# Rd 2 vs Texas BK

## 1AC

Same as Gonzaga I believe

## 2AC

### Solvency

#### 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 spare capacity – means no backstopping

Chazan 12 (Guy, energy correspondent at Financial Times, "IEA warns of falling spare oil capacity," Mar 14, [http://www.ft.com/intl/cms/s/0/14b2afec-6db0-11e1-b9c7-00144feab49a.html#axzz26J9564I8], jam)

World oil markets face a “bumpy ride” in the months ahead, amid falling global crude supplies and tightening western inventories, the International Energy Agency said. In its closely watched monthly oil market report, the IEA said that a series of unscheduled supply outages from Syria to the UK had reached 750,000 barrels a day. The outages, combined with concerns about Iran, have helped to push crude prices up 20 per cent since December. In recent weeks, prices have posted record highs in euro-denominated terms, surpassing the peak reached during the 2008 price spike. That has created a headache for western leaders, especially in the US where high petrol prices could jeopardise the fragile economic recovery and undermine President Barack Obama’s re-election hopes. As a result of the supply disruptions, the IEA, which advises the industrialised countries on energy policy, downgraded its full-year forecast for non-Opec production growth to 730,000 b/d from 900,000 b/d. As recently as last December, it was predicting non-Opec supply growth of 1 million b/d. The agency stressed it expected non-Opec production to recover as 2012 progresses. The disruptions to supply in places like South Sudan, Yemen, Syria and the UK North Sea come at a time when Opec has ramped up production, with Saudi Arabia pumping at a three-decade peak and Libyan output quickly recovering to prewar levels. The IEA said Opec production stood at 31.42m b/d in February, the highest level since mid-2008. That has led to a decline in Opec’s spare capacity – the cushion of supply its big producers, especially Saudi Arabia, keep in reserve. The IEA said Opec spare capacity is now below 3m b/d for the first time since 2008 – a year when oil prices spiked to their all-time high of $147 a barrel. The combination of low Opec spare capacity, constrained non-Opec supply and tightening western oil inventories – which are below their five-year average for a seventh consecutive month – means oil markets are in for a “bumpy ride in the months ahead,” the IEA said. “There is a buffer in the system, but it’s not as big as we’d like given the geopolitical uncertainties in the market,” said David Fyfe, head of the IEA’s oil markets division. But he stressed those tensions should ease later in the year as production increases in Angola, Nigeria, Libya and Iraq, boosting Opec’s spare capacity. Also, non-Opec supply this year would actually exceed last year’s level, he noted. The agency left its forecast for 2012 oil demand growth unchanged at 800,000 b/d – a 0.9 per cent increase on last year. It said the “relatively subdued economic backdrop” and high crude prices were putting a brake on oil demand, which is expected to stand at 89.9m b/d for 2012.

#### There’s government-trained personnel for nuke

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)

Expansion of Reporting Requirements Regarding Department of Defense Energy Efficiency Programs,” requires the Secretary of Defense to evaluate the cost and feasibility of a policy that would require new power generation projects established on installations to be able to provide power for military operations in the event of a commercial grid outage.28 A potential solution to meet this national security requirement, as well as the critical needs of nearby towns, is for DoD to evaluate SMRs as a possible source for safe and secure electricity. Military facilities depend on reliable sources of energy to operate, train, and support national security missions. The power demand for most military facilities is not very high, and could easily be met by a SMR. Table 1 provides the itemized description of the annual energy requirements in megawatt of electricity (MWe) required for the three hundred seventy four DoD installations.29 DoD History with SMRs The concept of small reactors for electrical power generation is not new. In fact, the DoD built and operated small reactors for applications on land and at sea. The U.S. Army operated eight nuclear power plants from 1954 to 1977. Six out of the eight reactors built by the Army produced operationally useful power for an extended period, including the first nuclear reactor to be connected and provide electricity to the commercial grid. 30 The Army program that built and operated compact nuclear reactors was ended after 1966, not because of any safety issues, but strictly as a result of funding cuts in military long range research and development programs. In essence, it was determined that the program costs could only be justified if there was a unique DoD specific requirement. At the time there were none.31 Although it has been many years since these Army reactors were operational, the independent source of energy they provided at the time is exactly what is needed again to serve as a secure source of energy today. Many of the nuclear power plant designs used by the Army were based on United States Naval reactors. Although the Army stopped developing SMRs, the Navy as well as the private sector has continued to research, develop, and implement improved designs to improve the safety and efficiency of these alternative energy sources. The U.S. Navy nuclear program developed twenty seven different power plant systems and almost all of them have been based on a light water reactor design.32 This design focus can be attributed to the inherent safety and the ability of this design to handle the pitch and roll climate expected on a ship at sea. To date, the U. S Navy operated five hundred twenty six reactor cores in two hundred nineteen nuclear powered ships, accumulated the equivalent of over six thousand two hundred reactor years of operation and safely steamed one hundred forty nine million miles. The U.S. Navy has never experienced a reactor accident.33 All of the modern Navy reactors are design to use fuel that is enriched to ninety three percent Uranium 235 (U235) versus the approximate three percent U235 used in commercial light water reactors. The use of highly enriched U235 in Navy vessels has two primary benefits, long core lives and small reactor cores.34 The power generation capability for naval reactors ranges from two hundred MWe (megawatts of electricity) for submarines to five hundred MWe for an aircraft carrier. A Naval reactor can expect to operate for at least ten years before refueling and the core has a fifty year operational life for a carrier or thirty to forty years for a submarine.35 As an example, the world’s first nuclear carrier, the USS Enterprise, which is still operating, celebrated fifty years of operations in 2011.36 The Navy nuclear program has set a precedent for safely harnessing the energy associated with the nuclear fission reaction. In addition, the Navy collaborates with the private sector to build their reactors and then uses government trained personnel to serve as operators. Implementing the use of SMRs as a secure source of energy for our critical military facilities will leverage this knowledge and experience.

#### Transition takes 30 months

Sorensen 11 (Kirk, studying thorium technology since 2000 and has been a public advocate for its use and development since 2006, masters’ degree in aerospace engineering from the Georgia Institute of Technology and is studying nuclear engineering at the University of Tennessee under Dr. Laurence Miller, May 28, [www.financialsense.com/financial-sense-newshour/big-picture/2011/05/28/03/kirk-sorensen/thorium-could-be-our-energy-silver-bullet], jam)

Jim: (32:00) Let me throw another idea, and I've often had this conversation, with the late Matt Simmons, who was a big believer in peak oil, and was kind of looking for that silver bullet. And that is, could it take a crisis? I know in the midst of a crisis, World War II, you know, we discovered nuclear power and also weapon grade uranium in the Manhattan project where we basically produced a bomb in a short period of time. So if we were faced with a severe energy crisis, global warming, or just shortages of fuel, could we turn this into a Manhattan project and turn thorium? In other words, how quickly can we turn the table and really start to get this thing running? Kirk: (32:47) If we were talking Manhattan project, and that’s where you're taking the smartest people out of society. You’re putting them in a place and they work on it six days a week, 18 hours a day, we could probably have one of these reactors up and running within 18 months. And we could be to a production level within a year or so after that. I mean, it would be a lot like World War II. Imagine the factories turning out B-29 bombers, you know, it would be like that. Jim: (33:11) Wow. Kirk: (33:11) Now Manhattan style projects, that’s a severe disruption though, to the flow society. That is a heavy governmental hand reaching and deciding how to allocate resources. And that’s really not what I would hope would happened. What I would hope would happen would be a much more market-driven approach where a fair and clear regulatory environment allows businesses and investors to make wise decisions, with a high certainty that if they fulfill the obligations laid out, and the regulations, they will be able to build and operate the machines they have designed. In that scenario, which I would call more the skunk works approach, having worked at Lockheed when I was younger, I think we could have this ready in four or five years. With abundant private financing and a clear and realistic regulatory environment. That's not really the world we live in right now. Now that may change, but that's not how it is right now. Right now we have a regulatory challenge and we are looking for ways to move the technology forward under situations that have a stronger need for the technology. For instance, the military's need for base islanding, and so, in that scenario that does stretch out the time. But I guess maybe I’m getting past your original question, which was could we do this in a Manhattan style project, and the answer is absolutely yes. And it would go quite quickly.

### Complexity K

#### Risk of extinction outweighs – even if probability of our scenario is low, the capability to bounce back from lesser catastrophes means they don’t matter as much

Anders Sandberg et al., James Martin Research Fellow at the Future of Humanity Institute at Oxford University and postdoctoral research assistant for the EU Enhance project, Jason G. Matheny, PhD candidate in Health Policy and Management at Johns Hopkins Bloomberg School of Public Health, special consultant to the Center for Biosecurity at the University of Pittsburgh Medical Center and co-founder of New Harvest, and Milan M. Ćirković, senior research associate at the Astronomical Observatory of Belgrade, assistant professor of physics at the University of Novi Sad in Serbia and Montenegro, “How Can We Reduce the Risk of Human Extinction,” 2008, http://thebulletin.org/web-edition/features/how-can-we-reduce-the-risk-of-human-extinction

The facts are sobering. More than 99.9 percent of species that have ever existed on Earth have gone extinct. Over the long run, it seems likely that humanity will meet the same fate. In less than a billion years, the increased intensity of the Sun will initiate a wet greenhouse effect, even without any human interference, making Earth inhospitable to life. A couple of billion years later Earth will be destroyed, when it's engulfed by our Sun as it expands into a red-giant star. If we colonize space, we could survive longer than our planet, but as mammalian species survive, on average, only two million years, we should consider ourselves very lucky if we make it to one billion. Humanity could be extinguished as early as this century by succumbing to natural hazards, such as an extinction-level asteroid or comet impact, supervolcanic eruption, global methane-hydrate release, or nearby supernova or gamma-ray burst. (Perhaps the most probable of these hazards, supervolcanism, was discovered only in the last 25 years, suggesting that other natural hazards may remain unrecognized.) Fortunately the probability of any one of these events killing off our species is very low--less than one in 100 million per year, given what we know about their past frequency. But as improbable as these events are, measures to reduce their probability can still be worthwhile. For instance, [investments](http://www3.interscience.wiley.com/journal/118486553/abstract?CRETRY=1&SRETRY=0) in asteroid detection and deflection technologies cost less, per life saved, than most investments in medicine. While an extinction-level asteroid impact is very unlikely, its improbability is outweighed by its potential death toll. The risks from anthropogenic hazards appear at present larger than those from natural ones. Although great progress has been made in reducing the number of nuclear weapons in the world, humanity is still threatened by the possibility of a global thermonuclear war and a resulting nuclear winter. We may face even greater risks from emerging technologies. Advances in synthetic biology might make it possible to engineer pathogens capable of extinction-level pandemics. The knowledge, equipment, and materials needed to engineer pathogens are more accessible than those needed to build nuclear weapons. And unlike other weapons, pathogens are self-replicating, allowing a small arsenal to become exponentially destructive. Pathogens have been [implicated](http://www3.interscience.wiley.com/journal/118564287/abstract) in the extinctions of many wild species. Although most pandemics "fade out" by reducing the density of susceptible populations, pathogens with wide host ranges in multiple species can reach even isolated individuals. The intentional or unintentional release of engineered pathogens with high transmissibility, latency, and lethality might be capable of causing human extinction. While such an event seems unlikely today, the likelihood may increase as biotechnologies continue to improve at a rate rivaling [Moore's Law](http://www.intel.com/technology/mooreslaw/index.htm). Farther out in time are technologies that remain theoretical but might be developed this century. Molecular nanotechnology could allow the creation of self-replicating machines capable of destroying the ecosystem. And advances in neuroscience and computation might enable improvements in cognition that accelerate the invention of new weapons. A survey at the Oxford conference found that concerns about human extinction were dominated by fears that new technologies would be misused. These emerging threats are especially challenging as they could become dangerous more quickly than past technologies, outpacing society's ability to control them. As H.G. Wells noted, "Human history becomes more and more a race between education and catastrophe." Such remote risks may seem academic in a world plagued by immediate problems, such as global poverty, HIV, and climate change. But as intimidating as these problems are, they do not threaten human existence. In [discussing](http://www.foreignaffairs.org/19831201faessay8351/carl-sagan/nuclear-war-and-climatic-catastrophe-some-policy-implications.html) the risk of nuclear winter, Carl Sagan emphasized the astronomical toll of human extinction: A nuclear war imperils all of our descendants, for as long as there will be humans. Even if the population remains static, with an average lifetime of the order of 100 years, over a typical time period for the biological evolution of a successful species (roughly ten million years), we are talking about some 500 trillion people yet to come. By this criterion, the stakes are one million times greater for extinction than for the more modest nuclear wars that kill "only" hundreds of millions of people. There are many other possible measures of the potential loss--including culture and science, the evolutionary history of the planet, and the significance of the lives of all of our ancestors who contributed to the future of their descendants. Extinction is the undoing of the human enterprise. There is a discontinuity between risks that threaten 10 percent or even 99 percent of humanity and those that threaten 100 percent. For disasters killing less than all humanity, there is a good chance that the species could recover. If we value future human generations, then reducing extinction risks should dominate our considerations. Fortunately, most measures to reduce these risks also improve global security against a range of lesser catastrophes, and thus deserve support regardless of how much one worries about extinction. These measures include: Removing nuclear weapons from hair-trigger alert and further reducing their numbers; Placing safeguards on gene synthesis equipment to prevent synthesis of select pathogens; Improving our ability to respond to infectious diseases, including rapid disease surveillance, diagnosis, and control, as well as accelerated drug development; Funding research on asteroid detection and deflection, "hot spot" eruptions, methane hydrate deposits, and other catastrophic natural hazards; Monitoring developments in key disruptive technologies, such as nanotechnology and computational neuroscience, and developing international policies to reduce the risk of catastrophic accidents.

#### Policy debate is the antidote to overt linearity—combining diverse theories and opinions by cutting lots of cards and putting together the best ones while role-playing makes policymaking creative

Kerbel ’12 Josh Kerbel, federal civilian employee, despite that he’s still published in Parameters, Foreign Policy, and World Politics Review, “How Government Thinks - and How it Should,” Disruptive Change—Strategic Foresight Initiative Blog, The Atlantic Council, 6/22/2012, http://www.acus.org/disruptive\_change/how-government-thinks-and-how-it-should

In particular, the federal government remains enthralled by notions of "linearity". That is to say, it maintains a reflexive tendency to think of society as a linear system with all the characteristics—the whole being equal to the sum of the parts; clear cause-and-effect; past behavior as a reliable indicator of future behavior; and proportionality of input/output—that make such systems readily predictable and manageable. Admittedly, such linear/analytic thinking—especially the inclination to “break down” issues—is not inherently bad and can indeed bring clarifying thought to highly complicated issues. However—misapplied to complex ones, which as the “default setting” it so often is—the downside of such thinking is that the federal government tends to oversimplify, exaggerate its ability to predict and manage, promotes unreasonable expectations, and thereby actually contributes to its own ineffectiveness, or worse, increasing irrelevance. (For examples, see the above mentioned list of confounding emergent issues.) The key question then becomes: how can the federal government—both the political and bureaucratic elements—get itself to think a bit less traditionally (i.e., apply the rules of linearity, make precise linear arguments, and predict definitive outcomes) and a little more creatively (i.e., “break” the rules of linearity, imagine alternative narratives, and ask new/better questions)? For only the latter will make government—and the policies it crafts—more adaptable, resilient and agile; characteristics necessary in a volatile, dynamic—complex—world. To start, it’s crucial to recognize that "creative government" is not just some fanciful “new-age” or “artsy” whim. Nor can it continue to be dismissed as oxymoronic. Increasingly complexity means that many—if not most—of the sharp distinctions around which the federal government currently thinks and organizes (economic/political/social, foreign/domestic, diplomatic/military, public/private, etc.) are increasingly outmoded and fail to grasp the nature of the challenges, much less their solutions. Like it or not, elementary education is a national security issue; the military budget is a health care issue; energy is an agricultural issue. Fundamentally, to better understand and cope with such an undisciplined world and the types of emergent challenges it generates, more synthetic—creative—perspectives are absolutely essential. It’s also worth noting that increasing complexity is not a new phenomenon but rather a chronic challenge that—when the complexity of society exceeds the ability of the prevailing governmental mindsets and organizations to cope—inevitably results in acute “crises of governance.” Moreover, it is precisely at such critical moments that a government needs to "collapse" and synthesize its existing mental and organizational hierarchies, just as the proverbial sand pile collapses and builds anew in the face of mounting sand. In order to facilitate such creative thinking, the federal government needs to address at least two fundamental deficiencies. First, it must attract and/or cultivate—and support and promote—more individuals inclined to think in interdisciplinary terms: “synthesists”. Second, since thinking tends to reflect the organizational structures in which it takes place, much of the existing bureaucracy needs to coalesce into flatter, less hierarchical organizations that permit creativity to thrive and stove pipes to be broken down. It does little good to have creative thinkers if the government’s organizational structures and/or bureaucratic processes—as exemplified by the current departmental structure or the congressional committee structure—compel the continued slicing of issues into artificial/incomplete pieces according to ever more obsolete and unrealistic sets of rules and problem definitions. Moreover, it does little to help government in the recruitment/retention of creative thinkers if the only reward they’re likely to reap for their creativity is a pigeonhole and frustration. Finally, the federal government alone will not be able to change the way it thinks. To facilitate the change, the public too must change the way it thinks—about government. Indeed, the same complexity that has made government’s traditional hierarchical view of society obsolete has also rendered many of society’s traditional expectations of government equally invalid. Gone are the days when the public can or should expect the government to develop and implement “neat and clean” top-down driven solutions. Rather the public must understand that the messiness of a complex world precludes such expectations, and requires modesty—and a tolerance for uncertainty—that is all too rare in today’s political discourse.

#### Imagining hypothetical scenarios is key to carrying an exploration of lived complexity into practical application

Kavalski ‘7 Emilian Kavalski, “The fifth debate and the emergence of complex international relations theory: notes on the application of complexity theory to the study of real life,” Cambridge Review of International Affairs, vol. 20 iss. 3, 2007, 10.1080/09557570701574154

In a further examination of the cognitive perspective, some proponents of CIR theory have suggested ‘scenarios’ as tools for the modelling of complexity (Feder 2002; Harcourt and Muliro 2004). Scenarios are defined as ‘imaginative stories of the future that describe alternative ways the present might evolve over a given period of time’ (Heinzen 2004, 4). They focus on subjective interpretations and perceptions. Understanding complexity, therefore, would depend on the relationship between the ‘cognitive schema’ (that is, available knowledge) and the ‘associative network’ (that is, the activation of the links between different concepts) of the observer (Bradfield 2004, 40). The suggestion is that in some sense ‘we create our own consciousness of complexity by seeking it out’ (LaPorte 1975, 329). In this respect, some proponents of CIR theory have asserted the analysis of discourses as an important distinction between human and nonhuman complex systems (Geyer 2003b, 26).14 The intellectual considerations of these epistemological frameworks suggest the challenging conceptual and methodological problems facing CIR theory. On a metatheoretical level, the problem stems from the realization that students of the complexity of international life can never be fully cognizant of the underlying truths, principles and processes that ‘govern reality’ because this would (i) involve (a degree of) simplification of complex phenomena (LaPorte 1975, 50), as well as (ii) imply ‘knowing the not knowable’ (Cioffi-Revilla 1998, 11). As suggested, analytically, the conscious consideration of complexity is hindered by the inherent difficulty of formalizing uncertainty and contingency (Whitman 2005, 105). Some commentators, therefore, have rejected the possibility of constructing comprehensive models for the study of complexity altogether in an attempt to overcome the trap of having to justify their methodologies in ways that are understandable to conventional IR. Therefore, a number of CIR proponents rely on ‘sensemaking’ (Browaeys and Baets 2003, 337; Coghill 2004, 53), ‘whatiffing’ (Beaumont 1994, 171) and other forms of ‘speculative thinking’ (Feder 2002, 114) for their interpretations of the complexity of international life. The claim is that the acceptance of endogeneity as a ‘fact’ of international life provides more insightful modes of analysis than the linear-regression-type approach of traditional IR (Johnston 2005 1040). Without ignoring some controversial aspects of incorporating ontological and epistemological reflection into methodological choices, the claim here is that CIR theory suggests intriguing heuristic devices that both challenge conventional wisdom and provoke analytical imaginations. Complex international relations theory, therefore, proffers analytical tools both for explaining and understanding discontinuities. It is claimed that its approaches offer ‘antidotes’ to the anxiety that randomness engenders in traditional IR as well as provide a paradigm that accepts uncertainty as inevitable (Feder 2002, 117). Thus, in contrast to the typically linear perceptions of change in mainstream IR— that is, changes in variables occur, but the effect is constant—CIR suggests that ‘things suffer change’. The contention is that the unpredictability of the emergent patterns of international life needs to be conceptualized within the framework of self-organizing criticality—that is, their dynamics ‘adapt to, or are themselves on, the edge of chaos, and most of the changes take place through catastrophic events rather than by following a smooth gradual path’ (Dunn 2007, 99). Complex international relations, in other words, suggests that change entails the possibility of a ‘radical qualitative effect’ (Richards 2000, 1). Therefore, the alleged arbitrariness of occurrences that conventional IR might describe as the effects of randomness (or exogenous/surprising shocks) could (and, in fact, more often than not does) reflect ignorance of their interactions. In fact, the reference to ‘chance’ is merely a metaphor for our lack of knowledge of the dynamics of complexity (Smith and Jenks 2006, 273). In this respect, CIR theory sketches the fifth debate in the study of international life (see Table 2). Its outlines follow the proposition of the Gulbenkian Commission to break down the division between ‘natural’ and ‘social’ sciences, since both are pervaded by ‘complexity’. Therefore, scholars should not be ‘conceiving of humanity as mechanical, but rather instead conceiving nature as active and creative [to make] the laws of nature compatible with the idea of novelty and of creativity’ (Wallerstein 1996, 61–63). Complex international relations (unlike other IR approaches) acknowledges that patterns of international life are panarchic ‘hybrids’ of physical and social relations (Urry 2003, 18) and advocates such fusion (through the dissolution of the outdated distinction) of scientific realities (Whitman 2005, 45–64). Its complex adaptive thinking in effect challenges the very existence of ‘objective standards’ for the assessment of competing knowledge claims, because these are ‘not nature’s, but rather always human standards, standards which are not given but made . . . adopted by convention by the members of a specific community’ (Hoffmann and Riley 2002, 304). The complex adaptive thinking of CIR theory, therefore, is an instance of ‘true thinking’—‘thinking that looks disorder and uncertainty straight in the face’ (Smith and Jenks 2006, 4).

#### Their K frames the plan as an end-point – it’s not, it’s a useful heuristic to understand the world but it doesn’t necessarily preclude alternative ways of understanding

#### Complexity theory causes political paralysis and lazy scholarship

Hendrick ‘9 Diane Hendrick, “Complexity Theory and Conflict Transformation: An Exploration of Potential and Implications,” University of Bradford Department of Peace Studies, June 2009, http://143.53.238.22/acad/confres/papers/pdfs/CCR17.pdf

It is still relatively early days in the application of complexity theory to social sciences and there are doubts and criticisms, either about the applicability of the ideas or about the expectations generated for them. It is true that the translation of terms from natural science to social science is sometimes contested due to the significant differences in these domains, and that there are concerns that the meanings of terms may be distorted, thus making their use arbitrary or even misleading. Developing new, relevant definitions for the new domain applications, where the terms indicate a new idea or a new synthesis that takes our understanding forward, are required. In some cases, particular aspects of complexity theory are seen as of only limited applicability, for example, self-organisation (see Rosenau‘s argument above that it is only relevant in systems in which authority does not play a role). There are those who argue that much that is being touted as new is actually already known, whether from systems theory or from experience, and so complexity theory cannot be seen as adding value in that way. There are also concerns that the theory has not been worked out in sufficient detail, or with sufficient rigour, to make itself useful yet. Even that it encourages woolly thinking and imprecision.In terms of application in the field, it could be argued that it may lead to paralysis, in fear of all the unexpected things that could happen, and all the unintended consequences that could result, from a particular intervention. The proposed adaptability and sensitivity to emerging new situations may lead to difficulties in planning or, better expressed, must lead to a different conception of what constitutes planning, which is, in itself, challenging (or even threatening) for many fields. The criteria for funding projects or research may not fit comfortably with a complexity approach, and evaluation, already difficult especially in the field of conflict transformation, would require a re-conceptualisation. Pressure for results could act as a disincentive to change project design in the light of emergent processes. There may be the desire to maintain the illusion of control in order to retain the confidence of funders. On the other hand, there are fears that complexity may be used as an excuse for poor planning, and implementation, which is a valid concern for funders. In addition, there may be scepticism that the co-operation and co-ordination between different researchers or interveners, (let alone transdisciplinary undertakings) appropriate to working on complex problem domains, will not work due to differing mental models, competing interests and aims, competition for funding, prestige, etc. Such attempts appear, therefore, unrealistic or unfeasible.

### States CP

#### Not using the DoD regulatory authority means the CP takes 20 years to just start

Makhijani ’12 Arjun Makhijani, electrical and nuclear engineer, President of the Institute for Energy and Environmental Research, has served as an expert witness in Nuclear Regulatory Commission Proceedings, “Is Thorium A Magic Bullet For Our Energy Problems?” interviewed by Ira Flatow, host of Science Friday, NPR, 5/4/2012, <http://www.npr.org/2012/05/04/152026805/is-thorium-a-magic-bullet-for-our-energy-problems>

This isn't going to happen tomorrow, even if you pour money into it. It would take 10 years for the NRC to understand and write regulations for this thing. And it would take 10 years before that to build the reactors, do the experiments and produce the data so you can regulate this thing, because all of our regulation is based on light water reactors.

#### 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 & Breetz 11 (Richard B., Professor of national Security Strategy at the national War College and a Senior fellow and energy and environmental Security and Policy Chair in the Center for Strategic research, institute for national Strategic Studies, at the national Defense University, Hanna L., doctoral candidate in the Department of Political Science at the Massachusetts institute of technology, "Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications," February 2011, [www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf], jam)

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.

### Elections DA

#### Plan is uniquely insulated from politics – bipartisan consensus

Shaw 5/15 (Andrew, member of the Government Affairs team where he focuses primarily on energy issues at the intersection of Canada-U.S. relations, uses his knowledge and experience of Congress and the Executive Branch to advise clients on critical energy and environmental public policy issues, “ A “Chunks” Approach to Climate Policy,” 2012, [[www.politicsandlawblog.com/2012/05/15/a-chunks-approach-to-climate-policy/](http://www.politicsandlawblog.com/2012/05/15/a-chunks-approach-to-climate-policy/)], jam)

While ideally President Obama would seek a “comprehensive” approach to climate change, Zichal acknowledged that the Administration would likely approach this issue in “chunks.” Specifically, Zichal talked about seeking “tools and policies that can garner bipartisan support.” One example provided by Zichal was extending the production tax credit for renewable production, which is set to expire at the end of this year. The “chunks” mention appears to reinforce the notion that President Obama would be unlikely to pursue cap-and-trade, or some variant, in a second-term. Following Zichal’s comments, Senator Lamar Alexander (R-TN) spoke – his remarks suggested that there are other “chunks” where consensus is achievable on energy policy between the Administration and Congress. Specifically, Senator Alexander expressed support for the Advanced Research Projects Agency-Energy (ARPA-E), an agency focused on R&D for breakthrough energy technologies, such as small modular reactors, smart grids, carbon capture and electric car batteries. ARPA-E is modeled after the Defense Advanced Research Projects Agency (DARPA), which, among other achievements, helped in inventing the internet. The American Recovery and Reinvestment Act provided the first appropriations for ARPR-E, which has subsequently used that money to fund over 180 projects focused on emerging energy technologies. In an election year, Republicans and Democrats spend an inordinate amount of time highlighting their differences on energy policy. Yet on ARPA-E, both President Obama and Governor Mitt Romney have expressed support for a continued commitment to the program. Senator Alexander’s comments indicate that an important and achievable “chunk” of climate policy, regardless of the outcome of the election, could be a renewed emphasis on ARPA-E.

#### DoD shields the links

Lacey 8/16 (Stephen, reporter Climate Progress, B.A. in journalism from Franklin Pierce University, 2012, [thinkprogress.org/climate/2012/08/16/699811/the-solyndra-standard-on-loan-guarantees-military-spending-and-clean-energy-politics/?mobile=nc], jam)

That’s exactly how it’s playing out. The politically-manufactured outrage over Solyndra has turned into an all-out campaign — with tens of millions of dollars being spent this election season specifically targeting federal renewable energy investments. Mitt Romney has jumped on the bandwagon, using Solyndra as a central piece of his campaign. And here’s the really astonishing disconnect: While supporting tens of thousands of jobs, the loan guarantee program is expected to cost $2 billion less than Congress budgeted for, according to an analysis from Herb Allison, John McCain’s former National Finance Chairman. Meanwhile, amidst the Solyndra saga, we casually accept a $300 million aircraft failure without batting an eye. No outrage. No sustained political campaign. It’s just another day testing our military toys. Why? Because we don’t often see programs like this as a “failure” in the political arena. We would never use one failure as an excuse to abandon investment in new technologies. Most politicians accept losses in military R&D expenditures because the long-term gains are potentially so important for national defense and for eventually developing technologies for civilian use. We should always strive to make programs as efficient and cost-effective as possible. But a few bankrupt clean energy companies representing a fraction of the program’s budgeted cost is no excuse for abandoning federal investments in clean energy — a strategically important sector that is becoming one of the largest drivers of business this century. Alas, don’t expect anyone to publicly admit this. As the campaign season unfolds, political leaders are all too willing to practice the Solyndra standard.

#### Business and bipartisan political support for the plan

Tindale 11 (Stephen, associate fellow at the Centre for European Reform, June 2011, "Thorium: How to save Europe's nuclear revival," [www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/pb\_thorium\_june11-153.pdf], jam)

In the US, political interest in thorium molten salt reactors is cross-party, having been led by Democratic Senator Harry Reid and Republican Senator Orrin Hatch. Reid and Hatch have introduced three bills to Congress, all of which identified thorium fuel cycle technology as a means to expand nuclear power without increasing waste or nuclear proliferation. When he entered office, President Barack Obama set up a Blue Ribbon Commission on America’s nuclear future, which is considering nuclear fuel cycles and nuclear waste against criteria of “cost, safety, resource utilisation and sustainability, and the promotion of nuclear non-proliferation and counter-terrorism goals”.11 The Commission will publish a draft report in July 2011 and a final report in January 2012. US Energy Secretary Steven Chu has already indicated that he thinks thorium and molten salt reactors are the way forward for nuclear energy: “We cannot continue to improve the condition of people throughout the world without use of nuclear power. None of the renewable energy solutions can be scaled quickly enough to meet current and future energy needs. Safer, proliferation resistant, nuclear power without the long term high level waste storage problems is needed to power a growing world economy and to allow all nations to provide for and feed their growing populations in peace. These goals are available by changing the nuclear fuel cycle to a U233/Thorium fuel cycle.”12 Large US energy companies have not yet shown serious interest in molten salt reactors. However, Microsoft’s Bill Gates has set up a company called TerraPower with the aim of developing a nuclear energy system which reduces the weapons proliferation risk and allows the re-use of spent nuclear fuel. TerraPower has identified thorium molten salt reactors as a promising means of achieving these objectives. Other US companies are part of a consortium, with Japanese and Russian companies, to develop a molten salt reactor. Japanese companies involved include Toyota, Toshiba and Hitachi.

#### Romney winning a close FL race – polling, state econ

Miami Herald “Buz group FL poll: Romney 50%, Obama 47%” 9/13/12 <http://miamiherald.typepad.com/nakedpolitics/2012/09/biz-group-fl-poll-romney-50-obama-47.html>

The Associated Industries of Florida business group has released snippets of a survey taken by Mclaughlin & Associates, a firm that typically polls for Republicans, which finds Mitt Romney clinging to an inside-the-error-margin lead over President Obama, 50-47%, among likely voters.¶ Th AIF numbers suggest a significant bounce compared to pre-convention surveys from Quinnipiac University and CNN/Time/ORC (Although Public Policy Polling, which typically surveys for Democrats, found Obama up by just 1 before and after the conventions). And the Florida figures show a more comfortable lead for Romney now than he faces nationwide, where most surveys indicate Obama got a post-convention bounce while Romney didn't. Update: Missed this Survey USA Poll released yesterday showing Obama with a 4-point lead (48-44) in Florida.¶ But there's still a good chance that Florida could be breaking the opposite direction from the nation. The state's jobless and home-foreclosure rates are higher than the nation's. The poll says 55 percent to 40 percent of likely voters say they're not better off than four years ago. There's also a good chance that this one poll will be a pro-Romney outlier as other surveys are released.

#### Nuclear swings Florida and Latinos for Obama

Whitman and Avilla 12

Christie is an [American](http://en.wikipedia.org/wiki/United_States)  [politician](http://en.wikipedia.org/wiki/Politician) and [author](http://en.wikipedia.org/wiki/Author) who served as the [50th](http://en.wikipedia.org/wiki/List_of_Governors_of_New_Jersey) [Governor](http://en.wikipedia.org/wiki/Governor_of_New_Jersey) of [New Jersey](http://en.wikipedia.org/wiki/New_Jersey) from 1994 to 2001, and was the [Administrator of the Environmental Protection Agency](http://en.wikipedia.org/wiki/Administrator_of_the_Environmental_Protection_Agency) also was New Jersey's first, and to date, only [female governor](http://en.wikipedia.org/wiki/List_of_female_state_governors_in_the_United_States). Karen is a guest Columnist for the Orlando Sentinel. “Nuclear energy = green jobs, economic growth in Fla., beyond” 6/22/12 <http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community>

We all know how critical Florida is to the outcome of this year's election. This week, as Orlando hosts the annual conference of the National Association of Latino Elected and Appointed Officials, all eyes are on the presidential candidates as they speak to Hispanic elected officials — and by extension, to their constituents — about the issues that are top of mind for voters.¶ Notably, the conference addresses two issues also of paramount concern to all Floridians: energy and the economy.¶ From our perspective, these issues are deeply intertwined — and one way that Floridians and the state's thriving Hispanic community can advocate for economic growth through renewed [investment](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) in clean energy is by supporting nuclear energy. We need to let the candidates know that Americans are relying on the next president for clean, sustainable energy policies that benefit us all.¶ As we look toward diversifying America's energy [portfolio](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) and building out the energy generated by renewables, candidates should look to nuclear energy as one proven way to effectively meet growing demand. In doing so, they are registering their support for well-paying jobs, sustained economic growth and clean, affordable energy options.¶ Florida is one of many states exploring opportunities to expand capacity at existing facilities, which would mean the creation of new jobs and added [economic](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) impact. By showing our support for Florida's five nuclear-energy reactors, as well as paving the way for the expansion of the infrastructure that supports them in the state and beyond, we can help create and sustain green jobs and work to reduce unemployment.¶ Florida needs jobs. While overall U.S. unemployment rates stand at 8.2 percent, unemployment in Florida is slightly higher, at 8.6 percent. National unemployment among Hispanics is higher still, at 11 percent.¶ At present, the U.S. nuclear-energy industry supports 100,000 American jobs. Each new nuclear facility creates an average of 1,400 to 1,800 high-paying jobs, often reaching as many as 3,500 jobs during peak construction periods. Once operational, these facilities create 400 to 700 direct and permanent jobs.¶ What does this all mean for minorities, who are so disproportionately impacted by unemployment?¶ Latinos in Florida will be able to take advantage of contract opportunities set aside for minority development programs. And Florida's communities will provide the goods and [services](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) needed to support a growing nuclear-energy industry. Recent trends in entrepreneurship indicate business starts in the Hispanic community will continue at a much higher rate than in other communities. Hispanic communities are therefore readily able to address the growing needs of new nuclear facilities.¶ Educational institutions across the state are also targeting minority populations with training programs designed to produce nuclear work-force-ready candidates. These programs and partnerships are cropping up at minority-serving institutions statewide.¶ Take, for example, [Miami Dade College](http://www.orlandosentinel.com/topic/OREDU0000157196.topic)'s Nuclear-Career Academic Bridge, which leverages a combination of [financial](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) aid, mentorships and focused, skills-oriented training to ready students to enter the nuclear industry upon completion of the program.¶ These kinds of efforts — which expose Hispanic students in greater numbers to critical science,[technology](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community), engineering and mathematics education — not only promote greater diversity in the energy work force, but also put Hispanic students in line to enter well-paying careers in an industry with a bright future.¶ Just as nuclear power creates and sustains jobs, it also promotes healthy economic growth. Each of America's 104 nuclear-power facilities generates, on average, $430 million in economic output annually, as well as an additional $40 million per year in total labor income. Minority-owned suppliers and businesses are among key beneficiaries of this economic infusion.¶ Indeed, all eyes will be on the candidates speaking at the Orlando conference this week. And clearly the candidates will be keenly focused on the Hispanic community. They're looking to the more than 1 million potential voters that Florida's Hispanic population represents for cues on how to shape their policies and platforms.¶

#### Florida is key to the election

Silver 9/12 [Nate, 9/12/12, “Florida a True Must-Win for Romney” <http://fivethirtyeight.blogs.nytimes.com/2012/09/12/sept-11-florida-a-true-must-win-for-romney/#more-34415>]

Florida has a [well-established reputation](http://fivethirtyeight.blogs.nytimes.com/2012/08/29/in-florida-tampa-is-essential-to-romney-election-hopes/) as a swing state. But as the election season has worn on, it has come to look even more important. Florida now ranks a clear second on our list of [tipping point states](http://fivethirtyeight.blogs.nytimes.com/2012/04/27/arizona-is-probably-not-a-swing-state/), those most likely to provide the decisive votes in the Electoral College, behind only Ohio.¶ Florida is typically just slightly Republican-leaning, and the tipping point calculation is sensitive to even the smallest deviations from the national averages. As I’ve argued before, for instance, North Carolina [isn’t that essential to the electoral math](http://fivethirtyeight.blogs.nytimes.com/2012/08/07/aug-7-north-carolina-isnt-central-to-electoral-math/), even though the race there is quite close, because other states that would help get a candidate to 270 electoral votes precede it in the pecking order.¶ But as the election has evolved, Mr. Obama’s polling has held up fairly well in Florida, including [another decent poll there](http://www.surveyusa.com/index.php/2012/09/11/in-florida-8-weeks-out-obama-4-points-atop-romney-nelson-11-points-atop-mack-voter-fraud-of-greater-concern-than-voter-suppression/) on Tuesday, which put him four points ahead.¶ Just as important, Mr. Obama’s polling has been choppy lately in a several other states, particularly Virginia (where he got a very poor poll on Monday), Colorado and Iowa, which had initially appeared to be easier wins for him. It is more conceivable now that Mr. Obama could have an easier time winning Florida than those other states, increasing its importance.¶ Nonetheless, Florida is mostly a state where Mr. Obama is playing offense. If he wins it, it will solve almost all of his other problems.¶ If Mr. Obama wins Florida, he could lose each of Virginia, Colorado and Iowa, along with Ohio, Wisconsin, and North Carolina, and either New Hampshire or Nevada, and still win the Electoral College. From Mr. Romney’s point of view, conversely, that might seem to make Florida a must-win state. In fact, it’s possible to put some numbers around this idea.¶ Defining a must-win state in a formal way is a bit tricky. For example, is Georgia a must-win for Mr. Romney? If he loses it, he would almost certainly lose the Electoral College. But that is because Georgia is much more Republican-leaning than the states that we would ordinarily classify as swing states. If things get bad enough for Mr. Romney to lose Georgia, his map will almost certainly be a disaster in a number of other ways.¶ So what we might really think of as must-win states are those that a candidate could not afford to lose even in a *close* election.¶ Imagine that the election is very close: the popular vote is within one percentage point either way. This condition occurred roughly 3,000 times out of the 25,000 simulations that I ran in the forecast model on Monday.¶ For each of the top 12 states on our tipping point list, I looked up the probability of Mr. Romney winning the election conditional upon losing the state in these 3,000 simulations. If Mr. Romney has great difficulty winning the Electoral College without the state in a close election, we can fairly describe it as a must-win.¶ These simulations estimate that Mr. Romney has only a 2 percent chance of winning the election if he loses Florida — even assuming that the election is very close over all. Losing its 29 electoral votes just presents too daunting a challenge for him, given his inability so far to penetrate into states like Pennsylvania that could plausibly substitute for it.¶ The numbers aren’t remotely that overwhelming for any other state. Mr. Romney has a 15 percent chance of winning a close election despite losing Ohio, for instance — not pleasant odds, but also far from impossible. If he lost Virginia, he’d still have a 19 percent chance of winning a close election; Colorado, a 28 percent chance; Wisconsin, a 37 percent chance, and so forth.¶ So, it isn’t a cliché to call Florida a must-win for Mr. Romney; he very badly needs it. What does the same list look like for Mr. Obama? Pennsylvania is the closest analog to Florida for him; he has just a 10 percent chance of winning a close election if he loses the state.¶ However, Mr. Obama is highly likely to win Pennsylvania, according to our forecast, as he has led in every poll of the state since February and as Mr. Romney has not placed all that many resources into the state.¶ Otherwise, Mr. Obama’s electoral strategy is fairly robust. He has about a 28 percent chance of winning a close election if he loses Ohio, for instance, about twice Mr. Romney’s chance of doing the same.

