designs – including molten salt reactors and reactors utilizing thorium fuels – could be developed as SMRs. Each of these designs offers some combination of inherently safe operation, very little nuclear proliferation risk, relatively small nuclear waste management needs, very abundant domestic fuel resources, and high power densities – all of which are desirable attributes for significant expansion of nuclear energy. Currently, several corporations have been developing small nuclear reactors. Table 2 lists several of these companies and their reactor power capacities, as well as an indication of the other types of reactor innovations that are being incorporated into the designs. Some of these technologies depend on the well-established light water reactor, while others use higher energy neutrons, coolants capable of higher temperature operation, and other innovative approaches. Some of these companies, such as NuScale, intend to be able to connect as many as 24 different nuclear modules together to form one larger nuclear power plant. In addition to the different power ranges described in Table 2, these reactors vary greatly in size, some being only 3 to 6 feet on each side, while the NuScale reactor is 60 feet long and 14 feet in diameter. Further, many of these reactors produce significant amounts of high-temperature heat, which can be harnessed for process heating, gas turbine generators, and other operations. One major obstacle is to rapid commercialization and development are prolonged multi-year licensing times with the Nuclear Regulatory Commission. Currently, the NRC will not consider a reactor for licensing unless there is a power utility already prepared to purchase the device. Recent Senate legislation introduced by Senator Jeff Bingaman (D-NM) has pushed for DOE support in bringing down reactor costs and in helping to license and certify two reactor designs with the NRC. Some additional opportunities to facilitate the NRC licensing process for innovative small modular reactors would be to fund NRC to conduct participatory research to get ahead of potential license applications (this might require ~$100million/year) and potentially revise the current requirement that licensing fees cover nearly all NRC licensing review costs. One option for accelerating SMR development and commercialization, would be for DOD to establish SMR procurement specifications (to include cost) and agree to purchase a sufficient amount of SMR’s to underwrite private sector SMR development. Of note here may be that DARPA recently (3/30/10) issued a “Request for Information (RFI) on Deployable Reactor Technologies for Generating Power and Logistic Fuels”2 that specifies may features that would be highly desirable in an advanced commercial SMR. While other specifications including coproduction of mobility fuel are different than those of a commercial SMR power reactor, it is likely that a core reactor design meeting the DARPA inquiry specifications would be adaptable to commercial applications. While nuclear reactors purchased and used by DOD are potentially exempt from many NRC licensing requirements3, any reactor design resulting from a DOD procurement contract would need to proceed through NRC licensing before it could be commercially offered. Successful use of procured SMR’s for DOD purposes could provide the knowledge and operational experience needed to aid NRC licensing and it might be possible for the SMR contractor to begin licensing at some point in the SMR development process4. Potential purchase of small modular nuclear reactors would be a powerful but proven way in which government procurement of new energy technologies could encourage innovation. Public procurement of other renewable energy technologies could be similarly important.

#### Only military SMR’s will be usable on bases

Andres and Breetz 11

Richard 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, and Hanna Breetz, doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, Small Nuclear Reactorsfor Military Installations:Capabilities, Costs, andTechnological Implications, [www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf](http://www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf)

The preceding analysis suggests that DOD should seriously consider taking a leadership role on small reactors. This new technology has the potential to solve two of the most serious energy-related problems faced by the department today. Small reactors could island domestic military bases and nearby communities, thereby protecting them from grid outages. They could also drastically reduce the need for the highly vulnerable fuel convoys used to supply forward operating bases abroad. The technology being proposed for small reactors (much of which was originally developed in U.S. Government labs) is promising. A number of the planned designs are self-contained and highly mobile, and could meet the needs of either domestic or forward bases. Some promise to be virtually impervious to accidents, with design characteristics that might allow them to be used even in active operational environments. These reactors are potentially safer than conventional light water reactors. The argument that this technology could be useful at domestic bases is virtually unassailable. The argument for using this technology in operational units abroad is less conclusive; however, because of its potential to save lives, it warrants serious investigation. Unfortunately, the technology for these reactors is, for the most part, caught between the drawing board and production. Claims regarding the field utility and safety of various reactors are plausible, but authoritative evaluation will require substantial investment and technology demonstration. In the U.S. market, DOD could play an important role in this area. In the event that the U.S. small reactor industry succeeds without DOD support, the types of designs that emerge might not be useful for the department since some of the larger, more efficient designs that have greater appeal to private industry would not fit the department’s needs. Thus, there is significant incentive for DOD to intervene to provide a market, both to help the industry survive and to shape its direction. Since the 1970s, in the United States, only the military has overcome the considerable barriers to building nuclear reactors. This will probably be the case with small reactors as well. If DOD leads as a first mover in this market—initially by providing analysis of costs, staffing, reactor lines, and security, and, when possible, by moving forward with a pilot installation—the new technology will likely survive and be applicable to DOD needs. If DOD does not, it is possible the technology will be unavailable in the future for either U.S. military or commercial use.

## fiscal cliff

#### Decline doesn’t cause war

Morris Miller, Professor of Administration @ the University of Ottawa, ‘2K

(Interdisciplinary Science Review, v 25 n4 2000 p ingenta connect)

The question may be reformulated. Do wars spring from a popular reaction to a sudden economic crisis that exacerbates poverty and growing disparities in wealth and incomes? Perhaps one could argue, as some scholars do, that it is some dramatic event or sequence of such events leading to the exacerbation of poverty that, in turn, leads to this deplorable denouement. This exogenous factor might act as a catalyst for a violent reaction on the part of the people or on the part of the political leadership who would then possibly be tempted to seek a diversion by finding or, if need be, fabricating an enemy and setting in train the process leading to war. According to a study under- taken by Minxin Pei and Ariel Adesnik of the Carnegie Endowment for International Peace, there would not appear to be any merit in this hypothesis. After studying ninety-three episodes of economic crisis in twenty-two countries in Latin America and Asia in the years since the Second World War they concluded that:19 Much of the conventional wisdom about the political impact of economic crises may be wrong ... The severity of economic crisis – as measured in terms of inflation and negative growth – bore no relationship to the collapse of regimes ... (or, in democratic states, rarely) to an outbreak of violence ... In the cases of dictatorships and semi-democracies, the ruling elites responded to crises by increasing repression (thereby using one form of violence to abort another).

#### Election renews Obama’s pol cap—makes the plan irrelevant

Mike Lillis, The Hill, 9/29/12, Democrats lay out second-term wish list for President Obama, thehill.com/homenews/campaign/259253-dems-lay-out-wish-list-for-a-second-obama-term

An Obama victory in November would lend the president a new fistful of political capital as he confronts Republican leaders over how to avoid the fiscal cliff and steer the polarized country through the next four years. More than a month before November's elections, his allies in the House are already offering tips for how to spend it.

“He's got to continue to concentrate on jobs,” Rep. Bill Pascrell said last week as the House was leaving town for a long, pre-election recess.

“I'm hoping he'll do immigration reform,” said Rep. Henry Cuellar (D-Texas).

“We should get back to an energy policy – one that acknowledges that climate change is real,” said Rep. Peter Welch (D-Vt.).

“The critical issues will be revenue generation … and … a concerted push on immigration reform,” said Rep. Raul Grijalva (D-Ariz.).

“I think he'd want his administration to start on healthcare,” said Rep. Mike Honda (D-Calif.).

The remarks highlight the sheer variety of issues the Democrats are hoping to address after two years in the House minority – and foreshadow the degree of pressure a reelected Obama would be under to satisfy his allies after a bruising campaign season.

The quotations also suggest some rising confidence among Democrats.

The presidential contest remains a close one, but recent polls showing Obama with a growing lead in the key battleground states of Ohio and Florida are indication that GOP contender Mitt Romney has a hard road ahead to unseat the incumbent. National polls this week also showed Obama with a growing lead, while Republican criticism of Romney has intensified.

Although the Republicans are expected to keep control of the House, an Obama win amid a lingering jobs crisis would – at least in the eyes of Democrats – validate some of the policies the president has adopted on the campaign trail and pressure Republicans to reach deals on them. Indeed, some leading Republicans have said an Obama victory would be “a referendum” for raising taxes on the country's highest earners, one of Obama's top priorities.

The power of post-election momentum was evident four years ago when Obama was swept into the White House in a wave of Democratic victories that allowed the party to secure the early passage of their controversial economic stimulus package and paved the way for the enactment of sweeping healthcare reforms the following year.

