### Off

Immigration will pass – but controversies still need to be resolved—

Weissenstein 2/23 (Michael, ABC News, “McCain, Obama to meet on Immigration Tuesday,” http://abcnews.go.com/International/wireStory/mccain-guardedly-optimistic-immigration-reform-18570284)

U.S. Sen. John McCain said Friday that he and other lawmakers working on an immigration overhaul will meet with President Barack Obama on Tuesday to discuss the effort to revamp the system.¶ McCain, a member of a bipartisan group of eight senators working on a bill, said there is still significant disagreement with the president, but he is optimistic about producing legislation that includes a path to legalization for illegal immigrants.¶ The White House could not immediately confirm the Tuesday meeting.¶ "The president of the United States has supported our efforts. In fact we will be meeting with the president on Tuesday," McCain said during a visit to Mexico.¶ He did not say how many senators would attend the meeting.¶ McCain told reporters after meeting with Mexican President Enrique Pena Nieto that many details must be worked out between Obama and senators trying to produce legislation.¶ Asked about the prospects for reaching a deal, he said: "I am guardedly optimistic that we could by the end of the next month. There's still a number of agreements that need to be made before I can assure you that we will have a resolution."¶ While they differ on some key details, both Obama and the Senate are contemplating legislation that would provide a pathway to citizenship for most of the 11 million illegal immigrants already in the U.S., tighten border security, crack down on businesses that employ illegal workers and strengthen the legal immigration system.¶ McCain ticked off those aspects and added that he also envisions the legislation including a process for foreign agricultural and low-skilled laborers to work in the United States, a provision for highly educated workers to remain in the U.S., better identification cards for migrants and a special path for migrants brought to the U.S. as children.¶ "On some of those we have specific agreement, in other areas we agree in principle, but we have not resolved the details," he said. "We are making progress, but we are still not at a point where we can say we will succeed."¶

Political capital is key to RESOLVING these fights and getting it passed—

Foley 1-15 Elise is a writer @ Huff Post Politics. “Obama Gears Up For Immigration Reform Push In Second Term,” 2013, http://www.huffingtonpost.com/2013/01/15/obama-immigration-reform\_n\_2463388.html

Obama has repeatedly said he will push hard for immigration reform in his second term, and administration officials have said that other contentious legislative initiatives -- including gun control and the debt ceiling -- won't be allowed to get in the way. At least at first glance, he seems to have politics on his side. GOP lawmakers are entering -- or, in some cases, re-entering -- the immigration debate in the wake of disastrous results for their party's presidential nominee with Latino voters, who support reform by large measures. Based on those new political realities, "it would be a suicidal impulse for Republicans in Congress to continue to block [reform]," David Axelrod, a longtime adviser to the president, told The Huffington Post.¶ Now there's the question of how Obama gets there. While confrontation might work with Republicans on other issues -- the debt ceiling, for example -- the consensus is that the GOP is serious enough about reform that the president can, and must, play the role of broker and statesman to get a deal.¶ It starts with a lesson from his first term. Republicans have demanded that the border be secured first, before other elements of immigration reform. Yet the administration has been by many measures the strictest ever on immigration enforcement, and devotes massive sums to policing the borders. The White House has met many of the desired metrics for border security, although there is always more to be done, but Republicans are still calling for more before they will consider reform. Enforcing the border, but not sufficiently touting its record of doing so, the White House has learned, won't be enough to win over Republicans.¶ In a briefing with The Huffington Post, a senior administration official said the White House believes it has met enforcement goals and must now move to a comprehensive solution. The administration is highly skeptical of claims from Republicans that immigration reform can or should be done in a piecemeal fashion. Going down that road, the White House worries, could result in passage of the less politically complicated pieces, such as an enforcement mechanism and high-skilled worker visas, while leaving out more contentious items such as a pathway to citizenship for undocumented immigrants.¶ "Enforcement is certainly part of the picture," the official said. "But if you go back and look at the 2006 and 2007 bills, if you go back and look at John McCain's 10-point 'This is what I've got to get done before I'm prepared to talk about immigration,' and then you look at what we're actually doing, it's like 'check, check, check.' We're there. The border is as secure as it's been in a generation or two, so it's really time."¶ One key in the second term, advocates say, will be convincing skeptics such as Republican Sen. John Cornyn of Texas that the Obama administration held up its end of the bargain by proving a commitment to enforcement. The White House also needs to convince GOP lawmakers that there's support from their constituents for immigration reform, which could be aided by conservative evangelical leaders and members of the business community who are pushing for a bill.¶ Immigrant advocates want more targeted deportations that focus on criminals, while opponents of comprehensive immigration reform say there's too little enforcement and not enough assurances that reform wouldn't be followed by another wave of unauthorized immigration. The Obama administration has made some progress on both fronts, but some advocates worry that the president hasn't done enough to emphasize it. The latest deportation figures were released in the ultimate Friday news dump: mid-afternoon Friday on Dec. 21, a prime travel time four days before Christmas.¶ Last week, the enforcement-is-working argument was bolstered by a report from the nonpartisan Migration Policy Institute, which found that the government is pouring more money into its immigration agencies than the other federal law-enforcement efforts combined. There are some clear metrics to point to on the border in particular, and Doris Meissner, an author of the report and a former commissioner of the U.S. Immigration and Naturalization Service, said she hopes putting out more information can add to the immigration debate.¶ "I've been surprised, frankly, that the administration hasn't done more to lay out its record," she said, adding the administration has kept many of its metrics under wraps.¶ There are already lawmakers working on a broad agreement. Eight senators, coined the gang of eight, are working on a bipartisan immigration bill. It's still in its early stages, but nonmembers of the "gang," such as Sen. Marco Rubio (R-Fla.) are also talking about reform.¶ It's still unclear what exact role the president will play, but sources say he does plan to lead on the issue. Rep. Zoe Lofgren (D-Calif.), the top Democrat on the House immigration subcommittee, said the White House seems sensitive to the fact that Republicans and Democrats need to work out the issue in Congress -- no one is expecting a fiscal cliff-style arrangement jammed by leadership -- while keeping the president heavily involved.

Plan tanks capital—

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

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

Attaching space makes it worse—

Powell, 2k9. (Stewart Powell, Washington Bureau Writer. “Potential Uphill Battle for NASA” The Houston Chronicle. September 13, 2009. Online.)

NASA supporters are bracing for an uphill battle to get the extra funding needed to take on missions more ambitious than visits to the internationalspace station. A high-level panel told President Barack Obama last week that the space program needs an infusion of about $3 billion more a year by 2014. That may be a tough sell, even though the amount could be considered spare change in a fast-spending capital where the White House and Congress are on track to dole out nearly $4 trillion this year to finance federal operations, including bailouts for Wall Street firms, banks and automakers. “The congressional agenda over the next year is going to be focused on cutting programs, not adding to them,” said Scott Lilly, a scholar at the Center for AmericanProgress. Adding resources to the nation’s $18.7 billion-a-year space program would require cuts in other areas, said Lilly, who doesn’t think lawmakers are willing to make those trades. Rep. Pete Olson, R-Sugar Land, the ranking Republican on the House subcommittee that has jurisdiction over NASA, saidwrangling the additional $3 billion a year would be “an enormous challenge — but one I am prepared to win.” Added Olson, whose district includes Johnson Space Center: “NASA doesn’t require bailout funds — it needs the promised level of investment that previous Congresses have endorsed.” The 10-member panel of space experts led by retired aerospace executive Norman Augustine suggested extending U.S. participation in the $100 billion space station for five years, extending budgeting for the retiring shuttle fleet by six months, delaying plans for a 2020 return to the moon and extending the timeline for the next generation of manned spacecraft by two years at least until 2017. But the experts warned in their 12-page preliminary report to Obama on Tuesday that “meaningful human exploration” would be possible only under “a less constrained budget ramping (up) to approximately $3 billion per year” in additional spending by 2014. Former astronaut Sally Ride, a member of the committee, forecast $27.1 billion in additional funds would be needed over the next decade — a 27 percent increase over the $99.1 billion currently planned. Even before Obama publicly reacts to Augustine’s report to map the next steps in the nation’s manned space exploration, members of Congress are scrambling. “The immediate challenge goes beyond money to just getting NASA on the radar screen when everyone is focused on health care reform,” said a key congressional staffer involved in NASA issues. *Finding support* NASA supporters initially are targeting the Democratic leadership of appropriations subcommittees in the House and Senate with jurisdiction over NASA. Space advocates have an ally in Sen. Barbara Mikulski, D-Md., chairwoman of the Senate Appropriations Committee panel that handles space agency spending. But in the House, pro-NASA lawmakers expect a fight with Rep. Alan Mollohan, D-W.Va.,chairman of the House Appropriations Committee panel that cut next year’s NASA spending nearly $500 million below what Obama requested. Lawmakers are looking for a House-Senate conference committee to restore the funds that Mollohan cut before the Augustine panel completed its work.Aides to Sen. Bill Nelson, D-Fla., chairman of a Senate subcommittee that oversees NASA, said they have already identified six potential sources of additional NASA funding within the federal budget, including some of the $8 billion promised over the next decade to private energy firms to research fossil fuels and deep drilling for oil and gas.Lawmakers also are exploring the possibility of redirecting some of the two-year, $787 billion economic stimulus package from shovel-ready transportation construction projects and other federally subsidized programs into the NASA budget. The administration so far has only paid out $160 billion of the total, according to Vice President Joe Biden. “A lot of stimulus money has not been spent,” said Sen. John Cornyn, R-San Antonio. “We should redirect some of those stimulus funds to pay for enhancements to the NASA budget because I believe human space flight is so important.” Aerospace executives and veteran space experts are hoping for reliable year-to-year funding. “These are challenging economic times, but this is not the moment to turn away from leading a global space exploration effort,” said Dean Acosta, head of the Houston-based Coalition for Space Exploration. *President’s influence* Presidential leadership will be essential to gaining an increase, emphasized John Logsdon, a space policy expert who served on the Shuttle Columbia Accident Investigation Board. “The president has to use some portion of his political capital to put forward an Obama space program.”

Reform key to remittances

Oppenheimer, writer for the Miami Herald, 1/19/2013

(Andres, “Andres Oppenheimer: Obama may help Latin America - without trying,” http://www.miamiherald.com/2013/01/19/3189668/obama-may-help-latin-america-without.html#storylink=cpy)

Let’s start with the obvious: Obama doesn’t have a history of special interest in Latin America. When I interviewed him for the first time in 2007, he had never set foot in the region. And during his first term, unlike most of his predecessors, he didn’t come up with any grand plan for Latin America — granted, he had to focus on resurrecting the U.S. economy — and instead stated that his top foreign policy priority is Asia’s Pacific rim. Still, he may end up being great for Latin America, for reasons that have very little to do with Latin America. First, there are better-than-even chances that — emboldened by his 71-27 victory margin among Latino voters in the 2012 elections — Obama will be able to pass an immigration reform plan that could legalize many of the estimated 11 million undocumented residents in the United States. That would be a godsend to the economies of Mexico, Central America, the Caribbean, Colombia and Ecuador. **Most experts agree that once undocumented workers get legal status**, **they get better jobs and can send more money to their relatives back home**.

