# 1NC

### Prizes

#### The United States federal government should establish five one million dollar annual prizes to be distributed to the colleges or universities in the United States that demonstrate the greatest success in commercialization of fusion power generation. One million dollar prize should be established for the greatest success over a five year period.

#### Each prize recipient should be honored at an awards ceremony hosted by the President of the United States.

#### The CP motivates private sector action to solve tech breakthroughs and STEM

Charlton & Andras 8 (Bruce G., Editor-in-Chief -- Medical Hypothesis, Peter Andras, Member of the Editorial Advisory Board -- Medical Hypotheses, Newcastle University, “Stimulating revolutionary science with mega-cash prizes,” Medical Hypotheses - Volume 70, Issue 4, 2008, <http://medicalhypotheses.blogspot.com/2008/03/mega-cash-prizes-for-revolutionary.html>, CMR)

In conclusion, we suggest that revolutionary science could be encouraged by increasing the monetary incentives for successful revolutionary science – especially the incentives as they operate on the best young scientists as they choose their career paths in their mid twenties to early thirties. This could be accomplished by a change in behaviour of the large grant awarding bodies – a shift from funding research programs with grants and towards rewarding successful revolutionary science with prizes. For example, a research foundation working in a specific scientific field might at present spend 100 million dollars per year – and might spread this money among ten 10 million dollar program grants. In all likelihood, this money will at present be spent on normal science, and will produce modest incremental progress. We are suggesting that such a research foundation might instead spend 100 million dollars in a single prize, awarded to a relatively young scientist or a few scientists in recognition of a significant success in revolutionary science. In the short term, this kind of prize would serve merely as a retrospective recognition of research which had been done anyway – but after a few years the mega-cash prize would begin to work as a prospective incentive; shaping the behaviour of young scientists towards more ambitious scientific problems which (if successfully solved) would be eligible for such prizes. There is a previous literature on the use of prizes to stimulate scientific research [11], [12], [13] and [14] – however, these types of prizes have either implicitly or explicitly been orientated towards problem solving as quickly as possible and therefore using the simplest possible methods – since this ‘research and development’ approach is most likely to win the prize. What is novel about our argument here, is that we are suggesting that prizes may also be set-up such that they encourage revolutionary science. Furthermore, we advocate the use of scientometrics as a screening mechanism before peer review as a method of preventing corruption and ensuring that the research being rewarded has had an objectively verifiable consequence of revolutionizing (i.e. changing the direction of, or opening-up new fields for) the practice of science. In other words, mega-cash prizes might encourage some of the very best young scientists to make more long-term and high risk career choices. The real winner of this would be society as a whole; since normal science can successfully be done by second rate scientists – but if the first rate scientists do not make the decision to tackle the toughest scientific problems, then solutions to these tough problems may be delayed, or they may never be solved.

INNOVATION – government-led programs discourage diversity key to solvency – prizes solve

Adler 11 (Jonathan H. Adler, Professor of Law and Director of the Center for Business Law and Regulation, Case Western Reserve University School of Law, “EYES ON A CLIMATE PRIZE: REWARDING ENERGY INNOVATION TO ACHIEVE CLIMATE STABILIZATION”, 35 Harv. Envtl. L. Rev. 1, lexis, CMR)

Like traditional research and development ("R&D") grants, government supported prizes reward innovations that "are publicly valued but not privately marketable." n75 In addition, by offering an award to all comers, prizes encourage diverse research and innovation strategies, and allow for the success of outliers. n76 Indeed, a particular virtue of prizes is that they facilitate the targeting of investment without forgoing an ability to draw upon decentralized knowledge and alternative views of where innovation may lead. n77 With government research grants, on the other hand, a federal agency typically determines the goal to be achieved, the means to achieve that goal, and who will receive funding to pursue it. n78 Inducement prizes allow the government to establish a goal without being prescriptive as to how that goal should be met or who is in the best position to meet it. n79 Because technological innovation is unpredictable, can emerge from unexpected directions, and may involve a degree of serendipity, prizes have a distinct advantage insofar as they do not preclude potentially promising directions for innovation. n80 Moreover, with prizes there is no need to apply for [\*15] a government grant, comply with complex eligibility requirements, or ingratiate oneself with grant-making authorities. n81

#### COMMERCIALIZATION – government r&d doesn’t produce commercially viable tech or innovations – private sector solves best

Adler 11 (Jonathan H. Adler, Professor of Law and Director of the Center for Business Law and Regulation, Case Western Reserve University School of Law, “EYES ON A CLIMATE PRIZE: REWARDING ENERGY INNOVATION TO ACHIEVE CLIMATE STABILIZATION”, 35 Harv. Envtl. L. Rev. 1, lexis, CMR)

Federal funding of science is worthwhile, particularly for basic scientific research. n209 Yet federal R&D money rarely produces commercially viable technologies or dramatic technological innovation. n210 This is particularly true for agencies that are not themselves consumers of the innovations they are trying to stimulate. The Department of Defense's procurement process may stimulate a significant degree of innovation because those defense contractors that develop technological breakthroughs may be rewarded with sizable contracts. There is competition for the contracts and innovation is rewarded. The Department of Energy, on the other hand, is not a significant consumer of the technology it funds. n211 Indeed, the Department of Defense [\*31] may be better positioned to encourage energy innovation through its procurement process than is the DOE with traditional R&D grants. n212 Insofar as this is so, it is because a competitive procurement process can induce innovation by offering a substantial financial reward for significant breakthroughs.

Direct federal investment R&D expenditures tend to be less productive than private sector investments. One reason for this is that federal agencies tend to develop "organizational stove pipes" that reinforce "risk-averse, parochial views" about what sorts of technologies are worth funding. n213 As a result, notes one Department of Energy official, "Government R&D dollars will tend to flow to marginal ideas." n214 Government R&D funding often goes to support relatively mature technologies rather than those projects more likely to spur needed innovation. n215

#### CROWD-OUT – Plan discourages best scientists from innovating in the field – turns STEM and innovation

Adler 11 (Jonathan H. Adler, Professor of Law and Director of the Center for Business Law and Regulation, Case Western Reserve University School of Law, “EYES ON A CLIMATE PRIZE: REWARDING ENERGY INNOVATION TO ACHIEVE CLIMATE STABILIZATION”, 35 Harv. Envtl. L. Rev. 1, lexis, CMR)

Government grants are also subject to various regulations and reporting rules that inflate costs and may discourage the participation by some researchers. n216 Prizes, on the other hand, may "attract teams with fresh ideas who would never do business with the federal government because of procurement regulations" or other bureaucratic obstacles n217 and may be "more likely to reach innovators who happen to be good at R&D or diffusion, but are perhaps not very skilled at documenting their work." n218

#### CP avoids politicization – comparative evidence

Adler 11 (Jonathan H. Adler, Professor of Law and Director of the Center for Business Law and Regulation, Case Western Reserve University School of Law, “EYES ON A CLIMATE PRIZE: REWARDING ENERGY INNOVATION TO ACHIEVE CLIMATE STABILIZATION”, 35 Harv. Envtl. L. Rev. 1, lexis, CMR)

Energy policy is typically quite politicized, and energy subsidies are no exception. Government grant-making is inevitably subject to political pressures by politicians and interest groups seeking funding for their particular projects. Grants are often dispersed on political criteria, rewarding large, politically connected incumbent firms, rather than innovative upstarts. n232 In the case of the SynFuels program, fuel cell projects were "allotted to each of the 50 states, regardless of economic viability." n233 This may have bolstered political support for the program, but it did nothing to make the underlying investments worthwhile.¶ [\*34] It is not uncommon for political leaders to overrule expert determinations of what types of projects should, or should not, get funded. n234 Grant programs seek to avoid this problem through the institution of various procedures, including peer-review. Yet even the most educated and well-intentioned experts may focus their energies in the wrong direction. As Cohen and Noll concluded:¶ ¶ The overriding lesson from the case studies is that the goal of economic efficiency -- to cure market failures in privately sponsored commercial innovation -- is so severely constrained by political forces that an effective, coherent national commercial R&D program has never been put in place. n235¶ ¶ Political considerations could influence prize criteria, but the risk of political interference is substantially less. A government official can see who is receiving an ex ante grant, whereas the likely recipient of an ex post prize is uncertain. It is difficult to predict, let alone ensure, that a prize for an as-yet-undeveloped innovation will go to a politically preferred recipient.

### States

#### The State and Territorial Governments in the Department of Energy’s Experimental Program to Stimulate Competitive Research should substantially increase financial support for federal programs for fusion energy generation in the United States.

#### DOE EPSCoR program empirically funds fusion research at national labs, including STEM students – states can contribute funds

Gary C. April, PhD, Associate Director Alabama DOE EPSCoR, 2005, “Alabama DOE EPSCoR,” http://www.netl.doe.gov/publications/proceedings/05/EPSCoR/pdf/abstracts/powell-abstract.pdf

The Alabama DOE EPSCoR Program is made up of three integrated components including Program Coordination, Human Resources Development, and Energy Research Clusters. All programmatic elements are coordinated through a statewide steering committee. The first Implementation Award for the Alabama DOE EPSCoR Program (1994-2000) had three energy research clusters: Fusion Energy, Novel Organic Semiconducting Materials, and Petroleum Reservoir Characterization. Alabama’s second Implementation Award (2001- 2007) builds on the success of these clusters and expands the interest and focus of energy related research through Fuel Cell technology and manufacturing. Collectively, the success of the first three energy research clusters can be measured against the record that they established during the six-year tenure of their work. For an investment of $3.4 MM from DOE and $4.4MM from institutional/state matching, these programs supported the research of: a) 21 research professors, b) 32 post-doctoral associates, c) 40 doctoral-level graduate students, and d) 41 undergraduate research students. Their research also brought in an additional $18MM in non-DOE EPSCoR funding. Add to these numbers the $1.5MM from DOE, state and institutional sources for Human Resources Development activities elevating energy awareness among K – post doctoral participants, an additional $1.2MM from DOE Traineeship Awards and success in the DOE State Laboratory Partnership Awards by six investigators at a total of nearly $2.1MM and the true impact of the support base for energy-related programs in Alabama is quite evident. The Fuel Cell energy research cluster is located at the University of Alabama and Alabama A&M University (HBCU). The program is in its fourth year of the second Implementation Award. DOE awarded the Fuel Cell group a total of $1.2MM for four years with matching support from institutional/state matching. To date, the program has supported: a) 13 research faculty, b) 10 undergraduates, c) 15 graduates, and d) three post-doctoral associates. Their research has thus far produced an additional $5MM in non-DOE EPSCoR funding. The Human Resources Development Travel and Enhancement Grant Programs are intended to help cover the costs incurred by young Alabama researchers seeking an opportunity to visit a Federal Laboratory for the purpose of on-site research or developing collaborative research between institutions. Since the programs were initiated, 12 research faculty from four EPSCoR institutions, including one HBCU, one visiting scholar, one undergraduate student, 10 graduate students, and one post-doctoral associate have participated in research efforts at Argonne, Oak Ridge, Los Alamos, and the Pacific Northwest National Laboratories.

### **CIR**

It’ll pass but PC is key

Dann 3/27 (Carrie, Political Reporter, NBC News, “Obama optimistic on immigration legislation”, <http://firstread.nbcnews.com/_news/2013/03/27/17490075-obama-optimistic-on-immigration-legislation?lite>, CMR)

As a bipartisan group of senators chips away at the remaining obstacles to an immigration deal, President Barack Obama says he is optimistic that – if lawmakers release a draft bill early next month – he will be able to sign comprehensive immigration reform into law before autumn.¶ “If we have a bill introduced at the beginning of next month -- as these senators indicate it will be -- then I'm confident that we can get it done certainly before the end of the summer,” Obama said in an interview with Telemundo on Wednesday.¶ The president repeated that he could still introduce a White House-drafted version of the legislation if the “Gang of Eight” Senate group is not able to put forward a bill. But he said he’s confident that lawmakers will be able to work out the final snags in the negotiations in time to unveil their proposal when they return from a two-week Easter recess next month.¶ “I'm optimistic,” he said. “ I've always said that if I see a breakdown in the process, that I've got my own legislation. I'm prepared to step in. But I don't think that's going to be necessary. I think there's a commitment -- among this group of Democratic and Republican senators to get this done.”¶ The negotiations have been held up in part by continuing disputes between business and labor groups about the conditions of a guest-worker program, particularly the wages and treatment ensured to temporary workers compared to those for American workers pursuing similar jobs.¶ But the president said he doesn’t believe that the dispute could scuttle the whole reform framework.¶ “There are still some areas about … the future flow of guest workers,” he said. “Labor and businesses may not always agree exactly on how to do this. But this is a resolvable issue.” While he expressed optimism that a final bill will contain a path to citizenship for those currently in the country illegally, Obama would not offer specifics on how long the process of obtaining citizenship should take.¶ And he declined to outline how the security of the nation’s border should be assessed, saying only that there should be no border security “trigger” that must be met before undocumented persons are eligible to begin the process of seeking legal status.¶ “We don't want to make this earned pathway to citizenship a situation in which it's put off further and further into the future,” he said. “There needs to be a certain path for how people can get legal in this country, even as we also work on these strong border security issues.”¶ While the White House has deferred to the Senate group on the legislative language, the president has used the bully pulpit in recent days to urge lawmakers to action and remind the public of the general framework for reform that he supports – including a path to citizenship.¶ In addition to the Telemundo interview, he also sat down with Spanish-language channel Univision on Wednesday. Earlier this week, the president urged Congress to show “political courage” on the issue during remarks at a naturalization ceremony at the White House.¶ Senate negotiators say they are close to a final deal.¶ Earlier Wednesday, Republican Sens. John McCain and Jeff Flake of Arizona held a joint press conference with Democrats Chuck Schumer of New York and Michael Bennet of Colorado. The lawmakers traveled to Arizona’s southern border to survey the state of security there, a tour that offered a very real illustration of the illegal immigration issue when they spotted a woman scaling a border fence. (She was later apprehended by border security officers, McCain said.)¶ At a press conference, Schumer told reporters there that negotiators are “90 percent of the way there” on a compromise bill, adding that the trip offered a glimpse into what further resources are needed to ensure full border security.¶ “We learned about the great progress that’s been made,” Schumer said. “It’s a lot better than it was 10 years ago, but we also learned that we have more progress to go. And in our immigration bill, we hope that we will make that progress, along with many other goals.”

#### Congress will attack the plan – seen as a wasteful “blank check”

NTI 12/7/12 (Congress Scrutinizes Fusion "Ignition" Project, <http://www.nti.org/gsn/article/congress-scrutinizes-fusion-projects-mounting-cost/>, CMR)

Legislative analysts have voiced significant doubts over the prospects of an effort to perform nuclear fusion "ignition" using a giant laser array in California, the San Francisco Chronicle reported on Tuesday.¶ In preliminary recommendations to lawmakers, the National Nuclear Security Administration has called for no fewer than 36 more months of studies at the National Ignition Facility to explore two new avenues for potentially eliminating complicated obstacles to the goal. Experts on Capitol Hill are expected to start mulling over plans for the fusion site at the Lawrence Livermore National Laboratory after NNSA officials issue their formal version of the document around the beginning of next week.¶ The United States has used at least $5 billion to date on constructing and operating the fusion complex, and present testing is absorbing $450 million or more on an annual basis. The site failed to achieve its congressionally imposed aim of achieving "ignition" by late 2012, and one informed legislative insider said the milestone remains "very, very far away."¶ "They're asking us to give them a blank check ... and then we'd see where we are," the source said. "That worries me. They're not even close."¶ The specialist said the government has spent too much to end operations at the facility. "It's too early now to estimate its eventual success, but we'll all be looking at fiscal 2014 to talk about budget," according to the insider.

