## 1NC

### 1NC

T PROCUREMNT

#### Financial incentives aren’t procurement

Menz, 5 **-** Faculty of Economics and Finance, School of Business, Clarkson University, Bertrand H. Snell Hall, Potsdam, NY, also from the Center for International Climate and Environmental Research, Oslo (CICERO), Norway (Fredric, “Green electricity policies in the United States: case study,” Energy Policy, December, Science Direct) **Italics in original**

There is considerable variation among states in both their regulatory environments and the policies that have been implemented to promote green electricity. In the following discussion, state and local policy instruments are categorized as financial incentives, rules and regulations, and voluntary measures.[7](http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0301421504001648#fn7)Financial incentives include various subsidies and/or funding in direct support of green electricity projects, tax incentives (credits, deductions, or exemptions), and provisions for zero-interest or low-interest loans. Rules and regulations include requirements that utilities distribute a minimum share of electricity from renewable or green energy sources, green power purchase requirements for government entities, and net-metering requirements for consumers with small renewable generating facilities. Voluntary measures include green power products aimed at electricity consumers, green power certificate programs, and other programs to increase market support for renewable energy technologies.

#### B. Vote negative

#### 1-Limits- They explode the topic by allowing any number of rules and regulations – fair limits are key to clash and manageable research burden

#### 2-Ground-Procurement is distinct from direct commercialization – it allows the aff to dodge core generics like the energy DA by increasing procurement in contained areas like nuclear submarines

### 1NC

#### OBAMA

#### CIR will pass this year---Obama building momentum

The Hill 3/25 (Justin Sink and Meghashyam Mali, “Obama: 'The time has come' to move immigration reform in Congress,”

http://thehill.com/video/administration/290129-obama-the-time-has-come-to-move-immigration-reform)

Obama said he expects debate on an immigration bill to “begin next month” at a ceremony where 28 people, including 13 armed servicemembers, became citizens. Bipartisan groups in both the House and Senate are moving closer to unveiling separate immigration reform proposals, and the president is hoping to build momentum for a deal. “We've known for years that our immigration system is broken, that we're not doing enough to harness the talent and ingenuity of all those who want to work hard and find a place in America,” Obama said. “And after avoiding the problem for years, the time has come to fix it once and for all. The time has come for comprehensive, sensible immigration reform.” Speaking from the East Room, Obama argued that immigration strengthens the country. “It keeps us vibrant, it keeps us hungry, it keeps us prosperous. It is what makes us such a dynamic country,” he said. “If we want to keep attracting the best and the brightest, we've got to do a better job of welcoming them.” Advocates for immigration reform see a real chance for legislation to pass Congress this year, despite opposition from some House GOP lawmakers, many of whom have said they will oppose measures that grant “amnesty” to illegal immigrants and have questioned proposed protections for gay or lesbian couples. Immigration reform is a potent political issue for Obama, who won more than 70 percent of the Hispanic vote in 2012. Since that showing, a growing number of conservative lawmakers have signaled they would back immigration reform, including measures to provide a pathway to citizenship. Groups aligned with Obama have signaled their intention of pressuring Congress. On Monday, The New York Times reported that Organizing for Action — the political group born from the president's reelection campaign — will launch a new online effort featuring the stories of some 7,000 supporters, some of whom entered the country illegally. The Senate’s “Gang of Eight” introduced their framework, calling for a pathway to citizenship, heightened border security, increased high-skilled immigration and a guest worker program, in January. But since then, senators have been tied down in negotiations over the details of the plan, with many key issues still unresolved. Obama said he wanted to see debate begin on a congressional bill by April. “We are making progress, but we've got to finish the job, because this issue is not new,” Obama said. “Everyone pretty much knows what's broken, everyone knows how to fix it.”

DOD smrs drain capital

Bencosme 12 (Francisco, is a Joseph S. Nye, Jr. External Relations Intern at the Center for a New American Security (CNAS). “The State of Small Modular Nuclear Reactors” http://www.cnas.org/blogs/naturalsecurity/2012/11/state-small-modular-nuclear-reactors.html)

Some have argued that the Department of Defense (DOD) would be a unique testing ground for an SMR demonstration. While this might be true, there does not appear to be enough political will for using the DOD as a site for energy experimentation. A DOD SMR program might also entail high political costs due to the larger defense cut negotiations that are taking place in Congress as part of the fiscal cliff. The bottom line: the administration’s recent moves are a sign that SMRs are poised to play a large role in any nuclear energy future.

#### Political capital Is key to reform

Shifter 12/27 Michael is the President of Inter-American Dialogue. “Will Obama Kick the Can Down the Road?” 2012, http://www.thedialogue.org/page.cfm?pageID=32&pubID=3186

Not surprisingly, Obama has been explicit that reforming the US’s shameful and broken immigration system will be a top priority in his second term. There is every indication that he intends to use some of his precious political capital – especially in the first year – to push for serious change. The biggest lesson of the last election was that the “Latino vote” was decisive. No one doubts that it will be even more so in future elections. During the campaign, many Republicans -- inexplicably -- frightened immigrants with offensive rhetoric. But the day after the election, there was talk, in both parties, of comprehensive immigration reform. ¶ Despite the sudden optimism about immigration reform, there is, of course, no guarantee that it will happen. It will require a lot of negotiation and deal-making. Obama will have to invest a lot of his time and political capital -- twisting some arms, even in his own party. Resistance will not disappear.

#### Reform key to the economy

Farrell 12/13/12 (Chris, a contributing editor for Bloomberg Businessweek. From 1986-97, he was on the magazine's staff, as a corporate finance staff and department editor and then as an economics editor. Farrell wrote Right on the Money: Taking Control of Your Personal Finances and Deflation: What Happens When Prices Fall? Among Farrell's many awards are a National Magazine Award, two Loeb Awards, and the Edward R. Murrow Award. Farrell is a graduate of the London School of Economics and Stanford University. “Obama’s Next Act: Immigration Reform” <http://www.businessweek.com/articles/2012-12-13/obamas-next-act-immigration-reform>)

Washington won’t get much of a reprieve from verbal pyrotechnics once the drama of the fiscal cliff is over. Up next: major immigration reform. President Obama has made it clear that a comprehensive overhaul of the nation’s badly frayed immigration system is a second-term priority. Many Republican lawmakers are convinced the big takeaway from the 2012 election results is that conservatives need to rethink their hard-line stance on immigration—including illegal immigrants. Here’s what Washington should do before tackling the tough job of rewriting the immigration laws: Create a quicksilver path to citizenship for the 11 million to 12 million undocumented workers in the U.S. (excluding the small number convicted of violent crimes or multiple felonies). The shift in status acknowledges that these foreign-born newcomers, like previous generations of immigrants, overcame significant obstacles to come to the U.S. to make a better life for their families. Illegal immigrants are neighbors heading off to work, sending their kids to school, and attending church. Their everyday lives would vastly improve by moving from the shadows of society into the mainstream. More important from a public-policy perspective, the change would give a boost to the economy’s underlying dynamism. “What you’re doing in the short run is making it easier for workers to move between jobs, a relatively small effect,” says Gordon Hanson, a professor of economics at the University of California at San Diego. “The larger effect from eliminating uncertainty for these immigrants is creating incentives for them to make long-term investments in careers, entrepreneurship, education, homes, and community.” Let’s state the obvious: A rapid transformation of illegal immigrants into legal immigrants isn’t in the cards. Amnesty—let alone citizenship—is an anathema to large parts of the electorate. Too bad, since the scholarly evidence is compelling that immigrants—documented or not, legal or illegal—are a boon to the net economy. “Competition fosters economic growth,” says Michael Clemens, senior fellow at the Center for Global Development in Washington. The economic return from attracting skilled immigrants to the U.S. is well known. Foreign-born newcomers account for some 13 percent of the population, yet they are responsible for one-third of U.S. patented innovations. The nation’s high-tech regions such as Silicon Valley, the Silicon Hills of Austin, Tex., and Boston’s Route 128 rely on immigrant scientists, engineers, entrepreneurs, and employees. Better yet, economist Enrico Moretti at the University of California at Berkeley calculates that a 1 percent increase in the share of college-educated immigrants in a city hikes productivity and wages for others in the city. Less appreciated is how much the economy gains from the efforts of less-skilled immigrants, including illegal workers. Throughout the country, foreign-born newcomers have revived beaten-down neighborhoods as immigrant entrepreneurs have opened small businesses and immigrant families have put down stakes. Immigrant workers have played a vital role keeping a number of industries competitive, such as agriculture and meatpacking. Cities with lots of immigrants have seen their per capita tax base go up, according to David Card, an economist at UC Berkeley. Despite the popular impression that a rising tide of immigrants is associated with higher crime rates, research by Robert Sampson of Harvard University and others offer a compelling case that it’s no coincidence that the growing ranks of immigrants tracks the reduction in crime in the U.S. But don’t newcomers—legal and illegal—drive down wages and job opportunities for American workers? Not really. A cottage industry of economic studies doesn’t find any negative effect on native-born wages and employment on the local level. On the national level the research shows the impact on native-born Americans doesn’t drift far from zero, either positively or negatively. “In both cases, immigrants are more likely to complement the job prospects of U.S.-born citizens than they are to compete for the same jobs as U.S.-born citizens,” Giovanni Peri, an economist at the University of California at Davis, writes in Rationalizing U.S. Immigration Policy: Reforms for Simplicity, Fairness, and Economic Growth. The counterintuitive results reflect a numbers of factors. Immigrants expand the size of the economic pie by creating new businesses, new jobs, and new consumers. Middle-class families find it easier to focus on careers with affordable immigrant labor offering gardening, child care, and other services. Many illegal immigrants aren’t fluent in English, so they don’t compete for the same jobs as native-born workers. Another factor behind the lack of direct competition is the higher educational level of native-born Americans. In 1960 about half of U.S.-born working-age adults hadn’t completed high school, while the comparable figure today is about 8 percent. The real downside concern is on the fiscal side of the immigrant ledger. Yes, more taxes would go into Social Security, Medicare, and the like with legalization, but more people would qualify for Medicaid, welfare, and other benefits. At the local level, many school districts are strained financially from educating immigrant children, legal and illegal. That said, the prospect of fiscal costs would diminish as newly legalized immigrant workers move freely around the country seeking jobs, entrepreneurs are comfortable expanding their payrolls, and immigrant parents push their children to live the American Dream. “Over time, as entrepreneurs emerge and families are better able to get their kids through high school and college, you’re reducing the long-run fiscal claim of the group,” says Hanson. There is no economic evidence that making roughly 6 percent of the workforce illegal will benefit the economy. Plenty of research supports the opposite case. A fast track to legality offers Washington a rare twofer: a just move that’s economically efficient.

**Nuclear war**

**Harris and Burrows 09** PhD European History @ Cambridge, counselor in the National Intelligence Council (NIC) & member of the NIC’s Long Range Analysis Unit

Mathew, and Jennifer “Revisiting the Future: Geopolitical Effects of the Financial Crisis” <http://www.ciaonet.org/journals/twq/v32i2/f_0016178_13952.pdf>

Of course, the report encompasses more than economics and indeed believes the future is likely to be the result of a number of intersecting and interlocking forces. With so many possible permutations of outcomes, each with ample Revisiting the Future opportunity for unintended consequences, there is a growing sense of insecurity. Even so, history may be more instructive than ever. While we continue to believe that the Great Depression is not likely to be repeated, the lessons to be drawn from that period include the harmful effects on fledgling democracies and multiethnic societies (think Central Europe in 1920s and 1930s) and on the sustainability of multilateral institutions (think League of Nations in the same period). There is no reason to think that this would not be true in the twenty-first as much as in the twentieth century. For that reason, the ways in which the potential for greater conflict could grow would seem to be even more apt in a constantly volatile economic environment as they would be if change would be steadier. In surveying those risks, the report stressed the likelihood that terrorism and nonproliferation will remain priorities even as resource issues move up on the international agenda. Terrorism’s appeal will decline if economic growth continues in the Middle East and youth unemployment is reduced. For those terrorist groups that remain active in 2025, however, the diffusion of technologies and scientific knowledge will place some of the world’s most dangerous capabilities within their reach. Terrorist groups in 2025 will likely be a combination of descendants of long established groups\_inheriting organizational structures, command and control processes, and training procedures necessary to conduct sophisticated attacks\_and newly emergent collections of the angry and disenfranchised that become self-radicalized, particularly in the absence of economic outlets that would become narrower in an economic downturn. The most dangerous casualty of any economically-induced drawdown of U.S. military presence would almost certainly be the Middle East. Although Iran’s acquisition of nuclear weapons is not inevitable, worries about a nuclear-armed Iran could lead states in the region to develop new security arrangements with external powers, acquire additional weapons, and consider pursuing their own nuclear ambitions. It is not clear that the type of stable deterrent relationship that existed between the great powers for most of the Cold War would emerge naturally in the Middle East with a nuclear Iran. Episodes of low intensity conflict and terrorism taking place under a nuclear umbrella could lead to an unintended escalation and broader conflict if clear red lines between those states involved are not well established. The close proximity of potential nuclear rivals combined with underdeveloped surveillance capabilities and mobile dual-capable Iranian missile systems also will produce inherent difficulties in achieving reliable indications and warning of an impending nuclear attack. The lack of strategic depth in neighboring states like Israel, short warning and missile flight times, and uncertainty of Iranian intentions may place more focus on preemption rather than defense, potentially leading to escalating crises. 36 Types of conflict that the world continues to experience, such as over resources, could reemerge, particularly if protectionism grows and there is a resort to neo-mercantilist practices. Perceptions of renewed energy scarcity will drive countries to take actions to assure their future access to energy supplies. In the worst case, this could result in interstate conflicts if government leaders deem assured access to energy resources, for example, to be essential for maintaining domestic stability and the survival of their regime. Even actions short of war, however, will have important geopolitical implications. Maritime security concerns are providing a rationale for naval buildups and modernization efforts, such as China’s and India’s development of blue water naval capabilities. If the fiscal stimulus focus for these countries indeed turns inward, one of the most obvious funding targets may be military. Buildup of regional naval capabilities could lead to increased tensions, rivalries, and counterbalancing moves, but it also will create opportunities for multinational cooperation in protecting critical sea lanes. With water also becoming scarcer in Asia and the Middle East, cooperation to manage changing water resources is likely to be increasingly difficult both within and between states in a more dog-eat-dog world.

### 1NC

STATES counterplan

#### Text

#### The fifty states and relevant sub federal actors should enter into power purchase agreements for nuclear reactors under 300MW. Financing through the creation of state clean energy banks.

#### Solves the case

Ben-Moshe et al 9 (Sony Ben-Moshe, Jason J. Crowell, Kelley M. Gale,\* Breton A. Peace, Brett P. Rosenblatt, and Kelly D. Thomason\*\* “FINANCING THE NUCLEAR RENAISSANCE: THE BENEFITS AND POTENTIAL PITFALLS OF FEDERAL & STATE GOVERNMENT SUBSIDIES AND THE FUTURE OF NUCLEAR POWER IN CALIFORNIA” http://www.felj.org/docs/elj302/19gale-crowell-and-peace.pdf)

In addition to federal subsidies, various states have passed legislation to promote the development of new nuclear power plants that supplement the financial incentives provided by the DOE. The most commonly used incentive for nuclear construction in states with rate-regulated utilities are regulations which allow utilities to recover their capital costs and construction work in progress (CWIP) in rate-bases utilized to determine the regulated rates utilities charge to consumers either during construction or once the plant is either put in service or abandoned. The states that do not permit costs to be recovered during construction have a process by which a state commission can annually approve costs on a non-appealable basis for inclusion in the rate-base at commercial operation or abandonment. Both rate-regulated and restructured states also provide tax credits or exemptions for new nuclear construction. Kansas exempts new nuclear facilities from state property taxes while Texas permits school districts to enter into agreements with developers of new nuclear plants to limit the appraised value of the plants for purposes of assessing school district maintenance and operations property taxes. The following Table provides a summary of the key features of the various state programs providing financial incentives for new nuclear power development. Legislation is also currently pending in Indiana and Oklahoma that would provide cost recovery mechanisms for new nuclear construction.154 Other states have recently implemented legislation or regulations indicating their support for construction of nuclear power plants through programs aside from direct financial incentives. Utah passed a bill establishing a state position of ―energy officer‖ and a policy to promote ―the study of nuclear power generation.‖155 Illinois, Kentucky, Minnesota and Wisconsin all currently have legislation pending to overturn state moratoria on the construction of new nuclear plants.156 Finally, Georgia and Kentucky have issued general resolutions to support development of new nuclear power plants, while many other state or local governments have issued resolutions to support the construction of particular nuclear plants.157 The many states that have recently implemented financial incentives for construction of new nuclear power plants to supplement federal programs, and the states that have released policies in support of nuclear development signify the increasing and widespread support for new nuclear power. Additionally, certain local municipalities and counties have discussed adding nuclear power to their local clean/sustainable energy initiatives. For example, Calvert County in Maryland entered into an agreement with a nuclear power developer providing for a fifty percent tax credit against property taxes for fifteen years so long as the developer invests at least $2.5 million in improvements or equipment in the county and creates at least twenty-five new jobs with salaries above the county median salary.158 It is interesting to note that the Calvert County action reflects a growing recognition that nuclear energy will boost the number of high paying professional jobs in the markets where new nuclear power plants are located.159 Having described a number of state-level policies aimed at spurring new development, arguably the most important of all state-level policy initiatives aimed at promoting development of new nuclear power plants is the same policy initiative that drives renewable projects, the renewable portfolio standard, which we describe in detail in the next section.

### 1NC

OBJECTIVISM

#### ---Government energy incentives are self-defeating --- The affirmative’s political planning lays the foundation for a new totalitarian priesthood.

Epstein 2009

Alex, founder and director of the Center for Industrial Progress, Energy at the Speed of Thought: The Original Alternative Energy Market, TOS Vol. 4, No. 2.