#### Strong relations are structurally impossible – Syria, Magnitsky, missile defense, anti-Americanism

Baker 6/13 (Peter, New York Times writer, used to be the Washington Post’s Moscow bureau chief, wrote a book on Putin while there, "Syria Crisis and Putin’s Return Chill U.S. Ties With Russia," 2012, [www.nytimes.com/2012/06/14/world/europe/putins-return-brings-rapid-chill-to-us-russia-ties.html?pagewanted=all], jam)

WASHINGTON — Sitting beside President Obama this spring, the president of Russia gushed that “these were perhaps the best three years of relations between Russia and the United States over the last decade.” Two and a half months later, those halcyon days of friendship look like a distant memory. Gone is Dmitri A. Medvedev, the optimistic president who collaborated with Mr. Obama and celebrated their partnership in March. In his place is Vladimir V. Putin, the grim former K.G.B. colonel whose return to the Kremlin has ushered in a frostier relationship freighted by an impasse over Syria and complicated by fractious domestic politics in both countries. The back-and-forth this week over Russian support for Syria’s government as it tries to crush an uprising underscored the limits of Mr. Obama’s ability to “reset” ties with Moscow. He signed an arms control treaty with Mr. Medvedev, expanded supply lines to Afghanistan through Russian territory, secured Moscow’s support for sanctions on Iran and helped bring Russia into the World Trade Organization. But officials in both capitals noted this week that the two countries still operated on fundamentally different sets of values and interests. The souring relations come as Mr. Obama and Mr. Putin are preparing to meet for the first time as presidents next week on the sidelines of a summit meeting in Mexico. With Mitt Romney, the Republican presidential candidate, saying Wednesday that Mr. Obama’s Russia policy “has clearly failed,” and Mr. Putin stoking anti-American sentiment in response to street protests in Moscow, the Mexico meeting may be a test of whether the reset has run its course. “We were already at a place with the Russians where we were about to move to a new phase,” said Benjamin J. Rhodes, a deputy national security adviser to Mr. Obama. “A lot of this is can we continue to build on the initial steps we’ve taken with the Russians even as we’ve had differences emerge, most notably on Syria.” Others see the situation more pessimistically. “There is a crisis in the Russian-American relationship,” said Aleksei K. Pushkov, the hawkish head of Russia’s parliamentary foreign affairs committee. “It is a crisis when the sides have to balance their interests but they cannot do so because their interests diverge. It is developing into some kind of long-term mistrust.” Signs of that divergence seem increasingly pronounced lately, despite private reassurances from Mr. Putin that he wants to deepen ties. Michael A. McFaul, a former Russia adviser to Mr. Obama, has been subjected to an unusual campaign of public harassment since arriving in Moscow as ambassador. A Russian general threatened pre-emptive strikes against American missile defense sites in Poland in the event of a crisis. Mr. Putin has cracked down on demonstrations while blaming Americans for them, and he skipped the Group of 8 summit meeting hosted by Mr. Obama last month. “The reset failed to change the underlying suspicion and distrust of America shared by a majority of Russians as well as Putin himself,” said Masha Lipman, an analyst at the Carnegie Moscow Center. “America is seen as a threat, an agent seeking to undermine Russia, to weaken it, to do harm to it. Russia always has to be on the alert, on the defensive.” Adding to the tension have been moves in Congress to block visas and freeze assets of Russians implicated in human rights abuses. The bipartisan legislation, named for Sergei L. Magnitsky, a lawyer whose corruption investigation led to his death in prison, passed a House committee last week and will be taken up by a Senate panel next week. “I see this as part of an effort to make clear the expected international conduct as it relates to human rights,” said Senator Benjamin L. Cardin, a Maryland Democrat sponsoring the legislation. “This is what friends do. We point out when you need to do better.” The Obama administration, seeking to avoid a rupture, opposes the bill on the grounds that the State Department has already banned visas for Russians implicated in Mr. Magnitsky’s death. Instead, the administration is highlighting legislation introduced on Tuesday to repeal decades-old trade restrictions on Russia known as Jackson-Vanik. On Tuesday, hours after Secretary of State Hillary Rodham Clinton accused Russia of supplying attack helicopters to Syria, she sent an under secretary of state, Wendy Sherman, to a Russia Day reception at the Russian Embassy in Washington, where she pointed to the proposed Jackson-Vanik repeal and talked about “mutual respect,” with no explicit mention of Syria. The complication for Mr. Obama is that lawmakers like Mr. Cardin and Senator John McCain, Republican of Arizona, want to link the Jackson-Vanik repeal to the Magnitsky legislation, angering Russian officials, who were shocked to learn that the White House apparently cannot block it. Mr. Putin was already upset at even the administration’s mild criticism of his domestic crackdown; Mr. Pushkov said the Kremlin viewed that to “not be very loyal.” Mr. Obama is focusing on enlisting Russia’s help on issues like stopping Iran from building nuclear weapons. The next round of talks between Iran and international powers opens in Moscow next week, and the administration hopes that Russia’s role as host will prompt it to use its influence with Tehran to extract more concessions. One of the biggest successes of the reset, however, has also made the United States more dependent on Russia. With Pakistan cutting off supply lines to Afghanistan, the so-called northern distribution network through Russia is the primary reinforcement route for America’s war on the Taliban. “We need more from them than they need from us at the moment,” said Angela E. Stent, director of Russian studies at Georgetown University. The Russians are less invested than Mr. Obama in the notion of a reset. “They look at that as an American course correction. But it’s not their policy, it’s an American policy,” Ms. Stent said. Publicly, the administration rejects any connection between Syria and the Afghan supply route. But, privately, officials worry that Russia will try to use the leverage provided by the supply route. So far, Russian officials have reassured their American counterparts that they will not. If anything, Moscow worries that the United States is pulling out of Afghanistan too soon, fearing a security collapse near Russia’s southern flank. For Mr. Obama, who considers improved ties with Russia one of his signature accomplishments, the question is whether the current friction is temporary or is a sign that the reset has accomplished what it can. The coming meeting in Los Cabos, Mexico, could prove uncomfortable for Mr. Obama. The first time the two men met, in July 2009, when Mr. Putin was prime minister, Mr. Putin delivered an hourlong harangue about the United States. “The president’s going to be yearning for the days of meetings with Dima,” said David J. Kramer, an official in the George W. Bush administration, using Mr. Medvedev’s nickname. “It probably won’t be a pretty meeting. And it shouldn’t be a pretty meeting.”

## 1AR

### Solvency

#### The green fleet swamps the link

Cardwell 12 (Diane, 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.

#### Nuclear doesn’t displace oil

IM No date (International Mundi, “United States - electricity production from oil sources Electricity production from oil sources (kWh),” <http://www.indexmundi.com/facts/united-states/electricity-production-from-oil-sources>, AM\*Cites the IEA)

Electricity production from oil sources (% of total) in United States was 1.11 as of 2010. Its highest value over the past 50 years was 17.17 in 1977, while its lowest value was 1.11 in 2010. Definition: Sources of electricity refer to the inputs used to generate electricity. Oil refers to crude oil and petroleum products. Source: International Energy Agency (IEA Statistics © OECD/IEA, http://www.iea.org/stats/index.asp), Energy Statistics and Balances of Non-OECD Countries, Energy Statistics of OECD Countries, and Energy Balances of OECD Countries.

#### DoD’s even smaller

Bartis 11 (James, PhD chemical physics – MIT, senior policy researcher – RAND, 2012,Promoting International Energy Security: Volume 1, Understanding Potential Air Force Roles, http://www.rand.org/content/dam/rand/pubs/technical\_reports/2012/RAND\_TR1144z1.pdf)

As fuel purchasers, neither the Air Force nor DoD has enough power to influence the world oil market. Their fuel purchases are simply too small. But as part of the armed forces of the United States, the Air Force plays an important and productive role in the world oil market. The armed services are the backbone of the U.S. national security policy that assures access to the energy supplies of the Persian Gulf and the stability and security of key friendly states in the region. Moreover, the U.S. Navy’s global presence assures freedom of passage in the sea- lanes that are crucial to the international trade in petroleum and natural gas.

#### Russia’s fine

Mobius, executive chairman of the Templeton Emerging Markets Team, 9/17/2012

(Mark, “Personal wealth: The next stage in Russiaâ s economy,” The Edge Singapore, Lexis)

Turmoil in Europe (and the prospect of slower growth elsewhere this year) contributed to oil-price declines this spring and summer, but our team doesnâ t anticipate a dramatic fall in oil prices. Many individual companies in Russia have been able to prosper regardless of the dips, because the cost of commodity production there is so low that each company can still continue to capture profits. We believe a worst-case oil-price scenario could already be priced into the valuations of Russian oil companies. Of course, if there is a severe depression in Europe or the US, it would likely have a negative price impact, not just on oil but also on other commodities â " but we donâ t think thatâ s likely to happen in the near term.

#### Non-unique – geopolitical forces ensure oil prices will be low and get lower – OPEC can’t change this

Brodrick 12 (Sean, Weiss Research’s small-cap specialist, concentrating in natural resources, is the editor of the company’s Red-Hot Global Resources, Global Resource Hunter, as well as a regular contributor to the daily investment e-newsletter, Uncommon Wisdom, "3 Reasons Why Oil Prices Will Go Lower Short-Term," Jun 14, [http://www.uncommonwisdomdaily.com/3-reasons-why-oil-prices-will-go-lower-short-term-14427], jam)

#1. Saudi Arabia Could Tell OPEC to Take a Hike.¶ Recently, Saudi Arabia increased its production to 10 million barrels a day to pick up the slack from sanctions against fellow OPEC member Iran. What’s more, Saudi Oil Minister Ali al-Naimi said the desert kingdom saw increased oil production (and lower prices) as a “stimulus” for the sputtering global economy.¶ What’s more, Mr. al-Naimi said Saudi Arabia’s analysis “suggests we will need a higher (production) ceiling than currently exists.”¶ While the Saudis will see how other OPEC members react before formulating a position, Mr. al-Naimi added that his country needs to be allowed to produce more than it currently does. Saudi Arabia says it has spare capacity of another 2.5 million barrels per day.¶ Is Mr. Luaibi, the oil minister for Iraq, going to tell the Saudis otherwise? Iraq’s oil exports are expected to rise to 2.9 million barrels-per-day next year, from 2.4 million barrels this year. So, Mr. Luaibi might have trouble convincing the Saudis to cut back.¶ It may all be a wash because Saudi Arabia said it is going into the meeting planning not to ask for OPEC to raise the production level. But that won’t stop it from cheating like a bandit … indeed, any OPEC country that can produce more oil seems to be ready to do so, regardless of quotas.¶ Also, Saudi Arabia has every incentive to keep prices low enough to discourage a search for alternative fuels and keep demand high for its oil.¶ Sources say while Iran needs $117 oil to balance its budget, Saudi Arabia is happy with $100 oil. I think the Saudis might be happier with even-lower prices than that, considering that they can pump oil for an estimated cost of $20 per barrel.¶ Think about it: If the Saudis keep the price of oil low enough, long enough, a lot of expensive deepwater-oil projects will have to be shelved.¶ Compare their $20-per-barrel cost with North Sea fields that have a marginal cost of about $60 per barrel, while other new deepwater discoveries can cost from $70 to $90 per barrel.¶ That means more market share for the Saudis, who can ride prices back up again after they put some deepwater competitors out of business.¶ #2. U.S. Oil Production Soars; Imports Drop.¶ U.S. oil production has risen 25% since 2008 (an additional 1.6 million barrels per day), and last year, the United States registered the largest increase in oil production of any country outside of OPEC. America’s oil production could increase by 600,000 barrels per day this year.¶ Hydraulic fracturing has led to a monumental increase in U.S. natural gas and oil production, which will only increase further as the country’s demand for those resources grows.¶ Result: We are becoming more independent of imported oil. Net petroleum imports have fallen from 60% of total consumption in 2005 to 42% today. Here’s a chart I picked up from economics professor Mark J. Perry’s excellent Carpe Diem blog …¶ What’s more, the composition of our imported oil is changing. The output of Canadian oil sands has tripled since 2000. Not only is Canada a friendly country, but Canada’s production is already hooked into the North American oil grid. So, more production from Canada lowers U.S. oil prices, which already trade at a steep discount to the Brent crude international benchmark.¶ I’m not saying we’re going to be free of imported oil, or even free of importing oil from countries that hate us. I’m saying that the more independence we get with our energy supply, the better off we are.¶ Does more oil supply here in the U.S. translate to lower prices at the gas pump? Bet on it! The average price for a gallon of regular gasoline in the United States fell 15.9 cents to $3.624 in the past three weeks.¶ #3. Global Economic Growth Is Slowing Down.¶ The debt crisis is just one problem Europe is grappling with. Another is that economies all over Europe are slowing down rapidly, including the engine of Europe, Germany.¶ This economic slowdown — with a threat of recession — is weighing on oil demand and prices. In fact, Europe’s fuel demand has fallen so fast that nearly a quarter of Europe’s refinery capacity was taken offline in May, as refiners responded to declining demand for gasoline and diesel.¶ The euro zone accounts for just 12% of global oil demand, or about half as much as the United States. But since oil prices are made on the margins, a euro-zone recession will be a heavy weight on crude.¶ Meanwhile, in China, imports went up 0.4% in May to a record 6 million barrels, but that’s because China is building up oil stockpiles. In fact, the most bullish news for oil is that China diverted 40 million barrels to its strategic petroleum reserve and could add another 85 to 110 million barrels in the second half of the year.¶ But China’s economy is hitting the brakes. China’s inflation dipped to a two-year low in May while economic activity remained weak. Steel production fell 2.5% in May compared to April. Iron ore spot import prices fell 8% through most of May. And output of copper fell 1.4% month-on-month, its second-consecutive month of decline.¶ Here in the U.S., our economy is still growing. But job creation slipped alarmingly in April and May, and manufacturing orders slid lower in the last two months.¶ I don’t know if we’re going into another recession. In fact, I hope we can avoid it, and one thing that will help us avoid a recession is lower oil prices. But the fear of a recession should be enough to cause traders to make bearish bets on oil prices. And that could send oil prices lower, faster than anyone thinks possible.¶ OPEC has a poor record of halting such dives. Deutsche Bank data shows that, over the past 20 years, OPEC has slashed production 13 times to try and prop up prices. Three-quarters of the time, the tactic has succeeded within three months. There are three notable exceptions: 1998, 2001 and 2008. In each instance, amid a worldwide economic slump, it took an average of 15 months for the cuts to work.

### Elections DA

#### Romney up: debate swung Florida’s undecideds

Tampa Bay Times 10/11 (“Times/Bay News 9/Herald exclusive Florida Poll: Romney 51, Obama 44” <http://www.tampabay.com/news/politics/national/timesbay-news-9herald-exclusive-florida-poll-romney-51-obama-44/1255882>)

Barack Obama's lackluster debate performance last week has dramatically altered the presidential race in Florida, with Mitt Romney opening up a decisive 7 percentage point lead, according to a new Tampa Bay Times/Bay News 9/Miami Herald poll.¶ The survey conducted this week found 51 percent of likely Florida voters supporting Romney, 44 percent backing Obama and 4 percent undecided. That's a major shift from a month ago when the same poll showed Obama leading 48 percent to 47 percent — and a direct result of what Obama himself called a "bad night" at the first debate.¶ The debate prompted 5 percent of previously undecided voters and 2 percent of Obama backers to move to Romney. Another 2 percent of Obama supporters said they are now undecided because of the debate.

# Rd 3 vs Oklahoma CO

## 1AC

### Part 1

#### Contention 1 is physics.

#### Liquid fluoride thorium reactors are safe, efficient, and minimally wasteful

Hargraves and Moir ’10 Robert Hargraves, teaches energy policy at the Institute for Lifelong Education at Dartmouth, PhD in physics from Brown, and Ralph Moir, Sc.D. in nuclear engineering from MIT, published 10 papers on molten-salt reactors during his career at Lawrence Livermore National Laboratory, “Liquid Fluoride Thorium Reactors: An old idea in nuclear power gets reexamined,” American Scientist, Vol. 98, No. 4, July-August 2010, http://www.americanscientist.org/issues/feature/liquid-fluoride-thorium-reactors

Liquid fuel thorium reactors offer an array of advantages in design, operation, safety, waste management, cost and proliferation resistance over the traditional configuration of nuclear plants. Individually, the advantages are intriguing. Collectively they are compelling. Unlike solid nuclear fuel, liquid fluoride salts are impervious to radiation damage. We mentioned earlier that fuel rods acquire structural damage from the heat and radiation of the nuclear furnace. Replacing them requires expensive shutdown of the plant about every 18 months to swap out a third of the fuel rods while shuffling the remainder. Fresh fuel is not very hazardous, but spent fuel is intensely radioactive and must be handled by remotely operated equipment. After several years of storage underwater to allow highly radio-active fission products to decay to stability, fuel rods can be safely transferred to dry-cask storage. Liquid fluoride fuel is not subject to the structural stresses of solid fuel and its ionic bonds can tolerate unlimited levels of radiation damage, while eliminating the (rather high) cost of fabricating fuel elements and the (also high) cost of periodic shutdowns to replace them. More important are the ways in which liquid fuel accommodates chemical engineering. Within uranium oxide fuel rods, numerous transuranic products are generated, such as plutonium-239, created by the absorption of a neutron by uranium-238, followed by beta decay. Some of this plutonium is fissioned, contributing as much as one-third of the energy production of uranium reactors. All such transuranic elements could eventually be destroyed in the neutron flux, either by direct fission or transmutation to a fissile element, except that the solid fuel must be removed long before complete burnup is achieved. In liquid fuel, transuranic fission products can remain in the fluid fuel of the core, transmuting by neutron absorption until eventually they nearly all undergo fission. In solid fuel rods, fission products are trapped in the structural lattice of the fuel material. In liquid fuel, reaction products can be relatively easily removed. For example, the gaseous fission poison xenon is easy to remove because it bubbles out of solution as the fuel salt is pumped. Separation of materials by this mechanism is central to the main feature of thorium power, which is formation of fissile uranium-233 in the blanket for export to the core. In the fluoride salt of the thorium blanket, newly formed uranium-233 forms soluble uranium tetrafluoride (UF4). Bubbling fluorine gas through the blanket solution converts the uranium tetrafluoride into gaseous uranium hexafluoride (UF6), while not chemically affecting the lessreactive thorium tetrafluoride. Uranium hexafluoride comes out of solution, is captured, then is reduced back to soluble UF4 by hydrogen gas in a reduction column, and finally is directed to the core to serve as fissile fuel. Other fission products such as molybdenum, neodymium and technetium can be easily removed from liquid fuel by fluorination or plating techniques, greatly prolonging the viability and efficiency of the liquid fuel. Liquid fluoride solutions are familiar chemistry. Millions of metric tons of liquid fluoride salts circulate through hundreds of aluminum chemical plants daily, and all uranium used in today's reactors has to pass in and out of a fluoride form in order to be enriched. The LFTR technology is in many ways a straightforward extension of contemporary nuclear chemical engineering. Waste Not Among the most attractive features of the LFTR design is its waste profile. It makes very little. Recently, the problem of nuclear waste generated during the uranium era has become both more and less urgent. It is more urgent because as of early 2009, the Obama administration has ruled that the Yucca Mountain Repository, the site designated for the permanent geological isolation of existing U.S. nuclear waste, is no longer to be considered an option. Without Yucca Mountain as a strategy for waste disposal, the U.S. has no strategy at all. In May 2009, Secretary of Energy Steven Chu, Nobel laureate in physics, said that Yucca Mountain is off the table. What we're going to be doing is saying, let's step back. We realize that we know a lot more today than we did 25 or 30 years ago. The [Nuclear Regulatory Commission] is saying that the dry-cask storage at current sites would be safe for many decades, so that gives us time to figure out what we should do for a long-term strategy. The waste problem has become somewhat less urgent because many stakeholders believe Secretary Chu is correct that the waste, secured in huge, hardened casks under adequate guard, is in fact not vulnerable to any foreseeable accident or mischief in the near future, buying time to develop a sound plan for its permanent disposal. A sound plan we must have. One component of a long-range plan that would keep the growing problem from getting worse while meeting growing power needs would be to mobilize nuclear technology that creates far less waste that is far less toxic. The liquid fluoride thorium reactor answers that need. Thorium and uranium reactors produce essentially the same fission (breakdown) products, but they produce a quite different spectrum of actinides (the elements above actinium in the periodic table, produced in reactors by neutron absorption and transmutation). The various isotopes of these elements are the main contributors to the very long-term radiotoxicity of nuclear waste. The mass number of thorium-232 is six units less than that of uranium238, thus many more neutron captures are required to transmute thorium to the first transuranic. Figure 6 shows that the radiotoxicity of wastes from a thorium /uranium fuel cycle is far lower than that of the currently employed uranium/plutonium cycle--after 300 years, it is about 10,000 times less toxic. By statute, the U.S. government has sole responsibility for the nuclear waste that has so far been produced and has collected $25 billion in fees from nuclear-power producers over the past 30 years to deal with it. Inaction on the waste front, to borrow the words of the Obama administration, is not an option. Many feel that some of the $25 billion collected so far would be well spent kickstarting research on thorium power to contribute to future power with minimal waste. Safety First It has always been the dream of reactor designers to produce plants with inherent safety - reactor assembly, fuel and power-generation components engineered in such a way that the reactor will, without human intervention, remain stable or shut itself down in response to any accident, electrical outage, abnormal change in load or other mishap. The LFTR design appears, in its present state of research and design, to possess an extremely high degree of inherent safety. The single most volatile aspect of current nuclear reactors is the pressurized water. In boiling light-water, pressurized light-water, and heavywater reactors (accounting for nearly all of the 441 reactors worldwide), water serves as the coolant and neutron moderator. The heat of fission causes water to boil, either directly in the core or in a steam generator, producing steam that drives a turbine. The water is maintained at high pressure to raise its boiling temperature. The explosive pressures involved are contained by a system of highly engineered, highly expensive piping and pressure vessels (called the "pressure boundary"), and the ultimate line of defense is the massive, expensive containment building surrounding the reactor, designed to withstand any explosive calamity and prevent the release of radioactive materials propelled by pressurized steam. A signature safety feature of the LFTR design is that the coolant - liquid fluoride salt - is not under pressure. The fluoride salt does not boil below 1400 degrees Celsius. Neutral pressure reduces the cost and the scale of LFTR plant construction by reducing the scale of the containment requirements, because it obviates the need to contain a pressure explosion. Disruption in a transport line would result in a leak, not an explosion, which would be captured in a noncritical configuration in a catch basin, where it would passively cool and harden. Another safety feature of LFTRs, shared with all of the new generation of LWRs, is its negative temperature coefficient of reactivity. Meltdown, the bogey of the early nuclear era, has been effectively designed out of modern nuclear fuels by engineering them so that power excursions - the industry term for runaway reactors - are self-limiting. For example, if the temperature in a reactor rises beyond the intended regime, signaling a power excursion, the fuel itself responds with thermal expansion, reducing the effective area for neutron absorption - the temperature coefficient of reactivity is negative - thus suppressing the rate of fission and causing the temperature to fall. With appropriate formulations and configurations of nuclear fuel, of which there are now a number from which to choose among solid fuels, runaway reactivity becomes implausible. In the LFTR, thermal expansion of the liquid fuel and the moderator vessel containing it reduces the reactivity of the core. This response permits the desirable property of load following - under conditions of changing electricity demand (load), the reactor requires no intervention to respond with automatic increases or decreases in power production. As a second tier of defense, LFTR designs have a freeze plug at the bottom of the core - a plug of salt, cooled by a fan to keep it at a temperature below the freezing point of the salt. If temperature rises beyond a critical point, the plug melts, and the liquid fuel in the core is immediately evacuated, pouring into a subcritical geometry in a catch basin. This formidable safety tactic is only possible if the fuel is a liquid. One of the current requirements of the Nuclear Regulatory Commission (NRC) for certification of a new nuclear plant design is that in the event of a complete electricity outage, the reactor remain at least stable for several days if it is not automatically deactivated. As it happens, the freezeplug safety feature is as old as Alvin Weinberg's 1965 Molten Salt Reactor Experiment design, yet it meets the NRCs requirement; at ORNL, the "old nukes" would routinely shut down the reactor by simply cutting the power to the freeze-plug cooling system. This setup is the ultimate in safe power outage response. Power isn't needed to shut down the reactor, for example by manipulating control elements. Instead power is needed to prevent the shutdown of the reactor. Cost Wise In terms of cost, the ideal would be to compete successfully against coal without subsidies or market-modifying legislation. It may well be possible. Capital costs are generally higher for conventional nuclear versus fossil-fuel plants, whereas fuel costs are lower. Capital costs are outsized for nuclear plants because the construction, including the containment building, must meet very high standards; the facilities include elaborate, redundant safety systems; and included in capital costs are levies for the cost of decommissioning and removing the plants when they are ultimately taken out of service. The much-consulted MH study The Future of Nuclear Power, originally published in 2003 and updated in 2009, shows the capital costs of coal plants at $2.30 per watt versus $4 for light-water nuclear. A principal reason why the capital costs of LFTR plants could depart from this ratio is that the LFTR operates at atmospheric pressure and contains no pressurized water. With no water to flash to steam in the event of a pressure breach, a LFTR can use a much more close-fitting containment structure. Other expensive high-pressure coolant-injection systems can also be deleted. One concept for the smaller LFTR containment structure is a hardened concrete facility below ground level, with a robust concrete cap at ground level to resist aircraft impact and any other foreseeable assaults. Other factors contribute to a favorable cost structure, such as simpler fuel handling, smaller components, markedly lower fuel costs and significantly higher energy efficiency. LFTRs are high-temperature reactors, operating at around 800 degrees Celsius, which is thermodynamically favorable for conversion of thermal to electrical energy - a conversion efficiency of 45 percent is likely, versus 33 percent typical of coal and older nuclear plants. The high heat also opens the door for other remunerative uses for the thermal energy, such as hydrogen production, which is greatly facilitated by high temperature, as well as driving other industrial chemical processes with excess process heat. Depending on the siting of a LFTR plant, it could even supply heat for homes and offices. Thorium must also compete economically with energy-efficiency initiatives and renewables. A mature decision process requires that we consider whether renewables and efficiency can realistically answer the rapidly growing energy needs of China, India and the other tiers of the developing world as cheap fossil fuels beckon - at terrible environmental cost. Part of the cost calculation for transitioning to thorium must include its role in the expansion of prosperity in the world, which will be linked inexorably to greater energy demands. We have a pecuniary interest in avoiding the enviromental blowback of a massive upsurge in fossil-fuel consumption in the developing world. The value of providing an alternative to that scenario is hard to monetize, but the consequences of not doing so are impossible to hide from. Perhaps the most compelling idea on the drawing board for pushing thorium-based power into the mainstream is mass production to drive rapid deployment in the U.S. and export elsewhere. Business economists observe that commercialization of any technology leads to lower costs as the number of units increases and the experience curve delivers benefits in work specialization, refined production processes, product standardization and efficient product redesign. Given the diminished scale of LFTRs, it seems reasonable to project that reactors of 100 megawatts can be factory produced for a cost of around $200 million. Boeing, producing one $200 million airplane per day, could be a model for LFTR production.

#### However, thorium tech hasn’t caught on in the US

Niiler ’12 Eric Niiler, “Nuclear power entrepreneurs push thorium as a fuel,” Washington Post, 2/20/2012, http://www.washingtonpost.com/national/health-science/nuclear-power-entrepreneurs-push-thorium-as-a-fuel/2011/12/15/gIQALTinPR\_story.html

The proposed fuel is thorium, an abundant silver-gray element named for the Norse god of thunder. It is less radioactive than the uranium that has always powered U.S. plants, and advocates say that not only does it produce less waste, it also is more difficult to turn into nuclear weapons. They’re pushing the idea of adapting plants to use thorium as a fuel or replacing them with a completely new kind of reactor called a liquid-fluoride thorium reactor, or LFTR (pronounced “lifter”). The LFTR would use a mixture of molten chemical salts to cool the reactor and to transfer energy from the fission reaction to a turbine. Proponents say such a system would be more efficient and safer than existing plants, which use pressurized water to cool uranium fuel rods and boiling water or steam to transfer the energy they create. “A molten-salt reactor is not a pressurized reactor,” said John Kutsch, director of the Thorium Energy Alliance, a trade group based in Harvard, Ill. “It doesn’t use water for cooling, so you don’t have the possibility of a hydrogen explosion, as you did in Fukushima.” Kutsch and others say that a thorium-fueled reactor burns hotter than uranium reactors, consuming more of the fuel. “Ninety-nine percent of the thorium is burned up,” he said. “Instead of 10,000 pounds of waste, you would have 300 pounds of waste.” ‘Small boatloads of fanatics’ Although the idea of thorium power has been around for decades — and some countries are planning to build thorium-powered plants — it has not caught on with the companies that design and build nuclear plants in the United States or with the national research labs charged with investigating future energy sources.

#### Climate change is coming now and bears a hugely disproportionate impact on those already at the greatest socioeconomic disadvantage, causing widespread physical displacement and death

Byravan and Rajan ’10 Sujatha Byravan and Sudhir Chella Rajan, “The Ethical Implications of Sea-Level Rise Due to Climate Change,” Ethics & International Affairs 24, No. 3, 9/20/2010, only accessible on some exclusive database

As scientific evidence for the adverse effects of human-induced climate change grows stronger, it is becoming increasingly clear that these questions are of urgent practical interest and require concerted international political action. In the course of this century and the next, the earth’s climate will almost surely get warmer as a direct result of the emissions accumulated in the atmosphere from the burning of fossil fuels since the Industrial Revolution. This warming will very likely result in heat waves, heavy precipitation in some areas, extreme droughts in others, increased hurricane intensity, and sea-level rise of about one meter—although recent findings suggest this rise could quite plausibly be greater than that by century’s end.1 Forecasts of how many people will be displaced by 2050 by climate change vary widely, from about 25 million to 1 billion. The difficulty in accurate forecasting lies not only in the uncertainty regarding future climate change impacts and adaptation measures but also in estimating the outcome of the several complex factors driving migration.2 No other form of environmentally induced human migration will likely be as permanent as that caused by climate-induced SLR; and there are special reasons why its victims deserve unique moral consideration. SLR will affect coastal populations in a variety of ways, including inundation, flood and storm damage, erosion, saltwater intrusion, and wetland loss. Together, these will greatly reduce available land for cultivation, water resources, and fodder, causing severe hardship in terms of livelihood and habitat loss. Worst of all, SLR and the associated changes in the coastal zone will add burdens to many who are already poor and vulnerable. The physical changes associated with SLR may themselves take place in abrupt, nonlinear ways as thresholds are crossed. In turn, the least resilient communities— that is, those dependent on subsistence fishing—will be the first to experience ‘‘tipping points’’ in their life systems, so that the only option available to them would be to abandon their homes and search for better prospects elsewhere. As the average sea level continues to rise, coastal inundation, saltwater intrusion, and storm surges will become more intense and people will find it increasingly difficult to stay in their homes and will look for ways to migrate inland. As ever larger numbers pass thresholds in their ability to cope, more societal tipping points will be crossed, resulting in the sudden mass movements of entire villages, towns, and cities in coastal regions.3 On small islands and in countries with heavily populated delta regions, the very existence of the nation-state may become jeopardized, so that the extremely vulnerable will no longer have state protection they can rely on. The extent of vulnerability to sea-level rise in any given country will depend on more than just its terrain and climatic conditions: the fraction of the population living in low-lying regions, the area and proportion of the country inundated, its wealth and economic conditions, and its prevailing political institutions and infrastructure will all be of relevance. Thus, in a large country, such as the United States or China, coastal communities would be able to move inland, given adequate preparation and government response. In the case of small islands in the South Pacific, however, such an option does not exist, since it is expected that most or even the entire land area will sink or become uninhabitable. In such cases as Bangladesh, Egypt, Guyana, and Vietnam, where nearly half or more of the populations live in low-lying deltaic regions that support a major fraction of their economies, SLR will threaten the very functioning of the state. Moreover, it is increasingly clear that for tens to hundreds of millions of people living in low-lying areas and on small islands, no physical defense is realistically possible or can be fully protective. A recent report by the Dutch Delta Committee proposes annual investments of about 1.5 billion Euros for the rest of the century just to protect the Netherlands’ 200-mile coastline, and indicates that 20–50 percent of coastal land worldwide cannot be protected, especially under conditions where SLR takes place rapidly—as a result, say, of a collapse of major ice sheets in Greenland or Antarctica.4 Even if greenhouse gases are removed from the atmosphere through some future technology, we are already committed to a certain degree of warming and sea-level rise because of the thermal inertia of the oceans. In addition, most residents of small island nations and other low-lying coastal regions around the world will not be able to avail themselves of the sorts of conventional adaptation remedies that are conceivable for the victims of drought, reduced crop yields, desertification, and so on. Apart from exceptional cases where adequate engineering solutions can be developed to prevent inundation, coastal erosion, saltwater intrusion, and other challenges associated with rising seas, people living in these vulnerable regions will be forced to flee, generally with no possibility of return to their original homes. Indeed, migration and permanent resettlement will be the only possible ‘‘adaptation’’ strategy available to millions. Existing international law provides no solution for these individuals, for whom, we will argue, the only just remedy is in the form of special rights of free global movement and resettlement in regions and countries on higher ground in advance of disaster. What Needs to Be Done The issue of climate change and migration has received considerable scholarly attention, primarily in terms of its political and legal implications, but there has been little focus on the ethical aspects.5 In an earlier paper we suggested that the responsibility of absorbing ‘‘climate exiles’’ should be shared among host countries in a manner that is proportional to a host’s cumulative emissions of greenhouse gases.6 Here, we try to develop the ethical basis for the international community, first, to recognize that displaced persons, and in particular those whose nation states will have become physically nonexistent or will face an unendurable burden, should have a special right to free movement to other countries; and, second, to formulate institutional means for providing them political, social, and economic rights. We define the victims’ unbearable burden in the following terms: they will face a breakdown or total forfeiture of prevailing physical, economic, and social support systems; and they will have no effective state to endow them with rights and alleviate their pain. It is not our intention to provide a particular formula for how individual countries should be made responsible for the victims’ habitation and citizenship, but to suggest instead that once the basic principle of shared responsibility based on each country’s contribution to climate change is accepted, there could be several ways to determine precisely how the costs of policy implementation should be distributed, how rights could be exercised by the climate exiles and migrants, and what other institutional and political mechanisms should be established to avert a massive refugee crisis. The fairest solution, we therefore propose, is for the international community to grant, in the first instance, the individual right to migrate to safe countries for those who will be displaced forcibly by SLR. We then recommend that an international treaty begin to address this issue so that climate migrants and future exiles will be able to find homes well in advance of the actual emergency.7 Indeed, unlike in the case of natural disasters, such as the Asian tsunami of December 2004, the world is already sufficiently forewarned about the need to prepare for the effects of SLR and has ample time and opportunity to make reasoned judgments about how best to respond.8 We contend that the alternative—to ignore potential victims until after they become ‘‘environmental refugees’’—is morally indefensible as well as impractical. For one thing, the victims in the case of SLR cannot even be classified as ‘‘refugees’’ since there are no legal instruments that give them this option. Notably, the Refugee Convention, designed to protect those forced to flee their homes as a result of war or persecution, in force since 1954, recognizes as a refugee someone who is ‘‘unable [or] unwilling to avail himself of the protection’’ of his country of nationality and is outside that country ‘‘owing to well-grounded fear of being persecuted for reasons of race, religion, nationality, membership in a particular social group or political opinion’’—a definition that does not extend to those adversely affected by environmental disasters, including climatic change. In this paper and elsewhere we therefore reserve the terms ‘‘climate migrants’’ and ‘‘climate exiles’’ to refer to the victims of SLR attributed to climate change. The former includes all those who are displaced because of the effects of climate change, while the latter refers to a special category of climate migrants who will have lost their ability to remain well-functioning members of political societies in their countries, often through no fault of their own. Further, while most climate migrants will be internally displaced people, or have the opportunity of returning to their countries or regions of origin if adequate adaptation measures were taken, climate exiles will be forced to become permanently stateless in the absence of other remedies. Duties to Climate Exiles Our fundamental argument is that humanity carries a special obligation to present and future generations of people whose homes, means of livelihood, and membership in states will be lost specifically as a result of sea-level rise caused by climate change. We draw upon the principle of intergenerational equity, wherein each generation is collectively responsible for protecting and using natural resources in a sustainable manner so that future generations are not unduly harmed by their present misuse. The recognition of this duty implies, as Joerg Tremmel suggests, that ‘‘in spite of the difficulties such as opportunity costs, restricted human ability and foresight, modern collective agents (present governments and leading industrial companies) have to take their responsibility for future generations seriously.’’9 This responsibility is carried over to representative agents in the future who share the legacy of causing harm with their forebears but who now have the ability to recognize the suffering that ensues as a result of historical (if not continuing) actions and can therefore make amends to the sufferers who live in their midst. As we discuss later, this is not always equivalent to an argument for making reparations for past injury.

#### Global warming risks massive species die-off and habitat destruction

Hannah ’12 Lee Hannah, senior researcher in climate change biology at Conservation International, visiting researcher and adjunct professor at the Bren School of Environmental Science & Management at UC-Santa Barbara, has a pretty detailed Wikipedia page, “As Threats to Biodiversity Grow, Can We Save World’s Species?” Yale Environment 360, 4/19/2012, http://e360.yale.edu/feature/as\_threats\_to\_biodiversity\_grow\_can\_we\_save\_worlds\_species/2518/

Now, with 7 billion people on the planet — heading to 10 billion — and with greenhouse gas emissions threatening more rapid temperature rises than the warming that brought the last Ice Age to an end, the many millions of living things on Earth face an unprecedented squeeze. Is a wave of extinctions possible, and if so, what can we do about it? The late climate scientist and biologist Stephen Schneider once described this confluence of events — species struggling to adapt to rapid warming in a world heavily modified by human action — as a “no-brainer for an extinction spasm.” My colleagues Barry Brook and Anthony Barnosky recently put it this way, “We are witnessing a similar collision of human impacts and climatic changes that caused so many large animal extinctions toward the end of the Pleistocene. But today, given the greater magnitude of both climate change and other human pressures, the show promises to be a wide-screen technicolor version of the (by comparison) black-and-white letterbox drama that played out the first time around.” The magnitude of the threat was first quantified in a 2004 Nature study, “Extinction Risk from Climate Change.” This paper suggested that in six diverse regions, 15 to 37 percent of species could be at risk of extinction. If those six regions were typical of the global risk, the study’s authors later calculated, more than a million terrestrial and marine species could face extinction due to human encroachment and climate change — assuming conservatively that 10 million species exist in the world. Headlines around the world trumpeted the 1 million figure. Whether that scenario will unfold is unclear. But signs of what is to come are already all around us: nearly 100 amphibian species in South America vanishing in a disease outbreak linked to climate change, large areas of western North American facing massive die-offs of trees because of warming-driven beetle outbreaks, and increasing loss of coral reefs worldwide because of human activities and coral bleaching events driven by rising ocean temperatures. Most of the world’s biologically unique areas have already lost more than 70 percent of their high-quality habitat. The world community has the power to greatly reduce the prospect of an extinction spasm by lowering greenhouse gas emissions and launching large-scale conservation and forest preservation programs that both slow global warming and provide a sanctuary for countless species. But progress on these fronts is slow, and pressure on the world’s biodiversity remains relentless. An important part of the solution is preserving the ability of species to move across a changing landscape. Before humans, species responded to climate change by migrating, sometimes long distances, to track their preferred climatic conditions. Fully natural landscapes were conducive to these movements, with even slow-dispersing plants shifting the heart of their range on continental scales. The mechanisms of these changes are still being worked out, but we know they happened: Insects once found in Britain are now found only in the Himalayas, and centers of oak distribution have moved from the Mediterranean to Central Europe and from Georgia to Pennsylvania. Recent studies have shown that migration was an important method for species to cope with rapid climate change as far back as 55 million years ago, a period known as the Paleocene-Eocene Thermal Maximum, or PETM. Then, for reasons that are still not entirely clear, vast amounts of greenhouse gases were released into the atmosphere and oceans, leading to an increase in global temperatures of 4 to 9 degrees C (7 to 14 degrees F) in less than 10,000 years. Geological and fossil studies, using techniques such as stable isotope analysis, show major extinctions, the evolution of new animals and plants, and the migration of species on a large scale. Now, however, landscapes are crowded with human uses. Cities, urban sprawl, and agriculture take up huge areas. Freeways and roads create long linear obstructions to natural movement and present a patchwork of obstacles that are a severe challenge to species’ natural modes of shifting to track climate. To unravel these future responses requires understanding of past response, modeling of future response, and insights from changes already underway. To date, marine systems have experienced the most extensive impacts of climate change. From coral bleaching to melting sea ice, marine systems are changing on global and regional scales. Coral bleaching occurs when water temperatures exceed regional norms, causing corals to expel symbiotic micro-organisms from their tissues, ultimately leading to morbidity or death. Bleaching has exterminated some coral species from entire ocean basins. Global extinctions may follow as temperatures continue to rise. Corals face a second threat from acidification as CO2 builds up in the atmosphere and oceans, which prevents corals and many other marine organisms, including clams and oysters, from forming their calcium carbonate shells. Overall, the evidence suggests that the world’s roughly 5 million marine species face as severe threats from climate change as their terrestrial counterparts. On land, tropical biodiversity hotspots in places such as the Amazon and the rainforests of Indonesia and Malaysia are especially at risk. All global climate models now show significant future warming in the tropics, even if more muted than warming at high latitudes. Tropical animals, insects, and plants are tightly packed along climatic gradients from lowlands to mountaintops, and these organisms are sensitive to changes in temperature and rainfall. Already, scores of amphibians in South America have disappeared as a warmer, drier climate has led to outbreaks of disease such as the chytrid fungus. At the same time, large areas of tropical forest are being cleared for timber, ranching, and farming such crops as soybeans and oil palm.