**PC is key and finite**

**Nakamura 2/20** (David, “In interview, Obama says he has a year to get stuff done”, 2013, <http://www.washingtonpost.com/blogs/post-politics/wp/2013/02/20/in-interview-obama-says-he-has-a-year-to-get-stuff-done/>, CMR)

President **Obama** said Wednesday he’s **eager to move quickly to enact his second-term agenda, acknowledging** that **he has a severely limited time frame** before the political world begins thinking about the next election cycle in 2014 and beyond.¶ Obama told a San Francisco television station that **he wants to “get as much stuff done as quickly as possible.**”¶ “Once we get through this year, then people start looking at the mid-terms and after that start thinking about the presidential election,” Obama said during a brief interview with KGO, an ABC affiliate. “The American people don’t want us thinking about elections, they want us to do some work. America is poised to grow in 2013 and add a lot of jobs as long as Washington doesn’t get in the way.”¶ **Obama’s remarks were an acknowledgement that** **a second-term president’s ability to use his political capital faces rapidly diminishing returns, highlighting the high stakes of his bids to strike deals with Congress on** issues from tax reform, budget cuts, **immigration** **reform** and gun control.

#### Immigration reform key to STEM leadership and biotech innovation

Scullion ’13 (Christine, “Manufacturers Take the Lead In STEM Education”, January 8, <http://www.shopfloor.org/2013/01/manufacturers-take-the-lead-in-stem-education/27254>, CMR)

The U.S. the leading producer of cutting-edge products such as those on display at the Consumer Electronics Show. Whether it’s in IT, biotech, aerospace, medical devices or heavy machinery, US companies will be the ones to constantly and consistently create new and better things. This future promises to be bright, but only if we have the workforce capable of pushing that leading-edge. And right now, that doesn’t look like a very good bet. The lack of a skilled workforce is a constant threat to manufacturing growth. In fact in a recent survey 82% of manufacturers reported a moderate-to-serious shortage in skilled production labor. Worker shortages abound not only among machinists and welders but also in occupations requiring expertise in the fields of science, technology, engineering and math (STEM), where the unemployment rate today lies well below 4%.¶ The US needs to refocus our workforce training resources and reform our immigration system to continue to grow and innovate. Immigration reform is a serious issue for Manufacturers not only in the High-tech arena but across manufacturing sectors. Without a skilled workforce – from the PhDs to production labor, the nation’s economy will suffer and jobs will be moved overseas. Access to the right individual with the right skills at the right time will ensure that the US remains a global innovation leader.

#### The impact is bioterror

Chyba 4 - Co-Director of the Center for International Security and Cooperation (CISAC), Stanford Institute for International Studies, and an Associate Professor at Stanford University

[Christopher & Alex Greninger, “Biotechnology and Bioterrorism: An Unprecedented World” Survival, 46:2, Summer 2004]

In the absence of a comprehensive and effective system of global review of potential high-consequence research, we are instead trapped in a kind of offence–defence arms race. Even as legitimate biomedical researchers develop defences against biological pathogens, bad actors could in turn engineer countermeasures in a kind of directed version of the way natural pathogens evolve resistance to anti-microbial drugs. The mousepox case provides a harbinger of what is to come: just as the United States was stockpiling 300m doses of smallpox vaccine as a defence against a terrorist smallpox attack, experimental modification of the mousepox virus showed how the vaccine could possibly be circumvented. The United States is now funding research on antiviral drugs and other ways of combating smallpox that might be effective against the engineered organism. Yet there are indications that smallpox can be made resistant to one of the few known antiviral drugs. **The future has the appearance of an** eternal arms race of measures and countermeasures. The ‘arms race’ metaphor should be used with caution; it too is in danger of calling up misleading analogies to the nuclear arms race of the Cold War. First, the biological arms race is an offence–defence race, rather than a competition between offensive means. Under the BWC, only defensive research is legitimate. But more fundamentally, the driver of de facto offensive capabilities in this arms race is not primarily a particular adversary, but rather the ongoing global advance of microbiological and biomedical research. Defensive measures **are in** a race with nefarious applications of basic research, much of which is itself undertaken for protection against natural disease. In a sense, we are in an arms race with ourselves. It is hard to see how this arms race is stable – an offence granted comparable resources would seem to be necessarily favoured. As with ballistic missile defence, particular defensive measures may be defeated by offensive countermeasures. **In the biological case, implementing defensive measures will** require not only research but drug development and distribution plans. Offensive measures need not exercise this care, although fortunately they will likely face comparative resource constraints (especially if not associated with a state programme), and may find that some approaches (for example, to confer antibiotic resistance) have the simultaneous effect of inadvertently reducing a pathogen’s virulence. The defence must always guard against committing the fallacy of the last move, whereas the offence may embrace the view of the Irish Republican Army after it failed to assassinate the British cabinet in the 1984 Brighton bombing: ‘Today we were unlucky, but remember we have only to be lucky once – you will have to be lucky always’.40 At the very least, the defence will have to be vigilant and collectively smarter than the offence. **The only way for the defence to win** convincingly in the biological arms race **would** seem to **be to succeed in discovering and implementing** certain de facto last-move defences, at least on an organism-by-organism basis. Perhaps there are defences, or a web of defences, that will prove too difficult for any plausible non-state actor to engineer around. Whether **such defences** exist is unclear at this time, but their exploration **should be a long-term research goal of US biodefence** efforts. Progress might also have an important impact on international public health. One of the ‘Grand Challenges’ identified by the Bill and Melinda Gates Foundation in its $200m initiative to improve global health calls for the discovery of drugs that minimise the emergence of drug resistance – a kind of ‘last move’ defence against the evolutionary countermeasures of natural microbes.41 **Should** a collection of such **defensive moves prove possible**, **bioterrorism might ultimately succumb to** a kind of globalised dissuasion by denial:42 non-state groups would calculate that they could not hope to achieve dramatic results through biological programmes and would choose to direct their efforts elsewhere.

#### Extinction

Steinbruner 97 John D. Steinbruner, Brookings senior fellow and chair in international security, vice chair of the committee on international security and arms control of the National Academy of Sciences, Winter 1997, Foreign Policy, “Biological weapons: a plague upon all houses,” n109 p85(12), infotrac

Although human pathogens are often lumped with nuclear explosives and lethal chemicals as potential weapons of mass destruction, there is an obvious, fundamentally important difference: Pathogens are alive, weapons are not. Nuclear and chemical weapons do not reproduce themselves and do not independently engage in adaptive behavior; pathogens do both of these things. That deceptively simple observation has immense implications. The use of a manufactured weapon is a singular event. Most of the damage occurs immediately. The aftereffects, whatever they may be, decay rapidly over time and distance in a reasonably predictable manner. Even before a nuclear warhead is detonated, for instance, it is possible to estimate the extent of the subsequent damage and the likely level of radioactive fallout. Such predictability is an essential component for tactical military planning. The use of a pathogen, by contrast, is an extended process whose scope and timing cannot be precisely controlled. For most potential biological agents, the predominant drawback is that they would not act swiftly or decisively enough to be an effective weapon. But for a few pathogens - ones most likely to have a decisive effect and therefore the ones most likely to be contemplated for deliberately hostile use - the risk runs in the other direction. A lethal pathogen that could efficiently spread from one victim to another would be capable of initiating an intensifying cascade of disease that might ultimately threaten the entire world population. The 1918 influenza epidemic demonstrated the potential for a global contagion of this sort but not necessarily its outer limit.

### Trade-off

**RENEWABLES POISED FOR EXPLOSIVE GROWTH AND WILL OUTCOMPETE ALL COPETITORS**

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**There are** plenty of **misconceptions about the costs and benefits of renewable energy.** But while opinions vary as to the effectiveness of generation sources such as wind and solar, facts are indisputable. And the **facts show that renewable power is increasingly economical and poised for explosive growth in the United States.**¶ **While the U.S. actually saw substantial decline in the renewable energy investment dollars from 2011-2012 (from $300 billion down to $270 billion), that's** a **misleading** figure. **The drop can be attributed**, in part, **to falling costs of renewable energy materials, and increased energy use.** In fact, **2012 was a record year for U.S. installed renewable capacity** at 17.4 GW.¶ **"Solar had a very strong year, but really wind was the big winner overall in terms of capacity**," said Ethan Zindler, head of policy analysis at Bloomberg New Energy Finance. ¶ Zindler was part of a gathering of energy analysts at a recent American Council on Renewable Energy (ACORE) policy forum, which highlighted industry advancements and acted as a brainstorming session for the future of renewable energy policy. While not optimistic about how renewable energy would fare over the next couple years, Zindler noted that these technologies -- **wind**, in particular -- **are approaching cost parity with coal generation.**¶ Renewables enjoy falling costs¶ **A Bloomberg New Energy Finance analysis shows a** 20-**30 percent drop in the levelized costs (without subsidies) of photovoltaic tech**nology over the past 12 months, and the price of wind generation continues to be down.¶ "The short answer is that, in a number of cases, **these technologies really are now very much getting close to being competitive with their fossil rivals**," Zindler said.¶ Making costs more reasonable is a product of increased investment and research, and much of it was spurred from the American Recovery and Reinvestment Act of 2009, a policy move that pumped substantial cash into renewable energy. **The ultimate goal is to see the cost of solar, wind and geothermal systems continue to fall. This is becoming increasingly necessary as natural gas prices remain at historic lows.**¶ **Renewables will go toe-to-toe with natural gas in the coming years, as state Renewable Portfolio Standards and U.S. E**nvironmental **P**rotection **A**gency regulations **make it tougher to build new coal generation and more cumbersome to keep old units operating.**¶ Importance of continued policy support¶ Just as policy can encourage development, its absence can stunt it. Renewables spending slowed recently over fear of revoked renewable production tax credits and subsidies.¶ In time, **the renewables industry will certainly thrive on its own.** But for now, policy is critical to supporting renewable energy growth.¶ Not only will policy offer much needed financial support, but it is also part of the country's heritage, according to Nancy Pfund, managing partner at venture capital firm DBL Investors.¶ "Even from the early days of land grants and coal railroad development, **the government has played a critical role in supporting the emergence of new technologies in the energy field and transitioning us from one to the other**," Pfund said, speaking at the ACORE forum.¶ Few of those presenting at the forum projected wide-sweeping energy legislation to hit any time soon. But absent a comprehensive energy reform bill, there are likely to be incremental changes to help erect a stronger energy roadmap, including focusing on continuing support for funding that could further drive down the cost of renewables.¶ Perhaps Congress should also heed research that demonstrates a growing number Americans want and support renewable energy.¶ "All the polls, all the studies show that American's love solar energy and they want the government to pursue policies that support it," Pfund said. She predicted that over the next few years, the renewable energy discussion will shift from policy professionals to the broader consumer marketplace.¶ This consumer support also creates an opportunity for utilities to work with lawmakers in driving renewable energy policy and growth, she said.¶ All in all, **the facts seem to be piling up on the side of renewable energy.** Policy reform has been shown to work, and has driven costs down. Likewise, a lack of firm policy has slowed advancement, again a testament to it's potential effectiveness. **The next few years will be critical and challenging for renewble energy, but as long as installed capacity continues to grow, and the facts demonstrate improvement, it will be tough to make the argument against these generation sources and the policies that support them.**

#### Investments in nuclear power trade off with investment in renewables – renewables key to halt warming

Carbon Control News 7/7/2008 “Activists make new economic case against nuclear's climate benefits”, lexis

A number of new reports have emerged arguing that investments in nuclear power could contribute to climate change, rather than reduce carbon dioxide (CO2) emissions, because those investments would divert limited resources from more cost-effective clean energy alternatives. The reports aim to counter the nuclear industry's inroads in casting nuclear power as a solution to global warming and highlight the contentious nature of the debate over what role -- if any -- nuclear should play in federal polices to address climate change.  Presumptive Republican presidential nominee John McCain (AZ) has said his administration would seek to build 45 new nuclear power plants by 2030 in order to stave off the worst effects of global warming. Meanwhile, industry officials point out that nuclear power is currently the largest source of low-carbon power in the United States. Nuclear plants are also "the lowest-cost producer of base-load electricity," according to the Nuclear Energy Institute (NEI), with the costs of operating a plant amounting to 1.76 cents per kilowatt-hour.  But environmentalists are increasingly citing rising construction costs and lingering concerns surrounding the disposal of radioactive nuclear waste to claim nuclear energy is not a long-term solution to climate change. And some environmentalists are now arguing that by diverting resources from more cost-effective renewable and energy efficiency investments, proponents of nuclear energy may actually be making attempts to mitigate global warming more difficult. Yet in a recent article for the conservative Heritage Foundation, Jack Spencer and Nick Loris write that, "Nuclear power must be expanded if CO2 caps are to work." They argue that unlike wind and solar power, which are intermittent and incapable of providing consistent base-load energy, nuclear power is capable of meeting growing demand for energy without emitting greenhouse gases.  While environmentalists point to the high costs of constructing a plant, the authors maintain those costs are not as high when considered in the context of the full lifetime operation of a nuclear plant. In fact, they write that, "Given the low cost needed to operate a nuclear plant, lifetime costs are very low once the plant has been constructed. It is therefore difficult to conclude that wind or solar power should be built at all."  Currently, NEI estimates construction costs for a new nuclear plant to be between $6 billion and $7 billion, while the utility company Florida Power & Light, which has plans to construct two new nuclear reactors, recently estimated that costs for a single reactor could be as high as $12 billion. But Spencer and Loris write that, "Additional production will allow these costs to be spread, thus lowering costs overall. Further savings should be achieved by applying lessons learned from initial construction projects. Because nuclear plants could have an operating life of 80 years, the benefit could be well worth the cost."  But those arguments have prompted a rebuttal from environmentalists and some economists. In a paper recently released by the environmental think tank Rocky Mountain Institute, "The Nuclear Illusion," Amory Lovins and Imran Sheikh concede that nuclear power, at least from a climate change perspective, far outperforms coal power, which currently provides around half of U.S. electricity. But the authors argue that nuclear power's decentralized, low-carbon competitors -- wind, solar, hydro, and cogeneration power -- can displace more coal power per dollar at a faster pace.  "New nuclear power costs far more than its distributed competitors, so it buys far less coal displacement per dollar than the competing investments it stymies," the authors write. "And its higher relative cost than nearly all competitors, per unit of net CO2 displaced, means that every dollar invested in nuclear expansion will worsen climate change by buying less solution per dollar."  Sheikh tells Carbon Control News that he and Lovins wrote the article, in part, because, "We're seeing this perceived resurgence in nuclear power because it's carbon-zero, or roughly carbon-zero, and since climate change is becoming such a hot topic." The paper was released now, Sheikh says, as a way to counter the increased focus on nuclear power as an answer to climate change, and to show "we can offer more climate protection for less money" by pursing efficiency and small, decentralized electricity production -- what is termed "micropower." His advice for lawmakers? "Just let all types of generation and efficiency compete on a level playing field, and when that happens micropower will probably win."  That is an argument Sheikh and Lovins repeatedly make in their paper: let investors choose energy sources, not politicians, because subsidies will only distort the market and possibly delay effective action on climate change. The authors argue that "full U.S. deployment" of decentralized micropower, including recovered waste-heat cogeneration and wind power, and end-use efficiency measures could replace much of nuclear energy's current U.S. market share "without significant land-use, reliability, or other constraints, and with considerable gains in employment" -- and without federal subsidies.  In April testimony before the House Select Committee on Global Warming and Energy Independence, Lovins noted that nuclear energy has attracted "no private risk capital despite U.S. taxpayer subsidies that can now total about $13 billion per new nuclear plant--roughly its entire cost." While politicians may decide to approve further subsidies for nuclear, "Heroic efforts at near- or over-100% subsidization will continue to elicit the same response as defibrillating a corpse: it will jump, but it won't revive."