Remittances key to global microcredit diffusion

Giuliano, Asst Professor Economics – UCLA, fellow – NBER and IZA, ‘6

(Paola, “Remittances, Financial Development, and Growth,” Institute for the Study of Labor, IZA Discussion Paper No. 2160)

[footnote 3 included]

The relationship between remittances, financial development and growth is a-priori ambiguous. On one hand, well-functioning financial markets, by lowering costs of conducting transactions, may help direct remittances to projects that yield the highest return and therefore enhance growth rates. On the other hand, remittances might become a substitute for inefficient or nonexistent credit markets by helping local entrepreneurs bypass lack of collateral or high lending costs and start productive activities.3 [footnote 3 begins] Entrepreneurs in developing countries confront much less efficient credit markets, and available evidence indicates that access to credit is among their biggest concerns (Paulson and Towsend, 2000). Several recent papers also suggest that credit constraints play an especially critical role in determining growth prospects in economies characterized by a high level of income inequality (Banerjee and Newman, 1993; Aghion and Bolton, 1997; Aghion, Caroli and Garcia Penalosa, 1999) [footnote 3 ends] The empirical analysis finds strong evidence that the second channel works: remittances boost growth in countries with less developed financial systems by providing an alternative way to finance investment and helping overcome liquidity constraint. In contrast, while more developed financial systems seems to attract more remittances (the volumes of remittance inflows increase with lower transaction costs and fewer restrictions on payments), they do not seem to magnify their growth impact. Although this mechanism has not been studied in a macro context, there is some evidence at the micro-level. Dustmann and Kirchamp (2001) find that the savings of returning migrants may be an important source of startup capital for microenterprises. Similarly, in a study of 30 communities in West-Central Mexico, Massey and Parrado (1998) conclude that earnings from work in the United States provided an important source of startup capital in 21% of the new business formations. Woodruff and Zenteno (2001) also find that remittances are responsible for almost 20% of the capital invested in microenterprises throughout urban Mexico.

Key to climate adaptation

Carraro, OECD Environment Directorate, ‘10

(Maëlis, “Assessing the role of microfinance in fostering adaptation to climate change”, *OECD Environmental Working Paper No. 15*)

Core elements of microfinance, a priori, make it attractive for facilitating adaptation by the poor Microfinance provides access to basic financial services to the poor. Through small loans with compulsory, frequent repayments to groups or individuals, microfinance helps the poor build up their assets, establish or develop a business, and protect against risks. Microfinance institutions (MFIs) are now spread all over the world (including in developed countries), and count over 100 million of the world’s poor among their clients. Almost 90% of the clients of MFIs are women. The scope of microfinance services, meanwhile, not only includes the provision of credit for income generation, but also savings, insurance, money transfer, and educational and health loans. Many MFI’s also provide “credit plus” complementary services such as skills education and training, health and nutrition workshops, and advice on agricultural practices. These elements of microfinance make it an attractive vehicle for facilitating adaptation. MFI’s already have pre-existing networks of access to the poor – especially women – who are also particularly vulnerable to climate change. Meanwhile, the nature of microfinance lending, consisting of high volume, limited value loans, is also consistent with the fundamental nature of a majority of adaptation actions that will ultimately consist of thousands of decentralised actions by individuals, households and communities, as they continuously seek to internalise climate risks in their activities. Despite its theoretical potential, very little is actually known about how microfinance interacts with adaptation in practice Through the provision of credit and other financial services microfinance helps the poor develop alternate livelihood opportunities, build assets and spread risks. These actions would also – in most cases -automatically reduce vulnerability to climate risk even if there is no explicit consideration of such risks. From this perspective climate change might simply be one more reason to scale up microfinance. However, what is perhaps more critical from an adaptation perspective are more specific issues like how microfinance could be tapped for more targeted climate risk reduction and adaptation, for building adaptive capacity for climate change, and for reducing incentives for *mal*-adaptation. Very little is currently known about these latter, more specific, linkages which can only be examined through detailed analysis of actual microfinance portfolios in regions that are also particularly vulnerable to the impacts of climate change. The analysis of Bangladesh and Nepal in this report has been undertaken within this context. Not only are the two countries particularly vulnerable to the impacts of climate change, but they also have a vibrant microfinance industry to make such an examination possible. Empirical analysis of existing portfolios in Bangladesh and Nepal reveals that close overlaps already exist between ongoing microfinanced activities and key climate change vulnerabilities Analyses of existing microfinance portfolios of the 22 leading MFIs each in Bangladesh and Nepal reveal that many existing projects are already directed at sectors and activities that would also be vulnerable to climate change. This overlap is particularly strong for Bangladesh where agriculture, disaster relief and preparedness, and water and sanitation – which are all particularly affected by climate change – constitute almost 70% of the existing microfinance portfolio. For Nepal, meanwhile, the degree of overlap between the orientation of existing microfinance programs and climate change vulnerabilities is more limited. The dominant climate change risk in Nepal is in water resources and hydropower, whereas the related category of microfinance programs, water and sanitation, is a relatively small part of the overall portfolio. Collectively, the programs related to water, agriculture, health, and disasters (which are all vulnerable to climate change) constitute slightly less than 47% of the existing portfolio. However, even if programmatic priorities are closely intertwined with sectors and activities that might be vulnerable to climate change, not all microfinance activities within these areas might be relevant for adaptation. A more in-depth analysis of specific loan programs and projects is therefore required for this purpose. Microfinance is already promoting some adaptation to reduce vulnerability to current climate risks in these countries and, in some isolated cases, also to climate change A more detailed analysis of the credit programs and projects reveals that a number of existing microfinance lending programs and projects already offer adaptation “win-wins”. In fact, 43% of the portfolio that was examined in Bangladesh and 37% in Nepal could be classified as win-wins1, i.e. synergistic with adaptation. These include, for example, lending programs that support disaster relief and preparedness, crop diversification, improving access to irrigation, and provision of better sanitation facilities that reduce the risks of water borne diseases. They also include at least a few programs that go beyond coping or adapting to current climate risks. For example, lending programs to support construction of weather resistant housing or the adoption of drought and salt tolerant seeds in Bangladesh would also theoretically facilitate adaptation to longer term climate change. These latter examples, however, remain isolated at this stage in the case of Bangladesh, and absent almost entirely in Nepal.

Solves extinction from inevitable warming—

Romero, 8

[Purple, reporter for ABS-CBN news, 05/17/2008, Climate change and human extinction--are you ready to be fossilized? <http://www.abs-cbnnews.com/nation/05/16/08/climate-change-and-human-extinction-are-you-ready-be-fossilized>

Climate change killed the dinosaurs. Will it kill us as well? Will we let it destroy the human race? This was the grim, depressing message that hung in the background of the Climate Change Forum hosted on Friday by the Philippine National Red Cross at the Manila Hotel. "Not one dinosaur is alive today. Maybe someday it will be our fossils that another race will dig up in the future, " said Roger Bracke of the International Federation of Red Cross and Red Crescent Societies, underscoring his point that no less than extinction is faced by the human race, unless we are able to address global warming and climate change in this generation. Bracke, however, countered the pessimistic mood of the day by saying that the human race still has an opportunity to save itself. This more hopeful view was also presented by the four other speakers in the forum. Bracke pointed out that all peoples of the world must be involved in two types of response to the threat of climate change: mitigation and adaptation. "Prevention" is no longer possible, according to Bracke and the other experts at the forum, since climate change is already happening. Last chance The forum's speakers all noted the increasing number and intensity of devastating typhoons--most recently cyclone Nargis in Myanmar, which killed more than 100,000 people--as evidence that the world's climatic and weather conditions are turning deadly because of climate change. They also reminded the audience that deadly typhoons have also hit the Philippines recently, particularly Milenyo and Reming, which left hundreds of thousands of Filipino families homeless. World Wildlife Fund Climate and Energy Program head Naderev Saño said that "this generation the last chance for the human race" to do something and ensure that humanity stays alive in this planet. According to Saño, while most members of our generation will be dead by the time the worst effects of climate change are felt, our children will be the ones to suffer. How will Filipinos survive climate change? Well, first of all, they have to be made aware that climate change is a problem that threatens their lives. The easiest way to do this – as former Consultant for the Secretariats of the UN Convention on Climate Change Dr. Pak Sum Low told abs-cbnews.com/Newsbreak – is to particularize the disasters that it could cause. Talking in the language of destruction, Pak and other experts paint this portrait of a Philippines hit by climate change: increased typhoons in Visayas, drought in Mindanao, destroyed agricultural areas in Pampanga, and higher incidence rates of dengue and malaria. Sañom said that as polar ice caps melt due to global warming, sea levels will rise, endangering coastal and low-lying areas like Manila. He said Manila Bay would experience a sea level increase of 72 meters over 20 years. This means that from Pampanga to Nueva Ecija, farms and fishponds would be in danger of being would be inundated in saltwater. Sañom added that Albay, which has been marked as a vulnerable area to typhoons, would be the top province at risk. Sañom also pointed out that extreme weather conditions arising from climate change, including typhoons and severe droughts, would have social, economic and political consequences: Ruined farmlands and fishponds would hamper crop growth and reduce food sources, typhoons would displace people, cause diseases, and limit actions in education and employment. Thus, Saño said, while environmental protection should remain at the top of the agenda in fighting climate change, solutions to the phenomenon "must also be economic, social, moral and political." Mitigation Joyceline Goco, Climate Change Coordinator of the Environment Management Bureau of the Department of Environment and Natural Resources, focused her lecture on the programs Philippine government is implementing in order to mitigate the effects of climate change. Goco said that the Philippines is already a signatory to global agreements calling for a reduction in the "greenhouse gasses"--mostly carbon dioxide, chloroflourocarbons and methane--that are responsible for trapping heat inside the planet and raising global temperatures. Goco said the DENR, which is tasked to oversee and activate the Clean Development Mechanism, has registered projects which would reduce methane and carbon dioxide. These projects include landfill and electricity generation initiatives. She also said that the government is also looking at alternative fuel sources in order do reduce the country's dependence on the burning of fossil fuels--oil--which are known culprits behind global warming. Bracke however said that mitigation is not enough. "The ongoing debate about mitigation of climate change effects is highly technical. It involves making fundamental changes in the policies of governments, making costly changes in how industry operates. All of this takes time and, frankly, we're not even sure if such mitigation efforts will be successful. In the meantime, while the debate goes on, the effects of climate change are already happening to us." Adaptation A few nations and communities have already begun adapting their lifestyles to cope with the effects of climate change. In Bangladesh, farmers have switched to raising ducks instead of chickens because the latter easily succumb to weather disturbances and immediate effects, such as floods. In Norway, houses with elevated foundations have been constructed to decrease displacement due to typhoons. In the Philippines main body for fighting climate change, the Presidential Task Force on Climate Change, (PTFCC) headed by Department on Energy Sec. Angelo Reyes, has identified emission reduction measures and has looked into what fuel mix could be both environment and economic friendly. The Department of Health has started work with the World Health Organization in strengthening its surveillance mechanisms for health services. However, bringing information hatched from PTFCC’s studies down to and crafting an action plan for adaptation with the communities in the barangay level remains a challenge. Bracke said that the Red Cross is already at the forefront of efforts to prepare for disasters related to climate change. He pointed out that since the Red Cross was founded in 1919, it has already been helping people beset by natural disasters. "The problems resulting from climate change are not new to the Red Cross. The Red Cross has been facing those challenges for a long time. However, the frequency and magnitude of those problems are unprecedented. This is why the Red Cross can no longer face these problems alone," he said. Using a medieval analogy, Bracke said that the Red Cross can no longer be a "knight in shining armor rescuing a damsel in distress" whenever disaster strikes. He said that disaster preparedness in the face of climate change has to involve people at the grassroots level. "The role of the Red Cross in the era of climate change will be less as a direct actor and increase as a trainor and guide to other partners who will help us adapt to climate change and respond to disasters," said Bracke. PNRC chairman and Senator Richard Gordon gave a picture of how the PNRC plans to take climate change response to the grassroots level, through its project, dubbed "Red Cross 143". Gordon explained how Red Cross 143 will train forty-four volunteers from each community at a barangay level. These volunteers will have training in leading communities in disaster response. Red Cross 143 volunteers will rely on information technology like cellular phones to alert the PNRC about disasters in their localities, mobilize people for evacuation, and lead efforts to get health care, emergency supplies, rescue efforts, etc.