#### We affirm: The United States federal government should substantially increase market-fixed production cost incentives for Liquid Fuel Thorium Small Modular Reactors.

#### Flexible incentives would prompt a thorium renaissance

Rosner and Goldberg ‘11 (Robert (William E. Wrather Distinguished Service Professor in the Departments of Astronomy and Astrophysics and Physics) and Stephen (Special Assistant to the Director at the Argonne National Laboratory) , *Energy Policy Institute at Chicago*, “Small Modular Reactors – Key to Future Nuclear Power Generation in the U.S.”, Technical Paper, Revision 1, November 2011)

Production Cost Incentive: A production cost incentive is a performance-based incentive. With a production cost incentive, the government incentive would be triggered only when the project successfully operates. The project sponsors would assume full responsibility for the upfront capital cost and would assume the full risk for project construction. The production cost incentive would establish a target price, a so-called “market-based benchmark.” Any savings in energy generation costs over the target price would accrue to the generator. Thus, a production cost incentive would provide a strong motivation for cost control and learning improvements, since any gains greater than target levels would enhance project net cash flow. Initial SMR deployments, without the benefits of learning, will have significantly higher costs than fully commercialized SMR plants and thus would benefit from production cost incentives. Because any production cost differential would decline rapidly due to the combined effect of module manufacturing rates and learning experience, the financial incentive could be set at a declining rate, and the level would be determined on a plant-by-plant basis, based on the achievement of cost reduction targets.43 The key design parameters for the incentive include the following: 1. The magnitude of the deployment incentive should decline with the number of SMR modules and should phase out after the fleet of LEAD and FOAK plants has been deployed. 2. The incentive should be market-based rather than cost-based; the incentive should take into account not only the cost of SMRs but also the cost of competing technologies and be set accordingly. 3. The deployment incentive could take several forms, including a direct payment to offset a portion of production costs or a production tax credit. The Energy Policy Act of 2005 authorized a production tax credit of $18/MWh (1.8¢/kWh) for up to 6,000 MW of new nuclear power plant capacity. To qualify, a project must commence operations by 2021. Treasury Department guidelines further required that a qualifying project initiate construction, defined as the pouring of safety- related concrete, by 2014. Currently, two GW-scale projects totaling 4,600 MW are in early construction; consequently, as much as 1,400 MW in credits is available for other nuclear projects, including SMRs. The budgetary cost of providing the production cost incentive depends on the learning rate and the market price of electricity generated from the SMR project. Higher learning rates and higher market prices would decrease the magnitude of the incentive; lower rates and lower market prices would increase the need for production incentives. Using two scenarios (with market prices based on the cost of natural gas combined-cycle generation) yields the following range of estimates of the size of production incentives required for the FOAK plants described earlier. For a 10% learning rate, 􏰂 Based on a market price of $60/MWh44 (6¢/kWh), the LEAD plant and the subsequent eight FOAK plants would need, on average, a production credit of $13.60/MWh (1.4¢/kWh), 24% less than the $18 credit currently available to renewable and GW-scale nuclear technologies. (The actual credit would be on a sliding scale, with the credit for the LEAD plant at approximately $31/MWh, or 3.1¢/kWh, declining to a credit of about $6/MWh, or 0.6¢/kWh, by the time of deployment of FOAK-8). The total cost of the credit would be about $600 million per year (once all plants were built and operating). If the market price were about $70/MWh (7¢/kWh), the LEAD and only four subsequent FOAK plants would require a production incentive. In this case, the average incentive would be $8.40/MWh (0.8¢/kWh), with a total cost of about $200 million per year. Higher learning rates would drive down the size of the production incentive. For example, at a 12% learning rate, 􏰂 At a market price of $60/MWh (6¢/kWh), the LEAD and the subsequent five FOAK plants would require a production incentive, with an average incentive level of about $15/MWh (1.5¢/kWh). Total annual cost (after all plants are in full operation) would be about $450 million per year. 􏰂 At a market price of $70/MWh (7¢/kWh), the LEAD and three FOAK plants would require a production incentive averaging $9.00/MWh (0.9¢/kWh, half of the current statutory incentive), with a total annual cost of about $170 million per year. The range of costs for the production incentive illustrates the sensitivity of the incentive level to the learning rate and the market price of electricity. Thus, efforts to achieve higher learning rates, including fully optimized engineering designs for the SMRs and the manufacturing plant, as well as specially targeted market introduction opportunities that enable SMRs to sell electricity for higher priced and higher value applications, can have a critical impact on the requirements for production incentives. The potential size of the incentive should be subject to further analysis as higher quality cost estimates become available.

#### This would trigger key reductions in carbon emissions—that’s essential to slow and reverse anthropogenic climate change

Hargraves and Moir ’11 Robert Hargraves, teaches energy policy at the Institute for Lifelong Education at Dartmouth, PhD in physics from Brown, and Ralph Moir, Sc.D. in nuclear engineering from MIT, published 10 papers on molten-salt reactors during his career at Lawrence Livermore National Laboratory, “Liquid Fuel Nuclear Reactors,” Physics & Society, January 2011, http://www.aps.org/units/fps/newsletters/201101/hargraves.cfm

Burning coal for power is the largest source of atmospheric CO2, which drives global warming. We seek alternatives such as burying CO2 or substituting wind, solar, and nuclear power. A source of energy cheaper than coal would dissuade nations from burning coal while affording them a ready supply of electric power. Can a LFTR produce energy cheaper than is currently achievable by burning coal? Our target cost for energy cheaper than from coal is $0.03/kWh at a capital cost of $2/watt of generating capacity. Coal costs $40 per ton, contributing $0.02/kWh to electrical energy costs. Thorium is plentiful and inexpensive; one ton worth $300,000 can power a 1,000 megawatt LFTR for a year. Fuel costs for thorium would be only $0.00004/kWh. The 2009 update of MIT’s Future of Nuclear Power shows that the capital cost of new coal plants is $2.30/watt, compared to LWRs at $4/watt. The median of five cost studies of large molten salt reactors from 1962 to 2002 is $1.98/watt, in 2009 dollars. Costs for scaled-down 100 MW reactors can be similarly low for a number of reasons, six of which we summarize briefly: Pressure. The LFTR operates at atmospheric pressure, obviating the need for a large containment dome. At atmospheric pressure there is no danger of an explosion. Safety. Rather than creating safety with multiple defense-in-depth systems, LFTR’s intrinsic safety keeps such costs low. A molten salt reactor cannot melt down because the normal operating state of the core is already molten. The salts are solid at room temperature, so if a reactor vessel, pump, or pipe ruptured they would spill out and solidify. If the temperature rises, stability is intrinsic due to salt expansion. In an emergency an actively cooled solid plug of salt in a drain pipe melts and the fuel flows to a critically safe dump tank. The Oak Ridge MSRE researchers turned the reactor off this way on weekends. Heat. The high heat capacity of molten salt exceeds that of the water in PWRs or liquid sodium in fast reactors, allowing compact geometries and heat transfer loops utilizing high-nickel metals. Energy conversion efficiency. High temperatures enable 45% efficient thermal/electrical power conversion using a closed-cycle turbine, compared to 33% typical of existing power plants using traditional Rankine steam cycles. Cooling requirements are nearly halved, reducing costs and making air-cooled LFTRs practical where water is scarce. Mass production. Commercialization of technology lowers costs as the number of units produced increases due to improvements in labor efficiency, materials, manufacturing technology, and quality. Doubling the number of units produced reduces cost by a percentage termed the learning ratio, which is often about 20%. In The Economic Future of Nuclear Power, University of Chicago economists estimate it at 10% for nuclear power reactors. Reactors of 100 MW size could be factory-produced daily in the way that Boeing Aircraft produces one airplane per day. At a learning ratio of 10%, costs drop 65% in three years. Ongoing research. New structural materials include silicon-impregnated carbon fiber with chemical vapor infiltrated carbon surfaces. Such compact thin-plate heat exchangers promise reduced size and cost. Operating at 950°C can increase thermal/electrical conversion efficiency beyond 50% and also improve water dissociation to create hydrogen for manufacture of synthetic fuels such that can substitute for gasoline or diesel oil, another use for LFTR technology. In summary, LFTR capital cost targets of $2/watt are supported by simple fluid fuel handling, high thermal capacity heat exchange fluids, smaller components, low pressure core, high temperature power conversion, simple intrinsic safety, factory production, the learning curve, and technologies already under development. A $2/watt capital cost contributes $0.02/kWh to the power cost. With plentiful thorium fuel, LFTRs may indeed generate electricity at less than $0.03/kWh, underselling power generated by burning coal. Producing one LFTR of 100 MW size per day could phase out all coal burning power plants worldwide in 38 years, ending 10 billion tons per year of CO2 emissions from coal plants.

#### Thorium spills over—formal mechanisms encourage global tech dispersal

Johnson 6 (Brian, BS Nuclear Engineering from Oregon State U, later received a Ph.D. in Nuclear Science and Engineering from M.I.T., "Thorium for Use in Plutonium Disposition,Proliferation-Resistant Fuels for DevelopingCountries, and Future Reactor Designs," [www.wise-intern.org/journal/2006/Johnson-ANS.pdf], jam)

As it stands, the joint plutonium disposition plans of the United State and Russia have stalled. This is because MOX, the technology chosen to undertake disposition, has taken more time and money than expected. In addition to this, Russia refuses to bear any of the cost of plutonium disposition through the use of MOX. This has opened the door to other options including thorium based fuels. A program in Russia examining thorium-based fuels has made a lot of progress and promises to be an excellent way to dispose of plutonium. The United States cannot directly benefit from this research and should start a program equal in size to the Russian program so that if thorium-based fuels turn out to be a better option for disposition there will be less delay in implementation. The United States outlines a desire in the Global Nuclear Energy Partnership (GNEP) to establish reactors in developing nations to provide potable water, heat for industrial processes, and electricity to growing populations. There are currently no designs that have all of the characteristics desired for reactors to be deployed in developing countries. Thorium-based, proliferation-resistant fuels can provide an evolutionary step until better technologies are developed. The design of this fuel shares a lot of the same technology as thorium-based fuel for plutonium disposition. Because of this, the same program could cover both research objectives with marginal added cost. Molten salt reactors meet all of the goals of next generation fuel cycles. However, the United States is not currently funding research into the technology. Recent research done in France has shown that some of the issues that prohibited development can be resolved. The United States is the only country with operating experience with molten salt reactors. Considering these facts, it makes sense for the United States to fund some research into this promising technology. Thorium could be used to reach several goals in the United States. The technology is not ready for implementation. The United States should fund research into thorium to reach these goals. In doing so, the United States could become a leader in thorium-based technology.

#### Formal mechanisms buoy global exports

Rosner & Goldberg 11 (Robert, William E. Wrather Distinguished Service Professor, Departments of Astronomy and Astrophysics, and Physics, and the College at the U of Chicago, and Stephen, Energy Policy Institute at Chicago, The Harris School of Public Policy Studies, "Small Modular Reactors - Key to Future Nuclear Power Generation in the U.S.," November 2011, [https://epic.sites.uchicago.edu/sites/epic.uchicago.edu/files/uploads/EPICSMRWhitePaperFinalcopy.pdf], jam)

Previous studies have documented the potential for a significant export market for U.S. SMRs, mainly in lesser developed countries that do not have the demand or infrastructure to accommodate GW-scale LWRs. Clearly, the economics of SMR deployment depends not only on the cost of SMR modules, but also on the substantial upgrades in all facets of infrastructure requirements, particularly in the safety and security areas, that would have to be made, and as exemplified by the ongoing efforts in this direction by the United Arab Emirates (and, in particular, by Abu Dhabi). This is a substantial undertaking for these less developed countries. Thus, such applications may be an attractive market opportunity for FOAK SMR plants, even if the cost of such plants may not have yet achieved all of the learning benefits. The Department of Commerce has launched the Civil Nuclear Trade Initiative, which seeks to identify the key trade policy challenges and the most significant commercial opportunities. The Initiative encompasses all aspects of the U.S. nuclear industry, and, as part of this effort, the Department identified 27 countries as “markets of interest” for new nuclear expansion. A recent Commerce Department report identified that “SMRs can be a solution for certain markets that have smaller and less robust electricity grids and limited investment capacity.” Studies performed by Argonne National Laboratory suggest that SMRs would appear to be a feasible power option for countries that have grid capacity of 2,000-3,000 MW. Exports of SMR technology also could play an important role in furthering non-proliferation policy objectives. The design of SMR nuclear fuel management systems, such as encapsulation of the fuel, may have non-proliferation benefits that merit further assessment. Also, the development of an SMR export industry would be step toward a U.S.-centric, bundled reliable fuel services. Exports of FOAK plants help achieve learning without the need for a full array of production incentives required for domestic FOAK deployments. Projected, unsubsidized, electricity market prices will likely be higher in selected foreign markets, particularly when the electricity pricing is based on liquefied natural gas import prices. 49 This situation would enable SMRs to be in a more favorable competitive position. SMR exports would qualify, if needed, for export credit assistance under current U.S. government programs, but this assistance would not require the need for new federal funding.

### Part 2

#### Contention 2 is fragility.

#### Our world is composed of an unimaginable complexity of interacting force-fields, each following their own rules and working to their own tempo, continually being driven by their interactions and contradictions with other fields. The human is but one small piece in a play of forces involving solar energy, tectonic plate shifts, ocean currents, asteroid showers, earthquakes, volcanos, species evolutions and extinctions, rainstorms, tornadoes, and hurricanes.

#### However, human influence is accelerating in dangerous ways, such as increasing emissions of green-house gases into the air, trapping heat within the atmosphere, severely disturbing the prior functioning of ecological processes. We should take two things from this. First, humanity is not alone on the earth. We are surrounded not only by other critters, but also inorganic pulses of energy and matter with unmistakable impact on our lives. In fact, humanity itself is not closed; it too is open, changing, continuously including and excluding. Second, we still carry a disproportionate influence on things—this complex world of becoming is radically fragile, open to change, for better or for worse. And thus our social realities are also malleable, contestable, and fragile.

#### Amidst all these diffuse networks, vectors, and multiplicities, it’s hard to believe that some still hold onto ‘total’ and ‘whole’ accounts of being and identity, but if the last 10 years of military interventions social oppressions tell us anything, it’s that these totalizing world-views live on, and produce vengefulness and ressentiment when they encounter difference, leading to massive, unflinching exercises of violence. “*They”* killed 3,000 people who happened to reside within the same geographic boundaries as us, so *“we”* re-raised by invading two of their countries, resulting in the deaths of hundreds of thousands (at least). All this destruction because an impossible number of contingent factors aligned to pit two stratified social fields against each other, both trapped in absolutist ideology and unwilling to see change.

#### These are the stakes of leftist politics today. We can either resign ourselves to stratified fundamentalism or take a risk on a new strategy to contest environmental destruction, combining critical thought, social interaction, and institutional engagement. Affirm the plan as an experiment in political becoming.

Connolly ’11 William E. Connolly, Krieger-Eisenhower Professor of Political Science at Johns Hopkins University, A World of Becoming, 2011, p. 5-8

A force-field, roughly speaking, is any energized pattern in slow or rapid motion periodically displaying a capacity to morph, such as a climate system, biological evolution, a political economy, or human thinking. As we shall explore in chapter 1, different force-fields display differential capacities of agency. We inhabit a world of becoming composed of heterogeneous force-fields; and we also participate in two registers of temporal experience, each of which can help us to get bearings in such a world. It is when the story of multiple force-fields of different types, in and beyond the human estate, is linked to the exploration of two registers of temporal experience in the human estate that things get interesting. Nonetheless, the themes of this book may carry little weight for anyone who finds nothing of interest in the Barton Fink scene or in a moment from their own past that resonates somehow with the scene I have painted from mine. You may give singular priority to the demands of punctual time while I seek to maintain a tense balance between the incorrigible demands and pleasures of operational perception set in punctual time (the kids’ attention to that spinning bottle as it drew to a halt) and the need to dwell periodically in protean moments that exceed the operational demands of action. You may initially connect the temper I commend to ‘‘optimism’’ or ‘‘romanticism’’ rather than to the pessimism, coolness, realism, or abiding sense of the negative that you respect. I don’t see it that way, though. My sense is that those who jump to such a conclusion have too limited an arsenal of ontological alternatives available. To appreciate two registers of experience in a world of becoming can also help us come to terms with tragic possibility. Such an appreciation encourages us to embrace the world as we act and intervene resolutely in it, even though it is replete with neither divine providence nor ready susceptibility to human mastery. Indeed, I don’t read the absence of providence or mastery as a ‘‘lack,’’ finding the use of that term by some to express a hangover of previous views inadequately overcome in the view officially adopted. I also know that shared experiences of grief or loss can help to consolidate connections with others, and that collective anger, resentment, and indignation are often indispensable spurs to critical action. So there is no sense here that ‘‘thinking it is so makes it so’’ or that ‘‘optimism is always healthy.’’ These orientations are attached to a different take on existence than that advanced here, though there are people who confuse the two. I do suspect that when inordinate drives for individual self-sufficiency, unity, community, consensus, or divine redemption are severely disappointed, things can become dangerous. These disappointed drives—I am sure there are others as well—readily cross over into entrenched dispositions to take revenge on the most fundamental terms of human existence, as a person, a constituency, or a putative nation grasps those terms. If and when that happens, an exclusionary, punitive, scandal-ridden, bitter politics is apt to result, regardless of how the carriers represent themselves to others. Here actions speak louder than words. A world of becoming has considerable evidence on its side, as we shall see; and affirmation of this condition without existential resentment provides one way to act resolutely in the world while warding off individual and collective drives to existential resentment. There are others, as we shall also see. Given the human predicament (explored in chapter 4), no theological or nontheological perspective at this level carries iron-clad guarantees. A crack or fissure running through every final perspective is part of the human predicament as I construe it. On my rendering, the course of time is neither governed solely by a pattern of efficient causation—where each event is determined to occur by some prior event in linear temporal order—nor expressive of an inherent purpose revolving around the human animal as such. Neither/nor. To put it in different terms, time is neither mechanical nor organic, and its human apprehension is neither susceptible to the method of ‘‘individualism’’ nor that of ‘‘holism.’’ We participate, rather, in a world of becoming in a universe set on multiple zones of temporality, with each temporal force-field periodically encountering others as outside forces, and the whole universe open to an uncertain degree. From this perspective, tragic possibility—not inevitability but possibility—is real: tragic possibility as seen from the vantage point of your time or country or species; tragic possibility sometimes actualized through the combination of hubris and an unlikely conjunction of events. Or by some other combination. I even suspect that differential degrees of agency in other force-fields, with which we enter into encounters of many types, increases the risk of that possibility. The universe is not only open; there is an ‘‘outside’’ to every temporal force-field. We are not only limited as agents, but part of our limitation comes from the different degrees of agency in other force-fields with which we interact. The operation of multiple tiers of becoming in a world without a higher purpose amplifies the need to act with dispatch, and sometimes with militancy, in particular situations of stress. The fact that we are not consummate agents in such a world, combined with the human tendency to hubris, means that we must work to cultivate wisdom under these very circumstances. These two dictates, engendering each other while remaining in tension, constitute the problematic of political action in a world of becoming. William James, Henri Bergson, Friedrich Nietzsche, Alfred North Whitehead, and Gilles Deleuze all advance different versions of time as becoming. Perhaps Merleau-Ponty and Marcel Proust do too, with qualifications. I draw from several of them the idea that it takes both philosophical speculation linked to scientific experiment and dwelling in uncanny experiences of duration to vindicate such an adventure. Both. Luckily, as we shall see, some strains of complexity theory in the natural sciences also support the theme of time as becoming as they compose new experiments and rework classical conceptions of causality. Moreover, in everyday life fugitive glimmers of becoming are available to more people more of the time, as we experience the acceleration of many zones of life, the enhanced visibility of natural disasters across the globe, the numerous pressures to minoritize the entire world along several dimensions at a more rapid pace, the globalization of capital and contingency together, the previously unexpected ingress of capital into climate change, the growing number of film experiments with the uncanniness of time, and the enlarged human grasp of the intelligence and differential degrees of agency in other plant and animal species. Such experiences and experiments together call into question early modern conceptions of time. Many respond to such experiences by intensifying religious and secular drives to protect an established image, as either linear and progressive or infused with divine providence. I suspect, however, that such responses— unless their proponents actively engage the comparative contestability of them without deep existential resentment—can amplify the dangers and destructiveness facing our time. Or, at least, they need to be put into more active competition with a conception that speaks to an array of contemporary experiences otherwise pushed into the shadows. To amplify the experience of becoming is one affirmative way to belong to time today. Active exploration and support of such a perspective can make a positive contribution to the late-modern period by drawing more people toward such a perspective or by showing others how much work they need to do to vindicate their own perspective. I belong to a growing contingent who think that a perspective defined by active examination of becoming can make positive contributions to explorations of spirituality, economics, political action, poetic experience, and ethics.

#### Praxis can be hard. In all our critiquing, destabilizing, and disrupting, we risk losing sight of the important goals our critiques suggest—the material changes necessary to reorient institutions and social relations in less violent fashions. This obviates particular strategies for change in conjunction with broadening our theoretical lenses.

Bryant ’12 Levi Bryant, teaches philosophy at Collin College, “RSI, Discursivity, Critique, and Politics,” Larval Subjects, 7/18/2012, http://larvalsubjects.wordpress.com/2012/07/18/rsi-discursivity-critique-and-politics/

If I get worked up about these issues, then this is because I think they’ve created serious lacuna in our political theory and practice. Suppose I focus on norms, for example. Great, I’ve developed a theory of norms and how they contribute to the social fabric. Yet while Kant claims that “ought implies can”, I’m not so sure. You’ve shown that something is unjust or that this would be the reasonable way to proceed. But at the real-material level people are caught in sticky networks that suck them into life in particular ways. They ought, for example, to drive an electric car, but what if it’s not available where they are or what if they can’t afford it? Well they should do whatever they can to get it? But what of their other obligations such as eating, sheltering themselves, taking care of their children, paying their medical bills, etc? It would be so nice if we just had mistaken beliefs or failed to recognize the right norms. Things would be so easy then. But there’s life, there’s the power of things. Sometimes the issues aren’t ones of ideology– and yes, of course, I recognize that ideology is probably involved in making electric cars expensive and hard to obtain, but not for them always –sometimes they’re simply issues of the power of things. And if we treat things as blank screens we’ll have difficulty seeing this and we’ll miss out on other opportunities for engagement. Long ago I used to keep track of my blog. I had a map that showed me where all my visits were coming from about the world. I noticed that the interior portions of the United States were largely dark with no visits and that the coasts and cities had a high volume of traffic. Given that my blog talks about all sorts of things ranging from weather patterns to beavers to mantis shrimps to octopi (I get all these random visits from folks searching for these things), it followed that the absence of traffic from these regions of the country couldn’t be explained in terms of a lack of interest in French and continental philosophy (yes, I recognize that there are also cultural reasons folks from these reasons might shy away from such things). What then was it? I think the answer must be that there’s a lack easy and inexpensive internet access from these portions of the country. Notice also that these regions of the country are also the most conservative regions of the country. Could there be a relation between lack of access and conservatism? I am not suggesting that lack of access is the cause of conservatism and fundamentalism. Clearly there’s a whole history in these regions and an entire set of institutions that exercise a particular inertia. I’m saying that if the only voices you hear are those in your immediate community, how much opportunity is there to think and imagine otherwise? You’re only exposed to the orthodoxy of your community and their sanctions. I am also not saying that if you give people the internet they’ll suddenly become radical leftists. Minimally, however, they’ll have a vector of deterritorialization that allows them to escape the constraints of their local social field. All of this begs the question of who critique is for. If it can’t get to the audience that you want to change, what’s it actually doing? Who’s it addressed to? Sometimes you get the sense that the practice of radical political philosophy and critical theory is a bit like the Underpants Gnomes depicted in South Park: The Underpants Gnomes have a plan for success: collect underwear —>; ? [question mark] —->; profit. This is like our critical theorists: debunk/decipher —>; ? [question mark] —->; revolution! The problem is the question mark. We’re never quite sure what’s supposed to come between collecting the underwear and profit, between debunking and revolution. This suggests an additional form of political engagement. Sometimes the more radical gesture is not to debunk and critique, but to find ways to lay fiber optic cables, roads, plumbing, etc. How, for example, can a people rise up and overturn their fundamentalist dictators if they’re suffering from typhoid and cholera as a result of bad plumbing and waste disposal? How can people overturn capitalism when they have to support families and need places to live and have no alternative? Perhaps, at this point, we need a little less critique and a little more analysis of the things that are keeping people in place, the sticky networks or regimes of attraction. Perhaps we need a little more carpentry. This has real theoretical consequences. For example, we can imagine someone writing about sovereignty, believing they’re making a blow against nationalism by critiquing Schmitt and by discussing Agamben, all the while ignoring media of communication or paths of relation between geographically diverse people as if these things were irrelevant to nationalism occurring. Ever read Anderson on print culture and nationalism? Such a person should. Yet they seem to believe nationalism is merely an incorporeal belief that requires no discussion of material channels or media. They thereby deny themselves of all sorts of modes of intervention, hitching everything on psychology, attachment, and identification. Well done!

#### We should stop treating structures as unmovable wholes—all it takes is one crack to expose the fragility of oppressive institutions. The plan is a radical experiment in democratic politics.

Connolly ’12 William E. Connolly, Krieger-Eisenhower Professor of Political Science at Johns Hopkins University, “Steps toward an Ecology of Late Capitalism,” Theory & Event, Vol. 15, Issue 1, 2012, Muse

A philosophy attending to the acceleration, expansion, irrationalities, interdependencies and fragilities of late capitalism suggests that we do not know with confidence, in advance of experimental action, just how far or fast changes in the systemic character of neoliberal capitalism can be made. The structures often seem solid and intractable, and indeed such a semblance may turn out to be true. Some may seem solid, infinitely absorptive, and intractable when they are in fact punctuated by hidden vulnerabilities, soft spots, uncertainties and potential lines of flight that become apparent as they are subjected to experimental action, upheaval, testing, and strain. Indeed, no ecology of late capitalism, given the variety of forces to which it is connected by a thousand pulleys, vibrations, impingements, dependencies, shocks and thin threads, can specify with supreme confidence the solidity or potential flexibility of the structures it seeks to change. The strength of structural theory, at its best, was in identifying institutional intersections that hold a system together; its conceit, at its worst, was the claim to know in advance how resistant those intersections are to potential change. Without adopting the opposite conceit, it seems important to pursue possible sites of strategic action that might open up room for productive change. Today it seems important to attend to the relation between the need for structural change and identification of multiple sites of potential action. You do not know precisely what you are doing when you participate in such a venture. You combine an experimental temper with the appreciation that living and acting into the future inevitably carries a shifting quotient of uncertainty with it. The following tentative judgments and sites of action may be pertinent.

#### Talking about state policies that improve the ways we produce energy and contest climate change has a radical potential. The 1AC affirms a militant pluralist assemblage tasked with exploring new strategies for reducing inequality and changing human interaction with our so-called ‘environment.’

Connolly ’12 William E. Connolly, Krieger-Eisenhower Professor of Political Science at Johns Hopkins University, “Steps toward an Ecology of Late Capitalism,” Theory & Event, Vol. 15, Issue 1, 2012, Muse

3. Today, perhaps the initial target should be on reconstituting established patterns of consumption by a combination of direct citizen actions in consumption choices, publicity of such actions, and social movements to reconstitute the state/market supported infrastructure of consumption. By the infrastructure of consumption I mean state support for market subsystems such as a national highway system, a system of airports, medical care through private insurance, etc., etc., that enable some modes of consumption in the zones of travel, education, diet, retirement, medical care, energy use, health, and education and render others more difficult or expensive to procure.21 To shift several of these in the correct direction would already reduce extant inequalities. To change the infrastructure is also to affect the types of work and investment available. Social movements that work upon the infrastructure and ethos in tandem can make a real difference directly, encourage more people to extend their critical perspectives, and thereby open more people to a militant politics if and as a new disruptive event emerges. Perhaps a cross-state citizen goal should be to construct a pluralist assemblage by moving back and forth between shifts in role performance, revisions in political ideology, and adjustments in political sensibility, doing so to generate enough collective energy to launch a general strike simultaneously in several countries in the near future. Its aim would be to reduce inequality and to reverse the deadly future created by established patterns of climate change by fomenting significant shifts in patterns of consumption, corporate policies, state law and the priorities of interstate organizations. Again, the dilemma of today is that the fragility of things demands shifting and slowing down intrusions into several aspects of nature as we speed up shifts in identity, role performance, cultural ethos, market regulation, and citizen activism.

#### Nature and humanity do not exist as pre-formed totalities, but social theory which discards either as platonic myopia commits a severe strategic and ethical error. The future of humanity is not determined by humanism; time remains open to strategic interventions which infuse an emancipatory ethic into a spirit of engagement with difference.

Connolly ’11 William E. Connolly, Krieger-Eisenhower Professor of Political Science at Johns Hopkins University, A World of Becoming, 2011, p. 17-21

There has been a tendency in cultural theory, philosophy, and political theory to bypass work in biology and neuroscience, even though we humans have ourselves evolved from other species and come equipped with genes, blood, hearts, muscles, brains, sexual organs, feet, and even hands for typing, a practice that depends upon unconscious habits wired into the body/brain system through training and repetition. (No one I know can recite the order of the alphabet on the keypad they use so efficiently.) There are diverse, even contending, sources of that tendency. The reductionism of biology and neuroscience has been one. The difficulty of engaging them from the outside has been another. The desire to provide cultural theory its own foundations has constituted a third. Related to this, the desire to protect a theology of transcendence has provided a fourth. These disparate pressures push in the same direction. They spawn modes of cultural theory that do not come to terms closely enough with the biocultural organization of perception, the layered complexity of thought, multiple modes and degrees of agency in the world, innumerable intersections between nonhuman force-fields of several types and cultural life, the role of multi-media micropolitics in organizing nonconscious registers of intersubjective life, the critical role that cultivation of the visceral register of being plays in ethical life, the connections between natural and cultural time, and other issues besides. The arrival of complexity theory in the physical sciences places these reasons and excuses under new pressure. Complexity theory, as I receive it, moves natural science closer to the concerns of cultural theory as it surmounts reductionism. It advances several distinctive themes that touch received theories of explanation, interpretation, agency, ethics, and time in the human sciences. First, because of periodic confluences between novel changes in the environment and ‘‘pre-adaptations’’ that cannot be identified in advance, much of biological evolution cannot be predicted. A pre-adaptation is a biological feature that plays one role or is redundant at one time, but upon a strategic change in the environment now becomes important and promotes a new function. Thus, early fish had lungs that evolved into swim bladders, a novel functionality that allows fish to adjust their buoyancy to the water level, as the amount of air and water in the bladder is adjusted. Without the lung, fish would have evolved in a different way; with it there was no way to predict in advance that it would evolve the way it did. It is impossible to predict its evolution apart from detailed knowledge of other changes in and around it at a later date.∞ Innumerable such pre-adaptations are retrospectively discernible in cultural life, such as the bills of exchange that evolved into pivots of capitalist systems, the Calvinist quest for signs of predestination that evolved into capitalist tendencies in northern Europe to industriousness and accumulation, the creative (and destructive) use of high speed computers by a financial elite to exploit slower market transactions by the largest mass of investors, the Spinozist inspiration to Einsteinian theory, the receptivity of the visceral register of human intersubjectivity to multi-media coding by tv, the creative adaptation of the liberal doctrine of human rights into rights of doctor assisted suicide and same sex marriage, and the transfiguration of the human knowledge of mortality into a series of faiths that promise life after death. Since pre-adaptations are known after rather than before the fact, we already encounter a source of unpredictability and uncertainty in the evolution of nature/culture. Second, because of ‘‘Poincare resonances’’ that come into play when a previously stable system is thrown into disequilibrium, there are potentials for self-organization in some natural systems that also exceed our powers of prediction before they find expression. Ilya Prigogine suggests that such resonances were already in play in the period immediately following the Big Bang, generating one temporal flow out of several potentialities available, a direction that has affected everything else since.≤ When a simple physical system faces a new situation of disequilibrium, the pattern of resonance that arises seems to generate forks that can issue in more than one vector of development. The direction selected affects everything else that later emerges, without determining everything else in a simple, linear way. Brian Goodwin suggests, for instance, that such modes of self organization ‘‘at the edge of chaos’’ play a role at strategic intervals in species evolution.≥ The turn actually taken at a bifurcation point is interpreted by some under the star of chance or contingency. Perhaps. I suspect that it is wise to read such turns as modes of emergent causality that are neither reducible to chance, nor to explanation according to a classic concept of causality, nor to probability within a known distribution of possibilities. The actual turn sometimes exceeds any probability heretofore organized into the matrix of recognized possibilities. Some modes of opacity are due to incomplete information and others to processes that are intrinsically complex, when we recognize new conditions of intensified disequilibrium but cannot project with confidence the new turn that will be taken from that point. I claim that the American evangelical-capitalist resonance machine arose in a similar way, though the fact that its generators included sophisticated human subjects interacting across different subject positions during a period of accentuated uncertainty makes a real difference to the account. At a pregnant moment of new uncertainty, when many social scientists projected the expansion of secular development, a constellation of disaffected white workers, evangelicals, and neoliberal corporate leaders responded creatively to an evolving situation in a way that enabled a new econo-political constellation to emerge. It was irreducible to the separate parts—the perceived self-interests of each constituency—from which it emerged. Its advance grew out of prior spiritual affinities (pre-adaptations) across partial differences of interest and creed between the constituencies. Such a set of spiritual pre-adaptations is most readily identified retrospectively, though those who worried about how new movements of pluralization were closing out white blue collar workers did sense dimly that a potential realignment of some sort could be in the works.∂ As we shall see in a later chapter, similar developments are discernible in global politics today. The demise of the Soviet Union and the Cold War has combined with concomitant changes in the three religions of the Book to open new destructive patterns of resonance between cross-territorial constituencies. Third, because every spatio-temporal system constituting the universe is open to some degree, and because each regularly maintains connections with other heterogeneous systems and periodically forms connections to others, another source of potential disequilibrium stalks stable systems. For instance, the tier of chrono-time on which an asteroid flow is set could intersect with the rotational pattern of the earth, creating a collision that affects future life on the face of the earth. Or the trajectory of global capitalism and that of climate evolution could intersect, altering the intensity of the latter and changing the pressures for capitalist development. Or a world financial system with some degree of autonomy could collapse, creating new pressures for war or capitalist reform that were not discernible before that event occurred. Stuart Kaufman, indeed, conjectures that a collision between three open systems helped to generate preconditions for life on earth. ‘‘It may be that myriad small organized molecules and even more complex molecules, fell onto the young earth to supply some preconditions that then mixed with the electrical force-fields and soupy stuff on early earth [to form life].’’Σ Each of these open systems—molecules, electrical force-fields, and the soupy earth—was propelled by its own tendencies, but the improbable conjunction between them may have been responsible for the origin of life on earth. Of course, many will doubt that such an improbable event could have occurred in this way, as much as some of us doubt the story of a divine creation of life. Pre-adaptations unstateable in advance, intersections between partially open systems of multiple kinds, and novel capacities for self-organization within a system triggered by infusions from elsewhere periodically operate in and upon each other, generating turns in time out of which a new equilibrium emerges, transcending our ability to articulate it in advance. That means that recent developments in complexity theory carry implications for the image of time we bring to the study of nature and culture and particularly to the multiple imbrications between them. Some advocates of complexity theory in the natural sciences see this. Ilya Prigogine, for instance, a Nobel Prize-winning founder of chaos theory, argues that time preceded ‘‘existence’’ at the inception of our universe, meaning that the chaos preceding the big bang was itself temporal in character. The universe we inhabit, not necessarily the only one that could have evolved, continues to be ‘‘heterogeneous and far from equilibrium.’’ This leads him to postulate an image of time as becoming, a temporal flow that is irreversible in ways that upset the Newtonian model of reversible processes, replete with an element of uncertainty in what becomes and periodically the source of new events and processes. It is the relations between disparate processes set on different time scales that impress him the most. ‘‘We are in a world of multiple fluctuations, some of which have evolved while others have regressed. These fluctuations are the macroscopic manifestations of fundamental properties of fluctuations arising on the microscopic level of unstable dynamic systems . . . Irreversibility, and therefore the flow of time, starts at the dynamical level. It is amplified at the macro scopic level, then at the level of life, and finally at the level of human activity. What drove these transitions from one level to the next remains largely unknown, but at least we have achieved a noncontradictory description of nature rooted in dynamical instability.’’ The flow of irreversible time is eternal: ‘‘We have an age, our civilization has an age, but time itself has neither a beginning nor an end.’’Π Stuart Kaufman evinces a similar view. He draws upon the elements listed above to identify real creativity in the trajectory of natural and cultural processes. Attempts to expunge the creative dimension from natural processes are legion, either in pursuit of a linear, deterministic science or to protect the image of an omnipotent God who monopolizes creativity. But they rest upon speculative leaps or unproven articles of faith. Kauffman is willing to make such a leap in the opposite direction. Why go in that direction? Well, dominant assumptions postulate a radical break between nature and culture that is more and more difficult to sustain. The radical break between humanity and other processes—the ‘‘anthropic exception’’—is introduced to explain how we have capacities to understand natural regularities but the objects we comprehend have no power to participate in a world of becoming at all. Moreover, the alternative conjecture opens a door to urgently needed modes of collaboration between practitioners in literature, the natural sciences, and the human sciences, as we explore complex interconnections between the human estate and nonhuman processes. This conjecture also carries considerable promise in several fields of inquiry in the natural sciences, most particularly biology and neuroscience. And finally, following this trail may promote new possibilities of cross-fertilization between devotees of divine transcendence who concentrate creativity in God (not all devotees of transcendence do so) and devotees of a world immanent to itself who, while joining them in resisting closures in the Gallilean tradition, admit differential degrees of real agency and creativity into a variety of natural-social processes.

