# 1

#### A – Interpretation – Affirmatives must specify the type of financial incentive they use

#### B – Violation – they only say “obtain”

#### Vote Neg—

#### First is Ground – many mechanisms count as financial incentives – not specifying allows them to spike out of disads that only apply to certain types – key because these links are the only core neg ground across bi-directional energies.

# election

#### Obama will win – but changes matter

SILVER 10 – 29 – 12 Elections Guru [Nate Silver, Oct. 28: In Swing States, a Predictable Election?, <http://fivethirtyeight.blogs.nytimes.com/2012/10/29/oct-28-in-swing-states-a-predictable-election/>]

Even in this last full week before the election, I’d encourage you to take a more macroscopic view of the election. We have seen, broadly speaking, a mild recovery for Mr. Obama over the past week or so in the polls. Among polls that have surveyed the race more than once since Denver, his numbers have improved more often than they have worsened in the most recent edition of the survey, and Mr. Obama’s predicted probability of winning the Electoral College has improved as a result (to 74.6 percent as of Sunday).

Then again, it may be best not to make too much of these mild fluctuations. There certainly seemed to the the possibility in a brief period after Charlotte that Mr. Obama would run away with the race, although even then forecast expected some reversion to the mean.

But other than in that convention bounce period, the polls have usually told about the same story: that Mr. Obama has a modest edge, but far from an insurmountable one, in the states necessary for him to win him 270 electoral votes.

The forecast model is a bit more confident now about Mr. Obama’s potential to turn that edge in to an Electoral College victory because there is so little time remaining in the race.

Still, an election held today would probably keep us up quite late before we knew the result with much certainty — and so, in all likelihood, will the one on Nov. 6.

**Nuclear alienates key constituent groups.**

**Mick 6/19** (Jason Daily Tech, Obama Fights For Nuclear, Environmentalists Label Him a Shill http://www.dailytech.com/Obama+Fights+For+Nuclear+Environmentalists+Label+Him+a+Shill/article18781.htm)

Despite these small victories, President Obama's nuclear vision faces many impending obstacles.  Despite the fact that you could tear down one of the nation's old reactors, replace it with a dozen modern clean reactor designs and still have less net waste, some environmentalist groups remain adamantly opposed to new plant construction.  They have vowed to bury the bid for clean nuclear power under a flood of lawsuits.  If the suits succeed, they will raise the cost of nuclear so high, that it can't even compete with the most expensive forms of nuclear energy, like solar power.

And perhaps the biggest obstacle to Obama's nuclear vision will come in 2012.  That is the year when he will face reelection.  That may prove challenging given that one of his former key constituent groups—the environmental lobby—has become one of his staunchest critics.  Regardless, the U.S. is making its first true nuclear progress in 30 years, and that is among the many factors that will already make President Obama's presidency noteworthy.

**Obama’s margin for error is small --- it costs him the election.**

**TNF 12** (The New Fuelist, Obama’s tall environmental task in 2012 http://www.newfuelist.com/blog/obama-coal-regulations-keystone-pipeline)

In case you can’t see it, that’s a treacherous tightrope Barack Obama is walking on these days whenever he steps into the circus-like national energy and environmental policy debate. And his margin for political error on environmental issues will shrink even more during this election year. To avoid alienating environmentalists who supported him in 2008, he must not forget to occasionally—and substantially—lean to the left. But if he wants to hold on to coveted independent voters who are more worried about the slumping economy than they are about pollution, he must also periodically shift back to the middle and right.

The proposed Keystone XL pipeline embodies the President’s conundrum. From the right, calls for increased “energy security” and for the creation of (a disputed number) of pipeline-related jobs make it hard for him to say no. On the left, a large and organized anti-pipeline contingent has taken pains to turn the decision on the pipeline—which will carry crude made from Canadian oil sands, the extraction and production of which makes the fuel much more greenhouse gas-intense than conventional oil—into a political make-or-break for Obama on climate change.

The administration spent 2011 establishing what it must view as a politically necessary middle ground on the environment. It engineered a drastic ratcheting up of fuel efficiency standards for automakers, and sold it as a way to both reduce greenhouse gas emissions and the burden on the consumer. It also introduced landmark regulations on air pollution from power plants, while placating utilities—and outraging many supporters—by delaying the EPA’s proposed tightening of the nation’s standards for smog. And it earned at least temporary relief from pressure to decide on the Keystone XL by punting the issue past the election, to 2013.

But it’s going to be tougher to maintain balance on the tightrope this year. Congressional Republicans, by demanding a much-earlier Obama decision on the Keystone XL in exchange for their support of the recent payroll tax extension, have hinted at their party’s desire to force the President’s hand on environmental issues. The GOP’s presidential nominee will undoubtedly attempt to paint Obama as an over-regulator and irrational environmentalist—an attack line which will warrant a defense. And therein lies Obama’s tall task: to defend his administration’s substantial forays into environmental regulation in terms that resonate with independents whose main concern is the economy—all while simultaneously ensuring that his frustrated environmentalist supporters don’t completely lose their patience.

#### Romney will undermine Russia relations

LARISON 6 – 27 – 12 Columnist for the American Conservative [Daniel Larison “U.S.-Russian Relations Would Get Much Worse Under Romney” <http://www.theamericanconservative.com/larison/u-s-russian-relations-would-get-much-worse-under-romney/>]

Putin doesn’t actually want a “hard-line conservative in the White House.” Putin distrusts the U.S. because he believes that the Bush administration behaved in an ungrateful and untrustworthy fashion in the previous decade, and U.S.-Russian relations improved as much as they did because the current administration seemed to be more reliable. U.S.-Russian relations reached their lowest point in the last twenty years in no small part because of a “more active U.S. policy” toward the Middle East, the South Caucasus, and central Europe. Putin might be willing to deal with a more hard-line American President, but only so long as it this translated into tangible gains for Russia. Provided that the hard-liner was willing to live up to his end of the bargain, there could be some room for agreement, but there isn’t any. Since Romney’s Russia policy is essentially to never make any deals with the current Russian government, Putin doesn’t have much of an incentive to cooperate. That will guarantee that U.S.-Russian relations will deteriorate much more than they have in the last year.

#### Nuclear war – Terrorism, Prolif, multiple hotspots, turns case

ALLISON 11 Director @ Belfer Center for Science and Int’l Affairs @ Harvard’s Kennedy School, Former Assistant Secretary of Defense, Robert D. Blackwill, Senior Fellow – Council on Foreign Relations [Graham Allison, “10 Reasons Why Russia Still Matters”, Politico -- October 31 -- <http://dyn.politico.com/printstory.cfm?uuid=161EF282-72F9-4D48-8B9C-C5B3396CA0E6>]