### Off

Interpretation and Violation - The affirmative must specify the specific type of SMR reactor designs they employ.

This is best

1.) Lots of types of SMR designs - aff skirts over most important part of the nuclear-power debate.

Szondy 12 - Freelance writer, award-winning playwright (David, February 16th 2012, http://www.gizmag.com/small-modular-nuclear-reactors/20860/

Types of modular reactors Let's take a look now at some of the major types of modular reactors under development. There are, in fact, many more than are presented here, but this should give a good cross section of what is in the pipeline. Light-water reactors A modular light-water reactor is basically a scaled-down version of a conventional reactor. Like conventional reactors, it uses water as a coolant and a neutron moderator (that is, the water slows down the neutrons produced by the nuclear fuel so that the uranium atoms have a better chance of absorbing them and inducing nuclear fission. The trick of fission is simply to have enough nuclear fuel in one place with a moderator so that the reaction becomes self-sustaining). Engineers already have decades of experience with light-water SMRs because these are the type used on submarines and icebreakers, so the technology is already advanced and has had lots of field testing under very hard conditions. Imagine a nuclear power plant that has to be able to operate safely as it's being tossed about in the ocean while sealed inside a submarine hull and you can see the daunting challenges that have been overcome. Small light-water reactors aren't as efficient as their larger cousins, but they have a number of advantages. Steam is produced in a nuclear plant by passing a loop of cooling water from the reactor through the steam generator, which is a separate vessel filled with coiling pipes. The hot cooling water enters the generator and as it runs through the pipes a second coil filled with water is heated by the water from the reactor. This changes to steam, which turns the turbines that turns the dynamos. On a conventional reactor, most types have the steam generator outside the reactor vessel. With light-water SMRs, the steam generator can be placed inside the vessel. This not only makes the reactor more compact and self-contained, but it also makes it much safer. One common problem in reactors is radioactive water leaking as it travels from the reactor to the steam generator. With the steam generator inside the reactor vessel, it's the much safer situation of only non-radioactive water/steam going into and out of the reactor vessel. Westinghouse SMR The Westinghouse SMR is a miniature version of their AP1000 reactor. But where the AP1000 produces 1,154 megawatts and requires a plant covering 50 acres (20 ha), the Westinghouse SMR needs only 15 (6 ha), puts out 225 megawatts and can be built in 18 months as opposed to several years. The reactor and containment vessel stand 89 feet (27 m) high and 32 feet (9.8 m) in diameter, which makes it compact enough to be factory-built and shipped by rail to the site. Its fuel is standard enriched uranium that needs servicing every two years, but the reactor's passive cooling system relies on the natural circulation of water rather than pumps, which means that even in the event of a complete power loss, as Fukushima suffered, the Westinghouse SMR can go for up to a week without needing any operator intervention to prevent damage. mPower Backed by Babcock and Wilcox, mPower is based on US Navy reactor designs and produces 160 megawatts when the system's condensers are cooled by water, but it can be air-cooled as well, though with a lower power output. Seventy-five feet (23 m) high and 14 feet (4.3 m) in diameter, mPower is designed to be factory built, rail-shipped and installed below ground. Like the Westinghouse SMR, the mPower uses a passive cooling system and the steam generator is integral with the reactor. Unlike the Westinghouse SMR, the mPower needs refueling only every four years and the process involves simply replacing the entire core, which is inserted like a cartridge. The reactor has a 60-year service life and is designed to store its spent fuel on site for the duration. NuScale NuScale seems impractically small with its output of only 45 megawatts, but it's intended to be installed twelve at a time to provide up to 540 megawatts. These are each placed in an underground pool of water and each unit is cooled by natural circulation. Because of this, there are no pumps and the only moving parts in the reactor are those used to operate the control rods. When it is time for refueling, the reactor is removed from its pool by an overhead crane and taken to another section of the facility. High-temperature gas cooled reactors As the term implies, gas-cooled reactors use a gas instead of water as a reactor cooling medium. In modern reactors this gas is usually helium because it's an inert element that doesn't react with other materials, yet is an excellent coolant (just ask any mixed-gas deep sea diver and he'll tell you why they have a heating tube in their suit while breathing helium). This is important because, not using water, the moderator for the nuclear reaction is a graphite core, which is flammable. These operate at relatively low pressures and high gas temperatures of up to 1,800 degrees F (1,000 degrees C) and the gas either drives the turbines directly or via a steam generator. This reactor type has safety advantages because the way the design makes the nuclear reaction self-regulating. As the reactor gets hotter, the reaction slows down and the reactor cools. It also lends itself to smaller scales to allow for factory building and underground installation. GT-MHR Built by a partnership led by General Atomics, the GT-MHR reactor has a capacity of 285 megawatts and can also be used to produce 100,000 tons of hydrogen gas per year. It has the interesting distinction of being able to run on weapons-grade plutonium. The reason for this was that the GT-MHR was originally designed to help dispose of Soviet nuclear warheads after the end of the Cold War. It also serves to highlight the practical applications of the SMRs' ability to burn alternative nuclear fuels. Fast neutron reactors In conventional reactors, neutrons are slowed down by a moderator such as water, carbon or helium so that the uranium atoms have a better chance of absorbing them and initiating fission. A fast neutron reactor manages the same fission reaction except it does so by reflecting fast-moving neutrons back into the uranium in large quantities and thereby increasing the odds of fission. This has the advantage of allowing reactors to be very simple in design (and hence smaller) and to use enriched fuels, thorium or even nuclear waste as fuel. There are two types of fast neutron systems used in current SMR designs. The first are candle, breed-burn or traveling-wave reactors. The second, standing wave reactors. The "candle" name for the first variety stems from the fact that that's what the fuel resembles. Put simply, it's a big slab of depleted uranium with a plug of enriched uranium stuck in one end. When the nuclear reaction starts, the enriched uranium "ignites" the slab by initiating a reaction that turns the U-238 into Pu-239, an isotope of plutonium that can fission and generate power. This reaction burns along the slab at roughly one centimeter per year, creating and burning plutonium as it goes. It's a process that can take years, even decades, as the reactor burbles away at a temperature of about 1,000 degrees F (550 degrees C) while cooled by liquid sodium, lead or lead-bismuth alloy. The other version is called a "standing wave," and the principle is the same, except instead of a great slab, the reactor is made up of fuel rods of U-238 and the reaction is started in the center. As the reaction proceeds outwards, the spent rods are reshuffled by the operators until all the fuel is consumed. The upshot of this is that a traveling wave reactor uses it fuel more efficiently and can run for 60 years without refueling. Theoretically, it could go for 200 years. With either type, they are also unusual in that they have no moderator, rely on passive cooling, can be built in factories and have no moving parts. They are as close to plug-and-play as nuclear reactors can get. Hyperion Hyperion is another very small modular reactor that produces only 25 megawatts, but what it lacks in power it makes up for in portability. The reactor vessel is only 8 feet (2.5 m) tall and 5 feet (1.5 m) in diameter, has no moving parts and can go for ten years without refueling. When refueling is needed, the reactor is returned to the factory and replaced rather in the manner of a gas bottle. This configuration not only makes it possible to build multi-reactor power plants, but the individual reactors can also be used for applications like providing heat to extract oil from shale beds, steam for industrial uses and running desalination plants. PRISM Power Reactor Innovative Small Module (PRISM) is a GE-Hitachi design. It's sodium cooled, installed underground and generates 311 megawatts with refueling every six years. Its ability to burn plutonium and depleted uranium makes it of great interest to the UK, which is negotiating to have two installed at the Sellafield nuclear facility where they would be used to burn nuclear waste stockpiles. This is more than just a waste disposal solution. It's estimated that if this works, the waste could provide power to Britain for 500 years. Molten salt reactors In this type of SMR, the coolant and the fuel are one in the same. The coolant is a mixture of lithium and beryllium fluoride salts. In this is dissolved a fuel, which can be enriched uranium, thorium or U-233. This molten salt solution passes at relatively low pressure and a temperature of 1,300 degrees F (700 degrees C) through a graphite moderator core. As the fuel burns, the waste products are removed from the solution and fresh fuel is added. Flibe Flibe (Fluoride salt of Lithium and Beryllium) is a sort of reactor in a box. The US military wants to develop small reactors that can be easily set up at remote bases. Toward this end, the Flibe is designed around a power plant that packs into a set of cargo containers. The idea is to stick the reactor in the ground, set up the generating machinery and cover the lot with a building. The last doesn't need to be anything like the containment building of a conventional reactor because the reactor is not only passively heated, but also features a salt plug that needs to be actively cooled at all times. If the reactor suffers a breakdown and the reactor starts to overheat, the plug melts and the molten salt/fuel mixture pours out into a drain tank. Power output is rated at 20 to 50 megawatts and it uses U-233 and thorium for fuel. This not only eliminates proliferation issues (neither U-233 nor thorium is completely unsuitable for weapons), but it also opens up a cheap, easily obtained energy source.

Allowing them not to specify makes the debate generic, three impacts

1.) Education - Our knowledge of SMRs become sound-bytes divorced from the actual mechanics of the technology itself

2.) Unfair Aff Ground - they can cherry pick the benefits and advantages of mulitle reactor desgins.

3.) Neg Ground - We lose all specific SMR-based PICs and disads to particular disposal or refueling methods for SMRs.