## 2AC

### Case

#### Meltdowns are *impossible* with LFTRs – passive design and chemically inert liquid salt

Lerner 12 (George, president of Lerner Consulting, a consulting firm, "Can Use LFTRs to Consume Nuclear Waste," Jan 17, [liquidfluoridethoriumreactor.glerner.com/2012-can-use-lftrs-to-consume-nuclear-waste/], jam)

If the reactor overheats, a frozen plug melts and the fuel quickly drains out of the core into tanks where nuclear reaction is physically impossible. Radiation is contained by materials that remain solid at temperatures much higher than inside the reactor, with passive air cooling. (In solid-fueled reactors, you have to override everything that normally happens in the core and bring in coolant.) Fuel draining to the storage tanks could be triggered by seismic alert, chemical or temperature sensors, power outage, or the operators. [The 1989 Loma Prieta earthquake about 60 miles from Oakland, CA, reached Oakland about 30 seconds later. Japan has a seismic alert network, industrial plants shut down, elevators open at the nearest floor, trains stop, etc. California is building one.] “LFTR designs have a freeze plug at the bottom of the core—a plug of salt, cooled by a fan to keep it at a temperature below the freezing point of the salt. If temperature rises beyond a critical point, the plug melts, and the liquid fuel in the core is immediately evacuated, pouring into a subcritical geometry in a catch basin. This formidable safety tactic is only possible if the fuel is a liquid.” Hargraves, American Scientist, July 2010 “A passive core drain system activated by a melt plug enables draining the radioactive inventory into geometrically subcritical drain tanks that are passively thermally coupled to the environment.” Fast Spectrum Molten Salt Reactor Options, Oak Ridge National Laboratory, July 2011 “One of the current requirements of the Nuclear Regulatory Commission (NRC) for certification of a new nuclear plant design is that in the event of a complete electricity outage, the reactor remain at least stable for several days if it is not automatically deactivated. As it happens, the freeze-plug safety feature is as old as Alvin Weinberg’s 1965 Molten Salt Reactor Experiment design, yet it meets the NRC’s requirement; at ORNL, the [engineers] would routinely shut down the reactor by simply cutting the power to the freeze-plug cooling system. This setup is the ultimate in safe poweroutage response. Power isn’t needed to shut down the reactor, for example by manipulating control elements. Instead power is needed to prevent the shutdown of the reactor.” Hargraves, American Scientist, July 2010 Inherent Safety: Low Pressure LFTRs operate at atmospheric pressure. No high pressure to contain, no risk of pressure containment explosively failing. In a LFTR, there is no coolant boiling away. “A signature safety feature of the LFTR design is that the coolant — liquid fluoride salt — is not under pressure. The fluoride salt does not boil below 1400 degrees Celsius. Neutral pressure reduces the cost and the scale of LFTR plant construction by reducing the scale of the containment requirements, because it obviates the need to contain a pressure explosion. Disruption in a transport line would result in a leak, not an explosion, which would be captured in a noncritical configuration in a catch basin, where it would passively cool and harden.” Hargraves, American Scientist Volume 98, July 2010 “Only a low pressure vessel is needed as the salts run near atmospheric pressure as opposed to the thick walled vessels needed for LWR or PBMR. No water or sodium means no possible steam explosion or hydrogen production within the containment. In designs without graphite moderator, there is not even combustible material present.” D. LeBlanc / Nuclear Engineering and Design 240 (2010) p.1644-1656 “The containment walls are only required to contain a low-pressure internal environment and endure when subjected to external seismic and impact stressors. Halide salts are chemically inert, so they do not have exothermic reactions with the environment (oxygen, water) as would hot sodium or hot zirconium. With a greater than 500°C margin to boiling, the halide salts also do not have a credible route to pressurizing containment as would a water-cooled reactor. FS-MSRs also do not have any hydrogenous material within containment; thus they cannot generate hydrogen.” Fast Spectrum Molten Salt Reactor Options, Oak Ridge National Laboratory, July 2011 Inherent Safety: Containing Radioactive Material Radioactive cesium and iodine that were released in Fukushima-Daiichi would not be released in a LFTR accident. Cesium fluoride, strontium bi-fluoride are very stable salts. “Fluoride combines ionically with almost any transmutation product. This is an MSFR’s first level of containment. It is especially good at containing biologically active ‘salt loving’ wastes such as Cesium 137. The salts do not burn, explode or degrade in air or water, and the fluoride salts of the radioactive actinides and fission products are generally not soluble in water or air.” Wikipedia There are much less fissile materials (compared with LWR) in the fuel salt at any time, as continuous refueling enables operating with just enough to sustain reactivity. About half of the total fissile material is in the reactor core, the rest in the heat transfer and chemical processing loops. Thorium is one of the least radioactive materials, so (unless the LFTR is for waste burning, at a high security storage site) there is no hazardous fuel storage. Gasseous fission byproducts are easily and continuously removed from the reactor and safely stored. There is far less radioactive gas (that could leak in an accident) than in a LWR, and it isn’t pressurized. Inherent Safety: Self-Regulating The temperature in the reactor is self-regulating. The liquid fuel naturally expands if it gets hotter, slowing nuclear reaction, and contracts if it gets cooler (strong negative temperature coefficient of reactivity). [The nuclear reaction in the poorly-designed Chernobyl reactor got Hotter and Stronger as coolant boiled away.] Remove less heat (making less electricity), and the reactor throttles down. Remove more heat (making more electricity) and the reactor throttles up. “Most MSR designs have very strong negative temperature and void coefficients which act instantly, aiding safety and allowing automatic load following operation.” D. LeBlanc / Nuclear Engineering and Design 240 (2010) 1644-1656 Gasseous fission products are easily removed from the molten salt, making the reactor much more stable. (Xenon gas in LWR absorbs neutrons so readily it affects fission rate, so restarting the LWR must be done very carefully.) “Removing the most significant neutron poison xenon-135 made the reactor safer and easier to restart. In solid-fuel reactors, on restart the 135Xe in the fuel absorbs neutrons, followed by a sudden jump in reactivity as the 135Xe is burned out. Conventional reactors may have to wait hours until xenon-135 decays after shutting down and not immediately restarting.” Wikipedia – Molten Salt Reactor Experiment “The MSRE confirmed expectations and predictions. For example, it was demonstrated that: the fuel salt was immune to radiation damage, the graphite was not attacked by the fuel salt, and the corrosion of Hastelloy-N was negligible. Noble gases were stripped from the fuel salt by a spray system, reducing the 135Xe poisoning by a factor of about 6. The bulk of the fission product elements remained stable in the salt. Additions of uranium and plutonium to the salt during operation were quick and uneventful, and recovery of uranium by fluorination was efficient.” Wikipedia – Molten Salt Reactor Experiment Inherent Safety: Stable Chemistry “FS-MSRs have a negative salt void coefficient (expanded fuel is pushed out of the core) and a negative thermal reactivity feedback that avoids a set of major design constraints in solid-fuel fast reactors. A passive core drain system activated by a melt plug enables draining the radioactive inventory into geometrically subcritical drain tanks that are passively thermally coupled to the environment. FS-MSRs have a low operating pressure even at high temperatures; and FS-MSR salts are chemically inert, thermodynamically lacking the energetic reactions with environmental materials seen in other reactor types (hot zirconium and sodium with water). FS-MSRs do involve more intensive manipulation of highly radioactive materials than other reactor classes and thus small spills and contamination accidents appear to be more likely with this reactor class.” Fast Spectrum Molten Salt Reactor Options, Oak Ridge Nat’l Lab 2011

No risk and their impact is academic garbage

NEI 12, Nuclear Energy Institute, “Myths & Facts About Nuclear Energy”, June, http://www.nei.org/resourcesandstats/documentlibrary/reliableandaffordableenergy/factsheet/myths--facts-about-nuclear-energy-january-2012/

Fact: If this claim were true, it would be dangerous to breathe air or eat food. Every human being is continuously exposed to different forms of radiation every moment of their life. In fact, the use of radiation in medicine, electricity generation and many other common applications has improved, extended and saved the lives of millions of Americans. Studies by the United Nations Scientific Committee on the Effects of Atomic Radiation, the National Research Council’s BEIR VII study group and the National Council on Radiation Protection and Measurements all show that the risk associated with low-dose radiation from natural and man-made sources, including nuclear power plants, is extremely small. Researchers with the U.S. Department of Energy’s Lawrence Berkeley National Laboratory, through a combination of state-of-the-art time-lapse live imaging and mathematical modeling of a special line of human breast cells, found evidence that for low-dose levels of ionizing radiation, cancer risks may not be directly proportional to dose. The data show that at lower doses of ionizing radiation, DNA repair mechanisms work much better than at higher doses. This contradicts the standard model for predicting biological damage from ionizing radiation—the linear-no-threshold hypothesis or LNT—which holds that risk is directly proportional to dose at all levels of irradiation. Dr. James Conca addressed LNT in a recent Forbes article. Conca is an international expert on the environmental effects of radiological and chemical contamination and the 9 determination of risk at low doses of radiation. Radiation is strictly controlled and monitored at all nuclear power plants to minimize plant emissions and worker exposure. Less than one-tenth of a percent of all radiation exposure is from nuclear facilities as confirmed by widespread radiation monitoring programs that ensure the safety of plant workers and neighbors. For more information about radiation, visit www.radiationanswers.org. Nuclear plants emit dangerous amounts of radiation. Fact: Nuclear power plants have controlled and monitored emissions of radiation, but the amount is extremely small and poses no threat to the public or the environment. The Nuclear Regulatory Commission reports that people living close to a nuclear power plant receive, at most, an additional one millirem of radiation exposure a year. To put this in perspective, one millirem is one thousandth of the radiation exposure from a single whole-body CAT scan. The average American is exposed to 620 millirem of radiation every year. Three hundred millirem comes from natural sources, such as cosmic rays, uranium in the Earth’s crust and radon gas in the atmosphere. Most of the rest comes from medical procedures such as CAT scans and consumer products. The radiation exposure from living near a nuclear power plant is insignificant and is no threat to the health of the public. After more than 3,600 reactor years of operation, there is no scientific or medical evidence that shows anyone has been harmed by the radiation from any of America’s commercial nuclear energy facilities, including the accident at Three Mile Island 32 years ago. The radiation from nuclear plants causes cancer and other harmful effects. Fact: After more than a half-century of radiological monitoring and medical research, there is no evidence linking U.S. nuclear energy plants to negative effects on the health of the public or workers. Claims that radioactivity from nuclear plants has caused negative health effects have been refuted by the United Nations Scientific Committee of the Effects of Atomic Radiation, National Research Council’s BEIR VII study group, the National Cancer Institute, the American Cancer Society, the American Academy of Pediatrics, numerous state departments of health and other independent studies.

### Wilderson

#### Their understanding of Black bodies as ontologically shaped by the unique and incommensurable experience of slavery is founded on confusion between Structural Trauma (the trauma of our ontological condition) and Historical Trauma (of specific events such as the Middle Passage). Structural trauma is infected by the sublime—it is simultaneously the site of terror and ecstasy. By understanding the historical trauma of slavery as constitutive of the Black body slavery is rendered sublime. Thus, the experience of slavery (both as historical event and as ongoing violence) becomes aestheticized, as the slave becomes a sort of divine figure and the locus of our juissance. Slavery “remembered” in this way is divorced from its cause and ethical significance—It is “without consequence”. Further, we become unable to work though the trauma of slavery as Being itself is rendered sublime, language is impossible and chronology becomes “trauma time”.

Anna Phillips, The ‘Slave Sublime’ , Masters Dissertation in Cultural Memory, Institute of Germanic and Romance Studies Tutors: Dr Andrew Asibong, Birckbeck Dr Richard Crownshaw, Goldsmiths. 15 September 2008 http://sas-space.sas.ac.uk/1795/1/Anna%20Phillips%20Dissertation.pdf

How, first, are we to categorise the sublime? Briefly, the sublime may be characterised as an overwhelming exposure to reality, such that any attempt to comprehend or articulate it becomes impossible. As Shaw writes, “whenever experience slips out of conventional understanding, whenever the power of an object or event is such that words fail and points of comparison disappear, then we resort to the feeling of the sublime” (2006: 2). In postmodern thought (chiefly, in the works of Lyotard), the sublime is explained as a rupture, a shattering of all systems, be they of language, ideology or comprehension. The ‘slave sublime’, in Gilroy’s work, denotes a certain school of thought in which the ‘ineffable’ terror of slavery is given an almost religious significance, “a special redemptive power produced through suffering” (1993a: 216). However, The Black Atlantic does not elaborate at length upon the implications of such ‘sublimity’. Durrant points out that Gilroy’s use of the term ‘sublime’ relies upon Burke’s definition more than the Kantian theories which are at the heart of Lyotard’s postmodern sublime. For Durrant, the Kantian idea of the sublime as an incomprehensible infinite which induces a crisis in the subject is integral to the deconstructive and psychoanalytic theories which have emerged from the Holocaust: It is as a breach or rupture in the subject’s powers of presentation that the experience of the sublime is linked to the Freudian category of trauma. The ‘monstrous’ histories of slavery, colonialism, or the Holocaust are sublime insofar as they do violence both to the individual and the collective imagination (2004: 3). Trauma as a concept has become ubiquitous within the humanities and is now suffering something of a backlash (for an overview see Ball 2000; Douglass & Vogler 2003). There is no space here to engage with the vast literature which has been consecrated to defining and debating the terms of ‘trauma’. However, a brief examination of how it might relate to the theoretical issues of the sublime is necessary. Caruth defines trauma as an “overwhelming experience of sudden or catastrophic events in which the response to the event occurs in the often delayed, uncontrolled repetitive appearance of hallucinations and other intrusive phenomena” (1996: 11). As Radstone (2000) and Leys (2000) point out, various versions of trauma theory exist. In the model most frequently cited by Holocaust critics, language itself is compromised by the incomprehensibility of the traumatic event, rendering true witness impossible. Chronology is also disrupted in favour of what Edkins labels “trauma-time”, an achronological, compulsively repetitive state of mind (2003: 16). It is the first model which is most widely cited by Holocaust critics (Felman & Laub 1992; Tal 1996; Wood 1999). What links the ‘sublime’ to this theory of trauma is, as Durrant points out, violence: both involve the shattering, rupturing and overturning of norms, be they of chronology, language, philosophy, or perception. “In the sublime”, writes LaCapra, “the excess of trauma becomes an uncanny source of elation or ecstasy [...] of negative sublimity or displaced sacralisation” (2001: 23). This ‘displaced sacralisation’ may be seen most clearly in attitudes to the Nazi atrocities. Around the memory of the Holocaust, schools of thought have arisen which treat the Jewish genocide as qualitatively different from normal history. The ‘negative sublimity’ LaCapra describes may be discerned within Holocaust discourse in a variety of ways. Religious formulations are used: for example, Des Pres writes, “The Holocaust shall be represented, in its totality, as a unique event, as a special case and kingdom of its own, above or below or apart from history” (Des Pres 1976: 42). Commemorative rituals are proposed, such as the sacramental eating of ‘the rotten bread of Auschwitz’ suggested by Rabbi Greenberg (in Novick 1999: 199). For many, including historians, the historical ‘uniqueness’ of Auschwitz has become an article of faith (see Stone 2003). Survivor Elie Wiesel is the leading proponent of this view, fiercely protecting what he has described, in an intriguing choice of words, as “the forbidden sanctuary of the nocturnal kingdom that was Auschwitz” (in Weissman 2004: 49). The Holocaust, for Wiesel and his adherents, is “the ultimate event, the ultimate mystery, never to be comprehended or transmitted” (in Novick 1999: 211). This insistence upon the impossibility of ever understanding or adequately representing the horror of the concentration camps has been termed ‘Holocaust piety’ (Rose 1996: 43). For LaCapra, this ‘displaced sacralisation’ is founded upon a confusion between what he terms ‘structural’ and ‘historical’ trauma. Structural trauma is related to the absence of foundational certainties, such as God or community. Historical trauma, on the other hand, is specific to events, such as the Middle Passage or Hiroshima. The danger, for LaCapra, lies in conflating the two: in drawing a causal relationship between a horrific event such as the Holocaust and the absence of a divinity, of referential language, or of a unified subject. It is this tendency he identifies within postmodern thought. “Structural trauma is often figured as deeply ambivalent, as both shattering or painful and the occasion of jouissance, ecstatic elation, or the sublime” (2001: 80). LaCapra also points out that historical trauma may form the basis for community, albeit one dedicated to the memory of past atrocity. This paradoxical value accorded to past suffering is indeed visible in contemporary Western society (see Mowitt 2000). As Amato points out, victimhood carries with it great moral capital: to identify oneself with the suffering of a class, group or race, he writes, is “the communion call of the twentieth century secular individual. It is his sincerity, his holiness, his martyrdom” (1990: xxii). How does the memory of slavery fit into this model of remembrance? Gilroy coins the phrase ‘slave sublime’ in a discussion which attempts to create a dialogue between the Jewish and African diasporic experiences. Whilst such dialogue has become more visible in academic circles since The Black Atlantic was published (see for example Michaels 1999; Newton 1999; Zierler 2004; Sundquist 2005), it has become no less fraught. The problem stems from the fact that, relatively speaking, slavery has not been adequately remembered, and is not accorded the importance it deserves today in any of the former slave-owning nations. This is undeniable; what is more controversial is the perceived ‘dominance’ of the Holocaust in public memory, especially in America where, aside from individual immigrant survivors or liberating GIs, it is not a direct part of the nation’s history. As Baldwin, once again, states: The Jew’s suffering is recognised as part of the moral history of the world and the Jew is recognised as a contributor to the world’s history: this is not true for blacks. Jewish history, whether or not one can say it is honoured, is certainly known: the black history has been blasted, maligned, and despised (cited in Gilroy 1993a: 216). Such views are echoed by black figures from Césaire to Dieudonné, from Morrison to Farrakhan, and they reflect the resentment which is felt over the perceived neglect of slavery. Accusations of anti-Semitism and racism fly in these embittered ‘memory wars’. What is at stake is an assertion of identity and of worth in the present, increasingly defined by one’s past suffering. Sundquist provides an illuminating overview of what has been termed ‘blackjewishrelations’ (Newton 1999). African Americans, he argues, responded immediately to the racial genocide of the Nazis. As the term ‘holocaust’ became less referential and more representational, he writes, “it began to exercise an eerie, enthralling power in which a people’s identity might be codified only in their destruction, nowhere more insistently than in African American culture” (2005: 436). The phrase ‘the black holocaust’ is the most extreme example of this phenomenon, symbolizing an aggressive competition which has occasionally degenerated into outright anti-Semitism. Nonetheless, there is much to be gained in bringing together these two experiences of diaspora and persecution, in “facing Black and Jew”. Newton (1999) uses Levinas’ idea of ‘facing’, a form of dialogue which respects the alterity and distance of the other, to suggest ways in which the two experiences may inform each other. In this spirit, Gilroy (1993a) builds on Bauman’s argument to suggest that slavery, as much as Auschwitz, needs to be placed at the heart of modernity. Such juxtaposition of the Jewish and black experiences chimes with the work of genocide scholars such as Moses (2007) and Stone (2003). Moses suggests an analysis of genocide which traces its roots in Eurocentric thought and scientific theories of race and eugenics, moving away from the stifling debate over the ‘uniqueness’ of the Holocaust and toward examination of what he terms the ‘racial century’, beginning in 1850 and culminating in the Holocaust. Benjamin’s ‘Angel of History’, according to Durrant, might be reconfigured thus: “colonialism, apartheid, slavery, and the Holocaust are, for all their historical differences, nevertheless part of the same ‘single catastrophe’ to which the Angelus Novus bears witness” (2004: 7). There are further parallels to be drawn between the black and the Jewish diaspora if one places them in the context of modernity. Ethnocidal terror, it has been suggested, goes hand in hand with the evolution of modern, Enlightened Europe. Far from being an aberration, events such as slavery and the Holocaust are integral to modernity’s narrative of ‘progress’ (Bauman 1989; Gilroy 1993a; Sala-Molins 1987). Durrant (2003: 3) draws a parallel between Lyotard’s notion of ‘the jews’, an abstract notion with a complex relationship to Jews per se, and other excluded ‘others’ such as Spivak’s subaltern and Bhabha’s ‘native’. For Lyotard, ‘the jews’ represent an irreversible exclusion, a ‘Forgetting’ of the humanity of the Other which is irreversible, unrepresentable, and sublime (1995: 1990). Without over-simplifying two very different concepts, I wish to suggest a connection between ‘the jews’ and Morrison’s notion of the ‘Africanist’ presence in American literature, “the denotative and connotative blackness that African peoples have come to signify” (1992: 6). Morrison is discussing the ways in which the African diaspora are represented in white canonical texts; ‘the jews’ is a philosophical category; and yet both point to the exclusion of the racialised other, and the fundamental importance this exclusion has in the formation of the modern Western subject. Dayan (1995) reiterates the argument that the negation of the African’s humanity is an essential part of the Enlightenment. Comparing Descartes’ Discourse of Method with the Code Noir, Louis XIV’s infamous edict defining the regulation of French slavery, she points to the parallels between the European subject’s disavowal of all corporeality and the slave object’s exclusion from all cerebral existence. As she writes, “the making of enlightenment man led to the demolition of the unenlightened brute” (1995: 45). The African slave and the Jewish ‘other’ represent a fundamental element in the construction of modern Western subjectivity; both are “at the same time within, on the margins of, and radically excluded from Western thought” (Caroll, in Lyotard 1990: xi). It is upon these grounds that I wish to examine France and America. If slavery is at the heart of modernity, an essential counterpart to Enlightenment thought, then the United States and France provide a unique point of comparison. Whilst the two nations now have very different attitudes towards minorities, they share certain notions of citizenship based on jus soli and nationhood which stem to Enlightenment philosophy (Ravitch 1997). France and America are joined by national narratives explicitly invoking republicanism, liberty and equality, which coexist uneasily with the foundation of racial subjugation and colonial expansion upon which the two nations are built. They share a special relationship to the Enlightenment and to modernity, in its temporality and inception (see Anderson 2006: 192-5). Despite the differences between slavery in the Caribbean and the American South, France and America are significant both to the system of thought within which the sublime is theorised, and the racial terror which accompanied that thought’s development. The ‘slave sublime’, then, is a pattern of remembering in which the horrors of slavery – most particularly the Middle Passage, but also the continual breaking up of the family unit, the punishments and arbitrary killings, the process of dehumanisation – are approached with an awe-filled reverence, as experience beyond language which may carry a lesson for us. This attitude may be seen in the writing of critics such as Marcus Wood, whose discussion of visual representations of slavery very much engages with the discourse of sublimity established within Holocaust studies. Throughout his study, Wood explicitly draws upon that model, asserting, “in the spirit of Felman’s work on the Holocaust, that the historic trauma of transatlantic and plantation slavery must not be encapsulated within a history believed to be stable, digested and understood” (2000: 11). In critiquing the Liverpool Museum of Slavery, he is particularly incensed by the statement in the museum literature that ‘in order to come to terms with the past, it is necessary to understand it’: Such sentiments could not be expressed easily about the memory of the Nazi Holocaust, and if they were expressed would fly in the face of the ethically meticulous work of Claude Lanzmann, Kali Tal and a host of artists and intellectuals who have gone a long way to making sure that we continue to understand that the Holocaust is something the West must work very hard never to ‘come to terms with’ (2000: 297). It is hard to argue with many of Woods’ points: there is most certainly a lack of care and sensitivity in much commemoration of slavery, as the following chapter will demonstrate. However, such a turn away from understanding is not necessarily the most appropriate manner of commemoration. Figures such as Felman have been accused of shrouding the Holocaust in obscurity, creating what Agamben terms “cheap mystifications” (1999:13). The “ethically meticulous” work of Lanzmann in particular has come in for much criticism (see Weissman 2004; LaCapra 1997; Rose 1996). To conclude this chapter, I wish to outline the problems which have been associated with the ‘Holocaust sublime’, and point to their importance for the ‘slave sublime’. The problem with the idea of ‘incomprehensibility’, as critics point out, is that it perversely elevates horror; as Agamben asks, “[w]hy confer on extermination the prestige of the mystical?” (1999: 32). Weissman concurs, arguing that insistence upon ‘ineffability’ in fact enhances the power and fascination of these horrors (2004: 205). For others, the danger of this ‘sublime’ interpretation of racial terror is that the contemporary audience does not have to contemplate the roots of such atrocity. To describe the Holocaust as ‘unique’ in fact robs it of all consequence for the present (Stone 2003: 191). One might equally argue the same for slavery. Removing certain events from the path of ‘normal’ history, designating them too ‘enormous’ or ‘terrible’ to be comprehended, absolves us of the need to understand them. ‘To argue for silence, prayer, [...] non-representability, is to mystify something we dare not understand, because we fear that it may be all too understandable, all too continuous with what we are – human, all too human” (Rose 1996: 42). Whilst the ‘slave sublime’ is not nearly as widely visible as this ‘Holocaust piety’, it is still, I would argue, a problematic mode of remembrance. It is worth repeating that slavery does not receive the attention it should in the public memory sphere, in France, America, or indeed in Britain. But the transformation of slaves into secular martyrs and the Middle Passage into a transcendental memory is no solution. As Hesse writes, when the memory of slavery is perceived as sublime, its memory formations assume the absence of historical consequences [...] They obscure how and why the development of republicanism, liberalism, and democracy in the West emerged in conjunction with slavery, ethnocide, and racism (2002: 158). It is this connection between republicanism, modernity and Enlightenment on the one hand, and slavery, ethnocide and colonialism on the other, which critics such as Gilroy and Durrant seek to explore. Remembering slavery in this manner leads us to examine racism now and in the past, the roots of our contemporary society, and the collusion of the values we hold most dear in perpetuating subjugation and murder. If slavery is remembered as a sacred, aestheticised experience beyond words, it is dehistoricised. Thus, as Stone writes of the Holocaust, it becomes “without consequence”. Unless slavery is understood in its proper context, unless we trace racism through colonialism, slavery, post-Reconstruction violence and current debates over immigration in our postcolonial world, its implications for the present go unexamined.

### Kritik

#### Alt cedes the political—turns the K—our advocacy solves

Connolly ’12 William E. Connolly, Krieger-Eisenhower Professor of Political Science at Johns Hopkins University, “Steps toward an Ecology of Late Capitalism,” Theory & Event, Vol. 15, Issue 1, 2012, Muse

6. The democratic state, while it certainly cannot alone tame capital or reconstitute the ethos of consumption, must play a significant role in reconstituting our lived relations to climate, weather, resource use, ocean currents, tectonic instability, glacier flows, species diversity, work, local life, consumption, and investment, as it responds favorably to pressures to forge a new ethos. A New, new democratic Left will thus experimentally enact new intersections between role performance and political activity, outgrow its old disgust with the very idea of the state, and remain alert to the dangers states can pose. It will do so because, as already suggested, the fragile ecology of late capital requires state interventions of several sorts. A refusal to participate in the state today cedes too much hegemony to neoliberal markets, either explicitly or by implication. Some drives to fascism, remember, emerged the last time around in capitalist states after a total market meltdown. Most of those movements failed. But a couple became consolidated through a series of resonances (vibrations) back and forth between industrialists, state officials, and vigilante groups in neighborhoods, clubs, churches, the police, the media and pubs. You do not fight the danger of a new kind of neofascism by withdrawing from either micropolitics or state politics. You do so through a multi-sited politics designed to shift systemic interactions and to infuse a new ethos into the fabric of everyday life. Changes in ethos can sometimes open doors to new possibilities of state and interstate action, so that an advance in one domain seeds that in the other. And vice versa. A positive dynamic of mutual amplification might be generated here. Could a series of significant shifts in the routines of state and global capitalism even press the fractured system to a point where it hovers on the edge of capitalism itself? We don’t know. That is one reason it is important to focus on interim goals. Another is that in a world of becoming, replete with periodic and surprising shifts in the course of events, you cannot project far beyond an interim period. Another yet is that activism needs to project concrete, interim possibilities to gain support and propel itself forward. That being said, it does seem unlikely to me, at least, that a positive interim future includes either socialist productivism or the world projected by proponents of deep ecology.23

#### Prefer plurality over unitary theory—our world of fragility and complexity can’t be explained by singular totalizing frameworks—it always leaps outside and beyond these explanations. Mixing critique is the best strategy because it allows for greater theoretical agility—the alt alone is an anthropocentric denial of the activity of objects

Bryant ’12 Levi Bryant, teaches philosophy at Collin College, “RSI, Discursivity, Critique, and Politics,” Larval Subjects, 7/18/2012, http://larvalsubjects.wordpress.com/2012/07/18/rsi-discursivity-critique-and-politics/

What we need– or what I want –is something like the Lacanian Borromean Knot. Here the Imaginary would be the way in which one entity encounters another entity. For example, the way in which mantis shrimps encounter the world about them or the way in which people of another culture encounter the world around them. Each machine or object (the two are synonyms for me), encounters the world around it in a particular way. Each discipline encounters the world around it in a particular way and is blind to other aspects of the world. There are as many phenomenologies and transcendental structures of cognition as there are types of machines. There’s even a transcendental aesthetic, analytic, and dialectic for flowers. The symbolic would be the way in which entities capable of language signify the world through narratives, signifiers, signs, texts, etc. Who knows whether this is restricted to humans? As I’ve increasingly argued, I believe aliens live among us. They go by names like “corporation”, “army”, “government”, “institution”, etc. These beings, I believe, are irreducible to humans (the influence of Niklas Luhmann on me), and perhaps have their own symbolics. Just as we don’t know the language of dolphins, we don’t know the languages of these entities. They have their own symbolic. And perhaps likewise with bees, dolphins, octopi, and birds. Finally, the real is the dimension of irreducibility of a think to how it is perceived by another being (imaginary), or symbolized by another entity. It is the irreducible difference that a road has to affect us, for example, despite being created by us. The important caveat is 1) that there is no one borromean knot or RSI, and that 2) all three orders don’t need to be present for there to be being at work. The orders can become unglued, and in many instances some of the orders aren’t present at all. For example, I suspect that the order of the symbolic isn’t operative for bacteria (though the symbolic is at work for us when we talk about bacteria), though the order of the real and imaginary is at work for bacteria. How we work with bacteria in the symbolic, of course, does not undermine the real of bacteria or their ability to contribute differences irreducible to knowledge, signification, or belief. What’s important is that we practice something like what Bogost has call “alien phenomenology”, thinking the experiential world of nonhumans and others, and refusing to privilege one point of view on the universe.

#### Far from simply alienating animals and reducing them to “standing reserve,” science has emerged as a tool to reshape the metaphysical divide between us and animals.

Haraway 91—Donna Haraway [Awesome philosopher with a Phd in biology], "A Cyborg Manifesto Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in Simians, Cyborgs and Women: The Reinvention of Nature (New York; Routledge, 1991), pp.149-181. <http://www.egs.edu/faculty/haraway/haraway-a-cyborg-manifesto.html>

I will return to the science fiction of cyborgs at the end of this chapter, but now I want to signal three crucial boundary breakdowns that make the following political-fictional (political-scientific) analysis possible. By the late twentieth century in United States scientific culture, the boundary between human and animal is thoroughly breached. The last beachheads of uniqueness have been polluted if not turned into amusement parks--language tool use, social behaviour, mental events, nothing really convincingly settles the separation of human and animal. And many people no longer feel the need for such a separation; indeed, many branches of feminist culture affirm the pleasure of connection of human and other living creatures. Movements for animal rights are not irrational denials of human uniqueness; they are a clear-sighted recognition of connection across the discredited breach of nature and culture. Biology and evolutionary theory over the last two centuries have simultaneously produced modern organisms as objects of knowledge and reduced the line between humans and animals to a faint trace re-etched in ideological struggle or professional disputes between life and social science. Within this framework, teaching modern Christian creationism should be fought as a form of child abuse.

#### The K of technology misses the boat—the segregation of “nature” from “machine” is anthropocentric metaphysics

Haraway 91—Donna Haraway [Awesome philosopher with a PhD in biology], "A Cyborg Manifesto Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in Simians, Cyborgs and Women: The Reinvention of Nature (New York; Routledge, 1991), pp.149-181. <http://www.egs.edu/faculty/haraway/haraway-a-cyborg-manifesto.html>

The second leaky distinction is between animal-human (organism) and machine. Pre-cybernetic machines could be haunted; there was always the spectre of the ghost in the machine. This dualism structured the dialogue between materialism and idealism that was settled by a dialectical progeny, called spirit or history, according to taste. But basically machines were not self-moving, self-designing, autonomous. They could not achieve man's dream, only mock it. They were not man, an author to himself, but only a caricature of that masculinist reproductive dream. To think they were otherwise was paranoid. Now we are not so sure. Late twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply to organisms and machines. Our machines are disturbingly lively, and we ourselves frighteningly inert.

#### Loss of life outweighs zimmerman - their evidence is anthropocentric and stupid

David Macauley, Minding Nature: The philosophers of ecology, 1996, p. 74

We may approach the issue of what Heidegger may teach today's radical environmentalists by examining an issue about which they and Heidegger would profoundly disagree. I Heidegger claimed that there is a greater danger than the destruction of all life on earth by nuclear war.40 For radical environmentalists, it is hard to imagine anything more dangerous than the total destruction of the biosphere! Heidegger argued, however, that worse than such annihilation would he the totally technologized world in which material "happiness" for everyone is achieved, but in which humanity would be left with a radically constricted capacity for encountering the being of entities. This apparently exorbitant claim may be partially mitigated by the following consideration. If human existence lost all relationship to transcendent being, entities could no longer show themselves at all, and in this sense would no longer "be." Who needs nuclear war, Heidegger asked rhetorically, if entities have already ceased to be? For many environmentalists, such a question reveals the extent to which Heidegger remained part of the human-centered tradition that he wanted to overcome. By estimating so highly human Dasein's contribution to the manifesting of things, Heidegger may well have underestimated the contribution made by many other forms of life, for which the extinction of humankind's ontological awareness would be far preferable to their own extinction in nuclear war!

#### Being has not been forgotten—but totalizing accounts of technology shut themselves off from any relation to it

Latour ’93 Bruno Latour, professor at the Ecole des Mines de Paris, We Have Never Been Modern, Harvard University Press: Cambridge, 1993, p. 66-67

Who has forgotten Being? No one, no one ever has, otherwise Nature would be truly available as a pure 'stock'. Look around you: scientific objects are circulating simultaneously as subjects, objects and discourse. Networks are full of Being. As for machines, they are laden with subjects and collectives. How could a being lose its difference, its incompleteness, its mark, its trace of Being? This is never in anyone's power; otherwise we should have to imagine that we have truly been modern, we should be taken in by the upper half of the modern Constitution. Has someone, however, actually forgotten Being? Yes: anyone who really thinks that Being has really been forgotten. As Levi-Strauss says, 'the barbarian is first and foremost the man who believe in barbarism.' (Levi-Strauss, [1952] 1987. p. 12). Those who have failed to undertake empirical studies of sciences, technologies, law, politics, economics, religion or fiction have lost the traces of Being that are distributed everywhere among beings. If, scorning empiricism, you opt out of the exact sciences, then the human sciences, then traditional philosophy, then the sciences of language, and you hunker down in your forest -- then you will indeed feel a tragic loss. But what is missing is you yourself, not the world! Heidegger's epigones have converted that glaring weakness into a strength. 'We don't know anything empirical, but that doesn't matter, since your world is empty of Being. We are keeping the little flame of Being safe from everything, and you, who have all the rest, have nothing.' On the contrary: we have everything, since we have Being, and beings, and we have never lost track of the difference between Being and beings. We are carrying out the impossible project undertaken by Heidegger, who believed what the modern Constitution said about itself without understanding that what is at issue there is only half of a larger mechanism which has never abandoned the old anthropological matrix. No one can forget Being, since there has never been a modern world, or, by the same token, metaphysics. We have always remained pre-Socratic, pre-Cartesian, pre-Kantian, pre-Nietzschean. No radical revolution can separate us from these pasts, so there is no need for reactionary counter-revolutions to lead us back to what has never been abandoned. Yes, Heraclitus is a surer guide than Heidegger: 'Einai gar kai entautha theous.'

#### Even if our aff does not resolve calculative thinking or our alienation from the environment our advocacy of policy changes to address global warming is still essential. The scientific consensus around warming is not replicated in current politics. We should recognize the proximate alienation from the natural world denies our planets heat.

Housman 11 Benjamin H. Housman Undergradute Honor’s Thesis at Emory titled “Cooling Down Global Warming: Revisiting Sartre and Heidegger on this Modern Day Challenge“ April 14, 2011, PJF

Up to this point we have explored existential theories of responsibility, social ontology, and Heidegger’s philosophy of technology as each relates to global warming. But what about public policy; what about the formal laws that often dictate the norms and behavior of citizens within a society? As we discussed in the first chapter, a green revolution is in order. A green revolution will demand action that alters the state of our current nation and reevaluates our laws towards sustainability. According to Thomas Friedman, the green revolution will hopefully transform laws, thereby causing a dramatic change in the social consciousness of this country. Friedman said, in comparing the civil rights movement to a potential green movement, “Ultimately, it was about changing laws, so that no one had an option to discriminate, and it was those laws that ultimately changed the behavior and consciousness of tens of millions of people. But the civil rights movement started with citizen activism” (398). In order for such a green revolution to occur, as was the case with the civil rights movement, citizen activism in the form of a strong social ensemble resembling Sartre’s group must emerge.¶ But, alas, we are forgetting an important part of this story: What, exactly, will these green laws entail; how will the government legislate sustainability? It is beyond the scope of this paper to speculate on the efficacy and economics of potential policies like a carbon tax or a cap-and-trade system. While new legislation certainly will not resolve Heidegger’s concerns about our loss of meditative thinking and treatment of things as standing reserve, it may still contribute significantly towards minimizing our greenhouse gas emissions and fighting global warming. However, before any law can ever realistically be pushed through Congress, a change in the attitude and beliefs towards our environment must occur.¶ Pragmatism, a largely American philosophy, promotes the belief that we should seek to bring our diverse values, experiences, and perspectives into a harmonious pluralism. For pragmatists, policy serves as a powerful tool for meeting the challenges we experience in society. As Dr. John Stuhr, a scholar in American pragmatism, says regarding the pragmatist’s view towards philosophy:¶ [I]t must be practical, critical, and reconstructive; it must aim at the successful transformation or amelioration of the experienced problems which call it forth and intrinsically situate it, and its success must be measured in terms of this goal. Thus, for the classical American philosophers, philosophy is primarily an instrument for the ongoing critical reconstruction of daily practice. (3)¶ Philosophy must reside close to our experience and serve to change our environment in such a way that the problems plaguing society can be overcome through constructive activity. Thus, pragmatism is very much a “doer’s” philosophy and does not promote the traditional image of an intellectual lost in theory, detached from the world that surrounds him; rather, pragmatists wish to shake the very norms and rules of society if such a change is called for.¶ But how can a pragmatic, policy-oriented approach to global warming that also accepts the plurality of attitudes, beliefs, and values in this country ever result in any action without undermining the very diversity of opinion on global warming? In other words, what sort of compromise, or harmonious pluralism, could possibly exist between people with fundamentally conflicting ideologies: those who adamantly believe in global warming and those who just as vigorously reject it? To make this question even more difficult to answer, research suggests that within the last decade a growing disparity between partisan ideologies over global warming has occurred. The trends indicate that Republicans are becoming increasingly skeptical of global warming while Democrats are becoming increasingly convinced of its reality.16¶ This trend was just recently epitomized in a bill (H.R. 910) authored by Republican Ed Whitfield, chairman of the Subcommittee on Energy and Power, that was approved and sent to the House of Representatives. The bill intends to prevent the Environmental Protection Agency from managing greenhouse gas emissions. According to an editorial in a major journal entitled “Into Ignorance”, during a recent subcommittee hearing on March 14, “Misinformation was presented as fact, truth was twisted and nobody showed any inclination to listen to scientists, let alone learn from them.”17 The article proceeds to say: “That this legislation is unlikely to become law doesn't make it any less dangerous. It is the attitude and ideas behind the bill that are troublesome, and they seem to be spreading” (266). These growing anti global-warming bills only exacerbate the political stalemate that continues to block progress and change. The¶ “attitude” behind this bill—namely, that global warming either is not real or that it does not pose any sort of threat to us or our environment—exemplifies the very lack of distress felt in our society over this pressing issue. We again come back to this same question: how can we foster a plurality of beliefs and find a harmonious pluralism when political ideologies clash so fundamentally; how can government representatives make any sort of progress when such a blatant partisan divide exists?¶ Unfortunately there is no easy solution to this problem. Many citizens feel demoralized and pessimistic precisely because of this very clear dissension within our government. Ironically, though, the scientific community is virtually unanimous on global warming; 97-98% of active climate researchers believe that climate change has resulted from human activities.18 Similarly, the Intergovernmental Panel on Climate Change (IPCC), the leading international body for the assessment of climate change, argued in a 2001 report that anthropogenic behavior has caused the rise in global temperatures. The IPCC, to which thousands of scientists contribute, stated in the report: “Anthropogenic factors do provide an explanation of 20th century temperature change...[and] it is unlikely that detection studies have mistaken a natural signal for an anthropogenic signal.”19 Some scientists, in fact, believe that the IPCC’s report erred on¶ the moderate side and underestimated the effects that may occur from warming the planet.20¶ So, what will it take for the virtually unanimous scientific opinion to translate into political belief and action? In other words, what will it take to persuade Republican officials that global warming is real and caused by us? We have already mentioned the need for us to unite through a green revolution, but the strength of this movement is lacking right now due to this tension in public and political opinion about climate change. Ultimately, the pluralistic attitudes towards global warming must collapse into a more unified belief in its reality. As Trevors and Saier Jr. state in a journal article entitled “A Vaccine Against Ignorance,” lies against global warming continue to be disseminated even though the scientific evidence is “unequivocal.”21 The solution they propose: education. They say, “Humanity certainly needs to be immunized with a vaccine for ignorance, and we propose that the vaccine is education.” Thus, the last two sections of this chapter will investigate two necessary areas of education on global warming. The first area of education must be in public awareness; ensuring that the public has been exposed to the large body of scientific data that shows the anthropogenic cause of global warming. Once public awareness increases and people become better informed, a more unified societal attitude towards global warming that resembles a Sartrean group (rather than our current Sartrean collective) is more likely to emerge and politicians may then be swayed by public pressure and opinion. The other area of education must stress the need for a greater appreciation of our natural environment—it must remind us of our humble¶ place within this earth’s dynamic whole, and call attention to the positioned, technological world that impairs an ethic of care towards our environment.