What is the solution? We just need the right government “energy plan,” leading politicians, intellectuals, and businessmen tell us. Of course “planners” such as Barack Obama, John McCain, Al Gore, Thomas L. Friedman, T. Boone Pickens, and countless others favor different plans with different permutations and combinations of their favorite energy sources (solar, wind, biomass, ethanol, geothermal, occasionally nuclear and natural gas) and distribution networks (from decentralized home solar generators to a national centralized so-called smart grid). But each agrees that there must be a plan—that the government must lead the energy industry using its power to subsidize, mandate, inhibit, and prohibit. And each claims that his plan will lead to technological breakthroughs, more plentiful energy, and therefore a higher standard of living. Consider Nobel Peace Prize winner Al Gore, who claims that if only we follow his “repower American plan”—which calls for the government to ban and replace all carbon-emitting energy (currently 80 percent of overall energy and almost 100 percent of fuel energy)4 in ten years—we would be using fuels that are not expensive, don’t cause pollution and are abundantly available right here at home. . . . We have such fuels. Scientists have confirmed that enough solar energy falls on the surface of the earth every 40 minutes to meet 100 percent of the entire world’s energy needs for a full year. Tapping just a small portion of this solar energy could provide all of the electricity America uses. And enough wind power blows through the Midwest corridor every day to also meet 100 percent of US electricity demand. Geothermal energy, similarly, is capable of providing enormous supplies of electricity for America. . . . [W]e can start right now using solar power, wind power and geothermal power to make electricity for our homes and businesses.5 And Gore claims that, under his plan, our vehicles will run on “renewable sources that can give us the equivalent of $1 per gallon gasoline.”6 Another revered thinker, Thomas L. Friedman, also speaks of the transformative power of government planning, in the form of a government-engineered “green economy.” In a recent book, he enthusiastically quotes an investor who claims: “The green economy is poised to be the mother of all markets, the economic investment opportunity of a lifetime.”7 Friedman calls for “a system that will stimulate massive amounts of innovation and deployment of abundant, clean, reliable, and cheap electrons.”8 How? Friedman tells us that there are two ways to stimulate innovation—one is short-term and the other is long-term—and we need to be doing much more of both. . . . First, there is innovation that happens naturally by the massive deployment of technologies we already have [he stresses solar and wind]. . . . The way you stimulate this kind of innovation—which comes from learning more about what you already know and doing it better and cheaper—is by generous tax incentives, regulatory incentives, renewable energy mandates, and other market-shaping mechanisms that create durable demand for these existing clean power technologies. . . . And second, there is innovation that happens by way of eureka breakthroughs from someone’s lab due to research and experimentation. The way you stimulate that is by increasing government-funded research. . . .9 The problem with such plans and claims: Politicians and their intellectual allies have been making and trying to implement them for decades—with nothing positive (and much negative) to show for it. For example, in the late 1970s, Jimmy Carter heralded his “comprehensive energy policy,” claiming it would “develop permanent and reliable new energy sources.” In particular, he (like many today) favored “solar energy, for which most of the technology is already available.” All the technology needed, he said, “is some initiative to initiate the growth of a large new market in our country.”10 Since then, the government has heavily subsidized solar, wind, and other favored “alternatives,” and embarked on grand research initiatives to change our energy sources—claiming that new fossil fuel and nuclear development is unnecessary and undesirable. The result? Not one single, practical, scalable source of energy. Americans get a piddling 1.1 percent of their power from solar and wind sources,11 and only that much because of national and state laws subsidizing and mandating them. There have been no “eureka breakthroughs,” despite many Friedmanesque schemes to induce them, including conveniently forgotten debacles such as government fusion projects,12 the Liquid Fast Metal Breeder Reactor Program,13 and the Synfuels Corporation.14 Many good books and articles have been written—though not enough, and not widely enough read—chronicling the failures of various government-sponsored energy plans, particularly those that sought to develop “alternative energies,” over the past several decades.15 Unfortunately, the lesson that many take from this is that we must relinquish hope for dramatic breakthroughs, lower our sights, and learn to make do with the increasing scarcity of energy. But the past failures do not warrant cynicism about the future of energy; they warrant cynicism only about the future of energy under government planning. Indeed, history provides us ample grounds for optimism about the potential for a dynamic energy market with life-changing breakthroughs—because America once had exactly such a market. For most of the 1800s, an energy market existed unlike any we have seen in our lifetimes, a market devoid of government meddling. With every passing decade, consumers could buy cheaper, safer, and more convenient energy, thanks to continual breakthroughs in technology and efficiency—topped off by the discovery and mass availability of an alternative source of energy that, through its incredible cheapness and abundance, literally lengthened and improved the lives of nearly everyone in America and millions more around the world. That alternative energy was called petroleum. By studying the rise of oil, and the market in which it rose, we will see what a dynamic energy market looks like and what makes it possible. Many claim to want the “next oil”; to that end, what could be more important than understanding the conditions that gave rise to the first oil? Today, we know oil primarily as a source of energy for transportation. But oil first rose to prominence as a form of energy for a different purpose: illumination. For millennia, men had limited success overcoming the darkness of the night with man-made light. As a result, the day span for most was limited to the number of hours during which the sun shone—often fewer than ten in the winter. Even as late as the early 1800s, the quality and availability of artificial light was little better than it had been in Greek and Roman times—which is to say that men could choose between various grades of expensive lamp oils or candles made from animal fats.16 But all of this began to change in the 1820s. Americans found that lighting their homes was becoming increasingly affordable—so much so that by the mid-1860s, even poor, rural Americans could afford to brighten their homes, and therefore their lives, at night, adding hours of life to their every day.17 What made the difference? Individual freedom, which liberated individual ingenuity. The Enlightenment and its apex, the founding of the United States of America, marked the establishment of an unprecedented form of government, one established explicitly on the principle of individual rights. According to this principle, each individual has a right to live his own life solely according to the guidance of his own mind—including the crucial right to earn, acquire, use, and dispose of the physical property, the wealth, on which his survival depends. Enlightenment America, and to a large extent Enlightenment Europe, gave men unprecedented freedom in the intellectual and economic realms. Intellectually, individuals were free to experiment and theorize without restrictions by the state. This made possible an unprecedented expansion in scientific inquiry—including the development by Joseph Priestly and Antoine Lavoisier of modern chemistry, critical to future improvements in illumination.18 Economically, this freedom enabled individuals to put scientific discoveries and methods into wealth-creating practice, harnessing the world around them in new, profitable ways—from textile manufacturing to steelmaking to coal-fired steam engines to illuminants. There had always been a strong desire for illumination, and therefore a large potential market for anyone who could deliver it affordably—but no one had been able to actualize this potential. In the 1820s, however, new scientists and entrepreneurs entered the field with new knowledge and methods that would enable them to harness nature efficiently to create better, cheaper illuminants at a profit. Contrary to those who believe that the government is necessary to stimulate, invest in, or plan the development of new energy sources, history shows us that all that is required is an opportunity to profit. That said, profiting in the illumination industry was no easy task. The entrenched, animal-based illuminants of the time, whatever their shortcomings, had long histories, good reputations, refined production processes, established transportation networks and marketing channels, and a large user base who had invested in the requisite lamps. In other words, animal-based illuminants were practical. For a new illumination venture to be profitable, it would have to create more value (as judged by its customers) than it consumed. A successful alternative would not only have to be a theoretical source of energy, or even work better in the laboratory; it would have to be produced, refined, transported, and marketed efficiently—or it would be worthless. Unlike today, no government bureaucrats were writing big checks for snazzy, speculative PowerPoint presentations or eye-popping statistics about the hypothetical potential of a given energy source. Thus, scientists and entrepreneurs developed illumination technologies with an eye toward creating real value on the market. They began exploring all manner of potential production materials—animal, vegetable, and mineral—and methods of production and distribution. Many of their attempts failed, such as forays into fish oils and certain plant oils that proved unprofitable for reasons such as unbearable smell, high cost of mass production, and low-quality light.19 But, out of this torrent of entrepreneurial exploration and experimentation, three illumination breakthroughs emerged. One, called camphene, came from the work of the enterprising scientist Isaiah Jennings, who experimented with turpentine. If turpentine could create a quality illuminant, he believed, the product held tremendous commercial potential as the lowest-cost illuminant on the market: Unlike animal fat, turpentine was neither in demand as a food product nor as a lubricant. Jennings was successful in the lab, and in 1830, he took out a patent for the process of refining turpentine into camphene. The process he patented was a form of distillation—boiling at different temperatures in order to separate different components—a procedure that is vital to the energy industry to this day. Before camphene could succeed on the market, Jennings and others had to solve numerous practical problems. For example, they discovered that camphene posed the threat of explosion when used in a standard (animal) oil lamp. The initial solution was to design new lamps specifically for use with camphene—but this solution was inadequate because the money saved using camphene would barely defray the expense of a new lamp. So, producers devised methods that enabled customers to inexpensively modify their existing lamps to be camphene-safe. The payoff: In the 1840s, camphene was the leading lamp oil, while use of animal oils, the higher-cost product, as illuminants declined in favor of their use as lubricants. Camphene was the cheapest source of light to date, creating many new customers who were grateful for its “remarkable intensity and high lighting power.”20 Second, whereas Jennings had focused on developing a brand-new source of illumination, another group of entrepreneurs—from, of all places, the Cincinnati hog industry—saw an opportunity to profitably improve the quality of light generated from animal lard, an already widely used source of illumination. At the time, the premium illuminant in the market was sperm whale oil, renowned for yielding a safe, consistent, beautiful light—at prices only the wealthy could afford. In the 1830s, soap makers within the hog industry set out to make traditional lard as useful for illumination as the much scarcer sperm whale oil. They devised a method of heating lard with soda alkali, which generated two desirable by-products that were as good as their sperm equivalents but less expensive: a new lard oil, dubbed stearin oil, for lamps and stearic acid for candles. This method, combined with a solid business model employing Cincinnati’s feedstock of hogs, created a booming industry that sold 2 million pounds of stearin products annually. The price of stearin oil was one third less than that of sperm whale oil, making premium light available to many more Americans.21 Thus camphene and stearin became leaders in the market for lamps and candles—both portable sources ofillumination. The third and final new form of illumination that emerged in the early 1800s was a bright, high-quality source of illumination delivered via fixed pipes to permanent light fixtures installed in homes and businesses. In the 17th century, scientists had discovered that coal, when heated to extremely high temperatures (around 1600 degrees), turns into a combustible gas that creates a bright light when brought to flame. In 1802, coal gas was used for the first time for commercial purposes in the famous factory of Boulton & Watt, near Birmingham, England.22 Soon thereafter, U.S. entrepreneurs offered coal gas illumination to many industrial concerns—making possible a major extension of the productive day for businesses, and thus increasing productivity throughout American industry. Initially, the high cost of the pipes and fixtures required by gas lighting precluded its use in homes. But entrepreneurs devised more efficient methods of installing pipes in order to bring gas into urban homes, and soon city dwellers in Baltimore, Boston, and New York would get more useful hours out of their days. Once the infrastructure was in place, the light was often cheaper than sperm whale oil, and was reliable, safe, and convenient. As a result, during the 1830s and 1840s, the coal-gas industry grew at a phenomenal rate; new firms sprang up in Brooklyn, Bristol (Rhode Island), Louisville, New Orleans, Pittsburgh, and Philadelphia.23 By the 1840s, after untold investing, risk-taking, thinking, experimentation, trial, error, failures, and success, coal gas, camphene, and stearin producers had proven their products to be the best, most practical illuminants of the time—and customers eagerly bought them so as to bring more light to their lives than ever before. But this was only the beginning. Because the market was totally free, the new leaders could not be complacent; they could not prevent better ideas and plans from taking hold in the marketplace. Unlike the static industries fantasized by today’s “planners,” where some government-determined mix of technologies produces some static quantity deemed “the energy Americans need,” progress knew no ceiling. The market in the 19th century was a continuous process of improvement, which included a constant flow of newcomers who offered unexpected substitutes that could dramatically alter Americans’ idea of what was possible and therefore what was “needed.” In the early 1850s, entrepreneurs caused just such a disruption with a now-forgotten product called coal oil.24 Coal oil initially emerged in Europe, which at the time also enjoyed a great deal of economic freedom. Scientists and entrepreneurs in the field of illumination were particularly inclined to look for illuminants in coals and other minerals because of the relative scarcity of animal and vegetable fats, and correspondingly high prices for both. Beginning with the French chemist A. F. Selligue, and continuing with the British entrepreneur James Young, Europeans made great strides in distilling coal at low heat (as against the high heat used to create coal gas) to liquefy it, and then distilling it (as Jennings had distilled turpentine into camphene) to make lamp oil and lubricants that were just as good as those from animal sources. Coal was plentiful, easy to extract in large quantities, and therefore cheap. The primary use of coal oil in Europe, however, was as a lubricant. In North America, the primary use would be as an illuminant. Beginning in the 1840s, a Canadian physician named Abraham Gesner, inspired by the Europeans, conducted experiments with coal and was able to distill a quantity of illuminating oil therefrom. Gesner conceived a business plan (like so many scientists of the day, he was entrepreneurial), and teamed with a businessman named Thomas Cochrane to purchase an Alberta mining property from which he could extract a form of coal (asphaltum), refine it at high quality, and sell it below the going price for camphene. But in 1852 the project was aborted—not because the owners lost the means or will to see it through, but because the Canadian government forbade it. The government denied that the subsurface minerals belonged to those who harnessed their value; it held that they were owned by the Crown, which did not approve of this particular use. Gesner’s experience in Canada highlights a vital precondition of the rapid development of the American illumination energy industry: the security of property rights. All of the industries had been free to acquire and develop the physical land and materials necessary to create the technologies, make the products, and bring them to market based on the entrepreneurs’ best judgment. They had been free to cut down trees for camphene, raise hogs for stearin, and mine coal and build piping for gas lighting, so long as they were using honestly acquired property. And this freedom was recognized as a right, which governments were forbidden to abrogate in the name of some “higher” cause, be it the Crown or “the people” or the snail darter or protests by those who say, “Not in my backyard” about other people’s property. Because property rights were recognized, nothing stopped them from acting on their productive ideas. Had property rights not been recognized, all their brilliant ideas would have been like Gesner’s under Canadian rule: worthless. Not surprisingly, Gesner moved to the United States. He set up a firm, the New York Kerosene Company, whose coal-oil illuminant, kerosene, was safer and 15 percent less expensive than camphene, more than 50 percent less expensive than coal gas, 75 percent less expensive than lard oil, and 86 percent less expensive than sperm whale oil. Unfortunately, this was not enough for Gesner to succeed. His product suffered from many problems, such as low yields and bad odor, and was not profitable. However, his limited successes had demonstrated that coal’s abundance and ease of refining made it potentially superior to animal and vegetable sources. That potential was fully actualized by a businessman named Samuel Downer and his highly competent technical partners, Joshua Merrill and Luther Atwood. Downer had devoted an existing company to harnessing a product called “coup oil,” the properties of which rendered it uncompetitive with other oils. Recognizing the hopelessness of coup oil, Downer set his sights on coal-oil kerosene. Downer’s firm made major advances in refining technology, including the discovery of a more efficient means of treating refined oil with sulfuric acid, and of a process called “cracking”—also known as “destructive distillation”—which uses high heat to break down larger molecules into smaller ones, yielding higher amounts of the desired substance, in this case kerosene. (Unbeknownst to all involved, these discoveries would be vital to the undreamed of petroleum industry, which would emerge in the near future.) By 1859, after much effort went into developing effective refining processes and an efficient business model, Downer’s firm was able to make large profits by selling kerosene at $1.35 a gallon—a price that enabled more and more Americans to light their houses more of the time. Others quickly followed suit, and by decade’s end, businessmen had started major coal-oil refineries in Kentucky, Cincinnati, and Pittsburgh. The industry had attracted millions in investment by 1860, and was generating revenues of $5 million a year via coal oil—a growing competitor to coal gas, which was generating revenues of $17 million a year and had attracted $56 million (more than $1 billion in today’s dollars) in investment.25 As the 1850s drew to a close, coal oil and coal gas were the two leading illuminants. These new technologies brightened the world for Americans and, had the evolution of illumination innovation ended here, most Americans of the time would have died content. Their quality of life had improved dramatically under this energy revolution—indeed, so dramatically that, were a comparable improvement to occur today, it would dwarf even the most extravagant fantasies of today’s central planners. This points to a crucial fact that central planners cannot, do not, or will not understand: The source of an industry’s progress is a free market—a market with real economic planning, profit-driven individual planning. The revolution in illumination was a process of thousands of entrepreneurs, scientists, inventors, and laborers using their best judgment to conceive and execute plans to make profits—that is, to create the most valuable illuminant at the lowest cost—with the best plans continually winning out and raising the bar. As a result, the state of the market as a whole reflected the best discoveries and creativity of thousands of minds—a hyperintelligent integration of individual thinking that no single mind, no matter how brilliant, could have foreseen or directed. Who knew in 1820 that, of all the substances surrounding man, coal—given its physical properties, natural quantities, and costs of extraction and production—would be the best source for inexpensive illumination? Who knew all the thousands of minute, efficiency-producing details that would be reflected in the operations of the Samuel Downer Company—operations developed both by the company and by decades of trial and error on the market? Consider, then, what it would have meant for an Al Gore or Thomas Friedman or Barack Obama to “plan” the illumination energy market. It would have meant pretending to know the best technologies and most efficient ways of harnessing them and then imposing a “plan.” And, given that neither Gore nor Friedman nor anyone else could possibly possess all the knowledge necessary to devise a workable plan, what would their “plan” consist of? It would consist of what all central planners’ “plans” consist of: prohibition, wealth transfers, and dictates from ignorance. Depending on when the “planners” began their meddling and who was whispering in their ear, they might subsidize tallow candles or camphene, thereby pricing better alternatives out of the market or limiting lighting choices to explosive lamps. Thankfully, there was no such “planner”—there were only free individuals seeking profit and free individuals seeking the best products for their money. That freedom enabled the greatest “eureka” of them all—from an unlikely source. George Bissell was the last person anyone would have bet on to change the course of industrial history. Yet this young lawyer and modest entrepreneur began to do just that in 1854 when he traveled to his alma mater, Dartmouth College, in search of investors for a venture in pavement and railway materials.26 While visiting a friend, he noticed a bottle of Seneca Oil—petroleum—which at that time was sold as medicine. People had known of petroleum for thousands of years, but thought it existed only in small quantities. This particular bottle came from an oil spring on the land of physician Dr. Francis Beattie Brewer in Titusville, Pennsylvania, which was lumber country. At some point during or soon after the encounter, Bissell became obsessed with petroleum, and thought that he could make a great business selling it as an illuminant if, first, it could be refined to produce a high quality illuminant, and, second, it existed in substantial quantities. Few had considered the first possibility, and most would have thought the second out of the question. The small oil springs or seeps men had observed throughout history were thought to be the mere “drippings” of coal, necessarily tiny in quantity relative to their source. But Bissell needed no one’s approval or agreement—except that of the handful of initial investors he would need to persuade to finance his idea. The most important of these was Brewer, who sold him one hundred acres of property in exchange for $5,000 in stock in Bissell’s newly formed Pennsylvania Rock Oil Company of New York. To raise sufficient funds to complete the project, Bissell knew that he would have to demonstrate at minimum that petroleum could be refined into a good illuminant. He solicited Benjamin Silliman Jr., a renowned Yale chemist, who worked with the petroleum, refined it, and tested its properties for various functions, including illumination. After collecting a $500 commission (which the crash-strapped firm could barely put together), Silliman delivered his glowing report: 50 percent of crude petroleum could be refined into a fine illuminant and 90 percent of the crude could be useful in some form or another. Proof of concept in hand, Bissell raised just enough money to enact the second part of his plan: to see if oil could be found in ample quantities. According to the general consensus, his plan—to drill for oil—was unlikely to uncover anything. (One of Bissell’s investors, banker James Townsend, recalled his friends saying, “Oh, Townsend, oil coming out of the ground, pumping oil out of the earth as you pump water? Nonsense! You’re crazy.”) But Bissell’s organization had reason to suspect that the consensus was wrong—mostly because saltwater driller Samuel Kier had inadvertently found modest quantities of oil apart from known coal deposits, which contradicted the coal-drippings theory. And so Bissell proceeded, albeit with great uncertainty and very little money. He sent Edwin Drake, a former railroad conductor and jack-of-many-trades, to Titusville to find oil. Drake and his hired hands spent two years and all the funds the company could muster, but after drilling to 69.5 feet with his self-made, steam-powered rig, he found nothing. Fortunately, just as the investors told Drake to wrap up the project, his crew noticed oil seeping out of the rig. Ecstatic, they attempted to pump the oil out of the well—and succeeded. With that, a new industry was born. That is, a new potential industry was born. In hindsight we know that oil existed in quantities and had physical qualities that would enable it to supplant every other illuminant available at the time. But this was discovered only later by entrepreneurs with the foresight to invest time and money in the petroleum industry. Bissell and other oilmen faced a difficult battle. They had to extract, refine, transport, and market at a profit this new, little-understood material, whose ultimate quantities were completely unknown—while vying for market share with well-established competitors. Fortunately, they were up to the task, and many others would follow their lead. When word got out about Drake’s discovery, a “black gold” rush began, a rush to buy land and drill the earth for as much of this oil as possible. For example, upon seeing Drake’s discovery, Jonathan Watson, a lumber worker on Brewer’s land, bought what would become millions of dollars worth of oil land. George Bissell did the same. Participants included men in the lumber industry, salt borers turned oil borers, and others eager to take advantage of this new opportunity.27 Progress in this new industry was messy and chaotic—and staggering. In 1859, a few thousand barrels were produced; in 1860, more than 200,000; and in 1861, more than 2 million.28 Capital poured in from investors seeking to tap into the profits. In the industry’s first five years, private capitalists invested $580 million—$7 billion in today’s dollars.29 Even in the middle of the 19th century, when wealth was relatively scarce, the supposed problem of attracting capital to fund the development of a promising energy source did not exist so long as the energy source was truly promising. As producers demonstrated that enormous quantities of oil existed, they created a huge profit opportunity for others to build businesses performing various functions necessary to bring oil to market. At first, would-be transporters were hardly eager to build rail lines to Titusville, and would-be refiners were hardly eager to risk money on distillation machines (“stills”) that might not see use. As such, the oil industry was not functioning efficiently, and much of the oil produced in the first three years went to waste. The oil that did not go to waste was expensive to bring to market, requiring wagon-driving teamsters to haul it 20–40 miles to the nearest railroad station in costly 360-pound barrels.30 But once production reached high levels, driving crude oil prices down, the transportation, refining, and distribution of oil attracted much investment and talent. An early, price-slashing solution to transportation problems was “pond fresheting.” Entrepreneurial boatmen on Oil Creek and the Alleghany River, which led to Pittsburgh, determined that they could offer cheaper transportation by strapping barrels of oils on rafts and floating them down the river. But this only worked half the year; the rest of the time, water levels were too low. The ingenious workaround they devised was to pay local dam owners to release water (“freshet”) at certain points in the year in order to raise water levels, thereby enabling them to float their rafts downstream. The method worked, and Pittsburgh quickly became the petroleum refining capital of America.31 Railroads entered the picture as well, building lines to new cities, which allowed them to become refining cities. In 1863, the Lake Shore Railroad built a line to Cleveland, inspiring many entrepreneurs to establish refineries there—including a 23-year-old named John Rockefeller.32 Another innovation in oil transport was “gathering lines”—small several-mile-long pipelines that connected drilling sites to local storage facilities or railroads. At first, gathering lines were halted by the Pennsylvania government’s lax enforcement of property rights; the politically-influential teamsters would tear down new pipelines, and the government would look the other way. But once rights were protected, gathering lines could be constructed quickly for any promising drilling site, enabling sites to pump oil directly to storage facilities or transportation centers without the loss, danger, and expense of using barrels and teamsters. Still another innovation was the tank car. These special railroad cars could carry far more oil than could normal boxcars loaded with barrels, and, once certain problems were solved (wood cars were replaced by iron cars and measures were taken to prevent explosion), they became the most efficient means of transportation.33 In the area of refining, innovation was tremendous. Certain industry leaders, such as Joshua Merrill of the Samuel Downer Company and Samuel Andrews of Clark, Rockefeller, and Andrews (later to be named Standard Oil), continuously experimented to solve difficulties associated with the refining process. To refine crude oil is to extract from it one or more of its valuable “fractions,” such as kerosene for illumination, paraffin wax for candles, and gasoline for fuel. The process employs a still to heat crude oil at multiple, increasing temperatures to boil off and separate the different fractions, each of which has a different boiling point. Distillation is simple in concept and basic execution, but to boil off and bottle kerosene was hugely problematic: Impure kerosene could be highly noxious and highly explosive. Additionally, early stills did not last very long, yielded small amounts of kerosene per unit, took hours upon hours to cool between batches, and raised numerous other challenges. Throughout the 1860s, the leading refiners experimented with all aspects of the refining process: Should stills be shaped horizontally or vertically? How should heat be applied for evenness of temperature? How can the life of the still be maximized? How can the tar residue at the bottom be cleaned quickly and with as little damage to the still as possible? What procedures should one employ to purify the kerosene once distillation has been performed? When the process involves a chemical treatment, how much of that treatment should be used? Is it profitable to “crack” the oil, heating it at high temperature to create more kerosene molecules, which creates more kerosene per barrel but takes longer and requires expensive purification procedures? The leading refiners progressively asked and answered these questions, and profited immensely from the knowledge they gained. By the end of the 1860s, the basics of refining technology had been laid down,34 though it would not be until the 1870s—the Rockefeller era—that they would be employed industry-wide. On the marketing and distribution end, kerosene became a widely available good. Refining firms made arrangements with end sellers, most notably wholesale grocers and wholesale druggists, to sell their product. Rockefeller’s firm was a pioneer in international sales, setting up a New York office to sell kerosene all around the world—where it was in high demand thanks to its quality and cheapness, and to the lack of alternatives.35 The pace of growth of the oil industry was truly phenomenal. Within five years of its inception, with no modern communication or construction technology, the industry had made light accessible to even some of the poorest Americans. In 1864, a chemist wrote: Kerosene has, in one sense, increased the length of life among the agricultural population. Those who, on account of the dearness or inefficiency of whale oil, were accustomed to go to bed soon after the sunset and spend almost half their time in sleep, now occupy a portion of the night in reading and other amusements.36 Within five years, an unknown technology and an unimagined industry had become a source of staggering wealth creation. Had the early days of this industry been somehow filmed, one would see oilmen in every aspect of the business building up an enormous industry, moving as if the film were being fast-forwarded. Almost nothing in history rivals this pace of development, and it is inconceivable today that any construction-heavy industry could progress as quickly. It now takes more than five years just to get a permit to start building an oil derrick, let alone to complete the derrick, much less thousands of them. But in the mid-1800s, no drilling permits or other government permissions were required to engage in productive activity. This did not mean that oilmen could pollute at will—property rights laws prohibited polluting others’ property (though some governments, unfortunately, were lax in their enforcement of such laws). It did mean that, for the most part, they were treated as innocent until proven guilty; and they knew that so long as they followed clearly defined laws, their projects would be safe.37 Anyone with an idea could implement it as quickly as his abilities permitted. If he thought a forest contained a valuable mineral, he could buy it. If he thought drilling was the best means of extracting the mineral, he could set up a drilling operation. If he thought a railroad or a pipeline was economical, he could acquire the relevant rights-of-way, clear the land, and build one. If he thought he could do something better than others, he could try—and let the market be the judge. And he could do all of these things by right, without delay—in effect, developing energy at the speed of thought. As one prominent journalist wrote: It is certain . . . the development [of the petroleum industry] could never have gone on at anything like the speed that it did except under the American system of free opportunity. Men did not wait to ask if they might go into the Oil Region: they went. They did not ask how to put down a well: they quickly took the processes which other men had developed for other purposes and adapted them to their purpose. . . . Taken as a whole, a truer exhibit of what must be expected of men working without other regulation than that they voluntarily give themselves is not to be found in our industrial history.38 Imagine if George Bissell and Edwin Drake were to pursue the idea of drilling for oil in today’s political context. At minimum, they would have to go through a multiyear approval process in which they would be required to do environmental impact studies documenting the expected impact on every form of local plant and animal life. Then, of course, they would have to contend with zoning laws, massive taxes, and government subsidies handed to their competitors. More likely, the EPA would simply ax the project, declaring Titusville “protected” government land (the fate of one-third of the land in the United States today). More likely still, Bissell would not even seriously consider such a venture, knowing that the government apparatus would wreck it with unbearable costs and delays, or a bureaucratic veto. The speed of progress depends on two things: the speed at which men can conceive of profitable means of creating new value—and the speed at which they can implement their ideas. Since future discoveries depend on the knowledge and skills gained from past discoveries, delays in market activity retard both the application and the discovery of new knowledge. In 1865, members of the oil industry experienced a tiny fraction of the government interference with which the modern industry regularly contends: the Civil War’s Revenue Act of 1865. This was a $1 per barrel tax on crude inventory—approximately 13 percent of the price. This Act “slowed drilling to a virtual standstill” and “put hundreds of marginal producers out of business” by eating into businesses’ investment and working capital.39 Remarkably, the damage done by the Act scared the government away from taxing crude and oil products for decades, an effective apologyforits previous violation of property rights. Such was the general economic climate of the time. After the brief but crushing bout of confiscatory taxation, the economic freedom that made possible the rise of the oil industry resumed, as did the industry’s explosive growth. In 1865, kerosene cost 58 cents a gallon, much less expensive than any prior product had been—and half the price of coal oil.40 But entrepreneurs did not have time to revel in the successes of the past. They were too busy planning superior ventures for the future—knowing that with creativity they could always come up with something better, and that customers would always reward better, cheaper products. The paragon of this relentless drive to improve was Rockefeller, who developed a new business structure that would bring the efficiency of oil refining—and ultimately, the whole process of producing and selling oil—to new heights. Rockefeller was obsessed with efficiency and with careful accounting of profit and loss. In seeking to maximize his efficiency, he had one central realization that steered the fate of his company: Tremendous efficiency could be achieved through scale. From his first investment in a refinery in 1863, when he built the largest refinery in Cleveland, to his continual borrowing to expand the size of his operations, Rockefeller realized that the more oil he refined, the more he could invest in expensive but efficient devices and practices whose often-high costs could be spread over a large number of units. He created barrel-making facilities that cut his barrel costs from $3 to $1 each. He built large-scale refineries that required less labor per barrel. He purchased a fleet of tank cars, and created an arrangement with a railroad that lowered his costs from $900,000 to $300,000 a trip. (Such savings are the real basis of Rockefeller’s much-maligned rebates from railroads.) Rockefeller’s improvements, which can be enumerated almost indefinitely, helped lower the prevailing per-gallon price of kerosene from 58 cents in 1865, to 26 cents in 1870—a price at which most of his competitors could not afford to stay in business—to 8 cents in 1880. These incredible prices represented the continuous breakthroughs that the Rockefeller-led industry was making. Every five years marked another period of dramatic progress—whether through long-distance pipelines that eased distribution or through advances in refining that made use of vast deposits of previously unrefinable oil. Oil’s potential was so staggering that no alternative was necessary. But then someone conceived of one: the electric lightbulb. Actually, many men had conceived of electric lightbulbs in one form or another; but Thomas Edison, beginning in the late 1870s, was the first to successfully develop one that was practical and potentially profitable. Edison’s lightbulb lasted hundreds of hours, and was conceived as part of a practical distribution network—the Edison system, the first electrical utility and distribution grid. As wonderful as kerosene was, it generated heat and soot and odor and smoke and had the potential to explode; lightbulbs did not. Thus, as soon as Edison’s lightbulb was announced, the stock prices of publicly traded oil refiners plummeted. Oil, it appeared, was no longer the future of illumination energy; electricity was. This fact, and the competitive pressures it placed on the oil industry, prompted entrepreneurs to figure out whether their product could enjoy comparable consumer demand in any other sphere, inside or outside of the energy industry. They worked to expand the market for oil as a lubricant and as a fuel for railroads and tankers. But the fate of the industry would hinge on the rise of the automobile in the 1890s.41 It is little known that most builders of automobiles did not intend them to run on gasoline. Given the growth and popularity of electricity at the time, many cars were designed to run on electric batteries, whereas other cars ran on steam or ethanol. Gasoline’s dominance was not a fait accompli. If the market had not been free, the electric car would likely have been subsidized into victory, given the obsession with electricity at the time. But when the technologies were tested in an open market, oil/gasoline won out—because of the incredible efficiency of the Rockefeller-led industry coupled with gasoline’s energy density. Per unit of mass and volume, it could take a car farther than an electric battery or a pile of coal or a vat of ethanol (something that remains true to this day). Indeed, Thomas Edison himself explained this to Henry Ford, in a story told by electricity entrepreneur Samuel Insull. “He asked me no end of details,” to use Mr. Ford’s own language, “and I sketched everything for him; for I have always found that I could convey an idea quicker by sketching than by just describing it.” When the conversation ended, Mr. Edison brought his fist down on the table with a bang, and said: “Young man, that’s the thing; you have it. Keep at it. Electric cars must keep near to power stations. The storage battery is too heavy. Steam cars won’t do, either, for they require a boiler and fire. Your car is self-contained—carries its own power plant—no fire, no boiler, no smoke and no steam. You have the thing. Keep at it.”. . . And this at a time when all the electrical engineers took it as an established fact that there could be nothing new and worthwhile that did not run by electricity.42 By 1912, gasoline had become a staple of life—and was on the way to changing it even more than kerosene had. A trade journal from 1912, Gasoline—The Modern Necessity, read: It seems almost unbelievable that there was once a time when the refiners and manufacturers of petroleum products concerned themselves seriously with finding a market for the higher distillates. At the present time it is the higher distillate known as gasoline that is giving not alone the refiners grave concern but modern civilization as well. Then it was how to find an adequate and profitable market for it; now it is how to meet the ever-increasing demand for it.43 Oil was the ultimate alternative energy—first for illumination, then for locomotion. In a mere half century, oil went from being useless black goo to the chief energy source leading the illumination and mobilization of the world. Young couples filling up their automobiles in 1910 had nary a clue as to how much thought and knowledge went into their ability to power their horseless carriages so cheaply and safely. Nor did most appreciate that all of this depended on a political system in which the government’s recognition and protection of the right to property and contract enabled businessmen to develop the world around them, risk their time and money on any innovation they chose, and profit from the results. If we compare today’s “planned” energy market to the rights-respecting energy market that brought about the emergence of oil, we can see in concrete fact the practicality of a genuinely free market. Instead of protecting property rights and unleashing the producers of energy to discover the best forms of energy and determine how best to deploy them (which includes genuine privatization of the electricity grid and other transcontinental development),44 our government randomly dictates what the future is to be. Today, we are told, as if it were written in the stars, that plug-in hybrids powered by solar and wind on a “smart grid” are the way to go—a claim that has no more validity than an 1860s claim that a network of wagon drivers should deliver coal oil nationwide. What sources of energy are best pursued and how best to pursue them can be discovered only by millions of minds acting and interacting freely in the marketplace—where anyone with a better idea is free to prove it and unable to force others to fund his pursuit. When the government interferes in the marketplace, countless productive possibilities are precluded from coming into existence. Today’s government as “energy planner” not only thwarts the market by coercively subsidizing the “right” energy technologies; it damages the market by opposing or even banning the “wrong” energy technologies or business models. Today’s energy policy severely restricts the production of every single practical, scalable form of energy: coal, natural gas, oil, and, above all, nuclear. Nuclear energy deserves special mention because it has tremendous proven potential, the result of its incredible energy density: more than one million times that of any fossil fuel—which, unlike oil, coal, or natural gas, has never been allowed to develop in anything resembling a free market. Thanks to environmentalist hysteria, this proven-safe source of energy has been virtually banned in the United States. And when nuclear plants have been permitted, construction costs and downtime losses have been multiplied many times over by multi-decade regulatory delays. Even in other countries, where nuclear power is much more welcome, it is under the yoke of governments and is therefore progressing at a fraction of its potential. If the scientists, engineers, and businessmen in the nuclear power industry had been able to pursue their ideas and develop their products in a free market—as oilmen once were able to do—how much better would our lives be today? What further technologies would have blossomed from that fertile foundation? Would automobiles even be running on gasoline? Would coal be used for anything anymore? And if entrepreneurs with other, perhaps even better, energy ideas had been free to put them into practice as quickly as their talents would allow—just as their 19th-century forebears had—might we by now have realized the dream of supplanting nuclear fission with nuclear fusion, which many consider the holy grail of energy potential? The fact is, we cannot even dream of what innovations would have developed or what torrents of energy would have been unleashed. As the history of the original alternative energy industry illustrates, no one can predict the revolutionary outcomes of a market process. Happily, however, with respect to the future, we can do better than dream: We can see for ourselves what kind of untapped energy potential exists, by learning from the 19th century. We can—and must—remove the political impediments to energy progress by limiting the government to the protection of rights. Then, we will witness something truly spectacular: energy at the speed of 21st-century thought.

#### ---The alternative is a question of ethics --- Reject the affirmative’s managerial self-hatred for the creative freedom of the market.