### **Off**

**Production excludes R&D**

Koplow 4 Doug Koplow is the founder of Earth Track in Cambridge, MA. He has worked on natural resource subsidy issues for 20 years, primarily in the energy sector "Subsidies to Energy Industries" Encyclopedia of Energy Vol 5 2004www.earthtrack.net/files/Energy%20Encyclopedia,%20wv.pdf

3. SUBSIDIES THROUGH THE FUEL CYCLE¶ Because no two fuel cycles are exactly the same, examining subsidies through the context of a generic fuel cycle is instructive in providing an overall framework from which to understand how common subsidization policies work. Subsidies are grouped into preproduction (e.g., R&D, resource location), production (e.g., extraction, conversion/generation, distribution, accident risks), consumption, postproduction (e.g., decommissioning, reclamation), and externalities (e.g., energy security, environmental, health and safety).¶ 3.1 Preproduction¶ Preproduction activities include research into new technologies, improving existing technologies, and market assessments to identify the location and quality of energy resources.¶ 3.1.1 Research and Development¶ R&D subsidies to energy are common worldwide, generally through government-funded research or tax breaks. Proponents of R&D subsidies argue that because a portion of the financial returns from successful innovations cannot be captured by the innovator, the private sector will spend less than is appropriate given the aggregate returns to society. Empirical data assembled by Margolis and Kammen supported this claim, suggesting average social returns on R&D of 50% versus private returns of only 20 to 30%.¶ However, the general concept masks several potential concerns regarding energy R&D. First, ideas near commercialization have much lower spillover than does basic research, making subsidies harder to justify. Second, politics is often an important factor in R&D choices, especially regarding how the research plans are structured and the support for follow-on funding for existing projects.¶ Allocation bias is also a concern. Historical data on energy R&D (Table III) demonstrate that R&D spending has heavily favored nuclear and fossil energy across many countries. Although efficiency, renewables, and conservation have captured a higher share of public funds during recent years, the overall support remains skewed to a degree that may well have influenced the relative competitiveness of energy technologies. Extensive public support for energy R&D may also reduce the incentive for firms to invest themselves. U.S. company spending on R&D for the petroleum refining and extraction sector was roughly one-third the multi-industry average during the 1956-1998 period based on survey data from the U.S. National Science Foundation. For the electric, gas, and sanitary services sector, the value was one-twentieth, albeit during the more limited 1995-1998 period.¶ 3.1.2 Resource Location¶ Governments frequently conduct surveys to identify the location and composition of energy resources. Although these have addressed wind or geothermal resources on occasion, they most often involve oil and gas. Plant siting is another area where public funds are used, primarily to assess risks from natural disasters such as earthquakes for large hydroelectric or nuclear installations. Survey information can be important to evaluate energy security risks and to support mineral leasing auctions, especially when bidders do not operate competitively. However, costs should be offset from lease sale revenues when evaluating the public return on these sales. Similarly, the costs of siting studies should be recovered from the beneficiary industries.¶ 3.2 Production¶ Energy production includes all stages from the point of resource location through distribution to the final consumers. Specific items examined here include resource extraction, resource conversion (including electricity), the various distribution links to bring the energy resource to the point of final use, and accident risks.

Financial incentives are grants or loans—government purchases are distinct.

Czinkota et al 9—Associate Professor at the McDonough School of Business at Georgetown University, Michael, Fundamentals of International Business, p. 69 – google books

Incentives offered by policymakers to facilitate foreign investments are mainly of three types: fiscal, financial, and nonfinancial. Fiscal incentives are specific tax measures designed to attract foreign investors. They typically consist of special depreciation allowances, tax credits or rebates, special deductions for capital expenditures, tax holidays, and the reduction of tax burdens. Financial incentives offer special funding for the investor by providing, for example, land or buildings, loans, and loan guarantees. Nonfinancial incentives include guaranteed government purchases; special protection from competition through tariffs, import quotas, and local content requirements, and investments in infrastructure facilities.

Violation – The memoranda portion of the plan text includes R & D – this isn’t energy production

A. Limits—they allow a ton of new affs about all aspects of energy production prior to actual production—R&D, manufacturing, exploration—this explodes the topic undermining in-depth research and clash.

B. Grammar—since incentives have to be for energy production, this is the only logical reading of the resolution, grammar is a decision-rule because it creates the shared meaning we need to interpret the topic.

Independently procurement isn’t a financial incentive

Czinkota et al 9—Associate Professor at the McDonough School of Business at Georgetown University, Michael, Fundamentals of International Business, p. 69 – google books

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Key to predictable ground – procurement allows tons of new affs dealing with the military, government research facilities and almost any government service, this explodes the topic making deep debate and predictable ground impossible. Most topic arguments assume a private-sector based increase in energy production like investment tradeoffs, environmental DAs or condition the company CPs, government procurement dodges all these.

### Solvency

Still tons of variables to be resolved -- SMRs can’t be operational for at least a decade.

King et al., ‘11

[Marcus, Research Analyst and Project Director at CNA Corporation's Center for Naval Analyses, LaVar Huntzinger, Thoi Nguyen, March, “Feasibility of Nuclear Power on U.S. Military Installations,” http://www.cna.org/sites/default/files/research/Nuclear%20Power%20on%20Military%20Installations%20D0023932%20A5.pdf]

Designs for small reactors are at various levels of technological readiness and some are about to begin the NRC licensing process, but none have been licensed or constructed yet. Consequently, there are a number of unresolved certification, licensing, and regulatory issues. The size of the emergency planning zone that should surround the reactor is an example of such an issue. Resolving these issues will take time and resources. NRC representatives have indicated that they expect these issues could be resolved by the middle of the decade and that a plant could be built and operating by about 2020

The more of a departure from the status quo SMR reactors are, the longer licensing takes. Licensing takes DECADES.

O’ Connor ’11 (Dan O’Connor is a Policy Fellow in AEL’s New Energy Leaders Project and will be a regular contributor to the website, American Energy League, “Small Modular Reactors: Miracle, Mirage, or Between?”, http://leadenergy.org/2011/01/small-modular-reactors-miracle-mirage-or-medium/, January 4, 2011, LEQ)

Judging only by this promising activity, it is tempting to dub the SMR a miracle. But the majority of these diverse designs have yet to be demonstrated. In fact, the demonstration stage of the South African project, Pebble Bed Modular Reactor (a HTR), stalled and faded in 2010 after losing government funding due to lack of customer interest. The importance of demonstration, especially in the highly-regulated US industry, cannot be overstated. But even in the stages before the crucial demonstration step, skepticism over the SMR’s promises abounds. The ASME EnComm noted regulatory, financial, operational, and logistical challenges. Treading the uncharted waters of Lego-like power plant construction will not be easy. In a traditional plant, one reactor provides heat for one or a few steam turbines. In an SMR-based plant, each module drives one turbine with its own controls and operators. As such, few of the costs associated with these systems scale down with reactor capacity. The turbines do not come in a complimentary plug-and-play form either – they would have to be built on site. And while decentralization enables partial operation and online refueling, it also introduces the challenge of module co-operation, the need for numerous highly-trained operator personnel, and brand new reviews by the Nuclear Regulatory Commission (NRC). This goes without mentioning the urgent and increased need for a more dynamic national approach to waste storage. Licensing questions remain too. The one-time approval of a module before its mass production, bypassing a regulatory damper for each unit, is a highly-desirable advantage of SMR design. But if a utility would like to increase its capacity over two decades by incrementally adding more modules, will it face the choice between building licensed, though dated, technology or waiting again for a license to build with state of the art modules? Furthermore, as addressed in my past article, “Putting the Cart Before the Horse with Nuclear R&D” and its comments, the waiting time even for a traditional design license is considerable. With each new SMR innovation, from an individualized control room to coolant choice, the licensing duration increases by as much as a decade, pushing the vital demonstration step further away. Additional costs associated with these regulatory complications and non-scalable systems could combine to nullify the SMR’s affordability argument.

NRC has sufficient resources now to ensure safety – but overstretch causes a repeat of Fukushima

Kaufman 11, Daniel - Brookings Senior Fellow “Preventing Nuclear Meltdown,” 4-1-2011, http://www.brookings.edu/research/opinions/2011/04/01-nuclear-meltdown-kaufmann

Many wonder whether Japan’s nuclear disaster could have been averted. The embattled operator of the Fukushima nuclear plant, Tokyo Electric Power Company (TEPCO), has borne the brunt of criticism; its numerous failures over the years are certainly well known. However, Japan’s Nuclear and Industrial Safety Agency (NISA), responsible for regulating the nuclear industry, also ought to be subject to particular scrutiny for allowing TEPCO to operate despite its past safety and disclosure violations. We thus ask what types of regulatory failure may have contributed to Japan’s nuclear crisis and assess whether the U.S. Nuclear Regulatory Commission (NRC) is at risk of committing similar errors. Regulatory failure occurs when the regulatory system is deeply flawed – such as when it over- or under-regulates or when the regulatory design is based on “old science”. Regulatory failure also happens when agencies inadequately fulfill their oversight, supervisory and enforcement functions. Failures by regulatory agencies can go undetected for some time until they are exposed by a crisis, such as the BP oil spill in 2010 and the financial crisis that originated in Wall Street in 2008. When assessing regulatory failure, it is important to distinguish between at least three different types of failure: lack of resources, mismanagement and poor technical expertise, and capture of the regulator by the regulated. Episodes of regulatory failure result from different combinations of subpar performance in some or all of these components. Which dimensions were associated with the failures at Japan’s regulatory agency? Does the U.S. nuclear energy regulator face similar challenges? Let us review each of the three types of failures in the context of Japan’s NISA and the U.S.’s NRC. Lack of Resources: When regulators lack the resources to hire staff, provide adequate training and expend the money necessary to monitor industries, regulatory concerns may go undetected and failure may result. The evidence does not suggest that Japan’s NISA or the U.S.’s NRC lacked sufficient resources to effectively implement regulations.

Flood of new reactors overstretches NRC funds and manpower

Weaver 7 Lynn, President Emirtus of Florida Institute of Technology, “Fund NRC Nuclear Power Licensing” <http://www.theledger.com/article/20070207/COLUMNISTS03/702070394?p=3&tc=pg>

The Nuclear Regulatory Commission has alerted several utilities that license reviews would be delayed at least a year.¶ With all the concern in Congress over global warming, one might think that an increase in the number of nuclear power plants in the United States is inevitable, both to satisfy energy demands and to counter greenhouse-gas emissions. But that, of course, would be wrong.¶ There are about 100 nuclear plants in the United States and they account for about 75 percent of our country's emission-free electricity.¶ Utilities are preparing to build another 33 plants, including two in Florida.¶ These would be the first reactors to be built in this country in many years, and federal and state energy officials agree that it won't be possible to reduce U.S. greenhouse emissions without them. But it now appears that electric utilities might not be able to obtain licenses anytime soon to build new nuclear plants.¶ The reason for the licensing delay is simple-and-straightforward: a critical shortage of manpower at the Nuclear Regulatory Commission - which is expected to become acute within a year. The NRC knows that it needs to expand its workforce, because it's facing a flood of regulatory reviews for new nuclear plants and existing plants that are seeking a renewal of their operating licenses. But it doesn't have the money.¶ Congress is bogged down in a dispute over federal spending. It has passed just two of the 11 spending bills for the fiscal year that began last October, those covering defense and homeland security. The rest of the government is operating under a continuing resolution that holds spending to last year's levels.¶ As a result, the NRC's budget is lower by $95 million (12 percent), compared with the level approved by both the House and Senate appropriations committees, but not the full House.¶ This has meant that the NRC doesn't have enough funds to handle the resurgence in nuclear power. In fact, it recently alerted several utilities that reviews of their applications for license renewal would be delayed at least a year, because it does not have the capability to deal with more than a few applications at a time.¶ So far, the NRC has done a commendable job of coping with the situation, even though its budget in recent years has been slighted. Since 2000, the licenses of 48 nuclear plants - including all of the units at the Turkey Point plant and the St. Lucie plant in Florida - have been extended for another 20 years, but the owners of many other plants now face some uncertainty in getting the license of their plants renewed. And the start of construction of new nuclear plants could be set back.