# Rd 6 vs Gonzaga HN

## 1AC

See rd 2

## 2AC

### Case

#### Meltdowns are *impossible* with LFTRs – passive design and chemically inert liquid salt

Lerner 12 (George, president of Lerner Consulting, a consulting firm, "Can Use LFTRs to Consume Nuclear Waste," Jan 17, [liquidfluoridethoriumreactor.glerner.com/2012-can-use-lftrs-to-consume-nuclear-waste/], jam)

If the reactor overheats, a frozen plug melts and the fuel quickly drains out of the core into tanks where nuclear reaction is physically impossible. Radiation is contained by materials that remain solid at temperatures much higher than inside the reactor, with passive air cooling. (In solid-fueled reactors, you have to override everything that normally happens in the core and bring in coolant.) Fuel draining to the storage tanks could be triggered by seismic alert, chemical or temperature sensors, power outage, or the operators. [The 1989 Loma Prieta earthquake about 60 miles from Oakland, CA, reached Oakland about 30 seconds later. Japan has a seismic alert network, industrial plants shut down, elevators open at the nearest floor, trains stop, etc. California is building one.] “LFTR designs have a freeze plug at the bottom of the core—a plug of salt, cooled by a fan to keep it at a temperature below the freezing point of the salt. If temperature rises beyond a critical point, the plug melts, and the liquid fuel in the core is immediately evacuated, pouring into a subcritical geometry in a catch basin. This formidable safety tactic is only possible if the fuel is a liquid.” Hargraves, American Scientist, July 2010 “A passive core drain system activated by a melt plug enables draining the radioactive inventory into geometrically subcritical drain tanks that are passively thermally coupled to the environment.” Fast Spectrum Molten Salt Reactor Options, Oak Ridge National Laboratory, July 2011 “One of the current requirements of the Nuclear Regulatory Commission (NRC) for certification of a new nuclear plant design is that in the event of a complete electricity outage, the reactor remain at least stable for several days if it is not automatically deactivated. As it happens, the freeze-plug safety feature is as old as Alvin Weinberg’s 1965 Molten Salt Reactor Experiment design, yet it meets the NRC’s requirement; at ORNL, the [engineers] would routinely shut down the reactor by simply cutting the power to the freeze-plug cooling system. This setup is the ultimate in safe poweroutage response. Power isn’t needed to shut down the reactor, for example by manipulating control elements. Instead power is needed to prevent the shutdown of the reactor.” Hargraves, American Scientist, July 2010 Inherent Safety: Low Pressure LFTRs operate at atmospheric pressure. No high pressure to contain, no risk of pressure containment explosively failing. In a LFTR, there is no coolant boiling away. “A signature safety feature of the LFTR design is that the coolant — liquid fluoride salt — is not under pressure. The fluoride salt does not boil below 1400 degrees Celsius. Neutral pressure reduces the cost and the scale of LFTR plant construction by reducing the scale of the containment requirements, because it obviates the need to contain a pressure explosion. Disruption in a transport line would result in a leak, not an explosion, which would be captured in a noncritical configuration in a catch basin, where it would passively cool and harden.” Hargraves, American Scientist Volume 98, July 2010 “Only a low pressure vessel is needed as the salts run near atmospheric pressure as opposed to the thick walled vessels needed for LWR or PBMR. No water or sodium means no possible steam explosion or hydrogen production within the containment. In designs without graphite moderator, there is not even combustible material present.” D. LeBlanc / Nuclear Engineering and Design 240 (2010) p.1644-1656 “The containment walls are only required to contain a low-pressure internal environment and endure when subjected to external seismic and impact stressors. Halide salts are chemically inert, so they do not have exothermic reactions with the environment (oxygen, water) as would hot sodium or hot zirconium. With a greater than 500°C margin to boiling, the halide salts also do not have a credible route to pressurizing containment as would a water-cooled reactor. FS-MSRs also do not have any hydrogenous material within containment; thus they cannot generate hydrogen.” Fast Spectrum Molten Salt Reactor Options, Oak Ridge National Laboratory, July 2011 Inherent Safety: Containing Radioactive Material Radioactive cesium and iodine that were released in Fukushima-Daiichi would not be released in a LFTR accident. Cesium fluoride, strontium bi-fluoride are very stable salts. “Fluoride combines ionically with almost any transmutation product. This is an MSFR’s first level of containment. It is especially good at containing biologically active ‘salt loving’ wastes such as Cesium 137. The salts do not burn, explode or degrade in air or water, and the fluoride salts of the radioactive actinides and fission products are generally not soluble in water or air.” Wikipedia There are much less fissile materials (compared with LWR) in the fuel salt at any time, as continuous refueling enables operating with just enough to sustain reactivity. About half of the total fissile material is in the reactor core, the rest in the heat transfer and chemical processing loops. Thorium is one of the least radioactive materials,

so (unless the LFTR is for waste burning, at a high security storage site) there is no hazardous fuel storage. Gasseous fission byproducts are easily and continuously removed from the reactor and safely stored. There is far less radioactive gas (that could leak in an accident) than in a LWR, and it isn’t pressurized. Inherent Safety: Self-Regulating The temperature in the reactor is self-regulating. The liquid fuel naturally expands if it gets hotter, slowing nuclear reaction, and contracts if it gets cooler (strong negative temperature coefficient of reactivity). [The nuclear reaction in the poorly-designed Chernobyl reactor got Hotter and Stronger as coolant boiled away.] Remove less heat (making less electricity), and the reactor throttles down. Remove more heat (making more electricity) and the reactor throttles up. “Most MSR designs have very strong negative temperature and void coefficients which act instantly, aiding safety and allowing automatic load following operation.” D. LeBlanc / Nuclear Engineering and Design 240 (2010) 1644-1656 Gasseous fission products are easily removed from the molten salt, making the reactor much more stable. (Xenon gas in LWR absorbs neutrons so readily it affects fission rate, so restarting the LWR must be done very carefully.) “Removing the most significant neutron poison xenon-135 made the reactor safer and easier to restart. In solid-fuel reactors, on restart the 135Xe in the fuel absorbs neutrons, followed by a sudden jump in reactivity as the 135Xe is burned out. Conventional reactors may have to wait hours until xenon-135 decays after shutting down and not immediately restarting.” Wikipedia – Molten Salt Reactor Experiment “The MSRE confirmed expectations and predictions. For example, it was demonstrated that: the fuel salt was immune to radiation damage, the graphite was not attacked by the fuel salt, and the corrosion of Hastelloy-N was negligible. Noble gases were stripped from the fuel salt by a spray system, reducing the 135Xe poisoning by a factor of about 6. The bulk of the fission product elements remained stable in the salt. Additions of uranium and plutonium to the salt during operation were quick and uneventful, and recovery of uranium by fluorination was efficient.” Wikipedia – Molten Salt Reactor Experiment Inherent Safety: Stable Chemistry “FS-MSRs have a negative salt void coefficient (expanded fuel is pushed out of the core) and a negative thermal reactivity feedback that avoids a set of major design constraints in solid-fuel fast reactors. A passive core drain system activated by a melt plug enables draining the radioactive inventory into geometrically subcritical drain tanks that are passively thermally coupled to the environment. FS-MSRs have a low operating pressure even at high temperatures; and FS-MSR salts are chemically inert, thermodynamically lacking the energetic reactions with environmental materials seen in other reactor types (hot zirconium and sodium with water). FS-MSRs do involve more intensive manipulation of highly radioactive materials than other reactor classes and thus small spills and contamination accidents appear to be more likely with this reactor class.” Fast Spectrum Molten Salt Reactor Options, Oak Ridge Nat’l Lab 2011

### Hafnium DA

#### Nuke expansion now—assumes Japanese phase-out

Tirone 9/19 (Jonathan, Associated Press, “Nuclear Power Production Set to Grow Even After Japan Phase-Out (Vienna),” http://www.northjersey.com/news/international/170334006\_Nuclear\_Power\_Production\_Set\_to\_Grow\_Even\_After\_Japan\_Phase-Out\_\_Vienna\_.html?page=all, AM\*Agency=IAEA)

Nuclear power is set to grow over the next four decades even after Japan shuts down its reactor fleet, the International Atomic Energy Agency says. Global installed capacity is set to rise to at least 469 gigawatts of energy by 2050 from 370 GWe today, according to the IAEA's most pessimistic scenario. Nuclear capacity may reach as much as 1,137 GWe in a more favorable investment climate, the Vienna-based agency said. "We are a little bit more optimistic," said Holger Rogner, IAEA head of planning and economic studies, late Tuesday in the Austrian capital. "There is still a case for nuclear power." Japan has about 46 GWe of capacity at 50 reactors and plans to phase out nuclear power in the next three decades in response to the Fukushima Dai-ichi reactor meltdowns last year. The IAEA, established in 1957 to promote the peaceful uses of atomic power, sees growth driven by new reactor projects in China and in newcomer nations such as Turkey and the United Arab Emirates A gigawatt is equivalent to 1 billion watts of electricity. The driving forces that brought about the renaissance in nuclear power — growing demand in emerging economies, energy security, elevated fossil-fuel prices and climate pressures — haven't changed, Rogner said. The IAEA presented its findings to the organization's 155 members, meeting at their general conference in Vienna. "The feedback we receive is that there is no real retraction from most national power programs," Rogner said. "What we do see is that some newcomer states have a much better understanding for the need to get things right. Before Fukushima they were a little too optimistic how fast you can move forward the technology." Japan's new policy follows public pressure since the Fukushima disaster caused mass evacuations and left areas north of Tokyo uninhabitable for decades. Germany and Switzerland announced plans to phase out nuclear power after the meltdowns.

#### Rare earth shortage now – Chinese monopoly

Worstall 10/10 (Tim, Senior Fellow at the Adam Smith Institute and an expert on rare earth metals according to The Telegraph, “The rare earths shortage isn’t over yet” Forbes <http://www.forbes.com/sites/timworstall/2012/10/10/the-rare-earths-shortage-isnt-over-yet/>) wg

The Rare Earths Shortage Isn't Over Yet¶ Back a couple of years the great panic was that China’s 97% of the rare earths market was going to be exploited. That near monopoly would, when export licences were limited, mean that those companies that used the materials would have to locate themselves in China in order to get stocks. I’ve certainly had a conversation or two with companies that do use rare earths where they’ve indicated that they have at least considered such a move.¶ The panic was rather overdone in my opinion. Rare earths just aren’t rare (nor are they earths, thoise are the first two things you need to know about them) and there are multitudes of places around the world where you can mine them. As Molycorp, Lynas and others have shown. Indeed, as I hope to be showing in a few months time as we start to produce (very small indeed amounts it has to be said) one of the rare earths.¶ However, as I’ve been saying over this time there is indeed a limit in the market. A chokepoint, something that China does have and no one else really does. That’s the ability to process the rare earths. The real difficulty is in separating the 15 lanthanides, one from each other. Molycorp has part of a plant (they can only separate some, not all). There’s a few small plants in the CIS, remnants of the Soviet industry. But they’re not really ready to run at present. There’s a small plant in France but that has problems with storage of the waste and one more being built in South Africa (disclosure, I know one of the directors there). The big breakthrough though, the one that was going to break China’s grip, was the Lynas plant in Malaysia. Big enough to actually make a difference, complete in that it would be able to process all of the different lanthanides. And that’s running into problems:¶ A Malaysian court has kept on hold a license granted to Lynas Corp Ltd’s controversial rare earth plant, delaying until next month a decision on whether to consider judicial reviews aimed at permanently blocking production.¶ It’s complete and it’s ready to roll but they’ve huge problems in getting that license to allow them to actually operate. The problem is that there was a previous plant there (processing material from the local tin ores) which left quite a bit of radioactive residue around the place. This shouldn’t be a problem for the new plant: partly because they’re going to be more careful. But mainly because the ore they want to process is much lower in that radioactivity in the first place.¶ But a delay this is and no one is really quite sure yet which way the court case and license is going to go. For there’s a good suspicion that it’s more likely to be a political decision than a legal one.¶ It really isn’t all over yet. Not licensing this plant will mean that the world becomes reliant once again on Chinese supplies, reinforcing that monopoly.

#### Thorium incentives solve global rare earth shortage

Halper 12 (Mark, Energy editor for Smart Planet, “Solve the energy AND rare earth crisis: join the thorium bank” Smart Planet, 7/24/12 <http://www.smartplanet.com/blog/intelligent-energy/solve-the-energy-and-rare-earth-crisis-join-the-thorium-bank/17845>) wg

Put this idea into the “killing two birds with one stone” category.¶ The “birds” in this case are nothing less than two great economic and environmental challenges facing the West: How to establish carbon-free, sustainable energy independence, and how to cut reliance on China for the rare earth metals vital to products ranging from missiles to mobile phones.¶ The “stone” is literally a stone - okay, a rock - called monazite.¶ As I’ve noted before on SmartPlanet, monazite is a mineral rich in rare earth elements, and also in thorium, the element that could replace uranium and usher in a future of safe, efficient nuclear power that helps cut the fossil fuel cord and that greatly reduces nuclear waste hazards including weapons proliferation.¶ Two problems: Most countries in the West lack policy that supports thorium nuclear. Likewise, countries like the U.S. years ago took measures that handed the rare earth business to China.¶ Co-operative Kennedy. Jim Kennedy speaking in Chicago recently.¶ Another issue: Although mining monazite in say, the U.S., could help free the country from China’s rare earth shackles, the presence of thorium in the rock discourages such initiative. That’s because - with no federal thorium nuclear approval in place - mildly radioactive thorium is a costly rare earth byproduct that someone has to safely store away.¶ You would think it’s high time to solve this riddle.¶ Jim Kennedy’s Thorium Bank to the rescue!¶ Kennedy, one of the organizers of the recent Thorium Energy Alliance Conference in Chicago, made a compelling case at the conference for Congress to authorize - but not fund - a “cooperative” responsible for not only taking the thorium off the hands of rare earth mining companies, but also for developing thorium uses and markets, including energy.¶ You can watch a video of Kennedy making his case below. In it, he describes how he and fellow TEAC organizer John Kutsch have been lobbying Congress - so far unsuccessfully.¶ Kennedy is a St. Louis consultant who is also president of a company called ThREEM3 that owns rights to the rare earth byproducts from Missouri’s Pea Ridge iron ore mine (which would come from monazite at the mine, I believe).¶ He notes, ”As John and I have been trying to convince Congress…you could create a rare earth cooperative that could receive the thorium-baring monazites, and essentially pull out the rare earths, and then take the thorium liability and hand it over to another entity, something we can just simply call the thorium bank.¶ “And the thorium bank would have a very simple elegant one sentence piece of legislation along with it that says, ‘Congress gives the thorium bank the authority to develop uses and markets for thorium, including energy.’ ”¶ That, he says, would provide “the big tent to develop a thorium energy economy,” and would include Western partners and owners who would participate in the revenue stream and, by the way, create jobs.¶ Kennedy suggests calling the entity the “Thorium Storage and Industrial Products Corporation.”¶ He describes it as, “Something to give the public confidence - a federally chartered facility that’s going to accept every single gram of thorium and all the other actinides that are produced.¶ “That thorium bank would solve the rare earth crisis in the United States in Japan in Korea in Europe. Everyone could participate and own. And own the offtake. Because it would be a co-op. And then you would relegate the risk over to this facility. And this facility would be the big tent where people could come in and either contribute capital or IP.”

#### Asteroid mining – it’s happening

Diaz 12 (Jesus, Gizmodo Australia, “New asteroid mining company may solve world’s economic problems” 4/23/12 <http://www.gizmodo.com.au/2012/04/new-asteroid-mining-company-may-solve-worlds-economic-problems/>)

Early on Wednesday morning, a group of billionaires and former NASA scientists will announce Planetary Resources, the first asteroid mining company in history. They claim they will “add trillions of dollars to the global GDP” and “help ensure humanity’s prosperity”.¶ The group of investors and scientists on board this enterprise is impressive:¶ …including Google’s Larry Page & Eric Schmidt, Ph.D.; film maker & explorer James Cameron; Chairman of Intentional Software Corporation and Microsoft’s former Chief Software Architect Charles Simonyi, Ph.D.; Founder of Sherpalo and Google Board of Directors founding member K. Ram Shriram; and Chairman of Hillwood and The Perot Group Ross Perot, Jr.¶ Harnessing the resources of asteroids is not a crazy proposition, and the return of investment could be amazing. So much so that they are convinced they can “add trillions of dollars to the global GDP”. More importantly, this may solve many of our material needs as resources on Earth keep dwindling fast.

#### Solves shortage

Mr. V’s Think Pad 10 – Writer of over 65 blogs about space (10/21/10, Mr. V’s Think Pad, “Astronomy: Asteroid Mining,” http://mrvsthinkpad.blogspot.com/2010/10/astronomy-asteriod-mining.html)

Rare earth elements (also known as rare earth metals) are a series of seventeen chemical elements in the periodic table, namely scandium, yttrium, and the fifteen lanthanides. Rare earth elements have only been known since 1794, when yttrium was first discovered in Sweden. The properties in rare earth elements are essential to the development of modern energy conversion and telecommunication technologies. While rare earth elements are abundant, their low concentrations in geologic formation makes mining and processing difficult, expensive and environmentally destructive. As measured in 2006, there were approximately 137,000-tons of commercial grade rare-earth reserves known. Over 90% of these reserves, both light and heavy ores, were in China. As of 2009, 97% of all rare earth production and exportation was from China. At current rates of consumption, current reserves of ores with concentrations of 6% and higher will run out long before petroleum. This will drive prices up exponentially from the present rates of $US500 to $US1000 per pound. One endeavor being made in response to the depletion of these rare earths is use of Remote Sensing Technologies to identify locations on earth where deposits of ores can be found. Transposing full spectrum photo image pixels from satellites and aerial reconnaissance into digital databases allows geologists the ability to manipulate information and search out rare earth resources. Another endeavor is to find rare earth elements in sea water. By bonding them with other chemicals then extracting the bonded molecular compound, researchers have been able to extract measurable quantities of rare earth elements out of ocean salt water. However, the technologies for large scale extraction are not competitive yet competitive with those of terrestrial based mining. A third endeavor being considered is that of mining rare earth elements from asteroids. Present indication are that asteroids have concentrations of rare earth elements in their geology which many times higher than those found on earth. In such high concentrations, mining of asteroids could be profitable in spite of the high cost of launch operations. Sending robots or humans to mine rare earth elements from off asteroids may sound very science fiction and unreal, but consider; the concentration of rare earth elements in asteroids is much higher than anywhere on earth, and also higher than that of the moon. Near earth asteroids orbit much closer to earth than the moon.

#### DoD stockpile and domestic mining

Topf 11 (Andrew, specializes in writing about mining and commodities, Nov 6, [www.mining.com/us-strategic-rare-earth-reserve-one-step-closer/])

A temporary production stoppage by China's largest rare earth exporter makes the creation of an American rare earth stockpile more likely, according to a report by dealReporter that appeared in yesterday's FT. The stoppage was a "wake-up call" for the US Department of Defense because the rare earth elements are needed for a variety of defense applications, writes dealReporter, citing a congressional source. The article quotes congressional sources and three rare earth companies saying that "the creation of a US rare earth strategic reserve is more likely to get the go-ahead after (Inner Mongolia Baotou Steel Rare-Earth (SHA:600111)) halted production. Such a move would create another source of demand for the metals, likely aiding a rebirth of the US rare earths industry." Two years ago China reduced its export quota of rare earth elements, which has led to a surge in prices and exploration activities by rare earth companies eager to hunt for the materials used in everything from manufacturing electric cars to cell phone components to magnets used in guidance missiles. Nearly all (96%) of the world's rare earth production comes from China. Getting rare earths out of the ground, and separating and processing them however is an expensive endeavour as MINING.com reported last week, with 96% of non-Chinese rare earth companies predicted to fail according to one expert. MINING.com reported Oct. 23rd on a plan by Molycorp., the only rare earth producer in the Western hemisphere, to spend $114 million to accelerate by three months the start-up of its rare earth processing facility at Mountain Pass, California. The mine has re-opened after closing in 2002 due to low rare earth prices and a series of radioactive wastewater spills.

#### Aerospace will decline inev

Sterner 10 (Eric, national security and aerospace consultant in Washington, DC., has held senior Congressional staff positions as the lead Professional Staff Member for defense policy on the House Armed Services Committee, Jun 15, [www.worldpoliticsreview.com/articles/5793/tending-the-forge-of-american-space-power?page=3], jam)

The industry also faces difficulties in the manner that contracts are awarded. Increasingly, to simplify and expedite the contracting process, the government awards multi-year, winner-takeall contracts. While this process can reduce the administrative burden and uncertainty of frequent competitions, it also creates a situation in which the losers in a particular bid face multi-year dry-spells in which they may have no significant government work. As a result, they are forced to release design teams, lay off skilled laborers, and dispose of, or mothball, physical plant. More often than not, those capabilities cannot be reconstituted, except at extraordinarily high prices. As a result, talent is not available for future bids, and the overall size of the industrial base shrinks. The nature of space systems compounds the problem. Unlike other systems, once launched, space systems cannot be “maintained.” Thus, there is no post-deployment, hands-on work on a spacecraft that often enables a contractor to maintain critical skill-sets. Moreover, because so much is riding on each launch event, they are few and far between. Thus, there is an extremely limited number of opportunities for those entities that constitute the industrial base to practice their trade and enhance skill-sets. The industry’s future is at risk as well. Its workforce is aging, yet low flight rates and the industry’s contraction over recent decades have limited the number of opportunities for younger engineers to acquire the technical and management skills possessed by their predecessors. Often, talented younger personnel simply leave the industry. Consequently, there is a risk of leadership shortages in the future. Meanwhile, for those engineers, skilled manufacturers, and scientists who stay in the community, the feast-or-famine distribution of work among contractors often creates a migrant workforce, in which individuals follow the work from contractor to contractor. While this mobility may create learning opportunities and foster the spread of some knowledge, it also retards the development of corporate knowledge and expertise.

#### Economic crisis causes cooperation, not war – their ev is rhetoric

Barnett 9 (Thomas P.M., senior managing director of Enterra Solutions LLC and a contributing editor/online columnist for Esquire magazine, Aug 24, [www.worldpoliticsreview.com/articles/4213/the-new-rules-security-remains-stable-amid-financial-crisis] AD: 9-24-11, jam)

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. So, to sum up: \*No significant uptick in mass violence or unrest (remember the smattering of urban riots last year in places like Greece, Moldova and Latvia?); \*The usual frequency maintained in civil conflicts (in all the usual places); \*Not a single state-on-state war directly caused (and no great-power-on-great-power crises even triggered); \*No great improvement or disruption in great-power cooperation regarding the emergence of new nuclear powers (despite all that diplomacy); \*A modest scaling back of international policing efforts by the system's acknowledged Leviathan power (inevitable given the strain); and \*No serious efforts by any rising great power to challenge that Leviathan or supplant its role. (The worst things we can cite are Moscow's occasional deployments of strategic assets to the Western hemisphere and its weak efforts to outbid the United States on basing rights in Kyrgyzstan; but the best include China and India stepping up their aid and investments in Afghanistan and Iraq.) Sure, we've finally seen global defense spending surpass the previous world record set in the late 1980s, but even that's likely to wane given the stress on public budgets created by all this unprecedented "stimulus" spending. If anything, the friendly cooperation on such stimulus packaging was the most notable great-power dynamic caused by the crisis. Can we say that the world has suffered a distinct shift to political radicalism as a result of the economic crisis? Indeed, no. The world's major economies remain governed by center-left or center-right political factions that remain decidedly friendly to both markets and trade. In the short run, there were attempts across the board to insulate economies from immediate damage (in effect, as much protectionism as allowed under current trade rules), but there was no great slide into "trade wars." Instead, the World Trade Organization is functioning as it was designed to function, and regional efforts toward free-trade agreements have not slowed. Can we say Islamic radicalism was inflamed by the economic crisis? If it was, that shift was clearly overwhelmed by the Islamic world's growing disenchantment with the brutality displayed by violent extremist groups such as al-Qaida. And looking forward, austere economic times are just as likely to breed connecting evangelicalism as disconnecting fundamentalism. At the end of the day, the economic crisis did not prove to be sufficiently frightening to provoke major economies into establishing global regulatory schemes, even as it has sparked a spirited -- and much needed, as I argued last week -- discussion of the continuing viability of the U.S. dollar as the world's primary reserve currency. Naturally, plenty of experts and pundits have attached great significance to this debate, seeing in it the beginning of "economic warfare" and the like between "fading" America and "rising" China. And yet, in a world of globally integrated production chains and interconnected financial markets, such "diverging interests" hardly constitute signposts for wars up ahead. Frankly, I don't welcome a world in which America's fiscal profligacy goes undisciplined, so bring it on -- please! Add it all up and it's fair to say that this global financial crisis has proven the great resilience of America's post-World War II international liberal trade order. Do I expect to read any analyses along those lines in the blogosphere any time soon? Absolutely not. I expect the fantastic fear-mongering to proceed apace. That's what the Internet is for.

### Elections DA

#### 2013 budget request triggers your perception links – if Romney wanted to make thorium an election issue, he would have – they need a card that the plan is a unique factor

#### Romney up – polls, swing states

Sheppard 10/14 (Elena, Policy Mic, Latest Presidential Polls: Romney Ahead Says Real Clear Politics Polls, Obama Ahead Says New York Times; <http://www.policymic.com/articles/16484/latest-presidential-polls-real-clear-politics-polls-show-romney-new-york-times-poll-show-obama>)

With 23 days to go until the presidential election, all eyes are on the poll numbers. As for who is in the lead? It really depends on who you ask. At this point, nearly across the board, Romney seems to be in the lead; but only marginally so. On Sunday, Rasmussen Reports released their daily Tracking Polls which put Romney in the lead with 49% support to Obama's 47%. According to the polling numbers, 2% of voters prefer another candidate and 2% are undecided. Rasmussen numbers in swing states show similar percentages. In the 11 swing states (Colorado, Florida, Iowa, Michigan, Nevada, New Hampshire, North Carolina, Ohio, Pennsylvania, Virginia, and Wisconsin) Rasmussen polls shows Romney with 49% support to Obama's 47%. The same as national polling numbers according to Rasmussen. It should be noted, that Rasmussen is considered to be a right-leaning enterprise. RealClearPolitics also puts Romney in the lead with the average polling data on their site showing Romney ahead 47.3% to Obama's 45.9%. According to RealClearPolitics the media outfit that puts Romney furthest in the lead is Pew Research which has Romney up by 4 points; 49% to Obama's 45%. Check out the RealClearPolitics numbers below:

#### Err aff: risk of an Obama gain outweighs

Silver 10/12 (Nate Romney Debate gains show staying power <http://fivethirtyeight.blogs.nytimes.com/2012/10/12/oct-12-romney-debate-gains-show-staying-power/?gwh=EB0A7A5046CCC852A922C7B507944540>)

The forecast model adjusts Mr. Obama’s numbers up slightly based on its economic index and his incumbency status, but only by about 0.4 percentage points. It may also be that he will need to earn those lost points back — rather than expecting them to return automatically — with, for example, a stronger performance in the last two presidential debates. In the same way that Mr. Romney had a wind at his back before the Denver debate, in that the four- or five-point lead that Mr. Obama held at that point was higher than might be expected based on economic conditions, Mr. Obama might have more to gain than to lose in the final two events.

#### Up in Florida

Rasmussen 10/12 (http://www.rasmussenreports.com/public\_content/politics/elections/election\_2012/election\_2012\_presidential\_election/florida/election\_2012\_florida\_president)

Mitt Romney has crossed the 50% mark for the first time to widen his lead to four points in Florida. The latest Rasmussen Reports telephone survey of Likely Florida Voters finds Romney with 51% support to President Obama’s 47%. Two percent (2%) remain undecided. (To see survey question wording, click here.) This is the widest gap between the candidates in surveys this year, but Florida remains a Toss-Up in the Rasmussen Reports Electoral College Projections. Prior to these findings, the candidates have been within two points of each other in Florida in every survey since April. Last week, it was Romney 49%, Obama 47%.

#### Nuclear swings Florida and Latinos for Obama

Whitman and Avilla 12

Christie is an [American](http://en.wikipedia.org/wiki/United_States)  [politician](http://en.wikipedia.org/wiki/Politician) and [author](http://en.wikipedia.org/wiki/Author) who served as the [50th](http://en.wikipedia.org/wiki/List_of_Governors_of_New_Jersey) [Governor](http://en.wikipedia.org/wiki/Governor_of_New_Jersey) of [New Jersey](http://en.wikipedia.org/wiki/New_Jersey) from 1994 to 2001, and was the [Administrator of the Environmental Protection Agency](http://en.wikipedia.org/wiki/Administrator_of_the_Environmental_Protection_Agency) also was New Jersey's first, and to date, only [female governor](http://en.wikipedia.org/wiki/List_of_female_state_governors_in_the_United_States). Karen is a guest Columnist for the Orlando Sentinel. “Nuclear energy = green jobs, economic growth in Fla., beyond” 6/22/12 <http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community>

We all know how critical Florida is to the outcome of this year's election. This week, as Orlando hosts the annual conference of the National Association of Latino Elected and Appointed Officials, all eyes are on the presidential candidates as they speak to Hispanic elected officials — and by extension, to their constituents — about the issues that are top of mind for voters.¶ Notably, the conference addresses two issues also of paramount concern to all Floridians: energy and the economy.¶ From our perspective, these issues are deeply intertwined — and one way that Floridians and the state's thriving Hispanic community can advocate for economic growth through renewed [investment](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) in clean energy is by supporting nuclear energy. We need to let the candidates know that Americans are relying on the next president for clean, sustainable energy policies that benefit us all.¶ As we look toward diversifying America's energy [portfolio](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) and building out the energy generated by renewables, candidates should look to nuclear energy as one proven way to effectively meet growing demand. In doing so, they are registering their support for well-paying jobs, sustained economic growth and clean, affordable energy options.¶ Florida is one of many states exploring opportunities to expand capacity at existing facilities, which would mean the creation of new jobs and added [economic](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) impact. By showing our support for Florida's five nuclear-energy reactors, as well as paving the way for the expansion of the infrastructure that supports them in the state and beyond, we can help create and sustain green jobs and work to reduce unemployment.¶ Florida needs jobs. While overall U.S. unemployment rates stand at 8.2 percent, unemployment in Florida is slightly higher, at 8.6 percent. National unemployment among Hispanics is higher still, at 11 percent.¶ At present, the U.S. nuclear-energy industry supports 100,000 American jobs. Each new nuclear facility creates an average of 1,400 to 1,800 high-paying jobs, often reaching as many as 3,500 jobs during peak construction periods. Once operational, these facilities create 400 to 700 direct and permanent jobs.¶ What does this all mean for minorities, who are so disproportionately impacted by unemployment?¶ Latinos in Florida will be able to take advantage of contract opportunities set aside for minority development programs. And Florida's communities will provide the goods and [services](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) needed to support a growing nuclear-energy industry. Recent trends in entrepreneurship indicate business starts in the Hispanic community will continue at a much higher rate than in other communities. Hispanic communities are therefore readily able to address the growing needs of new nuclear facilities.¶ Educational institutions across the state are also targeting minority populations with training programs designed to produce nuclear work-force-ready candidates. These programs and partnerships are cropping up at minority-serving institutions statewide.¶ Take, for example, [Miami Dade College](http://www.orlandosentinel.com/topic/OREDU0000157196.topic)'s Nuclear-Career Academic Bridge, which leverages a combination of [financial](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) aid, mentorships and focused, skills-oriented training to ready students to enter the nuclear industry upon completion of the program.¶ These kinds of efforts — which expose Hispanic students in greater numbers to critical science,[technology](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community), engineering and mathematics education — not only promote greater diversity in the energy work force, but also put Hispanic students in line to enter well-paying careers in an industry with a bright future.¶ Just as nuclear power creates and sustains jobs, it also promotes healthy economic growth. Each of America's 104 nuclear-power facilities generates, on average, $430 million in economic output annually, as well as an additional $40 million per year in total labor income. Minority-owned suppliers and businesses are among key beneficiaries of this economic infusion.¶ Indeed, all eyes will be on the candidates speaking at the Orlando conference this week. And clearly the candidates will be keenly focused on the Hispanic community. They're looking to the more than 1 million potential voters that Florida's Hispanic population represents for cues on how to shape their policies and platforms.¶

#### Florida key—resolves close elections

Silver 9/12 [Nate, 9/12/12, “Florida a True Must-Win for Romney” <http://fivethirtyeight.blogs.nytimes.com/2012/09/12/sept-11-florida-a-true-must-win-for-romney/#more-34415>]

Florida has a [well-established reputation](http://fivethirtyeight.blogs.nytimes.com/2012/08/29/in-florida-tampa-is-essential-to-romney-election-hopes/) as a swing state. But as the election season has worn on, it has come to look even more important. Florida now ranks a clear second on our list of [tipping point states](http://fivethirtyeight.blogs.nytimes.com/2012/04/27/arizona-is-probably-not-a-swing-state/), those most likely to provide the decisive votes in the Electoral College, behind only Ohio. Florida is typically just slightly Republican-leaning, and the tipping point calculation is sensitive to even the smallest deviations from the national averages. As I’ve argued before, for instance, North Carolina [isn’t that essential to the electoral math](http://fivethirtyeight.blogs.nytimes.com/2012/08/07/aug-7-north-carolina-isnt-central-to-electoral-math/), even though the race there is quite close, because other states that would help get a candidate to 270 electoral votes precede it in the pecking order. But as the election has evolved, Mr. Obama’s polling has held up fairly well in Florida, including [another decent poll there](http://www.surveyusa.com/index.php/2012/09/11/in-florida-8-weeks-out-obama-4-points-atop-romney-nelson-11-points-atop-mack-voter-fraud-of-greater-concern-than-voter-suppression/) on Tuesday, which put him four points ahead. Just as important, Mr. Obama’s polling has been choppy lately in a several other states, particularly Virginia (where he got a very poor poll on Monday), Colorado and Iowa, which had initially appeared to be easier wins for him. It is more conceivable now that Mr. Obama could have an easier time winning Florida than those other states, increasing its importance. Nonetheless, Florida is mostly a state where Mr. Obama is playing offense. If he wins it, it will solve almost all of his other problems. If Mr. Obama wins Florida, he could lose each of Virginia, Colorado and Iowa, along with Ohio, Wisconsin, and North Carolina, and either New Hampshire or Nevada, and still win the Electoral College. From Mr. Romney’s point of view, conversely, that might seem to make Florida a must-win state. In fact, it’s possible to put some numbers around this idea. Defining a must-win state in a formal way is a bit tricky. For example, is Georgia a must-win for Mr. Romney? If he loses it, he would almost certainly lose the Electoral College. But that is because Georgia is much more Republican-leaning than the states that we would ordinarily classify as swing states. If things get bad enough for Mr. Romney to lose Georgia, his map will almost certainly be a disaster in a number of other ways. So what we might really think of as must-win states are those that a candidate could not afford to lose even in a *close* election. Imagine that the election is very close: the popular vote is within one percentage point either way. This condition occurred roughly 3,000 times out of the 25,000 simulations that I ran in the forecast model on Monday. For each of the top 12 states on our tipping point list, I looked up the probability of Mr. Romney winning the election conditional upon losing the state in these 3,000 simulations. If Mr. Romney has great difficulty winning the Electoral College without the state in a close election, we can fairly describe it as a must-win. These simulations estimate that Mr. Romney has only a 2 percent chance of winning the election if he loses Florida — even assuming that the election is very close over all. Losing its 29 electoral votes just presents too daunting a challenge for him, given his inability so far to penetrate into states like Pennsylvania that could plausibly substitute for it. The numbers aren’t remotely that overwhelming for any other state. Mr. Romney has a 15 percent chance of winning a close election despite losing Ohio, for instance — not pleasant odds, but also far from impossible. If he lost Virginia, he’d still have a 19 percent chance of winning a close election; Colorado, a 28 percent chance; Wisconsin, a 37 percent chance, and so forth. So, it isn’t a cliché to call Florida a must-win for Mr. Romney; he very badly needs it. What does the same list look like for Mr. Obama? Pennsylvania is the closest analog to Florida for him; he has just a 10 percent chance of winning a close election if he loses the state. However, Mr. Obama is highly likely to win Pennsylvania, according to our forecast, as he has led in every poll of the state since February and as Mr. Romney has not placed all that many resources into the state. Otherwise, Mr. Obama’s electoral strategy is fairly robust. He has about a 28 percent chance of winning a close election if he loses Ohio, for instance, about twice Mr. Romney’s chance of doing the same.

#### Plan’s insulated from backlash – bipartisan consensus

Shaw 5/15 (Andrew, member of the Government Affairs team where he focuses primarily on energy issues at the intersection of Canada-U.S. relations, uses his knowledge and experience of Congress and the Executive Branch to advise clients on critical energy and environmental public policy issues, “ A “Chunks” Approach to Climate Policy,” 2012, [[www.politicsandlawblog.com/2012/05/15/a-chunks-approach-to-climate-policy/](http://www.politicsandlawblog.com/2012/05/15/a-chunks-approach-to-climate-policy/)], jam)

While ideally President Obama would seek a “comprehensive” approach to climate change, Zichal acknowledged that the Administration would likely approach this issue in “chunks.” Specifically, Zichal talked about seeking “tools and policies that can garner bipartisan support.” One example provided by Zichal was extending the production tax credit for renewable production, which is set to expire at the end of this year. The “chunks” mention appears to reinforce the notion that President Obama would be unlikely to pursue cap-and-trade, or some variant, in a second-term. Following Zichal’s comments, Senator Lamar Alexander (R-TN) spoke – his remarks suggested that there are other “chunks” where consensus is achievable on energy policy between the Administration and Congress. Specifically, Senator Alexander expressed support for the Advanced Research Projects Agency-Energy (ARPA-E), an agency focused on R&D for breakthrough energy technologies, such as small modular reactors, smart grids, carbon capture and electric car batteries. ARPA-E is modeled after the Defense Advanced Research Projects Agency (DARPA), which, among other achievements, helped in inventing the internet. The American Recovery and Reinvestment Act provided the first appropriations for ARPR-E, which has subsequently used that money to fund over 180 projects focused on emerging energy technologies. In an election year, Republicans and Democrats spend an inordinate amount of time highlighting their differences on energy policy. Yet on ARPA-E, both President Obama and Governor Mitt Romney have expressed support for a continued commitment to the program. Senator Alexander’s comments indicate that an important and achievable “chunk” of climate policy, regardless of the outcome of the election, could be a renewed emphasis on ARPA-E.

#### DoD shields links

Lacey 8/16 (Stephen, reporter Climate Progress, B.A. in journalism from Franklin Pierce University, 2012, [thinkprogress.org/climate/2012/08/16/699811/the-solyndra-standard-on-loan-guarantees-military-spending-and-clean-energy-politics/?mobile=nc], jam)

That’s exactly how it’s playing out. The politically-manufactured outrage over Solyndra has turned into an all-out campaign — with tens of millions of dollars being spent this election season specifically targeting federal renewable energy investments. Mitt Romney has jumped on the bandwagon, using Solyndra as a central piece of his campaign. And here’s the really astonishing disconnect: While supporting tens of thousands of jobs, the loan guarantee program is expected to cost $2 billion less than Congress budgeted for, according to an analysis from Herb Allison, John McCain’s former National Finance Chairman. Meanwhile, amidst the Solyndra saga, we casually accept a $300 million aircraft failure without batting an eye. No outrage. No sustained political campaign. It’s just another day testing our military toys. Why? Because we don’t often see programs like this as a “failure” in the political arena. We would never use one failure as an excuse to abandon investment in new technologies. Most politicians accept losses in military R&D expenditures because the long-term gains are potentially so important for national defense and for eventually developing technologies for civilian use. We should always strive to make programs as efficient and cost-effective as possible. But a few bankrupt clean energy companies representing a fraction of the program’s budgeted cost is no excuse for abandoning federal investments in clean energy — a strategically important sector that is becoming one of the largest drivers of business this century. Alas, don’t expect anyone to publicly admit this. As the campaign season unfolds, political leaders are all too willing to practice the Solyndra standard.

#### Business and bipartisan political support

Tindale 11 (Stephen, associate fellow at the Centre for European Reform, June 2011, "Thorium: How to save Europe's nuclear revival," [www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/pb\_thorium\_june11-153.pdf], jam)

In the US, political interest in thorium molten salt reactors is cross-party, having been led by Democratic Senator Harry Reid and Republican Senator Orrin Hatch. Reid and Hatch have introduced three bills to Congress, all of which identified thorium fuel cycle technology as a means to expand nuclear power without increasing waste or nuclear proliferation. When he entered office, President Barack Obama set up a Blue Ribbon Commission on America’s nuclear future, which is considering nuclear fuel cycles and nuclear waste against criteria of “cost, safety, resource utilisation and sustainability, and the promotion of nuclear non-proliferation and counter-terrorism goals”.11 The Commission will publish a draft report in July 2011 and a final report in January 2012. US Energy Secretary Steven Chu has already indicated that he thinks thorium and molten salt reactors are the way forward for nuclear energy: “We cannot continue to improve the condition of people throughout the world without use of nuclear power. None of the renewable energy solutions can be scaled quickly enough to meet current and future energy needs. Safer, proliferation resistant, nuclear power without the long term high level waste storage problems is needed to power a growing world economy and to allow all nations to provide for and feed their growing populations in peace. These goals are available by changing the nuclear fuel cycle to a U233/Thorium fuel cycle.”12 Large US energy companies have not yet shown serious interest in molten salt reactors. However, Microsoft’s Bill Gates has set up a company called TerraPower with the aim of developing a nuclear energy system which reduces the weapons proliferation risk and allows the re-use of spent nuclear fuel. TerraPower has identified thorium molten salt reactors as a promising means of achieving these objectives. Other US companies are part of a consortium, with Japanese and Russian companies, to develop a molten salt reactor. Japanese companies involved include Toyota, Toshiba and Hitachi.