Although voter enthusiasm toward Obama waned, reelection would give the president new – if fleeting – leverage in his negotiations with GOP leaders over a range of issues.

#### No lame duck focus link—plan happens immediately—key to aff and neg ground—immediate implementation is the only basis for predictable research and preparation—AND—the lame duck session is a special session—means by their standard the plan would be done in 2013 post-the disad, or another immediate special session is fair game

#### Link inevitable—election spills-over to lame duck fights

Marilyn Geewak, NPR, 9/20/12, 'Fiscal Cliff' Scenarios Leave Economists On Edge, www.npr.org/2012/09/20/161442506/fiscal-cliff-scenarios-leave-economists-on-edge

But that's not the worst-case scenario. This is: Congress may not have time to do anything at all during the lame-duck session.

Why? Because this election season could bring major distractions, similar to those that followed the 2000 presidential election. That year's "hanging chad" drama in Florida turned into a massive time suck for political leaders. Florida officials spent weeks trying to count paper ballots to determine which presidential candidate had won that state's tie-breaking electoral votes.

Another tussle over ballots is possible this year, especially given the array of new state laws involving voter ID.

It's also possible in this tight presidential election that neither candidate may win enough electoral votes to clinch victory. Dozens of combinations of battleground-state outcomes could leave the race undecided. If no one wins, then the House would decide the election — not exactly a scenario for holding down partisanship on Capitol Hill.

And it's not just the presidential race that could spur demands for recounts. All of the House seats are up for grabs, as well as 33 Senate slots. With Congress so narrowly split, each disputed seat could inflame partisan rancor and make it harder to come up with compromises by New Year's Eve.

#### Not intrinsic

#### Obama pc collapses budget negotiations—2011 proves

The Hotline, 9/10/12, Slow and Steady Wins the Race, Lexis

Gaps in Obama's leadership contributed to the collapse of a "grand bargain" on spending and debt last year. with Obama "failing to cultivate congressional relationships that may have helped him break through GOP opposition, author Bob Woodward told ABC. Woodward: "President Clinton, President Reagan. And if you look at them, you can criticize them for lots of things. They by and large worked their will. On this, President Obama did not. Now, some people are going to say he was fighting a brick wall, the Republicans in the House and the Republicans in Congress. Others will say it's the president's job to figure out how to tear down that brick wall. In this case, he did not."

Asked if Obama "simply wasn't ready for the job of being president," Woodward responded: "I am not ducking this. I am weighing evidence, and there's evidence that he got on top a lot of things, he did a lot of things. And there's evidence that there are gaps. He did not fix this."

Woodward places "particular blame for the failure to reach a deal" with Obama, "writing that the seeds of discord were planted early in his administration." Woodward: "There's this divided-man quality to President Obama always. Initially he meets with the congressional leaders, he says you know, 'We're going to be accommodating, we're going to listen, we're going to talk, we're going to compromise.' But then they -- Republicans ask some questions and challenge him a little bit and he says 'Look I won. I'm in charge here.' And the Republicans feel totally isolated and ostracized. And this was the beginning of a war" (Klein, ABC, 9/10).

#### No Link—Plan doesn’t require legislation, or focus from Obama and Congress

#### House blocks

Bruce Bartlett, The New York Times, held senior policy roles in the Reagan and George H.W. Bush administrations and served on the staffs of Representatives Jack Kemp and Ron Paul, 10/2/12, The 'Fiscal Cliff' Opportunity, Lexis

Although it appears that the Republicans will retain control of the House while Democrats' prospects of continuing to have a Senate majority have improved, the majority margins are likely to narrow. This could be a particular problem in the House, where Representative John Boehner of Ohio, the speaker, has never had a firm hold on power because he is viewed with suspicion by the G.O.P.'s Tea Party wing.

The budget analyst Stan Collender speculates that Mr. Boehner will be on a short leash during the lame-duck session as the Tea Party tries to maintain influence after a disappointing election. This means that Mr. Boehner will have little scope to negotiate with Democrats on a compromise that would forestall the fiscal cliff, making it likely that the fiscal cliff measures will begin as scheduled.

The two primary sticking points are taxes and military spending. President Obama is insisting that the Bush tax cuts not be extended for those with incomes over $250,000. For them, the top tax rate would rise to 39.6 percent - what it was during the Clinton administration - from 35 percent. The administration would also like to raise the maximum tax rate on dividends and capital gains to 20 percent for upper-income taxpayers, from 15 percent currently.

Republicans are adamantly opposed to any increase in taxes for anyone, but especially the wealthy, whom they univer-sally view as "job creators," even if all they do is cash dividend checks on inherited stocks. But Republicans are even more concerned about impending cuts to military spending, which they agreed to last summer as part of the deal to raise the debt ceiling.

#### No impact—at worst they’ll just punt the deadline

Reuters, 9/21/12, Lawmakers May Delay 'Fiscal Cliff' Deadlines, www.foxbusiness.com/2012/09/21/lawmakers-may-delay-fiscal-cliff-deadlines/

Slowly and quietly, the U.S. Congress may be arriving at a consensus on how to avoid falling off the "fiscal cliff" on December 31 - by simply putting off its own deadline for most of the major year-end budget and tax decisions. That approach would delay the day of reckoning while also allowing more time for compromise in a Congress that has battled for two years over how best to reduce huge budget deficits. No formal agreements have been reached, however, and turning a consensus into an actual deal that avoids jolting the markets or economy will depend on the results of the November 6 general election. The "cliff" refers to the year-end deadline for the expiration of hundreds of billions of dollars worth of tax cuts and the triggering of $109 billion in across-the-board spending cuts. The non-partisan Congressional Budget Office has said the scenario could throw the country into recession. Congress created the hazardous end-of-year deadline in August 2011 when it agreed to a deficit deal as a way out of a deadlock over raising the U.S. debt ceiling. In recent weeks, lawmakers of all political stripes, from conservative Republicans to liberal Democrats in the Senate and House of Representatives, have alluded to surprisingly similar hopes for the high-stakes "lame-duck" work session that will follow the November presidential and congressional elections. They would put aside the $109 billion in "automatic" across-the-board spending cuts that otherwise would hit military and domestic programs equally. They would make some new, possibly smaller down payments on deficit-reduction for the near-term. Then they would write a new deadline - maybe March 31 or June 30 - to come up with a grand, $4 trillion deficit-reduction program over 10 years; and devise a new method for forcing a divided Congress to act. The entire exercise would be aimed at finding a long-term fix for U.S. fiscal problems without the jolt of indiscriminate spending cuts and tax hikes that would occur under current law. RUNNING FOR COVER The threat of a possible recession after such blanket spending cuts now preoccupies Washington. Among the fearful are the big-company CEOs represented by the Business Roundtable, for example, and Ben Bernanke, the chairman of the U.S. Federal Reserve, who briefed members of Congress this week after declaring that "I don't think our tools are strong enough to offset the effects of a major fiscal shock" of the cliff. The most vocal Democrats and Republicans in Congress have turned the floors of the House and Senate into pre-election spin rooms as each side tries to pin the blame on the other. But a stream of ideas to delay the December 31 day of doom floats through Capitol Hill brainstorming sessions. \* Liberal Democrat Dick Durbin, the second-ranking Senate Democrat, has alluded to a six-month delay, coupled with a $40 billion to $50 billion deficit-reduction down payment for the first half of the year. \* Conservative Republican Senator Lindsey Graham has touted a "mini deal" in November or December to delay decisions through March. It would contain a $20 billion deficit cut. \* Senate Budget Committee Chairman Kent Conrad, a longtime Democratic deficit hawk, said the "optimum outcome" would give Congress six more months to work out details on revamping the tax code and big government programs like Social Security and Medicare.