That central point is that Russia matters a great deal to a U.S. government seeking to defend and advance its national interests. Prime Minister Vladimir Putin’s decision to return next year as president makes it all the more critical for Washington to manage its relationship with Russia through coherent, realistic policies. No one denies that Russia is a dangerous, difficult, often disappointing state to do business with. We should not overlook its many human rights and legal failures. Nonetheless, Russia is a player whose choices affect our vital interests in nuclear security and energy. It is key to supplying 100,000 U.S. troops fighting in Afghanistan and preventing Iran from acquiring nuclear weapons. Ten realities require U.S. policymakers to advance our nation’s interests by engaging and working with Moscow. First, Russia remains the only nation that can erase the United States from the map in 30 minutes. As every president since John F. Kennedy has recognized, Russia’s cooperation is critical to averting nuclear war. Second, Russia is our most consequential partner in preventing nuclear terrorism. Through a combination of more than $11 billion in U.S. aid, provided through the Nunn-Lugar Cooperative Threat Reduction program, and impressive Russian professionalism, two decades after the collapse of the “evil empire,” not one nuclear weapon has been found loose. Third, Russia plays an essential role in preventing the proliferation of nuclear weapons and missile-delivery systems. As Washington seeks to stop Iran’s drive toward nuclear weapons, Russian choices to sell or withhold sensitive technologies are the difference between failure and the possibility of success. Fourth, Russian support in sharing intelligence and cooperating in operations remains essential to the U.S. war to destroy Al Qaeda and combat other transnational terrorist groups. Fifth, Russia provides a vital supply line to 100,000 U.S. troops fighting in Afghanistan. As U.S. relations with Pakistan have deteriorated, the Russian lifeline has grown ever more important and now accounts for half all daily deliveries. Sixth, Russia is the world’s largest oil producer and second largest gas producer. Over the past decade, Russia has added more oil and gas exports to world energy markets than any other nation. Most major energy transport routes from Eurasia start in Russia or cross its nine time zones. As citizens of a country that imports two of every three of the 20 million barrels of oil that fuel U.S. cars daily, Americans feel Russia’s impact at our gas pumps. Seventh, Moscow is an important player in today’s international system. It is no accident that Russia is one of the five veto-wielding, permanent members of the U.N. Security Council, as well as a member of the G-8 and G-20. A Moscow more closely aligned with U.S. goals would be significant in the balance of power to shape an environment in which China can emerge as a global power without overturning the existing order. Eighth, Russia is the largest country on Earth by land area, abutting China on the East, Poland in the West and the United States across the Arctic. This territory provides transit corridors for supplies to global markets whose stability is vital to the U.S. economy. Ninth, Russia’s brainpower is reflected in the fact that it has won more Nobel Prizes for science than all of Asia, places first in most math competitions and dominates the world chess masters list. The only way U.S. astronauts can now travel to and from the International Space Station is to hitch a ride on Russian rockets. The co-founder of the most advanced digital company in the world, Google, is Russian-born Sergei Brin. Tenth, Russia’s potential as a spoiler is difficult to exaggerate. Consider what a Russian president intent on frustrating U.S. international objectives could do — from stopping the supply flow to Afghanistan to selling S-300 air defense missiles to Tehran to joining China in preventing U.N. Security Council resolutions. So next time you hear a policymaker dismissing Russia with rhetoric about “who cares?” ask them to identify nations that matter more to U.S. success, or failure, in advancing our national interests.

# INDIA

#### India is poised to become a nuclear exporter due to lack of US competition in the small reactor market. The plan obviously reverses this. Exports are key to Indian nuclear industry.

CSIS, 2010 [ “India’s Nuclear Push” <http://csis.org/blog/india%E2%80%99s-nuclear-push>]

“In India's statement to the 54th General Conference of the International Atomic Energy Agency (IAEA) in Vienna, Indian Atomic Energy Commission chairman Srikumar Banerjee said that Nuclear Power Corporation of India Ltd (NPCIL) is ‘ready to offer Indian PHWRs of 220 MWe or 540 MWe for export’”. ¶ It’s happening– second-tier nuclear suppliers from China, South Korea, and now India are waking up to the opportunities that may emerge from intensified interest in nuclear power. India is entering the nuclear supply business at a time when new nuclear states are looking for alternatives to the huge, expensive reactors sold by the French, Russians, Japanese, Canadians, and Americans. ¶ ¶ Last year, Korea won the plum contract in the Middle East – a $20 billion agreement to build 4 nuclear power reactors in the United Arab Emirates. The UAE plans to construct a total of 10 reactors, using one contractor. China, while busily constructing nuclear power plants at home, will build a few new reactors in Pakistan and reportedly is interested in Turkish and Arab state plans to import. India will be next off the starting block of this export race.¶ ¶ There’s no way to predict how price-competitive India’s export reactors will be. NPCIL is a public enterprise under the control of the government’s Department of Atomic Energy. One of the suggested virtues of the U.S.-India nuclear deal was that the Indian nuclear sector would be forced to clean up its act as foreign competition grew in India. One way for the NPCIL to become more self-sustaining is through exports. ¶ ¶ What will motivate nuclear power newcomers to buy Indian, Korean or Chinese? First, the reactor vendors from the advanced nuclear states are in disarray. AREVA has its much-publicized cost overruns in Olkiluoto; Japanese vendors do not have an export history; and Russian reactors were previously sold only in the Eastern bloc countries or allies. Russia will expand from reactors in India and Iran to potential contracts with Turkey and Vietnam.¶ ¶ China, South Korea and India all have smaller reactors to offer. In the United States, while there is interest in small modular reactors, there aren’t any licensed. These smaller reactors are more likely to fit the needs of states that are new to nuclear power. Not only do they lack the billions of dollars it takes to build large 1000MWe-1600MWe reactors, but they also lack the extensive transmission grids to accommodate large, centralized electricity generators.

#### Indian nuclear industry is essential to indian growth—2 internal links—first, shores up domestic energy supply. Second, manufacturing independently boosts the domestic economy

World Nuclear News, 2009 [http://www.world-nuclear-news.org/NN-Indian\_joint\_venture\_to\_produce\_forgings-301109.html]

India will have a world-class heavy forging facility for future nuclear power plants after a joint venture by Nuclear Power Corporation of India Ltd (NPCIL) and Larsen & Toubro (L&T).

NPCIL-LandT¶ The signing of the joint venture agreement in Mumbai¶ The joint venture will construct a new facility at L&T's existing manufacturing site in Hazira, Surat, Gujarat state, which will have a dedicated steel melt shop producing ingots of up to 600 tonnes, as well as a heavy forge shop equipped with a forging press that will be amongst the largest in the world. The facility will supply finished forgings for nuclear reactors, pressurizers and steam generators, and also heavy forgings for critical equipment in the hydrocarbon sector and for thermal power plants. The coastal location of the Hazira plant will also facilitate multi-modal transportation and export of parts produced at the joint venture facility.¶ In a joint statement, the companies said: "The new fully integrated facility ... would significantly augment India's capabilities in manufacturing critical components for the nuclear power industry." They added, "Indigenous manufacture of forgings will close a critical cap in Indian industry's capability to produce equipment for nuclear, thermal power and hydrocarbon plants. It will enable a significant reduction in cycle times."¶ ¶ Anil Kakodkar, secretary of the Department of Atomic Energy and chairman of the Atomic Energy Commission, commented: "The establishment of JV between NPCIL and L&T reflects our vision of steady progress for growth of nuclear power in the country in a self reliant manner." He added, "The facility would contribute in closing the gap in the supply chain for nuclear power reactors, a wide spectrum of installations for nuclear fuel cycle and other infrastructure applications, like hydrocarbon and power."¶ ¶ L&T chairman and managing director A M Naik added, "This JV will place India amongst the few countries in the world capable of producing nuclear grade heavy forgings. When combined with the established facilities in Hazira, this venture will form part of a fully integrated high technology manufacturing complex." He noted that L&T has previously provided NPCIL with nuclear power plant systems and equipment and that the new joint venture "will add a new dimension to our long standing relationship."¶ ¶ According to a Bloomberg report, the new plant will start in 2011, while exports are set to begin by 2013.¶ ¶ L&T is India's biggest engineering and construction company and makes reactor pressure vessels for the country's pressurized heavy water reactors (PHWRs), fast breeder reactor and steam generators. It has been involved in supply of equipment, systems and services for nearly all the PHWRs that have been indigenously built, including the manufacture of calandrias, end-shields, steam generators, primary heat transport system and heat exchangers.¶ ¶ The company signed four agreements with foreign nuclear power reactor vendors in early 2009. The first, with Westinghouse, sets up L&T to produce component modules for the Westinghouse AP1000 reactor. The second agreement was with Atomic Energy of Canada Ltd "to develop a competitive cost/scope model for the ACR-1000." In April, L&T signed an agreement with Russia's AtomStroyExport primarily focused on components for the next four VVER reactors at Kudankulam, but extending beyond that to other Russian VVER plants in India and internationally. In May, it signed an agreement with GE-Hitachi to produce major components for ABWRs - the two companies hope to utilize indigenous Indian capabilities for the complete construction of nuclear power plants including the supply of reactor equipment and systems, valves, electrical and instrumentation products for ABWR plants to be built in India.