Meltdowns cause extinction

Wasserman 4 Harvery - Sen. Advisor Nuclear Info and Res. Service, MA History U. Chicago, 2004, “Nuclear Power and Terrorism,” Spring, v. 17, no. 1, www.earthisland.org/eijournal/new\_articles.cfm?articleID=457&journalID=63

Infants and small children would quickly die en masse. Pregnant women would spontaneously abort or give birth to horribly deformed offspring. Ghastly sores, rashes, ulcerations and burns would afflict the skin of millions. Heart attacks, stroke and multiple organ failure would kill thousands on the spot. Emphysema, hair loss, nausea, inability to eat or drink or swallow, diarrhea and incontinence, sterility and impotence, asthma and blindness would afflict hundreds of thousands, if not millions. Then comes the wave of cancers, leukemias, lymphomas, tumors and hellish diseases for which new names will have to be invented. Evacuation would be impossible, but thousands would die trying. Attempts to quench the fires would be futile. More than 800,000 Soviet draftees forced through Chernobyl's seething remains in a futile attempt to clean it up are still dying from their exposure. At Indian Point, the molten cores would burn uncontrolled for days, weeks and years. Who would volunteer for such an American task force? The immediate damage from an Indian Point attack (or a domestic accident) would render all five boroughs of New York City an apocalyptic wasteland. As at Three Mile Island, where thousands of farm and wild animals died in heaps, natural ecosystems would be permanently and irrevocably destroyed. Spiritually, psychologically, financially and ecologically, our nation would never recover. This is what we missed by a mere 40 miles on September 11. Now that we are at war, this is what could be happening as you read this. There are 103 of these potential Bombs of the Apocalypse operating in the US. They generate a mere 8 percent of our total energy. Since its deregulation crisis, California cut its electric consumption by some 15 percent. Within a year, the US could cheaply replace virtually all the reactors with increased efficiency. Yet, as the terror escalates, Congress is fast-tracking the extension of the Price-Anderson Act, a form of legal immunity that protects reactor operators from liability in case of a meltdown or terrorist attack. Do we take this war seriously? Are we committed to the survival of our nation? If so, the ticking reactor bombs that could obliterate the very core of our life and of all future generations must be shut down.

Turns the case---NRC credibility and safety are essential to nuclear

Fertel 12 Marvin - Nuclear Energy Institute’s president and chief executive officer, “NRC Leadership Must Reinstate Environment That Promotes Collegial Engagement,” 6/26/2012

<http://www.nei.org/newsandevents/newsreleases/nrc-leadership-must-reinstate-environment-that-promotes-collegial-engagement>

“Safe performance of nuclear energy facilities and the Nuclear Regulatory Commission’s credibility are the two most important factors for policymaker and public confidence in nuclear energy. As such, the industry is concerned with anything that threatens the credibility of either. It is critical that the NRC leadership, including Allison Macfarlane if confirmed by the Senate, take the steps necessary to ensure that the agency is an efficient, effective regulator.

“The industry is always concerned about the possibility of a chilled working environment at our facilities or at the NRC, including the possibility of staff intimidation, at a time when the senior management and staff are working on crucial licensing activities and post-Fukushima safety recommendations. The industry takes safety culture issues seriously, and we expect the same priority treatment of these issues by our regulator.

“Safety is maximized when NRC and industry resources are focused on those matters that are most important to safety. It is important that the NRC commission and staff have a professional, collegial environment that allows the important work of the agency to continue without interruption or distraction.”

### Space advantage

TURN - Space exploration will cause environmental exploitation, space militerization, sovereignty conflict and epidemics

Gagnon 1999 (Coordinator of the Global Network Against Weapons & Nuclear Power in Space, Bruce K., “Space Exploration and Exploitation,” http://www.space4peace.org/articles/scandm.htm)

We are now poised to take the bad seed of greed, environmental exploitation and war into space. Having shown such enormous disregard for our own planet Earth, the so-called "visionaries" and "explorers" are now ready to rape and pillage the heavens. Countless launches of nuclear materials, using rockets that regularly blow up on the launch pad, will seriously jeopardize life on Earth. Returning potentially bacteria-laden space materials back to Earth, ­­­­­­­ any real plans for containment and monitoring, could create new epidemics for us. The possibility of an expanding nuclear-powered arms race in space will certainly have serious ecological and political ramifications as well. The effort to deny years of consensus around international space law will create new global conflicts and confrontations.

TURN – plan causes ozone depletion and overregulation, turns the case

Foust ‘9, Editor of the Space Review (Jeff, June 15, “Space and (or versus) the Environment”, http://www.thespacereview.com/article/1395/1)

While the current rate of ozone loss is considered insignificant, the paper examined what would happen if there was a sharp increase in launch rates. If launch rates doubled every decade, they found, rising emissions from rockets would offset the decline in other ozone-depleting substances by around 2035, causing ozone depletion rates to rise again. The effect would be sooner and sharper if launch rates tripled every decade. The authors conclude that, in such a scenario, there would be a move to regulate rocket emissions that could, in the worst case, sharply restrict launch activity. With today’s launch systems, though, such an outcome seems unlikely: most forecasts for the next decade project relatively flat levels of launch activity—about 60–70 orbital launches a year—that is far short of a doubling or tripling. However, a wild card here is space tourism and other suborbital launch activity, which is projected to grow from effectively zero today to hundreds or even thousands of launches a year by the end of the next decade, if systems enter service as planned and demand for such flights matches existing projections. The Astropolitics paper doesn’t take such missions, or interest in point-to-point suborbital or hypersonic travel, into account. Martin Ross, lead author of the paper at the Aerospace Corporation, said in an email last week that this is an area they will be looking at. They will also be studying the effect on ozone by emissions from hybrid rocket motors like the one being developed for SS2, something that he said there currently isn’t any information about. In an op-ed in last week’s issue of Space News, Ross urged the space industry to address this issue head-on rather than avoid it in the hopes it might go away on its own. “It is clear that the risk of regulation that would cap or even tax space systems according to the amount of ozone depletion they cause is small, but it is real,” he wrote. He added: “Historically, technical activities with high visibility—such as space operations—often excite unpredictable public and regulatory attention. Combined with a lack of scientifically reliable environmental effects data, the risk of idiosyncratic and overly restrictive regulation is high.”

Extinction

David Crockett Williams, Jr., author of Tetron Natural Unified Field Theory, Chemist, Personal and Financial Agent. February 7, 1996 THE SCIENTIFIC SPIRITUAL REVOLUTION
http://www.angelfire.com/on/GEAR2000/video96.html

Today all life on earth is threatened by many problems associated with the materialistic and shortsighted human activities out of harmony with nature that have led to an oxygen crisis from massive deforestation and fossil fuel combustion which has created global warming responsible for increased weather extremes, flooding, droughts, disease vectors, etc., and an ozone layer depletion that threatens all life on earth by the imminent destruction of the ocean's phytoplankton which produce over half of earth's oxygen and form the beginning of the oceanic food chain**.** Nuclear testing has caused lasting increases in seismic and volcanic activity, explainable by free energy science, which threatens cataclysmic earth changes. The danger of nuclear conflagration still exists. All these conditions have been predicted independently by many different religious prophecies since many hundreds of years ago. How can this be understood and resolved?

Space colonization is impossible—

1. Space colonization is unfeasible and doesn’t prevent human extinction

Economist’s View, 6-16-07, Charlie Stross, “The High Frontier, Redux,” published writer, http://www.antipope.org/charlie/blog-static/2007/06/the\_high\_frontier\_redux.html

And I don't want to spend much time talking about the unspoken ideological underpinnings of the urge to space colonization, other than to point out that they're there, that the case for space colonization isn't usually presented as an economic enterprise so much as a quasi-religious one. "We can't afford to keep all our eggs in one basket" isn't so much a justification as an appeal to sentimentality, for in the hypothetical case of a planet-trashing catastrophe, we (who currently inhabit the surface of the Earth) are dead anyway. The future extinction of the human species cannot affect you if you are already dead: strictly speaking, it should be of no personal concern. Historically, crossing oceans and setting up farmsteads on new lands conveniently stripped of indigenous inhabitants by disease has been a cost-effective proposition. But the scale factor involved in space travel is strongly counter-intuitive.

1. The land is unhabitable, and scientists refuse to address technical issues

Bell, 2005 (former space scientist and Adjunct Professor for Planetary Science at the Hawai'i Institute of Geophysics & Planetology at the University of Hawaii, Jeffrey F., “The Dream Palace of the Space Cadets,” Nov.25, http://www.spacedaily.com/news/oped-05zzb.html)

Unfortunately, the new generation of organizations like the Space Frontier Foundation and the Mars Society and even the staid National Space Society mostly lack something that the old L-5 Society and Space Studies Institute had: technical sophistication. Just look at Bob Zubrin's vision of Mars colonization. Nowhere in Zubrin's books is there the kind of detailed engineering design for Mars colonies that the O'Neillians produced for their L-5 colonies. The problems of sustaining human life on Mars are dismissed after superficial discussions devoid of any hard numbers. And there are obvious problems with colonizing Mars. The first one is that it gets incredibly cold there - probably down to -130C on winter nights. Every robot Mars probe has used small slugs of Pu-238 to keep its batteries from freezing at night. And there is air on Mars - not enough to breathe, but enough to conduct heat. The Martian regolith will not be the perfect insulator that the Moon's is. Thermal control on Mars will not be simply a matter of adding layers of aluminum foil to reflect the sun. Bases and rovers will need to be insulated and heated. And how do you keep a human in a spacesuit warm in this climate? And Mars has permafrost - at least in some places and those places are the ones to colonize. How do we keep the heat leaking out from our habitat or farm greenhouse into the ground from heating up the ice and melting or subliming it away? This is a severe problem in permafrost areas of the Earth - how bad will it be on Mars? Zubrin even proposes underground habitats. These will be in direct contact with the cold subsoil or bedrock which will suck heat out at a rapid rate. If Gerard O'Neill was still alive and advocating Mars colonies, he would be doing some basic thermal transfer calculations to see how bad the Martian cold problem really is. He would be figuring out how big a fission reactor to send along to keep the colony warm and how often its core will need to be replenished by fresh U-235 from Earth. He would even have a rough number for the amount of Pu-238 everyone will have to carry in their spacesuit backpacks. Bob Zubrin is perfectly competent to do these calculations since he has a Ph.D. in nuclear engineering. But you never see this kind of hard engineering analysis from the Mars Society. Instead, we get propaganda stunts like the Devon Island "Mars Base" which is only manned during the peak of the Arctic summer when the climate is tropical compared with that of Mars. Another thing you never see from the Mars Society is a realistic discussion of what would happen to the human body in the low Martian gravity. Zubrin has discussed at length the need for artificial spin gravity on the 6 month trip to Mars. But he assumes that the problem ends once the astronauts land on Mars. The problem of bone loss in a 0.38g field on Mars for ~18 months is completely ignored. When I read Zubrin's book The Case For Mars, I was so intrigued by this surprising omission that I consulted a friend who is a space medic at JSC. He tells me that this issue was once discussed at a conference of medical doctors who had actually worked with the long-term residents of Mir and ISS. NONE of these experts thought that humans could adapt permanently to Mars gravity!

### Overview Effect Advantage

No risk of an advantage – we’ve already been to space and their evidence says that we don’t need to send everyone there

Population stabilizing.