Romar 2008

Edward J., Lecturer with honors at Boston College of Management, Noble Markets: The Noble/Slave Ethic in Hayek’s Free Market Capitalism, Journal of Business Ethics, DOI 10.1007/s10551-008-9748-6

The slave revolt in morality begins when ressentiment itself becomes creative and gives birth to values: the ressentiment of natures that are denied the true reaction, that of deeds, and compensate themselves with an imaginary revenge. While every noble morality develops from the triumphant affirmation of itself, slave morality from the outset says No to what is ‘outside,’ what is ‘different,’ what is ‘not itself’; and this No is its creative deed. This inversion of the value posting eye—this need to direct one’s view outward instead of back to oneself—is of the essence of ressentiment: in order to exist, slave morality always first needs a hostile external world; it needs, physiologically speaking, external stimuli to act at all—its action is fundamentally reaction (Nietzsche, 1989b, pp. 36–37, italics in the original.) What connects the master/slave moralities is the ‘‘will to power.’’ Nietzsche considered this the primary psychological driving force of human behavior (Kaufman, 1974, p. 183). There are several references to the ‘‘will to power’’ in Beyond Good and Evil (Kaufman, 1989a, p. 203), On the Genealogy of Morals, where he likens the ‘‘will to power’’ to ‘‘an instinct for freedom’’ (Kaufman, 1989b, p. 87, italics in the original,), in Zarathustra where, according to Kaufmann, Nietzsche introduces the ‘‘will to power for the first time’’ (Kaufman, 1954, p. 7) and in The Will to Power, where it is discussed in depth. The ‘‘will to power’’ is found in both slave and master moralities. Nietzsche uses the term power in several ways. The term is used to describe the moral right of the masters to liberation and the creation of new values. The term is used to illustrate how slave morality weakens the noble and, by forcing society to accept slave morality, it leads society into decay, dependency and despair (Kaufman, 1968, p. 37). Finally, the ‘‘will to power’’ is used as a description of the noble as an individual who seeks excellence and self overcoming (Kaufman, 1974, pp. 201, 203). Power is not simply for the control of the herd, though it must play that role. The fundamental use of power is the freedom that allows individuals to be creative, to fulfill their potentiality and be their own master. In The Road to Serfdom, Hayek analyzes the major reasons why some societies descended into the tragedy of totalitarianism. He argues that these societies, in a false quest for utopia, were seduced by the promise of central planning to abandoned freedom in favor of distributive justice. Hayek analyses the practice of central planning and argues that any implementation of planning, even the most innocuous, will lead inevitably to totalitarianism. To the economist perhaps, what planning does to the economy and the production of wealth is of central importance. While this is important to the ethicist, too, what drives this choice is of equal importance. For Hayek, however, the driving force for planning and central control of the economy is the ‘‘demand for an equal distribution of wealth’’ (Hayek, 1994, p. 30). Distributive justice is offered as the road to freedom. By destroying private property it becomes the road to subservience where individual freedom is exchanged for some unachievable absolute security. Socialism is the doctrine of the slave and herd: all the docile, and gullible, who have no strong convictions of their own but are prepared to accept a ready-made system of values if it is only drummed into their ears sufficiently loudly and frequently. It will be those whose vague and imperfectly formed ideas are easily swayed and whose passions and emotions are readily aroused who will thus swell the ranks of the totalitarian party…It seems to be almost a law of human nature that it is easier for people to agree on a negative program—on the hatred of an enemy, on the envy of those better off—than on any positive task. (Hayek, 1994, p. 153) Over time this need for subservience will create a psychological dependency which will erode further freedom and independence. (T)he most important change which extensive governmental control produces is a psychological change, an alteration in the character of the people. This is necessarily a slow affair, a process which extends not over a few years but perhaps over one or two generations. The important point is that the political ideals of a people and its attitude toward authority are much the effect as the cause of the political institutions under which it lives. (Hayek, 1994, p. xxxix) For Hayek, socialism is not the only slave morality. He has equal contempt for conservatism and what he calls modern liberalism as solutions to the problem of political organization. Conservatism is found wanting because it offers only resistance to change but no alternative vision. It is fearful of change, ‘‘appeals to the timid mind’’ (Hayek, 1960, p. 400), and has a ‘‘fondness for authority’’ (Hayek, 1960, p. 400). Similarly, modern liberalism, the liberalism of Continental Europe and the English utilitarians, is found wanting because ‘‘socialist influences…have intruded into it’’ (Hayek, 1960, p. 409). If socialism, conservativism, and modern liberalism are false, Hayek is left to offer a positive moral foundation for his ‘‘Old Whig’’ society. He must offer a way to move forward toward his ideal society. For Hayek, the solution is free market capitalism as the foundation for conditions of individual freedom. For free markets to function effectively minimum regulation is required to allow for the maximum freedom. Therefore, what is needed is general agreement by all members of society to accept a minimum set of rules, which allow for maximum freedom. These rules protecting private property, individual choice and so forth, allow the greatest area for individual action. It requires individuals to be responsible for their own actions and to develop their own moral foundation. If socialism leads to a psychology of dependency, free market capitalism requires a psychology of independence. It demands that individuals take responsibility for themselves and achieve their potential. Progress and human fulfillment must be found in the crucible of market competition. Whether one succeeds or fails is immaterial; one must rejoice in the freedom to achieve one’s capabilities. The risk of success and failure are the essence of free market competition; one must take the risk and not wallow in self-pity.

### **China**

Turn soft power –

Chinese nuclear exports key to soft power

Blank-prof strategic studies institute, Army War College-6/16/10

China puts down marker in nuclear power race<http://www.atimes.com/atimes/China_Business/LF16Cb01.html>

Therefore, China's recent nuclear exports to Pakistan and the future of its nuclear exports in general need to be examined in these three contexts. The first context is that of the overall growth of the assertiveness of China's diplomacy in general and efforts to use nuclear power and military instruments like missiles as sources of influence abroad. In the case of exports to Pakistan, a second context is the long-standing geopolitical rivalry among India, China and Pakistan in which China's "all-weather" friendship with Pakistan has been a deliberate and conscious Chinese strategy to inhibit the growth of Indian power. Finally, we must keep in mind that China is not only an exporter of nuclear energy, it also is a consumer of that energy and so it will be a key market for other exports from the likes of Russia, the United States, France, South Korea, and Japan. As an importer, it obviously will welcome the rivalry of exporters who wish to sell to it so that it can obtain more favorable terms. However, as an exporter of nuclear energy and a power that wants to export more of it for both economic and political gain, it cannot afford to let either its rivals outpace it in Asia or in other areas that China deems as essential to the pursuit of its larger strategic goals.

#### Chinese soft power solves US/China confrontation---smooths over cracks by assuring neighbors

Shuli 13 (Hu Shuli is editor-in-chief of Caixin Media Company, editor-in-chief of the weekly magazine Century Weekly, executive editor-in-chief of the monthly journal China Reform and dean of the School of Communication and Design at Sun Yat-sen University. “A Sino-US relationship that competes on values,” http://www.scmp.com/comment/insight-opinion/article/1139455/sino-us-relationship-competes-values)

A new phase of Sino-American relations is poised to begin, now that Xi Jinping has been confirmed as China's next leader and Barack Obama re-elected US president. In both countries, the debate about foreign policy options has been robust, particularly on the bilateral relationship. This is the time to reflect on the past and look ahead to the future. The transfer of power has been smooth for both, with no noticeable change in the conduct of either's foreign policy. Over the past year, China has advocated a win-win relationship of mutual respect between a superpower and an emerging power. It was the approach Xi outlined on his visit to the US last February, and reiterated at November's party congress. Meanwhile, Obama introduced the policy of rebalancing in his first term and has been taking steps to effect this "pivot" towards Asia. The Sino-US relationship has never been more important, and hope is high that Obama and the new team of Xi and Li Keqiang will do more to forge a relationship of co-operation, rather than confrontation. The relationship has been highly transparent so far, and we've not seen the kind of misunderstanding, friction or behaviour to "test the water" so common with new administrations. But the lack of strategic trust remains a huge challenge for both. From Beijing's standpoint, Washington's rebalancing strategy has brought uncertainty to the region. The disputes over Scarborough Shoal and the Diaoyu Islands, as well other rows between China and its neighbours, can be understood in this context. America's determination to be a key player in Asian security has emboldened regional countries to lean on it. The result is, when involved in a row with China, these countries have become less likely to compromise. The US has repeatedly said it takes no side in the Sino-Japanese dispute over the Diaoyus. But if Japan had not been a US ally, would it have acted the way it did? Of course, without the US security guarantees, nationalism in Japan might grow even stronger and the calls to rearm through a change in the constitution might get even louder, and that would destabilise the region. The US presence in Asia will only grow, now that the Americans are slowly extricating themselves from the Middle East and Afghanistan. This is throwing a spanner in the works of China's relationship with the rest of Asia, particularly its neighbours. US officials and analysts like to describe the bilateral relationship as one of co-operation and competition; in the context of China's relations in its neighbourhood, Washington and Beijing are clear rivals. China is prepared to meet the challenge, but it should also fully prepare for any crisis. Moreover, Chinese diplomacy in the region must be more proactive to shore up the country's influence. Sino-US rivalry is risky, and leaders on either side are well aware that any mishandling could lead to devastating conflict. This is why, over the past year, China has been clear that it is seeking a new path. As President Hu Jintao urged at last year's strategic and economic dialogue, the two countries should "prove that the traditional belief that big powers are bound to enter into confrontation and conflicts is wrong, and seek new ways of developing relations between major countries in the era of economic globalisation". The striking feature of a rising power is its expanding interests, which may easily lead to conflict with the dominant power. As the world's two largest economies, China and the US must seek new ways of relating that benefit not only themselves but the rest of the world. How, then, should China respond to the US pivot to Asia? It has been China's policy to base its relationship with its neighbours on economic opportunities. Through trade and investment, China has sought to share the fruit of its growth with others in the region, and has thus built a foundation for peaceful co-operation. This effort must continue. But, as the challenges thrown up by America's strategic rebalancing have shown, a relationship built strictly on economic co-operation is not enough, and political and security concerns must also be addressed. In fact, a close economic relationship often creates such concerns. America's policy in Asia is founded not on economics, but on a vision of a secure and stable strategic order in the region. It is not surprising that this vision of a common good - coupled with the values that America likes to champion - is attractive to countries in the region. Thus, in some sense, the Sino-US rivalry is really one fought on values. In this regard, China needs to strengthen dialogue with its neighbours on politics and security matters, establish bilateral or multilateral security mechanisms, and do much more to dispel their doubts and worries. This is nothing short of a competition between the American Dream and the Chinese Dream. China has to adjust, elaborate and strengthen the substance of its Chinese Dream, to increase its moral appeal to others. Once this missing piece of the puzzle is in place, Chinese diplomacy will have found a new lease of life.

#### Tensions risk nuclear conflict over the Senkaku’s, South China sea or Taiwan.

Gross December 2012 (Donald Gross, a Pacific Forum CSIS Senior Associate, is a former White House and State Department official whose new book, The China Fallacy: How the U.S. Can Benefit from China’s Rise and Avoid Another Cold War, was published in October by Bloomsbury.

Now is the time to rethink America’s policy toward China. The United States can benefit economically from China’s rise, strengthen Chinese advocates of human rights and democracy, and avoid a new Cold War. We urgently need a national debate about U.S.–China policy to prevent doing permanent damage to American interests in Asia. Fortunately, this is a propitious period to have that debate. In the United States, President Barack Obama will shortly embark on his second term in office, so will be able to guide American foreign policy without the ever-present political pressures of a re-election campaign. In China, a new generation of leaders are coming to power with a mandate to address the country’s daunting domestic challenges—including corruption and cronyism within the Chinese Communist Party (CCP), environmental degradation, frequent “mass incidents” of social unrest, inflation, and glaring social inequalities. The leaders who take office in March—including President Xi Jinping and Premier Li Keqiang—know firsthand some of the worst excesses of the CCP. They were victims of Mao’s Great Proletarian Cultural Revolution, when an entire generation of young people—many from prominent families—were “sent down” to rural areas to perform backbreaking manual labor for years. Having experienced and survived the widespread human rights abuses that occurred between 1966 and 1976, the year of Mao’s death, China’s new leadership will be more receptive to calls for political reform from the country’s middle class and liberal intellectuals, who are highly critical of increasing corruption and cronyism within the CCCP. China’s new leaders will welcome overtures from the United States that aim to assist China in meeting its challenges. But harsh American trade measures or heightened military pressure will likely be met with a tough response, as the new leaders seek to prove their mettle and their capability to defend China’s national interests. Increased tensions with China could have dire consequences. They could lead to a military conflict over Taiwan’s political status, over whether Japan or China holds sovereignty to a group of uninhabitable islands and offshore energy resources in the East China Sea or over the ownership of small islands and energy resources in the South China Sea. In a worst case scenario, those conflicts could escalate, by accident or by design, to a nuclear exchange. It is essential to remember that China’s rise strengthens America’s economy and future prosperity. Today, China is the largest growth market in the world for U.S. goods and services. Trade with China, America’s third-largest export market and the leading market for U.S. agricultural products, has helped America’s recovery from the global financial crisis.

Turn Asia

China will undercut US leadership on non-proliferation absent strong domestic nuclear power industry

Cunningham-Policy Analyst for Energy and Climate, American Security Project-10/12

Small Modular Reactors: A Possible Path Forward for Nuclear Power

<http://americansecurityproject.org/ASP%20Reports/Ref%200087%20-%20Small%20Modular%20Reactors.pdf>

Not only does the U.S. “export” high safety standards in its reactor designs, but through 123 Agreements it requires rigorous non-proliferation measures as a requirement of doing business with American nuclear companies. With China expected to more than triple the number of installed nuclear reactors between 2011 and 2015, the U.S. may become less relevant in ensuring adequate safeguards against weapons proliferation. 6 A strong domestic nuclear industry will better position the U.S. to lead on this issue.

Chinese leadership on nuclear power export controls is key to Asian modeling

Lieggi-Monterey Institute’s Center for Non­proliferation Studies-10

From Proliferator to Model Citizen? Strategic Studies Quarterly

<http://www.au.af.mil/au/ssq/2010/summer/lieggi.pdf>

The extent to which China assisted weapons of mass destruction (WMD) and missile programs in countries like Pakistan and Iran has been well documented. Part of China’s past behavior stemmed from a fundamental disagreement with the Cold War structure of the nonproliferation regime; this ambivalence towards nonproliferation led China to undertake politically motivated proliferation activities that meshed with Beijing’s foreign policy needs at the time. In later years, particularly after China’s economy began to open in the 1980s, economic motivations also pushed Chinese entities to transfer WMD–related technologies abroad with little consideration for the ramiications on the nonproliferation regime. As China’s view of the international community (and its own place in it) changed, so too did its policy towards the proliferation of WMD. Much of this change was brought about by a mixture of factors touching on various issues facing Beijing, such as national security interests, economic stability, and international prestige. The factors that most affected China’s actions included signiicant international (particularly US) pressure placed on Beijing in the 1990s to adopt stronger nonproliferation policies, Beijing’s growing recognition that proliferation of WMD was detrimental to its own security interests, and concern within the Chinese leadership about the impact of China-based proliferation on Beijing’s acceptance as a responsible member of the world community. One of the areas within the nonproliferation regime where China has most notably changed in recent years is the field of nonproliferation related trade controls, particularly export controls. 1 In the 1980s and 1990s, China had very little in the way of controls on military-related trade; however, this began to change by the late 1990s. Between 1998 and 2002, China worked to revamp its export control system. Over the course of a few months in 2002, it promulgated a comprehensive set of export control measures for sensitive items related to WMD and other military programs. Most analysts agree that China’s system has improved since the comprehensive rules were adopted and that the system, at least on paper, is in line with international supplier regime standards. 2 Despite the legislative improvements, sales of sensitive dual-use items by Chinese companies to proliferating countries continued to concern the international community and the United States in particular. Many of the problems in the system are caused by insufficient Chinese capacity to enforce its controls. The weakest link in the Chinese export control system, as with many developing systems, is in its ability (and, some would say, political will) to enforce the restrictions that have been laid out in its legis­ lation. his area of China’s export control system has not traditionally been transparent, a fact that has added to uncertainties about Beijing’s will with regards to nonproliferation-related trade control enforcement. Beijing has been hesitant to discuss violation cases publicly, leaving many questions unanswered about its enforcement activities. Beijing has, however, made a few public announcements about export control violations since its system was revamped in 2002. hree such an­ nouncements made between 2006 and 2008 shed some light on the inner workings of China’s export control enforcement, as well as on the chal­ lenges facing it. Each of these three cases is reviewed to assess the status of China’s current enforcement capabilities. The three companies—Zibo CHEMET Equipment Company, Shanghai Smart Chemicals, Ltd., and Jilin Tumen Chemical Light Manufacturing Company—were punished for chemical-related exports, likely to Iran and North Korea. Additionally, a more recent case involving a seized shipment of dual-use materials at a border crossing with North Korea appears to show some improvements in China’s risk assessment and contraband interdiction abilities. his case is also examined. As the case studies show, China is slowly getting over the hurdles of establishing a viable export control system. Its progress in this field can be seen as a model for other countries—particularly those in Asia who face some of the same circumstances and challenges China had in the past decade. At the moment, while Beijing moves closer—however slowly—to international standards in the area of nonproliferation, many countries in Asia have yet to even begin the process of strengthening their systems. The lack of capacity in many Asian countries has had negative implications on the nonproliferation regime. The A. Q. Khan and other proliferation networks have exempliied how Asian nations with weak nonproliferation related controls can become key transshipment points for proliferators, or, as in the case of Malaysia and the Khan network, manufacturing hubs. Therefore, key areas will be identified so other Asian countries might learn from China’s experience while building their own strategic trade control frameworks. In this way, China’s system may prove to be an example for other countries in the region to selectively emulate when strengthening their own export control systems.

#### Turn Coal

#### US coal exports to China low now - downward pressure reverses this

Bryan Walsh 12, Senior Editor at TIME, May 31, 2012, “Drawing Battle Lines Over American Coal Exports to Asia,” online: http://science.time.com/2012/05/31/drawing-battle-lines-over-american-coal-exports-to-asia/

But across the Pacific Ocean, the demand for coal has never been hotter, with China burning 4.1 billion tons in 2010 alone, far more than any other country in the world. That insatiable demand forced China in 2009 to become a net coal importer for the first time, in part because congested rail infrastructure raised the cost of transporting coal from the mines of the country’s northwest to its booming southern cities. In April, Chinese coal imports nearly doubled from a year earlier. Right now Australia and Indonesia supply much of China’s foreign coal. U.S. coal from the Powder River Basin could be a perfect addition to the Chinese market. Montana and Wyoming are just short train trips to ports on the Pacific Northwest coast, and from there it’s a container ship away from Asian megacities where coal doesn’t have to compete with cheap natural gas and air-pollution regulations are far weaker than in the U.S. To a wounded Big Coal, China is a potential savior.¶ As I write in the new edition of TIME, there’s just one problem: right now, ports on the West Coast lack the infrastructure needed to transfer coal from railcars into container ships. (Just 7 million of the 107 million tons of U.S.-exported coal left the country via Pacific Ocean ports last year.) That’s why coal companies like Peabody and Ambre Energy are ready to spend millions to build coal-export facilities at a handful of ports in Washington and Oregon. If all those plans go forward, as much as 150 million tons of coal could be exported from the Northwest annually—-nearly all of it coming from the Powder -River -Basin and headed to Asia. Even if the U.S. kept burning less and less coal at home, it would have a reason to keep mining it.

#### SMRS retire US coal plants

Marcus King et al 11, Associate Director of Research, Associate Research Professor of International Affairs, Elliot School of International Affairs, The George Washington University, et al., March 2011, “Feasibility of Nuclear Power on U.S. Military Installations,” http://www.cna.org/sites/default/files/research/Nuclear%20Power%20on%20Military%20Installations%20D0023932%20A5.pdf

SMRs have potential advantages over larger plants because they provide owners more flexibility in financing, siting, sizing, and end-use applications. SMRs can reduce an owner's initial capital outlay or investment because of the lower plant capital cost. Modular components and factory fabrication can reduce construction costs and schedule duration. Additional modules can be added incrementally as demand for power increases. SMRs can provide power for applications where large plants are not needed or may not have the necessary infrastructure to support a large unit such as smaller electrical markets, isolated areas, smaller grids, or restricted water or acreage sites. Several domestic utilities have expressed considerable interest in SMRs as potential replacements for aging fossil plants to increase their fraction of non-carbon-emitting generators. Approximately 80 percent of the 1174 total operating U.S. coal plants have power outputs of less than 500 MWe; 100 percent of coal plants that are more than 50 years old have capacities below 500 MWe [3]. SMRs would be a viable replacement option for these plants.

#### US exports lock in Chinese coal and result in massive warming

Thomas M. Power 12, Research Professor and Professor Emeritus, Department of Economics, University of Montana; Principal, Power Consulting; February 2012, “The Greenhouse Gas Impact of Exporting Coal from the West Coast: An Economic Analysis,” <http://www.sightline.org/wp-content/uploads/downloads/2012/02/Coal-Power-White-Paper.pdf>

The cumulative impact of these coal port proposals on coal consumption in Asia could be much larger than even that implied by the two pending proposals. If Arch, Peabody, and other western U.S. coal producers’ projections of the competitiveness of western coal in Asia are correct, facilitating the opening of the development of West Coast coal ports could have a very large impact on the supply of coal to China and the rest of Asia.

6.4 The Long-term Implications of Fueling Additional Coal-Fired Electric Generation

Although the economic life of coal-fired generators is often given as 30 or 35 years, a permitted, operating, electric generator is kept on line a lot longer than that, as long as 50 or more years through ongoing renovations and upgrades. Because of that long operating life, the impact of the lower Asian coal prices and costs triggered by PRB coal competing with other coal sources cannot be measured by the number of tons of coal exported each year. Those lower coal costs will lead to commitments to more coal being burned for a half-century going forward.

That time-frame is very important. During exactly this time frame, the next half-century, the nations of the world will have to get their greenhouse gas emission stabilized and then reduced or the concentrations of greenhouse gases in the atmosphere may pass a point that will make it very difficult to avoid massive, ongoing, negative climate impacts. Taking actions now that encourage fifty-years of more coal consumption around the world is not a minor matter. Put more positively, allowing coal prices to rise (and more closely approximate their full cost, including “external” costs) will encourage extensive investments in improving the efficiency with which coal is used and the shift to cleaner sources of energy. This will lead to long-term reductions in greenhouse gas emissions that will also last well into the next half-century. 57

#### Coal destroys Chinese economic collapse and political stability

Schneider 11 (Keith, senior editor for Circle of Blue-a nonprofit focusing on resource shortages founded in 2000, Choke Point: China—Confronting Water Scarcity and Energy Demand in the World’s Largest Country, Feb 15, http://www.circleofblue.org/waternews/2011/world/choke-point-china%E2%80%94confronting-water-scarcity-and-energy-demand-in-the-world%E2%80%99s-largest-country/)

By any measure, conventional and otherwise, China’s tireless advance to international economic prominence has been nothing less than astonishing. Over the last decade alone, 70 million new jobs emerged from an economy that this year, according to the World Bank and other authorities, generated the world’s largest markets for cars, steel, cement, glass, housing, energy, power plants, wind turbines, solar panels, highways, high-speed rail systems, airports, and other basic supplies and civic equipment to support a modern economy. Yet, like a tectonic fault line, underlying China’s new standing in the world is an increasingly fierce competition between energy and water that threatens to upend China’s progress. Simply put, according to Chinese authorities and government reports, China’s demand for energy, particularly for coal, is outpacing its freshwater supply. Students of Chinese history and geography, of course, understand that tight supplies of fresh water are nothing new in a nation where 80 percent of the rainfall and snowmelt occurs in the south, while just 20 percent of the moisture occurs in the mostly desert regions of the north and west. What’s new is that China’s surging economic growth is prompting the expanding industrial sector, which consumes 70 percent of the nation’s energy, to call on the government to tap new energy supplies, particularly the enormous reserves of coal in the dry north. The problem, say government officials, is that there is not enough water to mine, process, and consume those reserves, and still develop the modern cities and manufacturing centers that China envisions for the region. “Water shortage is the most important challenge to China right now, the biggest problem for future growth,” said Wang Yahua, deputy director of the Center for China Study at Tsinghua University in Beijing. “It’s a puzzle that the country has to solve.” The consequences of diminishing water reserves and rising energy demand have been a special focus of Circle of Blue’s attention for more than a year. In 2010, in our Choke Point: U.S. series, Circle of Blue found that rising energy demand and diminishing freshwater reserves are two trends moving in opposing direction across America. Moreover, the speed and force of the confrontation is occurring in the places where growth is highest and water resources are under the most stress—California, the Southwest, the Rocky Mountain West, and the Southeast. Modernization vs. Water Resources In December, we expanded our reporting to China. Circle of Blue—in collaboration with the China Environment Forum (CEF) at the Washington-based Woodrow Wilson International Center for Scholars—dispatched four teams of researchers and photographers to 10 Chinese provinces. Their assignment: to report on how the world’s largest nation and second-largest economy is achieving its swift modernization, despite scarce and declining reserves of clean fresh water. In essence, Circle of Blue and CEF completed a national tour of the extensive water circulatory system and vast energy production musculature that makes China go. The result of our reporting is Choke Point: China. In a dozen chapters—starting today and posted weekly online through April—Choke Point: China will report in text, photographs, and interactive graphics the powerful evidence of a potentially ruinous confrontation between growth, water, and fuel that is already visible across China and is virtually certain to grow more dire over the next decade. Choke Point: China, though, is not a narrative of doom. Rather, our journalists and photographers found a powerful narrative in two parts and never before told. The first important finding—left largely unsaid in and outside China—is how effectively the national and provincial governments enacted and enforced a range of water conservation and efficiency measures. Circle of Blue met the engineers, plant managers, and workers who operate China’s robust and often state-of-the-art energy and water installations. We interviewed the academics and government executives who oversee the globally significant water conservation policies and practices that have been essential to China’s new prosperity. Those policies, we found, sharply reduced waste, shifted water from agriculture to industry, and slowed the growth in national water consumption. Though China’s economy has grown almost eight-fold since the mid-1990s, water consumption has increased 15 percent, or 1 percent annually. China’s major cities, including Beijing, are retrofitting their sewage treatment systems to recycle wastewater for use in washing clothes, flushing toilets, and other grey-water applications. Here in Baotou, a desert city of 1.5 million in Inner Mongolia, the giant Baotou Iron and Steel Company plant, one of the world’s largest, produces 10 million metric tons of steel annually in a region that receives mere inches of rainfall a year. The plant—which is 49 square kilometers and employs 50,000 workers—recycles 98 percent of its water, a requirement of a 1997 law that prompted owners of industrial plants to conserve water. Three Trends Converging We also discovered a second vital narrative that most industrial executives and government authorities we interviewed were either not fully aware of or were reluctant to acknowledge: the tightening choke point between rising energy demand and declining freshwater reserves that forms the central story line of the next era of China’s unfolding development. Stripped to its essence, China’s globally significant choke point is caused by three converging trends:Production of coal has tripled since 2000 to 3.15 billion metric tons a year. Government analysts project that China’s energy companies will need to produce an additional billion metric tons of coal annually by 2020, representing a 30 percent increase. Fresh water needed for mining, processing, and consuming coal accounts for the largest share of industrial water use in China, or roughly 120 billion cubic meters a year, a fifth of all the water consumed nationally. Though national conservation policies have helped to limit increases, water consumption nevertheless has climbed to a record 599 billion cubic meters annually, which is 50 billion cubic meters (13 trillion gallons) more than in 2000. Over the next decade, according to government projections, China’s water consumption, driven in large part by increasing coal-fired power production, may reach 670 billion cubic meters annually — 71 billion cubic meters a year more than today. China’s total water resource, according to the National Bureau of Statistics, has dropped 13 percent since the start of the century. In other words China’s water supply is 350 billion cubic meters (93 trillion gallons) less than it was at the start of the century. That’s as much water lost to China each year as flows through the mouth of the Mississippi River in nine months. Chinese climatologists and hydrologists attribute much of the drop to climate change, which is disrupting patterns of rain and snowfall. “It’s just impossible, if you haven’t lived it or experienced it, to understand change in China over the past 25 years, and especially since 1992,” said Kang Wu, a senior fellow and China energy scholar at East-West Center in Hawaii. “It’s a new world. It’s a new country. The worry in China and in the rest of the world is can they sustain it? They want to double the size of the economy again in 10 years. How can they do that? It’s a paradox from an economic point of view. They need a resource balance to meet demand, short-term and long-term. If you look out 10, 20, 30 years, it just looks like it’s not possible.” Rapid GDP Growth Will Continue In interviews, national and provincial government leaders, as well as energy industry executives, said China has every intention of continuing its 10 percent annual economic growth. “We believe that this is possible and we can do this with new technology, new ways to use water and energy,” said Xiangkun Ren, who oversees the coal-to-liquids program for Shenhua Group, the largest coal company in the world. Xiangkun acknowledged that avoiding the looming choke point will not be easy. The tightening loop is already visible in the jammed rail lines, huge coal truck traffic jams, and buckling roads that Circle of Blue encountered in Inner Mongolia—the country’s largest coal producer—and which are responsible for transporting billions of tons of coal from existing mines to market. Energy prices are steadily rising, putting new inflationary pressure on the economy. Even as China has launched enormous new programs of solar, wind, hydro, and seawater-cooled nuclear power, all of which use much less fresh water, energy market conditions will get worse without new supplies of coal, the source of 70 percent of the nation’s energy. China’s economy and the new social contract with its citizens, who have come to expect rising incomes and improving opportunities, is at risk, say some authorities.