#### DOD energy programs don’t link---conservative won’t oppose

Davenport 12

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

The White House believes it has figured out how to get more money for clean-energy programs touted by President Obama without having it become political roadkill in the wake of the Solyndra controversy: **Put it in the Pentagon**. While details are thin on the ground, lawmakers who work on both energy- and defense-spending policy believe the fiscal 2013 budget request to be delivered to Congress on Monday probably won't include big increases for wind and solar power through the Energy Department, a major target for Republicans since solar-panel maker Solyndra defaulted last year on a $535 million loan guarantee. But they do expect to see increases in spending on alternative energy in the Defense Department, such as programs to replace traditional jet fuel with biofuels, supply troops on the front lines with solar-powered electronic equipment, build hybrid-engine tanks and aircraft carriers, and increase renewable-energy use on military bases. While Republicans will instantly shoot down requests for fresh spending on Energy Department programs that could be likened to the one that funded Solyndra, many support alternative-energy programs for the military. "I do expect to see the spending," said Rep. Jack Kingston, R-Ga., a member of the House Defense Appropriations Subcommittee, when asked about increased investment in alternative-energy programs at the Pentagon. "I think in the past three to five years this has been going on, but that it has grown as a culture and a practice - and it's a good thing." "If Israel attacks Iran, and we have to go to war - and the Straits of Hormuz are closed for a week or a month and the price of fuel is going to be high," Kingston said, "the question is, in the military, what do you replace it with? It's not something you just do for the ozone. It's strategic." Sen. Lindsey Graham, R-S.C., who sits on both the Senate Armed Services Committee and the Defense Appropriations Subcommittee, said, "I don't see what they're doing in DOD as being Solyndra." "We're not talking about putting $500 million into a goofy idea," Graham told National Journal . "We're talking about taking applications of technologies that work and expanding them. I wouldn't be for DOD having a bunch of money to play around with renewable technologies that have no hope. But from what I understand, there are renewables out there that already work." A senior House Democrat noted that this wouldn't be the first time that the **Pentagon has been utilized to advance policies that wouldn't otherwise be supported**. "They did it in the '90s with medical research," said Rep. Henry Waxman, D-Calif., ranking member of the House Energy and Commerce Committee. In 1993, when funding was frozen for breast-cancer research programs in the National Institutes of Health, Congress boosted the Pentagon's budget for breast-cancer research - to more than double that of the health agency's funding in that area. **Politically, the strategy makes sense**. Republicans are ready to fire at the first sign of any pet Obama program, and renewable programs at the Energy Department are an exceptionally ripe target. That's because of Solyndra, but also because, in the last two years, the Energy Department received a massive $40 billion infusion in funding for clean-energy programs from the stimulus law, a signature Obama policy. When that money runs out this year, a request for more on top of it would be met with flat-out derision from most congressional Republicans. Increasing renewable-energy initiatives at the Pentagon can also help Obama advance his broader, national goals for transitioning the U.S. economy from fossil fuels to alternative sources. As the largest industrial consumer of energy in the world, the U.S. military can have a significant impact on energy markets - if it demands significant amounts of energy from alternative sources, it could help scale up production and ramp down prices for clean energy on the commercial market. Obama acknowledged those impacts in a speech last month at the Buckley Air Force Base in Colorado. "The Navy is going to purchase enough clean-energy capacity to power a quarter of a million homes a year. And it won't cost taxpayers a dime," Obama said. "What does it mean? It means that the world's largest consumer of energy - the Department of Defense - is making one of the largest commitments to clean energy in history," the president added. "That will grow this market, it will strengthen our energy security." Experts also hope that Pentagon engagement in clean-energy technology could help yield breakthroughs with commercial applications. Kingston acknowledged that the upfront costs for alternative fuels are higher than for conventional oil and gasoline. For example, the Air Force has pursued contracts to purchase biofuels made from algae and camelina, a grass-like plant, but those fuels can cost up to $150 a barrel, compared to oil, which is lately going for around $100 a barrel. Fuel-efficient hybrid tanks can cost $1 million more than conventional tanks - although in the long run they can help lessen the military's oil dependence, Kingston said Republicans recognize that the up-front cost can yield a payoff later. "It wouldn't be dead on arrival. But we'd need to see a two- to three-year payoff on the investment," Kingston said. Military officials - particularly Navy Secretary Ray Mabus, who has made alternative energy a cornerstone of his tenure - have been telling Congress for years that the military's dependence on fossil fuels puts the troops - and the nation's security - at risk. Mabus has focused on meeting an ambitious mandate from a 2007 law to supply 25 percent of the military's electricity from renewable power sources by 2025. (Obama has tried and failed to pass a similar national mandate.) Last June, the DOD rolled out its first department-wide energy policy to coalesce alternative and energy-efficient initiatives across the military services. In January, the department announced that a study of military installations in the western United States found four California desert bases suitable to produce enough solar energy - 7,000 megawatts - to match seven nuclear power plants. And so far, those **moves have met with approval from congressional Republicans**. Even so, any request for new Pentagon spending will be met with greater scrutiny this year. The Pentagon's budget is already under a microscope, due to $500 billion in automatic cuts to defense spending slated to take effect in 2013. But even with those challenges, clean-energy spending probably won't stand out as much in the military budget as it would in the Energy Department budget. Despite its name, the Energy Department has traditionally had little to do with energy policy - its chief portfolio is maintaining the nation's nuclear weapons arsenal. Without the stimulus money, last year only $1.9 billion of Energy's $32 billion budget went to clean-energy programs. A spending increase of just $1 billion would make a big difference in the agency's bottom line. But it would probably be easier to tuck another $1 billion or $2 billion on clean-energy spending into the Pentagon's $518 billion budget. Last year, the Pentagon spent about $1 billion on renewable energy and energy-efficiency programs across its departments.

## elections – russia

#### No war

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

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

#### Romney is posturing, Putin doesn’t care

Turkish Weekly 9/6/12

<http://www.turkishweekly.net/news/141414/romney%C3%ADs-tough-russia-rhetoric-an-election-ploy-analysts-say.html>

Romney’s Tough Russia Rhetoric An Election Ploy, Analysts Say But relations have also taken several high-profile hits recently, such as when Putin accused the United States of sponsoring the anti-Kremlin opposition rallies that erupted after last December’s parliamentary elections. The two countries have also locked horns on Syria, with U.S. officials accusing Russia of aiding and abetting Syrian strongman Bashar al-Assad. Kremenyuk notes it’s difficult to ascertain just how successful the U.S.-Russian “reset” truly was – and whether that trend could follow Romney to the White House. “Anyone can understand whatever he wants about the ‘reset’: an improvement? To some extent we improved [our relations],” he said. “But does that mean we have now finally identified a new agenda, what both nations want from each other? No.” For his part, Putin said Wednesday he is ready to work with the next U.S. president regardless of who wins in the November election, so long as that person is ready to work with Russia “Whoever the American public elects, we will work with them,” he told RT TV in an interview on Wednesday. “But we will work together only as effectively as our partners want to.” Lukyanov, of Russia in Global Affairs, said the Kremlin has largely taken Romney’s sharp comments with a grain of salt. “When Romney repeatedly said that Russia is the main geopolitical foe of the United States, it was actually perceived with irony, because no one – including the most hawkish Americans – believes that,” he said. “This is seen as a sign of his inexperience and very little interest [in Russia].”

#### Relations collapse inevitable—election irrelevant

Bovt 9/12/12

Georgy Bovt is a political analyst.

http://www.themoscowtimes.com/opinion/article/whether-obama-or-romney-the-reset-is-dead/467947.html