#### Indian Growth Prevents indo-pak war

Kapur 08 [Associate Professor in the Department of National Security Affairs at the U.S. Naval Post-graduate School and a Faculty Affiliate at Stanford University's Center for International Security and Cooperation

(Paul, Ten Years of Instability in a Nuclear South Asia, International Security, Volume 33, Number 2, Fall 2008]

The Indians, for their part, have pursued improved relations with Pakistan for two principal reasons, neither of which stems from nuclear deterrence. First, India's main national priority has become continued economic growth, which Indian leaders believe is essential if the country is to reduce poverty, shed its "third-world" status, and join the first rank of nations.[54](http://muse.jhu.edu.proxy.library.emory.edu/journals/international_security/v033/33.2.kapur.html" \l "f54) Greater prosperity, in turn, has led to rising economic aspirations among the Indian electorate. Indians increasingly expect, as Chengappa puts it, "better jobs, the American dream." Therefore the government seeks "to focus on growth and to keep the peace," rather than squander resources on continued Indo-Pakistani conflict.[55](http://muse.jhu.edu.proxy.library.emory.edu/journals/international_security/v033/33.2.kapur.html" \l "f55)

**Extinction**

**GSN, 3-16-2010**

[Global Security Newswire, “Regional Nuclear War Could Devastate World Population, Report Warns,” http://www.globalsecuritynewswire.org/gsn/nw\_20100315\_4193.php]

Computer modeling suggests a nuclear exchange between India and Pakistan would block out the sun with large amounts of airborne debris, disrupting global agriculture and leading to the starvation of around 1 billion people, *Scientific American* reported in its January issue (see *GSN*, March 4). The nuclear winter scenario assumes that cities and industrial zones in each nation would be hit by 50 bombs the size of the atomic bomb dropped on Hiroshima, Japan, in World War II. Although some analysts have suggested a nuclear exchange would involve fewer weapons, researchers who created the computer models contended that the panic from an initial nuclear exchange could cause a conflict to quickly escalate. Pakistan, especially, might attempt to fire all of its nuclear weapons in case India's conventional forces overtake the country's military sites, according to Peter Lavoy, an analyst with the Naval Postgraduate School. The nuclear blasts and subsequent blazes and radiation could kill more than 20 million people in India and Pakistan, according to the article. Assuming that each of the 100 bombs would burn an area equivalent to that seen at Hiroshima, U.S. researchers determined that the weapons used against Pakistan would generate 3 million metric tons of smoke and the bombs dropped on India would produce 4 million metric tons of smoke. Winds would blow the material around the world, covering the atmosphere over all continents within two weeks. The reduction in sunlight would cause temperatures to drop by 2.3 degrees Fahrenheit for several years and precipitation to drop by one-tenth. The climate changes and other environmental effects of the nuclear war would have a devastating affect on crop yields unless farmers prepared for such an occurrence in advance. The observed effects of volcano eruptions, smoke from forest fires and other events support the findings of the computer modeling, the researchers said. "A nuclear war could trigger declines in yield nearly everywhere at once, and a worldwide panic could bring the global agricultural trading system to a halt, with severe shortages in many places. Around 1 billion people worldwide who now live on marginal food supplies would be directly threatened with starvation by a nuclear war between India and Pakistan or between other regional nuclear powers," wrote Alan Robock, a climatology professor at Rutgers University in New Jersey, and Owen Brian Toon, head of the Atmospheric and Oceanic Sciences Department at the University of Colorado at Boulder.

# Budget DA

#### DOD is moving to a lighter and more agile force structure—2013 budget request is the first step in implementing that strategy.

Zee News 8/7/12 [“Curtailing of defence budget to throw new challenges: Panetta,” Zee News, Last Updated: Tuesday, August 07, 2012, 16:48, pg. http://zeenews.india.com/news/world/curtailing-of-defence-budget-to-throw-new-challenges-panetta\_792176.html

Asked to reduce the defence budget by USD 487 billion over the next decade, the Pentagon is faced with challenge to maintain a force strong enough to meet the challenges of the future, US Defence Secretary Leon Panetta has said.   
"It is a period of great challenge for the Department, but we have also taken the mandate to reduce the defense budget by USD 487 billion over the next decade as an opportunity to build the force we need to confront the security threats and challenges of the future," Panetta said.   
In his remarks to the Association of Defense Committees, Monterey, California, Panetta referred to the new defense strategy unveiled this year. That strategy consists of five key elements, he said.   
"As we draw down from the wars, we will be smaller and leaner, but we must remain agile, flexible, ready and technologically advanced. We will rebalance our global posture and presence to emphasise the Asia-Pacific and the Middle East," he said.

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"We will build innovative partnerships and strengthen key alliances and partnerships elsewhere in the world. We must ensure we can quickly confront and defeat aggression from any adversary anytime, anywhere. "Finally, this can't simply be about cutting we have to make key investments in technologies and capabilities, including our industrial base," said the Defense Secretary.   
Panetta said the Defense Department's budget request for 2013 was the first step in implementing this strategy.

#### They undermine that effort by trading off with modernization investments.

Parrish 5/10/12 [Karen Parrish, “Panetta, Dempsey: DOD Budget Request Reflects Tough Choices,” American Forces Press Service, May 10, 2012, pg. http://www.defense.gov/news/newsarticle.aspx?id=116287

To meet those cuts, department senior leaders worked with President Barack Obama to craft a strategy outlining defense priorities, the secretary said. They then built a spending plan that both supports that strategy and meets the Budget control Act’s spending caps, he added.

“My concern is that if Congress now tries to reverse many of the tough decisions that we reached by adding several billion dollars to the president's budget request, then they risk not only potential gridlock … [but] they could force the kind of trade-offs that could jeopardize our national defense,” Panetta said.

The secretary described some of those trade-offs. If DOD leaders can’t retire aging ships and aircraft, he said, they will have to realize savings in areas such as modernization investment.

If the department can’t reduce force structure after 2014, “Congress would be forcing us to reduce readiness. We would have to cut training [and] we'd have to cut equipment,” Panetta added.

And if Congress limits the Pentagon’s ability to put military health care costs on what the secretary called a sustainable track, lawmakers would limit defense options to invest in “new technologies that we believe are critical to the force we need for the future,” he said.