#### Nuclear war

Newmeyer 09 DR. JACQUELINE NEWMYER - LONG TERM STRATEGY GROUP- THE CENTER FOR NATIONAL POLICY “ECONOMIC CRISIS: IMPACT ON CHINESE MILITARY MODERNIZATION” APRIL 8, 2009, http://cnponline.org/index.php?ht=a/GetDocumentAction/i/12503

 So I think either way, either because of the insecurity that is stoked by what’s happening inside China and perceptions about economic slowdown, and/or because of demonization issues and popular discourse, I think that there’s a real chance that the Chinese leadership could feel compelled, for reasons of state security, to take actions that appear more belligerent abroad. And that could have effects leading up to possibly even military conflict or the use of military force against outside actors in addition to whatever force is used inside China to maintain stability. So I think that would be a real, kind of operational test for the PLA, a modernized force now. So, in conclusion, what struck me in thinking about and preparing for this presentation was there was less divergence between the sort of steady state and the more dramatic impact of the economic downturn scenarios than I expected. Either way, I think there is a chance, or a likelihood, of increased friction between China and other external countries, particular countries, that would affected in the case of increased arm transfers, actors in the Middle East would be affected, possibly also the U.S., and in the case of more serious concern about internal unrest in China, I think China’s relations with the West, and with India, or with Japan would be implicated there. So I think contrary to our hopes which would be that the downturn would have the effect of causing China to turn inwards and reduce the chances for any kind of external problem, I think, in fact, there’s reason to think, and to worry, that the downturn would lead to a greater chance of conflict abroad for China.

#### China nuclear exports are safe

Blackman 13 (Sarah Blackman is an online reporter working across NRI Digital's websites, BA honors in Journalism at the University of Central Lancashire, “China's nuclear roll-out: learning from Fukushima” http://www.power-technology.com/features/featurechina-nuclear-fukushima-japan)

The main lesson China has learned from the Fukushima disaster is that it will need to adapt a new generation of reactor technologies going forward. Zhou explains: "China learned the weak point of Gen II designs and understands potential risks of a large fleet of gen II reactors in China. Therefore, China quickly adjusted its nuclear development direction and pace." The nation is now focusing on delivering generation III and IV technologies, says Hess: "While the mainstay of the current Chinese fleet was adapted from early French pressurised water (PWR) technology, there are also CANDUs (Canadian developed pressurised heavy water reactor) and VVER's (Russian developed PWR) in operation. "An even greater diversity of reactor types are under construction - we see AP1000s, EPRs, fast reactors and even experimental high temperature reactors. Who knows what they'll invest in next." The first four AP1000s, designed by US-based Westinghouse, are being built at Sanmen and Haiyang for CNNC and China Power and Investment (CPI), while at least eight more of these reactors are planned for four more sites, according to the World Nuclear Association. Meanwhile, two Areva EPR reactors are being built at Taishan. The first unit is expected to be connected to the grid in October 2013, with commercial operations following two months later, and the second is set to be completed next year. Chinese manufacturers are yet to develop their own design capabilities, but the nation has plans to expand its overseas activities and develop engineering, procurement and construction offers abroad. Ernst and Young said in its 'Benchmarking the global nuclear industry 2012' report: "China's in-house production capabilities, low labour costs and a focus on quality create a strong competitive advantage." Over the last few decades, China has transformed from being an importer of nuclear technology to manufacturing its own equipment, for its own plants. So, with growing investments in nuclear and a strong focus on tightening safety standards in the sector, is China ready to ramp up the development of new nuclear, and breathe life into an industry dampened by uncertainty? "Yes, absolutely," says Hess. "There is a pressing need in China for the provision of cost-effective, clean and reliable electricity and nuclear power is the ideal choice for this. "While China may still be somewhat young in terms of the age of its reactor fleet and accordingly has less accumulated operating experience than some, it has demonstrated a terrific ability to build these plants both on schedule and budget," adds Hess.

### Workforce

#### High demand and job openings ensures scientists pick the nuclear field

Susie Hay (consultant at shortwork, which designs projects linking people and communities, including the Footprints programme for the National Decommissioning Agency (NDA)) and Michael Kelk (communications officer with the NDA) 2009 “Working in physics: A fresh look at nuclear” http://www.iop.org/careers/workinglife/articles/page\_39053.html

A new industry-wide graduate scheme aims to get the next generation of nuclear scientists thinking about community and environmental issues from the outset. Susie Hay and Michael Kelk describe the “nucleargraduates” programme. As everyone must surely now acknowledge, the economy is heading for recession in many countries, and several industries are planning to cut back on their workforces. Physics and engineering graduates may have an advantage in this economic climate, however, because one major sector is definitely still hiring talented people from these disciplines: the nuclear industry. Nuclear power is back on the political agenda for a number of reasons. These include the need to secure and sustain future power supplies, reduce carbon emissions and address the environmental problems associated with decommissioning aging power plants. But like other sectors, the nuclear industry has been affected by a shortage of science and technology graduates in recent years. Indeed, the average age of an employee in the industry in the UK is 50. Because the task of decommissioning some reactor sites — including the UK’s first, Sellafield in Cumbria — may take up to 150 years, it is crucial for organizations like the UK Nuclear Decommissioning Authority (NDA) to attract a new generation of workers with diverse skills. One aspect of the NDA’s recruitment campaign is an industry-wide graduate scheme, called “nucleargraduates”. Launched last year, it has so far recruited 23 graduates. About a quarter of these have physics degrees, and applications from physicists have trebled since the first intake started. Programme structure The two-year-long nucleargraduates programme sends participants on four professional secondments in different organizations and diverse locations. Participants in the scheme can expect to do three of their six-month placements in UK locations, which range from the Plymouth-based construction company Atkins and the NDA’s headquarters in West Cumbria to the Dounreay Research Site on the northern tip of Scotland. They will then go on a four-month placement overseas, typically in France, North America or Japan. More than 20 leading companies, regulators and government bodies are sponsoring the programme, making it the most comprehensive such scheme the industry has ever seen. Participants include global manufacturers like Rolls Royce and BAE Systems, engineering consultancy firms like Jacobs and Amec, government bodies such as the Environment Agency, and nuclear-site operators like Magnox North and Sellafield Limited. Participants in the scheme have, for example, worked at the high-level-waste plant at Sellafield and on the waste-transportation strategy at the UK Atomic Energy Agency site in Harwell, Oxfordshire. Building community links One important aspect of the scheme is a compulsory corporate social responsibility (CSR) programme called Footprints, which is designed to enable the participants to make small but lasting impacts in the areas and communities where the nuclear industry operates. As part of the programme, graduates spend 10% of their time working in local not-for-profit enterprises, schools and small businesses. By devoting such a significant amount of time to the endeavour, the NDA aims to make Footprints a real driver for change rather than a series of unconnected charitable gestures. The projects need not involve nuclear issues directly. Some participants have, for example, gone into primary schools to excite young people about science, technology, engineering and maths. Others, meanwhile, have been working with the Connexions Cumbria organization and young people not in employment, education or training to help them shape local services to meet their needs and increase their aspirations. One of the participants is Steve Mahay, a physics graduate from Birmingham University in the UK. His main role in his first placement at the Harwell site was to work on waste transportation. As part of his Footprints project, Mahay designed webpages for Didcot First, a local group that promotes the Oxfordshire town as a centre for science and technology. He also worked with Susan Elder, a chemistry graduate from Strathclyde University in the UK, to organize an event to promote science among young people. Mahay and Elder estimate that over 200 children came to see the demonstrations on magnets and how to save energy. “I was pleasantly surprised by how interested I became in the corporate-social-responsibility segment of my work,” says Elder. “The CSR programme really helped me to consider the world outside the NDA, and allowed me to learn new skills while doing something useful for the local community.” Looking to the future The reason for including the Footprints work in the programme is that although the nuclear industry is currently hiring new people to work on decommissioning older reactors, the closure of these “legacy” facilities can also bring severe job losses to local communities and businesses that depend on the nuclear industry. For example, when the Dounreay reactor finally closes in 2025, nearby communities like Thurso will lose about 2000 jobs. To minimize the impact on the area, the nuclear industry is working in partnership with the Highlands and Islands Development Agency, Caithness Council, local communities and potential entrepreneurs within and outside the nuclear industry to support and create new businesses — for example in wind and tidal energy — to help sustain the local economy. With such strategic goals in mind, the Footprints programme provides a way for the next generation of managers in the nuclear industry to look beyond the business to the wider socioeconomic context in which it operates. The end result of the Footprints scheme, the NDA hopes, will be that skills the participants gain within the industry including project management, communication and creative problem solving — are shared with the community. Equally, strong links with local communities allow industry leaders to keep in touch with opinions and experiences from outside the nuclear business. This knowledge can then help inform decision-making about the future of the industry. In the past, inward-looking and “them and us” cultures led to gaps in understanding, and a lack of effective partnerships between the industry and the communities in which it operates. For example, the first generation of nuclear sites like Sellafield were created to make weapons, not generate power, and the associated Cold War paranoia meant that such sites were not built to be “future proof”. It is only now, after the sites have been shut down and the NDA began dealing with them in 2004 that we are realizing the extent of the challenge. The industry now recognizes the importance of working together to build sustainable communities, and Footprints is an important part of that goal. Interested? The 23 members of the 2008 nucleargraduates scheme all have good academic qualifications; the programme requires at least a 2.2 BSc degree and some participants have higher degrees. Although non-UK citizens are eligible, such applicants must have the right to work in the UK and may need to go through more extensive background checks. Beyond this, the programme’s organizers are also looking for graduates with the curiosity, creativity and determination to meet the considerable challenges facing the nuclear industry now and in the future. Because of the “umbrella” nature of the scheme, participants are not guaranteed a job at the end of their placements. However, they will have gained enough experience within the industry to know what interests them most, and can then apply for a specific role at companies or organizations that appeal to them. As NDA graduate manager Carl Dawson emphasizes, it is not a “sausage machine” or one-size-fits all programme, and graduates are expected to explore many possibilities in the industry, particularly where skill shortages exist.

Nuclear Deterrence

#### #1 threat is the inevitable cut to the US nuclear weapons arsenal- their author

Bender, their author, 10 National Security Correspondent, Former Washington Bureau Chief at Boston Globe (Bryan Bender, Jane’s Defense Weekly, 3 April 2010, “Alarm Over Shortage of Nuclear Experts,” http://www-ners.engin.umich.edu/news\_archive/20100625140822mlr)

Still, it is the erosion of expertise in US nuclear weapons complex — which requires workers to be American citizens and eligible to hold some of the highest security clearances — that is most alarming, officials say. It comes as the Obama administration is preparing to make deep cuts in the American arsenal, which many specialists say will place a higher premium on technical know-how. The average age of US weapons is 26 years and with no plans to design new ones, the weapons will need key modifications to ensure they will work, if they are ever deployed. “There is a paradox,’’ said Thomas P. D’Agostino, undersecretary of energy for nuclear security. “As the number of weapons come down, what becomes even more important is having the people who understand how they work.’’ Senior military officials responsible for operating the weapons agree. “Having reduced numbers means that every system is more important to keep up and operate,’’ said Air Force Colonel Michael Fortney, commander of the 341st Missile Wing at Malmstrom Air Force Base in Montana, which maintains 150 land-based nuclear missiles. Even the staunchest supporters of arms control, who believe the size of the US arsenal far exceeds security needs and will even after Obama’s proposed cuts, agree the need for more trained nuclear specialists is critical. “We need more of this expertise so we know how the bombs work,’’ said Daryl Kimball, executive director of the Arms Control Association. The lack of expertise could have global consequences. The same scientists and engineers who work on the US nuclear weapons are also responsible for tracking the progress of other nations developing nuclear weapons and for helping countries secure their bomb-making material from theft by terrorists.

#### Alt cause- current wave of nuclear power retirement

Bender 10 National Security Correspondent, Former Washington Bureau Chief at Boston Globe (Bryan Bender, Jane’s Defense Weekly, 3 April 2010, “Alarm Over Shortage of Nuclear Experts,” http://www-ners.engin.umich.edu/news\_archive/20100625140822mlr)

The National Energy Institute, a policy group supported by the nuclear industry, estimates that 35 percent of the workforce at the nation’s more than 100 nuclear power plants will reach retirement by the end of 2012. And a recent study conducted with the help of the Massachusetts Institute of Technology concluded that even if the United States does not construct any reactors, the nation will need to graduate hundreds of additional nuclear scientists and engineers each year to fill the gap.

#### Non-unique and alt causes in the status quo – your author

Bender 10 National Security Correspondent, Former Washington Bureau Chief at Boston Globe (Bryan Bender, Jane’s Defense Weekly, 3 April 2010, “Alarm Over Shortage of Nuclear Experts,” http://www-ners.engin.umich.edu/news\_archive/20100625140822mlr)

“Many of these skills and facilities cannot be found in universities, other government laboratories, or in the US industry today,’’ the American Physical Society concluded last month. A key element in recruiting a new generation of weapons scientists, officials said, will be debunking the perception that the career field is primarily about building bigger and better weapons of mass destruction. “We spend most of our time making sure things don’t explode,’’ D’Agostino said.

#### Verification reduces confidence – your author

Bender 10 National Security Correspondent, Former Washington Bureau Chief at Boston Globe (Bryan Bender, Jane’s Defense Weekly, 3 April 2010, “Alarm Over Shortage of Nuclear Experts,” http://www-ners.engin.umich.edu/news\_archive/20100625140822mlr)

U.S. experience shows that, even with full access and disclosure, it is often difficult to accurately account for all materials produced. This fact will need to be taken into account to ensure that a procedure designed to increase confidence does not inadvertently reduce it. One goal might be to have various states provide national data in order to establish an acceptable international range for “Material Unaccounted For.”

#### Status quo blocks use – demo key – your author

**Davis, ’10** National Security Fellow – Center for Global Security Research, Founding Director – Defense Threat Reduction Agency of the United States Department of Defense, and Chair – American Physical Society Panel on Public Affairs, et al. (Jay Davis, February 2010, “Technical Steps to Support Nuclear Arsenal Downsizing,” http://www.aps.org/policy/reports/popa-reports/upload/nucleardownsizing.PDF)//CC

#### Fails – records not identified in the status quo

**Evans and Kawaguchi, ‘9** co-chairs of the INTERNATIONAL COMMISSION ON NUCLEAR NON-PROLIFERATION AND DISARMAMENT (Gareth Evans and Yoriko Kawaguchi, 2009, “Eliminating Nuclear Threats: A Practical Agenda for Global Policymakers,” http://www.icnnd.org/reference/reports/ent/part-iv-17.html)//CC

Nuclear archaeology. As multilateral nuclear disarmament progresses, at some point it will be essential to provide confidence that states do not retain undeclared nuclear weapons or fissile material. This will require verification measures aimed at assuring that states’ declarations of fissile holdings are complete, i.e. that nothing has been withheld. The verification process will need to include establishing baselines of historic fissile material production and subsequent transactions, against which declarations of current holdings can be evaluated. Establishing these baselines – an exercise that might be termed “nuclear archaeology” – will involve major challenges. It will be necessary for the verifiers to review records, undertake measurements and analyses of nuclear materials and related materials and wastes, and possibly interview personnel. 17.26 The point, for present purposes, is that in order to facilitate this future verification process, the necessary practical steps have to start being taken now: to ensure that all relevant records are identified, secured and preserved; to clarify records that appear incomplete or inconclusive with personnel familiar with the operations concerned; and where relevant – e.g. in the treatment of wastes, and dismantling of facilities – to ensure that relevant measurements and samples are taken. The key here is for the states concerned to recognize they have a mutual interest in ensuring that future verification is able to provide credible results.

#### High demand and job openings ensures scientists pick the nuclear field

Susie Hay (consultant at shortwork, which designs projects linking people and communities, including the Footprints programme for the National Decommissioning Agency (NDA)) and Michael Kelk (communications officer with the NDA) 2009 “Working in physics: A fresh look at nuclear” http://www.iop.org/careers/workinglife/articles/page\_39053.html

A new industry-wide graduate scheme aims to get the next generation of nuclear scientists thinking about community and environmental issues from the outset. Susie Hay and Michael Kelk describe the “nucleargraduates” programme. As everyone must surely now acknowledge, the economy is heading for recession in many countries, and several industries are planning to cut back on their workforces. Physics and engineering graduates may have an advantage in this economic climate, however, because one major sector is definitely still hiring talented people from these disciplines: the nuclear industry. Nuclear power is back on the political agenda for a number of reasons. These include the need to secure and sustain future power supplies, reduce carbon emissions and address the environmental problems associated with decommissioning aging power plants. But like other sectors, the nuclear industry has been affected by a shortage of science and technology graduates in recent years. Indeed, the average age of an employee in the industry in the UK is 50. Because the task of decommissioning some reactor sites — including the UK’s first, Sellafield in Cumbria — may take up to 150 years, it is crucial for organizations like the UK Nuclear Decommissioning Authority (NDA) to attract a new generation of workers with diverse skills. One aspect of the NDA’s recruitment campaign is an industry-wide graduate scheme, called “nucleargraduates”. Launched last year, it has so far recruited 23 graduates. About a quarter of these have physics degrees, and applications from physicists have trebled since the first intake started. Programme structure The two-year-long nucleargraduates programme sends participants on four professional secondments in different organizations and diverse locations. Participants in the scheme can expect to do three of their six-month placements in UK locations, which range from the Plymouth-based construction company Atkins and the NDA’s headquarters in West Cumbria to the Dounreay Research Site on the northern tip of Scotland. They will then go on a four-month placement overseas, typically in France, North America or Japan. More than 20 leading companies, regulators and government bodies are sponsoring the programme, making it the most comprehensive such scheme the industry has ever seen. Participants include global manufacturers like Rolls Royce and BAE Systems, engineering consultancy firms like Jacobs and Amec, government bodies such as the Environment Agency, and nuclear-site operators like Magnox North and Sellafield Limited. Participants in the scheme have, for example, worked at the high-level-waste plant at Sellafield and on the waste-transportation strategy at the UK Atomic Energy Agency site in Harwell, Oxfordshire. Building community links One important aspect of the scheme is a compulsory corporate social responsibility (CSR) programme called Footprints, which is designed to enable the participants to make small but lasting impacts in the areas and communities where the nuclear industry operates. As part of the programme, graduates spend 10% of their time working in local not-for-profit enterprises, schools and small businesses. By devoting such a significant amount of time to the endeavour, the NDA aims to make Footprints a real driver for change rather than a series of unconnected charitable gestures. The projects need not involve nuclear issues directly. Some participants have, for example, gone into primary schools to excite young people about science, technology, engineering and maths. Others, meanwhile, have been working with the Connexions Cumbria organization and young people not in employment, education or training to help them shape local services to meet their needs and increase their aspirations. One of the participants is Steve Mahay, a physics graduate from Birmingham University in the UK. His main role in his first placement at the Harwell site was to work on waste transportation. As part of his Footprints project, Mahay designed webpages for Didcot First, a local group that promotes the Oxfordshire town as a centre for science and technology. He also worked with Susan Elder, a chemistry graduate from Strathclyde University in the UK, to organize an event to promote science among young people. Mahay and Elder estimate that over 200 children came to see the demonstrations on magnets and how to save energy. “I was pleasantly surprised by how interested I became in the corporate-social-responsibility segment of my work,” says Elder. “The CSR programme really helped me to consider the world outside the NDA, and allowed me to learn new skills while doing something useful for the local community.” Looking to the future The reason for including the Footprints work in the programme is that although the nuclear industry is currently hiring new people to work on decommissioning older reactors, the closure of these “legacy” facilities can also bring severe job losses to local communities and businesses that depend on the nuclear industry. For example, when the Dounreay reactor finally closes in 2025, nearby communities like Thurso will lose about 2000 jobs. To minimize the impact on the area, the nuclear industry is working in partnership with the Highlands and Islands Development Agency, Caithness Council, local communities and potential entrepreneurs within and outside the nuclear industry to support and create new businesses — for example in wind and tidal energy — to help sustain the local economy. With such strategic goals in mind, the Footprints programme provides a way for the next generation of managers in the nuclear industry to look beyond the business to the wider socioeconomic context in which it operates. The end result of the Footprints scheme, the NDA hopes, will be that skills the participants gain within the industry including project management, communication and creative problem solving — are shared with the community. Equally, strong links with local communities allow industry leaders to keep in touch with opinions and experiences from outside the nuclear business. This knowledge can then help inform decision-making about the future of the industry. In the past, inward-looking and “them and us” cultures led to gaps in understanding, and a lack of effective partnerships between the industry and the communities in which it operates. For example, the first generation of nuclear sites like Sellafield were created to make weapons, not generate power, and the associated Cold War paranoia meant that such sites were not built to be “future proof”. It is only now, after the sites have been shut down and the NDA began dealing with them in 2004 that we are realizing the extent of the challenge. The industry now recognizes the importance of working together to build sustainable communities, and Footprints is an important part of that goal. Interested? The 23 members of the 2008 nucleargraduates scheme all have good academic qualifications; the programme requires at least a 2.2 BSc degree and some participants have higher degrees. Although non-UK citizens are eligible, such applicants must have the right to work in the UK and may need to go through more extensive background checks. Beyond this, the programme’s organizers are also looking for graduates with the curiosity, creativity and determination to meet the considerable challenges facing the nuclear industry now and in the future. Because of the “umbrella” nature of the scheme, participants are not guaranteed a job at the end of their placements. However, they will have gained enough experience within the industry to know what interests them most, and can then apply for a specific role at companies or organizations that appeal to them. As NDA graduate manager Carl Dawson emphasizes, it is not a “sausage machine” or one-size-fits all programme, and graduates are expected to explore many possibilities in the industry, particularly where skill shortages exist.

#### Nuclear intelligence fails – actionable intelligence can’t be translated into practice effectively

**Sokolski, 11** [What Nuclear Power’s Revival Will Now Require: Tightening the Rules Testimony of Henry Sokolski Executive Director The Nonproliferation Policy Education Center Washington, DC, March 17, 2011 Room 2172 Rayburn House Office Building Washington, DC, <http://foreignaffairs.house.gov/112/sok031711.pdf>]

Nuclear Inspections and Intelligence: What Are the Limits? This is where the idea of strengthening existing nuclear inspections and enhancing national intelligence are generally held up as nonproliferation solutions. In the case of IAEA inspections, much can be done to improve near-real time surveillance of inspected sites with remote sensors and secure communication links. Securing talented inspectors and retaining more of them would also be both possible and useful. 15. See Committee on Review of DOE's Nuclear Energy Research and Development Program, National Research Council, ―Minority Opinion: Dissenting State of Gilinsky and Macfarlane,‖ in Review of DOE's Nuclear Energy Research and Development Program (Washington, DC: National Academies Press, 2008), available at http://armscontrolcenter.org/assets/pdfs/macfarlane\_gilinsky.pdf and Frank Von Hippel, ―Managing Spent Fuel in the United States: The Illogic of Reprocessing,‖ in Henry Sokolski editor, Falling Behind: International Scrutiny of the Peaceful Atom (Carlisle, PA: Strategic Studies Institute, 2008), pp. 159-221. 16. On the matter of the NPT and the right to peaceful nuclear energy, 11 Yet, simply sending money to the IAEA and increasing its authority ought not to be seen as a panacea. Most U.S. officials, for example, are extremely enthusiastic about increasing the number of state adherents to the IAEA‘s latest inspection understanding, The Additional Protocol, which authorizes the IAEA to conduct more intrusive inspections than under existing safeguards agreements. The increased inspection authority that the Additional Protocol affords, though, is most commonly occasioned by a reduction in the number of routine inspections. Once a country qualifies for Additional Protocol inspections, it is argued, it should be trusted more and inspected less. This lessens IAEA inspection loads but it also reduces IAEA safeguards presence on the ground. There also are real limits on IAEA inspections. After Iran, Iraq, Libya, Syria, and Algeria, we learned that in the most dangerous cases, the IAEA cannot always meet its own timeliness nuclear detection goals. Safeguarding nuclear fuel making (e.g., enrichment, reprocessing, fuel fabrication, uranium hexafluoride production) and nuclear weapons usable fuels (highly enriched uranium, separated plutonium, mixed oxide fuel) anywhere; and large civilian nuclear facilities in hostile states (e.g., Iran and North Korea), are among these cases. In these instances, the inspected nuclear activities and materials are so close to bomb making that there is scant time even with discovery of a diversion to do much and a high likelihood that any discovery might come after the diversion if at all.17 Finally, recent research suggests that for large organizations with conflicting goals regarding the regulation of complex technologies, their mere expansion may not help and, in certain cases, could actually make matters worse. These research findings could easily apply to the IAEA, which is designed both to promote civilian nuclear applications and to restrain them to assure they stay peaceful. These two opposing IAEA functions make achieving the agency‘s safeguarding mission difficult. It also makes determining how much one is ―strengthening‖ the IAEA inherently tricky.18 This, then, brings us to the utility of improving national intelligence capabilities. Since the late l980s, much has been made of what the U.S. and other states might do to ―counter‖ proliferation with trade interdictions, covert operations, passing off sensitive information to agencies like the IAEA and, if necessary, military strikes. All of these operations may be needed; all demand timely, actionable intelligence. To argue that we can depend on such operations to prevent proliferation if we only could secure more ―actionable‖ intelligence, though, would be a stretch. First, there are severe limits on how much actionable intelligence any country is comfortable sharing with allies, much less international organizations. Second, there are limits on how much information most governments, including our own, are likely to demand about states that are about to or may have already acquired nuclear weapons. In more than a few cases, getting or sharing such information becomes awkward since it can force officials to have to act in ways they may be disinclined to. This arguably was the case with Israel, Pakistan, and North Korea, where at various points, senior U.S. officials actually kept intelligence officers from inspecting or reporting more on what actually was occurring in each of these countries nuclear weapons programs. We subsequently have had to downplay the implications of nonproliferation failures in each of these cases. This suggests that our problem in preventing proliferation may not be the lack of actionable intelligence so much as a lack of demand for it in the hardest and, arguably, most important cases.19

**Won’t happen – too expensive and controversial**

**Tepperman 09** - former Deputy Managing Ed. Foreig Affairs and Assistant Managing Ed. Newsweek (Jonathon, Newsweek, “Why Obama should Learn to Love the Bomb”, 44:154, 9-7)

The risk of an arms race--with, say, other Persian Gulf states rushing to build a bomb after Iran got one--is a bit harder to dispel. Once again, however, history is instructive. "In 64 years, the most nuclear-weapons states we've ever had is 12," says Waltz. "Now with North Korea we're at nine. That's not proliferation; **that's spread at glacial pace**." Nuclear weapons are so controversial and expensive that only countries that deem them absolutely critical to their survival go through the extreme trouble of acquiring them. That's why South Africa, Ukraine, Belarus, and Kazakhstan voluntarily gave theirs up in the early '90s, and why other countries like Brazil and Argentina dropped nascent programs. This doesn't guarantee that one or more of Iran's neighbors--Egypt or Saudi Arabia, say--might not still go for the bomb if Iran manages to build one. But the risks of a rapid spread are low, especially given Secretary of State Hillary Clinton's recent suggestion that the United States would extend a nuclear umbrella over the region, as Washington has over South Korea and Japan, if Iran does complete a bomb. If one or two Gulf states nonetheless decided to pursue their own weapon, that still might not be so disastrous, given the way that bombs tend to mellow behavior.