#### Relations resilient—dissident crisis proves

Drezner ’12 Daniel W. Drezner, professor of international politics at The Fletcher School of Law and Diplomacy at Tufts University, PhD in Political Science from Stanford University, “The big dogs that have not barked in the Chen Guangcheng case,” Foreign Policy, 5/4/2012, http://drezner.foreignpolicy.com/posts/2012/05/04/thoughts\_on\_the\_chen\_guangcheng\_case

My Big Thought: contrary to just about every headline I've seen in the past three days, I think Chen's case demonstrates the surprising resilience of the Sino-American relationship. Recall what I wrote earlier in the week: The fact that both Beijing and Washington have kept their mouths shut on Chen is a pretty surprising but positive sign about the overall stability/resilience of Sino-American relations. Bear in mind that according to the latest reports, much of the leadership in Beijing takesan increasingly conspiratorial view of the United States. As for the mood in Washington, well, let's just call it unfriendly towards China. Both sides are in the middle of big leadership decisions, making the incentive to cater to nationalist domestic interests even stronger than normal. With the rest of the Pacific Rim trying to latch themselves onto the U.S. security umbrella, this could have been the perfect match to set off a G-2 powderkeg. Despite all of these incentives for escalating the dispute, however, it hasn't happened. Kurt Campbell was dispatched to Beijing, talks are ongoing, and neither side appears to be interested in ramping up domestic audience costs. That escalation hasn't happened despite massive political incentives on both sides to let it happen suggests that, contrary to press fears about Chen blowing up the bilateral relationship, there are powerful pressures in Washington and Beijing to find a solution that saves as much face as humanly possible for both sides. Now, in the three days since I wrote that post, Chen has been released, calling every Chinese dissident, U.S. congressman and international reporter with a phone/recording device/Twitter account and is loudly and frantically describing the intimidation he and his family have experienced. The man has asked to be flown out on Hillary Clinton's plane as she departs from the Strategic and Economic Dialogue. In other words, everything that has transpired in the past three days has given a black eye to both the Chinese and American governments' handling of this case. Despite the near-overwhelming incentive to ramp up bilateral tensions, however, it really hasn't happened. China's Foreign Mnistry has issued a couple of garden-variety press statements demanding a U.S. apology that won't be forthcoming. There have been no leaks or anonymous criticisms of the United States otherwise, despite the fact that this entire case is a burr in China's saddle at veery awkward moment. None of the U.S. State Department statements or press leaks have been terribly critical of the Chinese side either. Indeed, as the Washington Post observes: Neither Clinton nor her Chinese counterparts mentioned Chen in their formal remarks at the end of their two-day meeting, saying instead that U.S.-Sino differences on human rights issues must not disrupt the broader relationship between the two world powers. State Councilor Dai Bingguo, China’s top foreign policy expert, said his country and the United States still have “fundamental differences” on human rights issues. “Human rights should not be a disturbance in state-to-state relations,” Dai said. “It should not be used to interfere in another country’s internal affairs.” Clinton promised to “continue engaging with the Chinese government at the highest levels” on the “human rights and aspirations” of all people. This is pretty extraordinary. Even more extraordinary is the possiblity that despite Chen's outspokenness, he actually could be able to leave the country with his family.

#### No war—economic globalization

Xuetong and Haixia ’12 Yan Xuetong, Dean of the Institute of Modern International Relations at Tsinghua University and the Chief Editor of The Chinese Journal of International Politics, he has his own Wikipedia page, Qi Haixia, Lecturer Ph.D in the Institute of International Studies , Tsinghua University, “Football Game Rather Than Boxing Match: China–US Intensifying Rivalry Does not Amount to Cold War,” Chinese Journal of International Politics 5(2): 105-127, Summer 2012, 10.1093/cjip/pos007

Economic globalization created a strategic need for superficial friendship between China and the United States. While scholars disagree over exactly when economic globalization began, all agree that it sped up after the end of the Cold War. This is because the Council for Mutual Economic Assistance ended after the collapse of the Soviet Union, resulting in a global market. Meanwhile, the pace of information-flow increased among states, shrinking the size of the globe and leading to popularization of the expression ‘global village’. Levels of interdependence have increased along with the growing proximity of international economic relations. That a strategy of complete confrontation can no longer effectively protect national interests is now obvious. It is for this reason that certain scholars argue that there has been a qualitative change in the nature of the security dilemma since end of the Cold War.35 Under the conditions of globalization, interdependence between China and the United States has continued to grow, and for the sake of economic interests, neither is willing to adopt a strategy of all-out confrontation. Economic interdependence, however, will not diffuse the political and security conflicts between the two states. Different interests in different spheres have thus created a foundation for superficial friendship between the United States and China.

### QER CP

#### 5. Doesn’t solve #based islands if the DoD isn’t the actor deploying these SMRs

Andres & Breetz 11 (Richard B., Professor of national Security Strategy at the national War College and a Senior fellow and energy and environmental Security and Policy Chair in the Center for Strategic research, institute for national Strategic Studies, at the national Defense University, Hanna L., doctoral candidate in the Department of Political Science at the Massachusetts institute of technology, "Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications," February 2011, [www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf], jam)

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.

#### Second, permutation do the Counterplan

A. “Resolved” doesn’t mean certain  
Merriam Webster ‘9 (<http://www.merriam-webster.com/dictionary/resolved>)  
# Main Entry: 1re·solve # Pronunciation: \ri-ˈzälv, -ˈzȯlv also -ˈzäv or -ˈzȯv\# Function: verb # Inflected Form(s): resolved; re·solv·ing 1 : to become separated into component parts; also : to become reduced by dissolving or analysis 2 : to form a resolution : determine 3 : consult, deliberate.  
B. Neither does “should”  
Encarta World English Dictionary 2005  
(<http://encarta.msn.com/encnet/features/dictionary/DictionaryResults.aspx?refid=1861735294>)  
expressing conditions or consequences: used to express the conditionality of an occurrence and suggest it is not a given,or to indicate the consequence of something that might happen ( used in conditional clauses )   
  
C. Doesn’t sever immediacy  
Online Plain Text English Dictionary ‘9 (<http://www.onelook.com/?other=web1913&w=Resolve>)  
Resolve: “To form a purpose; to make a decision; especially, to determine after reflection; as, to resolve on a better course of life.”

#### DoD already established its recommendations for SMR adoption

King 11 (Marcus, 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)

Recognizing nuclear power as a potential benefit to Department of Defense (DoD) facilities, Congress directed the DoD, in section 2845 of the National Defense Authorization Act (NDAA) of 2010, to “conduct a study to assess the feasibility of developing nuclear power plants on military installations” [12]. Specifically, the study is to consider the following topics: • Options for construction and operation • Cost estimates and the potential for life-cycle cost savings • Potential energy security advantages • Additional infrastructure costs • Effect on the quality of life of military personnel • Regulatory, state, and local concerns • Effect on operations on military installations • Potential environmental liabilities • Factors that may impact safe colocation of nuclear power plants on military installations • Other factors that bear on the feasibility of developing nuclear power plants on military installations. To meet this requirement, the office of the Deputy Under Secretary of Defense for Installations and Environment, DUSD(I&E), asked CNA to conduct this feasibility study. The CNA effort was directed by a steering group consisting of representatives from DUSD (I&E), each of the military departments, DOE, NRC, and DOE Labs. This report documents our analysis and findings.

#### AND—it recommended against being an early adopter—proves the CP can’t establish a bureaucratic consensus for the plan

King 11 (Marcus, 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)

The most significant risk for SMR power plants is associated with being an early adoptor of new technology. From a DoD perspective, economic feasibility depends on negotiating arrangements for the project that ensure DoD is not responsible for FOAK expenses. Having contractor owners and operators would reduce operating risks associated with being an early adoptor. If partners can’t be found who are willing to bear the FOAK and early adoptor risks then DoD should not undertake such a project. The recent MOU between DOE and DoD identifies a framework for cooperation and partnership for sharing risks associated with this type of project.

#### DoD empirically won’t implement energy policy recommendations

DSB 8 (Defense Science Board Task Force on DoD Energy Strategy, Feb 2008, More Figh -Less Fuel, www.acq.osd.mil/dsb/reports/ADA477619.pdf)

Finding #1: The recommendations from the 2001 Defense Science Board Task Force Report “More Capable Warfighting Through Reduced Fuel Burden” have not been implemented. The principal finding of the 2001 DSB report was that DoD systematically underestimates the cost of fuel to its tactical forces by failing to recognize the costs of the support structure and the protection necessary to bring that fuel to the systems that use it. As a consequence, significant warfighting, logistics and monetary benefits are available from making weapons systems more fuel-efficient, but those benefits are not valued or emphasized in DoD’s requirements and acquisition processes. The report found that the requirements process does not require energy efficiency in deployed systems, the acquisition process does not value it, so the PPBES process cannot not provide it visibility when considering investment decisions. These findings remain valid today. Few of the recommendations of that study have been implemented to date. Those that have begun; making energy efficiency a selective Key Performance Parameter in system design, and using the fully burdened cost of fuel in life cycle costing of alternative systems; are in their early stages of implementation. Focused leadership will be required to complete the recommendations of the 2001 study and similar recommendations made herein.

#### Delays the plan by years

Moniz 12 (Ernest, Cecil and Ida Green Professor of Physics and Engineering Systems and Director of the Energy Initiative at the Massachusetts Institute of Technology; Former Clinton Administration Under Secretary of the Department of Energy and as Associate Director for Science in the Office of Science and Technology Policy ; serves on the President’s Council of Advisors on Science and Technology, 11/15/11, Quadrennial Energy and Technology Reviews, web.mit.edu/mitei/views/testimony/111115-quadrennial-energy-and-technology-reviews.html)

S.1703 would legislate the QER as a required submission to the Congress, providing "an integrated view of national energy objectives and Federal energy policy, including alignment of research programs, incentives, regulations, and partnerships." Clearly this is in accord with the intentions put forward in the PCAST report. An interagency working group would be established at the beginning of each Administration, with the QER due one year later. This date is displaced by one year from that recommended by PCAST. In steady state, this shift by one year is quite reasonable. My concern is whether the first QER can be put together well by early 2014, given that the entire process needs to be invented. This can be ameliorated to some extent if the buildup of analytical capabilities and process development are funded and pursued aggressively in 2012.

#### No implementation and the CP links to politics

Barlas 12 (Stephen, Columnist @ Financial Executive, 1/1, Lexis)

But it is highly unlikely that Obama's blueprint will lead to a firmer footing for U.S. energy security than past so-called blueprints from other presidents, or perhaps more importantly, whether a print is even necessary. Obama's policy is a loosely knit set of policies that focus on producing more oil at home and reducing dependence on foreign oil by developing cleaner alternative fuels and greater efficiency. The Obama plan is not the result of any particular deep thinking or strategy. The President's Council of Advisors on Science and Technology (PCAST) called for the development of such a strategy in its November 2010 Report to the President on Accelerating the Pace of Change in Energy Technologies. Through an Integrated Federal Energy Policy. PCAST called for a Quadrennial Technology Review (QTR) as the first step in preparing a Quadrennial Energy Review. DOE completed the QTR in November 2011, six months after Obama published his blueprint. Steven E. Koonin, former undersecretary of Energy for Science, says QTR is limited in scope and all DOE felt it could get done given budget and time. "Technology development absent an understanding and shaping of policy and market context in which it gets deployed is not a productive exercise," he says. At this point there is no indication that DOE will even undertake the much more important QER, much less complete it any time soon. The larger reality is that any energy independence plan proposed by any U.S, president--whether based on a QER or not--has as much a chance of coming to fruition as Washington's football Redskins have of getting into the Super Bowl.

But regardless of the rhetoric of president after president, maybe the U.S. doesn't even need an energy independence or energy security policy. Natural Gas Making Inroads The biggest energy input for industrial and commercial business users is natural gas. Natural gas prices are incredibly important, both because the fuel is used directly to run industrial processes, heat facilities and commercial buildings and make products such as fertilizers, pharmaceuticals, plastics and other advanced materials. Thanks to the shale revolution, EIA forecasts natural gas prices will stay low for the foreseeable future, rising to $4.66 m/BTU in 2015 and $5.05 m/BTU in 2020. That is good news for the owners of 15,000 to 17,000 industrial boilers in this country, most of which use natural gas (and many of those who still use coal are switching to natural gas). In addition, companies such as Dow Chemical Co. are restarting operations at facilities idled during the recession, Bayer AG is in talks with companies interested in building new ethane crackers at its two industrial parks in West Virginia and Chevron Phillips Chemical Co. and LyondellBasell Co., are considering expanding operations in the United States. Fracking has also had a much less remarked-upon effect on petroleum prices, which are important to businesses with transportation fleets. New oil sources are spurting from the Bakken (stretching from Canada to North Dakota and Montana) and Eagles Ford (South Texas) shale plays. U.S. oil prices have fallen from $133.88 a barrel of Texas intermediate crude in June 2008 to around $86.07. EIA predicts oil prices will rise to $94.58/bbl in 2015 and $108.10/bbl in 2020. Beyond the flood of natural gas washing over them, U.S. companies are also benefitting from three decades of investments--most of which were made without federal subsidies, or support--into facility energy efficiency. Ralph Cavanagh, co-director of the Energy Program at the Natural Resources Defense Council and a member of the Electricity Advisory Board at DOE, says the most important single solution for U.S. businesses worried about energy prices and access is aggressive energy efficiency. "Energy independence is the wrong issue," Cavanagh says. "It is reducing the cost of energy services and improving energy security. "U.S. business has done a tremendous job in energy efficiency over the past three decades," he adds. "It takes less than one-half of a unit of energy to create $1 of economic value than it did in 1973. Industry has done that by upgrading the efficiency of process equipment and upgrading lighting." Others may well argue that the U.S. needs, and has always needed, an energy policy, but one narrowly targeted. Kenneth B Medlock III, deputy director, Energy Forum at the James A Baker III Institute for Public Policy at Rice University, notes that DOE and the Gas Research Institute helped develop, with federal funding, the horizontal drilling (i.e. fracking) technology that Mitchell Energy and Development Corp. (now a part of Devon Energy Corp.) pioneered. "Government ought to be focused on research and development," Med-lock notes. He also is a supporter of loan guarantees to promote investment activity in frontier technologies, and argues that as long as there are more good bets than bad bets in that kind of portfolio, the funds committed in total are a good investment. But spectacular failures of energy companies such as Solyndra Corp., the Chapter 11 filing of Beacon Power Corp. and other less publicized busts reduce, if not kill, the prospect of any additional congressional funding for energy loan guarantees of any kind. That is true even when legislation has bipartisan support, which is the case for the Energy Savings and Industrial Competitiveness Act of 2011 (S. 1000), which would, among other things, provide grants for a revolving loan program designed to develop energy-saving technologies for industrial and commercial use. The bill passed the Senate Energy Committee by a vote of 18-3 in July. However, the Congressional Budget Office has pegged the cost of the bill's provisions at $1.2 billion over five years. That is a serious barrier to passage. And in any case, even if it did pass, the bill would simply authorize funding. Congressional appropriations committees would have to approve the money as part of DOE's budget, which would be highly unlikely, Solyndra aside, since similar programs authorized by the 2005 and 2007 energy bills are still begging for appropriations. Besides impact on the federal deficit, politics, too, often impede progress on otherwise sensible policies. Politics apparently have clogged up the proposed Keystone XL oil pipeline extension from Canada. Environmentalists, a Democratic constituency, oppose the project, arguing it would create more greenhouse gas emissions than necessary and pose a potential drinking water danger for Nebraska residents because it passed over the Ogallala Aquifer. That view is shared by Nebraska's Republican Gov. Dave Heineman, whose views are opposite those of all the can presidential candidates, each of whom supported U.S. approval of Keystone XL. Labor unions, another key Democratic constituency, support the project that TransCanada, the project sponsor, says will bring more than 11 8,000 person-years of employment to workers in the states of Montana, South Dakota and Nebraska. If the Keystone debate features Democrats versus Democrats and Republicans versus Republicans, efforts to substitute domestic natural gas for foreign petroleum features business versus business.

### Fuel Bank CP

#### Fuel bank causes backlash and spurs prolif

Weiss ‘9 Leonard Weiss, Affiliate at Stanford’s Center for International Security and Cooperation, “Reliable Energy Supply and Nonproliferation,” Nonproliferation Review, Vol. 16 no. 2, July 2009, pp. 269-284

The problem of global warming has fostered much talk of a ‘‘nuclear renaissance’’ as a response to the need to reduce carbon emissions. But it is a virtual certainty that increasing the spread of nuclear energy technology will result in an increased risk of nuclear weapons proliferation and nuclear terrorism. Schemes to mitigate this increased risk include internationalized nuclear fuel assurances for countries that forego national fuel cycle facilities, but fears of cartelization as well as states’ natural desire to control their energy destiny have made proposals such as those of Acheson-Lilienthal, INFA in the NNPA, and the more recent ones from ElBaradei and NTI\*even with President Obama’s endorsement\*difficult to implement and perhaps ineffective if implemented. Thus, NPT Article IV remains a problem and a vehicle for raising the risk of proliferation as long as it is cast as giving the right of full access to nuclear technologies to NPT state parties. That is not to say that nuclear fuel assurances cannot be successful under certain special conditions and circumstances. But the acceptability of these conditions is problematic for any country sensitive to its sovereignty or for any potential proliferators. Any system creating tiers of limited suppliers and recipients is likely to engender complaints of discrimination and a class system for recipients that will be resented.

#### CP’s the squo—and it does nothing

Horner and Meier ‘9 Daniel Horner, and Oliver Meier, “Talks on Fuel Bank Stalled at IAEA,” Arms Control Today, October 2009, http://www.armscontrol.org/act/2009\_10/fuelBank

Plans to establish an international nuclear fuel bank, a key part of nonproliferation programs put forward by several world leaders, have failed to receive the support they need to start being put in place. The International Atomic Energy Agency (IAEA) Board of Governors ended its September meeting with little progress since June, the last time the board met. Earlier this year, advocates of the proposed fuel bank had talked about a timetable under which the board in June would have directed the IAEA Secretariat to flesh out a proposal for the September meeting and the board could have then endorsed it. But at the June meeting, some of the board’s 35 members balked at the plans. The board essentially decided to continue discussing the plan at a conceptual level. The talks have not made much headway since then, sources at the September meeting said. IAEA Director-General Mohamed ElBaradei, President Barack Obama, and others have strongly backed the fuel bank concept. The aim of the fuel bank proposals is to dissuade countries from pursuing their own uranium-enrichment programs by providing them with an assured supply of fuel at market prices. The bank would serve as backup to existing commercial mechanisms for countries with good nonproliferation credentials. In February 2004, President George W. Bush proposed a version of this approach in a speech at the National Defense University in Washington. (See ACT, March 2004.) But Bush’s version required countries to “renounce” enrichment and spent fuel reprocessing and was combined with a call for a ban on enrichment- and reprocessing-related exports to states that do not already operate fuel cycle facilities. That approach led to complaints from many potential recipients, and U.S. officials eventually turned away from such language. All proposals so far, however, have come from current or potential supplier states, while potential recipients have been largely indifferent or critical. (See ACT, January/February 2009.)

### 123 DA

#### No link—Obama won’t push for no-ENR pledges

Lugar 12 (Richard G. Lugar, former member of the Senate Foreign Relations Committee and coauthor of the Nunn-Lugar Cooperative Threat Reduction program, 2/21/12, Obama's Nuclear Misstep, nationalinterest.org/commentary/obamas-nuclear-mistake-6548)

However, the United States and the United Arab Emirates took an important joint step forward when they concluded a nuclear pact that, for the first time, contained a commitment from the receiving country that it would neither enrich nor reprocess on its territory. This 123 agreement became known as "the Gold Standard." My hope was that this agreement, done entirely outside of the requirements of existing law and in a bipartisan manner across the Bush and Obama administrations, would form a new basis for U.S. nuclear trade and internationalize the sound decision made by the UAE and the United States. Such a model could become a bulwark against further countries engaging in enrichment and reprocessing. Thus, it also could have meant fewer places for potential proliferators to gain access to such technology and materials. Instead of making it a requirement for all new agreements, however, the administration announced in a recent letter to me that it has opted for a "case-by-case" approach with regard to the Gold Standard in new 123 agreements. I fear this means there will be few cases in which we shall see its return.

#### 123 agreements are prolif-resistant enough—no ENR pledge not key

McGoldrick 10 (Fred, CSIS, spent 30 years at the U.S. State and Energy Departments and at the U.S. mission to the IAEA, negotiated peaceful nuclear cooperation agreements with a number of countries and helped shape the policy of the United States to prevent the spread of nuclear weapons, 11/30/10, The U.S.-UAE Peaceful Nuclear Cooperation Agreement: A Gold Standard or Fool’s Gold?, http://csis.org/files/publication/101130\_McGoldrick\_USUAENuclear.pdf)

Finally, while we have many ways to promote nonproliferation objectives, one important nonproliferation tool that we cannot afford to lose is our ability to enter into peaceful nuclear cooperation agreements with other countries. This capability, among others, has allowed the United States to promote widespread acceptance of nonproliferation norms and restraints, including international safeguards and physical protection measures and the NPT. U.S. agreements for cooperation in peaceful nuclear energy with other states require strict nonproliferation controls that go beyond those of other suppliers, such as consent rights on reprocessing, enrichment, and storage of weapons-usable materials subject to our agreements. They also provide a framework for establishing invaluable person-to-person and institution-to-institution contacts and collaboration that can help advance our nonproliferation objectives.

#### Their ev is what nonprolif advocates want Obama to do—not what he WILL do

Grossman 12 (Elaine, Global Security Newswire, 1/12/12, U.S. Nuclear Trade Talks with Vietnam, Jordan Moving Forward, www.nti.org/gsn/article/us-nuclear-trade-talks-vietnam-jordan-moving-forward/)

Nonproliferation proponents have argued that the United States should advocate in nuclear trade negotiations with nations such as Vietnam, Jordan and potentially Saudi Arabia that any agreement contain a pledge not to enrich uranium or reprocess plutonium on their territory. These activities are useful for civil energy programs but could also open the door to the clandestine development of nuclear weapons, if a nation opts to move in that direction. The United Arab Emirates volunteered in its 2009 atomic trade pact with Washington to renounce a right to enrich or reprocess, but the Obama administration has been reluctant to necessarily demand this type of “no-ENR” pledge from every other cooperative-agreement partner with whom it negotiates. Senior officials have warned that this so-called “gold standard” approach could undercut the U.S. nuclear industry’s ability to compete in the international marketplace and could ultimately leave Washington with less influence over nonproliferation concerns. It remained unclear this week how hard Kang and his negotiating team would press Vietnam to agree to a UAE-like gold standard. The administration letter to Congress, which has not been made public, discusses the ENR matter at some length, according to those privy to the text. The Obama team intends to pursue its approach to enrichment and reprocessing in future nuclear trade pacts on the basis of a “case-by-case” review, the letter reportedly states. In talks with Vietnam, U.S. negotiators would explore a range of ENR options, said one congressional aide familiar with the missive. This staffer and others on Capitol Hill were interviewed for this article on condition of not being named, saying they lacked the authority to discuss the matter openly. There are a variety of ways to pursue nonproliferation goals while engaging in nuclear commerce, the letter reportedly states, such as following trade guidelines set out by the Nuclear Suppliers Group, as well as using international fuel reserves, fuel services or fuel banks to obviate any need for domestic enrichment or reprocessing. It remains uncertain which of these various tools, if any, might be used in a potential Vietnam deal. “We’ve actually had tabled, I think, for almost a year our basic, boilerplate ‘123’ … agreement to Vietnam,” Tauscher said on Thursday, referring to nuclear trade pacts governed by Section 123 of the U.S. Atomic Energy Act. “And now we’re going to go forward and do that.” Some issue experts have speculated that Vietnam might not seek to enrich or reprocess as its nuclear energy sector develops. Hanoi would be unlikely to volunteer such a restriction in its pact with Washington, though, said one congressional source. Whether U.S. negotiators would push -- or even ask -- Vietnam for such a pledge was not spelled out in the letter, according to those familiar with the document. It could be that the Obama administration would prefer not to see a no-ENR commitment in the Vietnam agreement because that could heighten pressure on Washington to seek similar pledges in negotiations elsewhere, even in nations where U.S. officials are not keen on arm-twisting, said one congressional aide.

#### Plan can’t reverse negotiating positions

Lewis 12 (Jeffrey, director of the East Asia Nonproliferation Program at the James Martin Center for Nonproliferation, 8/1/12, It's Not as Easy as 1-2-3, www.foreignpolicy.com/articles/2012/08/01/it\_s\_not\_as\_easy\_as\_1\_2\_3?page=full)

The Obama administration largely finds itself an accidental architect of the new civil nuclear order. In addition to a new wave of countries seeking nuclear help from the United States, many 123 agreements that were negotiated 30 years ago -- during the last wave of enthusiasm for nuclear power -- will expire between now and 2014. When this flurry of activity ends, the United States will have negotiated more than a dozen nuclear cooperation agreements in a four-year period, many with the most important emerging nuclear powers. Dick Stratford, a senior State Department official, told a conference that he carried around a little list in his pocket because he had trouble keeping all the negotiations straight.

#### Alliance resilient

Ireland ‘9 Corydon Ireland, Harvard News Office, “Firm allies, past and present,” Harvard Gazette, 09/14/09, http://news.harvard.edu/gazette/story/2009/09/firm-allies-past-and-present/

She visited the John F. Kennedy Jr. Forum last week (Sept. 11) and, in a rare double ambassadorial appearance, took the stage with her South Korean counterpart, Han Duck-soo. Earlier this year, Han — a former prime minister of South Korea and one of the architects of its economic boom — assumed the duties of ambassador to the United States. In a conversation in front of a capacity crowd at the forum, the two diplomats reflected on the historical strength of the alliance and what issues might put it at risk. Both agreed it would take a lot to shake a political relationship that dates back to the 19th century, and one that was forged in steel by the Korean War. It is an alliance “less brittle and far more resilient than it ever has been,” said Stephens. Han, who in 1984 earned a Harvard Ph.D. in economics, called the U.S.-South Korea alliance the foundation of his nation’s “economic growth, prosperity, and security.” It remains so firm and mutual today, he added, that it could be an international model of cooperation — “the exemplar alliance relationship of the future.” Moderating the public conversation between ambassadors was Graham Allison, a terrorism scholar who has studied the threat posed by a nuclear-armed North Korea. He is Douglas Dillon Professor of Government at Harvard Kennedy School (HKS) and director of the Belfer Center for Science and International Affairs. Skeptical and probing, Allison prompted the two diplomats to imagine a near future in which the traditional alliance enjoyed by the United States and South Korea goes sour. In sum, he asked, what could go wrong and what issues need attending to? Neither of the ambassadors budged much. In fact, said Han, “there is a very, very fundamental notion that U.S.-Korea relations cannot be swayed by one or two events.” It is and has been an alliance, he said, that has never been “underestimated or disregarded. It was always central.”

### Licensing Regs K

#### DOD has authority independent of NRC—historical precedence supports

King et al. ’11 Marcus King, Associate Director of Research, Associate Research Professor of International Affairs, LaVar Huntzinger, Thoi Nguyen, “Feasibility of Nuclear Power on U.S. Military Installations,” CNA Market Solutions, March 2011, http://www.cna.org/sites/default/files/research/Nuclear%20Power%20on%20Military%20Installations%20D0023932%20A5.pdf

The most basic licensing issue relates to whether NRC will have jurisdiction over potential nuclear reactor sites or whether DoD could be self-regulating. Our conversations with NRC indicate it is the only possible licensing authority for reactors that supply power to the commercial grid. However, DOE and DoD are authorized to regulate mis- sion critical nuclear facilities under Section 91b of the Atomic Energy Act. There is some historical precedent for DoD exercising this authority. For example, the Army Nuclear Program was granted exception under this rule with regard to the reactor that operated aboard the Sturgis barge in the 1960s and 1970s [44].

#### Empirics

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)

In recent years, the U.S. Department of Defense (DOD) has become increasingly interested in the potential of small (less than 300 megawatts electric [MWe]) nuclear reactors for military use.1 DOD’s attention to small reactors stems mainly from two critical vulnerabilities it has identified in its infrastructure and operations: the dependence of U.S. military bases on the fragile civilian electrical grid, and the challenge of safely and reliably supplying energy to troops in forward operating locations. DOD has responded to these challenges with an array of initiatives on energy efficiency and renewable and alternative fuels. Unfortunately, even with massive investment and ingenuity, these initiatives will be insufficient to solve DOD’s reliance on the civilian grid or its need for convoys in forward areas. The purpose of this paper is to explore the prospects for addressing these critical vulnerabilities through small-scale nuclear plants.

# Rd 7 vs UNLV PS

## 1AC

See rd 2

## 2AC

### Case

#### 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.

#### DOD has authority independent of NRC—historical precedence supports

King et al. ’11 Marcus King, Associate Director of Research, Associate Research Professor of International Affairs, LaVar Huntzinger, Thoi Nguyen, “Feasibility of Nuclear Power on U.S. Military Installations,” CNA Market Solutions, March 2011, http://www.cna.org/sites/default/files/research/Nuclear%20Power%20on%20Military%20Installations%20D0023932%20A5.pdf

The most basic licensing issue relates to whether NRC will have jurisdiction over potential nuclear reactor sites or whether DoD could be self-regulating. Our conversations with NRC indicate it is the only possible licensing authority for reactors that supply power to the commercial grid. However, DOE and DoD are authorized to regulate mis- sion critical nuclear facilities under Section 91b of the Atomic Energy Act. There is some historical precedent for DoD exercising this authority. For example, the Army Nuclear Program was granted exception under this rule with regard to the reactor that operated aboard the Sturgis barge in the 1960s and 1970s [44].

### DoD TO DA

#### Plan is comparatively a drop in the bucket – other renewables spending now

Sustainable Business 11 (October 17, "US Military to Invest %2410 Billion a Year in Renewable Energy" http://www.sustainablebusiness.com/index.cfm/go/news.display/id/23039-http://www.sustainablebusiness.com/index.cfm/go/news.display/id/23039)

Military spending on renewable energy spiked over 300% between 2006-2009, to $1.2 billion, and is expected to exceed $10 billion a year by 2030, according to "From Barracks to the Battlefield: Clean Energy Innovation and America's Armed Forces," by the Pew Project on National Security, Energy and Climate. DOD currently spends about $20 billion a year on energy - 75% for fuel and 25% for facilities and infrastructure, according to Pike Research. DOD is focusing on vehicle efficiency, advanced biofuels, and energy efficiency and renewable energy at bases. It's expected to spend $2.25 billion a year by 2015 for efficient vehicles used in the air, land, and sea, while improving the energy efficiency of its buildings around the world - more than 500,000 of them.

#### Uniqueness overwhelms – [ ]

#### Civilian workers get cut, not weapons systems – and the possibility of sequestration triggers your link

Weisgerber 10/8 (Marcus, staff writer at Defense News, "If Cuts Happen, Troops, Major Weapons Are DoD Priorities," 2012, [www.defensenews.com/article/20121008/DEFREG02/310080001/If-Cuts-Happen-Troops-Major-Weapons-DoD-Priorities?odyssey=nav%7Chead], jam)

The Pentagon will move to protect major weapon programs, including those locked into fixed-price procurement deals, should mandatory U.S. government spending cuts go into effect under sequestration in January. The Defense Department would also consider furloughing civilian workers as a last-ditch way to pay for combat operations in Afghanistan, should the Pentagon have to absorb a $50 billion sequestration cut to its 2013 budget, Pentagon Comptroller Robert Hale said. “What we will do if we have to ... is ask the services to review key contracts and try to avoid any renegotiations that are disruptive,” Hale said during an Oct. 3 interview at the Pentagon. DoD might have a “limited ability” to reprogram funds across accounts, Hale noted, but Congress must approve funds shifted that way. “I think for high-priority contracts, we might try to do that,” he said. DoD leaders have consistently maintained that they are not making detailed plans for possible sequestration. Hale’s remarks, however, shed some light on how the Pentagon might proceed if further cuts are necessary. Gordon Adams, an analyst who oversaw defense budgets during the Clinton administration, said the Pentagon would likely send a $15 billion to $20 billion reprogramming request to Congress, should sequestration go into effect. But DoD could be playing with fire if it relies on lawmakers to shift funding, said Todd Harrison, an analyst with the Center for Strategic and Budgetary Assessments. “There’s just a big asterisk there that they are crossing their fingers and hoping that Congress will go along with a reprogramming,” he said. “What if they don’t?” The White House Office of Management and Budget (OMB) has yet to instruct DoD and other federal departments on how to implement the sequestration cuts, which are expected to be divvied evenly across budget coffers, with the exception of military personnel, whom the administration exempted. The possibility of sequestration and uncertainty on how it will play out has left many program managers and defense industry leaders grappling with what to expect and how to respond. Last month, Maj. Gen. John Thompson, who runs the Air Force’s $35 billion KC-46 tanker program, said he was afraid sequestration might force him to cancel the service’s fixed-price aircraft development contract with Boeing and renegotiate at a higher cost. “I don’t want to break my contract, and I’m fearful sequestration may force me to do that,” he said during a Sept. 18 briefing at an Air Force Association-sponsored conference. Hale said it is too early to signal specific programs that might fall into this category. “I understand the worry,” he said. “It’s premature to conclude that we would have to modify a specific contract like KC-46 or even have to renegotiate future parts of it.” If sequestration happens, DoD will implement it “in a way that minimizes the disruption and the devastation,” Hale said. Contractors have been struggling whether to issue layoff notices in advance of the sequestration possibly going into effect. Job layoffs on the eve of a presidential election are a highly sensitive political issue, and on Sept. 28 the Obama administration advised contractors they were unnecessary, prompting Lockheed Martin and BAE Systems to cancel plans for sending out layoff notices.

#### If funding did come from the DoD, it would be from energy efficiency savings

Fitzpatrick et al 11 (Ryan, Senior Policy Advisor for Clean Energy at Third Way, Josh Freed, Vice President for Clean Energy at Third Way, Mieke Eoyang, Director for National Security at Third Way, "Fighting for Innovation: How DoD Can Advance Clean Energy Technology... And Why It Has To," Jun, [content.thirdway.org/publications/414/Third\_Way\_Idea\_Brief\_-\_Fighting\_for\_Innovation.pdf], jam)

Leverage Savings From Efficiency and Alternative Financing to Pay for Innovation. In an age of government-wide austerity and tight Pentagon budgets, current congressional appropriations are simply not sufficient to fund clean energy innovation. Until Congress decides to direct additional resources for this purpose, the Defense Department must leverage the money and other tools it already has to help develop clean energy. This can take two forms: repurposing money that was saved through energy efficiency programs for innovation and using alternative methods of financing to reduce the cost to the Pentagon of deploying clean energy. For several decades the military has made modest use alternative financing mechanisms to fund clean energy and efficiency projects when appropriated funds were insufficient. In a 2010 report, GAO found that while only 18% of renewable energy projects on DoD lands used alternative financing, these projects account for 86% of all renewable energy produced on the Department’s property.33 This indicates that alternative financing can be particularly helpful to DoD in terms of bringing larger and more expensive projects to fruition. One advanced financing tool available to DoD is the energy savings performance contract (ESPC). These agreements allow DoD to contract a private firm to make upgrades to a building or other facility that result in energy savings, reducing overall energy costs without appropriated funds. The firm finances the cost, maintenance and operation of these upgrades and recovers a profit over the life of the contract. While mobile applications consume 75% of the Department’s energy,34 DoD is only authorized to enter an ESPC for energy improvements done at stationary sites. As such, Congress should allow DoD to conduct pilot programs in which ESPCs are used to enhance mobile components like aircraft and vehicle engines. This could accelerate the needed replacement or updating of aging equipment and a significant reduction of energy with no upfront cost. To maximize the potential benefits of ESPCs, DoD should work with the Department of Energy to develop additional training and best practices to ensure that terms are carefully negotiated and provide benefits for the federal government throughout the term of the contract.35 This effort could possibly be achieved through the existing memorandum of understanding between these two departments.36 The Pentagon should also consider using any long-term savings realized by these contracts for other energy purposes, including the promotion of innovative technologies to further reduce demand or increase general energy security.

#### Air power’s insufficient to prevent conflict

Sheldon and Gray ’11 John B. Sheldon, Professor, School of Advanced Air & Space Studies, Maxwell AFB, Alabama, and Marshall Institute Fellow and Colin S. Gray, professor of International Relations and Strategic Studies at the University of Reading, where he is the director of the Centre for Strategic Studies, Senior Associate to the National Institute for Public Policy, “Theory Ascendant? Spacepower and the Challenge of Strategic Theory,” Toward a Theory of Space Power, published by the Institute for National Strategic Studies at the National Defense University, ed. Luttes, Charles D., and Peter L. Hays, 7 March 2011, http://www.ndu.edu/press/space-Ch15.html

"Space power, alone, is insufficient to control the outcome of terrestrial conflict or ensure the attainment of terrestrial political objectives."29 The same is true of air- and seapower. The seat of political power for all polities resides on the land, where people live. Control of such power can only be ultimately won or lost by controlling land. Spacepower, along with air- and seapower, can help leverage—even critically—land power to achieve victory on land, but can never do so by itself. An exception to this may come about should human beings colonize other celestial bodies, such as the Moon or Mars. In that event, one might see spacepower take the lead role in delivering sovereign effects, with other forms of military power (especially land and airpower delivered by a preponderant spacepower) providing support.

#### Aerospace dec inev

Sterner 10 (Eric, national security and aerospace consultant in Washington, DC., has held senior Congressional staff positions as the lead Professional Staff Member for defense policy on the House Armed Services Committee, Jun 15, [www.worldpoliticsreview.com/articles/5793/tending-the-forge-of-american-space-power?page=3], jam)

The industry also faces difficulties in the manner that contracts are awarded. Increasingly, to simplify and expedite the contracting process, the government awards multi-year, winner-takeall contracts. While this process can reduce the administrative burden and uncertainty of frequent competitions, it also creates a situation in which the losers in a particular bid face multi-year dry-spells in which they may have no significant government work. As a result, they are forced to release design teams, lay off skilled laborers, and dispose of, or mothball, physical plant. More often than not, those capabilities cannot be reconstituted, except at extraordinarily high prices. As a result, talent is not available for future bids, and the overall size of the industrial base shrinks. The nature of space systems compounds the problem. Unlike other systems, once launched, space systems cannot be “maintained.” Thus, there is no post-deployment, hands-on work on a spacecraft that often enables a contractor to maintain critical skill-sets. Moreover, because so much is riding on each launch event, they are few and far between. Thus, there is an extremely limited number of opportunities for those entities that constitute the industrial base to practice their trade and enhance skill-sets. The industry’s future is at risk as well. Its workforce is aging, yet low flight rates and the industry’s contraction over recent decades have limited the number of opportunities for younger engineers to acquire the technical and management skills possessed by their predecessors. Often, talented younger personnel simply leave the industry. Consequently, there is a risk of leadership shortages in the future. Meanwhile, for those engineers, skilled manufacturers, and scientists who stay in the community, the feast-or-famine distribution of work among contractors often creates a migrant workforce, in which individuals follow the work from contractor to contractor. While this mobility may create learning opportunities and foster the spread of some knowledge, it also retards the development of corporate knowledge and expertise.