Goklany 9 – Indur M. Goklany is the Assistant Director for Science and Technology Policy, Office of Policy Analysis, US Department of the Interior, and co-editor of the Electronic Journal of Sustainable Development, Have increases in population, affluence and technology worsened human and environmental well-being?, The Electronic Journal of Sustainable Development (2009) 1(3)

The original Neo-Malthusian premise was that popula- tion would grow exponentially. Indeed until the latter decades of the 20th century, these concerns seemed well founded, as technological change increased the rate of population growth by reducing mortality rates. However, the **rate of population increase has slowed** in recent decades. In the five years from 1965 to 1970, the World’s population grew by 10.6 per cent. By contrast, the current rate of population growth has fallen **to 6**.0 **per cent** every five years **and is expected to fall** further (UNPD 2007). Accordingly, **recent** population **projections show** that **population should peak during this century**, perhaps **at less than** **9 billion.** Lutz et al. (2007) claim that there is a 90 percent probability that global population will not exceed 11.5 billion in 2100. Nevertheless, while most experts currently discount the possibility of exponential population increase, the notion lingers on in the popular mind (see, e.g., Revkin 2008). This tends to color discussions on environmental matters. In any case, Neo-Malthusians insist that even current population levels may be catastrophic for humanity, with some suggesting that the earth’s sustainable limit may be anywhere between 0.5 to 2 billion (Dahl 2005). The onset of the decline in growth rate was more or less concurrent with mortality rate declines in general, and preceded the appearance of AIDS. The proximate **cause is** obviously a **decline in** total **fertility** **rate** (TFR), that is, the number of children borne by a woman, which seems to have occurred worldwide, but to a differing extent in each country and culture. What are the under- lying causes of the decline in TFR? Figure 2, based on cross country data from the World Bank (2005), shows that TFR is inversely related to the level of economic development (as measured by GDP per capita) and falls over time (a crude surrogate for tech- nological change).2, 3 Goklany (2007a, 2007b) argues that the underlying relationships are more complex, with the conditions supporting economic and technological development and, significantly, the desire for such devel- opment, also important drivers. First, **since** lower poverty – the not-so-surprising consequence of economic **growth** – **means lower** infant **mortality rates** and higher survival rates, **it reduces pressures for** more **births**. This is particularly important because **children are** among the few available forms of **insurance in poorer countries**, which is one reason why they have the highest TFRs. Richer societies tend to have social security programs which can reduce the pressure for more children. Second, **higher incomes mean greater access** **to** **tech**nology, **which reduces** the **value of child labor**. Third, richer societies offer greater educational and **economic opportunities for women**, which also **increases** the **opportunity costs of** their **child bearing** and child rearing years. Fourth, the **time and cost of** educa ing **children** to be competitive and productive **in a richer** and more technologically advanced **society** **encourages small family sizes**. Apart from economic and technological develop- ment, factors that contribute to economic growth and the desire for greater wealth can help create conditions that tend to lower TFR. In particular, literacy and the amount of education, especially of women, helps propa- gate good habits of diet, nutrition, sanitation and safe drinking water. This improves health and reduces mor- tality, in general, and infant and maternal mortality, in particular. As noted, this reduces pressures to maximize birth and enables couples to plan the size of their fami- lies. At the same time, improved health leads to greater wealth (or economic growth). Finally, many couples – arguably swayed by commercials and lifestyles depicted by a ubiquitous, globalized and globalizing visual mass media – defer child birth in favor of current consumption (Goklany 2007a). Together these factors explain why TFR has dropped progressively with both economic development and time. Thus, in the IPAT equation, P is not independent of A and T: sooner or later, **as a nation grows richer, its** **population** **growth** rate **falls** (e.g., World Bank 1984), **which might lead to a cleaner environment** (Goklany 1995, 1998, 2007b). Therefore, while **economic development** and techno- logical change might initially increase the rate of popula- tion growth by reducing mortality rates, **in the long run**, they **moderate population growth** by helping directly or indirectly create the conditions for many families to vol- untarily opt for fewer children (and lower TFR).

### Aliens Advantage

No contact with ETI- communication barriers

Seth D. Baum, Department of Geography, Pennsylvania State University, Jacob D. Haqq-Misra, Department of Meteorology, Pennsylvania State University, & Shawn D. Domagal-Goldman, NASA Planetary Science Division, 2011, “Would Contact with Extraterrestrials Benefit or Harm Humanity? A Scenario Analysis” //ZY

Even if ETI exist in the nearby galactic vicinity, this does not necessarily imply that communication with them will be possible or straightforward. One major challenge is selecting the frequency at which to broadcast and listen [24]. The electromagnetic spectrum consists of a continuum of wavelengths for communication that includes radio, microwave, infrared, visible, ultraviolet, and x-ray bands. Searching this entire range is a monumental and nearly impossible task, so we choose particular wavelengths that seem more probable for interstellar communication. For example, the 21 cm hyperfine transition of neutral hydrogen was the first suggestion for a communication wavelength [1]. The *water hole* at a wavelength of 18 cm is another popular choice for SETI [24], and recent analysis has suggested that we shift our focus toward higher frequencies [25]. However, because there is an infinite number of wavelengths for interstellar communication, we must acknowledge the possibility that ETI may be transmitting or listening at wavelength ranges that we have not yet considered. The possibility also remains that ETI do not use electromagnetic radiation for communication but instead have discovered some other method (possibly something more efficient or effective) for exchanging information across astronomical distances. Communication via electromagnetic radiation is limited by the time required for a signal to reach its destination, i.e., the speed of light. On Earth, electromagnetic communication is nearly instantaneous because of the short distances involved. However, galactic communication occurs over astronomical distances so that even a message traveling at light speed will take a long time to reach its destination. For example, communication with ETI on a planet just 50 light years away–which is relatively close by galactic standards–will still take place on a timescale of 100 years. As Sagan [15] notes, this makes communication with ETI an intergenerational project: effective communication across astronomical distances will require unprecedented cooperation that spans several human lifetimes. This difficulty in communicating across such vast distances also might limit the ability for ETI to engage in interstellar warfare for the simple reason that the communications problem renders such warfare too logistically difficult to coordinate [26]; peaceful endeavors such as the formation of a Galactic Club may face similar logistical challenges. Such physical limits on interstellar communication by ETI are in turn limits as to how ETI could more generally come into contact with and affect humanity.

No exchange in communication- human ignorance

Seth D. Baum, Department of Geography, Pennsylvania State University, Jacob D. Haqq-Misra, Department of Meteorology, Pennsylvania State University, & Shawn D. Domagal-Goldman, NASA Planetary Science Division, 2011, “Would Contact with Extraterrestrials Benefit or Harm Humanity? A Scenario Analysis” //ZY

Even if humanity can successfully exchange signals with ETI, there is no guarantee that the information will be successfully communicated. In order for information to be exchanged, it is also necessary that humans and ETI understand the contents of each others’ messages. It will likely be difficult at first to communicate anything subjective about human experience, emotions, and expressions, so mathematical conversation may comprise our first few exchanges with ETI [29]. It may eventually be prudent to develop a framework for METI so as to increase the probability of successful communication anytime a transmission is sent from Earth [30]. Perhaps such schemes will succeed in effectively communicating with ETI. However, our extreme ignorance about the nature of any ETI means that we cannot rule out the possibility that we will fail or at least severely struggle to exchange information with them.

### \*\*\*2NC\*\*\*

Government procurement isn’t a subset of financial incentives, but a distinct category—Czinkota says financial incentives are offered to investors, not the business being invested in. This includes loans, loan guarantees and grants. Government purchases are specifically non-financial incentives.

Topical version of the aff would be to incentivize private sector energy development and argue the government will adopt it—this allows them to read all the same advantages but maintains a stable mechanism we can get links from.

Government procurement may result in more energy production, but isn’t a financial incentive for energy production.

Incentives are quid pro-quos with external actors—they must offer a reward for a change in behavior.

De LaHunt 6 - Assistant Director for Environmental Health & Safety Services in Colorado College's Facilities Services department (John, “Perverse and unintended” Journal of Chemical Health and Safety, July-August, Science direct)

Incentives work on a quid pro quo basis – this for that. If you change your behavior, I’ll give you a reward. One could say that coercion is an incentive program – do as I say and I’ll let you live. However, I define an incentive as getting something you didn’t have before in exchange for new behavior, so that pretty much puts coercion in its own box, one separate from incentives. But fundamental problems plague the incentive approach. Like coercion, incentives are poor motivators in the long run, for at least two reasons – unintended consequences and perverse incentives.

For requires a direct relationship—they must incentive external actors to increase energy production.

Words and Phrases 4 (Words and Phrases Permanent Edition, “For,” Volume 17, p. 338-343 November 2004, Thomson West)

WD Tenn 1942. The Fair Labor Standards Act of 1938 uses the words “production for commerce”  as denoting an intention to deal in a restricted way with question of coverage in connection with those employed directly in production of articles to be sold, shipped or transported across state lines in commerce, producing goods “for” a certain purpose implying a direct relation as distinguished from producing something which only “affects” a certain purpose which implies an indirect relation.

Energy production is the transformation of resources into electricity or fuels—the incentives must be for this process, not the manufacturing of technology relevant to production. This means *governments doing the production themselves isn’t topical*, but buying energy produced by an external actor is.

(ex/ this excludes govt buying nuclear reactors or SPS but allows government buying natural gas that companies drill for, it would also allow the government to purchase electricity made from solar at an external utility)

DOE 80—Revised: An Analysis of Federal Incentives Used to Stimulate Energy Production, Feburary, http://www.scribd.com/doc/67538352/Federal-Incentives-for-Energy-Production-1980

Energy production is defined as the transformation of natural resources into commonly used forms of energy such as heat, light, and electricity. By this definition, the shining of the sun or the running of a river are not examples of energy production, but the installation of solar panels or the construction of a hydroelectric dam are. Energy consumption is defined as the use of one of these common, "manufactured" forms of energy. Under this definition sunbathing is not energy consumption, but heating water by means of a solar panel is. In both definitions, the crucial ingredient is the application of technology and resources to change a natural resource into a useful energy form.

Government procurement explodes the topic—they allow any government service to utilize any topical energy source—tons of government functions multiplied by 6 energies results in a huge caselist—nuclear power for NASA, renewables for the military, nuclear powered navy, or CTL for the air force.

Our interp is the middle ground—they get every core topic aff like incentives for solar nuclear and wind and the entire restrictions half of the topic.

They allow tons of weird incentives like government purchasing, subsidizing infrastructure specifically for energy production, like grid upgrades, or providing special government services to energy producers—this could be advice on marketing or specific production practices, safety assistance or protection from natural disasters or terrorist attacks.

UN 4—UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT INCENTIVES UNCTAD Series on Issues in International Investment Agreements, unctad.org/en/docs/iteiit20035\_en.pdf

Box I.1. Types of incentives

Financial incentives

• Investment grants: “direct subsidies” to cover (part of) capital, production or marketing costs in relation to an investment project.

• Subsidized credits and credit guarantees: subsidized loans/ loan guarantees/ guaranteed export credits.

• Government insurance at preferential rates/ publicly funded venture capital participating in investments involving high commercial risks. Government insurance at preferential rates, usually available to cover certain types of risks such as exchange- rate volatility, currency devaluation, or non-commercial risks such as expropriation and political turmoil (often provided through an international agency).

Fiscal incentives

• Profit-based: reduction of the standard corporate income tax rate/ profit tax rate/ tax holiday.

• Capital-investment-based: accelerated depreciation/ investment and reinvestment allowance.

• Labour-based: reduction in social security contribution/ deductions from taxable earnings based on the number of employees or on other labour related expenditure.

• Sales-based: corporate income tax reductions based on total sales.

• Import-based: duty exemptions on capital goods, equipment or raw materials, parts and inputs related to the production process; tax credits for duties paid on imported materials or supplies.