Dempsey said he appreciates the difficulties lawmakers must contend with in managing military spending as U.S. military involvement in Afghanistan continues, and complex security challenges lie ahead.

The chairman said he and Panetta, along with the service chiefs and combatant commanders, faced the same issues when they prepared their budget request.

DOD’s spending plan “is a responsible investment in our nation’s security,” Dempsey said.

The challenge in finalizing defense funding is to “make sure our armed forces have what they need -- and no more than we need -- to keep America immune from coercion,” the chairman said.

DOD’s budget request reflects a carefully devised set of choices to sustain the joint force, Dempsey said.

Those choices, he added, reflect “the right mix among force structure, modernization, readiness, pay and benefits. Different choices will produce a different balance.”

#### The cuts risk nuke war—Modernization is key

Skelton 8/21/12—former chair of the U.S. House Armed Services Committee [Former U.S. Rep. Ike Skelton, D-Mo., “Guest commentary: Defense cuts we can't afford,” St. Louis Post-Dispatch, August 21, 2012 12:00 am, pg. http://www.stltoday.com/news/opinion/guest-commentary-defense-cuts-we-can-t-afford/article\_f82a499b-496f-59dd-b2ce-fa8a2cf593f6.html

Without a thorough study of the art of war and first-rate equipment, the U.S. military will be far less able to deter gathering conflicts or quickly resolve conflicts we are unable to avoid. The "Powell Doctrine" of only risking our troops when backed up by overwhelming force and a clear path to decisive victory could be at risk. With our unique portfolio of global responsibilities, we could find it difficult to simultaneously pursue terrorists, contain Iran and North Korea, counter a rising China, and deal with exploding hot spots like Syria today.

Those who say we can risk skipping one or two generations of military development are poor students of military history. America rose from a young, regional power to a formidable military force over the course of World War I alone. And Germany rose from the ashes of that war to threaten all of Europe in less than two decades.

Today, technology has accelerated the pace of change, and our adversaries are certainly not sitting on their hands. Russia and China are both building sixth-generation stealth fighters, while Iran and North Korea race to develop nuclear InterContinental Ballistic Missiles. The rise of cyber weapons puts America's highly networked economy and society at particular risk. We can choose to delay our defenses against these developing threats, but the threats themselves won't wait.

# Solvency

#### Say No

**Low 09** – Defence Science & Technology Agency [Low Hong Kuan, “Public-Private Partnerships in Defense Acquisition¶ Programs—Defensible?,” Submitted in partial fulfillment of the¶ requirements for the degree of¶ MASTER IN BUSINESS ADMINISTRATION¶ from the¶ NAVAL POSTGRADUATE SCHOOL, December 2009

Meanwhile, the rest of the world was slow to catch up with the UK defence PPPs¶ phenomenon. PricewaterhouseCoopers (2005) reported that, out of the 28 European¶ Union (EU) member countries, Germany was the only other country that implemented some defence PPPs. Others, such as Finland, France, the Netherlands, and Sweden, were¶ in the midst of discussions. In the U.S., the barriers to defense PPPs are succinctly¶ summed up by Held, et al. (2002):

The most prominent barriers to greater collaboration are (1) intellectual¶ property concerns, which combine with the fact that most companies do¶ research for their own purposes, not as a service for hire; and (2)¶ excessively bureaucratic requirements and the related distrust of¶ government involvement and oversight in company affairs. When¶ commercially oriented companies weigh these burdens against the¶ relatively small size of the Army market, other limitations on profits, and¶ the perceived fickleness of the government as a customer, the benefits of¶ collaboration generally fail to overcome them. (p. 36) pg. 7-8 //AFF

#### High bidding cost deters participation

**Dixon et al. 05** – Chair in Sustainable Futures in the Built Environment @ University of Reading [Dr. Timothy Dixon, Gaye Pottinger (¶ Senior Research Officer in the ¶ College of Estate Management @ University of Reading), Alan Jordan (Lecturer in the ¶ College of Estate Management @ University of Reading), “Lessons from the private finance initiative in the UK: Benefits, problems and critical success factors,” Journal of Property Investment & Finance 23. 5 (2005): 412-423.

Meanwhile, the high bidding costs represent an opportunity cost and high risk to firms contemplating market entry, acting as a barrier to participation in PFI market and reducing market competitiveness. Those firms that have been successful in PFI market have also become so adept at assessing and pricing risks that they are becoming more selective about the contracts for which they bid. Competition for individual contracts is therefore also reduced.

# Defense

#### Deterrence not key to Asian stability

Deepak **Nair**, Research Associate at the Institute of Southeast Asian Studies. 200**8**. (Contemporary Southeast Asia Vol. 31, No. 1. pg 124, [http://www.accessmylibrary.com/article-1G1-198805524/regionalism-asia-paci](http://www.accessmylibrary.com/article-1G1-198805524/regionalism-asia-pacificeast-asia.html)ficeast-asia.html. )

As highlighted in this article, the United States remains key to the process of regionalism in Asia. Its exclusion placed severe limits over how far the exclusive APT model could go, and has in turn strengthened the belief in the necessity of an inclusive regionalism that involves the membership of the US. However, the assumption that an inclusive model that involves the US will decidedly lead to a more meaningful regionalism must be questioned rigorously. A closer look at America's interests and hegemonic preferences discloses the complex nature of US power in Asia. On the one hand, US hegemony, centered on its hub-and-spoke alliances, contributes to regional order by managing Great Power rivalries, mitigating security dilemmas, allaying the security concerns of smaller Asian states and by managing regional conflicts. However, the US remains a status quo power in Asia, one that seeks to preserve the existing patterns of security dilemmas and regional disputes as these elements impart to its presence relevance and rationale. As a "holding operation", US hegemony has been effective in managing regional conflicts, but may not necessarily seek their full and sustainable resolution.^^ Thus, America's preference for bilateral alliances over any multilateral or regional project is not only an outcome of the unstable security politics of the region, but also because of the advantages it presents for its grand strategy.''" Alagappa takes this thread further and challenges the assumption of unproblematic US power in Asia by pointing out the diverse trajectories of Southeast and Northeast Asia. While US military withdrawal has been accompanied by thriving multilateralism and indigenous responses to formulate regional order in the former, regional disputes remain protracted in the latter in the presence of deep American involvement.''" Moreover, stability in Asia is not merely a product of American power; there are several other factors that need to be accounted for: successful state formation and modernization, the fostering of normative structures and economic development, among others.^" American power presents a confounding dilemma: its hegemonic structure is a less than ideal basis for regional order and yet it remains a viable — and for some, an important — basis for order and stability in the region. Regionalism that includes the United States may reflect an appreciation of the complex political and economic realities of the region, but it may still not hold out much beyond that. Therefore, the argument that the inclusion of the US would provide the EAS with a "distinct and sustainable future'" is not entirely tenable.'^

Cyber war infeasible

Clark, MA candidate – Intelligence Studies @ American Military University, senior analyst – Chenega Federal Systems, 4/28/’12

(Paul, “The Risk of Disruption or Destruction of Critical U.S. Infrastructure by an Offensive Cyber Attack,” American Military University)