#### Extinction

Speth 8 [James, dean of the Yale School of Forestry and Environmental Studies at Yale University, New Haven, Connecticut. Currently he serves the school as the Carl W. Knobloch, Jr. Dean and Sara Shallenberger Brown Professor in the Practice of Environmental Policy, The Bridge @ the Edge of the World, pg. 26]

The possibility of abrupt climate change is linked to what may be the most problematic possibility of all—"positive" feedback effects where the initial warming has effects that generate more warming. Several of these feedbacks are possible. First, the land's ability to store carbon could weaken. Soils and forests can dry out or burn and release carbon; less plant growth can occur, thus reducing nature's ability to remove carbon from the air. Second, carbon sinks in the oceans could also be reduced due to ocean warming and other factors. Third, the potent greenhouse gas methane could be released from peat bogs, wetlands, and thawing permafrost, and even from the methane hydrates in the oceans, as the planet warms and changes. Finally, the earth's albedo, the reflectivity of the earth's surface, is slated to be reduced as large areas now covered by ice and snow diminish or are covered by meltwater. All these effects would tend to make warming self-reinforcing, possibly leading to a greatly amplified greenhouse effect. The real possibility of these amplifying feedbacks has alarmed some of our top scientists. James Hansen, the courageous NASA climate scientist, is becoming increasingly outspoken as his investigations lead him to more and more disturbing conclusions. He offered the following assessment in 2007: "Our home planet is now dangerously near a 'tipping point.' Human-made greenhouse gases are near a level such that important climate changes may proceed mostly under the climate system's own momentum. Impacts would include extermination of a large fraction of species on the planet, shifting of climatic zones due to an intensified hydrologic cycle with effects on freshwater availability and human health, and repeated worldwide coastal tragedies associated with storms and a continuously rising sea level. .. . "Civilization developed during the Holocene, a period of relatively tranquil climate now almost 12,000 years in duration. The planet has been warm enough to keep ice sheets off North America and Europe, but cool enough for ice sheets on Greenland and Antarctica to be stable. Now, with rapid warming of o.6°C in the past 30 years, global temperature is at its warmest level in the Holocene. "This warming has brought us to the precipice of a great 'tipping point” If we go over the edge, it will be a transition to 'a different planet,' an environment far outside the range that has been experienced by humanity. There will be no return within the lifetime of any generation that can be imagined, and the trip will exterminate a large fraction of species on the planet.

### Solvency

#### To solve their advantages, they have to win the plan will result in global spread of fusion plants. They’ve written their plan to be as vague and nebulous as possible, which means it doesn’t solve – unspecified money for R&D doesn’t change the economics of nuclear and no solvency card in the aff says they speed up commercialization.

#### Fusion fails – multiple warrants

Murphy 12 – Associate Professor in the Physics department at UCSD, and a member of the Center for Astrophysics and Space Sciences, Tom Murphy, "Crunching the Numbers for Nuclear Fusion", February 3, 2012, http://gigaom.com/cleantech/crunching-the-numbers-for-nuclear-fusion/

The ITER experiment, if it adheres to its schedule and projected budget, will cost something like $20 billion to build and produce pops of unharnessed thermal power by 2026. I should note that most large experimental projects have slipping schedules, and it would be a fantastic irony if a fusion experiment violated this trend! In any case, we could imagine another several decades before commercial fusion tentatively steps onto the scene, putting us at mid-century. The projects will undoubtedly be very expensive, require intimate involvement of the highest level of expertise, and will likely not catch on in a big way until investors see a track record of profitability—if that ever comes to pass. So that’s fly number one: we’re looking at very long term.¶ Fly number two is that D-T fusion necessarily involves neutrons, which do not respond to magnetic or electrostatic confinement and therefore hurtle off to the walls of the containment vessel. In doing so, they knock into the atoms comprising the vessel, dislocating them within the lattice and causing structural damage. The integrity of the containment vessel will degrade like plastic in sunlight. The neutron flux from a D-T reactor is substantially higher than for a conventional fission reactor.¶ Fly number three is also related to neutrons: after doing their damage in the containment walls, the neutrons will marry a nice, plump nucleus and settle down. But the marriage is often radioactive, so that the container becomes radioactively “hot.” In fission, we get two radioactive daughters for each 200 MeV produced. For D-T fusion, if we are able to utilize most of the neutrons for conversion of lithium into tritium (and use enriched 6Li), we might be able to lose less than 0.2 neutrons per 20 MeV reaction (pure, uninformed guess on my part), which comes out to the same number of radioactive products per unit of energy. But at least materials choices for the container walls offers some control over the menagerie of radioactive products—unlike the randomness of fission. All told, the radioactive toll from a D-T fusion reactor may be comparable to that of a fission reactor, though with shorter half-life.¶ Then there is the extremely finicky nature of achieving fusion. Getting something to work in the lab is much different from having it operate reliably for years on end. Any significant departure from optimal conditions will see the fusion yield diminish. ITER aims for a thermal output ten times that of the input energy. In an eventual self-running mode, siphoning 10% of the output power in electrical form requires pulling out about 30% of the thermal power to run the heat-engine generator. This makes for a 3:1 net energy gain, which could quickly transition to a net energy drain if things are not maintained in tip-top condition through the years.

#### Fusion won’t deliver – optimists are wrong and spin-offs are non-existent hype [also in a2 spin-offs]

Kovel 1/4 (“Home All Engineering News South Korea, U.S. plan joint project for fusion reactor”, <http://why.knovel.com/all-engineering-news/2181-south-korea-us-plan-joint-project-for-fusion-reactor.html>, CMR)

Despite the optimism surrounding the project on the part of PPPL, Slate's Charles Seife notes that it features many of the same problems that have sunk previous fusion developments. He notes a recent report from the DOE highlighting the consistent inability of the country's biggest fusion project, the National Ignition Facility at the Lawrence Livermore National Laboratory, to accurately predict its own prospects for success.¶ ITER itself, though currently under construction, has already been nearly scuttled when the U.S. backed out of the initial project due to cost overruns and technical issues. It only renewed its support years later when designs had been scaled back and costs subsequently lowered. With cost overruns arising once again, the U.S. has already suggested the possibility it might not meet its financial commitments.¶ Seife notes that fusion research has seen a variety of similar failed projects, or even more outlandish concepts, often pushed by unrealistic optimists focused purely on the potential to solve global energy needs.

### Spin-Offs

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#### Reject tech predictions – empirically fail

Hendzel, 13 (Kevin, Linguist and translator Kevin Hendzel draws on over 25 years of experience in Russian-English translation, interpretation, professional writing and editing, national media relations and public outreach, and has appeared on national and international media with a wordwide audience exceeding 100 million, Kevin Hendzel’s professional background includes an extended period working on the US-Russia Direct Communications Link, also known as the Presidential "Hotline,” where he was Senior Linguist of the technical translation staff, “Why predictions about the future of technology always go awry”, January 11, <http://www.kevinhendzel.com/the-future-has-an-ancient-heart-why-predictions-about-the-future-of-language-technology-always-go-hopelessly-awry/>, CMR)

“Scholars and scientists who work on mechanical translation believe that within a few years the system may greatly increase communication, particularly in technical subjects, by making translation quick, accurate and easy.”¶ The New York Times – January 8, 1954¶ Technology gurus of the future, writing in the 1950s, predicted that today’s world would be exploding in brilliant and flashy flying cars with huge fins, space suits, jet packs, shiny edible clothing, huge rocket ships, smart-aleck talking robots, house-sized computers and comfortable Moon colonies.¶ Instead, the cars shrank, the space suits disappeared, the house-sized computers now fit in your hand, the robots are faceless wired Legos and the Moon colonies were erased from the drawing board before they even began.¶ The real technology revolution turned out to be exactly the opposite of the predictions.¶ Things didn’t get larger, they got smaller. The technology was not flashy, it disappeared silently into unimaginably more powerful hand-held devices.¶ Electronics did not fill rooms, it slid into pockets.¶ And what about all those newspapers they were reading during breakfast on the ultra-modern Moon colonies?¶ Nope, no moon colonies.¶ Also, no newspapers.¶ And machine translation is still clunky and unreliable nearly 60 years after the New York Times prediction above.¶ An outcome that’s exactly the opposite of the prediction.¶ How could all these predictions have gone so impossibly awry?¶ Predictions of explosive technological change are almost always wrong. What futurists think of as their own “imagination” is really a mirror reflection of what’s already staring them in the face that very day (such as the US space program in the 1950s) suddenly applied to the entire world (We’ll all live in space!), which is an unfortunately stale and unimaginative practice of taking whatever exists and simply extending it randomly into the future by making it larger or faster or more colorful or otherwise “futuristic.”¶ “Translating machines will soon take their place beside gramophone records and colour reproduction in the first rank of modern techniques for the spread of culture and science.”¶ Emile Delavenay¶ December, 1958¶ Futurists are overly seduced by the newest technology, most of which fails or is discarded or becomes outdated in the near term (8-track tapes, black-and-white TV, AM radio, the DeLorean) making what seems “futuristic” at the time unlikely to survive into the real future.¶ Hopeful technocratic predictions are also overly reliant on the views and opinions of engineers, who tend to have a narrow solutions focus that is surely admirable in its efficiency and focus (it got us to the Moon), but a bit too spartan and utilitarian for people to embrace (“I’m not wearing aluminum!”)¶ And that brings us to the most important reason that technology predictions fail: ¶ Successful technology is always shaped by human interaction: Technology that does not improve or advance or align with human experience will be modified, rejected or ignored.¶

#### No Impact- China already rigs US semiconductors

Thomas 7 [ William Thomas: A professional journalist for nearly five decades, author of Days of Deception: Ground Zero and Beyond, Bringing the War Home, and Chemtrails Confirmed, **TROJAN CHIPS COULD CRIPPLE US ATTACK ON IRAN ,** February, <http://www.willthomasonline.net/Trojan_Chips_Could_Cripple_US_A.html>]

It is widely documented that since the secession of America's semiconductor supremacy to Asia, most computer chips supplied for civilian and military use in the United States by corporate giants like AMD, Microsoft, Intel and Motorola are now imported. As Hank was reminded by his visitors, "It's all outsourced"-by U.S. manufacturers to suppliers in Japan, Taiwan and China. Electronic components made to military specifications in Taiwan and Japan are good to go. But U.S. military microchip suppliers have in recent years been "sharing components from a single source manufactured over there in the Big C," Hank learned. And chips manufactured in mainland China for use by the United States military are-surprise!-not OK. Regarding the marine assault force, three aircraft carriers and their escorts about to wage war on Iran, Hank was told, "We really don't know which components are installed in U.S. Navy weapons systems." Elements in the U.S. military in touch with Bob and Dave have discovered that Beijing has rigged those decks to insure China's supremacy in any showdown with the United States.

This has been accomplished by ensuring that its exported semiconductors used in many U.S. military computer and electronic components-from cell phones to missile warheads, fighter jets, frigates, radars, laptops and carriers-can be either accidentally or purposefully deactivated by a silent and invisible electromagnetic pulse delivered at the start of any future conflict.

#### Nanoelectric innovation solves

Kansas City Star 10 [“Semiconductor research Corporation and National science Foundation Further Fuel Nanoelectronics Research,” October 12, http://www.kansascity.com/2010/10/12/2302629/semiconductor-research-corporation.html]

Semiconductor Research Corporation (SRC), the world’s leading university-research consortium for semiconductors and related technologies, joined today with the National Science Foundation (NSF) to fund $2 million in supplemental grants for nanoelectronics research. Researchers at six major NSF Centers in leading U.S. universities will contribute to the goal of discovering a new digital switching mechanism using nanoelectronic innovations as a replacement for the transistor – the foundational building block of computing technology for decades. “The semiconductor industry continues to actively work on developing a new device that will fuel the industry’s leadership in the nanoelectronics era, and the NSF-NRI projects bring together our country’s top researchers to help drive critical research that not only affects our U.S. national competitiveness, but also economies worldwide,” said Jeff Welser, director of the Nanoelectronics Research Initiative (NRI) for SRC. Until recently, manufacturers were able to double the number of transistors on a chip at half the power for each transistor by shrinking them smaller and smaller in each new generation of semiconductor technology. However, it is becoming increasingly difficult to continue decreasing the power needed to switch transistors off and on, making it difficult to continue the pace of product innovation from scaling alone. New breakthroughs ranging from basic materials science to advanced devices and circuit architecture will be required, making the partnership between NSF and industry a natural fit for this work. “These investments in nanoelectronics align closely with NSF’s support for engineering and scientific research that furthers discovery,” said Lawrence Goldberg, senior engineering advisor at NSF. “We believe these supplemental grants, which support graduate students and postdoctoral associates, will create innovative technologies and help find a solution to this significant issue facing the semiconductor industry today.”

#### Can’t solve – econ status, falling demand and spending power

SFGate 11 [San Francisco Chronicle, 1/12/11, Global Electronic Chemicals Market to Reach US$30.9 Billion by 2015, According to New Report by Global Industry Analysts, Inc., http://www.sfgate.com/cgi-bin/article.cgi?f=/g/a/2011/01/12/prweb8058104.DTL]

Electronic chemicals are used in producing electronic components such as Printed Circuit Boards (PCB), Integrated Circuits (IC), flat screens, and semiconductor chips. As a result, the market closely follows the growth pattern in the electronics and allied industries like the semiconductor industry. The longest economic turmoil that lasted through years 2007 through 2009, not surprisingly impacted the market for electronic chemicals with the hurting electronics end-use sector resulting in the global market shedding over US$2.0 billion in revenues over the years 2007 through 2009. Sales of consumer electronic equipment, such as, blu-ray players, mobile phones, game consoles, DVDs, PCs, optical disk drives, scanners, printers, storage devices, and PC connectivity products, among others witnessed significant softening in demand. Key reasons attributed to the weak demand include all of the symptomatic manifestations of the recession, such as, high rates of employment, falling consumer incomes, confidence, reduction in household wealth, lower discretionary incomes and weaker spending power.

**STEM**

#### No STEM shortage – best experts agree their argument is hype

Benderly 12 (Beryl, “The Johnny-can’t-do-science myth damages US research”, Jan/Feb, <http://www.cjr.org/reports/what_scientist_shortage.php?page=all>, CMR)

But what “we all know,” as Senator Cornyn put it, turns out not to be true—and the perpetuation of this myth is discouraging Americans from pursuing scientific careers. Leading experts on the STEM workforce, including Richard Freeman of Harvard, Michael Teitelbaum of the Alfred P. Sloan Foundation, Paula Stephan of Georgia State University, Hal Salzman of Rutgers, Lindsay Lowell of Georgetown, and Norman Matloff of the University of California-Davis, have said for years that the US produces ample numbers of excellent science students. In fact, according to the National Science Board’s authoritative publication Science and Engineering Indicators 2008, the country turns out three times as many STEM degrees as the economy can absorb into jobs related to their majors. So what’s going on? Simply put, a desire for cheap, skilled labor, within the business world and academia, has fueled assertions—based on flimsy and distorted evidence—that American students lack the interest and ability to pursue careers in science and engineering, and has spurred policies that have flooded the market with foreign STEM workers. This has created a grim reality for the scientific and technical labor force: glutted job markets; few career jobs; low pay, long hours, and dismal job prospects for postdoctoral researchers in university labs; near indentured servitude for holders of temporary work visas.

#### Their authors are biased

Teitelbaum 3 (Michael, Ph.D. in demographics, educated at Reed College & Oxford University, former Rhodes Scholar, Program Director at the Alfred P. Sloan Foundation – a philanthropic foundation that has long devoted substantial funding to improving the health of U.S. science, engineering, and economic performance & former Staff Director of the Select Committee on Population in the House of Representatives, “Do we need more scientists?,” The Public Interest, Fall, Google)

On this issue, where one stands depends upon where one sits. Most of the assertions of current or impending shortages, gaps, or shortfalls have originated from four sources: university administrators and associations; government agencies that finance basic and applied research; corporate employers of scientists and engineers and their associations; and immigration lawyers and their associations. The economist Eric Weinstein has uncovered documentary evidence suggesting that the real intent of some of those involved in the 1980s “shortfall” alarms from NSF may have been to limit wage increases for Ph.D. scientists. Whether or not such motivations underlay that episode, we can certainly appreciate the various incentives that may currently spur some to endorse such claims. Universities want to fill their classrooms with undergraduates who pay their fees and finance their research with external funding, and to do so recruit graduate students and postdoctoral fellows to teach undergraduates and to staff their research laboratories. Government science-funding agencies may find rising wages problematic insofar as they result in increased costs for research. Meanwhile, companies want to hire employees with appropriate skills and backgrounds at remuneration rates that allow them to compete with other firms that recruit lower wage employees from less affluent countries. If company recruiters find large numbers of foreign students in U.S. graduate science and engineering programs, they feel they should be able to hire such noncitizens without large costs or lengthy delays. Finally, immigration lawyers want to increase demand for their billable services, and especially demand from the more lucrative clients such as would-be employers of skilled foreign workers.