• Export-based: export tax exemptions; duty drawback; preferential tax treatment of income from exports, income-tax reduction for special foreign-exchange-earning activities or for manufactured exports; tax credits on domestic sales in return for export performance; income-tax credits on net local content of exports; deduction of overseas expenditures and capital allowance for export industries.

• Based on other particular expenses: corporate income tax deduction based on, for example, expenditures relating to marketing and promotional activities.

• Value-added-based: corporate income tax reductions or credits based on the net local content of outputs; granting income-tax credits based on net value earned.

• Reduction of taxes for expatriates.

Other incentives

Regulatory incentives

• Lowering of environmental, health, safety or labour standards.

• Temporary or permanent exemption from compliance with applicable standards.

• Stabilization clauses guaranteeing that existing regulations will not be amended to the detriment of investors.

Subsidized services

• Subsidized dedicated infrastructure: electricity, water, telecommunication, transportation/ designated infrastructure at less than commercial price.

• Subsidized services, including assistance in identifying sources of finance, implementing and managing projects, carrying out pre- investment studies, information on markets, availability of raw materials and supply of infrastructure, advice on production processes and marketing techniques, assistance with training and retraining, technical facilities for developing know-how or improving quality control.

Market privileges

• Preferential government contracts.

• Closing the market to further entry or the granting of monopoly rights; protection from import competition.

Foreign exchange privileges

• Special treatment with respect to foreign exchange, including special exchange rates, special foreign debt-to-equity conversion rates, elimination of exchange risks on foreign loans, concessions of foreign exchange credits for export earnings, and special concessions on the repatriation of earnings and capital.

### Solvency

Human nature to innovate and make changes accordingly for survival.

Simon, 93 – Senior Fellow at the Cato Institute (Julian J. Simon “Scarcity or Abundance? A Debate on the Environment” http://www.juliansimon.org/writings/Norton/NORTON09.txt)

Population growth does not lower the standard of living all the evidence agrees. And the evidence supports the view that population growth raises it in the long run. Now we need some theory to explain how it can be that economic welfare grows along with population, rather than humanity being reduced to misery and poverty as population grows. The Malthusian theory of increasing scarcity, based on supposedly-fixed resources, which is the theory that the doomsayers rely upon, runs exactly contrary to the data over the long sweep of history. And therefore it makes sense to prefer another theory. The theory that fits the facts very well is this: More people, and increased income, cause problems in the short run. Short-run scarcity raises prices. This presents opportunity, and prompts the search for solutions. In a free society, solutions are eventually found. And in the long run the new developments leave us better off than if the problems had not arisen. When we take a long-run view, the picture is different, and considerably more complex, than the simple short-run view of more people implying lower average income. In the very long run, more people almost surely imply more available resources and a higher income for everyone.

The tech is decades away - thats 1NC King evidence. Concerns over the size of emergency planning zones makes actual tech development still decades away. Before the tech can become mainstream, it has to be "OKed" by the NRC - they are skeptical of SMR, means delays will compound.

The NRC is overstretched now - magnifies the delay.

Rysavy 9 (Charles F., Partner with K&L Gates LLP, Practiced for 20 years, “Small Modular Reactors”)

Regulatory resources present one of the greatest challenges to a robust SMR program in the U.S. The NRC Office of New Reactors, which is already working on the licensing of a number of large-scale reactors, is already over-burdened and will need to make resource adjustments to handle SMR applications. See, NRC Public Meeting, Meeting Slides–NRC (discussing the resource priorities of the Office of New Reactors). The NRC has already begun pre-application discussions with a number of SMR companies, but it is likely that SMRs will take a back seat to large-scale plants for the time being. Id. The Department of Energy has a unique and possibly essential role in overcoming this challenge. Encouragingly, DOE has stated that it intends to support the industry’s efforts to bring SMRs to domestic markets (NRC Public Meeting, Meeting Slides–DOE). Included among DOE’s proposed programs is a cost-share partnership for first-of- a-kind SMR design and licensing that may be initiated as early as 2011 (NRC Public Meeting, Meeting Slides–DOE). DOE also intends to work with NRC and the industry to evaluate unique licensing issues for SMRs, and to work on enhancing the regulatory framework and licensing process with the NRC (NRC Public Meeting, Meeting Slides–DOE).

Tech is still on the drawing board.

ITA, 11

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

Although SMRs have significant potential and the market for their deployment is growing, their designs must still go through the technical and regulatory processes necessary to ensure that they can be safely and securely deployed. Lightwater technology–based SMRs may not be ready for deployment in the United States for at least a decade, and advanced designs might be even further off. Light-water SMRs and SMRs that have undergone significant testing are the most likely candidates for near-term deployment, because they are most similar to existing reactors that have certified designs and significant operating histories. NuScale is on track to submit its reactor design to the NRC by 2012, as is Babcock & Wilcox for its mPower design. In addition, GE-Hitachi, which already completed an NRC preapplication review for its PRISM reactor in 1994, plans to submit its PRISM design for certification in 2012.

Independently, the manufacturing base just isn't READY to produce a ton of new reactors - their timeframe is too far away to solve.

ITA, 11 [International Trade Administration -- U.S. Department of Commerce, February, “The Commercial Outlook for U.S. Small Modular Nuclear Reactors,” http://trade.gov/mas/ian/build/groups/public/@tg\_ian/@nuclear/documents/webcontent/tg\_ian\_003185.pdf]

There are also domestic policies that hinder U.S. SMR competitiveness, with some policies relevant to all nuclear suppliers and some specific to SMR deployment, both at home and abroad. One obstacle is diminished manufacturing capacity. U.S. nuclear competitiveness is hampered because U.S. manufacturing capacity has been eroded through the lack of new reactor construction during the past few decades. Some government resources to help manufacturers are not appropriate for nuclear suppliers, or the resources exclude the suppliers entirely. For example, only two U.S. nuclear manufacturers qualified for the advanced energy manufacturing tax credit. The timeline to be eligible for the credit requires a facility to be up and running four years from certification. Some U.S. firms say that the timeline is too short for many nuclear suppliers; just acquiring the high-precision machines necessary to retool and rebuild capacity can require a lead time of several years.

Aff is decades away - licensing takes too much time, the more of a departure from SQ reactors the aff is, the longer licensing takes to make sure the tech works.

NRC won't LICENSE the reactors, aff only provides incentives for production - guts all their solvency.

Spencer & Loris, ‘11

[Jack, Research Fellow in Nuclear Energy in the Thomas A. Roe Institute for Economic Policy Studies, Nicolas, Research Associate in the Roe Institute, The Heritage Foundation, 2-2, “A Big Future for Small Nuclear Reactors?” http://www.heritage.org/research/reports/2011/02/a-big-future-for-small-nuclear-reactors]

If SMRs Are So Great, Where Is the Construction?¶ While some designs are closer to market introduction than others, the fact is that America’s regulatory and policy environment is not sufficient to support a robust expansion of existing nuclear technologies, much less new ones. New reactor designs are difficult to license efficiently, and the lack of a sustainable nuclear waste management policy causes significant risk to private investment.¶ Many politicians are attempting to mitigate these market challenges by offering subsidies, such as loan guarantees. While this approach still enjoys broad support in Congress and industry, the reality is that it has not worked. Despite a lavish suite of subsidies offered in the Energy Policy Act of 2005, including loan guarantees, insurance against government delays, and production tax credits, no new reactors have been permitted, much less constructed. These subsidies are in addition to existing technology development cost-sharing programs that have been in place for years and defer significant research and development costs from industry to the taxpayer.¶ The problem with this approach is that it ignores the larger systemic problems that create the unstable marketplace to begin with. These systemic problems generally fall into three categories:¶ Licensing. The Nuclear Regulatory Commission (NRC) is ill prepared to build the regulatory framework for new reactor technologies, and no reactor can be offered commercially without an NRC license. In a September 2009 interview, former NRC chairman Dale E. Klein said that small nuclear reactors pose a dilemma for the NRC because the commission is uneasy with new and unproven technologies and feels more comfortable with large light water reactors, which have been in operation for years and has a long safety record.[11] The result is that enthusiasm for building non-light-water SMRs is generally squashed at the NRC as potential customers realize that there is little chance that the NRC will permit the project within a timeframe that would promote near-term investment. So, regardless of which attributes an SMR might bring to the market, the regulatory risk is such that real progress on commercialization is difficult to attain. This then leaves large light water reactors, and to a lesser extent, small ones, as the least risky option, which pushes potential customers toward that technology, which then undermines long-term progress, competition, and innovation.¶ Nuclear Waste Management. The lack of a sustainable nuclear waste management solution is perhaps the greatest obstacle to a broad expansion of U.S. nuclear power. The federal government has failed to meet its obligations under the 1982 Nuclear Waste Policy Act, as amended, to begin collecting nuclear waste for disposal in Yucca Mountain. The Obama Administration’s attempts to shutter the existing program to put waste in Yucca Mountain without having a backup plan has worsened the situation. This outcome was predictable because the current program is based on the flawed premise that the federal government is the appropriate entity to manage nuclear waste. Under the current system, waste producers are able to largely ignore waste management because the federal government is responsible. The key to a sustainable waste management policy is to directly connect financial responsibility for waste management to waste production. This will increase demand for more waste-efficient reactor technologies and drive innovation on waste-management technologies, such as reprocessing. Because SMRs consume fuel and produce waste differently than LWRs, they could contribute greatly to an economically efficient and sustainable nuclear waste management strategy.¶ Government Intervention. Too many policymakers believe that Washington is equipped to guide the nuclear industry to success. So, instead of creating a stable regulatory environment where the market value of different nuclear technologies can determine their success and evolution, they choose to create programs to help industry succeed. Two recent Senate bills from the 111th Congress, the Nuclear Energy Research Initiative Improvement Act (S. 2052) and the Nuclear Power 2021 Act (S. 2812), are cases in point. Government intervention distorts the normal market processes that, if allowed to work, would yield the most efficient, cost-effective, and appropriate nuclear technologies. Instead, the federal government picks winners and losers through programs where bureaucrats and well-connected lobbyists decide which technologies are permitted, and provides capital subsidies that allow investors to ignore the systemic problems that drive risk and costs artificially high. This approach is especially detrimental to SMRs because subsidies to LWRs distort the relative benefit of other reactor designs by artificially lowering the cost and risk of a more mature technology that already dominates the marketplace.¶

The NRC has sufficent resources to review incoming reactor licenses now - Kaufman evidence indicates that the number of applicants filing for review is low and the review process is arduously addressing safety concerns. Overstretch means regulatory failure and allows unsafe reactors to be approved.

The plan hamstrings the NRC's resources - Weaver indicates that a resurgence of licensing claims draws thin the NRC's manpower - they lack the funds necessary to handle the hundreds of new claims the aff would result in after demonstrating that there is government demand for new nuclear reactors

The impact is accidents which cause extinction - Wasserman says it would render New York an inhabitable wasteland and permanently destroy ecosystems necessary for the maintenance of life.

Also turns all of the aff's internal links to their advantages - accidents jack NRC redability which hamstrings the nuclear agency.

One accident turns the case -- shuts down the nuclear industry.