### Elections DA

#### Romney up – polls, swing states

Sheppard 10/14 (Elena, Policy Mic, Latest Presidential Polls: Romney Ahead Says Real Clear Politics Polls, Obama Ahead Says New York Times; <http://www.policymic.com/articles/16484/latest-presidential-polls-real-clear-politics-polls-show-romney-new-york-times-poll-show-obama>)

With 23 days to go until the presidential election, all eyes are on the poll numbers. As for who is in the lead? It really depends on who you ask. At this point, nearly across the board, Romney seems to be in the lead; but only marginally so. On Sunday, Rasmussen Reports released their daily Tracking Polls which put Romney in the lead with 49% support to Obama's 47%. According to the polling numbers, 2% of voters prefer another candidate and 2% are undecided. Rasmussen numbers in swing states show similar percentages. In the 11 swing states (Colorado, Florida, Iowa, Michigan, Nevada, New Hampshire, North Carolina, Ohio, Pennsylvania, Virginia, and Wisconsin) Rasmussen polls shows Romney with 49% support to Obama's 47%. The same as national polling numbers according to Rasmussen. It should be noted, that Rasmussen is considered to be a right-leaning enterprise. RealClearPolitics also puts Romney in the lead with the average polling data on their site showing Romney ahead 47.3% to Obama's 45.9%. According to RealClearPolitics the media outfit that puts Romney furthest in the lead is Pew Research which has Romney up by 4 points; 49% to Obama's 45%. Check out the RealClearPolitics numbers below:

#### Up in Florida

Rasmussen 10/12 (http://www.rasmussenreports.com/public\_content/politics/elections/election\_2012/election\_2012\_presidential\_election/florida/election\_2012\_florida\_president)

Mitt Romney has crossed the 50% mark for the first time to widen his lead to four points in Florida. The latest Rasmussen Reports telephone survey of Likely Florida Voters finds Romney with 51% support to President Obama’s 47%. Two percent (2%) remain undecided. (To see survey question wording, click here.) This is the widest gap between the candidates in surveys this year, but Florida remains a Toss-Up in the Rasmussen Reports Electoral College Projections. Prior to these findings, the candidates have been within two points of each other in Florida in every survey since April. Last week, it was Romney 49%, Obama 47%.

#### Err aff—risk of Obama gain outweighs

Silver 10/12 (Nate Romney Debate gains show staying power <http://fivethirtyeight.blogs.nytimes.com/2012/10/12/oct-12-romney-debate-gains-show-staying-power/?gwh=EB0A7A5046CCC852A922C7B507944540>)

The forecast model adjusts Mr. Obama’s numbers up slightly based on its economic index and his incumbency status, but only by about 0.4 percentage points. It may also be that he will need to earn those lost points back — rather than expecting them to return automatically — with, for example, a stronger performance in the last two presidential debates. In the same way that Mr. Romney had a wind at his back before the Denver debate, in that the four- or five-point lead that Mr. Obama held at that point was higher than might be expected based on economic conditions, Mr. Obama might have more to gain than to lose in the final two events.

#### Nuclear swings Florida and Latinos for Obama

Whitman and Avilla ‘12 Christie is an [American](http://en.wikipedia.org/wiki/United_States)  [politician](http://en.wikipedia.org/wiki/Politician) and [author](http://en.wikipedia.org/wiki/Author) who served as the [50th](http://en.wikipedia.org/wiki/List_of_Governors_of_New_Jersey) [Governor](http://en.wikipedia.org/wiki/Governor_of_New_Jersey) of [New Jersey](http://en.wikipedia.org/wiki/New_Jersey) from 1994 to 2001, and was the [Administrator of the Environmental Protection Agency](http://en.wikipedia.org/wiki/Administrator_of_the_Environmental_Protection_Agency) also was New Jersey's first, and to date, only [female governor](http://en.wikipedia.org/wiki/List_of_female_state_governors_in_the_United_States). Karen is a guest Columnist for the Orlando Sentinel. “Nuclear energy = green jobs, economic growth in Fla., beyond” 6/22/12 <http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community>

We all know how critical Florida is to the outcome of this year's election. This week, as Orlando hosts the annual conference of the National Association of Latino Elected and Appointed Officials, all eyes are on the presidential candidates as they speak to Hispanic elected officials — and by extension, to their constituents — about the issues that are top of mind for voters.¶ Notably, the conference addresses two issues also of paramount concern to all Floridians: energy and the economy.¶ From our perspective, these issues are deeply intertwined — and one way that Floridians and the state's thriving Hispanic community can advocate for economic growth through renewed [investment](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) in clean energy is by supporting nuclear energy. We need to let the candidates know that Americans are relying on the next president for clean, sustainable energy policies that benefit us all.¶ As we look toward diversifying America's energy [portfolio](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) and building out the energy generated by renewables, candidates should look to nuclear energy as one proven way to effectively meet growing demand. In doing so, they are registering their support for well-paying jobs, sustained economic growth and clean, affordable energy options.¶ Florida is one of many states exploring opportunities to expand capacity at existing facilities, which would mean the creation of new jobs and added [economic](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) impact. By showing our support for Florida's five nuclear-energy reactors, as well as paving the way for the expansion of the infrastructure that supports them in the state and beyond, we can help create and sustain green jobs and work to reduce unemployment.¶ Florida needs jobs. While overall U.S. unemployment rates stand at 8.2 percent, unemployment in Florida is slightly higher, at 8.6 percent. National unemployment among Hispanics is higher still, at 11 percent.¶ At present, the U.S. nuclear-energy industry supports 100,000 American jobs. Each new nuclear facility creates an average of 1,400 to 1,800 high-paying jobs, often reaching as many as 3,500 jobs during peak construction periods. Once operational, these facilities create 400 to 700 direct and permanent jobs.¶ What does this all mean for minorities, who are so disproportionately impacted by unemployment?¶ Latinos in Florida will be able to take advantage of contract opportunities set aside for minority development programs. And Florida's communities will provide the goods and [services](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) needed to support a growing nuclear-energy industry. Recent trends in entrepreneurship indicate business starts in the Hispanic community will continue at a much higher rate than in other communities. Hispanic communities are therefore readily able to address the growing needs of new nuclear facilities.¶ Educational institutions across the state are also targeting minority populations with training programs designed to produce nuclear work-force-ready candidates. These programs and partnerships are cropping up at minority-serving institutions statewide.¶ Take, for example, [Miami Dade College](http://www.orlandosentinel.com/topic/OREDU0000157196.topic)'s Nuclear-Career Academic Bridge, which leverages a combination of [financial](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) aid, mentorships and focused, skills-oriented training to ready students to enter the nuclear industry upon completion of the program.¶ These kinds of efforts — which expose Hispanic students in greater numbers to critical science,[technology](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community), engineering and mathematics education — not only promote greater diversity in the energy work force, but also put Hispanic students in line to enter well-paying careers in an industry with a bright future.¶ Just as nuclear power creates and sustains jobs, it also promotes healthy economic growth. Each of America's 104 nuclear-power facilities generates, on average, $430 million in economic output annually, as well as an additional $40 million per year in total labor income. Minority-owned suppliers and businesses are among key beneficiaries of this economic infusion.¶ Indeed, all eyes will be on the candidates speaking at the Orlando conference this week. And clearly the candidates will be keenly focused on the Hispanic community. They're looking to the more than 1 million potential voters that Florida's Hispanic population represents for cues on how to shape their policies and platforms.¶

#### Florida key—resolves close elections

Silver 9/12 [Nate, 9/12/12, “Florida a True Must-Win for Romney” <http://fivethirtyeight.blogs.nytimes.com/2012/09/12/sept-11-florida-a-true-must-win-for-romney/#more-34415>]

Florida has a [well-established reputation](http://fivethirtyeight.blogs.nytimes.com/2012/08/29/in-florida-tampa-is-essential-to-romney-election-hopes/) as a swing state. But as the election season has worn on, it has come to look even more important. Florida now ranks a clear second on our list of [tipping point states](http://fivethirtyeight.blogs.nytimes.com/2012/04/27/arizona-is-probably-not-a-swing-state/), those most likely to provide the decisive votes in the Electoral College, behind only Ohio. Florida is typically just slightly Republican-leaning, and the tipping point calculation is sensitive to even the smallest deviations from the national averages. As I’ve argued before, for instance, North Carolina [isn’t that essential to the electoral math](http://fivethirtyeight.blogs.nytimes.com/2012/08/07/aug-7-north-carolina-isnt-central-to-electoral-math/), even though the race there is quite close, because other states that would help get a candidate to 270 electoral votes precede it in the pecking order. But as the election has evolved, Mr. Obama’s polling has held up fairly well in Florida, including [another decent poll there](http://www.surveyusa.com/index.php/2012/09/11/in-florida-8-weeks-out-obama-4-points-atop-romney-nelson-11-points-atop-mack-voter-fraud-of-greater-concern-than-voter-suppression/) on Tuesday, which put him four points ahead. Just as important, Mr. Obama’s polling has been choppy lately in a several other states, particularly Virginia (where he got a very poor poll on Monday), Colorado and Iowa, which had initially appeared to be easier wins for him. It is more conceivable now that Mr. Obama could have an easier time winning Florida than those other states, increasing its importance. Nonetheless, Florida is mostly a state where Mr. Obama is playing offense. If he wins it, it will solve almost all of his other problems. If Mr. Obama wins Florida, he could lose each of Virginia, Colorado and Iowa, along with Ohio, Wisconsin, and North Carolina, and either New Hampshire or Nevada, and still win the Electoral College. From Mr. Romney’s point of view, conversely, that might seem to make Florida a must-win state. In fact, it’s possible to put some numbers around this idea. Defining a must-win state in a formal way is a bit tricky. For example, is Georgia a must-win for Mr. Romney? If he loses it, he would almost certainly lose the Electoral College. But that is because Georgia is much more Republican-leaning than the states that we would ordinarily classify as swing states. If things get bad enough for Mr. Romney to lose Georgia, his map will almost certainly be a disaster in a number of other ways. So what we might really think of as must-win states are those that a candidate could not afford to lose even in a *close* election. Imagine that the election is very close: the popular vote is within one percentage point either way. This condition occurred roughly 3,000 times out of the 25,000 simulations that I ran in the forecast model on Monday. For each of the top 12 states on our tipping point list, I looked up the probability of Mr. Romney winning the election conditional upon losing the state in these 3,000 simulations. If Mr. Romney has great difficulty winning the Electoral College without the state in a close election, we can fairly describe it as a must-win. These simulations estimate that Mr. Romney has only a 2 percent chance of winning the election if he loses Florida — even assuming that the election is very close over all. Losing its 29 electoral votes just presents too daunting a challenge for him, given his inability so far to penetrate into states like Pennsylvania that could plausibly substitute for it. The numbers aren’t remotely that overwhelming for any other state. Mr. Romney has a 15 percent chance of winning a close election despite losing Ohio, for instance — not pleasant odds, but also far from impossible. If he lost Virginia, he’d still have a 19 percent chance of winning a close election; Colorado, a 28 percent chance; Wisconsin, a 37 percent chance, and so forth. So, it isn’t a cliché to call Florida a must-win for Mr. Romney; he very badly needs it. What does the same list look like for Mr. Obama? Pennsylvania is the closest analog to Florida for him; he has just a 10 percent chance of winning a close election if he loses the state. However, Mr. Obama is highly likely to win Pennsylvania, according to our forecast, as he has led in every poll of the state since February and as Mr. Romney has not placed all that many resources into the state. Otherwise, Mr. Obama’s electoral strategy is fairly robust. He has about a 28 percent chance of winning a close election if he loses Ohio, for instance, about twice Mr. Romney’s chance of doing the same.

#### Plan’s insulated from backlash – bipartisan consensus

Shaw ‘12 (Andrew, member of the Government Affairs team where he focuses primarily on energy issues at the intersection of Canada-U.S. relations, uses his knowledge and experience of Congress and the Executive Branch to advise clients on critical energy and environmental public policy issues, “ A “Chunks” Approach to Climate Policy,” 2012, [[www.politicsandlawblog.com/2012/05/15/a-chunks-approach-to-climate-policy/](http://www.politicsandlawblog.com/2012/05/15/a-chunks-approach-to-climate-policy/)], jam)

While ideally President Obama would seek a “comprehensive” approach to climate change, Zichal acknowledged that the Administration would likely approach this issue in “chunks.” Specifically, Zichal talked about seeking “tools and policies that can garner bipartisan support.” One example provided by Zichal was extending the production tax credit for renewable production, which is set to expire at the end of this year. The “chunks” mention appears to reinforce the notion that President Obama would be unlikely to pursue cap-and-trade, or some variant, in a second-term. Following Zichal’s comments, Senator Lamar Alexander (R-TN) spoke – his remarks suggested that there are other “chunks” where consensus is achievable on energy policy between the Administration and Congress. Specifically, Senator Alexander expressed support for the Advanced Research Projects Agency-Energy (ARPA-E), an agency focused on R&D for breakthrough energy technologies, such as small modular reactors, smart grids, carbon capture and electric car batteries. ARPA-E is modeled after the Defense Advanced Research Projects Agency (DARPA), which, among other achievements, helped in inventing the internet. The American Recovery and Reinvestment Act provided the first appropriations for ARPR-E, which has subsequently used that money to fund over 180 projects focused on emerging energy technologies. In an election year, Republicans and Democrats spend an inordinate amount of time highlighting their differences on energy policy. Yet on ARPA-E, both President Obama and Governor Mitt Romney have expressed support for a continued commitment to the program. Senator Alexander’s comments indicate that an important and achievable “chunk” of climate policy, regardless of the outcome of the election, could be a renewed emphasis on ARPA-E.

#### Relations are rife with disagreement

Zammit ’11 George Vital Zammit, professor of international relations at the University of Sheffield, “A DWARF OR A GIANT? Framing the European People’s Party international relations perspective and the transatlantic backdrop,” presented at EUSA Conference, Boston, 3/4/2011, http://euce.org/eusa/2011/papers/6f\_zammit.pdf

Amidst the commitment that both sides should strengthen collaboration, a number of key issues show that the transatlantic relationship is marked by serious disagreements and lack of consensus (inside the EU) on the American method (Martens 2005). Perhaps no other issue has registered more discord than the war in Iraq. As Dover (2010, 249) argues, the ‘EU’s self-constructed soft security identity’ acted as a barrier to military operations and it could never give the green light to go to war. 32 However the EU and the US have found themselves at loggerheads on other important issues, at times disagreeing both in the goals and in the methods to achieve them. As Brok (2005, 20) surmises, the ‘common interests of the USA and the EU are much greater than their differences’. Both are staunchly committed to liberal democracy but remain distant on critical issues of international concern. Clashes between both sides have been forthcoming too with the US lending more credibility to the EU’s economic prowess EU rather than its fledgling common foreign policy. Hill and Smith argue (2005, 392) that while Americans would ‘not always take seriously the foreign policy pronouncements of the presidency or the High Representative, they would always pay the closest attention to the activities of the Trade Commissioner or Ecofin’. The normative approach towards the establishment of a World Order remains one of the main divisions between the EU and the US. Another topical argument is the issue of Human Rights. 33 The EU has up to now refused to compromise the safeguard of one of its most important normative goals even where this is perceived to come in conflict with strategic goals. The US, while it stills retains the death penalty as deterrent to domestic crime, has resorted to interrogation techniques (that would go against the spirit of human rights) where it was retained that its national security was at stake. 34 Another related area is the subjection of nationals to the International Criminal Court (ICC). The US refuses to submit its nationals to ICC jurisdiction with the EU left with no option but to agree to the immunity of US personnel in its member states. 35 One of the key areas where the EU-US relationship has had contrasting views has been in the approach towards the Middle East process. The US has shown no qualms in taking unilateral positions while the EU favours a more internationalist approach. The creation of the Palestinian state is a priority for the EU whilst the US is more reticent about this goal giving more priority to Israel’s right to live in secure borders. 36 Consequently, the proposition to arrive to a two-state solution is becoming ever more unrealistic, further delaying a peaceful resolution of the Middle East conflict. 37 Finally, another bone of contention has been climate change. The last decade has seen a succession of failures in clinching a climate deal that is satisfactory to all. 38 In each circumstance both sides of the Atlantic have failed to agree with the necessary concessions that ought to be made. In terms of energy security, the US continues to claim the EU ought to diversify its provision of (alternative sources of) energy with a view to reduce its reliance on Russia. 39 What transpires from these all issues is that the EU and the US have different ways of conceiving some of the salient challenges of a global scale. The ramifications of such different views are likely to influence their future capabilities as international and normative actors. I shall now discuss this from an EPP perspective in the following section. Relations crushed.

#### DoD shields links

Lacey 8/16 (Stephen, reporter Climate Progress, B.A. in journalism from Franklin Pierce University, 2012, [thinkprogress.org/climate/2012/08/16/699811/the-solyndra-standard-on-loan-guarantees-military-spending-and-clean-energy-politics/?mobile=nc], jam)

That’s exactly how it’s playing out. The politically-manufactured outrage over Solyndra has turned into an all-out campaign — with tens of millions of dollars being spent this election season specifically targeting federal renewable energy investments. Mitt Romney has jumped on the bandwagon, using Solyndra as a central piece of his campaign. And here’s the really astonishing disconnect: While supporting tens of thousands of jobs, the loan guarantee program is expected to cost $2 billion less than Congress budgeted for, according to an analysis from Herb Allison, John McCain’s former National Finance Chairman. Meanwhile, amidst the Solyndra saga, we casually accept a $300 million aircraft failure without batting an eye. No outrage. No sustained political campaign. It’s just another day testing our military toys. Why? Because we don’t often see programs like this as a “failure” in the political arena. We would never use one failure as an excuse to abandon investment in new technologies. Most politicians accept losses in military R&D expenditures because the long-term gains are potentially so important for national defense and for eventually developing technologies for civilian use. We should always strive to make programs as efficient and cost-effective as possible. But a few bankrupt clean energy companies representing a fraction of the program’s budgeted cost is no excuse for abandoning federal investments in clean energy — a strategically important sector that is becoming one of the largest drivers of business this century. Alas, don’t expect anyone to publicly admit this. As the campaign season unfolds, political leaders are all too willing to practice the Solyndra standard.

#### Business and bipartisan political support

Tindale ‘11 (Stephen, associate fellow at the Centre for European Reform, June 2011, "Thorium: How to save Europe's nuclear revival," [www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/pb\_thorium\_june11-153.pdf], jam)

In the US, political interest in thorium molten salt reactors is cross-party, having been led by Democratic Senator Harry Reid and Republican Senator Orrin Hatch. Reid and Hatch have introduced three bills to Congress, all of which identified thorium fuel cycle technology as a means to expand nuclear power without increasing waste or nuclear proliferation. When he entered office, President Barack Obama set up a Blue Ribbon Commission on America’s nuclear future, which is considering nuclear fuel cycles and nuclear waste against criteria of “cost, safety, resource utilisation and sustainability, and the promotion of nuclear non-proliferation and counter-terrorism goals”.11 The Commission will publish a draft report in July 2011 and a final report in January 2012. US Energy Secretary Steven Chu has already indicated that he thinks thorium and molten salt reactors are the way forward for nuclear energy: “We cannot continue to improve the condition of people throughout the world without use of nuclear power. None of the renewable energy solutions can be scaled quickly enough to meet current and future energy needs. Safer, proliferation resistant, nuclear power without the long term high level waste storage problems is needed to power a growing world economy and to allow all nations to provide for and feed their growing populations in peace. These goals are available by changing the nuclear fuel cycle to a U233/Thorium fuel cycle.”12 Large US energy companies have not yet shown serious interest in molten salt reactors. However, Microsoft’s Bill Gates has set up a company called TerraPower with the aim of developing a nuclear energy system which reduces the weapons proliferation risk and allows the re-use of spent nuclear fuel. TerraPower has identified thorium molten salt reactors as a promising means of achieving these objectives. Other US companies are part of a consortium, with Japanese and Russian companies, to develop a molten salt reactor. Japanese companies involved include Toyota, Toshiba and Hitachi.

### QTR CP

#### Land and purchasing power make the DoD a unique customer – it needs to be buying this electricity – only way to reduce costs and commercialize the tech

Fitzpatrick et al 11 (Ryan, Senior Policy Advisor for Clean Energy at Third Way, Josh Freed, Vice President for Clean Energy at Third Way, Mieke Eoyang, Director for National Security at Third Way, "Fighting for Innovation: How DoD Can Advance Clean Energy Technology... And Why It Has To," Jun, [content.thirdway.org/publications/414/Third\_Way\_Idea\_Brief\_-\_Fighting\_for\_Innovation.pdf], jam)

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 to fund clean energy and efficiency projects when appropriated funds were insufficient. In a 2010 report, GAO found that while only 18% of renewable energy projects on DoD lands used alternative financing, these projects account for 86% of all renewable energy produced on the Department’s property.33 This indicates that alternative financing can be particularly helpful to DoD in terms of bringing larger and more expensive projects to fruition. One advanced financing tool available to DoD is the energy savings performance contract (ESPC). These agreements allow DoD to contract a private firm to make upgrades to a building or other facility that result in energy savings, reducing overall energy costs without appropriated funds. The firm finances the cost, maintenance and operation of these upgrades and recovers a profit over the life of the contract. While mobile applications consume 75% of the Department’s energy,34 DoD is only authorized to enter an ESPC for energy improvements done at stationary sites. As such, Congress should allow DoD to conduct pilot programs in which ESPCs are used to enhance mobile components like aircraft and vehicle engines. This could accelerate the needed replacement or updating of aging equipment and a significant reduction of energy with no upfront cost. To maximize the potential benefits of ESPCs, DoD should work with the Department of Energy to develop additional training and best practices to ensure that terms are carefully negotiated and provide benefits for the federal government throughout the term of the contract.35 This effort could possibly be achieved through the existing memorandum of understanding between these two departments.36 The Pentagon should also consider using any long-term savings realized by these contracts for other energy purposes, including the promotion of innovative technologies to further reduce demand or increase general energy security. In addition to ESPCs, the Pentagon also can enter into extended agreements with utilities to use DoD land to generate electricity, or for the long-term purchase of energy. These innovative financing mechanisms, known respectively as enhanced use leases (EULs) and power purchase agreements (PPAs), provide a valuable degree of certainty to third party generators. In exchange, the Department can leverage its existing resources—either its land or its purchasing power—to negotiate lower electricity rates and dedicated sources of locallyproduced power with its utility partners. DoD has unique authority among federal agencies to enter extended 30-year PPAs, but only for geothermal energy projects and only with direct approval from the Secretary of Defense. Again, limiting incentives for clean energy generation to just geothermal power inhibits the tremendous potential of other clean energy sources to help meet DoD’s energy goals. Congress should consider opening this incentive up to other forms of clean energy generation, including the production of advanced fuels. Also, given procurement officials’ lack of familiarity with these extended agreements and the cumbersome nature of such a high-level approval process, the unique authority to enter into extended 30-year PPAs is very rarely used.37 DoD should provide officials with additional policy guidance for using extended PPAs and Congress should simplify the process by allowing the secretary of each service to approve these contracts. Congress should also investigate options for encouraging regulated utility markets to permit PPA use by DoD. Finally, when entering these agreements, the Department should make every effort to promote the use of innovative and fledgling technologies in the terms of its EULs and PPAs. CON C L U S ION The Defense Department is in a unique position to foster and deploy innovation in clean energy technologies. This has two enormous benefits for our military: it will make our troops and our facilities more secure and it will reduce the amount of money the Pentagon spends on energy, freeing it up for other mission critical needs. If the right steps are taken by Congress and the Pentagon, the military will be able to put its resources to work developing technologies that will lead to a stronger fighting force, a safer nation, and a critical emerging sector of the American economy. The Defense Department has helped give birth to technologies and new economic sectors dozens of times before. For its own sake and the sake of the economy, it should make clean energy innovation its newest priority.

### Natural Gas TO DA

#### Causes fast, short-term, irreversible warming

Chameides 12 (Bill, Dean, Duke U's Nicholas School of the Environment, "Natural Gas: A Bridge to a Low-Carbon Future or Not," Jul 20, [http://www.huffingtonpost.com/bill-chameides/-natural-gas-a-bridge-to\_b\_1690857.html], jam)

Cathles's point about the transient effects of methane fugitive emissions is well taken. But there is a potential catch and it relates to short-term climate effects. During the transition period, when fugitive methane from using natural gas would build up in the atmosphere, there is a possibility, depending upon the magnitude of the methane emissions, that we would experience more short-term warming than if we were to have stuck with coal and oil. We might think of this as the transient version of the Howarth argument. Now, as long as the fugitive emissions are small or the Earth system is "reversible," the transient Howarth scenario does not seem all that worrisome. But what if the emissions are large? And what if the disturbances from global warming are not reversible? Then we would have a problem. The transition to natural gas would lead to more warming for a period of time until natural gas is phased out and the excess methane is removed from the atmosphere. With the exit of the excess methane, the extra warming would also go away. Cathles seems to argue that all would be well: "Even when methane leakage is so large (L = 10% of consumption) that substituting gas for coal and oil increases global warming in the short term, the benefit of gas substitution returns in the long term." But it is not all that obvious that the impacts from global warming are reversible. If fragile ecosystems like coral reefs are decimated by a decade or two of extra methane-induced warming, can we be sure that they will recover once the methane is flushed from the atmosphere? Probably not. Now for this to be a concern, fugitive emissions would need to be large -- about 10 percent or more. That's' a very remote possibility. Even so, Cathles's interesting results notwithstanding, I don't think we can ignore fugitive emissions and just assume they're too small to care about. And in any event from an economic and environmental point of view, the less of that stuff the better.

#### Warming ensures volcanic activity – coming soon and invisible brink

Telegraph 10 (Newspaper, Staff Writers, cites Bill McGuire of U of London's Hazard Research Center, http://www.telegraph.co.uk/earth/environment/climatechange/7604188/Volcanic-ash-cloud-Global-warming-may-trigger-more-volcanoes.html)JFS

The reduction in the ice could also stimulate volcanic eruptions, according to the research. And the greater weight of the water in the oceans where sea level has risen as ice melts can ''bend'' the Earth's crust. This produces magma and causes volcanic and seismic activity in coastal or island areas - where the majority of 550 volcanoes whose eruptions have been historically documented are found. Increased volcanic activity could cause more landslides, and have impacts well beyond the area where the volcano is situated - for example by releasing sulphur clouds into the atmosphere or by affecting air travel. Prof McGuire said the changes could occur in the coming decades or over centuries, rather than thousands of years, depending on factors such as how quickly sea levels rose. And he warned: ''The rise you may need may be much smaller than we expect. Looking ahead at climate change, we may not need massive changes. ''One of the worries is that tiny environmental changes could have these effects.'' His review said there was ''mounting evidence'' of seismic, volcanic and landslide activity being triggered or affected by small changes in the environment - even specific weather events such as typhoons or torrential rain. Prof McGuire said that in Taiwan the lower air pressure generated by typhoons was enough to ''unload'' the crust by a small amount and trigger earthquakes. Other impacts of rising temperatures include glacial lakes bursting out through rock dams and causing flash flooding in mountain regions such as the Himalayas, as well as rock, ice and landslides as permafrost melts. And he said there may be ''tipping points'' in the geological systems, where the crust reaches a threshold that causes a step-change in the frequency of such events - but it was not clear where those thresholds might lie.

#### Extinction – poisons all life

Marusek 7 – (James, nuclear physicist and engineer, formerly with the US Navy, American Institute of Aeronautics and Astronautics, “Comet and Asteroid Threat Impact Analysis,” http://www.aero.org/conferences/planetarydefense/2007papers/P4-3--Marusek-Paper.pdf)

A deep impact produces two zones of destruction: one at the point-of-impact and the other on the opposite side of the globe. The destruction at the point-of-impact produces a regional area of great devastation that wrecks havoc for several days. The shock wave from the impacts traveled through the Earth fracturing the Earth’s crust on the opposite side of the planet, producing a jumbled debris field and triggering massive mantle plume volcanism. The area of devastation on the opposite side of the Earth is significantly greater and the devastation is long-term extending thousands of years. It is this component that produces global devastation by releasing massive quantities of volcanic magma, which in turn generates acidic and poisonous gases. The gases combine with moisture to form acids that are primarily responsible for extinguishing life across the entire planet. 4 The gas generation is also responsible for the drawdown of oxygen levels below minimally acceptable levels. These deep impacts are not random. Rather they occur with regularity in geological time.

#### Plan’s good for the economy in the short-term

Rosner & Goldberg 11 (Robert, William E. Wrather Distinguished Service Professor, Departments of Astronomy and Astrophysics, and Physics, and the College at the U of Chicago, and Stephen, Energy Policy Institute at Chicago, The Harris School of Public Policy Studies, "Small Modular Reactors - Key to Future Nuclear Power Generation in the U.S.," Nov 2011, [https://epic.sites.uchicago.edu/sites/epic.uchicago.edu/files/uploads/EPICSMRWhitePaperFinalcopy.pdf], jam)

As stated earlier, SMRs have the potential to achieve significant greenhouse gas emission reductions. They could provide alternative baseload power generation to facilitate the retirement of older, smaller, and less efficient coal generation plants that would, otherwise, not be good candidates for retrofitting carbon capture and storage technology. They could be deployed in regions of the U.S. and the world that have less potential for other forms of carbon-free electricity, such as solar or wind energy. There may be technical or market constraints, such as projected electricity demand growth and transmission capacity, which would support SMR deployment but not GW-scale LWRs. From the on-shore manufacturing perspective, a key point is that the manufacturing base needed for SMRs can be developed domestically. Thus, while the large commercial LWR industry is seeking to transplant portions of its supply chain from current foreign sources to the U.S., the SMR industry offers the potential to establish a large domestic manufacturing base building upon already existing U.S. manufacturing infrastructure and capability, including the Naval shipbuilding and underutilized domestic nuclear component and equipment plants. The study team learned that a number of sustainable domestic jobs could be created – that is, the full panoply of design, manufacturing, supplier, and construction activities – if the U.S. can establish itself as a credible and substantial designer and manufacturer of SMRs. While many SMR technologies are being studied around the world, a strong U.S. commercialization program can enable U.S. industry to be first to market SMRs, thereby serving as a fulcrum for export growth as well as a lever in influencing international decisions on deploying both nuclear reactor and nuclear fuel cycle technology. A viable U.S.-centric SMR industry would enable the U.S. to recapture technological leadership in commercial nuclear technology, which has been lost to suppliers in France, Japan, Korea, Russia, and, now rapidly emerging, China. SMR design, licensing, and detailed engineering activities are in an early stage. Licensing and design certification documents are expected to be ready for NRC filing in the 2013 time frame, and detailed engineering is about 10-20% complete. At the time of this analysis, limited cost data were publicly available, and current estimates have a significant amount of uncertainty. The study team estimates that GW-level reactors have roughly two orders of magnitude greater manhours already expended in this early engineering design work as compared with design work carried out for SMRs to date. Finally, the tooling up at a factory dedicated to SMR manufacturing is still in the planning stages and will likely require significant investment for a dedicated plant to manufacture SMRs for an n th-of-a-kind (NOAK) economy.

## 1AR

### DOD TO DA

#### Military clean energy spending now – should trigger cuts

TDC 2012 (April 2, "Military sees threats, worry in climate change" http://wwwp.dailyclimate.org/tdc-newsroom/2012/04/climate-security-http://wwwp.dailyclimate.org/tdc-newsroom/2012/04/climate-security)

Detractors of the military's clean-energy efforts have taken another view, focusing on the immediate, higher costs and uncertainties of developing and testing technologies, like running jets on biofuels, while the Pentagon faces cuts to weapons programs and other areas. After President Obama doubled Defense Department energy efficiency spending to $1 billion in his 2012 spending plan, Republican lawmakers hauled Navy Secretary Ray Mabus before Congress in February to justify his department's programs. Mabus told Congress that biofuel prices could be competitive with oil by 2020 – and that cost parity could be helped along as the military's different branches test alternative fuels and work with researchers and scientists. After all, GPS, Internet, microchips and nuclear power all got a boost from the Navy's nuclear submarine program, McGinn noted. "The military had mission needs and they made investments." "They paid more than the private sector would ever consider," he added. "But the results were benefits for larger society."

# Doubles vs UNLV BV

## 1AC

See rd 2

## 2AC

### Case

#### Nuke expansion now—assumes Japanese phase-out

Tirone 9/19 (Jonathan, Associated Press, “Nuclear Power Production Set to Grow Even After Japan Phase-Out (Vienna),” http://www.northjersey.com/news/international/170334006\_Nuclear\_Power\_Production\_Set\_to\_Grow\_Even\_After\_Japan\_Phase-Out\_\_Vienna\_.html?page=all, AM\*Agency=IAEA)

Nuclear power is set to grow over the next four decades even after Japan shuts down its reactor fleet, the International Atomic Energy Agency says. Global installed capacity is set to rise to at least 469 gigawatts of energy by 2050 from 370 GWe today, according to the IAEA's most pessimistic scenario. Nuclear capacity may reach as much as 1,137 GWe in a more favorable investment climate, the Vienna-based agency said. "We are a little bit more optimistic," said Holger Rogner, IAEA head of planning and economic studies, late Tuesday in the Austrian capital. "There is still a case for nuclear power." Japan has about 46 GWe of capacity at 50 reactors and plans to phase out nuclear power in the next three decades in response to the Fukushima Dai-ichi reactor meltdowns last year. The IAEA, established in 1957 to promote the peaceful uses of atomic power, sees growth driven by new reactor projects in China and in newcomer nations such as Turkey and the United Arab Emirates A gigawatt is equivalent to 1 billion watts of electricity. The driving forces that brought about the renaissance in nuclear power — growing demand in emerging economies, energy security, elevated fossil-fuel prices and climate pressures — haven't changed, Rogner said. The IAEA presented its findings to the organization's 155 members, meeting at their general conference in Vienna. "The feedback we receive is that there is no real retraction from most national power programs," Rogner said. "What we do see is that some newcomer states have a much better understanding for the need to get things right. Before Fukushima they were a little too optimistic how fast you can move forward the technology." Japan's new policy follows public pressure since the Fukushima disaster caused mass evacuations and left areas north of Tokyo uninhabitable for decades. Germany and Switzerland announced plans to phase out nuclear power after the meltdowns.

#### 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.

#### SMRs are key to grid invulnerability – renewables are a step back

Barton 11 (Charles, founder of the Nuclear Green Revolution blog, MA in philosophy, “Future storm damage to the grid may carry unacceptable costs”, April 30, http://nucleargreen.blogspot.com/2011\_04\_01\_archive.html)

Amory Lovins has long argued that the traditional grid is vulnerable to this sort of damage. Lovins proposed a paradigm shift from centralized to distributed generation and from fossil fuels and nuclear power to renewable based micro-generation. Critics have pointed to flaws in Lovins model. Renewable generation systems are unreliable and their output varies from locality to locality, as well as from day to day, and hour to hour. In order to bring greater stability and predictability to the grid, electrical engineers have proposed expanding the electrical transmission system with thousands of new miles of transmission cables to be added to bring electricity from high wind and high sunshine areas, to consumers. This would lead, if anything, to greater grid vulnerability to storm damage in a high renewable penetration situation. Thus Lovins renewables/distributed generation model breaks down in the face of renewables limitations. Renewables penetration, will increase the distance between electrical generation facilities and customer homes and businesses, increasing the grid vulnerable to large scale damage, rather than enhancing reliability. Unfortunately Lovins failed to note that the distributed generation model actually worked much better with small nuclear power plants than with renewable generated electricity. Small nuclear plants could be located much closer to customer's homes, decreasing the probability of storm damage to transmission lines. At the very worst, small NPPs would stop the slide toward increased grid expansion. Small reactors have been proposed as electrical sources for isolated communities that are too remote for grid hookups. If the cost of small reactors can be lowered sufficiently it might be possible for many and perhaps even most communities to unhook from the grid while maintaining a reliable electrical supply. It is likely that electrical power will play an even more central role in a post-carbon energy era. Increased electrical dependency requires increased electrical reliability, and grid vulnerabilities limit electrical reliability. Storm damage can disrupt electrical service for days and even weeks. In a future, electricity dependent economy, grid damage can actually impede storm recovery efforts, making large scale grid damage semi-self perpetuating. Such grid unreliability becomes a threat to public health and safety. Thus grid reliability will be a more pressing future issue, than it has been. It is clear that renewable energy sources will worsen grid reliability, Some renewable advocates have suggested that the so called "smart grid" will prevent grid outages. Yet the grid will never be smart enough to repair its own damaged power lines. In addition the "smart grid" will be venerable to hackers, and would be a handy target to statures. A smart grid would be an easy target for a Stuxnet type virus attack. Not only does the "smart grid" not solve the problem posed by grid vulnerability to storm damage, but efficiency, another energy approach thought to be a panacea for electrical supply problems would be equally useless. Thus, decentralized electrical generation through the use of small nuclear power plants offers real potential for increasing electrical reliability, but successful use of renewable electrical generation approaches may worsen rather than improved grid reliability.

#### Empirics

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)

In recent years, the U.S. Department of Defense (DOD) has become increasingly interested in the potential of small (less than 300 megawatts electric [MWe]) nuclear reactors for military use.1 DOD’s attention to small reactors stems mainly from two critical vulnerabilities it has identified in its infrastructure and operations: the dependence of U.S. military bases on the fragile civilian electrical grid, and the challenge of safely and reliably supplying energy to troops in forward operating locations. DOD has responded to these challenges with an array of initiatives on energy efficiency and renewable and alternative fuels. Unfortunately, even with massive investment and ingenuity, these initiatives will be insufficient to solve DOD’s reliance on the civilian grid or its need for convoys in forward areas. The purpose of this paper is to explore the prospects for addressing these critical vulnerabilities through small-scale nuclear plants.

#### Intermittency and land

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

When discussing the energy security contributions offered by small nuclear reactors, it is not enough to simply compare them with existing nuclear technology, but also to examine how they measure up against other electricity generation alternatives—renewable energy technologies and fossil fuels. Coal, natural gas, and oil currently account for 45%, 23% and 1% respectively of US electricity generation sources. Hydroelectric power accounts for 7%, and other renewable power sources for 4%. These ratios are critical to remember because idealistic visions of providing for US energy security are not as useful as realistic ones balancing the role played by fossil fuels, nuclear power, and renewable energy sources. Limitations of renewables Renewable energy technologies have made great strides forward during the last decade. In an increasingly carbon emissions and greenhouse gas (GHG) aware global commons, the appeal of solar, wind, and other alternative energy sources is strong, and many countries are moving to increase their renewable electricity generation. However, despite massive expansion on this front, renewable sources struggle to keep pace with increasing demand, to say nothing of decreasing the amount of energy obtained from other sources. The continual problem with solar and wind power is that, lacking efficient energy storage mechanisms, it is difficult to contribute to baseload power demands. Due to the intermittent nature of their energy production, which often does not line up with peak demand usage, electricity grids can only handle a limited amount of renewable energy sources—a situation which Germany is now encountering. Simply put, nuclear power provides virtually carbon-free baseload power generation, and renewable options are unable to replicate this, especially not on the scale required by expanding global energy demands. Small nuclear reactors, however, like renewable sources, can provide enhanced, distributed, and localized power generation. As the US moves towards embracing smart grid technologies, power production at this level becomes a critical piece of the puzzle. Especially since renewable sources, due to sprawl, are of limited utility near crowded population centers, small reactors may in fact prove instrumental to enabling the smart grid to become a reality.

#### DOD cyberdefense is terrible and more spending fails

Strassman 11 - president of The Information Economics Press, Senior Advisor to the Science Applications International Corporation, and Distinguished Professor of Information Sciences, George Mason School of Information Technology and Engineering (Paul, “Operating in Cyberspace,” 2/9, <http://pstrassmann.blogspot.com/2011/02/operating-in-cyberspace.html>)

The current hardware, software and networks within the Defense Department are obsolete and dysfunctional. The department continues to operate with a culture that does not as yet acknowledge that its computer systems are technically unsuited for operations in the age of cyber warfare. The existing cyber defense deficiencies are deeply rooted in the ways the Defense Department acquired information technologies over the past decades. The existing flaws are enterprise-wide and pervasive. Regardless how much money is spent on cyber security protection most of it is inadequate to make the existing proliferation of networks adequately secure. The total number of DoD systems projects in FY10 was 5,300. \*\*\* Each of these programs is subdivided into subcontracts, many of which are legislatively dictated. The total number of DoD data centers was 772, which makes their defenses unaffordable. \*\*\*\* The information technology environment in the Defense Department is fractured. Instead of using a comprehensive and defensible infrastructure, which presently consumes 57% of the total information technology budget, money is spread over thousands of mini-infrastructures that operate in separate silo-like structures, which are almost entirely managed by contractors. Such profligacy is guaranteed to be incompatible and indefensible. Over ten percent of the total Defense Department IT budget is spent on cyber defenses to protect tens of thousands of points of vulnerability. The increasing amount of money spent on firewalls, virus protection and other protective measures cannot keep up with the rapidly rising virulence of the attackers.

#### DOD has authority independent of NRC—historical precedence supports

King et al. ’11 Marcus King, Associate Director of Research, Associate Research Professor of International Affairs, LaVar Huntzinger, Thoi Nguyen, “Feasibility of Nuclear Power on U.S. Military Installations,” CNA Market Solutions, March 2011, http://www.cna.org/sites/default/files/research/Nuclear%20Power%20on%20Military%20Installations%20D0023932%20A5.pdf

The most basic licensing issue relates to whether NRC will have jurisdiction over potential nuclear reactor sites or whether DoD could be self-regulating. Our conversations with NRC indicate it is the only possible licensing authority for reactors that supply power to the commercial grid. However, DOE and DoD are authorized to regulate mis- sion critical nuclear facilities under Section 91b of the Atomic Energy Act. There is some historical precedent for DoD exercising this authority. For example, the Army Nuclear Program was granted exception under this rule with regard to the reactor that operated aboard the Sturgis barge in the 1960s and 1970s [44].