#### No terrorism impact

**Mueller, ’10** – **professor of political science at Ohio State University** and author of Atomic Obsession: Nuclear Alarmism from Hiroshima to Al-Qaeda, more qualed than your tool-authors [John, “Calming Our Nuclear Jitters”, Winter, <http://www.issues.org/26.2/mueller.html>, CMR]

A daunting task Politicians of all stripes preach to an anxious, appreciative, and very numerous choir when they, like President Obama, proclaim atomic terrorism to be “the most immediate and extreme threat to global security.” It is the problem that, according to Defense Secretary Robert Gates, currently keeps every senior leader awake at night. This is hardly a new anxiety. In 1946, atomic bomb maker J. Robert Oppenheimer ominously warned that if three or four men could smuggle in units for an atomic bomb, they could blow up New York. This was an early expression of a pattern of dramatic risk inflation that has persisted throughout the nuclear age. In fact, although expanding fires and fallout might increase the effective destructive radius, the blast of a Hiroshima-size device would “blow up” about 1% of the city’s area—a tragedy, of course, but not the same as one 100 times greater. In the early 1970s, nuclear physicist Theodore Taylor proclaimed the atomic terrorist problem to be “immediate,” explaining at length “how comparatively easy it would be to steal nuclear material and step by step make it into a bomb.” At the time he thought it was already too late to “prevent the making of a few bombs, here and there, now and then,” or “in another ten or fifteen years, it will be too late.” Three decades after Taylor, we continue to wait for terrorists to carry out their “easy” task. In contrast to these predictions, terrorist groups seem to have exhibited only limited desire and even less progress in going atomic. This may be because, after brief exploration of the possible routes, they, unlike generations of alarmists, have discovered that the tremendous effort required is scarcely likely to be successful. The most plausible route for terrorists, according to most experts, would be to manufacture an atomic device themselves from purloined fissile material (plutonium or, more likely, highly enriched uranium). This task, however, remains a daunting one, requiring that a considerable series of difficult hurdles be conquered and in sequence. Outright armed theft of fissile material is exceedingly unlikely not only because of the resistance of guards, but because chase would be immediate. A more promising approach would be to corrupt insiders to smuggle out the required substances. However, this requires the terrorists to pay off a host of greedy confederates, including brokers and money-transmitters, any one of whom could turn on them or, either out of guile or incompetence, furnish them with stuff that is useless. Insiders might also consider the possibility that once the heist was accomplished, the terrorists would, as analyst Brian Jenkins none too delicately puts it, “have every incentive to cover their trail, beginning with eliminating their confederates.” If terrorists were somehow successful at obtaining a sufficient mass of relevant material, they would then probably have to transport it a long distance over unfamiliar terrain and probably while being pursued by security forces. Crossing international borders would be facilitated by following established smuggling routes, but these are not as chaotic as they appear and are often under the watch of suspicious and careful criminal regulators. If border personnel became suspicious of the commodity being smuggled, some of them might find it in their interest to disrupt passage, perhaps to collect the bounteous reward money that would probably be offered by alarmed governments once the uranium theft had been discovered. Once outside the country with their precious booty, terrorists would need to set up a large and well-equipped machine shop to manufacture a bomb and then to populate it with a very select team of highly skilled scientists, technicians, machinists, and administrators. The group would have to be assembled and retained for the monumental task while no consequential suspicions were generated among friends, family, and police about their curious and sudden absence from normal pursuits back home. Members of the bomb-building team would also have to be utterly devoted to the cause, of course, and they would have to be willing to put their lives and certainly their careers at high risk, because after their bomb was discovered or exploded they would probably become the targets of an intense worldwide dragnet operation. Some observers have insisted that it would be easy for terrorists to assemble a crude bomb if they could get enough fissile material. But Christoph Wirz and Emmanuel Egger, two senior physicists in charge of nuclear issues at Switzerland‘s Spiez Laboratory, bluntly conclude that the task “could hardly be accomplished by a subnational group.” They point out that precise blueprints are required, not just sketches and general ideas, and that even with a good blueprint the terrorist group would most certainly be forced to redesign. They also stress that the work is difficult, dangerous, and extremely exacting, and that the technical requirements in several fields verge on the unfeasible. Stephen Younger, former director of nuclear weapons research at Los Alamos Laboratories, has made a similar argument, pointing out that uranium is “exceptionally difficult to machine” whereas “plutonium is one of the most complex metals ever discovered, a material whose basic properties are sensitive to exactly how it is processed.“ Stressing the “daunting problems associated with material purity, machining, and a host of other issues,” Younger concludes, “to think that a terrorist group, working in isolation with an unreliable supply of electricity and little access to tools and supplies” could fabricate a bomb “is farfetched at best.” Under the best circumstances, the process of making a bomb could take months or even a year or more, which would, of course, have to be carried out in utter secrecy. In addition, people in the area, including criminals, may observe with increasing curiosity and puzzlement the constant coming and going of technicians unlikely to be locals. If the effort to build a bomb was successful, the finished product, weighing a ton or more, would then have to be transported to and smuggled into the relevant target country where it would have to be received by collaborators who are at once totally dedicated and technically proficient at handling, maintaining, detonating, and perhaps assembling the weapon after it arrives. The financial costs of this extensive and extended operation could easily become monumental. There would be expensive equipment to buy, smuggle, and set up and people to pay or pay off. Some operatives might work for free out of utter dedication to the cause, but the vast conspiracy also requires the subversion of a considerable array of criminals and opportunists, each of whom has every incentive to push the price for cooperation as high as possible. Any criminals competent and capable enough to be effective allies are also likely to be both smart enough to see boundless opportunities for extortion and psychologically equipped by their profession to be willing to exploit them. Those who warn about the likelihood of a terrorist bomb contend that a terrorist group could, if with great difficulty, overcome each obstacle and that doing so in each case is “not impossible.” But although it may not be impossible to surmount each individual step, the likelihood that a group could surmount a series of them quickly becomes vanishingly small. Table 1 attempts to catalogue the barriers that must be overcome under the scenario considered most likely to be successful. In contemplating the task before them, would-be atomic terrorists would effectively be required to go though an exercise that looks much like this. If and when they do, they will undoubtedly conclude that their prospects are daunting and accordingly uninspiring or even terminally dispiriting. It is possible to calculate the chances for success. Adopting probability estimates that purposely and heavily bias the case in the terrorists’ favor—for example, assuming the terrorists have a 50% chance of overcoming each of the 20 obstacles—the chances that a concerted effort would be successful comes out to be less than one in a million. If one assumes, somewhat more realistically, that their chances at each barrier are one in three, the cumulative odds that they will be able to pull off the deed drop to one in well over three billion. Other routes would-be terrorists might take to acquire a bomb are even more problematic. They are unlikely to be given or sold a bomb by a generous like-minded nuclear state for delivery abroad because the risk would be high, even for a country led by extremists, that the bomb (and its source) would be discovered even before delivery or that it would be exploded in a manner and on a target the donor would not approve, including on the donor itself. Another concern would be that the terrorist group might be infiltrated by foreign intelligence. The terrorist group might also seek to steal or illicitly purchase a “loose nuke“ somewhere. However, it seems probable that none exist. All governments have an intense interest in controlling any weapons on their territory because of fears that they might become the primary target. Moreover, as technology has developed, finished bombs have been out-fitted with devices that trigger a non-nuclear explosion that destroys the bomb if it is tampered with. And there are other security techniques: Bombs can be kept disassembled with the component parts stored in separate high-security vaults, and a process can be set up in which two people and multiple codes are required not only to use the bomb but to store, maintain, and deploy it. As Younger points out, “only a few people in the world have the knowledge to cause an unauthorized detonation of a nuclear weapon.” There could be dangers in the chaos that would emerge if a nuclear state were to utterly collapse; Pakistan is frequently cited in this context and sometimes North Korea as well. However, even under such conditions, nuclear weapons would probably remain under heavy guard by people who know that a purloin

#### No retaliation –

#### Supply is self-correcting and inevitable – current trends prove

Venton 12 (Danielle, “Rare-Earth Mining Rises Again in United States”, 5/11, <http://www.wired.com/wiredscience/2012/05/rare-earth-mining-rises-again/>, CMR)

That may soon change. Encouraged by rising prices and political support, new mines are starting up around the world, most notably in Malaysia and in California, where a company called Molycorp has reopened what until the 1980s was the world’s flagship rare-earth mine.¶ “In five years there will be rare earths produced all over the world and China will lose its edge,” said mining analyst John Kaiser, editor of Kaiser Research Online. “Molycorp is part of that equation. They’re putting back into production what was once the largest rare-earth mine in the world. And this is a good thing because it takes away power concentrated in China.”¶ Located in Mountain Pass, California, about an hour west of Las Vegas, the mine sits atop mineral deposits discovered in the late 1940s by geologists looking for commercial-grade uranium. They found some of the world’s richest reserves of bastnasite, a mineral containing higher-than-usual concentrations of rare-earth elements like cerium, lanthanum and yttrium.¶ Rare-earth mining began at Mountain Pass in the early 1950s, and by the mid-1980s the mine supplied 60 percent of global demand and 100 percent of U.S. needs. But as Chinese production increased, operations at Mountain Pass dwindled.¶ Environmental problems also played a role. Salty, radioactive water kept leaking from waste evaporation ponds, leading to the mine’s closure in 2002. Mining for rare earths is classically a very environmentally destructive process, and China’s market domination is due in part to disregard for health, safety and environmental controls. The country has recently started cleaning up its messiest mines, adding to export controls in pushing rare-earth prices up.¶ “They were cheap,” Kaiser said, “because China was willing to subsidize the price by producing things with lower environmental and health and safety controls — all the things that we over here don’t allow.”¶ Six years after the Mountain Pass closure, a group of private investors purchased the mine from Chevron. Molycorp is now giving the mine a $781 million overhaul, and claims it can be both profitable and environmentally responsible, operating without sucking the area dry of water, requiring massive electrical draws or leaving behind a toxic trail.¶ While those promises will be difficult to fulfill, one promising sign is Molycorp’s response to pressure from the Center for Biological Diversity, an environmental group that initially opposed renovation. Molycorp addressed their major concern: Rather than transporting waste water offsite through a potentially leaky pipeline, the company will recycle hydrochloric acid and water used in mining, eliminating the need for waste ponds and saving on chemical costs.¶ 'We’re selling everything that we’re producing before it’s even out of the ground.'While the new technique’s details are proprietary, few doubt Molycorp’s method will genuinely be cleaner than the older extraction method.¶ “The mining regulations in California are probably the strictest in the world,” said Navid Mojtabai of the New Mexico Institute of Mining & Technology. “If they’ve got the permits to operate then they’re already much cleaner than the Chinese.”¶ As China deals with its own environmental concerns and legal complaints at the World Trade Organization, Molycorp has its own lawsuit to contend with. In February an investor filed a class-action lawsuit against Molycorp, claiming the company overstated demand for its products and its production capabilities.¶ While none of the lawyers contacted in connection with the case would comment, several analysts dismissed it. According to rare-earth industry analyst Judith Chegwidden, director of the Roskill Consulting Group, the market volatility of 2011 left rare-earth buyers wary, temporarily reducing demand in a way that’s frustrating to investors but not evidence of Molycorp malfeasance.¶ Meanwhile, Molycorp is ramping up production at Mountain Pass, and looks set to produce 40,000 tons annually by the end of 2013. As the mine begins cranking out neodymium, lanthanum and other materials by the ton, the strategic vulnerability that’s caused so much concern should be eased.¶

# 2NC

## Prizes

### PDC

#### It’s not financial support

IPC ‘10

(Industrial Performance Center @ MIT, “Prizes for Energy Innovation: Incentives for Today’s Challenges”, March 2010, <http://reazioneacatena.files.wordpress.com/2011/03/x-prize-paper.pdf>, DZ)

Those wishing to sponsor innovation within a country, company or organization have many tools at their disposal, including direct financial incentives, regulatory mandates, competitive grant programs, and intellectual property management. While prizes cannot and should not replace these tools in most situations, in market and innovation conditions where they fit well as an additional incentive, prizes offer several major advantages, including a spirit of competition, high leverage on the prize purse investment, diverse participation, public excitement, media attention and enhanced credibility for innovative pursuits. Uniquely, prizes allocate incentives to an entire field of potential solvers, rather than necessitating an a priori selection of the top performers, as grants and contracts do. In addition to these benefits, prizes reduce risk to innovators and investors by validating the target area of innovation and handsomely rewarding winning innovators.

### S – General

#### Prizes solve – spurs innovation and an interest multiplier which ensures tons of investment

Lowrey 11 (Annie Lowrey, “Can cash prizes for innovation get the economy rolling again?”, Jan 2, <http://www.washingtonpost.com/wp-dyn/content/article/2010/12/31/AR2010123104063.html>, CMR)

In the flurry of activity at the end of the 111th Congress, the reauthorization of the "America Competes Act" went mostly unnoticed. But it is a little bill that Washington hopes will prove transformative. The law - its cringe-worthy official name is the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act - overhauls the way the federal government supports private-sector research and development, and one of the main ways the government hopes to support R&D is with prizes. Lots of prizes.¶ "Inducement prizes" (as opposed to "recognition prizes," like the Nobel or the MacArthur or the Pulitzer) make up a major part of the Obama administration's grand Strategy for American Innovation. Last year, outlining its vision for a more competitive America, the White House said the government "should take advantage of the expertise and insight of people both inside and outside" Washington by using "high-risk, high-reward policy tools such as prizes and challenges to solve tough problems." This fall, Challenge.gov, a portal featuring agencies' cash rewards for new ideas, debuted. And the America Competes Act, which passed in 2007, included a provision clarifying some legal issues around such contests.¶ ad\_icon¶ There's good reason for the government to get in on it: Prizes work, and they have a surprisingly long pedigree. Most famously, in 1714, the British government offered 20,000 pounds to anyone who could devise a reliable way of measuring longitude at sea, a problem neither Newton nor Galileo could solve. (Clockmaker John Harrison won in 1773.) Napoleon offered a prize for innovations in food preservation for his army, leading to the development of modern canning. And the $25,000 Orteig Prize spurred Charles Lindbergh to make his transatlantic flight.¶ After falling out of favor for decades, such high-publicity, fat-reward contests came into vogue again in the aughts in the wake of the 1996 Ansari X Prize for advances in commercial spaceflight. (A Paul Allen-financed group, with a vehicle called SpaceShipOne, built by Burt Rutan's company Scaled Composites, won the whole $10 million shebang in 2004.) The much-feted X Prize showed that prizes, properly constructed, can be cheaper and more effective than traditional R&D. They're a performance-based investment, one that pays for outcomes. They encourage unconventional thinkers from different fields to collaborate to solve a problem. And they include a prestige component, which costs the offerer nothing but can be highly valued by those pursuing the prize: The X Prize found that "competitors spent 10 to 40 times" the amount of the kitty.¶ Unsurprisingly, the funding available for prizes has exploded in the past decade, according to a study by management consulting firm McKinsey & Company, to as much, perhaps, as $2 billion. "More than 60 of these prizes have debuted since 2000, representing almost $250 million in new prize money," with awards from existing prizes tripling in the past 10 years, researchers wrote.¶ The evidence backing the prize boom is not entirely anecdotal, either. There is not a huge body of academic research into prizes, but what there is supports them.¶ One oft-cited study examines the prizes offered by the Royal Agricultural Society of England between 1839 and 1939. "We find large effects of the prizes on contest entries," the researchers wrote in 2008, confirming that prizes indeed spur innovation, as opposed to just rewarding pre-existing advances. "[W]e also detect large effects of the prizes on the quality of contemporaneous inventions."¶ The government - with its massive research budget and interest in helping private industry where the market fails - got into the prize business in earnest in the early aughts. NASA, for instance, created the Centennial Challenges, giving out dozens of prizes ranging from $50,000 to $2 million. (One retired engineer built a better space glove at home, working with a sewing needle.) And the Defense Advanced Research Projects Agency, or DARPA, offers a famed contest aiming to make ground-combat vehicles unmanned.¶ The Obama administration plans to exploit this trend - not just because prizes work, but also because of the ancillary benefits for government. Open-source innovation helps Washington break down its own research silos. Agencies such as NASA have their own scientists to solve problems; prizes let everyone from academics to hobbyists bring their expertise to bear.¶ Moreover, prizes develop innovations that immediately benefit the public good. (The government funds a lot of research that has no immediate or obvious public use or that goes to the primary benefit of private corporations. Not so for prizes.)