The Department of Homeland Security worries that our critical infrastructure and key resources (CIKR) may be exposed, both directly and indirectly, to multiple threats because of CIKR reliance on the global cyber infrastructure, an infrastructure that is under routine cyberattack by a “spectrum of malicious actors” (National Infrastructure Protection Plan 2009). CIKR in the extremely large and complex U.S. economy spans multiple sectors including agricultural, finance and banking, dams and water resources, public health and emergency services, military and defense, transportation and shipping, and energy (National Infrastructure Protection Plan 2009). The disruption and destruction of public and private infrastructure is part of warfare, without this infrastructure conflict cannot be sustained (Geers 2011). Cyber-attacks are desirable because they are considered to be a relatively “low cost and long range” weapon (Lewis 2010), but prior to the creation of Stuxnet, the first cyber-weapon, the ability to disrupt and destroy critical infrastructure through cyber-attack was theoretical. The movement of an offensive cyber-weapon from conceptual to actual has forced the United States to question whether offensive cyber-attacks are a significant threat that are able to disrupt or destroy CIKR to the level that national security is seriously degraded. It is important to understand the risk posed to national security by cyber-attacks to ensure that government responses are appropriate to the threat and balance security with privacy and civil liberty concerns. The risk posed to CIKR from cyber-attack can be evaluated by measuring the threat from cyber-attack against the vulnerability of a CIKR target and the consequences of CIKR disruption. As the only known cyber-weapon, Stuxnet has been thoroughly analyzed and used as a model for predicting future cyber-weapons. The U.S. electrical grid, a key component in the CIKR energy sector, is a target that has been analyzed for vulnerabilities and the consequences of disruption predicted – the electrical grid has been used in multiple attack scenarios including a classified scenario provided to the U.S. Congress in 2012 (Rohde 2012). Stuxnet will serve as the weapon and the U.S. electrical grid will serve as the target in this risk analysis that concludes that there is a low risk of disruption or destruction of critical infrastructure from a an offensive cyber-weapon because of the complexity of the attack path, the limited capability of non-state adversaries to develop cyber-weapons, and the existence of multiple methods of mitigating the cyber-attacks. To evaluate the threat posed by a Stuxnet-like cyber-weapon, the complexity of the weapon, the available attack vectors for the weapon, and the resilience of the weapon must be understood. The complexity – how difficult and expensive it was to create the weapon – identifies the relative cost and availability of the weapon; inexpensive and simple to build will be more prevalent than expensive and difficult to build. Attack vectors are the available methods of attack; the larger the number, the more severe the threat. For example, attack vectors for a cyberweapon may be email attachments, peer-to-peer applications, websites, and infected USB devices or compact discs. Finally, the resilience of the weapon determines its availability and affects its usefulness. A useful weapon is one that is resistant to disruption (resilient) and is therefore available and reliable. These concepts are seen in the AK-47 assault rifle – a simple, inexpensive, reliable and effective weapon – and carry over to information technology structures (Weitz 2012). The evaluation of Stuxnet identified malware that is “unusually complex and large” and required code written in multiple languages (Chen 2010) in order to complete a variety of specific functions contained in a “vast array” of components – it is one of the most complex threats ever analyzed by Symantec (Falliere, Murchu and Chien 2011). To be successful, Stuxnet required a high level of technical knowledge across multiple disciplines, a laboratory with the target equipment configured for testing, and a foreign intelligence capability to collect information on the target network and attack vectors (Kerr, Rollins and Theohary 2010). The malware also needed careful monitoring and maintenance because it could be easily disrupted; as a result Stuxnet was developed with a high degree of configurability and was upgraded multiple times in less than one year (Falliere, Murchu and Chien 2011). Once introduced into the network, the cyber-weapon then had to utilize four known vulnerabilities and four unknown vulnerabilities, known as zero-day exploits, in order to install itself and propagate across the target network (Falliere, Murchu and Chien 2011). Zero-day exploits are incredibly difficult to find and fewer than twelve out of the 12,000,000 pieces of malware discovered each year utilize zero-day exploits and this rarity makes them valuable, zero-days can fetch $50,000 to $500,000 each on the black market (Zetter 2011). The use of four rare exploits in a single piece of malware is “unprecedented” (Chen 2010). Along with the use of four unpublished exploits, Stuxnet also used the “first ever” programmable logic controller rootkit, a Windows rootkit, antivirus evasion techniques, intricate process injection routines, and other complex interfaces (Falliere, Murchu and Chien 2011) all wrapped up in “layers of encryption like Russian nesting dolls” (Zetter 2011) – including custom encryption algorithms (Karnouskos 2011). As the malware spread across the now-infected network it had to utilize additional vulnerabilities in proprietary Siemens industrial control software (ICS) and hardware used to control the equipment it was designed to sabotage. Some of these ICS vulnerabilities were published but some were unknown and required such a high degree of inside knowledge that there was speculation that a Siemens employee had been involved in the malware design (Kerr, Rollins and Theohary 2010). The unprecedented technical complexity of the Stuxnet cyber-weapon, along with the extensive technical and financial resources and foreign intelligence capabilities required for its development and deployment, indicates that the malware was likely developed by a nation-state (Kerr, Rollins and Theohary 2010). Stuxnet had very limited attack vectors. When a computer system is connected to the public Internet a host of attack vectors are available to the cyber-attacker (Institute for Security Technology Studies 2002). Web browser and browser plug-in vulnerabilities, cross-site scripting attacks, compromised email attachments, peer-to-peer applications, operating system and other application vulnerabilities are all vectors for the introduction of malware into an Internetconnected computer system. Networks that are not connected to the public internet are “air gapped,” a technical colloquialism to identify a physical separation between networks. Physical separation from the public Internet is a common safeguard for sensitive networks including classified U.S. government networks. If the target network is air gapped, infection can only occur through physical means – an infected disk or USB device that must be physically introduced into a possibly access controlled environment and connected to the air gapped network. The first step of the Stuxnet cyber-attack was to initially infect the target networks, a difficult task given the probable disconnected and well secured nature of the Iranian nuclear facilities. Stuxnet was introduced via a USB device to the target network, a method that suggests that the attackers were familiar with the configuration of the network and knew it was not connected to the public Internet (Chen 2010). This assessment is supported by two rare features in Stuxnet – having all necessary functionality for industrial sabotage fully embedded in the malware executable along with the ability to self-propagate and upgrade through a peer-to-peer method (Falliere, Murchu and Chien 2011). Developing an understanding of the target network configuration was a significant and daunting task based on Symantec’s assessment that Stuxnet repeatedly targeted a total of five different organizations over nearly one year (Falliere, Murchu and Chien 2011) with physical introduction via USB drive being the only available attack vector. The final factor in assessing the threat of a cyber-weapon is the resilience of the weapon. There are two primary factors that make Stuxnet non-resilient: the complexity of the weapon and the complexity of the target. Stuxnet was highly customized for sabotaging specific industrial systems (Karnouskos 2011) and needed a large number of very complex components and routines in order to increase its chance of success (Falliere, Murchu and Chien 2011). The malware required eight vulnerabilities in the Windows operating system to succeed and therefore would have failed if those vulnerabilities had been properly patched; four of the eight vulnerabilities were known to Microsoft and subject to elimination (Falliere, Murchu and Chien 2011). Stuxnet also required that two drivers be installed and required two stolen security certificates for installation (Falliere, Murchu and Chien 2011); driver installation would have failed if the stolen certificates had been revoked and marked as invalid. Finally, the configuration of systems is ever-changing as components are upgraded or replaced. There is no guarantee that the network that was mapped for vulnerabilities had not changed in the months, or years, it took to craft Stuxnet and successfully infect the target network. Had specific components of the target hardware changed – the targeted Siemens software or programmable logic controller – the attack would have failed. Threats are less of a threat when identified; this is why zero-day exploits are so valuable. Stuxnet went to great lengths to hide its existence from the target and utilized multiple rootkits, data manipulation routines, and virus avoidance techniques to stay undetected. The malware’s actions occurred only in memory to avoid leaving traces on disk, it masked its activities by running under legal programs, employed layers of encryption and code obfuscation, and uninstalled itself after a set period of time, all efforts to avoid detection because its authors knew that detection meant failure. As a result of the complexity of the malware, the changeable nature of the target network, and the chance of discovery, Stuxnet is not a resilient system. It is a fragile weapon that required an investment of time and money to constantly monitor, reconfigure, test and deploy over the course of a year. There is concern, with Stuxnet developed and available publicly, that the world is on the brink of a storm of highly sophisticated Stuxnet-derived cyber-weapons which can be used by hackers, organized criminals and terrorists (Chen 2010). As former counterterrorism advisor Richard Clarke describes it, there is concern that the technical brilliance of the United States “has created millions of potential monsters all over the world” (Rosenbaum 2012). Hyperbole aside, technical knowledge spreads. The techniques behind cyber-attacks are “constantly evolving and making use of lessons learned over time” (Institute for Security Technology Studies 2002) and the publication of the Stuxnet code may make it easier to copy the weapon (Kerr, Rollins and Theohary 2010). However, this is something of a zero-sum game because knowledge works both ways and cyber-security techniques are also evolving, and “understanding attack techniques more clearly is the first step toward increasing security” (Institute for Security Technology Studies 2002). Vulnerabilities are discovered and patched, intrusion detection and malware signatures are expanded and updated, and monitoring and analysis processes and methodologies are expanded and honed. Once the element of surprise is lost, weapons and tactics are less useful, this is the core of the argument that “uniquely surprising” stratagems like Stuxnet are single-use, like Pearl Harbor and the Trojan Horse, the “very success [of these attacks] precludes their repetition” (Mueller 2012). This paradigm has already been seen in the “son of Stuxnet” malware – named Duqu by its discoverers – that is based on the same modular code platform that created Stuxnet (Ragan 2011). With the techniques used by Stuxnet now known, other variants such as Duqu are being discovered and countered by security researchers (Laboratory of Cryptography and System Security 2011). It is obvious that the effort required to create, deploy, and maintain Stuxnet and its variants is massive and it is not clear that the rewards are worth the risk and effort. Given the location of initial infection and the number of infected systems in Iran (Falliere, Murchu and Chien 2011) it is believed that Iranian nuclear facilities were the target of the Stuxnet weapon. A significant amount of money and effort was invested in creating Stuxnet but yet the expected result – assuming that this was an attack that expected to damage production – was minimal at best. Iran claimed that Stuxnet caused only minor damage, probably at the Natanz enrichment facility, the Russian contractor Atomstroyeksport reported that no damage had occurred at the Bushehr facility, and an unidentified “senior diplomat” suggested that Iran was forced to shut down its centrifuge facility “for a few days” (Kerr, Rollins and Theohary 2010). Even the most optimistic estimates believe that Iran’s nuclear enrichment program was only delayed by months, or perhaps years (Rosenbaum 2012). The actual damage done by Stuxnet is not clear (Kerr, Rollins and Theohary 2010) and the primary damage appears to be to a higher number than average replacement of centrifuges at the Iran enrichment facility (Zetter 2011). Different targets may produce different results. The Iranian nuclear facility was a difficult target with limited attack vectors because of its isolation from the public Internet and restricted access to its facilities. What is the probability of a successful attack against the U.S. electrical grid and what are the potential consequences should this critical infrastructure be disrupted or destroyed? An attack against the electrical grid is a reasonable threat scenario since power systems are “a high priority target for military and insurgents” and there has been a trend towards utilizing commercial software and integrating utilities into the public Internet that has “increased vulnerability across the board” (Lewis 2010). Yet the increased vulnerabilities are mitigated by an increased detection and deterrent capability that has been “honed over many years of practical application” now that power systems are using standard, rather than proprietary and specialized, applications and components (Leita and Dacier 2012). The security of the electrical grid is also enhanced by increased awareness after a smart-grid hacking demonstration in 2009 and the identification of the Stuxnet malware in 2010; as a result the public and private sector are working together in an “unprecedented effort” to establish robust security guidelines and cyber security measures (Gohn and Wheelock 2010).