#### Low risk is no risk---and as a policymaker that threshold isn’t very high

Mueller 10 John Mueller is a professor of political science at Ohio State University, “Calming Our Nuclear Jitters” Issues Online in Science and Technology, Winter 2010 <http://www.issues.org/26.2/mueller.html>

The purpose here has not been to argue that policies designed to inconvenience the atomic terrorist are necessarily unneeded or unwise. Rather, in contrast with the many who insist that atomic terrorism under current conditions is rather likely— indeed, exceedingly likely—to come about, I have contended that it is hugely unlikely. However, it is important to consider not only the likelihood that an event will take place, but also its consequences. Therefore, one must be concerned about catastrophic events even if their probability is small, and efforts to reduce that likelihood even further may well be justified.

At some point, however, probabilities become so low that, even for catastrophic events, it may make sense to ignore them or at least put them on the back burner; in short, the risk becomes acceptable. For example, the British could at any time attack the United States with their submarine-launched missiles and kill millions of Americans, far more than even the most monumentally gifted and lucky terrorist group. Yet the risk that this potential calamity might take place evokes little concern; essentially it is an acceptable risk. Meanwhile, Russia, with whom the United States has a rather strained relationship, could at any time do vastly more damage with its nuclear weapons, a fully imaginable calamity that is substantially ignored.

In constructing what he calls “a case for fear,” Cass Sunstein, a scholar and current Obama administration official, has pointed out that if there is a yearly probability of 1 in 100,000 that terrorists could launch a nuclear or massive biological attack, the risk would cumulate to 1 in 10,000 over 10 years and to 1 in 5,000 over 20. These odds, he suggests, are “not the most comforting.” Comfort, of course, lies in the viscera of those to be comforted, and, as he suggests, many would probably have difficulty settling down with odds like that. But there must be some point at which the concerns even of these people would ease. Just perhaps it is at one of the levels suggested above: one in a million or one in three billion per attempt.

SQ solves nuclear scientists-University grants

DOE 8/9/11

Department of Energy Announces $39 Million to Strengthen University-Led Nuclear Energy Research and Development

<http://energy.gov/articles/department-energy-announces-39-million-strengthen-university-led-nuclear-energy-research>

Washington, D.C. – The Department of Energy today announced that it has awarded up to $39 million in research grants aimed at developing cutting-edge nuclear energy technologies and training and educating the next generation of leaders in the U.S. nuclear industry. Speaking at the U.S. Department of Energy’s annual Nuclear Energy University Programs (NEUP) workshop in Chicago, Assistant Secretary Peter Lyons said the grants would support up to 51 projects at colleges and universities around the country. Through NEUP, the Department is working to leverage the research and development capabilities of American universities and colleges to enhance U.S. leadership in the global nuclear energy industry. NEUP builds upon the Obama Administration’s efforts to ensure that nuclear power is a part of our clean energy mix. Through programs like NEUP, the Department is taking action to restart the nuclear industry as part of a broad approach to create new clean energy jobs and cut carbon pollution. “The Obama Administration continues to believe that nuclear energy has an important role to play as America moves to a clean energy future,” said Secretary of Energy Steven Chu. “As part of our commitment to restarting the American nuclear industry and creating thousands of new jobs and export opportunities in the process, we are investing in cutting-edge nuclear energy research projects that can develop the technologies required to advance our domestic nuclear industry and maintain global leadership in the field.” The 51 awards announced today are led by 31 U.S. universities in more than 20 states. Other universities, industry leaders, and national laboratories will serve as collaborators and research partners. The projects selected for negotiation of award cover four nuclear energy research fields including Fuel Cycle Research and Development; Reactor Concepts Research, Development and Demonstration; Nuclear Energy Advanced Modeling and Simulation; and Transformative Research.

#### Obama offering incentives for nuclear scientists

Capps 4/6/10

http://www.unexplainable.net/info-theories/brain-drain-fears-over-nuclear-scientist-shortage.php

Brain Drain: Fears Over Nuclear Scientist Shortage

It seems like a strange thing to have a shortage of, but nuclear physicists are in short supply these days, particularly in the United States. And that shortage is now reaching critical mass. That is to say it's fast approaching zero point. With the divide in generational gaps, the age of the nuclear physicist seems to be dwindling. Nuclear knowledge has been draining for decades now. With the creation of other new and more exciting fields and the public perception that nuclear physics is the science of ending the world, the nuclear physicists who enter college with fresh ideas about saving the world fear that they will be shuffled away to a dank bunker somewhere in the military establishment to design more deadly bombs to kill people. After the Cold War, nuclear experts were largely given up on in several regards. Programs lost funding, research was halted, and the focus became more partitioned than ever. Nuclear energy and nuclear weapons, somehow fused themselves in the public eye. But with 8 percent of the Nuclear Security Agency reaching its retirement age every year, it seems nuclear physics will need a boost in order to keep up, and maintain the current aging nuclear stockpile. Now the Obama administration has offered a tuition based solution: train to be a nuclear physicist and receive your money back and get a cash bonus. The new generation is not responding quickly, but the increased 13.4% Obama is budgeting for the Nuclear Security Agency in 2011 (more than $11.2 billion more than this year's funding) it's clear nuclear defense is on the president's mind. Why the sudden increase in nuclear defense budgeting? With the proverbial doomsday clock ticking backwards to six minutes to midnight, it seems the current administration is pushing for an end to the threat of nuclear war. But then with tensions internationally heating up it's possible that the Obama administration is preparing for a long term revitalization of nuclear studies.

## 2nc

## Topicality

### 2NC Procurement not FI

### Interpretation

#### ---Financial incentives are distinguished from rules and regulations. There are 11 types of financial incentives. Their interpretation explodes the topic to include 30 types of incentives and policies.

Database of State Incentives for Renewables and Efficiency 12

<http://www.dsireusa.org/glossary/>

DSIRE organizes incentives and policies that promote renewable energy and energy efficiency into two general categories -- (1) Financial Incentives and (2) Rules, Regulations & Policies -- and roughly 30 specific types of incentives and policies. This glossary provides a description of each specific incentive and policy type.

FINANCIAL INCENTIVES (click to collapse section)

 Corporate Tax Incentives

Corporate tax incentives include tax credits, deductions and exemptions. These incentives are available in some states to corporations that purchase and install eligible renewable energy or energy efficiency equipment, or to construct green buildings. In a few cases, the incentive is based on the amount of energy produced by an eligible facility. Some states allow the tax credit only if a corporation has invested a minimum amount in an eligible project. Typically, there is a maximum limit on the dollar amount of the credit or deduction. In recent years, the federal government has offered corporate tax incentives for renewables and energy efficiency. (Note that corporate tax incentives designed to support manufacturing and the development of renewable energy systems or equipment, or energy efficiency equipment, are categorized as “Industry Recruitment/Support” in DSIRE.)

 Grant Programs

States offer a variety of grant programs to encourage the use and development of renewables and energy efficiency. Most programs offer support for a broad range of technologies, while a few programs focus on promoting a single technology, such as photovoltaic (PV) systems. Grants are available primarily to the commercial, industrial, utility, education and/or government sectors. Most grant programs are designed to pay down the cost of eligible systems or equipment. Others focus on research and development, or support project commercialization. In recent years, the federal government has offered grants for renewables and energy efficiency projects for end-users. Grants are usually competitive.

 Green Building Incentives

Green buildings are designed and constructed using practices and materials that minimize the impacts of the building on the environment and human health. Many cities and counties offer financial incentives to promote green building. The most common form of incentive is a reduction or waiver of a building permit fee. Several organizations issue certification for green buildings, including the U.S. Green Building Council (LEED certification), the Green Building Initiative (Green Globes certification), and the NAHB Research Center (National Green Building Certification). (Note that this category includes green building incentives that do not fall under other DSIRE incentive categories, such as tax incentives and grant programs.)

 Industry Recruitment/Support

To promote economic development and the creation of jobs, some states offer financial incentives to recruit or cultivate the manufacturing and development of renewable energy systems and equipment. These incentives commonly take the form of tax credits, tax exemptions and grants. In some cases, the amount of the incentive depends on the quantity of eligible equipment that a company manufactures. Most of these incentives apply to several renewable energy technologies, but a few states target specific technologies, such as wind or solar. These incentives are usually designed as temporary measures to support industries in their early years. They commonly include a sunset provision to encourage the industries to become self-sufficient.

 Loan Programs

Loan programs provide financing for the purchase of renewable energy or energy efficiency systems or equipment. Low-interest or zero-interest loans for energy efficiency projects are a common demand-side management (DSM) practice for electric utilities. State governments also offer low-interest loans for a broad range of renewable energy and energy efficiency measures. These programs are commonly available to the residential, commercial, industrial, transportation, public and/or non-profit sectors. Loan rates and terms vary by program; in some cases, they are determined on an individual project basis. Loan terms are generally 10 years or less. In recent years, the federal government has offered loans and/or loan guarantees for renewables and energy efficiency projects.

 PACE Financing

Property-Assessed Clean Energy (PACE) financing effectively allows property owners to borrow money to pay for renewable energy and/or energy-efficiency improvements. The amount borrowed is typically repaid over a period of years via a special assessment on the owner's property. In general, local governments (such as cities and counties) that choose to offer PACE financing must be authorized to do so by state law.

 Performance-Based Incentives

Performance-based incentives (PBIs), also known as production incentives, provide cash payments based on the number of kilowatt-hours (kWh) or BTUs generated by a renewable energy system. A "feed-in tariff" is an example of a PBI. To ensure project quality, payments based on a system’s actual performance are generally more effective than payments based on a system’s rated capacity. (Note that tax incentives based on the amount of energy produced by an eligible commercial facility are categorized as “Corporate Tax Incentives” in DSIRE.)

 Personal Tax Incentives

Personal tax incentives include income tax credits and deductions. Many states offer these incentives to reduce the expense of purchasing and installing renewable energy or energy efficiency systems and equipment. The percentage of the credit or deduction varies by state, and in most cases, there is a maximum limit on the dollar amount of the credit or deduction. An allowable credit may include carryover provisions, or it may be structured so that the credit is spread out over a certain number of years. Eligible technologies vary widely by state. In recent years, the federal government has offered personal tax credits for renewables and energy efficiency.

 Property Tax Incentives

Property tax incentives include exemptions, exclusions, abatements and credits. Most property tax incentives provide that the added value of a renewable energy system is excluded from the valuation of the property for taxation purposes. For example, if a new heating system that uses renewable energy costs more than a conventional heating system, the additional cost of the renewable energy system is not included in the property assessment. In a few cases, property tax incentives apply to the additional cost of a green building. Because property taxes are collected locally, some states have granted local taxing authorities the option of allowing a property tax incentive for renewables.

 Rebate Programs

States, utilities and a few local governments offer rebates to promote the installation of renewables and energy efficiency projects. The majority of rebate programs that support renewables are administered by states, municipal utilities and electric cooperatives; these programs commonly provide funding for solar water heating and/or photovoltaic (PV) systems. Most rebate programs that support energy efficiency are administered by utilities. Rebate amounts vary widely by technology and program administrator.

 Sales Tax Incentives

Sales tax incentives typically provide an exemption from, or refund of, the state sales tax (or sales and use tax) for the purchase of a renewable energy system, an energy-efficient appliance, or other energy efficiency measures. Several states have established an annual “sales tax holiday” for energy efficiency measures by annually allowing a temporary exemption – usually for one or two days – from the state sales tax.

RULES, REGULATIONS & POLICIES (click to collapse section)

 Appliance/Equipment Efficiency Standards

Many states have established minimum efficiency standards for certain appliances and equipment. In these states, the retail sale of appliances and equipment that do not meet the established standards is prohibited. The federal government has also established efficiency standards for certain appliances and equipment. When both the federal government and a state have adopted efficiency standards for the same type of appliance or equipment, the federal standard overrides the state standard (even if the state standard is stricter).

 Building Energy Codes

Building energy codes adopted by states (and some local governments) require commercial and/or residential construction to adhere to certain energy standards. While some government entities have developed their own building energy codes, many use existing codes (sometimes with state-specific amendments), such as the International Energy Conservation Code (IECC), developed and published by the International Code Council (ICC); or ASHRAE 90.1, developed by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). A few local building energy codes require certain commercial facilities to meet green building standards.

 Energy Efficiency Resource Standards (EERS)

Energy efficiency resource standards (EERS) are state policies that require utilities to meet specific targets for energy savings according to a set schedule. EERS policies establish separate reduction targets for electricity sales, peak electric demand and/or natural gas consumption. In most cases, utilities must achieve energy savings by developing demand-side management (DSM) programs, which typically provide financial incentives to customers to install energy-efficient equipment. An EERS policy is sometimes coupled with a state’s renewables portfolio standard (RPS). In these cases, energy efficiency is typically included as a lower-tier resource.

 Energy Standards for Public Buildings

Many states and local governments, as well as the federal government, have chosen to lead by example by requiring new government buildings to meet strict energy standards. DSIRE includes policies that have established green building standards, energy-reduction goals, equipment-procurement requirements, and/or the use of on-site renewable energy. Many of these policies require that new government buildings (and renovated buildings, in some cases) attain a certain level of certification under the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program. Equipment-procurement policies often mandate the use of the most efficient equipment, including equipment that meets federal Energy Star criteria. Policies designed to encourage the use of on-site renewables generally establish conditional requirements tied to life-cycle cost analysis.

 Equipment Certification Requirements

Policies requiring renewable energy equipment to meet certain standards serve to protect consumers from buying inferior equipment. These requirements not only benefit consumers; they also protect the renewable energy industry by keeping substandard systems out of the market.

 Generation Disclosure

Some states require electric utilities to provide their customers with specific information about the electricity that the utility supplies. This information, which generally must be shared with customers periodically, usually includes the utility's fuel mix percentages and emissions statistics. In states with restructured electricity markets, generation disclosure policies are designed to help consumers make informed decisions about the electricity and suppliers they choose. A few states that have not fully restructured their electricity markets require generation disclosure by utilities.

 Green Power Purchasing Policies

Government entities, businesses, residents, schools, non-profits and others can play a significant role in supporting renewable energy by buying electricity from renewable resources, or by buying renewable energy credits (RECs). Many state and local governments, as well as the federal government, have committed to buying green power to account for a certain percentage of their electricity consumption. Green power purchases are typically executed through contracts with green power marketers or project developers, through utility green power programs, or through community aggregation.

 Interconnection Standards

Interconnection standards specify the technical and procedural process by which a customer connects an electricity-generating to the grid. Such standards include the technical and contractual terms that system owners and utilities must abide by. State public utilities commissions typically establish standards for interconnection to the distribution grid, while the Federal Energy Regulatory Commission (FERC) has adopted standards for interconnection to the transmission level. Many states have adopted interconnection standards, but some states’ standards apply only to investor-owned utilities -- not to municipal utilities or electric cooperatives. (Several states have adopted interconnection guidelines, which are weaker than standards and generally apply only to net-metered systems.)

 Line Extension Analysis

When a prospective customer requests electric service for a home or facility that is not currently served by the electric grid, the customer usually must pay a distance-based fee for the cost of extending power lines to the home or facility. In some cases, it is cheaper to use an on-site renewable energy system to meet a prospective customer’s electricity needs. A few states require utilities to provide information regarding renewable energy options when a line extension is requested.

 Mandatory Utility Green Power Option

Several states require electric utilities to offer customers the option to buy electricity generated from renewable resources, commonly known as “green power.” Typically, utilities offer green power generated using renewable resources that the utilities own (or for which they contract), or they buy renewable energy credits (RECs) from a provider certified by a state public utilities commission.

 Net Metering

For electric customers who generate their own electricity, net metering allows for the flow of electricity both to and from the customer – typically through a single, bi-directional meter. When a customer’s generation exceeds the customer’s use, electricity from the customer flows back to the grid, offsetting electricity consumed by the customer at a different time during the same billing cycle. In effect, the customer uses excess generation to offset electricity that the customer otherwise would have to purchase at the utility’s full retail rate. Net metering is required by law in most U.S. states, but these policies vary widely.

 Public Benefit Funds

Most public benefit funds (PBFs) were developed by states during the electric utility restructuring era, in the late 1990s, to ensure continued support for renewable energy, energy efficiency and low-income energy programs. These funds are commonly supported through a very small surcharge on electricity consumption (e.g., $0.002/kWh). This charge is sometimes referred to as a "system benefits charge" (SBC). PBFs commonly support rebate programs, loan programs, research and development, and energy education programs.

 Renewables Portfolio Standards (RPS)

Renewable portfolio standards (RPSs) require utilities to use renewable energy or renewable energy credits (RECs) to account for a certain percentage of their retail electricity sales -- or a certain amount of generating capacity -- according to a specified schedule. (Renewable portfolio goals are similar to RPS policies, but renewable portfolio goals are not legally binding.) Most U.S. states have established an RPS. The term “set-aside” or “carve-out” refers to a provision within an RPS that requires utilities to use a specific renewable resource (usually solar energy) to account for a certain percentage of their retail electricity sales (or a certain amount of generating capacity) according to a set schedule.

 Solar & Wind Access Policies

Solar and wind access policies are designed to establish a right to install and operate a solar or wind energy system at a home or other facility. Some solar access laws also ensure a system owner’s access to sunlight. These laws may be implemented at both the state and local levels. In some states, access rights prohibit homeowners associations, neighborhood covenants and local ordinances from restricting a homeowner’s right to use solar energy. Easements, the most common form of solar access policy, allow for the rights to existing access to a renewable resource on the part of one property owner to be secured from an owner whose property could be developed in such a way as to restrict that resource. An easement is usually transferred with the property title. At the local level, communities use several policies to protect solar access, including solar access ordinances, development guidelines requiring proper street orientation, zoning ordinances that contain building height restrictions, and solar permits.

 Solar & Wind Contractor Licensing

Some states have established a licensing process for solar-energy contractors and/or wind-energy contractors. These requirements are designed to ensure that contractors have the necessary knowledge and experience to install systems properly. Solar licenses typically take the form of either a separate, specialized solar contractor’s license, or a specialty classification under a general electrical or plumbing license.

 Solar & Wind Permitting Standards

Permitting standards can facilitate the installation of wind and solar energy systems by specifying the conditions and fees involved in project development. Some local governments have adopted simplified or expedited permitting standards for wind and/or solar. “Top-of-the-stack” permitting (or fast-track permitting) saves system owners and project developers time and money. Some states have capped fees that local governments may charge for a permit for a solar or wind energy system. In addition, some states have developed (or have supported the development of) model wind ordinances for use by local governments.

#### ---Precision-Prefer our evidence---DSIRE is the best source for incentive definitions

Gouchoe, 2k -North Carolina Solar Center Industrial Extension Service North Carolina State University (Susan, “Local Government and Community Programs and Incentives for Renewable Energy— National Report,” <http://seg.fsu.edu/Library/casestudy%20of%20incentives.pdf>

The Database of State Incentives for Renewable Energy (DSIRE) serves as the nation’s most comprehensive source of information on the status of programs and incentives for renewable energy. The database tracks these programs at the state, utility, local, and community level. Established in 1995, DSIRE is an ongoing project of the Interstate Renewable Energy Council (IREC) and is managed by the North Carolina Solar Center with funding from the U.S. Department of Energy’s Office of Power Technologies.

The first three phases of the DSIRE project—surveys of state financial incentives, state regulatory policies, and utility programs and incentives—have been completed. Information from these databases has been published in three previous reports: National Summary Report on State Financial Incentives for Renewable Energy (1997); National Summary Report on State Programs and Regulatory Policies for Renewable Energy (1998); and National Summary Report on Utility Programs and Incentives for Renewable Energy (1999). These reports summarize incentives, programs, and policies that promote active and passive solar, photovoltaics, wind, biomass, alternative fuels, geothermal, hydropower, and waste energy sources. Given the rapidly changing status of state activities, an updated report— National Summary Report on State Financial and Regulatory Incentives for Renewable Energy—has been produced concurrently with this report on local initiatives.

While reports serve as a snapshot of the status of incentives and programs, constant revisions and additions to the database maintain DSIRE’s role as the most up-to-date, national clearinghouse of information on incentives and programs for renewable energy. Through DSIRE on Line, the DSIRE database is accessible via the web at: http://www.ncsc.ncsu.edu/dsire.htm. In 2001, federal incentives will be added to the database, thereby providing a complete and comprehensive database of renewable energy incentives at all levels—national, state, and local.

### Ground

#### ---Procurement opens the door to affirmatives that are divorced from the larger private market debate---destroys core negative ground

Singh-Renewable Energy Policy Project-98 [Government Procurement to Expand PV Markets](http://www.repp.org/repp_pubs/pdf/pv4.pdf)

<http://www.repp.org/repp_pubs/articles/pv/pvs.html#4>

A good government procurement program for renewables should take into account the needs of the private market. The creation of a government market for renewables that bears no relationship to the private market eliminates the indirect, but potentially enormous economic development and environmental benefits of commercializing renewables in the private market. Too often policy efforts to create a government market have resulted in submarkets reflective of governments’ unique needs and procedures. For many PV firms, devoting substantial staff time to government contracts may detract significantly from efforts oriented to the larger private market.

### Reasonability

#### ---Reasonability is impossible it’s arbitrary and undermines research and preparation

Resnick, assistant professor of political science – Yeshiva University, ‘1

(Evan, “Defining Engagement,” Journal of International Affairs, Vol. 54, Iss. 2)

In matters of national security, establishing a clear definition of terms is a precondition for effective policymaking. Decisionmakers who invoke critical terms in an erratic, ad hoc fashion risk alienating their constituencies. They also risk exacerbating misperceptions and hostility among those the policies target. Scholars who commit the same error undercut their ability to conduct valuable empirical research. Hence, if scholars and policymakers fail rigorously to define "engagement," they undermine the ability to build an effective foreign policy.

## States CP

### States

#### States adopting clean energy banks assure specialization---it’s a necessary condition for renewable energy to take off and successfully facilities it to transform the US’s energy infrastructure

Sims 12 (Doug, is the NRDC’s Energy Project Finance Specialist, “Clean Energy Finance 3.0 - The Rise of the State Green Banks,” http://switchboard.nrdc.org/blogs/dsims/clean\_energy\_finance\_30\_-\_the.html)

Informed by OPIC and Ex-Im Bank and constituted along the lines described in the report, state level Green Banks are a powerful tool for many reasons. Here are some of them. Green Banks make public dollars invested go farther and give the public a return on its investment. Because of the underlying quality of investments in mature clean technologies (stemming from the use of solid underwriting criteria and risk management techniques), a well-structured and professionally managed Green Bank will have a very low default rate, earn revenues from interest and fees and be self-sustaining. As the report notes, OPIC has recorded a positive net income every year since its founding in 1969. Green Banks stimulate additional private sector investment. Currently, due to the European banking crisis and other factors, there is a limited amount of bank debt available to fund clean energy projects. A Green Bank lending alongside private lenders will create capacity for those lenders to participate in more deals. This is particularly important in large projects, like offshore wind. In areas like financing energy efficiency retrofits in buildings where banks need an incentive to enter an unfamiliar market, the Green Bank can provide tailored insurance to lenders to enable them to take the leap. NRDC and the City of New York have pioneered just such an approach with the New York Energy Efficiency Corporation (NYCEEC). A properly structured Green Bank will never “crowd out” private investors since its role is not to compete with private investors but to facilitate additional investment by them. Indeed, as the purely private market evolves to fill the gap, the Green Bank should change its products and sector focus to fill the then-current “green need”. Green Banks morph to fit to local conditions. In keeping with tried and true American tradition, each state can act a laboratory, borrowing what works from other states but ultimately designing its own program to fit its own needs. As discussed in detail in the report, Connecticut last year established the first state Green Bank though new legislation that repurposed several existing funds and programs and it is now examining how to effectively scale up PV market in state. Other states may decide to create “financing windows” within an existing clean energy policy framework without passing new legislation or create banks that combine the financing of clean energy with the financing of infrastructure like bridges and roads. It’s just a matter of working with stakeholders to find the sweet spot under the circumstances. Green Banks institutionalize sustainable finance. The transition to a more sustainable clean energy economy will be a long one and it will need different innovative financing tools over time. A professionally staffed, self-sustaining Green Bank will be flexible enough to meet those challenges and will not be dependent on appropriations which dry up during times, such as now, when state balance sheets are under pressure. Imagine what could happen if states across the country embraced the Green Bank model. They could make a sizeable difference in the deployment of low-pollution energy technologies. These banks have the potential to transform our energy system, along the way creating jobs for American workers, protecting our health and safeguarding the planet.

#### Illinois, Kentucky, Minnesota and Wisconsin all currently have legislation pending to overturn state moratoria on the construction of new nuclear plants---Maryland Georgia and Kentucky fund plants now, proves the federal government is unnessecary

#### Iowa proves---states can take the lead in new nuclear innovations

Thorton 12 (Deborah D. Thornton research analyst Institute Brief, Public Interest Institute “Iowa (and Bill Gates) could lead the way” http://www.dailyiowan.com/2012/05/09/Opinions/28357.html)

Nuclear energy has been in the news more this year in Iowa, as a result of proposed legislation that would facilitate a potential new plant by MidAmerican Energy. In March, the Senate Commerce Committee passed House File 561. Before committee passage, the bill was amended to provide increased fiscal oversight by the Iowa Utilities Board. Additionally, it would prevent MidAmerican from pre-billing customers for costs associated with a possible new 540-megawatt plant. Other components of the bill would prevent MidAmerican from increasing rates for low-income customers and require the plant to be built, if it was approved. Nationally, since 2007 16 license applications have been initiated with the NRC, which would result in 24 new nuclear reactors. While many of these applications will not be followed to completion, as many as six new traditional reactors are projected to be operational in the next eight years. On an international basis, the projections are for as many as 96 small modular reactors to be built in the next 18 years. The reactors built with the that technology would be self-contained units — made from a simpler design, able to be built in a factory, and have lower on-site costs. The reactors would be buried underground. All of these factors would make the units safer and more cost effective. They would be about 75 feet long by 12 feet wide and could be moved from the factory on a rail car. The unit resembles a "nuclear battery." This design would also protect the power plant from "tornadoes, hurricanes, or tsunamis." At this time, the U.S. Department of Energy has signed agreements for three demonstration small modular reactors at Savannah River in South Carolina. These units, from 180 to 300 megawatts each, could power 200,000 homes for a year. This size allows for one to become operational and another to then be easily added when more capacity is needed. It also mitigates the enormous up-front costs for a full-size reactor project, which can reach $7 billion and take many years to get approved and built. This is the issue facing Mid-American Energy and the Iowa Legislature. Microsoft founder Bill Gates is also encouraging innovative development of nuclear energy. He has invested in the development of fourth-generation nuclear-power-plant designs, which would run on leftover fuel from current plants and would require few, or no, humans to operate on a daily basis. He is also skeptical about the long-term viability of wind and solar power because of problems with reliability and storage.