### S – STEM

#### Counterplan leads to STEM entrepreneurs – philanthropists will fund their start-ups

Kalil 6, Special Assistant to the Chancellor for Science and Technology at UC Berkeley, 2006, (Thomas, “Prizes for Technological Innovation”, The Brookings Institution, Pg. 26 CMR) http://www.brookings.edu/~/media/Files/rc/papers/2006/12healthcare\_kalil/200612kalil.pdf 12-23-10

Under certain circumstances, inducement prizes¶ may act as a useful complement to grants and contracts¶ as a way to encourage technological innovation.¶ The government can establish a goal without¶ determining who is in the best position to reach the¶ goal or what the most promising technical approach¶ is. The government only pays the prize money if¶ someone is successful, and may be able to leverage¶ additional funding from foundations, philanthropists,¶ and contestants who value the reputational¶ benefits of winning the competition. Prizes can also¶ generate public excitement and enthusiasm for science¶ and technology, and encourage more young¶ people to pursue careers in science, engineering, or¶ technology-based entrepreneurship.¶ This paper has suggested some useful starting¶ points for inducement prizes and AMCs in a number¶ of areas, including space exploration, vaccines,¶ African agriculture, reducing GHG emissions, and¶ education. The president and Congress could direct¶ agencies to identify other areas where prize¶ competitions are likely to be cost effective. Congress¶ could give additional agencies the authority¶ they need to sponsor prizes, and be prepared to¶ consider expanding the magnitude of prizes as our¶ understanding of this policy tool develops.¶ A broad range of historical examples and other empirical¶ evidence suggests that well-designed prizes¶ work. Although the optimal level of investment in¶ prizes is not clear, it is surely much larger than the¶ government’s current investment, which is currently¶ limited to DARPA’s recently completed twomillion-¶ dollar Grand Challenge for autonomous¶ ground vehicles, and NASA’s Centennial Challenge¶ program. We still have much to learn about¶ the strengths and limitations of prizes, but the time¶ to start additional experiments is now.

#### Only universities will engage in basic research. That is key to innovative output

Baumol 4 – Professor of economics @ NYU [William J. Baumol, EDUCATION FOR INNOVATION: ENTREPRENEURIAL BREAKTHROUGHS VS. CORPORATE INCREMENTAL IMPROVEMENTS, NATIONAL BUREAU OF ECONOMIC RESEARCH, Working Paper 10578, June 2004, pg. <http://www.biu.ac.il/soc/ec/students/teach/554/data/entrpacadbaumol.pdf>] cmr

The reasons for this division of labor with private industry are well understood, so¶ that only a few words (but taking a viewpoint that is not quite standard), need be said on¶ the subject here. I have argued earlier that the market mechanism is a powerful enforcer¶ of corporate innovative effort, making mandatory its growing participation in applied¶ innovative research. But the same market mechanism also inhibits investment in basic¶ research, that mainstay of long-run innovative output. From the point of view of the¶ unthinking market mechanism, investment in basic research is largely a “wasteful”¶ expenditure, because the outlay offers no dependable promise of addition to the profits of¶ the firm.11 By its very nature, it is nearly impossible to predict whether basic research¶ will yield any financial benefit at all and, if so, who will ultimately be the beneficiary.¶ Certainly, it need not be the enterprise that was so improvident as to have carried it out.¶ That is why governments and universities have had to step in, if truly basic research of¶ any magnitude was to be carried out in the market economies.

### S – Fusion

#### Private interest, activity, and success in fusion is increasing – provides cheap alternative to government bureaucracy and failure

Harris 11 (Richard, 'Power For The Planet': Company Bets Big On Fusion, 11-9, <http://www.npr.org/2011/11/09/141931203/-power-for-the-planet-company-bets-big-on-fusion>, CMR)

The world would be a very different place if we could bottle up a bit of the sun here on Earth and tap that abundant and clean energy supply. Governments have spent many billions of dollars to develop that energy source, fusion energy, but it's still a distant dream. Now a few upstart companies are trying to do it on the cheap. And the ideas are credible enough to attract serious private investment.¶ One such company is hidden away in a small business park in the suburbs of Vancouver, British Columbia. Nothing seems unusual here — there's a food distributor, an engineering firm and small warehouses. But on one door there's a sign suggesting that all is not normal.¶ The sign says "General Fusion" and warns people with pacemakers to proceed with caution.¶ The reason for that caution can be found behind bulletproof walls that surround an experimental machine. This gleaming metal structure could be out of a science fiction movie set. It stands 15 feet tall, is crisscrossed with wires and is covered with aluminum foil. Two men are hunched over an instrument, troubleshooting.¶ The machine is flanked with banks of electrical capacitors, which hold — and release — the amount of energy you find in a stick of dynamite. A siren warns to stay clear: The system is charging up, and with all that electric charge, some piece of hardware could go flying.¶ This plasma ray gun is part of a bigger instrument, which is still under construction. The goal, simply put, is to create a small piece of the sun and harness that energy.¶ "This is an insanely ambitious project," says Michel Laberge, the brains behind the project. He's a physicist and inventor with a rusty beard and a college-casual wardrobe.¶ Michel Laberge, president and chief technology officer of General Fusion, says the fusion machine he is developing "is an insanely ambitious project."¶ Beating The Big Guys¶ This story really starts a dozen years ago, when the company where he was working asked him to join in a hot technology race that had nothing to do with energy. He was asked to build a switch for fiber optics communication cables.¶ "So I was in competition with Nortel, Bell Lab, Lucent," Laberge says. "All those guys were putting literally billions of dollars in this project. And they gave me half a million dollars, and one guy ... said, 'Do something that will work better than the other guy.' [And I said,] 'Oh, OK!' "¶ As Laberge tells the story, he actually succeeded.¶ "For half a million dollars, we beat the billion-dollars worth of work. So that inflated my head a little bit. I said, 'Hey, look at that. You can beat the big guy if you do something different.' "¶ Of course I think it's going to work! Do you think I'm going to spend ten years of my life doing something I think won't work?¶ - Michel Laberge, president and chief technical officer, General Fusion¶ So, on his 40th birthday, he quit his job in what he calls a midlife crisis, took the pile of money he'd earned at his old company, and decided to try something really revolutionary. With his Ph.D. in fusion energy, he thought he'd try to beat the big boys in the fusion field.¶ "Reason No. 1 is to save the planet. We are in deep poo-poo," Laberge says.¶ Fossil fuels will run out, and in the meantime they are causing global warming. Among the allures is that fusion reactors can't melt down, and they don't produce significant nuclear waste. And Laberge says if he succeeds, he could be worth billions.¶ "As for glory, I word that as a negative. I don't want glory. That's just a pain. I don't want anybody to know me, really. Not interested in the glory. I'll take the money, though," he says with a hearty laugh.¶ He knew he couldn't beat the existing multibillion-dollar fusion labs at their own game. So instead, he decided to combine ideas from the two current approaches to make a vastly cheaper machine.¶ A One-Two Punch¶ The general principle behind fusion is simple. If you can fuse together light atoms, you can create a heavier atom plus lots of energy. The trick is that in order to fuse atoms together, you need to provide enough energy to heat the atoms up to 150 million degrees Celsius.¶ Inside General Fusion's Machine¶ How Fusion Works¶ When two atoms fuse together to form a larger, heavier atom, they release large amounts of energy. That's called a fusion reaction, and it's what powers the sun.¶ Canadian startup General Fusion has designed a machine to generate fusion power by smashing together two variants of hydrogen atoms: deuterium, which has one neutron and one proton, and tritium, which has two neutrons and one proton.¶ The result: helium gas (which will get released into the atmosphere) and vast amounts of energy, which will get captured and turned into electricity. The company is still constructing its prototype. Here's how it's supposed to work.¶ "Other fusion uses a very complex way of producing energy — superconducting magnets, laser beams, all sorts of expensive and complicated and pricey stuff," he says. "It costs them billions and billions of dollars, so it's not so practical in my opinion. Here, what the energy source is, is compressed air. Compressed air is dirt cheap."¶ Think of his idea as a one-two punch. His big electrical gizmo starts to heat up the atoms. Those get injected into a 10-foot-wide sphere full of swirling molten lead.¶ "The liquid will be circulated with a pump, so it spins around and makes a vortex in the center. You know, like your toilet with a hole in the center," Laberge says.¶ And just as the heated atoms get into the center, Laberge fires 200 pistons, powered with compressed air, which surround the sphere. "Those are compressed air guns ... that send a big compression wave, squash the thing, and away you go!"¶ Banks of capacitors are a key part of General Fusion's machine. The capacitors, which charge up and release bursts of electricity, will be used to heat gases to 1 million degrees Celsius in preparation for a fusion reaction.¶ Enlarge Brett Beadle for NPR¶ Banks of capacitors are a key part of General Fusion's machine. The capacitors, which charge up and release bursts of electricity, will be used to heat gases to 1 million degrees Celsius in preparation for a fusion reaction.¶ If all goes as planned, squashing the mixture heats it up enough to fuse the atoms and ignite nuclear reactions.¶ The concept is called magnetized target fusion. Laberge didn't invent the idea, but he re-imagined it, and, more to the point, he raised $30 million from Amazon.com founder Jeff Bezos and several venture capital firms to see if he can get it off the ground.¶ Ask Laberge if he thinks it will work, and you'll get an indignant reply: "Of course I think it's going to work! Do you think I'm going to spend 10 years of my life doing something I think won't work? I think it [has] a good shot of working."¶ He adds, "I wouldn't say I'm 100 percent sure it's going to work. That would be a lie. But I would put it at 60 percent chance that this is going to work. Now of course other people will give me a much smaller chance than that, but even at 10 percent chance of working, investors will still put money in, because this is big, man, this is making power for the whole planet. This is huge!"¶ Changing The Venture Capital Game¶ And the physics concept isn't the only big idea here: Laberge is also pioneering the idea that venture capital firms, which are used to taking big gambles but expect a quick payback, can sometimes have the patience to invest in a project they can't just flip in three years. Private funding could change the game for fusion energy.¶ Richard Siemon used to run the fusion program at Los Alamos National Laboratory, which is part of the multibillion-dollar federal research effort. He says radical ideas like this get dreamed up at the big labs, but they get starved for money, which flows mostly to the industrial-sized projects. Sure, he says, those big projects are exploring important physics, "but when they are working on a concept and somebody says, 'Yeah, but it's going to cost too much for the customer in the end,' that's sort of like a non-issue for a government researcher."¶ General Fusion is relying heavily on funding from venture capital firms, which are generally accustomed to quick turnarounds. This project is pioneering the idea that such firms can have the patience to invest in longer-term projects.¶ Enlarge Brett Beadle for NPR¶ General Fusion is relying heavily on funding from venture capital firms, which are generally accustomed to quick turnarounds. This project is pioneering the idea that such firms can have the patience to invest in longer-term projects.¶ But private investors are only interested in projects that could become commercially viable power sources. That's why Siemon is happy to see private investors taking an interest in fusion energy.¶ "I really think that venture capital might just come in at this point and pick the best fruits off the tree and run with them," says the retired physicist.¶ In fact, Laberge's company is not the only one out there using private funds to build reactors based on magnetized target fusion and other novel concepts. Siemon says he's confident someone will eventually figure this out. And that may be an economic competitor.¶ "Just in the last year I heard it reported from some technical meetings that China has gotten interested in magnetized target fusion," Siemon notes.¶ China could easily throw hundreds of millions of dollars at the idea. So venture capitalists could have some serious competition. Laberge, of course, is betting he will emerge victorious.

### 2nc\*\*\*

#### Government-led energy r&d inevitably fails – leads to slow, inconsistent solutions that turns the case – star this card

Sovacool 8 (Benjamin K. Sovacool, Energy Governance Program, Centre on Asia and Globalisation, National University of Singapore, “Replacing tedium with transformation: Why the US Department of Energy needs to change the way it conducts long-term R&D”, Science Direct, March, CMR)

While transformational R&D does occasionally occur within the present DOE research system, it occurs by circumstance instead of design. Complicated structure and loss of mission within some parts of the DOE continues to plague some programs and create inconsistencies in terms of a national energy policy. Various layers of stove-piping within and between the DOE and the national laboratories continue to fracture collaboration and engender only slow, incremental progress on energy problems. Energy R&D remains grossly under-funded by federal and private sponsors, compromising the country's ability to address energy concerns.¶ In addition, scientists and engineers continue to view themselves as problem solvers instead of critical and reflexive thinkers, and channels of communication and coordination between other federal institutions and within the DOE remain confusing. The national laboratories are sponsor driven rather than mission driven, R&D programs are poorly funded compared to other federal activities, and inconsistencies make it virtually impossible to sustain a coherent, long-term national energy vision. These trends contribute directly to the country's energy insecurity, risking inflated energy prices, environmental degradation, and recurring energy crises.¶ The diffuse and growing challenges facing the American energy sector demand a fundamental rethinking and radical redesign of the processes the country utilizes to produce energy technologies. The DOE and national laboratories were not designed to pursue transformational R&D projects, and program mangers and policymakers often lack the personal, organizational and political will bring them forward. Managers at the DOE national laboratories conform to rather than controvert the conventional wisdom and paradigms of their federal sponsors because of programmatic and financial risks to their organization of nonconformity are too great. In turn, individual researchers seeking to keep themselves gainfully employed “follow the money” down predetermined R&D pathways rather than expending considerable time and energy challenging existing paradigms and process structures.

### 1nc – fusions turns\*\*

#### *Federal support* for fusion is a *dead-end* – *even with full funding*, previous failures prove it’s at least *60 years away*

Grossman 9 – Clarence Efroymson Professor of Economics at Butler University, “U.S. Energy Policy and the Presumption of Market Failure”, Spring/Summer, <http://www.cato.org/pubs/journal/cj29n2/cj29n2-5.pdf>, CMR)

Of course this analogy demonstrated only that Congress did not¶ understand the great differences between a fusion reactor project¶ and the Apollo moon landing. When Kennedy took office the U.S.¶ had a manned space program and could lift payloads into earth orbit.¶ The science of lifting them out of orbit to the moon was fairly clear,¶ and only better engineering was needed to achieve that goal. Apollo¶ was also intended to be simply a demonstration project with no commercial¶ intent. No firm would have undertaken such a venture when¶ the assumption was that no commercial payoff was even possible.¶ However, the MFEE did have a commercial purpose, a purpose¶ that was to be achieved through congressional guidance and appropriation¶ of funds. With a chosen design and a timetable in the bill,¶ Congress had substituted political judgment for both scientific and¶ market judgments. Thus, the project, originally a pure research¶ effort, had become an extremely fanciful example of a government¶ energy development program.¶ The results were predictable. Funding rose to a high of $469 million¶ in 1984, but then fell as cheap conventional energy resources¶ ended the panicked search for alternatives. More important,¶ advances in fusion did not follow the MFEE’s timetable. By 1990, so¶ far from having demonstrated the principles of a working fusion¶ reactor, scientists conceded that the whole idea was nowhere near¶ realization. Said one physicist, “People have been saying, ‘Fusion is¶ 30 years away—and always will be.’ Except now, it seems to be 60¶ years away” (Carey 1990).¶ Still, promoters of fusion blamed the reduced funding for the failure¶ to achieve the stipulated benchmarks and called for a renewed¶ effort. One group of researchers argued for accelerated spending¶ and promised success by 2005 (Dean et al. 1991). In fact, fusion did¶ maintain research support, though at declining rates. By 2006, only¶ $290 million was appropriated for fusion research of all kinds—in¶ real terms less than a third of the amount spent in 1984. The largest¶ tokomak magnetic confinement project was the International¶ Thermonuclear Experimental Reactor (ITER), no longer even a¶ U.S. project. Though accelerated fusion research and development¶ continues to have its proponents, even with higher energy prices¶ another crash program is very unlikely. Clearly, whatever market failure¶ existed with respect to pure fusion research, the MFEE and the¶ congressional effort to induce innovation failed far more dramatically.¶ In fact, none of the benchmarks set in the original bill have ever¶ been met. Increased “Apollo mode” funding today would be no more¶ likely to get us there according to any timetable than it did in 1980.