Whether Obama or Romney, the Reset Is Dead During every U.S. presidential election campaign, there is a debate in Russia over whether the Republican or Democratic candidate would be more beneficial for the Kremlin. Russian analysts and politicians always fail to understand that Americans have shown little interest in foreign policy since the end of the Cold War. Even when foreign policy is mentioned in the campaign, Russia is far down the list as a priority item. The volume of U.S-Russian trade remains small. The recent Exxon-Rosneft deal notwithstanding, U.S. interest in Russia's energy projects has fallen, particularly as the Kremlin has increased its role in this sector. To make matters worse, the United States is determined to establish clean energy and energy independence, while Russia's gas exports are feeling the pinch from stiff competition with the U.S. development of shale gas production. Of course, traditional areas of cooperation remain: the transit of shipments to and from Afghanistan through Russia, Iran's nuclear program and the struggle against international terrorism. But the transit route into Afghanistan cannot, by itself, greatly influence bilateral relations as a whole, and progress on the other two points seems to have reached a plateau beyond which little potential remains for bringing the two countries into closer cooperation. On the positive side, a new visa agreement came into force this week that will facilitate greater contact between both countries' citizens. But it will be years before that significantly influences overall U.S.-Russian relations. A new agreement regarding child adoptions has also been implemented after a few disturbing adoption stories prompted Russia's media, with the help of government propaganda, to spoil the U.S. image in Russia. Meanwhile, both U.S. President Barack Obama and Republican candidate Mitt Romney support the U.S. missile defense program in principle, although the exact form and scope of its deployment differ among the candidates. Even though President Vladimir Putin, during his interview with RT state television last week, expressed guarded optimism over the prospect of reaching an agreement on missile defense with Obama, Russia seems to underestimate the degree to which Americans are fixated on missile defense as a central component of their national security. It is highly unlikely that any U.S. administration — Democratic or Republican — will ever agree to major concessions on missile defense. It even seemed that Kremlin propagandists were happy when in March Romney called Russia the United States' No. 1 foe. They were given another present when Obama, addressing the Democratic National Convention last week, said Romney's comment only proved that he lacked foreign policy experience and was locked in Cold War thinking. For the next two months, however, the two candidates are unlikely to devote much attention to Russia. Russia's internal politics will also be one of the key factors shaping future U.S.-Russian relations. The two-year jail sentence slapped on three members of Pussy Riot for their anti-Putin prayer in Moscow's main cathedral has already become a subject of discussion between Foreign Minister Sergei Lavrov and U.S. Secretary of State Hillary Clinton. Even the most pragmatic "pro-reset" U.S. administration would criticize to one degree or another Russia's poor record on human rights. It appears that Russia is moving increasingly toward confrontation rather than rapprochement with the West. The Kremlin now seems fully committed to spreading the myth that the U.S. State Department is the cause behind most of Russia's domestic problems and is bent on undermining its national security by deploying missile defense installations in Europe and by supporting the opposition. There are other disturbing signals as well. Take, for example, the United Russia bill that would prohibit Russian officials from owning bank accounts and property overseas, with particular attention paid to their holdings in the West. The ideological underpinning of this bill is that assets located in the West are tantamount to betrayal of the motherland. Then there is Russia's opposition to the U.S. Magnitsky Act. The Kremlin interprets this initiative as yet another confirmation of its suspicions that Washington is conspiring against it and that the bill's real U.S. motive is to blackmail Russian officials by threatening to freeze their overseas bank accounts and property. An increase in these anti-Western attitudes does not bode well for U.S.-Russian relations, even if Obama is re-elected in November. Regardless of which candidate wins, the reset is bound to either slowly die a natural death under Obama or be extinguished outright under Romney. As a result, the most we can likely expect from U.S.-Russian relations in the next four years is cooperation on a limited range of mundane issues.

## elections

#### The result is locked in – debate proves

Downie 10/4

<http://www.washingtonpost.com/blogs/post-partisan/post/obama-lost-the-first-debate-but-he-will-still-win-the-election/2012/10/04/9c3b7eb8-0deb-11e2-bd1a-b868e65d57eb_blog.html>

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Furthermore, most post-debate polling bumps come from previously undecided voters, of which there is a historically small amount in this campaign, thus making it even less likely that Romney could exceed past norms. And Romney would need to outdo history by quite a distance — only Harry Truman has come back from a national deficit as large or larger than Romney’s at this point in the campaign. If Romney would have to pull off a miracle to close the gap in national polling, he has no shot at matching the president in the electoral college. As mentioned above, forecasters commonly predict that Obama already has a big lead of safe and leaning states. If we assume Romney will improve in the polls, there would be around nine “swing states”: Colorado, Florida, Iowa, North Carolina, New Hampshire, Nevada, Ohio, Virginia and Wisconsin. There’s one problem here for Romney: He is trailing, and has been consistently trailing, in all but two — North Carolina, where he’s held a small lead, and Florida, this election’s closest thing to a 50-50 state. Romney doesn’t need to win two out of those nine; in almost every scenario, he will need six or seven out of those nine to win, including at least two or three states where he is behind by several points more than he is nationally. All of which brings me to the final point: Given the state of the race before last night’s debate, even most Romney backers would agree that a Romney victory would require a flawless campaign the rest of the way from Romney and a blunder or two from Obama. After six years of both these men running for and/or being president of the United States, is there really anyone out there who thinks Mitt Romney can go a month without making a single mistake? Who thinks Barack Obama, who has been playing it safe for at least several months now, will suddenly make a reckless error, as opposed to a merely lackluster performance? (Or, if you’re Sean Hannity and co., do you believe the lamestream media will suddenly forget their liberal bias and stop protecting the president while assaulting Mitt Romney?) Seriously, does anyone believe that? The fact is that, come October, presidential elections cannot permanently change course over a few days or hours (unlike, say, media narratives). The majority of voters have already made their decision, and the debates won’t provide enough of a boost to alter the contest’s trajectory. Sadly for Romney, the path the race is stuck on ends with his defeat.

#### Undecided voters aren’t paying attention

Harry Enten, Guardian election expert, 10/4/12, If Mitt Romney won the debate, will he win the election?, www.guardian.co.uk/commentisfree/2012/oct/04/mitt-romney-won-debate-win-election

We cannot expect that this or any one debate will turn an Obama edge into a large Romney lead. Romney is down by about 3 percentage points in the Real Clear Politics average. Only 5% of the electorate is truly undecided. Most of these undecided voters weren't watching the debate and probably won't make their choice until election day.

#### No impact to reduced turnout

Nate Cohn, New Republic Election Expert, Part-Time Georgetown Coach -- his articles go through a TNR editing process and are available for all on his blog, he has been profiled on New York Magazine and MSNBC, 10/1/12, Obama’s College Voter Trump Card, [www.tnr.com/blog/electionate/107974/obamas-college-voter-trump-card](http://www.tnr.com/blog/electionate/107974/obamas-college-voter-trump-card)

Even if turnout among these voters is down 18 percent—and that’s beneath 2004, by the way—the total number of young, disproportionately non-white, and Obama-friendly voters actually increases from 23.5 to 25.7 million.

Even in this relatively low-turnout scenario, 6.5 million new 18-22 year olds will enter the electorate and they can go a long way toward helping Obama compensate for declining turnout among ’08 voters or an increase in conservative turnout. If they vote 63-37 for Obama, the president would net-1.7 million voters.

If non-white or young voters turned out at ’08-levels in 2012, demographics would actually ensure that Obama does even better than he did four years ago. These same demographic trends give Democrats a bit of breathing room to withstand modest declines in enthusiasm among young voters without actually falling far behind where they stood four years ago.

With this in mind, it’s no surprise that Obama opened his campaign at Ohio State University, or that Michelle Obama is holding rallies on college campuses across the battleground states. Today’s college students didn’t vote four years ago, and even an underwhelming turnout from America's most diverse age group could help the Obama campaign make up for losses among voters who have abandoned their cause since 2008.

#### No internal link

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.”

#### Syria overwhelms the link

Dreyfuss, 10/4/12

Robert Dreyfuss is a freelance investigative journalist, [http://www.thenation.com/blog/170356/turkeys-nato-trap-obama#](http://www.thenation.com/blog/170356/turkeys-nato-trap-obama)

Turkey, a NATO member with a religious-Sunni, right wing political base, is setting a dangerous trap for President Obama. The United States cannot let itself be drawn into war with Syria by virtue of its formal alliance with Turkey, through NATO. Already, Turkey has been shelling Syria. For more than a year, Turkey’s Prime Minister Erdogan has been itching for a fight with Syria, and now – following a minor incident involving a single mortar shell that crossed the Syrian-Turkish border – he may get one. If he does, the United States has to stay out of it. Weirdly, it isn’t even known who fired the mortar, which landed in a Turkish village. As the New York Times reports: “It was unclear if the mortar that struck Turkey was fired by government forces or by rebels fighting to oust the government of President Bashar al-Assad of Syria.” The problem for Obama is, if he backs Turkey in what is looking increasingly like Turkish nationalist frenzy, a combination Sunni-Muslim solidarity with Syria’s Muslim Brotherhood rebels and old Ottoman Empire wistfulness, he’ll find himself involved in yet another Middle East war with no end. And if he doesn’t, count on Mitt Romney to accuse him of abandoning a NATO ally.