### Solves-Investment

#### States signaling support for nuclear attracts investment

Harrison 10 (David, staff writer @ Pew Center for the States, “Nuclear Power Makes a Quiet Comeback in the States,” http://www.pewstates.org/projects/stateline/headlines/nuclear-power-makes-a-quiet-comeback-in-the-states-85899377873)

Lobbyists for the nuclear-power industry have deployed to state capitols to try to strike down regulatory roadblocks. While final say over approval of new plants lies with the federal Nuclear Regulatory Commission (NRC), state-level opposition can thwart the planning of plants. And state support makes new power plants more attractive to investors. "If states and communities start showing more receptivity towards projects," Nivola says, "that will have ramifications on Wall Street." Nuclear-power advocates have scored a few wins. South Carolina passed a bill last year to consider nuclear energy as a "renewable resource," putting it in the same category as wind and solar power. Georgia, Mississippi and Kansas have enacted legislation allowing utility companies to charge customers for new nuclear plants before the plants open. Critics say those cost-recovery mechanisms force ratepayers to pay for expensive projects that might never come to fruition. Advocates counter that

paying for the plants upfront lowers interest payments in the long run.

### AT NRC Blocks

#### The industry controls the NRC---if they want the aff, it will happen, this evidence cites the former commissioner who just retired because of industry influence

Northey 3/18/13 (Hannah Northey, E&E reporter “Jaczko blasts politics, nuclear industry's influence on agency,” http://www.eenews.net/Greenwire/2013/03/18/5)

The former chairman of the Nuclear Regulatory Commission who resigned last year amid infighting over his management style told a Japanese newspaper that politics and industry pressure are playing an increasingly strong role at the agency. Gregory Jaczko told the Asahi Shimbun last week that politics and industry influence play a heavy hand in determining who can serve on the commission and that the agency needs more diversity in the views of its members. "The biggest problem with the NRC continues to be the heavy influence that the industry has in selecting the members of the commission," Jaczko told the newspaper in an interview published Thursday. "It is a very political process." Jaczko said the nuclear industry played a role in his nomination and that of his successor, geologist and university professor Allison Macfarlane. The White House chose Macfarlane to replace Jaczko after he resigned amid accusations from his colleagues -- two Democrats and two Republicans -- that he had berated employees and hidden information (Greenwire, May 21, 2012). "There are few commissioners who ever get onto the commission who are not endorsed by the industry, including myself and the current chairman," he said. Scott Burnell, a spokesman for the NRC, said the commission's processes include avenues for all interested parties -- be they individual citizens, elected officials, public interest groups, industry executives or academic experts -- to provide relevant data and opinions. "Both commissioners and the technical staff considers all relevant information in conducting the agency's work," he said. But Democrats like Rep. Ed Markey of Massachusetts, Jaczko's former boss, repeatedly accused the industry and commissioners of pushing the chairman out because he demanded swift changes at U.S. reactors after the 2011 earthquake and tsunami that crippled three reactors at Japan's Fukushima Daiichi plant. Jaczko also opposed the construction of the first new U.S. nuclear reactors in more than 30 years in Georgia because he wanted assurance from the developers that they would hold off on operating the new units until the safety upgrades were implemented (Greenwire, July 2, 2012). "A lot of what I fought against when I was chairman was to reinstill that culture that our job is to ensure safety and to do what we need to do," Jaczko said. "And that was met with tremendous opposition from my colleagues on the commission." Others accused Jaczko, who also formerly worked for Senate Majority Leader Harry Reid (D-Nev.), of following his own political agenda at the NRC, namely his decision to halt the commission's review of the Energy Department's application to build a repository under Yucca Mountain, Nev. Jaczko said his decision was based solely on budgetary constraints (E&ENews PM, June 24, 2011). Jaczko said that while there are many good people at NRC who are very technologically sophisticated, "especially in the last few years that I was on the commission, there was very strong influence from the industry on the commission members," and it would be "virtually impossible" for a nuclear skeptic to serve on the commission. The U.S. nuclear industry has a culture of "not wanting to have the NRC involved, wanting to do more things by the licensees themselves and having less oversight from the NRC," Jaczko said. In the interview, Jaczko outlined a process by which utility executives came to him as chairman with certain demands and companies eventually worked with members of Congress to apply pressure on the NRC. "Most of it is in the form of dialogue, discussion and questions, and that is the type of pressure that is applied," he said. "It is very pervasive." Jaczko said the industry, however, learned early on that he wouldn't respond to such lobbying and decided to "apply pressure elsewhere." But other commissioners come to NRC with strong connections to the private sector and "are very open with the industry," he said.

## China Turns

## Uniqueness

### Safe reactors/exports now

#### China nuclear exports are safe

Blackman 13 (Sarah Blackman is an online reporter working across NRI Digital's websites, BA honors in Journalism at the University of Central Lancashire, “China's nuclear roll-out: learning from Fukushima” http://www.power-technology.com/features/featurechina-nuclear-fukushima-japan)

The main lesson China has learned from the Fukushima disaster is that it will need to adapt a new generation of reactor technologies going forward. Zhou explains: "China learned the weak point of Gen II designs and understands potential risks of a large fleet of gen II reactors in China. Therefore, China quickly adjusted its nuclear development direction and pace." The nation is now focusing on delivering generation III and IV technologies, says Hess: "While the mainstay of the current Chinese fleet was adapted from early French pressurised water (PWR) technology, there are also CANDUs (Canadian developed pressurised heavy water reactor) and VVER's (Russian developed PWR) in operation. "An even greater diversity of reactor types are under construction - we see AP1000s, EPRs, fast reactors and even experimental high temperature reactors. Who knows what they'll invest in next." The first four AP1000s, designed by US-based Westinghouse, are being built at Sanmen and Haiyang for CNNC and China Power and Investment (CPI), while at least eight more of these reactors are planned for four more sites, according to the World Nuclear Association. Meanwhile, two Areva EPR reactors are being built at Taishan. The first unit is expected to be connected to the grid in October 2013, with commercial operations following two months later, and the second is set to be completed next year. Chinese manufacturers are yet to develop their own design capabilities, but the nation has plans to expand its overseas activities and develop engineering, procurement and construction offers abroad. Ernst and Young said in its 'Benchmarking the global nuclear industry 2012' report: "China's in-house production capabilities, low labour costs and a focus on quality create a strong competitive advantage." Over the last few decades, China has transformed from being an importer of nuclear technology to manufacturing its own equipment, for its own plants. So, with growing investments in nuclear and a strong focus on tightening safety standards in the sector, is China ready to ramp up the development of new nuclear, and breathe life into an industry dampened by uncertainty? "Yes, absolutely," says Hess. "There is a pressing need in China for the provision of cost-effective, clean and reliable electricity and nuclear power is the ideal choice for this. "While China may still be somewhat young in terms of the age of its reactor fleet and accordingly has less accumulated operating experience than some, it has demonstrated a terrific ability to build these plants both on schedule and budget," adds Hess.

#### China is leading in 4th generation reactors---critical to their domestic industry

Xinhuna 13 (“China building nuclear power plant with fourth-generation features,” http://www.globaltimes.cn/content/754006.shtml)

China has broken ground on a 3 billion-yuan ($476 million) nuclear power project that will be the first in the world to put a reactor with fourth-generation features into commercial use, a Chinese energy company said Sunday. It also marks China's latest move to speed up nuclear power development, which came to a halt after the Fukushima nuclear crisis in Japan in 2011. Construction of the project at Shidao Bay in the coastal city of Rongcheng, east China's Shandong Province, began last month, Xinhua learned from Huaneng Shandong Shidao Bay Nuclear Power Co., Ltd. (HSNPC), the builder and operator of the plant. With a designed capacity of 200 megawatts and "the characteristics of fourth-generation nuclear energy systems," the high-temperature gas-cooled reactor will start generating power by the end of 2017, the HSNPC said in a statement sent to Xinhua via email. Independently developed by China's Tsinghua University, the reactor has the features of "inherent safety" and "passive nuclear safety" in line with the fourth-generation concept, meaning it can shut down safely in the event of an emergency without causing a reactor core meltdown or massive leakage of radioactive material, according to the statement. The reactor can have an outlet temperature of 750 degrees Celsius, compared with 1,000 degrees Celsius that can be reached by the very-high-temperature gas-cooled reactor, an internationally-accepted fourth-generation reactor concept. It can also raise electricity generation efficiency to around 40 percent from the current 30-percent level of second- and third-generation reactors, said the statement. If it is commercially successful, the reactor's technology and equipment can be exported to other countries in the future, said an HSNPC public relations officer who declined to be named. "That will be a great boost to China's nuclear industry, as a very high percentage of the equipment is produced domestically instead of being imported," the official told Xinhua by telephone.

#### ---No, they’ll export new tech

Froggatt 6/6/12

http://nuclearexportcontrols.blogspot.com/2012/06/chinese-nuclear-goes-global.html

Chinese Nuclear Goes Global

In the space of a couple of decades, China has become a major player in the global nuclear sector. With by far the largest number of reactors under construction of any country in the world, and further reactors on order, it is seen as a vital market for uranium, a testing ground for new reactors designs and, increasingly, a potential partner for nuclear developments across the world. But the Fukushima crisis in Japan has had a significant – and under reported – impact on Chinese nuclear developments, triggering a freeze on the start of new construction, a re-consideration of the safety standards of domestic designs and unprecedentedly visible opposition to the building of new, inland nuclear plants. While an announcement was made by the State Council last week that the ban will be lifted shortly, the events of the last 15 months will still result in a failure to meet China’s current five-year plan on nuclear development and, depending on how things develop, its 2020 objectives as well. The global clout of China’s nuclear sector is such that the impacts of its decisions stretch far beyond the nation’s borders. From France to Namibia, from reactor designers to uranium-mining firms, the industry will be waiting anxiously for news from China.

#### ---China taking lead on next generation technology

Kadak-Prof Nuclear Science, MIT-6

<http://web.mit.edu/pebble-bed/papers1_files/Made%20in%20China.pdf>

Nuclear Power: “Made in China”

 Planning for the long-term, China has also taken the lead in developing advanced nuclear technologies. 16 Chinese scientists and engineers, trained in Germany at the Juelich Research Institute, have introduced high temperature pebble bed reactor technology into China. Pebble bed reactors are considered to be the first of the so-called “Generation IV” nuclear technologies that are expected to come to use in the next 10 to 20 years. China’s view is that these reactors can provide supplemental electric power for densely and sparsely populated regions and forprocessing heavy oil and coal to reduce air pollution. 17 The Juelich Research Institute is where the first pebble bed research reactor was operated for over 22 years. Tsinghua University’s Institute of Nuclear Energy Technology (INET), with the assistance of German engineers, designed and built a 10 megawatt thermal (Mwth) high temperature helium-cooled pebble bed reactor capable of producing four megawatts of electricity using a steam turbine generator. The reactor began operations in December of 2000 and has demonstrated its inherent safety characteristics by completing significant safety tests. At present, it is the only operating pebble bed reactor in the world. China has advanced this technology to the point where a full scale 190 megawatt electrical (Mwe) demonstration plant has been approved by the Chinese government to be built at Weihai in Shandong province, with construction beginning in 2007 and operations starting in 2011. 18 An artist rendering of the proposed site is shown on Figure 4.

---China taking lead on SMR technology

Buijs-Clingendael International Energy Programme-3/12

China and the Future of New Energy Technologies

<http://www.clingendael.nl/publications/2012/201203_ciep_paper_buijs_china_future_new_energy_technologies.pdf>

Finally, China is researching modular high‐temperature gas‐cooled pebbled‐bed reactors, which operate using nuclear fissile material shaped in pellets, coated and encapsulated inside a ceramic material. The key feature of this design is that it has very strong passive safety characteristics, since the pebbles and ceramic material are designed in such a way that a total lack of cooling would not cause the overall structure to disintegrate. Moreover, it can be used to build small reactors at a modular design basis, which can be easily expanded. The technology was originally developed in South Africa but not further pursued there. A first small 10 MW experimental reactor was developed by Tsinghua University in the context of the 863 Program for national research and reached criticality in 2003. Construction of a larger demonstration project with two reactor modules driving a 210 MW steam turbine was begun at the Rongcheng Shidaowan site in Shandong province in 2009 and is scheduled for completion in 2013. Regarding this Chinese effort, the report China’s Program for Science and Technology Modernization: Implications for American Competitiveness prepared for the US‐China Economic and Security Review Commission in 2011 remarks: ‘Scientists predict that if the PRC program to make a commercially‐viable pebble bed reactor is successful, it will represent a revolution in reactor technology—perhaps the largest advance in a quarter of a century

## **Prolif**

### **1nc Prolif Turn**

China will undercut US leadership on non-proliferation absent strong domestic nuclear power industry

Cunningham-Policy Analyst for Energy and Climate, American Security Project-10/12

Small Modular Reactors: A Possible Path Forward for Nuclear Power

<http://americansecurityproject.org/ASP%20Reports/Ref%200087%20-%20Small%20Modular%20Reactors.pdf>

Not only does the U.S. “export” high safety standards in its reactor designs, but through 123 Agreements it requires rigorous non-proliferation measures as a requirement of doing business with American nuclear companies. With China expected to more than triple the number of installed nuclear reactors between 2011 and 2015, the U.S. may become less relevant in ensuring adequate safeguards against weapons proliferation. 6 A strong domestic nuclear industry will better position the U.S. to lead on this issue.

Chinese leadership on nuclear power export controls is key to Asian modeling

Lieggi-Monterey Institute’s Center for Non­proliferation Studies-10

From Proliferator to Model Citizen? Strategic Studies Quarterly

<http://www.au.af.mil/au/ssq/2010/summer/lieggi.pdf>

The extent to which China assisted weapons of mass destruction (WMD) and missile programs in countries like Pakistan and Iran has been well documented. Part of China’s past behavior stemmed from a fundamental disagreement with the Cold War structure of the nonproliferation regime; this ambivalence towards nonproliferation led China to undertake politically motivated proliferation activities that meshed with Beijing’s foreign policy needs at the time. In later years, particularly after China’s economy began to open in the 1980s, economic motivations also pushed Chinese entities to transfer WMD–related technologies abroad with little consideration for the ramiications on the nonproliferation regime. As China’s view of the international community (and its own place in it) changed, so too did its policy towards the proliferation of WMD. Much of this change was brought about by a mixture of factors touching on various issues facing Beijing, such as national security interests, economic stability, and international prestige. The factors that most affected China’s actions included signiicant international (particularly US) pressure placed on Beijing in the 1990s to adopt stronger nonproliferation policies, Beijing’s growing recognition that proliferation of WMD was detrimental to its own security interests, and concern within the Chinese leadership about the impact of China-based proliferation on Beijing’s acceptance as a responsible member of the world community. One of the areas within the nonproliferation regime where China has most notably changed in recent years is the field of nonproliferation related trade controls, particularly export controls. 1 In the 1980s and 1990s, China had very little in the way of controls on military-related trade; however, this began to change by the late 1990s. Between 1998 and 2002, China worked to revamp its export control system. Over the course of a few months in 2002, it promulgated a comprehensive set of export control measures for sensitive items related to WMD and other military programs. Most analysts agree that China’s system has improved since the comprehensive rules were adopted and that the system, at least on paper, is in line with international supplier regime standards. 2 Despite the legislative improvements, sales of sensitive dual-use items by Chinese companies to proliferating countries continued to concern the international community and the United States in particular. Many of the problems in the system are caused by insufficient Chinese capacity to enforce its controls. The weakest link in the Chinese export control system, as with many developing systems, is in its ability (and, some would say, political will) to enforce the restrictions that have been laid out in its legis­ lation. his area of China’s export control system has not traditionally been transparent, a fact that has added to uncertainties about Beijing’s will with regards to nonproliferation-related trade control enforcement. Beijing has been hesitant to discuss violation cases publicly, leaving many questions unanswered about its enforcement activities. Beijing has, however, made a few public announcements about export control violations since its system was revamped in 2002. hree such an­ nouncements made between 2006 and 2008 shed some light on the inner workings of China’s export control enforcement, as well as on the chal­ lenges facing it. Each of these three cases is reviewed to assess the status of China’s current enforcement capabilities. The three companies—Zibo CHEMET Equipment Company, Shanghai Smart Chemicals, Ltd., and Jilin Tumen Chemical Light Manufacturing Company—were punished for chemical-related exports, likely to Iran and North Korea. Additionally, a more recent case involving a seized shipment of dual-use materials at a border crossing with North Korea appears to show some improvements in China’s risk assessment and contraband interdiction abilities. his case is also examined. As the case studies show, China is slowly getting over the hurdles of establishing a viable export control system. Its progress in this field can be seen as a model for other countries—particularly those in Asia who face some of the same circumstances and challenges China had in the past decade. At the moment, while Beijing moves closer—however slowly—to international standards in the area of nonproliferation, many countries in Asia have yet to even begin the process of strengthening their systems. The lack of capacity in many Asian countries has had negative implications on the nonproliferation regime. The A. Q. Khan and other proliferation networks have exempliied how Asian nations with weak nonproliferation related controls can become key transshipment points for proliferators, or, as in the case of Malaysia and the Khan network, manufacturing hubs. Therefore, key areas will be identified so other Asian countries might learn from China’s experience while building their own strategic trade control frameworks. In this way, China’s system may prove to be an example for other countries in the region to selectively emulate when strengthening their own export control systems.

### Prolif impact

#### Proliferation causes nuclear war.

Horowitz 9 (Michael, Professor of Political Science @ University of Pennsylvania (Former Emory debater and NDT Champion), *The Spread of Nuclear Weapons and International Conflict: Does Experience Matter?*, Journal of Conflict Resolution, Volume 53 Number 2, April 2009 pg. 234-257]

Learning as states gain experience with nuclear weapons is complicated. While to some extent, nuclear acquisition might provide information about resolve or capabilities, it also generates uncertainty about the way an actual conflict would go—given the new risk of nuclear escalation—and uncertainty about relative capabilities. **Rapid proliferation** may especially heighten uncertainty given the potential for reasonable states to disagree at times about the quality of the capabilities each possesses.2 What follows is an attempt to describe the implications of inexperience and incomplete information on the behavior of nuclear states and their potential opponents over time. Since it is impossible to detail all possible lines of argumentation and possible responses, the following discussion is necessarily incomplete. This is a first step. The acquisition of nuclear weapons increases the confidence of adopters in their ability to impose costs in the case of a conflict and the expectations of likely costs if war occurs by potential opponents. The key questions are whether nuclear states learn over time about how to leverage nuclear weapons and the implications of that learning, along with whether actions by nuclear states, over time, convey information that leads to changes in the expectations of their behavior—shifts in uncertainty— on the part of potential adversaries. Learning to Leverage? When a new state acquires nuclear weapons, how does it influence the way the state behaves and how might that change over time? Although nuclear acquisition might be orthogonal to a particular dispute, it might be related to a particular security challenge, might signal revisionist aims with regard to an enduring dispute, or might signal the desire to reinforce the status quo. This section focuses on how acquiring nuclear weapons influences both the new nuclear state and potential adversaries. In theory, system wide perceptions of nuclear danger could allow new nuclear states to partially skip the early Cold War learning process concerning the risks of nuclear war and enter a proliferated world more cognizant of nuclear brinksmanship and bargaining than their predecessors. However, each new nuclear state has to resolve its own particular civil–military issues surrounding operational control and plan its national strategy in light of its new capabilities. Empirical research by Sagan (1993), Feaver (1992), and Blair (1993) suggests that viewing the behavior of other states does not create the necessary tacit knowledge; there is **no substitute** for **experience** when it comes to handling a nuclear arsenal, even if experience itself cannot totally prevent accidents. Sagan contends that **civil–military instability** in many likely new proliferators and pressures generated by the requirements to handle the responsibility of dealing with nuclear weapons will skew decision-making toward **more offensive strategies** (Sagan 1995). The questions surrounding Pakistan’s nuclear command and control suggest there is no magic bullet when it comes to new nuclear powers’ making control and delegation decisions (Bowen and Wolvén 1999). Sagan and others focus on inexperience on the part of new nuclear states as a key behavioral driver. **Inexperienced operators** and the bureaucratic desire to “justify” the costs spent developing nuclear weapons, combined with organizational biases that may favor escalation to avoid decapitation—the “**use it or lose it**” mind-set— may cause new nuclear states to adopt riskier launch postures, such as **launch on warning,** or at least be perceived that way by other states (Blair 1993; Feaver 1992; Sagan 1995).3 Acquiring nuclear weapons could alter **state preferences** and make states more likely to escalate disputes once they start, given their new capabilities.4 But their general lack of experience at leveraging their nuclear arsenal and effectively **communicating** nuclear threats could mean new nuclear states will be more likely to **select adversaries poorly** and to find themselves in disputes with resolved adversaries that will reciprocate militarized challenges. The “nuclear experience” logic also suggests that more experienced nuclear states should gain knowledge over time from nuclearized interactions that helps leaders effectively identify the situations in which their nuclear arsenals are likely to make a difference. Experienced nuclear states learn to select into cases in which their comparative advantage, nuclear weapons, is more likely to be effective, increasing the probability that an adversary will not reciprocate. Coming from a slightly different perspective, uncertainty about the consequences of proliferation on the balance of power and the behavior of new nuclear states on the part of their potential adversaries could also shape behavior in similar ways (Schelling 1966; Blainey 1988). While a stable and credible nuclear arsenal communicates clear information about the likely costs of conflict, in the short term, nuclear proliferation is likely to increase uncertainty about the trajectory of a war, the balance of power, and the preferences of the adopter.

### China Better Prolif Leader

#### They support it MORE than the US---proven by a laundry list of treaty violations

Boutin-School of International and Political Studies, Deakin University-11

Changing the Guard? China and the Nuclear Nonproliferation Regime

Asian Politics & Policy—Volume 3, Number 3—Pages 349–364

<http://onlinelibrary.wiley.com/doi/10.1111/j.1943-0787.2011.01275.x/pdf>

It is noteworthy that China’s commitment to the nuclear nonproliferation regime continued to deepen despite the negative environment engendered by a number of American policies pursued under President George W. Bush. The American approach to multilateralism during his term in ofﬁce was of great concern to Chinese authorities (Kent, 2008, pp. 65–66). The actions of the United States that were poorly received in China included the American withdrawal from the Treaty on the Limitation of Anti-Ballistic Missile Systems (commonly referred to as the ABM Treaty) in 2002, its withdrawal of formal support for the CTBT, and the negotiating of the United States-India Civil Nuclear Cooperation Initiative–Bilateral Agreement on Peaceful Nuclear Cooperation (Chu & Rong, 2008, p. 179). These concerns have been reinforced by the American National Missile Defense program, which as well as being widely regarded in China as directed against it, has considerable potential to encourage further horizontal nuclear proliferation (Graham & LaVera, 2002, pp. 240–241). The Chinese government stated in 2008 that this “global missile defense program will . . . have a negative impact on the process of nuclear disarmament” (Zhang, 2010, p. 149). The adoption of a more positive approach to nonproliferation multilateralism under President Obama will help to assuage Chinese concerns, but some aspects of American nonproliferation policy remain questionable from a Chinese perspective. While a number of issues—such as perceived general American efforts to dominate and circumvent multilateral nonproliferation mechanisms, the American emphasis on counter-proliferation, and its missile defense program—had and in some cases still have considerable potential to reinforce established Chinese suspicions of multilateralism, this has not resulted in a reversion to China’s former approach to the nonproliferation regime. Chinese authorities continue to harbor some reservations about the regime where issues of objectivity and the rules of engagement of suspected or conﬁrmed proliferators are concerned, and they send mixed signals on nonproliferation on occasion as a result. China remains a less enthusiastic supporter of the imposition of sanctions on actual or suspected proliferators than many other states, but in a remarkable policy transformation, China emerged as a supporter of the nuclear nonproliferation regime in the face of considerable internal threats to its integrity and effectiveness. This demonstrates the importance of multilateral nonproliferation instruments to the Chinese government and the depth of its commitment to this approach.

#### THE US is unequal in implementation---perceived as neonuclear apartheid making it useless

Kazmi-graduate student at the Department of Strategic and Nuclear Studies, National Defence University, Islamabad-8/30/12

Letter from Pakistan: How an unfair non-proliferation regime undermines nuclear security

<http://thebulletin.org/web-edition/op-eds/letter-pakistan-how-unfair-non-proliferation-regime-undermines-nuclear-security>

In a September 1967 speech, V.C. Trivedi, the Indian Ambassador to an early UN arms control effort known as the Eighteen Nations Committee on Disarmament, said that developing countries could tolerate nuclear weapons apartheid, but not an atomic apartheid that prevented them from attaining the economic progress that civilian nuclear power can bring. Regrettably, today's global nonproliferation architecture is being applied with such selectivity that it can truly be called the neo-nuclear apartheid. That architecture not only works against the peaceful use of nuclear energy in developing countries, it also undermines global nuclear security. The Nuclear Security Summit process -- which in recent years has been a focus of US nuclear proliferation policy -- professes to tackle robust concerns. The Seoul summit held earlier this year, for example, addressed not just nuclear security, but nuclear safety, the integrity of the Nuclear Non-Proliferation Treaty (NPT), and the nuclear programs of Iran and North Korea. But the positive elements of the Nuclear Security Summit initiative pale in comparison with the selective application of the nonproliferation regime to states that seek to create a nuclear power industry. The inequity of the nonproliferation regime is illustrated by its disparate treatment of developing countries. India rejected the NPT and tested nuclear weapons -- but still managed to be treated well under the nonproliferation regime, with the Nuclear Suppliers Group granting it a waiver to trade in nuclear materials in 2008. Because it is a signatory of the NPT, Iran has limited access to peaceful nuclear technology through Russia, even though Tehran stands accused of covertly attempting to develop nuclear weapons. And North Korea -- a nuclear-armed state that withdrew from the NPT and threatens its neighbors -- has been offered help with civilian power reactors during negotiations over its nuclear weapons program. Meanwhile, Pakistan -- which has gone to great lengths to support the global nuclear nonproliferation regime -- has been denied membership in the Nuclear Suppliers Group, a decision that greatly hampers Islamabad's efforts to develop a commercial nuclear energy program. Though the NPT is considered the pivot point of the nonproliferation system, the nuclear states outside the treaty are major players in the international security system, and they affect the world's nuclear balance. It will be difficult for the Nuclear Security Summit process and other similar initiatives to gain global acceptance until the nuclear nonproliferation regime is applied with at least a semblance of fairness. If the overall nonproliferation system is to become equitable and therefore effective, it must allow the non-NPT nuclear weapon states to participate in nuclear export-control cartels, so long as they contribute to controlling the proliferation of nuclear materials. Such a policy change would, as a byproduct, create transparency in the nuclear programs of non-NPT states and thereby enhance overall strategic stability. The Pakistan example. Few outside of South Asia are familiar with the tribulations Pakistan has faced as it has attempted to support international nuclear security and grow a nuclear power industry. Despite media and political claims to the contrary, Pakistan has supported the Nuclear Security Summit initiative and encouraged international cooperation and voluntary actions to ensure nuclear security. Furthermore, Pakistan observes nonproliferation norms in their letter and spirit. Islamabad's nuclear security and safety structure rests on four pillars: a robust command and control system under the National Command Authority, a thorough safety and security regulatory regime, a comprehensive system of export control management, and an extensive program of international cooperation. Since the 2010 summit in Washington, Islamabad has taken eight steps to buttress the Nuclear Security Summit initiative: To prevent non-state actors from gaining access to nuclear materials, Islamabad vigorously enforces UN Security Council Resolution 1540 PDF on WMD proliferation. The Pakistan Institute of Engineering and Applied Sciences offers a specialization in nuclear security, while the School of Nuclear Radiation Safety conducts courses in nuclear safety. During the 2010 summit, Pakistan, among other countries, announced that it would host a "center of excellence" -- that is, a collaborative hub where innovative approaches will be developed to strengthen the nuclear security process. In April 2012, Islamabad announced that it has opened a Strategic Plans Division Training Academy, and at the Seoul Summit in March, Pakistan's former Prime Minister Yousuf Raza Gilani offered nuclear security training to the international community. To prevent nuclear terrorism, Pakistan constructively participates in Global Initiative to Combat Nuclear Terrorism-related events and has helped develop guidelines on nuclear-detection architecture. In a significant development, Pakistan has announced it will add 8,000 highly skilled officials to its team of security professionals, including the creation of a special response force. The first batch of security personnel graduated from the Strategic Plans Division Training Academy in April 2012. This special response force, which supplements an existing SPD security force, has been termed a "qualitative milestone in … rapid response capability" for safeguarding Pakistan's strategic assets. Islamabad and the IAEA conduct joint seminars and workshops on nuclear security. Pakistan supports the spirit of the Proliferation Security Initiative by participating in its exercises as an observer. The United States launched this initiative in 2003 as an effort to stop trafficking of weapons of mass destruction, their delivery systems, and related materials to and from states and non-state actors of proliferation concern. Through its Exports Control Act, Pakistan continues to strengthen UNSC Resolution 1540 via measures that include a recent revision of its national control list to support the global efforts to prevent proliferation of weapons of mass destruction. To augment its export controls, Pakistan is deploying special nuclear material portals at key border points to deter and detect illicit trafficking of nuclear and radioactive materials. Despite this exemplary record, Pakistan's nuclear power industry has faced severe challenges in dealing with the Nuclear Suppliers Group, which, because of Pakistan's limited cooperation with China in nuclear matters, would not grant membership in the cartel. (In this realm, Pakistan started cooperating with China in 1986, before China participated in the NSG.) A refusal to let Pakistan participate in the export control cartels, and especially the NSG, would seriously limit the country's efforts to meet its growing energy needs through nuclear energy. According to Pakistan's Energy Security Plan of 2050, its needs to build nuclear power plants that will produce 8,800 megawatts of electricity within the next two decades. Participation in the Nuclear Suppliers Group is essential if Pakistan is to be able to acquire the equipment and expertise needed to build the nuclear plants that will fill this power gap. India -- which, like Pakistan, has not signed the NPT -- was given an exemption by the NSG, and it has been able to advance its civilian nuclear power industry, relieving pressure on its challenged electric utility system and cementing strategic and economic partnerships with other countries. This differential treatment of India and Pakistan under the international nonproliferation regime is simply unfair. Equity means security. The legacy of the Seoul Summit is a determination among state participants that their commitments toward nuclear security will remain "voluntary" until the states find the world nonproliferation regime equitable. The glaring inequities of the nonproliferation regime keep countries like Pakistan from meeting their energy needs and, thereby, harm their overall development. The unfairness of the nonproliferation regime is also keeping the world community from coming together around a common set of verifiable nuclear security standards. The sooner the nuclear nonproliferation regime ends its neo-nuclear apartheid policies and puts all countries on an equal footing, the more stabilizing the nonproliferation regime will become, and the safer the world will be.