### Politics

#### No initial spending – prize is conditioned on success

Adler 11 (Jonathan H. Adler, Professor of Law and Director of the Center for Business Law and Regulation, Case Western Reserve University School of Law, “EYES ON A CLIMATE PRIZE: REWARDING ENERGY INNOVATION TO ACHIEVE CLIMATE STABILIZATION”, 35 Harv. Envtl. L. Rev. 1, lexis, CMR)

Prizes, like patents, impose the relevant R&D costs of the invention on the inventors. Prize sponsors only pay for an inventor's work if she is ultimately successful. n225 Unsuccessful innovators, and their sponsors, are left to bear their R&D costs themselves. This has clear fiscal benefits for the government, and taxpayers. n226 If R&D is funded ex ante, there is no assurance that the investment will produce any benefits to the funder at all. n227 With prizes, on the other hand, the financial payment is conditional upon the prize conditions being fulfilled. Provided the prize is properly designed -- and a would-be innovator succeeds -- the funder gets its money's worth.

#### “Economic efficiency” means prizes avoid backlash

McKinsey & Company 9 – Global management consulting firm [The Social Sector Office, And the Winner is ... Capturing the Promise of Philanthropic Prizes, The report is based on interviews with analysts and practitioners, surveys of prize sponsors and competitors, databases of small and large awards, and case studies of 12 effective prizes, March 2009, pg. <http://www.mckinsey.com/clientservice/socialsector/And_the_winner_is.pdf> CMR

Success-contingent rewards: Prizes shift risk from prize sponsors to competitors (or their¶ sponsors) by only paying for successful achievement of a defined goal. No success, no prize.¶ Peter Diamandis calls this the “efficiency” of prizes: in a way, they are “fixed cost science¶ or engineering.”16 For philanthropists, government departments or corporations looking to¶ improve return on investment, in many situations this contingent rather than guaranteed¶ payout can be a much more attractive proposition than a conventional grant or contract.¶ Likewise, for competitors, success-contingent rewards combine with the theater of a wellstaged¶ competition to create an urgency that delivers previously unachievable levels of focus¶ and creativity, with real innovation as the ultimate result.¶ These distinctive attributes of prizes and the external trends that reinforce them help explain¶ why prizes are becoming so popular. But their intrinsic value is only part of the story. More¶ valuable still is the way these attributes combine to form powerful change levers that can¶ transform people’s actions and perceptions. This renewed and strengthened ability to affect¶ positive change is perhaps the fundamental reason for the prize renaissance of recent years.

#### Prizes avoid political fire

Adler 11 (Jonathan H. Adler, Professor of Law and Director of the Center for Business Law and Regulation, Case Western Reserve University School of Law, “EYES ON A CLIMATE PRIZE: REWARDING ENERGY INNOVATION TO ACHIEVE CLIMATE STABILIZATION”, 35 Harv. Envtl. L. Rev. 1, lexis, CMR)

The federal government has also shown a renewed interest in prizes, beginning with a 1999 National Academy of Engineering ("NAE") report encouraging government agencies to consider using technology inducement [\*26] prizes on an experimental basis. n172 NASA and the Defense Advanced Research Projects Agency ("DARPA") have experience with awarding prizes for technological innovation, though both agencies' programs have been designed on a rather small scale. n173 DARPA, the research agency within the Department of Defense, "has offered a $ 1 million prize to elicit a fortyfold improvement in robotic vehicles for rough terrain." n174 Congress recently authorized NASA to sponsor prizes out of its budget, as well as to accept private matching funds for prize rewards. n175 NASA's "Centennial Challenge" provides for several prizes to encourage more private investment in space-related technological innovation. n176 An unemployed engineer won NASA's Astronaut Glove Challenge in 2007 -- yet another example of a prize stimulating innovation by an "outsider." n177¶ Congress has shown some renewed interest in prizes in recent years. n178 In 2006 Congress permitted the National Science Foundation ("NSF") to begin utilizing "innovation inducement prizes" with portions of its annual appropriations. n179 In response, the NSF arranged with the National Academy of Sciences ("NAS") for a study on how the NSF could administer prizes to "achieve novel solutions to specified social or research needs or capitalize on recognized research opportunities." n180 The resulting report, published in 2007, summarizes the benefits and limitations of technology inducement prizes and makes recommendations for prize administration and topic selection. n181 Of note, the report concluded there are "many possibilities for employing innovation inducement prizes to overcome technical and scientific challenges in low-carbon energy supply, demand, and storage technologies." n182¶ The Energy Policy Act of 2005 authorized the Secretary of Energy to offer cash prizes of up to $ 10 million for "breakthrough achievements in research, development, demonstration, and commercial application" for energy-related innovations, as well as additional "Freedom Prizes" for innovations that reduce U.S. dependence on foreign oil. n183 The Freedom Prizes will award over $ 4 million to "the most effective and sustainable initiatives in oil [\*27] displacement (permanent reduction in oil dependency) using existing technologies and efficiency strategies." n184 In 2006, the House of Representatives also passed the H-Prize Act to authorize $ 70 million in prizes for advancements in hydrogen energy.

## Renewables

**2nc Trade-off**

**Government incentives for nuclear power trade off with renewable investment**

Jack **Spencer** (Research Fellow in Nuclear Energy) **and** Nicolas **Loris** (Research Assistant in the Thomas A. Roe Institute for Economic Policy Studies at The Heritage Foundation) June 19 **2008** “Critics of Nuclear Power's Costs Miss the Point”, WebMemo #1961)

Government has no business making any decisions about nuclear power based on costs. Its role should be to provide adequate oversight and fulfill its legal obligations on nuclear waste. It is primarily private companies that produce America's power,[12] and consumers pay for it. Their interactions in the marketplace should determine the best way to meet America's energy needs. The irony of mandates is that wind and solar may well have a place in meeting America's long-term energy needs. Massive wind farms that attempt to duplicate the model of high-output centralized power stations and individual photovoltaic solar installations on rooftops may not be the appropriate models. It may be that a decentralized model where households or neighborhoods have their own energy sources would work better for some of these technologies while more centralized models may work for others. But because the government attempts to funnel investment in one direction rather than allow the market to respond to peoples' needs, wind and solar many never get the opportunity to succeed.

### 2NC UQ

#### Clean tech leadership is high now—the industry is increasing now and the US is the leader in global investment—that’s Mitchell

#### Yes competitive – capacity growing in wind and solar – capital costs declining – fluctuating fuel costs close the gap with conventional tech.

Palaia 3-28

(Jeremy, Global Information Inc., PR Newswire, “Cost of Renewable Power Generation Increasing Competitive, Market Research Perspectives and Recommended Conferences”, DZ)

FARMINGTON, Conn., March 28, 2013 /PRNewswire-iReach/ -- Renewable power generation is one the most crucial ways of achieving the goal of sustainable development for all countries. Significant capacity additions are being witnessed annually. In 2012, 772.3 Gigawatts (GW) of renewable capacity was installed in 2011 across the world. Of this capacity, wind and solar PV (Photovoltaic) are the major renewable sources of energy and account for 49.3% of the cumulative renewable power installation in the world. According to an upcoming report, "Cost of Power Generation", wind is the largest renewable source and accounts for 36.8% of global renewable capacity. Between 2005 and 2012, cumulative installed capacity of wind power rose from 59.8 GW to 283.9 GW. The future prospects for the wind energy industry appear to be good, largely due to strong government support. By 2020, the wind power cumulative installed capacity is expected to reach 455.8 GW. Meanwhile, global solar PV installed capacity will continue to grow at a CAGR of 15% during the 2013–2020 forecast period to reach 331.2 GW by 2020.¶ (Photo: http://photos.prnewswire.com/prnh/20130328/CG85261)¶ The capital costs of renewable energy generation technologies such as solar PV and solar thermal are currently higher than those of conventional energy generation technologies. However, the capital costs of these renewable energy technologies have been declining over the last four to five years. The major drivers driving down the cost of these technologies are their technological improvements and mass deployments. Additionally, increasing costs during long-term construction and fluctuating fuel costs for conventional power generation are reducing the gap between the electricity costs of these two technologies. These patterns indicate that the Levelized Cost of Energy (LCOE) of renewable energy technologies is becoming competitive with the LCOE of conventional technologies.

## Spin-Offs

### No Solve

**Your predictions are bad – other areas disprove**

**HGFRC, ‘1** (Institutes of the HGF Research Collaboration on Nuclear Fusion, Hearing on Nuclear Fusion before the Bundestag Committee for Education, Research, and Technology Assessment, 28 March 2001, http://fire.pppl.gov/eu\_bundestag\_english.pdf)//CC

Moreover, **it is to be doubted that the presentation of** long **spin-off lists can be regarded as a justification for high future expenditures. Such lists have been drawn up in many areas of research**, among others, in elementary particle physics (**CERN**), in space research (**ESA, NASA) and** also in the field of fusion research (**JET, DOE Office for Fusion Research). A justification on the basis of expected spin-offs**, however, **is not possible since it is difficult to quantify the coming economic benefit. It would** also **have to be analysed what benefit would have been achieved if this money had been spent otherwise.** On the other hand, it may be assumed, however, that the expenditure of similar sums in different high-technology areas produces similar levels of spin-offs. The fact that fusion research requires very complex, specifically developed instruments in various technological areas makes it so to speak destined for the generation of spin-off products.

### Squo Solves

#### the military has already accrued the R&D benefits they isolate from ITER

Gsponer Their Evidence 8 (Dr. Andre, Director and Senior Researcher – Independent Scientific Research Institute, “ITER: The International Thermonuclear Experimental Reactor and the NuclearWeapons Proliferation Implications of ThermonuclearFusion Energy Systems”, 2-2, <http://arxiv.org/pdf/physics/0401110v3.pdf>)

3 Examples of spinoff¶ technologies expected from ITER¶ To conclude this section, we quote in extenso the examples given in section 5.13¶ devoted to the spinoff¶ benefits of fusion technologies in the summary of the report¶ of the Special Committee on the ITER Project of the Japanese Atomic Energy¶ Commission. This is not to imply that the examples given by the Committee are¶ necessarily relevant to the proliferation of nuclear weapons, but an illustration that¶ they are indeed mostly dual purpose¶ technologies of great military significance:¶ “Driving force of spinoff¶ technologies¶ Since fusion development requires gathering knowledge from a myriad¶ of advanced technologies, it is now making significant progress as¶ 48¶ a seed of these technologies. The fusion device is based on diverse¶ research fields and fashioned from advanced technologies, such as¶ physics, mechanical engineering, electric and electronic engineering,¶ materials engineering, thermodynamics, heat transfer flow and thermal¶ engineering, nuclear engineering, cryogenic engineering, electromagnetic¶ dynamics, chemical engineering, and control engineering¶ and instrumentation. Therefore, the development of this compound¶ technology not only advances individual fusion technology but also¶ raises the potential capability of all science and technology by mutual¶ stimulation between different fields of science. The resultant spinoff¶ benefits are seen in commercial technologies, such as the semiconductor¶ industry and the large, precision machine tool¶ industry. Fusion¶ research also contributes to the development of advanced technology¶ and basic science of other fields, such as physics, space science, materials¶ science, medicine, communications, and environmental science.¶ These applied sciences include accelerator technology, superconductor¶ technology, diagnosing techniques, plasma application technology,¶ heatproof and heavy irradiation proof¶ materials technology, impurity¶ removal techniques, and computer simulation techniques.¶ Examples of spinoff¶ technologies¶ Examples of spinoff¶ technologies include the development of large¶ superconducting coils for ITER, which reduced the cost by 75% of¶ niobium/tin superconducting wire material necessary of the generation¶ of the high magnetic¶ fields. This has allowed the high magnetic¶ field MRI used for medical diagnostics to become relatively commonplace.¶ At the same time, the AC loss has been reduced by 80% of¶ that for conventional superconductors, even at the strong magnetic¶ field of 13 tesla. This makes it feasible to increase the stored energy¶ in a superconducting power storage system by a factor of 5–7 when¶ compared with a system designed with conventional technology and¶ operating at 5–6 tesla. In addition, vacuum pumps for high thermal¶ efficiency refrigerating machines, which operate below4 K, have been¶ developed and have been adopted at the Fermi National Accelerator¶ Laboratory in the US and CERN in Europe. This also demonstrates¶ the enormous contribution of fusion research to the frontiers of science.¶ The technology of producing large positiveionbeam¶ currents,¶ originally developed for the heating of fusion plasmas, has already¶ pervaded into the technologies for products used in daily life, such¶ the semiconductors used in the home electric appliances. In addition,¶ the large negative ion beam¶ current technology developed for ITER¶ 49¶ is expected to give birth to completely new research fields, such as the¶ creation of previously unknown materials. The negative ion¶ beam,¶ which has monochromatic energy, is also suitable for manufacture of¶ intricate semiconductor devices. This allows the realization of low cost,¶ mass produced¶ single crystal silicon thin films for solar cells.¶ Furthermore, high power¶ radiofrequency¶ sources used for plasma¶ heating are already applied to the manufacture of high performance¶ ceramics. Potential applications of these sources extend from solving¶ environmental problems to the radar used in outer space. The integration¶ of component technology for the fusion reactor also advances the¶ systematic development of technologies addressing integration, such¶ as system engineering, control engineering, and safety engineering.¶ Additionally, an exploratory investigation related to the processing¶ of radioactive waste by utilizing a fusion reactor itself as an intense¶ neutron source is also being carried out and seems promising” [6,¶ p.274275].

# 1NR

## States

### EU

#### Plan trades off with workers and funding for ITER – kills fusion advances, turning case

Cho ’12 (Adrian Cho, “Bigger Contribution to ITER Erodes Domestic Fusion Program”, Science, Feb 24, 2k12, online, CMR)

¶ The U.S. fusion program is in a bind. To remain at the cutting edge, U.S. fusion researchers must participate in the huge international experiment called ITER being built in Cadarache, France. But to pay for ITER—which aims to produce a self-sustaining fusion reaction, or “burning plasma,” and prove that fusion is a viable energy source—the United States may have to sacrifice the very community of researchers who would use the machine when it is ready.¶ ¶ That paradox hit home last week, when President Barack Obama submitted a 2013 budget request to Congress that would slash the nation's already beleaguered domestic fusion program while boosting the U.S. contribution to ITER. Contributing to ITER “is reasonable only in the context of a domestic program,” says Martin Greenwald, a physicist at the Massachusetts Institute of Technology (MIT) in Cambridge and chair of the Department of Energy's (DOE's) Fusion Energy Sciences Advisory Committee (FESAC). “Otherwise, you're just building a piece of equipment for other people to use.”

#### US financial commitment to ITER key to international science cooperation

Chu ’12 (Energy Secretary Steven Chu, quoted by Richard M Jones in “FYI: The AIP Bulletin of Science Policy News”, March 26, <http://www.aip.org/fyi/2012/045.html>, CMR)

Secretary Chu replied: “Senator, you're asking a very important question that we asked ourselves. But first let me assure you that the program at NIF [National Ignition Facility] is not actually competing with ITER. And NIF is supported by the NNSA [National Nuclear Security Administration] budget. And we want to make sure that that new program goes forward. Now, ITER is international science collaboration. It - in the view of the fusion community - represents the most advanced, best chance we have of trying to control plasmas in a way that it can potentially . . . bring about controlled fusion for power generation. And it is an international cooperation. And we I think want this to go forward. We want to be seen as reliable international partners. But we're also very cognizant of the spending profiles. And we are working with the fusion community in the United States as well as internationally to see if we can satisfy both the needs of the fusion community in the U.S. and this ITER commitment. But it's -- in these tight budget times, it's tough.”