#### New military spending swings Florida and other battlegrounds

Thompson, 12

(Political Columnist-Forbes, “The Florida Effect: How Military Votes Could Hand Romney the White House,” 8/21, http://www.forbes.com/sites/lorenthompson/2012/08/21/the-florida-effect-how-military-votes-could-hand-romney-the-white-house/print/)

Much has been written about the wrangling and irregularities that surrounded Bush’s controversial victory — Gore actually won the popular vote nationwide — but one crucial factor in Bush’s Florida win has been largely overlooked. If Eglin Air Force Base in the state’s western Panhandle had been located in Alabama rather than Florida, Al Gore would have been sitting in the White House on 9-11. The counties around Eglin generated the most lopsided totals in the state favoring Bush, with the main county where the base is located giving Gore less than one in four votes. Not coincidentally, the only other county in the state where Bush did so well and Gore so badly was near the Navy’s big bases at Jacksonville. As the Wikipedia entry for that county observes, it is “a popular choice of residence for military personnel” stationed at those bases. So it was George Bush who was sitting in the White House on 9-11, because military votes had enabled him to overcome strong support for Gore in places like Miami-Dade County, winning a majority in both Florida and the Electoral College. Had Gore prevailed in Florida there probably wouldn’t have been an Iraq war three years later, and there might not have even been terrorist attacks on 9-11 since there would have been less disruption to the nation’s security team. Paradoxically, the preference of voters near big military bases in Florida for a “strong leader” like Bush may have led to a decade of war. But that’s just speculation; what is very real is the role that **voters motivated by military interests play in national elections** — a role that usually favors GOP presidential candidates. I’m not just talking about active-duty military personnel stationed at big bases in swing states like Colorado, Ohio and Virginia. I’m also referring to dependents whose lifestyles are determined by military pay and benefits, reservists residing in all 50 states, veterans who have retained their ties to the military, and civilians working at big bases whose jobs are endangered every time the Pentagon cuts spending. Add all these constituencies up, and they **amount to a pretty sizable voting bloc for any presidential candidate who is willing to throw money at the military.** Lately, those candidates have tended to be Republicans. Although Democrats presided over most of the big military buildups of the last century, their party’s thinking about defense was transformed by the Vietnam War. The left wing of the party became decidedly anti-military, just as the transition to an All Volunteer Force was making the military more conservative in its political leanings. This ideological divide, which has been documented by analysts such as Thomas Ricks, has made military voters more inclined to support Republicans than they were before Vietnam. It appears that the end of conscription and the growing professionalization in the ranks has produced a political culture tending to favor conservatives. Voters with ties to the military are not a large part of the electorate, so the impact of these trends on elections isn’t noticeable in most states. But in states like Florida that are fairly evenly balanced between supporters of the two national parties, the military vote can decide election outcomes. That’s especially true in presidential elections, because of the way in which the Electoral College awards votes on a winner-take-all basis from state to state. Since candidates can secure all of a state’s Electoral College votes with a modest plurality in the statewide balloting, military voters potentially exercise a disproportionate influence in states that are otherwise evenly balanced between the parties. Florida is the biggest prize in this sweepstakes given its rapid population growth. The 1990 census gave it 25 Electoral College votes because based on its population it had 23 members in the House of Representatives and the constitutionally mandated two U.S. Senators. The 2000 census gave it two more representatives and thus two more votes in the college. The 2010 census added two additional representatives, giving the Sunshine State a total of 29 Electoral College votes. So in this year’s balloting, Florida will be the only swing state that can deliver over a tenth of the 270 Electoral College votes candidates need to secure the presidency.

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#### DoD procurement professionals will ignore the CP–only fiat overcomes bureaucratic reluctance

Warwick 8

W.M. Warwick, Pacific Northwest National Laboratory, Dept. of Energy, 2008, Purchasing Renewable Power for the FederalSector: Basics, Barriers, and Possible Options, www.pnl.gov/main/publications/external/technical\_reports/PNNL-16485.pdf

To date, DOD has not used 10 USC 2394 or 10 USC 2922 (a) to enter into long-term power purchase agreements for renewable power. **The lack of precedent is a major reason why this authority has not been used**. Committing an agency to longer term contracts is risky and thus far, **procurement professionals have been reluctant to do so**. Their reasons are many and varied. One of the major stumbling blocks is inherent to the “ideal” renewable power contract model. As discussed, the best terms appear to be available by entering into a contract with a developer needing a power purchase contract to obtain construction financing. In other words, the contract is a promise to provide power from an as yet unbuilt project. There are limits to how far in advance the government can enter into contracts for future delivery of products and services. This also raises questions about how to pick a “winner.” To comply with Federal procurement requirements (10 USC 2922 (a) and 41 USC 253), the procurement should be competitive, which opens the door to offers from proposers and projects that may not be equal. Unfortunately, most procurement professionals feel (and are) unqualified to assess the merits of such proposals. Similarly, the power supply has to be synchronized with the current supplier’s contract termination. What happens if the new provider’s project isn’t operational when the current contract ends? Finally, what is the government cost estimate for a project like this? That requires a projection of future power costs, which does not exist and would be imperfect if it did. Available projections are not site specific enough to answer this question, and none extend out to the 30 plus years needed for the economic analysis. The National Institute of Standards and Technology (NIST) determined that LCC procedures are also inadequate for markets that are as volatile as energy and power markets have been and are likely to be into the future. Similarly, although the renewable power price can be forecasted with some precision, the necessary firming, shaping, and other services cannot. This point can be illustrated using the wind farm example cited previously (Figure 1). Finally, use of 10 USC 2922 (a) requires approval of the Secretary of Defense (SecDef). This means a contract will need to pass up the chain-of-command within a Service, through the Service Secretary, and then on to the SecDef. According to an Army general, decisions for SecDef approval pass through over 20 inboxes before they reach the SecDef. Because energy contracts are often time sensitive (many price offers expire within a day), this process may be too unwieldy to be effective.

#### All defense funds are going to designated, pre-existing programs—DoD ignoring new programs

Harrison 11

Todd Harrison, Center for Strategic and Budgetary Analysis, 2011, [www.csbaonline.org/wp-content/uploads/2011/07/2011.07.16-FY-2012-Defense-Budget.pdf](http://www.csbaonline.org/wp-content/uploads/2011/07/2011.07.16-FY-2012-Defense-Budget.pdf)

On January 6, 2011, prior to the official release of the FY 2012 budget request, Secretary of Defense Robert Gates announced the results of his efficiency initiative. The initiative, begun nearly a year ago, identified a total of $178 billion in potential savings over five years (FY 2012 to FY 2016), or six percent of the planned funding over that time period. Some $100 billion of the savings came from the Services and the remainder from defense-wide agencies, a government-wide pay freeze that applies to DoD civilians, and revised economic assumptions.3 Several high-profile weapon systems were affected by the announcement, including the Expeditionary Fighting Vehicle (EFV), the Joint Strike Fighter (JSF), and the Surface-Launched Advanced Medium-Range AirtoAir Missile (SLAMRAAM), which are discussed in more detail in Chapter IV of this report. Of the $178 billion in potential savings identified, $78 billion is being used to reduce total defense spending from FY 2012 to FY 2016 compared to what was projected in the FY 2011 FYDP. For example, the effect on the FY 2012 budget is a reduction of $13 billion from the $566 billion in base discretionary budget authority that was previously planned for FY 2012. The remaining $100 billion in potential savings is being reinvested within the defense budget in high-priority programs and activities, such as a new long-range bomber, next-generation jammer, and carrier-based unmanned strike and surveillance aircraft. The **funding for** these **new programs**, however, **could be at risk** in future years if the potential savings identified through the efficiency initiative do not materialize as projected. Previous attempts at achieving similar efficiencies have fallen short of their intended goal. For example, former Secretary of Defense Donald Rumsfeld suggested that DoD could save some $15 billion annually from efficiencies when he took office, roughly 5 percent of the annual budget at the time. But instead of declining, DoD’s peacetime operating costs grew substantially over the years that followed. Current DoD Comptroller Bob Hale wrote in a 2002 report, “After adjusting for changes in force size and inflation, day-to-day operating costs have consistently and persistently increased for decades.” Hale went on to conclude, “These barriers suggest that DoD should be realistic in assessing the prospects for future efficiency savings. The idea that multiple tens of billions of dollars a year can be saved through efficiencies over the next few years—and used to pay for new programs—is almost certainly unrealistic.”4 Unfunded Priori ties Each year, the Services rank and prioritize items for inclusion in the budget request. Unfunded priorities are those items not included in the budget request because they are a lower priority and do not fit within the funding ceiling set for the Department. The Services’ lists of unfunded priorities, sometimes referred to as “wish lists,” are routinely requested by Congress for consideration during their markup of the budget. The total amount of unfunded priorities grew dramatically over the past decade, rising from $9.5 billion in FY 2001 to a peak of $38 billion in FY 2008 (both figures in FY 2012 dollars). In the FY 2010 budget process, Secretary Gates required the Services to present their unfunded priorities to him for review before submitting them to Congress. Unfunded priorities for that year fell by an order of magnitude to just $3.5 billion. In FY 2011 unfunded priorities fell to $1.8 billion, and in FY 2012 they total only $1.2 billion. Nearly all of the unfunded priorities submitted to Congress are in procurement and O&M. This indicates that if the Services had additional funding available they would prioritize the maintenance of existing equipment and would procure additional equipment or spares to augment their inventory.