#### No impact to sabotage

Newitz 10 [ANNALEE NEWITZ, The US electrical grid is too crappy to be vulnerable to terrorist attack, say physicists,” IO9, October 13, 2010 8:30 AM, pg. http://io9.com/5662593/the-us-electrical-grid-is-too-crappy-to-be-vulnerable-to-terrorist-attack-say-physicists]

Last year, network theorists published some papers suggesting that terrorists could take down the entire US electrical grid by attacking a small, remote power station. But new research shows that network theory models, which great for analyzing many complex systems, don't work for patchwork systems like the US electrical grid. Basically, the grid was set up so haphazardly that you'd have to take out a major node before you'd affect the entire thing. (Want to see a map of the US electrical grid? Check out this one on NPR.)

Science Daily sums up:

[The] electric grid is probably more secure that many people realize — because it is so unpredictable. This, of course, makes it hard to improve its reliability (in another line of research, [study co-author Paul] Hines has explored why the rate of blackouts in the United States hasn't improved in decades), but the up-side of this fact is that it would be hard for a terrorist to bring large parts of the grid down by attacking just one small part.

The researchers based their conclusions on real-world data from the power grid in the eastern U.S.

#### Plan can’t solve Arctic leadership – no military capabilities

**Carafano 11** [James, PhD, Director of the Allison Center for Foreign Policy Studies at Heritage, visiting professor at National Defense University and Georgetown University, previous assistant professor at the U.S. Military Academy in West Point, former director of military studies at the Army's Center of Military History, previous fleet professor at the U.S. Naval War College, "America May Soon be Left Out in the Cold," 3-6, http://www.heritage.org/Research/Commentary/2011/03/America-May-Soon-be-Left-Out-in-the-Cold]

What's the biggest "stealth" challenge today? It may well be in the Arctic. While the world is fixated on the hot sands of the Middle East, the Obama administration cannot afford to forget the frozen north. In less than half a dozen years, international competition for primacy in the Arctic will be fierce. An Arctic passage could cut some the world's busiest trade routes by 40 percent. The region holds rich and as-yet unexploited stores of oil and other natural resources. Gaining and maintaining critical economic assets in the Arctic will require a serious commitment to scientific research, law enforcement, search and rescue, navigational aids and environmental protection. Yet, the U.S. has taken almost no concrete steps to field the capabilities needed to protect our sovereignty, safeguard our interests, or give us a competitive edge. In particular, our ice-breakers, the cornerstone of Arctic presence, are in pathetic shape. While other Arctic powers are building up their fleets with state-of-the art ships, the U.S. can barely field three. The Department of Homeland Security inspector general flatly stated that our Coast Guard has neither the ships nor the budget authority needed to achieve its current mission. And that means failure in the future is guaranteed as well. Don't look for the Coast Guard to start building new ships. According to retired Rear Adm. Jeff Garrett, the commandant of the Coast Guard and others estimate it would take three-quarters to a billion dollars to buy the kind of ice-breaker the future demands. And the Defense Department hasn't asked Congress for dime one.