#### EU disintegration inevitable

Stephen Walt 9/18 The coming erosion of the European Union, walt.foreignpolicy.com/posts/2011/08/18/the\_coming\_erosion\_of\_the\_european\_union

I gave a talk in Washington the other day about the future of the EU and transatlantic relations more generally, and I thought FP readers might be interested in what I had to say.  Here's a short summary of what I said.  I began with the rather obvious point that the highwater mark of Europe's global influence was past, and argued that it would be of declining strategic importance in the future. The logic is simple: After dominating global politics from roughly 1500 to 1900, Europe's relative weight in world affairs has declined sharply ever since. Europe's population is shrinking and aging, and its share of the world economy is shrinking too. For example, in 1900, Europe plus America produced over 50 percent of the world economy and Asia produced less than 20 percent. Today, however, the ten largest economies in Asia have a combined GDP greater than Europe or the United States, and the Asian G10 will have about 50 percent of gross world product by 2050. Europe's current fiscal woes are adding to this problem, and forcing European governments to reduce their already modest military capabilities even more. This isn't necessarily a big problem for Europeans, however, because they don't face any significant conventional military threats. But it does mean that Europe's ability to shape events in other parts of the world will continue to decline. Please note: I am not saying the Europe is becoming completely irrelevant, only that its strategic importance has declined significantly and that this trend will continue. Second, I also argued that the highwater mark of European unity is also behind us. This is a more controversial claim, and it's entirely possible that I'll be proven wrong here. Nonetheless, there are several obvious reasons why the EU is going to have real trouble going forward. The EU emerged in the aftermath of World War II. It was partly intended as a mechanism to bind European states together and prevent another European war, but it was also part of a broader[Western European effort](http://www.amazon.com/Cornell-Studies-Security-Affairs-ebook/dp/B004UBWFRQ) to create enough economic capacity to balance the Soviet Union.  Europeans were not confident that the United States would remain engaged and committed to their defense (and there were good reasons for these doubts), and they understood that economic integration would be necessary to create an adequate counterweight to Soviet power. As it turned out, the United States did remain committed to Europe, which is why the Europeans never got serious about creating an integrated military capacity. They were willing to give up some sovereignty to Brussels, but not that much. European elites got more ambitious in the 1980s and 1990s, and sought to enhance Europe's role by expanding the size of the EU and by making various institutional reforms, embodied in the Maastricht and Lisbon treaties. This broad effort had some positive results -- in particular, the desire for EU membership encouraged East European candidates to adopt democractic reforms and guarantees for minority rights -- but the effort did not lead to a significant deepening in political integration and is now in serious trouble.  Among other things, the Lisbon Treaty sought to give the positions of council president and High Representative for Foreign Affairs greater stature, so that Europe could finally speak with "one voice." Thus far, that effort has been something of a bust. The current incumbents -- Herman von Rompuy of Belgium and Catherine Ashton of Britain -- are not exactly politicians of great prominence or clout, and it is hardly surprising that it is national leaders like Nicolas Sarkozy of France and Angela Merkel of Germany that have played the leading roles in dealing with Europe's current troubles. As has long been the case, national governments remain where the action is. Today, European integration is threatened by 1) the lack of an external enemy, which removes a major incentive for deep cooperation, 2) the unwieldy nature of EU decision-making, where 27 countries of very different sizes and wealth have to try to reach agreement by consensus, 3) themisguided decision to create a common currency, but without creating the political and economic institutions needed to support it, and 4) nationalism, which remains a powerful force throughout Europe and has been gathering steam in recent years. It is possible that these challenges will force the EU member-states to eventually adopt even deeper forms of political integration, as some experts have already advised. One could view the recent Franco-German agreement on coordinating economic policy in this light, except that the steps proposed by Merkel and Sarkozy were extremely modest. I don't think the EU is going to fall apart, but prolonged stagnation and gradual erosion seems likely. Hence my belief that the heyday of European political integration is behind us.

## CIR

### O/V

#### Disad outweighs –

#### Failure to reform immigration ensures collapse of US biotech innovation necessary to dissuade and contain a bioterror attack

#### Risk of attack is high – only counter-measures solve

Glassman ’12 (James, “Expert: U.S. unprepared for bioterrorism attack”, April 5, <http://www.bioprepwatch.com/us_bioterror_policy/expert-u-s-unprepared-for-bioterrorism-attack/323620/>, CMR)

A recent essay published in Forbes magazine supports the contention that the United States remains woefully unprepared, if not uninterested, in the chances that it will face an attack using biological weapons.¶ James Glassman, a former undersecretary of state for public affairs and public diplomacy and the founder of the George W. Bush Institute, said that the United States remains vulnerable to an attack that could potentially kill hundreds of thousands of people because it lacks a means of producing needed medical countermeasures, according to Forbes.¶ Three years ago, a Congressional commission concluded that there is 50 percent chance that there will be an attack using a weapon of mass destruction somewhere in the world by 2013. The Commission on the Prevention of WMD Proliferation and Terrorism declared that the weapon used would more likely be biological than nuclear.¶ Regardless, Glassman said that the public has heard little about bioterrorism since the anthrax attacks in 2001, despite the considerable risk.¶ “Terrorists could spray Bacillus anthracis from crop-dusters over football stadiums,” Glassman wrote, Forbes reports. “Or they could send intentionally infected fanatics out to spread the smallpox virus through a crowded city, doing far more damage than a brigade of suicide bombers.”¶ Glassman pointed to last October’s Bio-Response Report Card study, issued last year by the Bipartisan WMD Terrorism Research Center, as proof that the country needs to do more to confront the threat of bioterrorism. The report card gave the United States a “D” grade for its detection and diagnosis capability and for the availability of medical countermeasures.¶ Glassman said that larger biopharmaceutical firms have done little to develop countermeasures, but small firms have filled the gap with mixed success.

**Nuclear war doesn’t cause extinction**

Seitz 11, Harvard University Center for International Affairs visiting scholar, (Russell, “Nuclear winter was and is debatable,” Nature, 7-7-11, Vol 475, pg37, accessed 9-27-11, CMR)

Alan Robock's contention that there has been no real scientific debate about the 'nuclear winter' concept is itself **debatable** (Nature 473, 275–276; 2011). This potential climate disaster, popularized in Science in 1983, rested on the output of a one-dimensional model that was later shown to overestimate the smoke a nuclear holocaust might engender. More refined estimates, combined with advanced three-dimensional models (see http://go.nature.com.libproxy.utdallas.edu/kss8te), have dramatically reduced the extent and severity of the projected cooling. Despite this, Carl Sagan, who co-authored the 1983 Science paper, went so far as to posit “the extinction of Homo sapiens” (C. Sagan Foreign Affairs 63, 75–77; 1984). Some regarded this apocalyptic prediction as **an exercise in mythology**. George Rathjens of the Massachusetts Institute of Technology protested: “Nuclear winter is **the worst example of the misrepresentation of science to the public in my memory**,” (see http://go.nature.com.libproxy.utdallas.edu/yujz84) and climatologist Kerry Emanuel observed that the subject had “become **notorious for its lack of scientific integrity”** (Nature 319, 259; 1986). Robock's single-digit fall in temperature is at odds with the subzero (about −25 °C) continental cooling originally projected for a wide spectrum of nuclear wars. Whereas Sagan predicted darkness at noon from a US–Soviet nuclear conflict, Robock projects global sunlight that is several orders of magnitude brighter for a Pakistan–India conflict — literally the difference between night and day. Since 1983, the projected worst-case cooling has fallen from a Siberian deep freeze spanning 11,000 degree-days Celsius (a measure of the severity of winters) to numbers so unseasonably small as to call the very term 'nuclear winter' into question.

#### Counterforce targeting checks

Mueller, ‘9 – Professor Political Science Ohio State U¶ (John, Woody Hayes Chair of National Security Studies and Professor of Political Science at Ohio State University. “Atomic Obsession: Nuclear Alarmism from Hiroshima to Al-Qaeda” p. 8)

To begin to approach a condition that can credibly justify applying such extreme characterizations as societal annihilation, a full-out attack with hundreds, probably thousands, of thermonuclear bombs would be required. Even in such extreme cases, the area actually devastated by the bombs' blast and thermal pulse effects would be limited: 2,000 I-MT explosions with a destructive radius of 5 miles each would directly demolish less than 5 percent of the territory of the United States, for example. Obviously, if major population centers were targeted, this sort of attack could inflict massive casualties. Back in cold war days, when such devastating events sometimes seemed uncomfortably likely, a number of studies were conducted to estimate the consequences of massive thermonuclear attacks. One of the most prominent of these considered several possibilities. The most likely scenario--one that could be perhaps be considered at least to begin to approach the rational-was a "counterforce" strike in which well over 1,000 thermonuclear weapons would be targeted at America's ballistic missile silos, strategic airfields, and nuclear submarine bases in an effort to destroy the country's strategic ability to retaliate. Since the attack would not directly target population centers, most of the ensuing deaths would be from radioactive fallout, and the study estimates that from 2 to 20 million, depending mostly on wind, weather, and sheltering, would perish during the first month.

### UQ

**Immigration will pass now—Obama is “using the bully pulpit” to build support for a bipartisan deal –FRAMING ISSUE – PC is the only relevant question because he can “chip away” at the remaining obstacles their evidence cites – that’s Dann and Nakamura**

#### Obama’s push secures passage in both houses – top priority

Fabian 3/27 (Jordan, “President Obama Expects Immigration Bill In April”, <http://abcnews.go.com/ABC_Univision/News/immigration-reform-obama-expects-bill-april/story?id=18825428&singlePage=true#.UVO8Dhw4vzw>, CMR)

President Obama expects an immigration bill to come before the Senate next month and voiced optimism that a final bill could pass through Congress this summer.¶ A bipartisan group of senators, known as the "Gang of Eight," missed a self-imposed deadline to submit a comprehensive immigration reform bill by the end of March, sparking concern that the group had reach an unsolvable impasse. But Obama said on Wednesday that the group is "actually making progress" and that they are very close to reaching a final agreement on a bill.¶ "I'm actually optimistic that when they get back they will introduce a bill," Obama said during an interview with Univision. "My sense is that they have come close and my expectation is that we'll actually see a bill on the floor of the Senate next month."¶ The president has repeatedly said that he would propose his own immigration bill should negotiations in Congress grind to a halt. But Obama refused to say that he would take such action even if the lawmakers fail to introduce a bill in April.¶ "I'm not going to presuppose that they don't [reach an agreement]," he said.¶ When Obama was asked if immigration reform could still get done by summer, a goal he set out earlier this year, the president replied, "I believe so."¶ Comprehensive immigration reform is one of Obama's top second-term priorities, and it's a rare issue where agreement between Republicans and Democrats in Washington has emerged since the November election.¶ The president has long faced pressure from Latino groups to act, especially since seven in ten Latino voters backed his reelection bid. Republican decision-makers certainly believe that cooperating on an immigration bill could help them make inroads among Latino voters, who have largely abandoned the party during the past eight years.

#### Momentum ensures bipartisan deal – overcomes border security and labor disputes

Sink 3/27 (Justin, “Obama 'confident' immigration reform will get done this summer”, <http://thehill.com/blogs/blog-briefing-room/news/290685-obama-confident-immigration-reform-will-get-done>, CMR)

President Obama expressed confidence Wednesday that lawmakers will strike a bipartisan immigration deal by the end of the summer.¶ “If we have a bill introduced at the beginning of next month as these senators indicate it will be, then I'm confident that we can get it done certainly before the end of the summer,” the president told Telemundo.¶ Obama taped interviews with both Telemundo and Univision on Wednesday afternoon in an effort to build momentum for an immigration deal, an achievement that seems within his grasp.¶ The bipartisan Senate group is expected to present a draft bill when Congress returns from a two-week Easter recess on April 8. Members of the group have expressed optimism they will be able to coalesce around a deal that tightens border security but also provides a path to citizenship for illegal immigrants.¶ Obama also downplayed a public clash between the U.S. Chamber of Commerce and the AFL-CIO. While the business and labor groups had agreed in principle on a temporary visa program, a split over worker wages has threatened to derail the process.¶ On Wednesday, Obama said that he did not agree that the split was “threatening to doom the legislation.”¶ “This is a resolvable issue,” Obama continued. “The most important thing is that we're seeing a strong commitment to finally solve this problem in a way that strengthens our border security, makes sure that there's a pathway to citizenship — an earned one, a tough one, but a pathway — so that people can live out their dreams and make sure that they have a better life for themselves and their kids.”¶ Obama is under pressure from Republicans to agree to a quantifiable set of border security standards before the nation’s estimated 11 million illegal immigrants are given any form of citizenship.¶ He told Telemundo it was important to provide clarity for illegal immigrants.¶ “Regardless of how much additional effort we put in on the borders, we don't want to make this earned pathway to citizenship a situation in which it's put off further and further into the future,” Obama said. “There needs to be a certain path for how people can get legal in this country, even as we also work on these strong border security issues.”¶ But in his remarks to Univision, Obama also stressed the need for a realistic evaluation of security procedures on the Southern border.¶ "Given the size of the border, it's never going to be 110 percent perfect," Obama said. "What we can do is to continue to improve it."¶ Obama said he remained optimistic that lawmakers would strike a deal.¶ “I'm not gonna presuppose failure,” Obama said. “I don't know why you keep on asking about failure, ‘cause I think this is gonna succeed.”¶ Obama repeated his threat that if the Senate fails to act on a deal to overhaul the nation's immigration action, he would push forward with his own legislation.¶ He said if that he has his own legislation if he sees “a breakdown."¶ “I'm prepared to step in. But I don't think that's going to be necessary,” Obama said.

#### Passes the House – momentum and spirit of compromise overcomes remaining issues

Foley 3/27 (Flise, “John Yarmuth: Immigration Group In House 'Very Close' To Deal”, <http://www.huffingtonpost.com/2013/03/27/john-yarmuth-immigration_n_2963491.html>, CMR)

Rep. John Yarmuth (D-Ky.), one of the House members working on an immigration reform plan, said Wednesday that he and his fellow members are nearing the conclusion of their talks.¶ "I think we're actually very close to being able to come forward with a package of very important commonsense reform proposals," Yarmuth said on MSNBC's "Jansing & Co." "We've really resolved all of the truly contentious issues, so now it's a lot of detail work and some loose ends."¶ The House group -- which MSNBC listed as Yarmuth and Reps. Zoe Lofgren (D-Calif.), Xavier Becerra (D-Calif.), Raul Labrador (R-Idaho), Mario Diaz-Balart (R-Fla.), John Carter (R-Texas) and Sam Johnson (R-Texas) -- has been working quietly on an immigration reform plan for years, but remained secretive about when and how they will release it.¶ Yarmuth said one of the biggest questions is how they ensure their bill can pass the Republican-controlled House, which will be a heavier lift than the Democratic-controlled Senate. The so-called "gang of eight" in the upper chamber plans to unveil a bill next month and has already put out a framework, but the House group still must decide whether to wait until a Senate bill passes or introduce their own legislation sooner.¶ They may be leaning toward the latter, Yarmuth hinted.¶ "I think one of the things that we're dealing with is the issue of making sure that House Republicans who are in the majority are comfortable with whatever package comes to the floor of the House," he said. "You know, just kind of the sensitivity is, would House Republicans be open to a bill that comes from a Democratic-controlled Senate or from a Democratic president? And that's why we kind of think our effort is most important because if we can get one through the House, then I think the odds of getting it signed into law improve a lot."¶ He said the contentious issues in the House group were over how to deal with undocumented immigrants already in the country, guest workers, border security and stopping employers from hiring people unauthorized to work in the United States.¶ Yarmuth said he is hopeful that immigration reform can eventually pass.¶ "I'm very optimistic," he said. "Again, I think in our group everybody is really committed to getting this done. We know we have to deal with the immigration issue, and this is the best opportunity we've had in generations, really. So we're very encouraged, and the spirit of bipartisanship and working toward a common goal is very, very strong. I wish we could do this in every area of our business."