## econ impact d

#### Recent empirics go neg

Barnett, senior managing director of Enterra Solutions LLC, contributing editor/online columnist for Esquire, 8/25/’9

(Thomas P.M, “The New Rules: Security Remains Stable Amid Financial Crisis,” Aprodex, Asset Protection Index, <http://www.aprodex.com/the-new-rules--security-remains-stable-amid-financial-crisis-398-bl.aspx>)

When the global financial crisis struck roughly a year ago, the blogosphere was ablaze with all sorts of scary predictions of, and commentary regarding, ensuing conflict and wars -- a rerun of the Great Depression leading to world war, as it were. Now, as global economic news brightens and recovery -- surprisingly led by China and emerging markets -- is the talk of the day, it's interesting to look back over the past year and realize how globalization's first truly worldwide recession has had virtually no impact whatsoever on the international security landscape.

None of the more than three-dozen ongoing conflicts listed by GlobalSecurity.org can be clearly attributed to the global recession. Indeed, the last new entry (civil conflict between Hamas and Fatah in the Palestine) predates the economic crisis by a year, and three quarters of the chronic struggles began in the last century. Ditto for the 15 low-intensity conflicts listed by Wikipedia (where the latest entry is the Mexican "drug war" begun in 2006). Certainly, the Russia-Georgia conflict last August was specifically timed, but by most accounts the opening ceremony of the Beijing Olympics was the most important external trigger (followed by the U.S. presidential campaign) for that sudden spike in an almost two-decade long struggle between Georgia and its two breakaway regions.

Looking over the various databases, then, we see a most familiar picture: the usual mix of civil conflicts, insurgencies, and liberation-themed terrorist movements. Besides the recent Russia-Georgia dust-up, the only two potential state-on-state wars (North v. South Korea, Israel v. Iran) are both tied to one side acquiring a nuclear weapon capacity -- a process wholly unrelated to global economic trends.

And with the United States effectively tied down by its two ongoing major interventions (Iraq and Afghanistan-bleeding-into-Pakistan), our involvement elsewhere around the planet has been quite modest, both leading up to and following the onset of the economic crisis: e.g., the usual counter-drug efforts in Latin America, the usual military exercises with allies across Asia, mixing it up with pirates off Somalia's coast). Everywhere else we find serious instability we pretty much let it burn, occasionally pressing the Chinese -- unsuccessfully -- to do something. Our new Africa Command, for example, hasn't led us to anything beyond advising and training local forces.

## link u

#### Biofuel fights now

Cardwell 12

Diane Cardwell, NYTimes, 8/27/12, Military SPending on Biofuels Draws Fire, www.nytimes.com/2012/08/28/business/military-spending-on-biofuels-draws-fire.html?pagewanted=all

When the Navy put a Pacific fleet through maneuvers on a $12 million cocktail of biofuels this summer, it proved that warships could actually operate on diesel from algae or chicken fat.

“It works in the engines that we have, it works in the aircraft that we have, it works in the ships that we have,” said Ray Mabus, secretary of the Navy. “It is seamless.”

The still-experimental fuels are also expensive — about $27 a gallon for the fuel used in the demonstration, compared with about $3.50 a gallon for conventional military fuels.

And that has made them a **flash point in a larger political battle** over government financing for new energy technologies.

“**You’re not the secretary of energy**,” Representative Randy Forbes, a Republican from Virginia, told Mr. Mabus as he criticized the biofuels program at a hearing in February. “You’re the secretary of the Navy.”

The House, controlled by Republicans, has already approved measures that would all but kill Pentagon spending on purchasing or investing in biofuels. A committee in the Senate, led by Democrats, has voted to save the program. **The fight will heat up again** when Congress takes up the Defense Department’s budget again in the fall.

The naval demonstration — known as the Great Green Fleet — was part of a $510 million three-year, multiagency program to help the military develop alternatives to conventional fuel. It is a drop in the ocean of the Pentagon’s nearly $650 billion annual budget.

## Link Non-Unique

#### Election partisanship spills-over

Julianna Goldman, Bloomberg, 9/6/12, Obama the Bin Laden Killer Might Get 2013 Fiscal Cliff Gut Check, [www.bloomberg.com/news/2012-09-06/obama-the-bin-laden-killer-might-get-2013-fiscal-cliff-gut-check.html](http://www.bloomberg.com/news/2012-09-06/obama-the-bin-laden-killer-might-get-2013-fiscal-cliff-gut-check.html)

Still, the obstacles to agreement are enormous. The president and lawmakers will start at the negotiating table right after the November election, with little time elapsed for emotions to cool from months of bitter partisanship.

#### Collapses the lame duck session

Bill Frenzel, Brookings Institute, 7/10/12, The Fiscal Cliff: A Hard Landing Becomes More Likely, www.realclearmarkets.com/articles/2012/07/10/the\_fiscal\_cliff\_a\_hard\_landing\_becomes\_more\_likely\_99755.html

Campaign promises, not compromise solutions, will dominate the political scene until November. But what happens then? One idea is that the branches and parties will reach some miraculous accommodation in the lame-duck Session that will prevent our economy from falling off what Chairman Bernanke has called the "fiscal cliff."

Unfortunately, that notion is as unlikely as it is popular. The dimensions of the cliff are enormous. It is composed of many diverse elements. Policymakers well-accustomed to discussion, negotiation and compromise would find them daunting in a normal, full Session. Currently the process is mired in distrust, animosity, and ideological warfare.

In the short lame-duck Session, the environment could hardly be worse for solving the complicated fiscal problems by compromise. Except for spending bills, like the Transportation Act, compromise has become a lost art. Well defined, highly divisive positions that have defied serious negotiation for 2 years are unlikely to be moved substantially in a month.

#### Multiple peripheral issues will come up in the lame duck

Jake Sherman, Politico, 9/24, Hill braces for lame-duck frenzy, dyn.politico.com/printstory.cfm?uuid=3B5A05C4-0674-471F-8B0D-AFDFF7748AD8

Tax rates, spending cuts and the deficit will dominate the Capitol this fall, but lawmakers and lobbyists are quietly maneuvering to use the lame-duck session to clean up a whole mess of other issues that Congress has been unable — or unwilling — to handle.

First there’s the United States Postal Service, which will default on $11 billion worth of health care retirement payments in August. Negotiations are under way to patch its finances during the lame-duck session.

K Street and Capitol Hill are also moving closer than ever before to a deal to legalize online gaming — something that’s long simmered on the back burner but that may pass in the lame duck. Congress also may extend parts of the Foreign Intelligence Surveillance Act, which expire at the end of 2012.

Welfare programs are also on the block: Extending parts of Temporary Assistance for Needy Families may not get done until after the election, even though some programs expire at the end of September.

This diffuse set of bills and expiring deadlines has created a behind-the-scenes frenzy as lobbyists and lawmakers try to set in motion a few deals despite the gridlock that has dominated the 112th Congress.

The action may extend to other fronts, like the Dodd-Frank financial law — lawmakers and lobbyists have spotted opportunity to repeal a provision in the law that forces banks to transfer derivatives trades out of their shops.

Most of the movement is so preliminary that few key players are willing to talk about it on the record. Many of these items could be slipped into larger legislation, outside public view while Washington deals with the frenzy of finding compromise on tax rates for every American. Much hinges on the election — the landscape for legislative victories will change significantly depending on the outcome of November.

But inside the Capitol, there’s an increasing desire to pick off a bunch of legislative wins. Speaker John Boehner (R-Ohio) can hardly make his way across the House floor these days without being bombarded by Republicans who want their priority pushed before the 112th Congress ends.

But House leaders are warning that they can’t do everything that’s punted to a lame duck. Aides in both chambers say Congress will be swamped at the end of the year — making each issue an uphill climb.