This means they have no offense, the entire regime will die with US leadership

ISN Security Watch 10 (“Nuclear Apartheid: Trouble Brewing amongst Non-Nuclear States,” http://oilprice.com/Geopolitics/International/Nuclear-Apartheid-Trouble-Brewing-Amongst-Non-Nuclear-States.html)

While there are those that argue Article VI contains no promise to disarm (a viewpoint prevalent within the Bush administration) there is a general acceptance among the NWS - at least rhetorically - of the need for disarmament. US President Barack Obama in particular understands this; the recent deal with Russian President Dmitry Medvedev could not have been better timed to neutralize the inevitable clash in New York.

But there is larger problem. The ‘have nots,’ many of whom are modernizing states, feel they are being denied nuclear technology by the West under the guise of preventing proliferation - in contravention of the Treaty’s third pillar. They believe they are the victims of ‘technological apartheid’ - the new colonialism enshrined by the NPT itself.

That the five NPT Weapons States are also the UN P5 further adds to this notion of the strong oppressing the weak. This is why Iran justifies intransigence as standing up to ‘imperialism.’

Unless the NNWS’ concerns are addressed, a treaty that many consider moribund may die. This sobering thought must be uppermost in Obama’s mind.

## Soft Power

### 1nc Soft Power

Turn soft power

Chinese nuclear exports key to soft power

Blank-prof strategic studies institute, Army War College-6/16/10

China puts down marker in nuclear power race<http://www.atimes.com/atimes/China_Business/LF16Cb01.html>

Therefore, China's recent nuclear exports to Pakistan and the future of its nuclear exports in general need to be examined in these three contexts. The first context is that of the overall growth of the assertiveness of China's diplomacy in general and efforts to use nuclear power and military instruments like missiles as sources of influence abroad. In the case of exports to Pakistan, a second context is the long-standing geopolitical rivalry among India, China and Pakistan in which China's "all-weather" friendship with Pakistan has been a deliberate and conscious Chinese strategy to inhibit the growth of Indian power. Finally, we must keep in mind that China is not only an exporter of nuclear energy, it also is a consumer of that energy and so it will be a key market for other exports from the likes of Russia, the United States, France, South Korea, and Japan. As an importer, it obviously will welcome the rivalry of exporters who wish to sell to it so that it can obtain more favorable terms. However, as an exporter of nuclear energy and a power that wants to export more of it for both economic and political gain, it cannot afford to let either its rivals outpace it in Asia or in other areas that China deems as essential to the pursuit of its larger strategic goals.

#### Chinese soft power solves US/China confrontation---smooths over cracks by assuring neighbors

Shuli 13 (Hu Shuli is editor-in-chief of Caixin Media Company, editor-in-chief of the weekly magazine Century Weekly, executive editor-in-chief of the monthly journal China Reform and dean of the School of Communication and Design at Sun Yat-sen University. “A Sino-US relationship that competes on values,” http://www.scmp.com/comment/insight-opinion/article/1139455/sino-us-relationship-competes-values)

A new phase of Sino-American relations is poised to begin, now that Xi Jinping has been confirmed as China's next leader and Barack Obama re-elected US president. In both countries, the debate about foreign policy options has been robust, particularly on the bilateral relationship. This is the time to reflect on the past and look ahead to the future. The transfer of power has been smooth for both, with no noticeable change in the conduct of either's foreign policy. Over the past year, China has advocated a win-win relationship of mutual respect between a superpower and an emerging power. It was the approach Xi outlined on his visit to the US last February, and reiterated at November's party congress. Meanwhile, Obama introduced the policy of rebalancing in his first term and has been taking steps to effect this "pivot" towards Asia. The Sino-US relationship has never been more important, and hope is high that Obama and the new team of Xi and Li Keqiang will do more to forge a relationship of co-operation, rather than confrontation. The relationship has been highly transparent so far, and we've not seen the kind of misunderstanding, friction or behaviour to "test the water" so common with new administrations. But the lack of strategic trust remains a huge challenge for both. From Beijing's standpoint, Washington's rebalancing strategy has brought uncertainty to the region. The disputes over Scarborough Shoal and the Diaoyu Islands, as well other rows between China and its neighbours, can be understood in this context. America's determination to be a key player in Asian security has emboldened regional countries to lean on it. The result is, when involved in a row with China, these countries have become less likely to compromise. The US has repeatedly said it takes no side in the Sino-Japanese dispute over the Diaoyus. But if Japan had not been a US ally, would it have acted the way it did? Of course, without the US security guarantees, nationalism in Japan might grow even stronger and the calls to rearm through a change in the constitution might get even louder, and that would destabilise the region. The US presence in Asia will only grow, now that the Americans are slowly extricating themselves from the Middle East and Afghanistan. This is throwing a spanner in the works of China's relationship with the rest of Asia, particularly its neighbours. US officials and analysts like to describe the bilateral relationship as one of co-operation and competition; in the context of China's relations in its neighbourhood, Washington and Beijing are clear rivals. China is prepared to meet the challenge, but it should also fully prepare for any crisis. Moreover, Chinese diplomacy in the region must be more proactive to shore up the country's influence. Sino-US rivalry is risky, and leaders on either side are well aware that any mishandling could lead to devastating conflict. This is why, over the past year, China has been clear that it is seeking a new path. As President Hu Jintao urged at last year's strategic and economic dialogue, the two countries should "prove that the traditional belief that big powers are bound to enter into confrontation and conflicts is wrong, and seek new ways of developing relations between major countries in the era of economic globalisation". The striking feature of a rising power is its expanding interests, which may easily lead to conflict with the dominant power. As the world's two largest economies, China and the US must seek new ways of relating that benefit not only themselves but the rest of the world. How, then, should China respond to the US pivot to Asia? It has been China's policy to base its relationship with its neighbours on economic opportunities. Through trade and investment, China has sought to share the fruit of its growth with others in the region, and has thus built a foundation for peaceful co-operation. This effort must continue. But, as the challenges thrown up by America's strategic rebalancing have shown, a relationship built strictly on economic co-operation is not enough, and political and security concerns must also be addressed. In fact, a close economic relationship often creates such concerns. America's policy in Asia is founded not on economics, but on a vision of a secure and stable strategic order in the region. It is not surprising that this vision of a common good - coupled with the values that America likes to champion - is attractive to countries in the region. Thus, in some sense, the Sino-US rivalry is really one fought on values. In this regard, China needs to strengthen dialogue with its neighbours on politics and security matters, establish bilateral or multilateral security mechanisms, and do much more to dispel their doubts and worries. This is nothing short of a competition between the American Dream and the Chinese Dream. China has to adjust, elaborate and strengthen the substance of its Chinese Dream, to increase its moral appeal to others. Once this missing piece of the puzzle is in place, Chinese diplomacy will have found a new lease of life.

#### Tensions risk nuclear conflict over the Senkaku’s, South China sea or Taiwan.

Gross December 2012 (Donald Gross, a Pacific Forum CSIS Senior Associate, is a former White House and State Department official whose new book, The China Fallacy: How the U.S. Can Benefit from China’s Rise and Avoid Another Cold War, was published in October by Bloomsbury.

Now is the time to rethink America’s policy toward China. The United States can benefit economically from China’s rise, strengthen Chinese advocates of human rights and democracy, and avoid a new Cold War. We urgently need a national debate about U.S.–China policy to prevent doing permanent damage to American interests in Asia. Fortunately, this is a propitious period to have that debate. In the United States, President Barack Obama will shortly embark on his second term in office, so will be able to guide American foreign policy without the ever-present political pressures of a re-election campaign. In China, a new generation of leaders are coming to power with a mandate to address the country’s daunting domestic challenges—including corruption and cronyism within the Chinese Communist Party (CCP), environmental degradation, frequent “mass incidents” of social unrest, inflation, and glaring social inequalities. The leaders who take office in March—including President Xi Jinping and Premier Li Keqiang—know firsthand some of the worst excesses of the CCP. They were victims of Mao’s Great Proletarian Cultural Revolution, when an entire generation of young people—many from prominent families—were “sent down” to rural areas to perform backbreaking manual labor for years. Having experienced and survived the widespread human rights abuses that occurred between 1966 and 1976, the year of Mao’s death, China’s new leadership will be more receptive to calls for political reform from the country’s middle class and liberal intellectuals, who are highly critical of increasing corruption and cronyism within the CCCP. China’s new leaders will welcome overtures from the United States that aim to assist China in meeting its challenges. But harsh American trade measures or heightened military pressure will likely be met with a tough response, as the new leaders seek to prove their mettle and their capability to defend China’s national interests. Increased tensions with China could have dire consequences. They could lead to a military conflict over Taiwan’s political status, over whether Japan or China holds sovereignty to a group of uninhabitable islands and offshore energy resources in the East China Sea or over the ownership of small islands and energy resources in the South China Sea. In a worst case scenario, those conflicts could escalate, by accident or by design, to a nuclear exchange. It is essential to remember that China’s rise strengthens America’s economy and future prosperity. Today, China is the largest growth market in the world for U.S. goods and services. Trade with China, America’s third-largest export market and the leading market for U.S. agricultural products, has helped America’s recovery from the global financial crisis.

### Africa Soft Power Impact

#### Chinese soft power is key to African stability – peacekeeping and infrastructure.

Ayenagbo et al 2012

Kossi, College of Urban and Environmental Sciences Northeast Normal University, China’s peacekeeping operations in Africa: From unwilling participation to responsible contribution, African Journal of Political Science and International Relations Vol. 6(2), pp. 22-32, February 2012 http://www.operationspaix.net/DATA/DOCUMENT/7538~v~Chinas\_Peacekeeping\_Operations\_in\_Africa\_\_From\_Unwilling\_Participation\_to\_Responsible\_Contribution.pdf

Furthermore, China proves an indispensable party to Washington when it comes to influencing the government in Khartoum and is able to operate as a mediator and the US has praised China for using its local influence constructively. By defending the principle that external parties can only intervene with the consent of the Sudanese government China shapes the conflicts between the principles of state sovereignty versus interventionism. At the question if China and the West are partners in Darfur crisis, one might say that China and Europe do not act as partners in managing the Darfur crisis due to the fact that many of their interests and principles are opposed. But they have to cooperate in maintaining international peace and stability benefit for both as well as the World. Influence of China’s soft power in Africa The first nine months of 2008, witnessed the deployment around the world of the roughly 2,000 peacekeepers in China, on average, 77% were in Africa. China is by far the largest contributor to Africa peacekeeping among the Security Council‟s permanent five members, with 63% of total P-5 contributions to the continent. The composition of Chinese deployments is generally on the softer side of such military interventions. Of the total number around the globe, 5% are military observers, 14% are police, and 81% are troops. In Africa, 91% are troops devoted to carry out combat units tasked with defending UN installations and personnel as well as local civilians in immediate danger. This component includes engineers, logistics staff, and medical personnel. Many of Chinese troops are deployed in their organic home units, which leaves the contributing countries to utilize for projects other than those mandated by the mission. We can identify UNAMID in Darfur which has consisted of a 321 member engineering contingent dispatched to help with the construction of camps, roads, and bridges. Beijing has recently decided to send well diggers and other relevant equipment to Darfur to solve the water shortage facing the hybrid African Union–United Nations force. UNMIS in Southern Sudan with 444 engineers, transport experts, and medical personnel. UNMIL in Liberia with 563 engineers, transport experts and medical personnel (He, 2007). MONUC in Congo with 218 engineers, transport expert and medical personnel. While in Congo, according to the UN Peacekeeping Best Practices Unit‟s chief, stated that Chinese medical personnel are “providing some of the best medical support anywhere in Central Africa.” Roads and brides are in honors of peacekeepers in Liberia. In all, according to Wei Yanwei, vice director of the Peace-Keeping Affairs Office of China‟s Ministry of (Jennifer, 2008), National Defense, Chinese peacekeepers worldwide have built or repaired more than 200 bridges and 7,500 kilometers of roads, airports, and water supply infrastructures, and they have treated nearly 50,000 local patients. Moreover local populations benefit from many facilities, items of infrastructure, and services constructed and rehabilitated. As results, peacekeeping operations was to develop and nurture China‟s national interests, to maintain friendly and non-interventionist relations with recipient governments and at project the image of a responsible stakeholder on the international stage. It is in this aspect of peacekeeping; the soft-security portion of nation building and reconstruction that the greatest opportunities lie for using soft power to promote China‟s wider national interests. In Africa: Sudan, Democratic Republic of the Congo, and Liberia are also where it has made large investments in natural resources and where stability, infrastructure, and good government-to-government relations will ultimately redound to its economic interest.

## 1nr

### 1NR Workforce

#### More evidence – status quo solves

Gene Aloise, Director, Natural Resources and Environment, GAO, April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces, http://www.gao.gov/assets/600/590488.pdf

According to NNSA officials, these five metrics are tracked very closely by M&O contractors at all sites, and attrition, employment acceptance rates, and pay and benefits comparability data are systematically collected at regular intervals enterprisewide. If any of these metrics indicate a problem in retention, for example, NNSA officials told us, action would be taken to address it. For example, these metrics were monitored very closely by NNSA and the M&O contractors at Los Alamos National Laboratory and Lawrence Livermore National Laboratory during their 2006 transition to a new M&O contract with less generous retirement and medical benefits. There were concerns that this change could lead to a spike in attrition among highly skilled staff that could in turn lead to difficulties in the laboratories meeting deadlines on project deliverables. Similarly, NNSA is now carefully watching the same metrics at Sandia National Laboratories because the M&O contractor substantially cut future retirement benefits that took effect for those employees who remained at the lab beyond the end of 2011. If the metrics indicate greater attrition than expected, the laboratory could adjust its recruiting strategies to hire more staff.

#### Incentives now solve the advantage enough

Gene Aloise, Director, Natural Resources and Environment, GAO, April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE: Strategies and Challenges in Sustaining Critical Skills in Federal and Contractor Workforces, http://www.gao.gov/assets/600/590488.pdf

Some of the human capital challenges facing the enterprise are beyond the control of NNSA and its M&O contractors, and in these cases, NNSA has authorized increased compensation to help the sites acquire or retain the personnel they require. The site locations are fixed, and site staff cannot change the number of U.S. citizens completing graduate science and technology programs. Similarly, NNSA and its contractors have no choice but to adapt to the increased mobility of their staff resulting from the shift to a defined contribution retirement systems. To mitigate these challenges, NNSA and its contractors continue to offer financial incentives to recruit and retain critically skilled employees, with competitive starting salaries. The scale of these financial incentives can vary by location and position, but NNSA reported that this strategy has thus far been adequate for recruiting and retaining the talent they need.

### 1NR Impact Overview

Economic integration prevents their impacts from escalating
Griswold, 7 (Daniel, director of the Center for Trade Policy Studies, 4/20/2007, Trade, Democracy and Peace, HYPERLINK "<http://www.freetrade.org/node/681>" <http://www.freetrade.org/node/681>)
A little-noticed headline on an Associated Press story a while back reported, "War declining worldwide, studies say." In 2006, a survey by the Stockholm International Peace Research Institute found that the number of armed conflicts around the world has been in decline for the past half-century. Since the early 1990s, ongoing conflicts have dropped from 33 to 17, with all of them now civil conflicts within countries. The Institute's latest report found that 2005 marked the second year in a row that no two nations were at war with one another. What a remarkable and wonderful fact. The death toll from war has also been falling. According to the Associated Press report, "The number killed in battle has fallen to its lowest point in the post-World War II period, dipping below 20,000 a year by one measure. Peacemaking missions, meanwhile, are growing in number." Current estimates of people killed by war are down sharply from annual tolls ranging from 40,000 to 100,000 in the 1990s, and from a peak of 700,000 in 1951 during the Korean War. Many causes lie behind the good news--the end of the Cold War and the spread of democracy, among them--but expanding trade and globalization appear to be playing a major role in promoting world peace. Far from stoking a "World on Fire," as one misguided American author argued in a forgettable book, growing commercial ties between nations have had a dampening effect on armed conflict and war. I would argue that free trade and globalization have promoted peace in three main ways. First, as I argued a moment ago, trade and globalization have reinforced the trend toward democracy, and democracies tend not to pick fights with each other. Thanks in part to globalization, almost two thirds of the world's countries today are democracies--a record high. Some studies have cast doubt on the idea that democracies are less likely to fight wars. While it's true that democracies rarely if ever war with each other, it is not such a rare occurrence for democracies to engage in wars with non-democracies. We can still hope that as more countries turn to democracy, there will be fewer provocations for war by non-democracies. A second and even more potent way that trade has promoted peace is by promoting more economic integration. As national economies become more intertwined with each other, those nations have more to lose should war break out. War in a globalized world not only means human casualties and bigger government, but also ruptured trade and investment ties that impose lasting damage on the economy. In short, globalization has dramatically raised the economic cost of war.

#### And, these wars cause extinction

Daguzan 10 (Citing Jean Francois, PhD and Senior Research Fellow at the Foundation for Strategic Research, “Economic crisis threatens existence of human beings” November 26, 2010, Right Vision News, pg online @ lexisnexis)

The financial and economic crisis being faced by the world is in fact a human catastrophe as it may threaten the well-being and existence of human beings in the globe, said Dr. Jean-Francois Daguzan, senior research fellow at the Foundation for Strategic Research, France. He was speaking at a roundtable discussion on ‘The Strategic Consequences of World Financial and Economic Crisis’ organised by the South Asia Strategic Stability Institute (SASSI) here on Wednesday. Former ambassador Tasawur Naqvi conducted the proceedings. Dr. Jean-Francois Daguzan said that the crisis could lead to violence. Every effort should be made to control it as it may lead to risky and dangerous situations. He said that the balance of power had already changed. He said that if economic crisis is compared with 9/11 and invasions of Iraq and Afghanistan, the World Trade Centre debacle seemed to be a contingent affair. The financial crisis to him was like a nuclear war, which is tilting the balance of power in the world. He said that an amount of $50,000 billion went to the aid of developing nations. He noted the impact of the snowballing crisis on stock exchanges and investment potential of different countries. He said that the crisis also affected stability of nations by impacting equities and stock exchanges. He said that the war in currencies is the last impact of the crisis in an age of artificial monetary powers of currencies, which would provoke and continue with economic crises within countries. He said that it is rebalancing the power politics in the world. He enumerated Southeast Asia’s economies facing problems in 1988 when China was big, but not enough to become the lone competitor of the west.

High skilled workforce is a prerequisite to the aff – we solve it

D’Ambrosio and O’Brien 9 (Peter D’Ambrosio Partner, Winston & Strawn LLP Washington, D.C. and Kevin O’Brien Partner, Howrey LLP Washington, D.C.“NUCLEAR POWER PROJECTS - NEW RISKS REQUIRE NEW APPROACHES,” http://www.winston.com/siteFiles/Publications/Nuclear\_Power\_Projects\_D'Ambrosio\_Article.pdf)

With virtually no nuclear power plant construction in the United States since the early 1990s, the dearth of experienced nuclear engineers and construction workers is a significant obstacle to cost certainty and successful plant construction.36 A 2001 Nuclear Energy Institute Study determined that, by 2017, almost all of the industry’s current workforce of skilled labor will have retired; leading one senior director of the Nuclear Energy Institute to predict a shortage of up to 20,000 skilled workers over the next ten years.37 In response to the concern over declining domestic nuclear expertise, the Energy Policy Act contains provisions to strengthen university training in nuclear science and engineering.38 In addition, the Nuclear Energy Institute, the American Gas Association, and Edison Electric Institute have recently created the Center for Energy Workforce Development, which is collaborating with secondary and post-secondary educational institutions to develop a steady stream of future labor.39 These measures, however, will not address the immediate labor shortage. The construction of nuclear power plants requires several specialized skills that are unique to the nuclear industry (such as high quality welding and nuclear island project management).40 Therefore, to obtain a workforce that is qualified to construct the next generation of plants, the United States will be required to compete in the global market where the most experienced personnel are overseas. The limited availability of labor, manufacturing and other resources creates significant risks to the timely completion of new plant construction, as delays, back-orders and bottlenecks are sure to ensue.

### #1 – A2: Won’t Pass

#### CIR will pass---compromises are working but there are still holdouts

Reuters 3/24 (Thomas Ferraro, staff writer @ Reuters, “How the US Congress is working to reform immigration laws,” http://www.gmanetwork.com/news/story/300743/news/world/how-the-us-congress-is-working-to-reform-immigration-laws)

In a U.S. Congress riven by partisan conflict on deficits and guns, a circle of eight senators from both parties meeting several times a week might be on the cusp of a major legislative breakthrough. The so-called Gang of Eight - four Democrats and four Republicans - is completing a plan for the biggest overhaul of immigration laws since 1986. The group is not only holding together after four months of intense discussions - an accomplishment in itself in Washington's brutally partisan atmosphere - it is down to the last sticking points, according to the senators and aides. The centerpiece, they say, will be a 10- to 15-year path to U.S. citizenship - perhaps under a different formulation - for 11 million illegal immigrants. The issue has gained new urgency for both parties after strong Hispanic support for President Barack Obama and fellow Democrats in last year's election. In an effort to improve the plan's chances with Republicans, the path to citizenship may wind up being called a road to a green card - the permit issued by the government that allows foreigners to work in the United States and ultimately apply for citizenship. If so, that would reflect the influence of Republican Senator Marco Rubio of Florida, one of the group's members. "There is no such thing as a path toward citizenship," Rubio said in an interview. "There is a path toward a green card." "We want to be generous and we want to be fair, but we also have to be fair to the people trying to do it legally," Rubio said. "To become a citizen, you first have to get a green card. I made that clear" to the others, Rubio said. Senate aides said they were not worried about what one called "semantics. ... We all agree you need to get a green card before getting citizenship. He is just reflecting concerns in his own party." The goal is a Senate bill sometime next month, with a Senate vote by June or July. Considering the battles in line ahead of immigration - on deficit reduction and gun violence - that schedule could be optimistic. There are also plenty of challenges ahead. The group envisions a commission that would help control the future flow of low-skilled guest workers into the United States in a way that satisfies businesses' need for employees as well as unions' desires to protect their members and U.S. wages. But satisfying both the U.S. Chamber of Commerce and the AFL-CIO labor organization on how that would work has become a problem. "It is a tightrope to bring in the workers that are necessary but not at the expense of American workers," Democratic Senator Dick Durbin of Illinois, one of the eight, said in an interview. "We need to find a reasonable way to thread the needle." BORDER COMMISSION DEBATED The group has promised that before there is a pathway to anything, U.S. borders must be declared "secure." It has been considering a commission composed of elected officials from border states to help the U.S. government make that determination, a prospect that has raised concerns from some Democrats, who fear giving border-state Republicans - they point to Arizona Governor Jan Brewer - an outsized role. Brewer has clashed with the Obama administration over an Arizona law she signed in 2010 clamping down on illegal immigration. "The idea is to have local input about the progress we are making on the borders," said Durbin. "But critics fear any one governor could say it is inadequate, denying citizenship to millions." "We need a way to have local input, but not local veto," Durbin said. The senators appear to have public opinion on their side. According to a Public Religion Research Institute poll released on Thursday, 63 percent of Americans said they supported a path to citizenship for undocumented foreigners. But the path through Congress will not be easy. Republican Senator Mike Lee of Utah, a favorite of the conservative Tea Party movement, was invited to join the group, but declined, for reasons that reflect broader concerns within the Republican Party. "There were a few things I couldn't agree to," Lee said of the framework the group of eight developed and released in January, which included the pathway to citizenship. "In trying to address the problem, we shouldn't create another one by giving a special set of legal advantages to illegal aliens," Lee said. Lee warned that the group may be trying to do too much with one bill. "I'm not convinced that comprehensive" legislation - as opposed to a piecemeal approach - "won't be a problem itself," Lee said. Lee and five other Republican members of the Senate Judiciary Committee are trying to slow down the immigration bill. In a letter to Democratic Judiciary Chairman Patrick Leahy of Vermont on Wednesday, they warned "against rushing a massive bill with far-reaching implications," suggesting a "step-by-step" approach was needed. It takes 60 votes to get a bill through the Senate, which is composed of 53 Democrats, two independents who vote with Democrats and 45 Republicans. A BAND AND A BOND But for some in the group of eight, getting this far in the era of gridlock is hope for the hopeless. "It is the most productive series of conversations that I have had in four years in the Senate," said Democratic Senator Michael Bennet of Colorado, one of the eight lawmakers participating in the discussions. "This is the best opportunity in a generation to pass immigration reform." "I think comprehensive reform is doable," Arizona Republican Senator Jeff Flake said, another member of the group. "We wouldn't be in this if we didn't think we could do it." Some have been down this road before. New York Democrat Chuck Schumer and South Carolina Republican Lindsey Graham, agreed on a comprehensive plan in 2010 only to see it unravel. Senator John McCain of Arizona, working with the late Massachusetts Democratic Senator Edward Kennedy, tried unsuccessfully in 2005 and 2006. But after the 2012 election in which Democrats won the Hispanic vote nationally by 70 percent, Graham said he sensed a new imperative. The morning after the election, Graham called Schumer and said, "I want to get the band back together and McCain wants in." Graham explained in an interview what prompted his call. Democrats, including Obama, had long promised Hispanics some action on immigration. "The reality from the Republican point of view is that we had to get this issue resolved," Graham said. "So we Republicans had a need and Democrats had a need," which equaled an "an opportunity to get it done." Until late last year, Schumer and McCain, who have been in Congress together for three decades, had rarely spoken to each other. The chill between them eased a bit in January when they ended up as a part of a group of lawmakers who reached a deal on new Senate rules to ease gridlock. "We bonded," said Schumer, "and then moved to immigration." McCain brought in Durbin, with whom he grew close in 1983 when both were newly elected members of the House of Representatives. Durbin had made friends with freshman Republican Rubio in predawn workouts in the Senate gym. Durbin invited Rubio. "I told Marco: 'I think you should be part of this. What do you think?" Durbin recalled. "He said: 'I think I can work with you. At least I'm willing to try.'" TALKING TO THE HOUSE The senators have been meeting two to four times a week since December, each session focusing on a mutually agreed-upon agenda. They sit in a circle with 20 staffers behind them, aides said. "Everyone in there wants to get it done," said Flake. "No one is looking for scoring political points. That makes all the difference." "There have been hard and tough negotiations, but it has been done all in the spirit of achieving the goal, in which compromise has been made on both sides," said New Jersey's Democratic senator, Robert Menendez, another group member. A group of eight House members - also four Democrats and four Republicans - began working on its own plan years ago, long before the Senate group even formed. The emerging and comprehensive House plan, like the one in the Senate, has a proposed path toward citizenship. Republicans Flake, McCain and Graham recently meet with a number of House Republicans to explain their efforts. "I don't want to say what their positions were, but they were cordial," said Flake, elected to the Senate in November after 12 years in the House. "They listened." Flake said he expected the Senate to pass a comprehensive bill while the House approved a limited one. But differences between the two measures could then be worked out, he said. McCain said he believed "we can convince our House Republican friends - if we can make sure that they are convinced that we have an effective control of the border and it is not amnesty."