#### Obama’s *push* and *prioritization* makes passage likely --- remaining details will be resolved

Strauss 3/27 (Daniel, “Schumer: Senate group ‘90 percent’ finished on immigration reform bill”, <http://thehill.com/blogs/blog-briefing-room/news/290653-schumer-says-immigration-group-is-90-percent-there>, CMR)

Senators working on drafting an immigration reform bill are "90 percent" finished, Sen. Charles Schumer (D-N.Y.), a member of the bipartisan group, said Wednesday.¶ "The bottom line is we're very close," Schumer said, striking an optimistic note. "I'd say we're 90 percent there. We have a few little problems to work on, we've been on the phone with our four colleagues all day."¶ ¶ Schumer made the comments after he and Sens. John McCain (R-Ariz.), Jeff Flake (R-Ariz.), and Michael Bennet (D-Colo.) toured the U.S.-Mexico border in Nogales, Ariz., on Wednesday. The four are all members of the "Gang of Eight" senators who have been drafting a bill to overhaul the nation’s immigration laws.¶ The group unveiled its framework in January and has been negotiating the details, with hopes to introduce a bill by the end of April.¶ Schumer and McCain used the post-tour press conference to stress the importance of border security.¶ "I don't know if this changed my views because Sen. McCain and Sen. Flake made clear what we needed on the border, but I'll be able to explain this to my colleagues," Schumer said. "Many of my colleagues say, 'Why do we need to do anything on the border?' We should."¶ Heightened border security, a pathway to citizenship for illegal immigrants already in the country, as well as measures to boost high-skilled immigration and create a guest worker program will be elements of the final package.¶ With strong Republican opposition to measures that would grant legalized status to illegal immigrants, efforts to boost border security could be a key element in winning support from conservative lawmakers.¶ McCain said that the $85 billion in across-the-board sequester spending cuts had weakened border security.¶ "There's no doubt that our border is less secure because of the sequester. And we'll be doing whatever we can to restore the funding," he said.¶ President Obama and congressional lawmakers have displayed an eagerness to pass a big immigration bill. The White House, which took a hit in polls after the recent fights over the budget, hopes to boost Obama's political standing by moving the focus toward immigration reform.¶ Obama has said the issue is a second-term priority and told lawmakers that “the time has come” to move legislation during a naturalization ceremony at the White House on Monday.¶ A bipartisan House group is also working on a proposal, but while those details have not been released, their efforts have received the general backing of leaders from both parties.

### Hirsh

**The plan isn’t a win, it’s an ambush---Obama hasn’t been pushing it for a long time and our link proves it has no supporters**

#### Our 1NC Nakamura evidence says Obama has a “severely limited timeframe” to “strike deals” on immigration – PC faces “rapidly diminishing returns” which means he has to focus capital in the short-term

#### Issue selection is key --- he can only get momentum if he starts with an issue like immigration where the public mood is changing. Overreaching with an unpopular issue empirically triggers backlash.

Hirsh, 2/7 --- Chief correspondent (2/7/2013, Michael, “There’s No Such Thing as Political Capital; The idea of political capital—or mandates, or momentum—is so poorly defined that presidents and pundits often get it wrong,” <http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207)>)

Consider, as another example, the storied political career of President Franklin Roosevelt. Because the mood was ripe for dramatic change in the depths of the Great Depression, FDR was able to push an astonishing array of New Deal programs through a largely compliant Congress, assuming what some described as near-dictatorial powers. But in his second term, full of confidence because of a landslide victory in 1936 that brought in unprecedented Democratic majorities in the House and Senate, Roosevelt overreached with his infamous Court-packing proposal. All of a sudden, the political capital that experts thought was limitless disappeared. FDR’s plan to expand the Supreme Court by putting in his judicial allies abruptly created an unanticipated wall of opposition from newly reunited Republicans and conservative Southern Democrats. FDR thus inadvertently handed back to Congress, especially to the Senate, the power and influence he had seized in his first term. Sure, Roosevelt had loads of popularity and momentum in 1937. He seemed to have a bank vault full of political capital. But, once again, a president simply chose to take on the wrong issue at the wrong time; this time, instead of most of the political interests in the country aligning his way, they opposed him. Roosevelt didn’t fully recover until World War II, despite two more election victories.¶ In terms of Obama’s second-term agenda, what all these shifting tides of momentum and political calculation mean is this: Anything goes. Obama has no more elections to win, and he needs to worry only about the support he will have in the House and Senate after 2014. But if he picks issues that the country’s mood will support—such as, perhaps, immigration reform and gun control—there is no reason to think he can’t win far more victories than any of the careful calculators of political capital now believe is possible, including battles over tax reform and deficit reduction.¶ Amid today’s atmosphere of Republican self-doubt, a new, more mature Obama seems to be emerging, one who has his agenda clearly in mind and will ride the mood of the country more adroitly. If he can get some early wins—as he already has, apparently, on the fiscal cliff and the upper-income tax increase—that will create momentum, and one win may well lead to others. “Winning wins.”

#### AND, Sequencing – unpopular policies ruin the agenda– Obama’s entire first term proves

Hirsh, 2/7 --- Chief correspondent (2/7/2013, Michael, “There’s No Such Thing as Political Capital; The idea of political capital—or mandates, or momentum—is so poorly defined that presidents and pundits often get it wrong,” <http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207)>)

.¶ THE REAL LIMITS ON POWER¶ Presidents are limited in what they can do by time and attention span, of course, just as much as they are by electoral balances in the House and Senate. But this, too, has nothing to do with political capital. Another well-worn meme of recent years was that Obama used up too much political capital passing the health care law in his first term. But the real problem was that the plan was unpopular, the economy was bad, and the president didn’t realize that the national mood (yes, again, the national mood) was at a tipping point against big-government intervention, with the tea-party revolt about to burst on the scene. For Americans in 2009 and 2010—haunted by too many rounds of layoffs, appalled by the Wall Street bailout, aghast at the amount of federal spending that never seemed to find its way into their pockets—government-imposed health care coverage was simply an intervention too far. So was the idea of another economic stimulus. Cue the tea party and what ensued: two titanic fights over the debt ceiling. Obama, like Bush, had settled on pushing an issue that was out of sync with the country’s mood.¶ Unlike Bush, Obama did ultimately get his idea passed. But the bigger political problem with health care reform was that it distracted the government’s attention from other issues that people cared about more urgently, such as the need to jump-start the economy and financial reform. Various congressional staffers told me at the time that their bosses didn’t really have the time to understand how the Wall Street lobby was riddling the Dodd-Frank financial-reform legislation with loopholes. Health care was sucking all the oxygen out of the room, the aides said.

#### Hirsch concedes PC matters

Hirsh, 2/7 --- Chief correspondent (2/7/2013, Michael, “There’s No Such Thing as Political Capital; The idea of political capital—or mandates, or momentum—is so poorly defined that presidents and pundits often get it wrong,” <http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207)>)

The point is not that “political capital” is a meaningless term. Often it is a synonym for “mandate” or “momentum” in the aftermath of a decisive election—and just about every politician ever elected has tried to claim more of a mandate than he actually has. Certainly, Obama can say that because he was elected and Romney wasn’t, he has a better claim on the country’s mood and direction. Many pundits still defend political capital as a useful metaphor at least. “It’s an unquantifiable but meaningful concept,” says Norman Ornstein of the American Enterprise Institute. “You can’t really look at a president and say he’s got 37 ounces of political capital. But the fact is, it’s a concept that matters, if you have popularity and some momentum on your side.”

#### Obama can’t win on energy policy

Eisler 12 (Matthew N. Eisler, Research Fellow at the Center for Contemporary History and Policy at the Chemical Heritage Foundation, “Science, Silver Buckshot, and ‘All of The Above’” Science Progress, April 2, <http://scienceprogress.org/2012/04/science-silver-buckshot-and-%E2%80%9Call-of-the-above%E2%80%9D/>, CR)

Conservatives take President Obama’s rhetoric at face value. Progressives see the president as disingenuous. No doubt White House planners regard delaying the trans-border section of the Keystone XL pipeline and approving the Gulf of Mexico portion as a stroke of savvy realpolitik, but one has to wonder whether Democratic-leaning voters really are as gullible as this scheme implies. And as for the president’s claims that gasoline prices are determined by forces beyond the government’s control (speculation and unrest in the Middle East), it is probably not beyond the capacity of even the mildly educated to understand that the administration has shown little appetite to reregulate Wall Street and has done its part to inflate the fear premium through confrontational policies in the Persian Gulf. Committed both to alternative energy (but not in a rational, comprehensive way) and cheap fossil fuels (but not in ways benefiting American motorists in an election year), President Obama has accrued no political capital from his energy policy from either the left or the right by the end of his first term. The president long ago lost the legislative capacity for bold action in practically every field, including energy, but because the GOP’s slate of presidential candidates is so extraordinarily weak in 2012, he may not need it to get re-elected. At least, that is the conventional wisdom in Democratic circles. Should President Obama win a second term, Congress is likely to be even more hostile than in his first term, as in the Clinton years. And as in the Clinton years, that will probably mean four more years of inaction and increased resort to cant.

### Inev

#### Skilled workers tied to comprehensive reform, won’t be addressed separately

Higgins 2/6 (John K. Higgins is a career business writer, with broad experience for a major publisher in a wide range of topics including energy, finance, environment and government policy, “Immigration Reform Could Open the Door for IT Talent”, <http://www.ecommercetimes.com/story/77241.html>, CR)

Congressional Hurdles and Outlook¶ How the bill fares in Congress may depend on how an overall comprehensive package of immigration reforms is handled.¶ "The Immigration Innovation Act could stand on its own, but in the current political situation it is unlikely that immigration issues will be handled piecemeal," Bob Sakaniwa, associate director of advocacy at the American Immigration Lawyers Association, told the E-Commerce Times. "The better prospect is that it will be included within a comprehensive package and its fate will be tied to what Congress does on the overall immigration reform effort."¶ The history of congressional immigration debates also indicates that the IT issue should be part of a comprehensive reform effort, LeDuc added. "As much as we might like, or it might seem practical to enact various reform initiatives independently, that's not a political reality at this time."¶ The momentum now exists for comprehensive immigration reform, and issues related to highly skilled workers have already made their way into bipartisan legislative language.¶ "We know that the attention of Congress will now be fully focused on achieving comprehensive reform and a complete bill in the next few months," Coffey said. "We're hoping that they succeed, and that's where our focus is."

#### Nope – Democrats won’t sign-off on piecemeal reform

Song 2/5 (Kyung, “Immigration committee examines skilled versus unskilled workers”, <http://seattletimes.com/html/localnews/2020294802_immigrationhearingxml.html>, CR)

WASHINGTON — Members of the House Judiciary Committee showed a sharp partisan divide during a hearing on immigration Tuesday that sometimes seemed to pit high-skilled foreign workers against illegal immigrants and those admitted to the U.S. through family ties.¶ A big portion of the hearing — the first on immigration this year — focused on temporary H-1B visas for science and technology workers.¶ Citing a shortage of qualified American engineers and programmers, Microsoft has been leading aggressive lobbying efforts to lift the cap on such foreign hires as well as for green cards allowing them to stay permanently.¶ Many members of the panel expressed strong support for creating more slots for high-tech talent. But Democrats largely swatted down Republicans’ suggestions to tackle that issue separately from possible citizenship for an estimated 11 million illegal immigrants and other thornier aspects of comprehensive immigration reform being debated in Congress.

### Plasma Physics Solve

#### The outbreak won’t be detected fast enough

Cheryl Loeb, (Research Associate, National Defense U.), JIHADISTS AND WEAPONS OF MASS DESTRUCTION, 2009, 154.

The difficulty in detecting biological terrorist attacks is that symptoms of illness do not appear immediately, as would occur in a chemical, nuclear, or conventional weapon attack. Because most biological weapons consist of living organisms, symptoms will occur only after an incubation period that may last days to weeks. Many times, the initial symptoms could appear as a common cold or influenza and might be mistaken for a normal outbreak of infectious disease. Until large numbers of individuals report illness, the attack could go undetected.

### PC Key

#### Political capital is finite and drives decisionmaking

Schier 9, Professor of Poliitcal Science at Carleton, (Steven, "Understanding the Obama Presidency," The Forum: Vol. 7: Iss. 1, Berkely Electronic Press, <http://www.bepress.com/forum/vol7/iss1/art10>)

In additional to formal powers, a president’s informal power is situationally derived and highly variable. Informal power is a function of the “political capital” presidents amass and deplete as they operate in office. Paul Light defines several components of political capital: party support of the president in Congress, public approval of the presidential conduct of his job, the President’s electoral margin and patronage appointments (Light 1983, 15).Richard Neustadt’s concept of a president’s “professional reputation” likewise figures into his political capital. Neustadt defines this as the “impressions in the Washington community about the skill and will with which he puts [his formal powers] to use” (Neustadt 1990, 185). In the wake of 9/11, George W. Bush’s political capital surged, and both the public and Washington elites granted him a broad ability to prosecute the war on terror. By the later stages of Bush’s troubled second term, beset by a lengthy and unpopular occupation of Iraq and an aggressive Democratic Congress, he found that his political capital had shrunk.Obama’s informal powers will prove variable, not stable, as is always the case for presidents. Nevertheless, he entered office with a formidable store of political capital. His solid electoral victory means he initially will receive high public support and strong backing from fellow Congressional partisans, a combination that will allow him much leeway in his presidential appointments and with his policy agenda. Obama probably enjoys the prospect of a happier honeymoon during his first year than did George W. Bush, who entered office amidst continuing controversy over the 2000 election outcome.Presidents usually employ power to disrupt the political order they inherit in order to reshape it according to their own agendas. Stephen Skowronek argues that “presidents disrupt systems, reshape political landscapes, and pass to successors leadership challenges that are different from the ones just faced” (Skowronek 1997, 6). Given their limited time in office and the hostile political alignments often present in Washington policymaking networks and among the electorate, presidents must force political change if they are to enact their agendas. In recent decades, Washington power structures have become more entrenched and elaborate (Drucker 1995) while presidential powers – through increased use of executive orders and legislative delegation (Howell 2003) –have also grown. The presidency has more powers in the early 21st century but also faces more entrenched coalitions of interests, lawmakers, and bureaucrats whose agendas often differ from that of the president. This is an invitation for an energetic president – and that seems to describe Barack Obama – to engage in major ongoing battles to impose his preferences.

#### Presidents perceive their capital as finite – our theory is true in practice

Marshall and Prins 11, BRYAN W. MARSHALL Miami University BRANDON C. PRINS University of Tennessee & Howard H. Baker, Jr. Center for Public Policy Power or Posturing? Policy Availability and Congressional Influence on U.S. Presidential Decisions to Use Force Presidential Studies Quarterly 41, no. 3 (September) 2011

We argue that the more important effect of Congress occurs because presidents anticipate how the use of force may affect the larger congressional environment in which they inevitably have to operate (Brulé, Marshall, and Prins 2010). It may be true that presidents consider the chances that Congress will react to a specific use of force with countervailing tools, but even more importantly they anticipate the likelihood that a foreign conflict may damage (or advantage) their political fortunes elsewhere—in essence, the presidential calculus to use force factors in how such actions might shape their ability to achieve legislative priorities. To be clear, presidents can and do choose to use force and press for legislative initiatives in Congress. Taking unilateral actions in foreign policy does not preclude the president from working the legislative process on Capitol Hill. However, political capital is finite so spending resources in one area lessens what the president can bring to bear in other areas. That is, presidents consider the congressional environment in their decision to use force because their success at promoting policy change in either foreign or domestic affairs is largely determined by their relationship with Congress. Presidents do not make such decisions devoid of calculations regarding congressional preferences and behavior or how such decisions may influence their ability to achieve legislative objectives. This is true in large part because presidential behavior is motivated by multiple goals that are intimately tied to Congress. Presidents place a premium on passing legislative initiatives.

The passage of policy is integral to their goals of reelection and enhancing their place in history (Canes-Wrone 2001; Moe 1985). Therefore, presidents seek to build and protect their relationship with Congress.