#### No Arctic War

Bartsch 12 (Golo, Associate at Ecologic Institute, “Arctic Security”, 7/30, http://arcticsummercollege.org/sites/default/files/Security%20Policy%20Brief\_Arctic%20Summer%20College\_July%2030%202012\_0.pdf)

As the Russian flag was planted underneath the North Pole in 2007, media predicted an uncontrolled “gold rush” or even a “new Cold War” in the region. This interpretation of military presence in the North, in combination with diminishing sea ice and territorial and resource claims of the riparian nations, created the image of imminent conflict. In fact, the probability of armed conflict in the North was not significantly higher during the last years than it was from 1990 to 2007. The nations involved, especially the Arctic Five, are affiliated with several overlapping international institutions, such as the United Nations or the Arctic Council, which provide arenas for peaceful conflict management. Furthermore, all those nations are aware that any armed escalation is counterproductive to their future interests and to exploitation of Arctic resources. In the official Northern strategies or White Papers of the Arctic Five, the commitment to peaceful cooperation and compliance with international law is a common and fundamental element. The current deployment, modernization, and reorganisation of the military in the Arctic takes place mostly to support the constabulary functions of those forces: Due to the harsh conditions of weather and terrain, it is foremost the military which has the equipment and personnel capacities to operate in the North at all. This includes not only the sovereign rights of border patrolling, coast guarding, and air policing, but also the provision of Search-and-Rescue (SAR) capabilities. Since an SAR agreement has been negotiated through the Arctic Council during the Conference of Nuuk in 2011, this task is of particular importance.

#### “Disconnect fees” and grid access deals prevent them from solving

Snider 12—E&E reporter [Annie Snider, “Clean energy doesn't always bring security for military,” Greenwire, Friday, January 27, 2012, pg. http://www.eenews.net/public/Greenwire/2012/01/27/1]

There is a technological fix: a switch that would let the base disconnect from the grid and keep the solar panels up, shouldering some of the backup power burden that currently falls to the base's diesel generators when commercial power goes out.

But Nellis has not implemented that fix. Nor has the Navy at the Naval Air Weapons Station in China Lake, Calif., where a 270-megawatt geothermal plant makes it the only military installation that produces more power than it uses. Nor have many other U.S. military bases that are quickly amassing fields of solar panels and wind turbines.

To be sure, the idea of using renewable energy to power critical missions wasn't on the Pentagon agenda when the Nellis and China Lake projects were built in 2007 and 1987, respectively. But today, as the Defense Department undertakes a massive effort to build renewable energy generation for "energy security," there is still no overarching requirement that such power sources be able to support vital national missions if the local power goes out.

"It's not energy security if you've got renewable generation that you cannot access if the grid goes down," said Scott Sklar, a 40-year veteran of the renewable power field and a frequent consultant for the military.

Cost is often cited as a barrier for DOD not having the proper grid-access deals or technologies. Utilities charge a "disconnect fee" for the right to drop off the grid and continue generation during a power outage. The fees vary, but military energy managers say they are sizeable enough to affect a project's overall financials.

Money's a problem for the military. Although officials see a security value to on-base power production, renewable energy projects are legally required to yield more in savings over their lifetime than they cost to build. Projects often meet that requirement with thin margins.

"If our leadership determines to us that there is a financial value to energy security, then that will be used in our evaluation of price," said Steve Dumont, an energy manager for the Air Force Command that oversees Nellis. "It's really a policy issue."

And that is the rub: DOD rules and guidance are largely driven by mandates for expanding the use of renewable energy and improving energy efficiency rather than operational need.

Pentagon policymakers have been awakened in recent years to the vulnerability of bases that rely on commercial power, but as they start to devise new standards for renewable power, they must navigate regulatory mazes that vary from state to state. States have authority over utilities, and many utilities must be dealt with individually.

Meanwhile, in the absence of orders from headquarters, base energy managers are left to make their own decisions. That is complicated by turnover on those posts and a lack of training and experience.

The result is expensive, labor-intensive projects -- some funded with federal taxpayers' cash, others by developers -- that meet federal green-energy mandates but provide little security benefit to the military.

As Pentagon officials, especially civilian appointees, raise the profile of the military's renewable energy ambitions, uniformed commanders are beginning to speak out about the problem.

Capt. Jeffrey Dodson, commander of the Navy's China Lake installation, raised the issue at a well-attended energy security event at the Pentagon this fall.

"What people don't realize is the electrons from ... geothermal don't come to Naval Air Weapons Station China Lake. It goes onto the grid," he told top Pentagon brass and civilian appointees. "That's one of the main limitations from an operator perspective."

#### Their solvency ev is industry cheerleading—diverse distributed sources solve better.

Lovins 10—Chair and Chief Scientist @ Rocky Mountain Institute [Amory B. Lovins (Experimental Physicist and Former professor of Advanced Energy Efficiency @ Stanford University) , “Lovins addresses New Nuclear Power for DOD (Q&A 3 of 3)” DOD Energy Blog, Wednesday, May 12, 2010, http://dodenergy.blogspot.com/2010/05/lovins-addresses-new-nuclear-power-for\_12.html]

Question 3: Are there any points in particular you'd like to call out re: the on nuclear energy generation potential for DOD?

ABL: Yes. Two major technical task forces evaluating DoD's energy options have carefully considered the various nuclear technologies at diverse scales that were vigorously suggested to them. Both pointedly declined to recommend military pursuit of any nuclear technology to power facilities. My 1Q2010 Joint Force Quarterly (JFQ) article "DoD's Energy Challenge as Strategic Opportunity" explains, with footnotes omitted:

"Nuclear power is sometimes suggested for land installations or even expeditionary forces, typically without discussing cost (grossly uncompetitive), modern renewables (typically much cheaper), operational reliability (usually needing 100% backup), or security. For these and other reasons, the 2008 DSB and JASON task forces didn’t endorse this option."

Some of the task forces' reasons are obvious. For isolated or grid-connected fixed installations, any mini-reactor would require 100% backup, as analysis of a Toshiba ~10-MWe unit proposed for the fly-in village of Galena, Alaska confirmed. Moreover, its economics would be dreadful. Unconservatively assuming the same $2,500/KWe capital cost at 10 MWe as at 50 MWe, a found that if the reactor (with capex upwards of 9¢/KWh) and its licensing (roughly comparable or larger under current rules), its installation and removal, and its decommissioning were all free, if O&M costs were half Toshiba's estimate for the 50-MWe design, and if NRC dropped the required security staffing from 34 to 4 guards, then the ~5–14¢/KWh operating cost alone might compete with diesel's, burning costly barged-in fuel; but to make even this work, the study had to make many absurd assumptions. I'm unaware of any remote installation for which a mini-reactor can be shown to be competitive.

Nor, inherently, can a mini-reactor's security of supply approach that of a properly designed network of diverse and distributed sources. The principles of resilient design, summarized in Ch. 13 of " Brittle Power", are no more compatible with a single power source than are the principles of least cost . Nuclear power does not earn a place in a "diversified" DOD energy supply portfolio simply by being different, any more than a financial portfolio should include one of everything on offer. Rather, a balanced portfolio includes only assets with a clear risk-and-return rationale.