CIR will pass, democrats unified, opponents cooled off, lobby negotiations, GOP support, grass roots push---but things can still fall apart

Khimm 3/19 (Suzy Khimm, reporter, covers the budget, economic policy, and financial regulatory reform. Before coming to Washington, she was based in Brazil and Southeast Asia, where she wrote for the Economist, Wall Street Journal Asia, Slate, and the Christian Science Monito“Five reasons why immigration reform is moving forward,” http://www.washingtonpost.com/blogs/wonkblog/wp/2013/03/19/five-reasons-why-immigration-reform-is-moving-forward/)

If you want to feel even modestly hopeful about Washington, don’t look at the prospects for a deal on the budget, infrastructure, or climate. Instead, look at the state of immigration reform, where real, honest-to-goodness, bipartisan talks have been humming along for months now. When the Senate’s “Gang of Eight” came out with a bipartisan framework for an immigration overhaul, there was no shortage of eye-rolling in Washington. Another bipartisan gang? Good luck with that! But then a strange thing happened: The Senate gang started to make progress and hammer out concrete details for a plan—a plan that was mostly in line with the White House’s own ideas for reform. Meanwhile, both the standard-bearers and the upstarts of the Republican Party have begun to echo the call for action. Sure, things could still fall apart when the talks shift to the House. But here’s why things are looking up: 1) We’ve been through this before. The 2006-07 immigration reform talks fell apart, but the passage of time seems to have allowed various stakeholders to cool off and come back to the table to work out a deal. Democrats are more united and relatively less suspicious of the temporary worker programs that raised their hackles the last time around (then-Sen. Obama was among those who voted for an amendment phasing out a guest-worker program), and more prominent Republicans have come around to a path to citizenship. “The immigration issue in a lot of ways I think is maturing in a way that simply takes time,” says Mary Giovagnoli, director of the Immigration Policy Center, who was a staffer for Sen. Ted Kennedy (D-Mass.) during the 2006-07 debate. “There seems to be a much greater level of trust and cordiality. [The last time] the two sides were dragged kicking and screaming together.” A similar dynamic was at play with health-care reform—another major effort that had suffered from a spectacular defeat in Congress before finally passing. “Any major, major piece of social change is a long process,” Giovagnoli concludes. 2) Republicans have a political imperative to keep things moving: Top strategists from both parties agree that the tide really began to turn after Election Day, when it became clear that Republicans lost the vast majority of Hispanic and Asian voters. While there’s certainty a desire to pass immigration reform because on its policy merits, “it’s also driven by survival,” says Kevin Madden, a former Romney adviser. “If we don’t change on this issue the party is going to lose its ability to grow.” 3) Immigration reform largely stands apart from the fiscal fight that’s driven apart both parties. Republicans have made it clear that their top priority is holding firm on taxes and spending, but they haven’t retained such a hard line on other issues. The Republican National Committee’s autopsy stressed the party’s need to reach out to minorities and support comprehensive immigration reform, but it remained firmly committed to preserving the party’s core economic agenda. ”If your top priority is low taxes, everything is possible,” says Jeff Hauser, lead for political media outreach at the AFL-CIO. “The fact that everything else is failing may make people more eager to provide an accomplishment.” 4) Powerful interest groups are trying to help the process along. The labor vs. business fight over temporary guest-workers was one of the biggest impasses of the Bush-era immigration fight. Now the AFL-CIO and the Chamber of Commerce are sitting down to iron out their own differences, at the behest of the Senate. They are still struggling to come to a final agreement, but it’s a good faith effort that could help such contentious issues from tearing apart the negotiations on Capitol Hill. 5) There’s a big grassroots movement in support of the issue. Congress’s last attempt at immigration reform died in 2007, but activists and advocates haven’t just been sitting in the wings over the last six years. Immigrant activists, together with their allies in evangelical churches, Latino groups, universities, and others, have mobilized around the record number of deportations by the Obama administration and the dramatic anti-immigration laws passed by Arizona and other GOP-governed states. Undocumented students from the DREAM movement have come forward into the spotlight. All this has helped keep the momentum for immigration reform going on the ground even as Congress and the White House dallied on the issue. And that’s helped drive public support for a comprehensive overhaul. ”A movement doesn’t really become a vital political entity that can drive legislation until you move from people who are most passionate and directly concerned to the average American says, ‘Oh this affects me,’ or ‘I don’t like what this says about the country,’” says Giovagnoli.

### # 3 – A2: No Political capital

#### Obama has political capital – he’s winning in polls now which allows him to gain political leverage – that’s Kernan and AFP

#### Obama has surging political capital

The Inquisitr 1/30 (“Obama’s More Popular Than Ever, Even If Everything Else Is Awful [Poll]” http://www.inquisitr.com/502313/obamas-more-popular-than-ever-even-if-everything-else-is-awful-poll/)

President Obama recently enjoyed a surge in popularity that he hasn’t experienced since his first year in office, according to recent polls. The US economy is down, the deficit is high, and the fiscal cliff still looms, but President Obama is completely immune to the dilemmas of our country, reports The Washington Post. A recent WaPo/ABC poll shows that 60 percent of Americans hold a favorable view of the president, up from his mid-to-low 50s during 2012. He also now has more “strongly positive” ratings than “strongly negative,” breaking a two-year stretch of mediocre-to-positive public perception. Obama’s boost primarily comes from his base, with a double-digit increase in popularity among traditionally left-leaning demographics. However, Obama’s popularity has improved some with the majority of Americans (the ever-elusive Independents and Moderates) as well. So, was it the speech that did it? This is where the polls get interesting. Obama’s second inaugural address, which has been criticized by his opponents as being one of the most partisan and radically liberal in history, was a home-run with his base. No surprise there, but what was interesting was that a full quarter of Americans had no opinion whatsoever on the address. Around 50 percent approved of it to various degrees, a quarter hated it, and a quarter just didn’t have an opinion. That’s eight in 10 Democrats in approval and three in 10 Republicans and Independents with zero reaction. Balanced against the popularity poll results, only 3 percent of Americans have no opinion of Obama altogether. Either way, the poll results represent a clear win for President Obama, which he will likely use to push legislative victories in the next year. Still, we face some dense partisanship in upcoming battles, which will make it difficult for him to solidify support among Republicans and conservative Democrats in his second term.

#### Immigration first---congress has moved on from fiscal fights

WSJ 3/24 (Wall Street Journal, writer by Janet Hook, staff writer. “Congress Set to Alter Focus After Passing Two Budgets,” http://online.wsj.com/article/SB10001424127887323466204578380820319800066.html)

After the Senate passed its budget this weekend, Congress is expected to pivot to issues such as immigration and guns before attempting a broader deal on taxes, spending and the national debt later this year. Capitol Hill fell quiet as lawmakers headed home for a two-week spring recess, the longest pause in the Capitol Hill budget wars in months. Before leaving town, the Senate early Saturday morning and the House last week passed nonbinding budget blueprints that laid out the parties' competing fiscal priorities.

NO one cares about gun control anymore---all about immigration

Roll Call 3/22 (“Can Schumer Deliver on Immigration and Guns?” http://www.rollcall.com/news/can\_schumer\_deliver\_on\_immigration\_and\_guns-223392-1.html?pg=2)

It is much less likely at this point that anything gets done on gun control, though Schumer still is working to achieve that. The current base bill that Reid has said he would bring up was written largely as a placeholder for whatever Schumer’s group could come up with. Even if those negotiations produce a bipartisan compromise, there’s still no guarantee any bill can overcome a filibuster that would likely be joined by members of both parties. It’s therefore the immigration effort that is most important for all stakeholders, including Schumer.

### #5 – Winners Win

Political capital is key to the agenda and finite for Obama in the second term, he can’t do a replay of his first term

Schultz 1/22/13 (David Schultz is a professor at Hamline University School of Business, where he teaches classes on privatization and public, private and nonprofit partnerships. He is the editor of the Journal of Public Affairs Education (JPAE) “Obama's dwindling prospects in a second term” http://www.minnpost.com/community-voices/2013/01/obamas-dwindling-prospects-second-term)

Presidential power also is a finite and generally decreasing product. The first hundred days in office – so marked forever by FDR’s first 100 in 1933 – are usually a honeymoon period, during which presidents often get what they want. FDR gets the first New Deal, Ronald Reagan gets Kemp-Roth, George Bush in 2001 gets his tax cuts. Presidents lose political capital, support But, over time, presidents lose political capital. Presidents get distracted by world and domestic events, they lose support in Congress or among the American public, or they turn into lame ducks. This is the problem Obama now faces. Obama had a lot of political capital when sworn in as president in 2009. He won a decisive victory for change with strong approval ratings and had majorities in Congress — with eventually a filibuster margin in the Senate, when Al Franken finally took office in July. Obama used his political capital to secure a stimulus bill and then pass the Affordable Care Act. He eventually got rid of Don’t Ask, Don’t Tell and secured many other victories. But Obama was a lousy salesman, and he lost what little control of Congress that he had in the 2010 elections. Since then, Obama has be stymied in securing his agenda. Moreover, it is really unclear what his agenda for a second term is. Mitt Romney was essentially right on when arguing that Obama had not offered a plan for four more years beyond what we saw in the first term. A replay wouldn't work Whatever successes Obama had in the first term, simply doing a replay in the next four years will not work. First, Obama faces roughly the same hostile Congress going forward that he did for the last two years. Do not expect to see the Republicans making it easy for him. Second, the president’s party generally does badly in the sixth year of his term. This too will be the case in 2014, especially when Democrats have more seats to defend in the Senate than the GOP does. Third, the president faces a crowded and difficult agenda. All the many fiscal cliffs and demands to cut the budget will preoccupy his time and resources, depleting money he would like to spend on new programs. Obama has already signed on to an austerity budget for his next four years – big and bold is not there. Fourth, the Newtown massacre and Obama’s call for gun reform places him in conflict with the NRA. This is a major battle competing with the budget, immigration, Iran and anything else the president will want to do. Finally, the president is already a lame duck and will become more so as his second term progress. Presidential influence is waning One could go on, but the point should be clear: Obama has diminishing time, resources, support and opportunity to accomplish anything. His political capital and presidential influence is waning, challenging him to adopt a minimalist agenda for the future. What should Obama do? Among the weaknesses of his first term were inattention to filling federal judicial vacancies. Judges will survive beyond him and this should be a priority for a second term, as well as preparing for Supreme Court vacancies. He needs also to think about broader structural reform issues that will outlive his presidency, those especially that he can do with an executive order. Overall, Obama has some small opportunities to do things in the next four years – but the window is small and will rapidly close.

#### Winners win is empirically denied---opportunities come they are not created

Jackie Calmes, NYTimes, 11/12/12, In Debt Talks, Obama Is Ready to Go Beyond Beltway, mobile.nytimes.com/2012/11/12/us/politics/legacy-at-stake-obama-plans-broader-push-for-budget-deal.xml

That story line, stoked by Republicans but shared by some Democrats, holds that Mr. Obama is too passive and deferential to Congress, a legislative naïf who does little to nurture personal relationships with potential allies - in short, not a particularly strong leader. Even as voters re-elected Mr. Obama, those who said in surveys afterward that strong leadership was the most important quality for a president overwhelmingly chose Mr. Romney. George C. Edwards III, a leading scholar of the presidency at Texas A & M University who is currently teaching at Oxford University, dismissed such criticisms as shallow and generally wrong. Yet Mr. Edwards, whose book on Mr. Obama's presidency is titled "Overreach," said, "He didn't understand the limits of what he could do." "They thought they could continuously create opportunities and they would succeed, and then there would be more success and more success, and we'd build this advancing-tide theory of legislation," Mr. Edwards said. "And that was very naïve, very silly. Well, they've learned a lot, I think." "Effective leaders," he added, "exploit opportunities rather than create them." The budget showdown is an opportunity. But like many, it holds risks as well as potential rewards. "This election is the second chance to be what he promised in 2008, and that is to break the gridlock in Washington," said Kenneth M. Duberstein, a Reagan White House chief of staff, who voted for Mr. Obama in 2008 and later expressed disappointment. "But it seems like this is a replay of 2009 and 2010, when he had huge majorities in the House and Senate, rather than recognizing that 'we've got to figure out ways to work together and it's not just what I want.' " For now, at least, Republican lawmakers say they may be open to raising the tax bill for some earners. "We can increase revenue without increasing the tax rates on anybody in this country," said Representative Tom Price, Republican of Georgia and a leader of House conservatives, on "Fox News Sunday." "We can lower the rates, broaden the base, close the loopholes." The challenge for Mr. Obama is to use his postelection leverage to persuade Republicans - or to help Speaker John A. Boehner persuade Republicans - that a tax compromise is in their party's political interest since most Americans favor compromise and higher taxes on the wealthy to reduce annual deficits. Some of the business leaders the president will meet with on Wednesday are members of the new Fix the Debt coalition, which has raised about $40 million to urge lawmakers and their constituents to support a plan that combines spending cuts with new revenue. That session will follow Mr. Obama's meeting with labor leaders on Tuesday. His first trip outside Washington to engage the public will come after Thanksgiving, since Mr. Obama is scheduled to leave next weekend on a diplomatic trip to Asia. Travel plans are still sketchy, partly because his December calendar is full of the traditional holiday parties. Democrats said the White House's strategy of focusing both inside and outside of Washington was smart. "You want to avoid getting sucked into the Beltway inside-baseball games," said Joel Johnson, a former adviser in the Clinton White House and the Senate. "You can still work toward solutions, but make sure you get out of Washington while you are doing that." The president must use his leverage soon, some Democrats added, because it could quickly wane as Republicans look to the 2014 midterm elections, when the opposition typically takes seats from the president's party in Congress.

Can’t win with energy

Harder 2/7 (Amy, is a National Journal Energy Policy Analyst, “In Washington Energy and Climate Issues Get Shoved in the Closet,” http://www.nationaljournal.com/columns/power-play/in-washington-energy-and-climate-issues-get-shoved-in-the-closet-20130206)

A week later, one senator, Republican Lisa Murkowski of Alaska, was standing at the podium in the same room to unveil her energy-policy blueprint. There were several open seats and just a few cameras. At least one reporter was there to ask the senator about her position on President Obama’s choice for Defense secretary, former Republican Sen. Chuck Hagel.

“I’m doing energy right now,” Murkowski responded. “I’m focused on that.”

Almost everyone else on Capitol Hill is focused on something else. Aside from the broad fiscal issues, Congress and the president are galvanizing around immigration reform.

Four years ago, the White House prioritized health care reform above comprehensive climate-change legislation. The former will go down in history as one of Obama’s most significant accomplishments. The latter is in the perpetual position of second fiddle. “To everything,” Murkowski interjected fervently when asked by National Journal Daily whether energy and climate policy was second to other policies in Washington’s pecking order.

Murkowski, ranking member of the Senate's Energy and Natural Resources Committee, said she hoped the Super Bowl blackout would help the public understand the importance of energy policy.

“This issue of immigration: Why are we all focused on that? Well, it’s because the Republicans lost the election because in part we did not have the Hispanic community behind us,” Murkowski said this week. “What is it that brings about that motivation? Maybe it could be something like a gap in the Super Bowl causes the focus on energy that we need to have. I can only hope.”

It will take more than hope. Elections have consequences, but so far the only kind of electoral consequence climate and energy policy has instigated is one that helped some lawmakers who supported cap-and-trade legislation to lose their seats in the 2010 midterm elections. For the pendulum to swing the other way—for lawmakers to lose their seats over not acting on climate and energy policy—seems almost unfathomable right now.

Billions of dollars are invested in the fossil-fuel power plants, refineries, and pipelines that the country depends on today. The companies that own this infrastructure have a business interest in keeping things the way they are. Immigration reform doesn’t face such formidable interests invested in the status quo.

“They [businesses] have employees—real, visible people—who they value and who they want to make legal as soon as possible,” said Chris Miller, who until earlier this year was the top energy and environment adviser to Senate Majority Leader Harry Reid, D-Nev.

On energy and climate-change policy, Miller added, “You’re probably never going to have anything like the fence in the Southwest or the border-control issue that pushes action and debate on immigration, because climate-change impacts will likely continue to be more abstract in the public's mind until those impacts are so crystal-clear it’s too late for us to do anything.”

Another, tactical reason helps build momentum on immigration and not on other issues. Obama can capitalize on immigration as it becomes more of a wedge issue within the GOP. On energy and climate policy, Obama faces a unified Republican Party.

“The president has cracked the code on how to push his agenda items through. He learned from his victories on the payroll tax and the fiscal cliff that the key is to stake out the political high ground on issues that poll in his favor while exploiting the divisions within the GOP,” said a former Republican leadership aide who would speak only on the condition of anonymity. “With this in mind, the next logical place for him to go is immigration. Unlike issues like energy or tax reform where the GOP is united, he can claim a big win on immigration reform while striking a political blow to Republicans.”

While Obama maneuvers for a big legislative win on immigration, he’s moving on a parallel track toward another win on climate change through Environmental Protection Agency rules controlling greenhouse-gas emissions, which don’t require congressional approval. Fresh off a strong reelection victory, Obama has more freedom to move unilaterally with EPA.

“He doesn't have to expend political capital or ask Democrats to extend their necks on this issue,” said Kevin Book, an energy analyst at the Washington-based consulting firm ClearView Energy Partners. “He already won. He can control the issue and move as fast or slow as he wants.”

The EPA action will only further polarize efforts, such as those by Murkowski on the Senate Energy panel, to move through Congress smaller bits of energy and environmental policy.

At that point, this second fiddle might not even be in the band.

### #7 And 8 Plan Popular

The plan is politically nuclear

Fairley 10 Peter, IEEE Spectrum, May, "Downsizing Nuclear Power Plants,” spectrum.ieee.org/energy/nuclear/downsizing-nuclear-power-plants/0

However, there are political objections to SMRs. Precisely because they are more affordable, they may well increase the risk of proliferation by bringing the cost and power output of nuclear reactors within the reach of poorer countries. Russia’s first SMR, which the nuclear engineering group Rosatom expects to complete next year, is of particular concern. The Akademik Lomonosov is a floating nuclear power plant sporting two 35-MW reactors, which Rosatom expects to have tethered to an Arctic oil and gas operation by 2012. The reactor’s portability prompted Greenpeace Russia to call this floating plant the world’s most dangerous nuclear project in a decade. SMRs may be smaller than today’s reactors. But, politically at least, they’re just as nuclear.

#### Huge public opposition

U.S. Department of Commerce International Trade Administration 12 (“The Commercial Outlook for U.S. Small Modular Nuclear Reactors” http://trade.gov/mas/ian/build/groups/public/@tg\_ian/@nuclear/documents/webcontent/tg\_ian\_003185.pdf)

One additional obstacle is beyond the scope of this report but could play a significant role in whether SMRs are commercially deployed: public opinion. To the extent that the smaller profile of SMRs results in their deployment closer to population centers, public opposition to their deployment might rise. Deployment at existing sites, or in industrial applications away from residential areas, however, might minimize the impact of public opinion. Education about the safety features of SMRs and nuclear reactors in general could also ameliorate this concern.

Public is key

Sam Youngman, The Hill, 07/27/09, Analysis: July has been disaster for Obama, Hill Dems, http://thehill.com/leading-the-news/analysis-july-has-been-disaster-for-obama-hill-dems-2009-07-27.html

Paul Light, an expert on the presidency and a professor at New York University, said the president's problems with Capitol Hill reflect "a miscalculation by the Obama administration on how political capital gets spent in Washington." Light said that capital, even for a president who enjoys immense personal popular support like Obama, is spent a bit at a time on each initiative or piece of legislation. "I think the Obama administration has been spending political capital at roughly the same rate the federal government spends money," Light said. "Eventually, it runs out." Light quoted President Lyndon Johnson, who said that "if you don't get it done in six months, you're not going to get it done." One of the reasons Obama has spent so much capital, aside from his ambitious agenda, has been his willingness to cede so much control to Congress, Light said. While lawmakers like Senate Majority Leader Harry Reid (D-Nev.) and House Speaker Nancy Pelosi (D-Calif.) are allies of the president, his political capital is not necessarily a priority of theirs. To that end, Light says, Obama has made a mistake in making Pelosi his "broker," spending his political capital but not always to his benefit. The other misstep that has bogged down the administration on healthcare specifically is Obama's inability to communicate effectively to the American people, Light said. While it is shocking to consider that Obama is anything less than one of the best communicators in modern political history, when it comes to healthcare, he simply has not been able to make the sell to people who do have health insurance. And Wednesday night's primetime press conference was a "disaster," Light said. Light said that for the president to regain political momentum, he needs to reclaim his agenda from Congress and start connecting with the public. "He needs to take this over and own it," Light said.

#### Nuclear power faces strong political opposition – this assumes nuclear industry push

JISEA 12 (The Joint Institute for Strategic Energy Analysis is operated by the Alliance for Sustainable Energy, LLC, on behalf of the U.S. Department of Energy’s National Renewable Energy Laboratory, the University of Colorado-Boulder, the Colorado School of Mines, the Colorado State University, the Massachusetts Institute of Technology, and Stanford University. “Nuclear and Renewable Energy Synergies Workshop: Report of Proceedings” http://www.nrel.gov/docs/fy12osti/52256.pdf)

In practice, such systems face several practical institutional/jurisdictional, technical, and political hurdles to implementation. Regulatory agencies for nuclear and renewable energies are separate, and combinations of the two are untested waters. Stovepipe issues extend beyond the regulatory framework, too. Because they defy easy categorization and thus ownership by single entities, hybrid systems would likely have difficulties with financing and risk assessment and management. Considering these challenges, the group felt that one of the primary enablers has to be leadership with a common desire to find solutions, strong roles and responsibilities, and the ability to overcome jurisdictional obstacles. Appropriate roles for government, industry, and national laboratories need to be defined and perspectives from all energy system stakeholders, from vendors to chemical plant operators, need to be incorporated. Other challenges are of a more technical nature. Hybrid systems are forging new ground in terms of operational integration, and appropriate interface technologies may not yet exist. Politically, *nuclear power in any form typically faces strong opposition*. Together, these hurdles create another one: cost. Working through the legal, technical, and political issues will require undetermined time and expense which, at least for the trail blazer, could place hybrid systems beyond the point of economic feasibility.

#### Nuclear power is a political deadweight---drains capital

Levine 12 (Greg, “Obama Drops Nuclear Energy from Convention Speech” http://my.firedoglake.com/gregglevine/2012/09/07/obama-drops-nuclear-energy-from-convention-speech/)

President Obama no longer promises to “safely harness nuclear power”–that likely would have sounded like a cruel joke in a world now contaminated by the ongoing Fukushima disaster–but beyond that, he does not promise anything about nuclear power at all. There was no platitude, no carefully crafted signal to the industry that has subsidized much of Obama’s political career, no mention of nuclear power whatsoever. That is not to say that the entire 2012 Democratic National Convention was a nuclear-free zone. A few hours before the president took the stage at the Time Warner Cable Arena, James Rogers, co-chair of the Charlotte host committee, and oh, by the way, CEO of Duke Energy, stepped to the lectern and endorsed Obama’s “all of the above” energy “strategy” (they keep using that word; I do not think it means what they think it means): We need to work even harder toward a future of affordable, reliable and cleaner energy. That means we need to invest heavily in new zero-emission power sources, like new nuclear, wind and solar projects, as well as new technologies, like electric vehicles. Well, if you are looking for a future of affordable, reliable and cleaner energy, you need look no further than nu–wait, what? If you are looking for those three features in an energy future, it is hard to imagine a worse option than the unsustainably expensive, chronically unreliable and dangerously dirty nuclear power plant. And, as has been discussed here many times, nuclear is not a zero-emission source, either. The massive carbon footprint of the nuclear fuel lifecycle rivals coal, and that doesn’t even consider the radioactive isotopes that facilities emit, even when they are not encountering one of their many “unusual events.” But the CEO of the Charlotte-based energy giant probably has his eyes on a different prize. Rogers, who has been dogged by questions about a power grab after Duke’s merger with Progress Energy and his lackluster performance as fundraiser-in-chief for the DNC, sits atop a company that operates seven US nuclear power plants, and is partners in a plan to build two new AP1000 reactors in Cherokee County, South Carolina. That last project, which is under active review by the Nuclear Regulatory Commission, awaiting a combined construction and operating license, is one of a small handful of proposed new nuclear facilities currently scrambling for financing. The South Carolina plant, along with a pair of reactors in Georgia, two slated for a different site in South Carolina, and possibly one more in Tennessee, represent what industry lobbyists like to call the “nuclear renaissance.” But completion of any of the above is nowhere close to guaranteed, and even if some of these reactors are eventually built, none will be able to generate even one kilowatt of commercial power until years after President Obama completes his sought-after second term. Which, if you really care about America’s energy future, is, of course, all for the better. As even James Rogers noted in his speech (and he gets props for this): [W]e cannot lose sight of energy efficiency. Because the cleanest, most efficient power plant is the one we never have to build. That Duke’s CEO thought to highlight efficiency is interesting. That President Obama, with his well-documented ties to the nuclear industry, chose not to even mention nuclear power is important. In the wake of Fukushima, where hundreds of thousands of Japanese have been displaced, where tens of thousands are showing elevated radiation exposure, and where thousands of children have thyroid abnormalities, no one can be cavalier about promising a safe harnessing of the atom. And in a world where radioisotopes from the breached reactors continue to turn up in fish and farm products, not only across Japan, but across the northern hemisphere, no one can pretend this is someone else’s problem. Obama and his campaign advisors know all this and more. They know that most industrialized democracies have chosen to shift away from nuclear since the start of the Japanese crisis. They know that populations that have been polled on the matter want to see nuclear power phased out. And they know that in a time of deficit hysteria, nuclear power plants are an economic sinkhole. And so, on a night when the president was promised one of the largest audiences of his entire campaign, he and his team decided that 2012 was not a year to throw a bone to Obama’s nuclear backers. Obama, a consummate politician, made the decision that for his second shot at casting for the future, nuclear power is political deadweight.