#### Multiple fights coming up in lame duck session

Andrew Taylor, WaPo, 9/10/12, Congress returning to big agenda but is not likely to act on much, lexis

Fresh off a five-week vacation, lawmakers return to Washington on Monday for a truncated pre-election session in which Congress will do what it often does: punt problems to the future.

They face a slew of deadlines and the prospect of a debilitating "fiscal cliff" in January, yet are expected to take a pass on the big issues of taxes and spending cuts. Their focus seems to be on the bare minimum, preventing a government shutdown when the budget year ends Sept. 30.

Democrats controlling the Senate and Republicans leading the House also will try to set up votes intended to score political points or paint the other side with an unflattering brush two months before the election. Their efforts are sure to be overshadowed by the presidential campaign.

Topping the agenda of substantive business is a six-month spending bill to finance the government's day-to-day operations. The annual appropriations process on Capitol Hill collapsed about midway through the campaign season. The stopgap measure would give the next Congress time to fashion a full-year plan. There would be no more sure way of driving Congress's approval ratings even lower than for lawmakers to stumble into a government shutdown right before the Nov. 6 vote.

House Speaker John A. Boehner (R-Ohio) and Senate Majority Leader Harry M. Reid (D-Nev.) hope to present the measure this week, with a House vote as early as Thursday. The measure also will ensure a steady flow of money into disaster aid accounts.

More challenging is what to do with one of the most significant pieces of leftover business: a five-year farm bill. The legislation would overhaul crop safety-net programs while funding the food-stamp program, which provides assistance to more than 46 million people.

The current farm act expires at the end of September. House Republican leaders are wary of bringing the bill to the floor. It appears that Congress will at most opt for a temporary extension of the old bill, including drought aid for livestock producers whose assistance programs expired last year.

But it's not certain lawmakers will do even that. Without a formal extension, food-stamp and other nutrition programs would continue to function beyond Sept. 30. Most farmers would not be affected; the current farm bill covers 2012 crops regardless of when they are harvested.

The food and farm legislation has bedeviled House leaders, with many GOP conservatives wanting deeper cuts to food stamps than Democrats, whose votes are needed to pass the measure.

In all likelihood, political votes are on tap. Sen. Charles E. Schumer (N.Y,), a key Democratic Party strategist, wants a procedural vote on the House Republican budget plan written by Rep. Paul Ryan (Wis.), the GOP vice-presidential nominee.

"Let 'em embrace it again," Schumer said while making the rounds at the Democratic convention Thursday.

In the House, Republicans promise a vote Friday on a bill called the "No More Solyndras Act," which would phase out Energy Department loan guarantees for solar and wind energy companies. It's unlikely to even get a vote in the Senate.

Solyndra went bankrupt last year after receiving a loan guarantee from the Obama administration, even as some White House aides raised red flags. The California company's failure left taxpayers on the hook for $500 million.

But after a full five-day workweek, House members could be leaving the Capitol by Friday evening to return to their districts to campaign. At most, they'll return the following week. The Senate also is likely to have a shortened September schedule.

What may be most noteworthy then about the abbreviated pre-election session is not what Congress is doing but the stack of must-do work that lawmakers are leaving unfinished until a post-election lame-duck session.

Topping the list is the expiration of the full menu of George W. Bush-era tax cuts on Dec. 31. The resulting tax increases, when combined with more than $100 billion in automatic across-the-board spending cuts set to take effect at the same time, have become known as the "fiscal cliff." Economists warn that unless Congress acts, the one-two austerity punch would send the fragile economy back into recession.

The automatic cuts are punishment for the inability of last year's deficit-reduction "supercommittee" to strike a bargain to cut 10-year deficits by at least $1.2 trillion as promised by last summer's debt and budget pact. The Bush tax cuts were originally set to expire at the end of 2010 but were renewed two years ago. President Obama promises to raise the top tax rate on upper-bracket earners back to the Bill Clinton-era level of 39.6 percent, up from 35 percent.

Other pressing issues for the lame-duck session include averting an almost 30 percent cut in doctors' Medicare fees, the food and farm bill, passing the annual Pentagon policy bill, a Russia free-trade bill and legislation to overhaul the U.S. Postal Service, which is losing $25 million a day. Congressional inaction would mean that the Postal Service would default on a $5.5 billion payment into its pension fund that's due at the end of the month.

## Non-Unique

#### House key—they block

John Bresnahan, and Jake Sherman, Politico, 10/2/12, Gang of 8 plots secret retreat, dyn.politico.com/printstory.cfm?uuid=C3050ACB-F6BB-450C-B6FE-BE85BC8EA9EF

But the dynamic, which is sure to distract many in town, ignores a fundamental truth: The House of Representatives is where the action will be after the election.

House Republicans have already passed a bill that extends all the Bush tax rates for a year and moved on legislation to blunt massive cuts to Pentagon and defense spending. If past is precedent, Boehner will hold that up as the party’s negotiating position until the rest of the players are ready to come to the table.

Plus, Boehner and Majority Leader Eric Cantor’s Republican Conference has been hesitant to put enough revenue on the table to satisfy Democrats and refused to endorse any increase in taxes.

“The House has outlined a common-sense path forward by passing legislation that replaces the sequester and stops the looming tax hike for one year while Congress works to enact comprehensive tax and entitlement reform. Tax hikes are a nonstarter, as the speaker has made clear,” Boehner spokesman Kevin Smith said in a statement to POLITICO.

With Reid, Obama and Senate Democrats strongly opposed to extending the Bush tax rates for anyone making more than $200,000 annually and families making over $250,000 annually, the lines are set for a huge political clash. Insiders on both sides of the aisle are bracing for a rocky lame-duck session no matter who wins on Election Day.

If polls stay steady, Boehner will be at the helm of a House filled with Republicans disappointed that Obama will have another four years in the White House.

#### House wont’ compromise

Jonathan Weisman, NYTimes, 10/1/12, Leaders at Work on Plan to Avert Mandatory Cuts, www.nytimes.com/2012/10/02/us/senate-leaders-at-work-on-plan-to-avert-fiscal-cliff.html?\_r=2&hp&&pagewanted=all

House Republicans, favored to retain control regardless of the presidential and Senate results, have not been part of the Senate talks so far and could be difficult to sway to back a package with significant new revenue even if it wins bipartisan Senate support.

Democratic leaders are already signaling a major stumbling block: they will accept no deal that extends Bush-era tax cuts for the rich, even for six months.

#### Insiders agree

Jonathan Weisman, NYTimes, 10/1/12, Leaders at Work on Plan to Avert Mandatory Cuts, www.nytimes.com/2012/10/02/us/senate-leaders-at-work-on-plan-to-avert-fiscal-cliff.html?\_r=2&hp&&pagewanted=all

But the bipartisan group of senators says that medicine has already proved too tough to swallow. Instead, the backstop should be an acceptable deficit reduction program like Simpson-Bowles.

“The idea is to put in place an end product upfront that is already fairly agreeable,” said a Senate official familiar with the plans. “You’d basically be giving Congress six months to improve upon it.”

After so many false starts, even those involved in the talks are reluctant to express much optimism.

## 1ar – pc bad

#### Obama tying himself to an issue makes it less likely to pass—association polarizes the issue, kills his priority

Chris **Cillizza**, WaPo, 1/30/**12**, Obama: The most polarizing president. Ever., [www.washingtonpost.com/blogs/the-fix/post/obama-the-most-polarizing-president-ever/2012/01/29/gIQAmmkBbQ\_blog.html](http://www.washingtonpost.com/blogs/the-fix/post/obama-the-most-polarizing-president-ever/2012/01/29/gIQAmmkBbQ_blog.html)

What do those numbers tell us? Put simply: that the country is hardening along more and more strict partisan lines.

While it’s easy to look at the numbers cited above and conclude that Obama has failed at his mission of bringing the country together, a deeper dig into the numbers in the Gallup poll suggests that the idea of erasing the partisan gap is simply impossible, as political polarization is rising rapidly.

Out of the ten most partisan years in terms of presidential job approval in Gallup data, seven — yes, seven — have come since 2004. Bush had a run between 2004 and 2007 in which the partisan disparity of his job approval was at 70 points or higher.

“Obama’s ratings have been consistently among the most polarized for a president in the last 60 years,” concludes Gallup’s Jeffrey Jones in a memo summing up the results. “That may not be a reflection on Obama himself as much as on the current political environment in the United States, because Obama’s immediate predecessor, Bush, had similarly polarized ratings, particularly in the latter stages of his presidency after the rally in support from the 9/11 terror attacks faded.”