The Naval situation is different, but not completely, as my JFQ article continued:

"After vast investment in hardware and a unique technical culture, nuclear propulsion has proven its merit in submarines and aircraft carriers. In 2006–09, Congressional enthusiasts announced supposed Naval Sea Systems Command (NAVSEA) findings that nuclear propulsion in new medium surface combatants could beat $70/bbl oil. However, the 2008 DSB task force discovered that NAVSEA’s actual finding ($75–225/bbl) had improperly assumed a zero real discount rate. A 3%/y real discount rate yielded a $132–345/bbl break even oil price; NAVSEA didn’t respond to requests to test the 7%/year real discount rate OMB probably mandates. Presumably the Secretary of Defense will reject this option and focus resources on making ships optimally efficient."

In short, as my JFQ article concluded, "The 2008 DSB and JASON studies are redirecting the military energy conversation from exotic, speculative, and often inappropriate supplies to efficient use, which makes autonomous in-theater supply important and often cost-effective...."

It's therefore disappointing to see that some in the Building, apparently unaware of the full competitive landscape, are now wasting still more time and money on nuclear power after both of DOD's advisory bodies rejected it for many compelling reasons. I hope the Congressionally mandated report the DOD Energy Blog mentions (4th paragraph: here), due 1 Jun 2010, will dig deeper than the current cheer-leading—originating ultimately from vendors desperate to find a cost-insensitive customer for technologies already rejected by the marketplace.

There you have it, sports fans. Amory's systems-based, economics-grounded response has substantially squelched my recently burgeoning enthusiasm for a new nuclear component to DOD's energy portfolio. I have to check my own cheer-leading tendencies sometimes. That said, if there's a man or woman among you who wants to attempt a public retort to these arguments, be my guest ... and good luck, you're going to need it!

# Water

#### No internal link -countries are landlocked – poorest countries coldn’t afford SMRs

#### No water wars

**Tetrais, ’11** [Dr. Bruno Tertrais is a Senior Research Fellow at the Fondation pour la recherche strate´gique (Foundation for Strategic Research), and a TWQ editorial board member. “The Climate Wars Myth”. Summer 2011. Center for Strategic and International Studies. The Washington Quarterly • 34:3 pp. 17-29. http://www.tandfonline.com/doi/abs/10.1080/0163660X.2011.587951]

And water crises do not mean water wars. The issue of access to water resources is undoubtedly a major dimension of numerous regional crises, in particular in the Greater Middle East, as testified by decades-old disputes between Turkey and Syria, or Egypt and Sudan. The value of strategic locations such as the Golan Heights or Kashmir is not a small part of tensions between Syria and Israel, or India and Pakistan. And water sharing can be the cause of local disputes sometimes degenerating into small-scale collective violence in Africa or Asia. However, experts from the University of Oregon, who maintain the most complete database on this topic, state that there has never been a ‘‘war over water’’ (that is, large-scale collective violence for the sake of a water resource) in the past 4,500 years.35 The last war over water opposed two Sumerian cities in the middle of the third millennium B.C.E., about sharing the waters of the Tigris and Euphrates. There are good reasons for such a scant record. Any country seeking to control the upstream of a river would need to ensure complete and permanent domination over it, which would be an ambitious goal. In the modern era, resorting to arms over water (like resorting to arms over oil) is just not worth the cost. Especially for those whose geographical location and budget can afford to build desalination plantswhich is the case for some of the most water-stressed countries, those located on the Arabian Peninsula. One should therefore not be surprised that access to water has always generated more cooperation than conflict. Since antiquity, thousands of agreements and treaties have been signed for water-sharing. And cooperation between adversaries has stood the test of wartime, as was seen during the 20th century in the Middle East, South Asia, or Southeast Asia.

#### No global water shortages

**Tetrais, ’11** [Dr. Bruno Tertrais is a Senior Research Fellow at the Fondation pour la recherche strate´gique (Foundation for Strategic Research), and a TWQ editorial board member. “The Climate Wars Myth”. Summer 2011. Center for Strategic and International Studies. The Washington Quarterly • 34:3 pp. 17-29. http://www.tandfonline.com/doi/abs/10.1080/0163660X.2011.587951]

Warming will not change anything about the global availability of water resources, but will probably induce changes in the geographical distribution of precipitation. However, this will not necessarily be for the worse: in many regions, the resource for agriculture will increase.29 Other regions will see more droughts. However, recent studies have shown that climate changewhatever its originhas only a small part of responsibility for water crises: population increase is by far the main cause.30

#### “Water wars” are unsupported by research

**Theisen et al, ’11** [Ole Magnus Theisen is a doctoral candidate at the Norwegian University of Science and Technology (NTNU) and Associate Researcher at the Centre for the Study of Civil War (CSCW) at the Peace Research Institute Oslo (PRIO). Helge Holtermann is Doctoral Researcher at CSCW, PRIO. Halvard Buhaug is Research Professor at CSCW, PRIO. International Security, Vol. 36, No. 3 (Winter 2011/12). Pp 80]

Drought, however defined, is a prevalent and recurring phenomenon, whereas civil war outbreak is a rare event. There is a tendency to ignore or underestimate the large number of false positives (i.e., occurrences of drought without conflict, for every instance where both phenomena are present). And although our finding is at odds with the rationale for at least two recent Nobel Peace Prize awards, other recent research comes to the same conclusion. 76 Besides, thecase-based environmental security literature, which generally is more supportive of an environment-conflict connection, covers many forms of scarcity, including human-induced environmental degradation. Only a handful of these studies concern water shortages directly. This literature is also vague on the type of collective violence, as well as the temporal dimension of the causal chain, and contributions rarely attempt to rank the importance of the environment relative to socioeconomic and political factors. Also, we should not ignore case studies that find little evidence of a causal connection between environmental scarcity and armed conflict. 77

#### No water Wars – resilience, conflict decreases

Wolf 11’

Ph.D. Department of Geosciences Oregon State University.WATER AND HUMAN SECURITY Aaron T. Wolf, 2011. http://opensiuc.lib.siu.edu/cgi/viewcontent.cgi?article=1171&context=jcwre&sei-redir=1&referer=http%3A%2F%2Fscholar.google.com%2Fscholar%3Fq%3Dwater%2Bconflict%2B%26btnG%3D%26hl%3Den%26as\_sdt%3D0%252C10%26as\_ylo%3D2011#search=%22water%20conflict%22

Another factor adding to the political stability of international watersheds is that once cooperative water regimes are established, they turn out to be tremendously resilient over time, even between otherwise hostile riparian nations, and even as conflict is waged over other issues. For example, the Mekong Committee has functioned since 1957, exchanging data throughout the Vietnam War. Secret “picnic table” talks have been held between Israel and Jordan, since the unsuccessful Johnston negotiations of 1953-55, even as these riparian nations were in a legal state of war until recently. And, the Indus River Commission not only survived through two wars between India and Pakistan, but treaty-related payments continued unabated throughout the hostilities. Any of these arguments, in and of itself, might not convince one of the unlikelihood of “water wars.” The combination of all of these factors, though – a historic lack of evidence combined with strategic, interest-based, and institutional irrationality of acute international hydroconflicts – should help convince us to think of water as a vehicle for reducing tensions and encouraging cooperation even between otherwise hostile co-riparian nations. Undala Alam (1998) has aptly dubbed this concept of water as a resource that transcends traditional thinking about resource-related disputes, “water rationality.”