#### No renewables investment

Ball 12 (Jeffrey, Scholar in Residence at Stanford University's Steyer-Taylor Center for Energy Policy and Finance, [“Tough Love for Renewable Energy,” Foreign Affairs, May/June, http://www.foreignaffairs.com/articles/137519/jeffrey-ball/tough-love-for-renewable-energy?page=6])

Over the past decade, governments around the world threw money at renewable power. Private investors followed, hoping to cash in on what looked like an imminent epic shift in the way the world produced electricity. It all seemed intoxicating and revolutionary: a way to boost jobs, temper fossil-fuel prices, and curb global warming, while minting new fortunes in the process.¶ Much of that enthusiasm has now fizzled. Natural gas prices have plummeted in the United States, the result of technology that has unlocked vast supplies of a fuel that is cleaner than coal. The global recession has nudged global warming far down the political agenda and led cash-strapped countries to yank back renewable-energy subsidies. And some big government bets on renewable power have gone bad, most spectacularly the bet on Solyndra, the California solar-panel maker that received a $535 million loan guarantee from the U.S. Department of Energy before going bankrupt last fall.

#### No link – nuclear corporations aren’t VC

Stepp 11 (Matthew, Senior Policy Analyst with the Information Technology and Innovation Foundation (ITIF) specializing in climate change and clean energy policy, 11 [“An Anti-Innovation Strategy: The Heritage Foundations Deficit Reduction and Energy Proposal” The Energy Collective, April 27, http://theenergycollective.com/mstepp/56497/anti-innovation-strategy-heritage-foundations-deficit-reduction-and-energy-proposal])

Citing the examples of the Internet, computer chips, and GPS, the report claims, "Government programs that become commercial successes were not intended to meet a commercial demand." There are two problems with this. First, this is not a reason to eschew federal funding for future basic research and pre-commercial technology since, as Heritage acknowledges, such investments have resulted in technologies that launched entire new industries, fueled decades of American prosperity, and improved the lives of millions. Second, this claim is not universally true. For example, nuclear power, a technology born out of the government-organized Manhattan Project and supported by the precursors to the DOE, relied on tremendous federal support for its development and deployment, and was explicitly developed for commercial use. Private companies like General Electric and Westinghouse coordinated closely to guarantee that the government would support their high-risk, advanced technology ventures, and the Atomic Energy Commission was set up to ensure the safety and economic viability of the industry.

#### Warming won’t cause extinction

Barrett, professor of natural resource economics – Columbia University, ‘7

(Scott, Why Cooperate? The Incentive to Supply Global Public Goods, introduction)

First, climate change does not threaten the survival of the human species.5 If unchecked, it will cause other species to become extinction (though biodiversity is being depleted now due to other reasons). It will alter critical ecosystems (though this is also happening now, and for reasons unrelated to climate change). It will reduce land area as the seas rise, and in the process displace human populations. “Catastrophic” climate change is possible, but not certain. Moreover, and unlike an asteroid collision, large changes (such as sea level rise of, say, ten meters) will likely take centuries to unfold, giving societies time to adjust. “Abrupt” climate change is also possible, and will occur more rapidly, perhaps over a decade or two. However, abrupt climate change (such as a weakening in the North Atlantic circulation), though potentially very serious, is unlikely to be ruinous. Human-induced climate change is an experiment of planetary proportions, and we cannot be sur of its consequences. Even in a worse case scenario, however, global climate change is not the equivalent of the Earth being hit by mega-asteroid. Indeed, if it were as damaging as this, and if we were sure that it would be this harmful, then our incentive to address this threat would be overwhelming. The challenge would still be more difficult than asteroid defense, but we would have done much more about it by now.

#### Existing carbon triggers the impact

Daniel Rirdan 12, founder of The Exploration Company, “The Right Carbon Concentration Target”, June 29, <http://theenergycollective.com/daniel-rirdan/89066/what-should-be-our-carbon-concentration-target-and-forget-politics?utm_source=feedburner&utm_medium=feed&utm_campaign=The+Energy+Collective+%28all+posts%29>

James Hansen and other promi­nent cli­ma­tol­o­gists are call­ing to bring the CO2 atmos­pheric level to 350 parts per million. In fact, an orga­ni­za­tion, 350.org, came around that ral­ly­ing cry. This is far more radical than most politicians are willing to entertain. And it is not likely to be enough. The 350ppm target will not reverse the clock as far back as one may assume. It was in 1988 that we have had these level of car­bon con­cen­tra­tion in the air. But wait, there is more to the story. 1988-levels of CO2 with 2012-levels of all other green­house gases bring us to a state of affairs equiv­a­lent to that around 1994 (2.28 w/m2). And then there are aerosols. There is good news and bad news about them. The good news is that as long as we keep spewing mas­sive amounts of particulate matter and soot into the air, more of the sun’s rays are scattered back to space, over­all the reflec­tiv­ity of clouds increases, and other effects on clouds whose over­all net effect is to cool­ing of the Earth sur­face. The bad news is that once we stop polluting, stop run­ning all the diesel engines and the coal plants of the world, and the soot finally settles down, the real state of affairs will be unveiled within weeks. Once we fur­ther get rid of the aerosols and black car­bon on snow, we may be very well be worse off than what we have had around 2011 (a pos­si­ble addi­tion of 1.2 w/m2). Thus, it is not good enough to stop all green­house gas emis­sions. In fact, it is not even close to being good enough. A carbon-neutral econ­omy at this late stage is an unmit­i­gated disaster. There is a need for a carbon-negative economy. Essentially, it means that we have not only to stop emitting, to the tech­no­log­i­cal extent pos­si­ble, all green­house gases, but also capture much of the crap we have already out­gassed and lock it down. And once we do the above, the ocean will burp its excess gas, which has come from fos­sil fuels in the first place. So we will have to draw down and lock up that carbon, too. We have taken fos­sil fuel and released its con­tent; now we have to do it in reverse—hundreds of bil­lions of tons of that stuff.

#### No tradeoff—subsidies fill-in—France proves

Tindale ’11 Stephen Tindale, associate fellow at the CER, “Thorium: How to save Europe’s Nuclear Revival,” Centre for European Reform, June 2011, http://www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/pb\_thorium\_june11-153.pdf

The money to support research and development of molten salt reactors need not be taken from renewables or other low-carbon energy supply options. There is more than enough money available in the existing subsidies for nuclear fusion. And the argument that governments which support any form of nuclear power overlook or downplay renewables is disproved by the example of France. France gets over three-quarters of its electricity from nuclear power stations. Yet the French government has supported onshore wind farms and is now giving subsides to offshore wind. It is also subsidising an expansion of the district heating system in Paris, to distribute heat from power stations burning energy crops and waste wood which would otherwise be wasted.

#### Doesn’t trade off with other renewables—nuclear replaces inefficient fossil fuel production

Farrell ’12 John Farrell, Institute for Local Self-Reliance (ILSR) senior researcher specializing in energy policy developments that best expand the benefits of local ownership and dispersed generation of renewable energy, “Clean Energy Doesn’t Require A Trade-Off, But A Trade-In Of Our Obsolete Electric Grid,” Think Progress, 2/29/2012, http://thinkprogress.org/climate/2012/02/29/434440/clean-energy-trade-off-trade-in-obsolete-electric-grid/?mobile=nc

In a New York Times SundayReview piece last week – [Drawing the Line at Power Lines](https://www.nytimes.com/2012/02/19/sunday-review/drawing-the-line-at-power-lines.html?_r=2&hp) – Elisabeth Rosenthal suggested that our desire for clean energy will require significant tradeoffs: There are pipelines, trains, trucks and high-voltage transmission lines. None of them are pretty, and all have environmental drawbacks. But if you want to drive your cars, heat your homes and watch TV, you will have to choose among these unpalatable options… Perhaps the answer is simply that in an increasingly crowded powered-on world, we’re all going to have to accept that Governor Cuomo’s so-called energy highway is likely to traverse our backyard. I disagree. The future of American electricity policy is not about tradeoffs, but rather a chance to trade-in an obsolete, centralized paradigm for a local, clean energy future. Utilities would have us believe that new high-voltage transmission lines are necessary to get more wind and solar power. But the truth is that the American electricity industry refuses to embrace the fundamentally different nature of renewable energy: its ubiquity means that Americans can produce energy near where they use it, in an economically competitive manner, and at a community scale. The 20th century electricity system was centrally controlled and centrally-owned, a necessary evil when coal, gas, and nuclear power plants had significant economies of scale and required enormous capital investments. The supply lines for these power plants were equally large, connecting far-off mines, oil and gas fields via rail and pipeline to these remote power plants, and big transmission lines in turn carried the electricity from these power plants to big urban centers. An electricity system primarily powered by wind and solar is fundamentally different. Turbines and panels are always right at the fuel source, whether on a rural farm or an urban rooftop. And because their scale is substantially more amenable to community ownership, renewable energy can be built near to and provide economic benefits to the communities it powers. The fundamental shift means Americans should trade-in an obsolete model of centralized energy generation for one that matches and builds support for the local energy opportunity. Local ownership and its economic benefits should play a significant role. For example, researchers in Germany recently surveyed [local support for expanding wind energy production](http://energyselfreliantstates.org/content/community-ownership-boosts-support-renewables), comparing two towns with nearby wind farms. When the local turbines were absentee-owned, 60 percent of residents were opposed to more local wind power. Opposition dropped by 45 percentage points when the wind farm was locally owned. It’s no different from the fight over the Badger-Coulee transmission line in Western Wisconsin, where locals have raised hell knowing that they will be asked to pay as much as $5 billion for new transmission lines that will earn utilities an 11% (or greater) return with questionable local economic benefit. Locally owned wind power is in short supply, however, because federal and state energy policy make it extremely difficult. Community ownership could be best achieved through cooperatives, schools, or cities, but federal wind incentives are for taxable entities, not these rooted community organizations. Furthermore, federal tax credits require wind power project participants to have “passive income” from investments, ruling out the vast majority of Americans. When community wind projects succeed, like the [South Dakota Wind Partners](http://energyselfreliantstates.org/content/change-federal-incentive-enables-cooperative-own-wind-project), organizers admit that repeated the success is unlikely in light of the legal and financial complexities. Community-scaled wind and solar projects also struggle against an electricity system stacked against small-scale or “distributed” generation. A recent study in Minnesota, for example, suggested that [the state could meet its entire 25% by 2025 renewable energy standard with distributed renewable energy projects](http://www.newrules.org/energy/publications/meeting-minnesotas-renewable-energy-standard-using-existing-transmission-system) connected to existing electric grid infrastructure. Incumbent utilities have focused on transmission instead, likely because new power lines (and not maximizing existing infrastructure) earns them a statutory 11-13% rate of return. This myopic focus on big infrastructure may prove doubly expensive as the cost of solar power falls rapidly. Within 10 years, one-third of Americans could install solar on their own rooftop and get electricity for less than their utility charges, without any additional power lines. But under the current electricity policy, these same Americans will likely be paying a few dollars each month for new utility-conceived high-voltage transmission lines even as they increasingly produce their own local, clean energy. The future of American energy policy is not a tradeoff between new clean energy and new transmission. Rather, it’s an opportunity to trade-in an obsolete, centralized model of development for the alternative – a democratized energy system where Americans can be producers and owners of their energy future.

### Topicality

#### We meet—production cost incentives are financial incentives in context of SMRs

Rosner & Goldberg 11 (Robert, William E. Wrather Distinguished Service Professor, Departments of Astronomy and Astrophysics, and Physics, and the College at the U of Chicago, and Stephen, Energy Policy Institute at Chicago, The Harris School of Public Policy Studies, "Small Modular Reactors - Key to Future Nuclear Power Generation in the U.S.," November 2011, [https://epic.sites.uchicago.edu/sites/epic.uchicago.edu/files/uploads/EPICSMRWhitePaperFinalcopy.pdf], jam)

Production Cost Incentive: A production cost incentive is a performance-based incentive. With a production cost incentive, the government incentive would be triggered only when the project successfully operates. The project sponsors would assume full responsibility for the upfront capital cost and would assume the full risk for project construction. The production cost incentive would establish a target price, a so-called “market-based benchmark.” Any savings in energy generation costs over the target price would accrue to the generator. Thus, a production cost incentive would provide a strong motivation for cost control and learning improvements, since any gains greater than target levels would enhance project net cash flow. Initial SMR deployments, without the benefits of learning, will have significantly higher costs than fully commercialized SMR plants and thus would benefit from production cost incentives. Because any production cost differential would decline rapidly due to the combined effect of module manufacturing rates and learning experience, the financial incentive could be set at a declining rate, and the level would be determined on a plant-by-plant basis, based on the achievement of cost reduction targets. 43 The key design parameters for the incentive include the following: 1. The magnitude of the deployment incentive should decline with the number of SMR modules and should phase out after the fleet of LEAD and FOAK plants has been deployed. 2. The incentive should be market-based rather than cost-based; the incentive should take into account not only the cost of SMRs but also the cost of competing technologies and be set accordingly. 3. The deployment incentive could take several forms, including a direct payment to offset a portion of production costs or a production tax credit. The Energy Policy Act of 2005 authorized a production tax credit of $18/MWh (1.8¢/kWh) for up to 6,000 MW of new nuclear power plant capacity. To qualify, a project must commence operations by 2021. Treasury Department guidelines further required that a qualifying project initiate construction, defined as the pouring of safety-related concrete, by 2014. Currently, two GW-scale projects totaling 4,600 MW are in early construction; consequently, as much as 1,400 MW in credits is available for other nuclear projects, including SMRs.

#### Counter-interp—financial incentives are cash payments

Joanna I. Lewis and Ryan H. Wiser in 2007, Fostering a renewable energy technology industry: An international comparison of wind industry policy support mechanisms, Energy Policy 35 (2007) 1844–1857, Cited by Malgor [exceptional dancer] in his wording paper “RE Incentives wording paper”

Financial incentives of various forms, whether based on electrical production or capital investment and whether paid as a direct cash incentive or as a favorable loan program, can also be used to encourage renewable energy development. Without a long-term power purchase agreement, however, this policy mechanism has been found to generally play a supplemental role to other policies in encouraging stable and sizable growth in renewable energy markets. Virtually all of the countries included in this survey have used ﬁnancial incentives of various types to encourage wind development. Many governments also provide a variety of tax-related incentives to promote investment in or production of renewable power generation. These incentives can come in the form of capital- or production-based income tax deductions or credits, accelerated depreciation, property tax incentives, sales or excise tax reductions, and VAT reductions. One of the most successful tax incentives in terms of contributing to installed capacity is the US’s PTC. Though the PTC has certainly been effective at promoting wind installations, its on-again, off-again nature has resulted in a very unstable market for wind farm investment, as was illustrated in Fig. 2. In the 1990s, India’s market was also driven in large part by various tax incentives, including 100 percent depreciation of wind equipment in the ﬁrst year of project installation, as well as a 5-year tax holiday (Rajsekhar et al., 1999). China has VAT reductions and income tax exemptions on electricity from wind, and a number of other countries have also used or continue to use a variety of tax-based incentives. As with ﬁnancial incentives, tax-based incentives are generally found to play a supplemental role to other policies, and countries that have relied heavily on tax-based strategies (e.g., US and India) have often been left with unstable markets for wind power.

#### Cash production incentives are uniquely predictable—confirmed by DEO program language

The Law ‘12 -- US Code of Federal Regulation , 2012, 10 CFR 451 – “RENEWABLE ENERGY PRODUCTION INCENTIVES,”

§ 451.9 Procedures for processing applications. (a) Supplemental information. DOE may request supplementary information relating to the application. (b) Audits. DOE may require the applicant to conduct at its own expense and submit an independent audit, or DOE may conduct an audit, to verify the number of kilowatt-hours claimed to have been generated and sold by the qualified renewable energy facility and for which an incentive payment has been requested or made. (c) DOE determinations. The Assistant Secretary for Energy Efficiency and Renewable Energy shall determine the extent to which appropriated funds are available to be obligated under this program for each fiscal year. Upon evaluating each application and any other relevant information, DOE shall further determine: (1) Eligibility of the applicant for receipt of an incentive payment, based on the criteria for eligibility specified in this part; (2) The number of kilowatt-hours to be used in calculating a potential incentive payment, based on the net electric energy generated from a qualified renewable energy source at the qualified renewable energy facility and sold during the prior fiscal year; (3) The number of kilowatt-hours to be used in calculating a potential additional incentive payment, based on the total quantity of accrued energy generated during prior fiscal years; (4) The amounts represented by 60 percent of available funds and by 40 percent of available funds; and (5) Whether justification exists for altering the 60:40 payment ratio specified in paragraph (e) of this section. If DOE intends to modify the 60:40 ratio, the Department shall notify Congress, setting forth reasons for such change. (d) Calculating payments. Subject to the provisions of paragraph (e) of this section, potential incentive payments under this part shall be determined by multiplying the number of kilowatt- hours determined under §451.9(c)(2) by 1.5 cents per kilowatt-hour, and adjusting that product for inflation for each fiscal year beginning after calendar year 1993 in the same manner as provided in section 29(d)(2)(B) of the Internal Revenue Code of 1986, except that in applying such provisions calendar year 1993 shall be substituted for calendar year 1979. Using the same procedure, a potential additional payment shall be determined for the number of kilowatt-hours determined under paragraph (c)(3) of this section. If the sum of these calculated payments does not exceed the funds determined to be available by the Assistant Secretary for Energy Efficiency and Renewable Energy under §451.9(c), DOE shall make payments to all qualified applicants.

### Elections DA

#### Romney up – polls, swing states

Sheppard 10/14 (Elena, Policy Mic, Latest Presidential Polls: Romney Ahead Says Real Clear Politics Polls, Obama Ahead Says New York Times; <http://www.policymic.com/articles/16484/latest-presidential-polls-real-clear-politics-polls-show-romney-new-york-times-poll-show-obama>)

With 23 days to go until the presidential election, all eyes are on the poll numbers. As for who is in the lead? It really depends on who you ask. At this point, nearly across the board, Romney seems to be in the lead; but only marginally so. On Sunday, Rasmussen Reports released their daily Tracking Polls which put Romney in the lead with 49% support to Obama's 47%. According to the polling numbers, 2% of voters prefer another candidate and 2% are undecided. Rasmussen numbers in swing states show similar percentages. In the 11 swing states (Colorado, Florida, Iowa, Michigan, Nevada, New Hampshire, North Carolina, Ohio, Pennsylvania, Virginia, and Wisconsin) Rasmussen polls shows Romney with 49% support to Obama's 47%. The same as national polling numbers according to Rasmussen. It should be noted, that Rasmussen is considered to be a right-leaning enterprise. RealClearPolitics also puts Romney in the lead with the average polling data on their site showing Romney ahead 47.3% to Obama's 45.9%. According to RealClearPolitics the media outfit that puts Romney furthest in the lead is Pew Research which has Romney up by 4 points; 49% to Obama's 45%. Check out the RealClearPolitics numbers below:

#### Up in Florida

Rasmussen 10/12 (http://www.rasmussenreports.com/public\_content/politics/elections/election\_2012/election\_2012\_presidential\_election/florida/election\_2012\_florida\_president)

Mitt Romney has crossed the 50% mark for the first time to widen his lead to four points in Florida. The latest Rasmussen Reports telephone survey of Likely Florida Voters finds Romney with 51% support to President Obama’s 47%. Two percent (2%) remain undecided. (To see survey question wording, click here.) This is the widest gap between the candidates in surveys this year, but Florida remains a Toss-Up in the Rasmussen Reports Electoral College Projections. Prior to these findings, the candidates have been within two points of each other in Florida in every survey since April. Last week, it was Romney 49%, Obama 47%.

#### Err aff—risk of Obama gain outweighs

Silver 10/12 (Nate Romney Debate gains show staying power <http://fivethirtyeight.blogs.nytimes.com/2012/10/12/oct-12-romney-debate-gains-show-staying-power/?gwh=EB0A7A5046CCC852A922C7B507944540>)

The forecast model adjusts Mr. Obama’s numbers up slightly based on its economic index and his incumbency status, but only by about 0.4 percentage points. It may also be that he will need to earn those lost points back — rather than expecting them to return automatically — with, for example, a stronger performance in the last two presidential debates. In the same way that Mr. Romney had a wind at his back before the Denver debate, in that the four- or five-point lead that Mr. Obama held at that point was higher than might be expected based on economic conditions, Mr. Obama might have more to gain than to lose in the final two events.

#### Nuclear swings Florida and Latinos for Obama

Whitman and Avilla ‘12 Christie is an [American](http://en.wikipedia.org/wiki/United_States)  [politician](http://en.wikipedia.org/wiki/Politician) and [author](http://en.wikipedia.org/wiki/Author) who served as the [50th](http://en.wikipedia.org/wiki/List_of_Governors_of_New_Jersey) [Governor](http://en.wikipedia.org/wiki/Governor_of_New_Jersey) of [New Jersey](http://en.wikipedia.org/wiki/New_Jersey) from 1994 to 2001, and was the [Administrator of the Environmental Protection Agency](http://en.wikipedia.org/wiki/Administrator_of_the_Environmental_Protection_Agency) also was New Jersey's first, and to date, only [female governor](http://en.wikipedia.org/wiki/List_of_female_state_governors_in_the_United_States). Karen is a guest Columnist for the Orlando Sentinel. “Nuclear energy = green jobs, economic growth in Fla., beyond” 6/22/12 <http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community>

We all know how critical Florida is to the outcome of this year's election. This week, as Orlando hosts the annual conference of the National Association of Latino Elected and Appointed Officials, all eyes are on the presidential candidates as they speak to Hispanic elected officials — and by extension, to their constituents — about the issues that are top of mind for voters.¶ Notably, the conference addresses two issues also of paramount concern to all Floridians: energy and the economy.¶ From our perspective, these issues are deeply intertwined — and one way that Floridians and the state's thriving Hispanic community can advocate for economic growth through renewed [investment](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) in clean energy is by supporting nuclear energy. We need to let the candidates know that Americans are relying on the next president for clean, sustainable energy policies that benefit us all.¶ As we look toward diversifying America's energy [portfolio](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) and building out the energy generated by renewables, candidates should look to nuclear energy as one proven way to effectively meet growing demand. In doing so, they are registering their support for well-paying jobs, sustained economic growth and clean, affordable energy options.¶ Florida is one of many states exploring opportunities to expand capacity at existing facilities, which would mean the creation of new jobs and added [economic](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) impact. By showing our support for Florida's five nuclear-energy reactors, as well as paving the way for the expansion of the infrastructure that supports them in the state and beyond, we can help create and sustain green jobs and work to reduce unemployment.¶ Florida needs jobs. While overall U.S. unemployment rates stand at 8.2 percent, unemployment in Florida is slightly higher, at 8.6 percent. National unemployment among Hispanics is higher still, at 11 percent.¶ At present, the U.S. nuclear-energy industry supports 100,000 American jobs. Each new nuclear facility creates an average of 1,400 to 1,800 high-paying jobs, often reaching as many as 3,500 jobs during peak construction periods. Once operational, these facilities create 400 to 700 direct and permanent jobs.¶ What does this all mean for minorities, who are so disproportionately impacted by unemployment?¶ Latinos in Florida will be able to take advantage of contract opportunities set aside for minority development programs. And Florida's communities will provide the goods and [services](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) needed to support a growing nuclear-energy industry. Recent trends in entrepreneurship indicate business starts in the Hispanic community will continue at a much higher rate than in other communities. Hispanic communities are therefore readily able to address the growing needs of new nuclear facilities.¶ Educational institutions across the state are also targeting minority populations with training programs designed to produce nuclear work-force-ready candidates. These programs and partnerships are cropping up at minority-serving institutions statewide.¶ Take, for example, [Miami Dade College](http://www.orlandosentinel.com/topic/OREDU0000157196.topic)'s Nuclear-Career Academic Bridge, which leverages a combination of [financial](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community) aid, mentorships and focused, skills-oriented training to ready students to enter the nuclear industry upon completion of the program.¶ These kinds of efforts — which expose Hispanic students in greater numbers to critical science,[technology](http://articles.orlandosentinel.com/2012-06-22/opinion/os-ed-nuclear-energy-florida-jobs-062212-20120621_1_nuclear-energy-green-jobs-hispanic-community), engineering and mathematics education — not only promote greater diversity in the energy work force, but also put Hispanic students in line to enter well-paying careers in an industry with a bright future.¶ Just as nuclear power creates and sustains jobs, it also promotes healthy economic growth. Each of America's 104 nuclear-power facilities generates, on average, $430 million in economic output annually, as well as an additional $40 million per year in total labor income. Minority-owned suppliers and businesses are among key beneficiaries of this economic infusion.¶ Indeed, all eyes will be on the candidates speaking at the Orlando conference this week. And clearly the candidates will be keenly focused on the Hispanic community. They're looking to the more than 1 million potential voters that Florida's Hispanic population represents for cues on how to shape their policies and platforms.¶

#### Florida key—resolves close elections

Silver 9/12 [Nate, 9/12/12, “Florida a True Must-Win for Romney” <http://fivethirtyeight.blogs.nytimes.com/2012/09/12/sept-11-florida-a-true-must-win-for-romney/#more-34415>]

Florida has a [well-established reputation](http://fivethirtyeight.blogs.nytimes.com/2012/08/29/in-florida-tampa-is-essential-to-romney-election-hopes/) as a swing state. But as the election season has worn on, it has come to look even more important. Florida now ranks a clear second on our list of [tipping point states](http://fivethirtyeight.blogs.nytimes.com/2012/04/27/arizona-is-probably-not-a-swing-state/), those most likely to provide the decisive votes in the Electoral College, behind only Ohio. Florida is typically just slightly Republican-leaning, and the tipping point calculation is sensitive to even the smallest deviations from the national averages. As I’ve argued before, for instance, North Carolina [isn’t that essential to the electoral math](http://fivethirtyeight.blogs.nytimes.com/2012/08/07/aug-7-north-carolina-isnt-central-to-electoral-math/), even though the race there is quite close, because other states that would help get a candidate to 270 electoral votes precede it in the pecking order. But as the election has evolved, Mr. Obama’s polling has held up fairly well in Florida, including [another decent poll there](http://www.surveyusa.com/index.php/2012/09/11/in-florida-8-weeks-out-obama-4-points-atop-romney-nelson-11-points-atop-mack-voter-fraud-of-greater-concern-than-voter-suppression/) on Tuesday, which put him four points ahead. Just as important, Mr. Obama’s polling has been choppy lately in a several other states, particularly Virginia (where he got a very poor poll on Monday), Colorado and Iowa, which had initially appeared to be easier wins for him. It is more conceivable now that Mr. Obama could have an easier time winning Florida than those other states, increasing its importance. Nonetheless, Florida is mostly a state where Mr. Obama is playing offense. If he wins it, it will solve almost all of his other problems. If Mr. Obama wins Florida, he could lose each of Virginia, Colorado and Iowa, along with Ohio, Wisconsin, and North Carolina, and either New Hampshire or Nevada, and still win the Electoral College. From Mr. Romney’s point of view, conversely, that might seem to make Florida a must-win state. In fact, it’s possible to put some numbers around this idea. Defining a must-win state in a formal way is a bit tricky. For example, is Georgia a must-win for Mr. Romney? If he loses it, he would almost certainly lose the Electoral College. But that is because Georgia is much more Republican-leaning than the states that we would ordinarily classify as swing states. If things get bad enough for Mr. Romney to lose Georgia, his map will almost certainly be a disaster in a number of other ways. So what we might really think of as must-win states are those that a candidate could not afford to lose even in a *close* election. Imagine that the election is very close: the popular vote is within one percentage point either way. This condition occurred roughly 3,000 times out of the 25,000 simulations that I ran in the forecast model on Monday. For each of the top 12 states on our tipping point list, I looked up the probability of Mr. Romney winning the election conditional upon losing the state in these 3,000 simulations. If Mr. Romney has great difficulty winning the Electoral College without the state in a close election, we can fairly describe it as a must-win. These simulations estimate that Mr. Romney has only a 2 percent chance of winning the election if he loses Florida — even assuming that the election is very close over all. Losing its 29 electoral votes just presents too daunting a challenge for him, given his inability so far to penetrate into states like Pennsylvania that could plausibly substitute for it. The numbers aren’t remotely that overwhelming for any other state. Mr. Romney has a 15 percent chance of winning a close election despite losing Ohio, for instance — not pleasant odds, but also far from impossible. If he lost Virginia, he’d still have a 19 percent chance of winning a close election; Colorado, a 28 percent chance; Wisconsin, a 37 percent chance, and so forth. So, it isn’t a cliché to call Florida a must-win for Mr. Romney; he very badly needs it. What does the same list look like for Mr. Obama? Pennsylvania is the closest analog to Florida for him; he has just a 10 percent chance of winning a close election if he loses the state. However, Mr. Obama is highly likely to win Pennsylvania, according to our forecast, as he has led in every poll of the state since February and as Mr. Romney has not placed all that many resources into the state. Otherwise, Mr. Obama’s electoral strategy is fairly robust. He has about a 28 percent chance of winning a close election if he loses Ohio, for instance, about twice Mr. Romney’s chance of doing the same.

#### Plan’s insulated from backlash – bipartisan consensus

Shaw ‘12 (Andrew, member of the Government Affairs team where he focuses primarily on energy issues at the intersection of Canada-U.S. relations, uses his knowledge and experience of Congress and the Executive Branch to advise clients on critical energy and environmental public policy issues, “ A “Chunks” Approach to Climate Policy,” 2012, [[www.politicsandlawblog.com/2012/05/15/a-chunks-approach-to-climate-policy/](http://www.politicsandlawblog.com/2012/05/15/a-chunks-approach-to-climate-policy/)], jam)

While ideally President Obama would seek a “comprehensive” approach to climate change, Zichal acknowledged that the Administration would likely approach this issue in “chunks.” Specifically, Zichal talked about seeking “tools and policies that can garner bipartisan support.” One example provided by Zichal was extending the production tax credit for renewable production, which is set to expire at the end of this year. The “chunks” mention appears to reinforce the notion that President Obama would be unlikely to pursue cap-and-trade, or some variant, in a second-term. Following Zichal’s comments, Senator Lamar Alexander (R-TN) spoke – his remarks suggested that there are other “chunks” where consensus is achievable on energy policy between the Administration and Congress. Specifically, Senator Alexander expressed support for the Advanced Research Projects Agency-Energy (ARPA-E), an agency focused on R&D for breakthrough energy technologies, such as small modular reactors, smart grids, carbon capture and electric car batteries. ARPA-E is modeled after the Defense Advanced Research Projects Agency (DARPA), which, among other achievements, helped in inventing the internet. The American Recovery and Reinvestment Act provided the first appropriations for ARPR-E, which has subsequently used that money to fund over 180 projects focused on emerging energy technologies. In an election year, Republicans and Democrats spend an inordinate amount of time highlighting their differences on energy policy. Yet on ARPA-E, both President Obama and Governor Mitt Romney have expressed support for a continued commitment to the program. Senator Alexander’s comments indicate that an important and achievable “chunk” of climate policy, regardless of the outcome of the election, could be a renewed emphasis on ARPA-E.

#### Strong relations are structurally impossible – Syria, Magnitsky, missile defense, anti-Americanism

Baker 6/13 (Peter, New York Times writer, used to be the Washington Post’s Moscow bureau chief, wrote a book on Putin while there, "Syria Crisis and Putin’s Return Chill U.S. Ties With Russia," 2012, [www.nytimes.com/2012/06/14/world/europe/putins-return-brings-rapid-chill-to-us-russia-ties.html?pagewanted=all], jam)

WASHINGTON — Sitting beside President Obama this spring, the president of Russia gushed that “these were perhaps the best three years of relations between Russia and the United States over the last decade.” Two and a half months later, those halcyon days of friendship look like a distant memory. Gone is Dmitri A. Medvedev, the optimistic president who collaborated with Mr. Obama and celebrated their partnership in March. In his place is Vladimir V. Putin, the grim former K.G.B. colonel whose return to the Kremlin has ushered in a frostier relationship freighted by an impasse over Syria and complicated by fractious domestic politics in both countries. The back-and-forth this week over Russian support for Syria’s government as it tries to crush an uprising underscored the limits of Mr. Obama’s ability to “reset” ties with Moscow. He signed an arms control treaty with Mr. Medvedev, expanded supply lines to Afghanistan through Russian territory, secured Moscow’s support for sanctions on Iran and helped bring Russia into the World Trade Organization. But officials in both capitals noted this week that the two countries still operated on fundamentally different sets of values and interests. The souring relations come as Mr. Obama and Mr. Putin are preparing to meet for the first time as presidents next week on the sidelines of a summit meeting in Mexico. With Mitt Romney, the Republican presidential candidate, saying Wednesday that Mr. Obama’s Russia policy “has clearly failed,” and Mr. Putin stoking anti-American sentiment in response to street protests in Moscow, the Mexico meeting may be a test of whether the reset has run its course. “We were already at a place with the Russians where we were about to move to a new phase,” said Benjamin J. Rhodes, a deputy national security adviser to Mr. Obama. “A lot of this is can we continue to build on the initial steps we’ve taken with the Russians even as we’ve had differences emerge, most notably on Syria.” Others see the situation more pessimistically. “There is a crisis in the Russian-American relationship,” said Aleksei K. Pushkov, the hawkish head of Russia’s parliamentary foreign affairs committee. “It is a crisis when the sides have to balance their interests but they cannot do so because their interests diverge. It is developing into some kind of long-term mistrust.” Signs of that divergence seem increasingly pronounced lately, despite private reassurances from Mr. Putin that he wants to deepen ties. Michael A. McFaul, a former Russia adviser to Mr. Obama, has been subjected to an unusual campaign of public harassment since arriving in Moscow as ambassador. A Russian general threatened pre-emptive strikes against American missile defense sites in Poland in the event of a crisis. Mr. Putin has cracked down on demonstrations while blaming Americans for them, and he skipped the Group of 8 summit meeting hosted by Mr. Obama last month. “The reset failed to change the underlying suspicion and distrust of America shared by a majority of Russians as well as Putin himself,” said Masha Lipman, an analyst at the Carnegie Moscow Center. “America is seen as a threat, an agent seeking to undermine Russia, to weaken it, to do harm to it. Russia always has to be on the alert, on the defensive.” Adding to the tension have been moves in Congress to block visas and freeze assets of Russians implicated in human rights abuses. The bipartisan legislation, named for Sergei L. Magnitsky, a lawyer whose corruption investigation led to his death in prison, passed a House committee last week and will be taken up by a Senate panel next week. “I see this as part of an effort to make clear the expected international conduct as it relates to human rights,” said Senator Benjamin L. Cardin, a Maryland Democrat sponsoring the legislation. “This is what friends do. We point out when you need to do better.” The Obama administration, seeking to avoid a rupture, opposes the bill on the grounds that the State Department has already banned visas for Russians implicated in Mr. Magnitsky’s death. Instead, the administration is highlighting legislation introduced on Tuesday to repeal decades-old trade restrictions on Russia known as Jackson-Vanik. On Tuesday, hours after Secretary of State Hillary Rodham Clinton accused Russia of supplying attack helicopters to Syria, she sent an under secretary of state, Wendy Sherman, to a Russia Day reception at the Russian Embassy in Washington, where she pointed to the proposed Jackson-Vanik repeal and talked about “mutual respect,” with no explicit mention of Syria. The complication for Mr. Obama is that lawmakers like Mr. Cardin and Senator John McCain, Republican of Arizona, want to link the Jackson-Vanik repeal to the Magnitsky legislation, angering Russian officials, who were shocked to learn that the White House apparently cannot block it. Mr. Putin was already upset at even the administration’s mild criticism of his domestic crackdown; Mr. Pushkov said the Kremlin viewed that to “not be very loyal.” Mr. Obama is focusing on enlisting Russia’s help on issues like stopping Iran from building nuclear weapons. The next round of talks between Iran and international powers opens in Moscow next week, and the administration hopes that Russia’s role as host will prompt it to use its influence with Tehran to extract more concessions. One of the biggest successes of the reset, however, has also made the United States more dependent on Russia. With Pakistan cutting off supply lines to Afghanistan, the so-called northern distribution network through Russia is the primary reinforcement route for America’s war on the Taliban. “We need more from them than they need from us at the moment,” said Angela E. Stent, director of Russian studies at Georgetown University. The Russians are less invested than Mr. Obama in the notion of a reset. “They look at that as an American course correction. But it’s not their policy, it’s an American policy,” Ms. Stent said. Publicly, the administration rejects any connection between Syria and the Afghan supply route. But, privately, officials worry that Russia will try to use the leverage provided by the supply route. So far, Russian officials have reassured their American counterparts that they will not. If anything, Moscow worries that the United States is pulling out of Afghanistan too soon, fearing a security collapse near Russia’s southern flank. For Mr. Obama, who considers improved ties with Russia one of his signature accomplishments, the question is whether the current friction is temporary or is a sign that the reset has accomplished what it can. The coming meeting in Los Cabos, Mexico, could prove uncomfortable for Mr. Obama. The first time the two men met, in July 2009, when Mr. Putin was prime minister, Mr. Putin delivered an hourlong harangue about the United States. “The president’s going to be yearning for the days of meetings with Dima,” said David J. Kramer, an official in the George W. Bush administration, using Mr. Medvedev’s nickname. “It probably won’t be a pretty meeting. And it shouldn’t be a pretty meeting.”

#### DoD shields links

Lacey 8/16 (Stephen, reporter Climate Progress, B.A. in journalism from Franklin Pierce University, 2012, [thinkprogress.org/climate/2012/08/16/699811/the-solyndra-standard-on-loan-guarantees-military-spending-and-clean-energy-politics/?mobile=nc], jam)

That’s exactly how it’s playing out. The politically-manufactured outrage over Solyndra has turned into an all-out campaign — with tens of millions of dollars being spent this election season specifically targeting federal renewable energy investments. Mitt Romney has jumped on the bandwagon, using Solyndra as a central piece of his campaign. And here’s the really astonishing disconnect: While supporting tens of thousands of jobs, the loan guarantee program is expected to cost $2 billion less than Congress budgeted for, according to an analysis from Herb Allison, John McCain’s former National Finance Chairman. Meanwhile, amidst the Solyndra saga, we casually accept a $300 million aircraft failure without batting an eye. No outrage. No sustained political campaign. It’s just another day testing our military toys. Why? Because we don’t often see programs like this as a “failure” in the political arena. We would never use one failure as an excuse to abandon investment in new technologies. Most politicians accept losses in military R&D expenditures because the long-term gains are potentially so important for national defense and for eventually developing technologies for civilian use. We should always strive to make programs as efficient and cost-effective as possible. But a few bankrupt clean energy companies representing a fraction of the program’s budgeted cost is no excuse for abandoning federal investments in clean energy — a strategically important sector that is becoming one of the largest drivers of business this century. Alas, don’t expect anyone to publicly admit this. As the campaign season unfolds, political leaders are all too willing to practice the Solyndra standard.

#### Business and bipartisan political support

Tindale ‘11 (Stephen, associate fellow at the Centre for European Reform, June 2011, "Thorium: How to save Europe's nuclear revival," [www.cer.org.uk/sites/default/files/publications/attachments/pdf/2011/pb\_thorium\_june11-153.pdf], jam)

In the US, political interest in thorium molten salt reactors is cross-party, having been led by Democratic Senator Harry Reid and Republican Senator Orrin Hatch. Reid and Hatch have introduced three bills to Congress, all of which identified thorium fuel cycle technology as a means to expand nuclear power without increasing waste or nuclear proliferation. When he entered office, President Barack Obama set up a Blue Ribbon Commission on America’s nuclear future, which is considering nuclear fuel cycles and nuclear waste against criteria of “cost, safety, resource utilisation and sustainability, and the promotion of nuclear non-proliferation and counter-terrorism goals”.11 The Commission will publish a draft report in July 2011 and a final report in January 2012. US Energy Secretary Steven Chu has already indicated that he thinks thorium and molten salt reactors are the way forward for nuclear energy: “We cannot continue to improve the condition of people throughout the world without use of nuclear power. None of the renewable energy solutions can be scaled quickly enough to meet current and future energy needs. Safer, proliferation resistant, nuclear power without the long term high level waste storage problems is needed to power a growing world economy and to allow all nations to provide for and feed their growing populations in peace. These goals are available by changing the nuclear fuel cycle to a U233/Thorium fuel cycle.”12 Large US energy companies have not yet shown serious interest in molten salt reactors. However, Microsoft’s Bill Gates has set up a company called TerraPower with the aim of developing a nuclear energy system which reduces the weapons proliferation risk and allows the re-use of spent nuclear fuel. TerraPower has identified thorium molten salt reactors as a promising means of achieving these objectives. Other US companies are part of a consortium, with Japanese and Russian companies, to develop a molten salt reactor. Japanese companies involved include Toyota, Toshiba and Hitachi.

#### Russia’s constrained from war

Weitz ’11 Richard Weitz, senior fellow at the Hudson Institute and a World Politics Review senior editor, “Global Insights: Putin not a Game-Changer for U.S.-Russia Ties,” 9/27/2011

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.

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### Case

#### 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.