Our guess is that Jones’ latter hypothesis is the right one — that we are simply living in an era in which Democrats dislike a Republican president (and Republicans dislike a Democratic one) even before the commander in chief has taken a single official action.

The realization of that hyper-partisan reality has been slow in coming for Obama. But in recent months, he seems to have turned a rhetorical corner — taking the fight to Republicans (and Republicans in Congress, particularly) and all but daring them to call his bluff.

Democrats will point out that Republicans in Congress have played a significant part in the polarization; the congressional GOP has stood resolutely against almost all of Obama’s top priorities. And Obama’s still-high popularity among the Democratic base also exacerbates the gap.

For believers in bipartisanship, the next nine months are going to be tough sledding, as the already-gaping partisan divide between the two parties will only grow as the 2012 election draws nearer. And, if the last decade of Gallup numbers are any indication, there’s little turnaround in sight.

#### Hyper-partisanship means if Obama ‘owns’ an issue it dies – legislative negotiation is impossible

John **Harris**, Politico, 1/30/**12**, The bipartisan myth, dyn.politico.com/printstory.cfm?uuid=CC31CBCE-0735-CDC9-3D3FDD6144EE94D6

He’s being joined by a critical mass of Washington influentials — witnessing the inability of the two parties to find common ground on the budget in 2011 — who are ready to discard the old ideal: Politicians huddling behind closed doors to cut deals is no longer viewed as necessarily even a desirable scenario, much less a plausible one. “This election is built to have a fight,” Rep. Kevin McCarthy, a California Republican and the House majority whip, told POLITICO. “If you watch from the rise of the tea party [on the right] to the rise of the Occupiers [on the left]—in ’08, our country said they wanted a little more government. In 2010, they said, ‘Whoa, that was too much.’ I think 2012 is going to be the argument for the size and scope of what they want America to be, and that is healthy. We should have the debate of what we want this country to look like.” The correct response to Washington gridlock, by this reckoning, is not private deal-making but a public clash over core beliefs. Most Republicans don’t believe in raising taxes and would rather fight than split the difference. Most Democrats don’t believe benefits like Medicare should be cut or turned over to the states and are more than ready to take the argument to voters. Neera Tanden, an influential Democrat who heads the liberal Center for American Progress, echoed McCarthy. “Two different elections point in two different ways, and both sides are arguing over fundamental principles,” she said. Tanden argues that much of the commentary about Washington incorrectly supposes that it is petty obstacles — political posturing or the tactics of special interest groups — that prevent a return to grand bargains of the Andrews Air Force Base variety. “The debate has become so shrill and partisan people just assume it’s ridiculous,” she said, when the argument is actually over basic questions that may get resolved only when the electorate decides in an emphatic way which side is right. This analysis is shared by Rahm Emanuel, a veteran of Washington and Obama’s West Wing and now the mayor of Chicago. “We need to take on the mythology that divided government produces progress,” Emanuel said. “Divided government produces divided government.” The notion of closed-door bipartisan deals, he said, belongs to a bygone era: “Events have moved on. What the markets want, and what the world wants, is decisive action. That comes with single-party governance.” This scenario is in fact what Washington produced twice over the past decade. In the first part of President George W. Bush’s term, Republican dominance produced major tax cuts. In the first part of Obama’s term, Democratic dominance produced the largest overhaul of the nation’s health care system in decades. Neither event was the result of a closed-door bargaining session of the sort many Washington elites hold dear. If the Split the Difference Scenario has been exposed as a myth, perhaps no person has been more shaken by the discovery than Obama. He now believes, according to advisers and others familiar with his thinking, that there is scant opportunity for any kind of Washington grand bargain until 2013 — and perhaps not then, unless the results of the November election leave one party clearly empowered and the other so chastened it is ready to deal. This conclusion represents a painful falling to earth. Obama’s 2008 message was built on the idea that Washington governance had become irrational — distorted by the mad dash of politicians for publicity and momentary tactical advantage — and that his brand of cool rationality could bridge divides and restore order. The blame over why this didn’t happen seemingly began within hours of his inauguration — Republicans spurned his overtures, or his own agenda was called too radical and divisive. But it wasn’t until 2011 that the basic premise of Obama’s vision of Washington compromise collapsed. House Speaker John Boehner’s support for the ideal of Washington difference-splitting probably would match Obama’s, if he were left to his own devices. But he did not have support from his own GOP caucus to negotiate on the issue most important to Obama, raising taxes in tandem with spending cuts. In the meantime, there were other valiant efforts to revive the old era of closed-door deal-making. The congressional supercommittee could not reach accord. A budget plan by two longtime Washington worthies, Democrat Erskine Bowles and Republican Alan Simpson, was unveiled to widespread editorial-page and think-tank praise — and was promptly snubbed by actual politicians. The Senate Gang of Six, devoted to finding bipartisan budget solutions, managed to make progress in closed-door talks — until the very moment when partisans not in the talks got wind of specifics on raising revenue or cutting treasured entitlement programs. This record of frustration is reflected in Obama’s rhetoric. Last July, in a televised address to the nation, he was still fully committed to the idea that there was a grand bargain to be struck with Republicans on the budget. He noted that he was pushing Democrats to make it happen: “While many in my own party aren’t happy with the painful cuts it makes, enough will be willing to accept them if the burden is fairly shared. While Republicans might like to see deeper cuts and no revenue at all, there are many in the Senate who have said, ‘Yes, I’m willing to put politics aside and consider this approach because I care about solving the problem.’” He said voters are “fed up with a town where compromise has become a dirty word,” and concluded, “The American people may have voted for divided government, but they didn’t vote for a dysfunctional government.” A half-year later, Obama’s speeches still give a nod to the idea that bipartisan progress would be desirable if possible — but they often reveal his clear belief that this is no longer likely. Speaking to the House Democratic Issues Conference last week, Obama said of Republicans: “Where they obstruct, where they’re unwilling to act, where they’re more interested in party than they are in country, more interested in the next election than the next generation, then we’ve got to call them out on it.” If many Washington politicians have given up on the idea of grand bargains built on both sides giving a little, it is clear many voters still believe this should be the goal. A Pew survey earlier this month found that 58 percent of respondents believe Republican leaders should work with Obama to get things done, “even if it means disappointing some groups of Republican supporters.” A CBS/New York Times poll this month made a similar point even more starkly: 85 percent said that “Democrats and Republicans should compromise some of their positions in order to get things done.” As the dream of Washington deal-making has faded in recent months, some academic observers believe there is a more structural explanation than simply a looming election campaign. Keith T. Poole, a University of Georgia political scientist who studies congressional voting patterns, said that although there were grand bargains during the administrations of Bill Clinton and George H.W. Bush, the trend has been moving away from major legislative agreements since Ronald Reagan used a bloc of moderate Democrats and Republicans to strike landmark deals in the early 1980s. George W. Bush and Barack Obama have had a relative handful of centrists to help move their agendas in bipartisan fashion. “Steadily the moderates have all disappeared,” Poole said. “The moderate Southern Democrats were replaced by Republicans and then, one by one, the moderate Republicans were replaced either by Democrats or conservative Republicans.” Poole and research partner Howard Rosenthal of New York University have written that Republicans have become more conservative faster than Democrats have become more liberal. “The Republican Party has been steadily moving to the right since the 1970s,” Poole said. “The Republicans have moved about three times the speed to the right as the Democrats have moved to the left.” This conclusion about the inexorable pace of polarization will disappoint many centrist voters, on whom elections hinge — a fact that is producing its own round of partisan blame-casting. Emanuel said Democrats are naïve if they are waiting for “the inner Bob Dole to come out” among today’s Republicans, ready to make a deal. Instead, “any person who reaches out and tries to work with the president is going to get [challenged in] a primary.” “It’s just a widening, a rift, between us,” in the two major parties, said Sen. Dick Durbin (D-Ill.), a member of the Senate Gang of Six, “and that makes it very difficult to get back to those glory days with Tip O’Neill and Ronald Reagan” able to steer a compromise on Social Security. Rep. Chris Van Hollen (D-Md.), who was a member of the failed budget supercommittee, told POLITICO that, “I think there is a deal to be cut that the American people would perceive as very fair and very balanced,” with a mix of tax increases and spending cuts. But, he said, as a practical matter, Obama realizes from “bitter experience … that that’s not going to be possible” because of GOP opposition.