Squassoni, ‘8

[Sharon, Senior Associate, Nonproliferation Program -- Carnegie Endowment for International Peace, 3-12, “The Realities of Nuclear Expansion” Congressional Testimony: House Select Committee for Energy Independence and Global Warming, Washington, DC]

A few caveats with respect to projecting nuclear energy expansion are necessary. Nuclear energy is undoubtedly safer and more efficient now than when it began fifty years ago, but it still faces four fundamental challenges: waste, cost, proliferation, and safety. It is an inherently risky business. Most industry executives will admit that it will only take one significant accident to plunge the “renaissance” back into the nuclear Dark Ages. Because of this, estimates are highly uncertain. For example, the U.S. Energy Information Administration does not use its computer model to estimate nuclear energy growth because, among other things, key variables such as public attitudes and government policy are difficult to quantify and project. That said, estimates tend to extrapolate electricity consumption and demand from gross domestic product (GDP) growth, make assumptions about nuclear energy’s share of electricity production, and then estimate nuclear reactor capacity.

### Space

The plan’s attempts to leave Earth allow Martian viruses to cause extinction

Michael Hanlon, 2/12/03, “Mars Plague That Could Kill Off Earth”, Daily Express London, http://www.100megsfree4.com/farshores/nmarplag.htm

A group of scientists are trying to persuade Nasa to abandon plans to bring back a soil sample from Mars because they fear an extra-terrestrial plague could be unleashed on Earth. The U.S space agency plans to send a robot probe to Mars around 2011 which will return to Earth carrying a few pounds of rock. But the International Committee Against Mars Sample Return warns it could infect Earth with an interplanetary plague**.** The committee is composed of professional scientists and amateur astronomers worried about the Martian "threat" from alien microbes against which Earth life has no defence. "If we make one mistake it could mean the extinction, maybe for our species, or maybe another, for instance bumble bees or photoplankton, which are a huge part of our ecology," said committee founder Barry DiGregorio. Nasa recently unveiled plans for a series of missions to Mars in the next decade, each of which would bring back about 20lb of rock and earth, paving the way for a manned mission around 2019. The samples would be parachuted down from space on to the American desert, where they would be opened up and analysed by scientists in quarantined conditions. The scientists will be looking particularly for evidence of past or present life. Nasa insists there is no danger. "Nasa is taking the necessary precautions," said John Rummel, its planetary protection officer. He is the man assigned to protect Earth from alien contamination and other planets from our microbes. The samples would be "kept in a controlled environment with as many precautions as possible," he added. He points out that the Earth naturally receives geological samples from Mars all the time. Hundreds of pounds of Martian meteorites hit the planet each year. If microbes exist they would have invaded Earth long ago, inoculating terrestrial life forms in the process. Until recently, most scientists had concluded that Mars is dead. It is too cold, has no water and too little atmosphere for life to thrive. But recent photographs from the Mars Global Surveyor, a Nasa probe currently orbiting Mars, appear to show water channels on the surface. And some scientists claim to have found signs of fossil life in a meteorite from Mars found in Antarctica 20 years ago.DiGregorio said: "We simply do not have the technology or the means yet to pull off a safe sample-return mission. Can we afford to make a mistake with this, something that might carry a deadly virus?"

**Space exploration risks extra-terrestrial pandemics**

Caldicott 2000 (Helen Caldicott, April 15, 2000, http://www.space4peace.org/articles/madness.htm )

I digressed. Well, NASA and the relevant corporations plan bring this 300 grams of space minerals back to earth, but they are not going to use a parachute, they're going to slam it into Utah at 300 to 400 G-force. Which will break the container apart. Now why is this a problem? Oh, I forgot, they have to put two nuclear power plants up on Mars, by the year 2007, so they can provide power for the human colony, keep it operating, turn the urine into water, do all that stuff, keep the men warm, and to provide power I suppose to the robots that will travel around picking up the dirt. It is predicted that humans will be present on Mars by the year 2016. But there is a problem, it is believed that there could be bacteria on Mars. Now, you know about the Ebola virus. Everyone is scared by Ebola viruses well as HIV and many other dangerous viruses. Scientists predict that there could be a massive epidemic of some uncontrollably dangerous virus in the future. It's quite interesting, though, when you look at history, in the early to mid-1300s, one quarter of the European population died as the result of a flea from China that carried the plague. When the Spaniards began to explore the Americas, they brought with them the smallpox virus, that killed tens of thousands of people. European explorers to Polynesian Hawaii in the 1500s, infected the natives with microbes. We killed a large number of Aborigines from just the common cold and flu in Australia. So if 300 grams of Martian soil slams into the desert on earth and bursts apart, there is a possibility that the earth could be infected, and the microbes could spread. The scientists will not have microscopes, labs and gram-positive stains to search for Martian bacteria, before they return. And what about our bacteria infecting Mars? And guess what they'll do? They'll stick an American flag on Mars.

Extinction

Daswani, 96 (Kavita, South China Morning Post, 1/4, lexis)

Despite the importance of the discovery of the "facilitating" cell, it is not what Dr Ben-Abraham wants to talk about. There is a much more pressing medical crisis at hand - one he believes the world must be alerted to: the possibility of a virus deadlier than HIV. If this makes Dr Ben-Abraham sound like a prophet of doom, then he makes no apology for it. AIDS, the Ebola outbreak which killed more than 100 people in Africa last year, the flu epidemic that has now affected 200,000 in the former Soviet Union - they are all, according to Dr Ben-Abraham, the "tip of the iceberg". Two decades of intensive study and research in the field of virology have convinced him of one thing: in place of natural and man-made disasters or nuclear warfare, humanity could face extinction because of a single virus, deadlier than HIV. "An airborne virus is a lively, complex and dangerous organism," he said. "It can come from a rare animal or from anywhere and can mutate constantly. If there is no cure, it affects one person and then there is a chain reaction and it is unstoppable. It is a tragedy waiting to happen." That may sound like a far-fetched plot for a Hollywood film, but Dr Ben -Abraham said history has already proven his theory. Fifteen years ago, few could have predicted the impact of AIDS on the world. Ebola has had sporadic outbreaks over the past 20 years and the only way the deadly virus - which turns internal organs into liquid - could be contained was because it was killed before it had a chance to spread. Imagine, he says, if it was closer to home: an outbreak of that scale in London, New York or Hong Kong. It could happen anytime in the next 20 years - theoretically, it could happen tomorrow. The shock of the AIDS epidemic has prompted virus experts to admit "that something new is indeed happening and that the threat of a deadly viral outbreak is imminent", said Joshua Lederberg of the Rockefeller University in New York, at a recent conference. He added that the problem was "very serious and is getting worse". Dr Ben-Abraham said: "Nature isn't benign. The survival of the human species is not a preordained evolutionary programme. Abundant sources of genetic variation exist for viruses to learn how to mutate and evade the immune system." He cites the 1968 Hong Kong flu outbreak as an example of how viruses have outsmarted human intelligence. And as new "mega-cities" are being developed in the Third World and rainforests are destroyed, disease-carrying animals and insects are forced into areas of human habitation. "This raises the very real possibility that lethal, mysterious viruses would**,** for the first time, infect humanity at a large scale and imperil the survival of the human race**,**" he said.

2NC Ext #2- Ozone Turn

Small amounts of rocket exhaust can destroy lots of ozone

Ross 2000 (Martin N. Ross, Environmental Systems Directorate, leads research on the stratospheric impact of Air Force launch vehicles. Summer 2000  Crosslink, Rockets and the Ozone Layer

http://www.aero.org/publications/crosslink/summer2000/01.html)

Complicated chemical and physical processes, only partially understood by atmospheric scientists, affect both the amount and distribution of ozone in the stratosphere. In general, ozone is formed in the equatorial stratosphere at altitudes above 30 kilometers. Large-scale winds continuously transport the ozone to lower altitudes and toward Earth's poles to form a layer about 10 kilometers thick, centered at about 22 kilometers altitude**.** The concentration of ozone is determined by the rate of ozone transport into the layer versus the rate of ozone loss by reaction with ozone-destroying radicals such as the chlorine atom (Cl), nitric oxide (NO), and the hydroxyl radical (OH). Because each radical is able to regenerate after destroying an ozone molecule (called a catalytic cycle), radical molecules exert a major influence on ozone even at the small quantities found in the stratosphere. This means that small changes in stratospheric composition caused by industrial activity, including rocket exhaust, might cause relatively large changes in the ozone layer**.**

Both solid and liquid rocket fuels deplete ozone

Ross 2000 (Martin N. Ross, Environmental Systems Directorate, leads research on the stratospheric impact of Air Force launch vehicles. Summer 2000  Crosslink, Rockets and the Ozone Layer

http://www.aero.org/publications/crosslink/summer2000/01.html)

Both solid and liquid rocket-propulsion systems emit a variety of gases and particles directly into the stratosphere**.** A large percentage of these emissions are inert chemicals such as carbon dioxide that do not directly affect ozone levels. Emissions of other gases, such as hydrogen chloride and water vapor, though not highly reactive**,** indirectly affect ozone levels by participating in chemical reactions that determine the concentrations of the ozone-destroying radicals in the global stratosphere. A small percentage of rocket- engine emissions, however, are highly reactive radical compounds that immediately attack and deplete ozone in the plume wake following launch**.** Aerosol emissions, such as alumina particles, carbon (soot) particles, and water droplets, can also act as reactive compounds when heterogeneous chemical reactions take place on the surface of these particles.

2NC Ext #3- Unfeasible

One thousand years before the process can start

Robertson 2006 (Douglas Robertson, space industry journalist, 3-6-06 OpEd: Space Exploration: A Reality Check, Space Business News, http://www.space.com/spacenews/archive06/RobertsonOpEd\_030606.html

Dramatic increases in exploration funding are not likely in the foreseeable future. If we are going to make progress toward truly understanding the Moon and Mars, we must send scientists while staying close to existing budgets. Whatever the dangers, we must proceed with our existing tools and technologies. Dangerous it will be. Detailed exploration, let alone settlement, of nearby worlds will be the single most difficult task humanity has ever tackled. Most likely, it will take many hundreds, or even thousands, of years. Our first attempts to establish a base on Earth's Moon or Mars may well fail. As on the oceans, many people will die: we cannot insist on levels of safety that make the exercise technically impractical or unaffordable.

#### Space colonization would take too long to be effective

Globus 2005 (Chairman of the National Space Society Space Settlement Advocacy Committee, Al, “Space Settlement Basics,” September 22, http://www.nas.nasa.gov/About/Education/SpaceSettlement/Basics/wwwwh.html)

How long did it take to build New York? California? France? Even given ample funds the first settlement will take decades to construct. No one isbuilding a space settlement today, and there are no immediate prospects for large amounts of money, so the first settlement will be awhile. If Burt Rutan's prediction of affordable orbital tourism in 25 years is correct, however, it's reasonable to expect the first orbital colony to be built within about 50 years.

2NC Ext #4- Uninhabitable

Space can’t sustain human life

Economist’s View, 6-16-07**,** Charlie Stross, “The High Frontier, Redux,” published writer, http://www.antipope.org/charlie/blog-static/2007/06/the\_high\_frontier\_redux.html

We're human beings. We evolved to flourish in a very specific environment that covers perhaps 10% of our home planet's surface area. (Earth is 70% ocean, and while we can survive, with assistance, in extremely inhospitable terrain, be it arctic or desert or mountain, we aren't well-adapted to thriving there.) Space itself is a very poor environment for humans to live in. A simple pressure failure can **kill a spaceship crew in minutes**. And that's not the only threat. **Cosmic radiation** poses a serious risk to long duration interplanetary missions, and unlike solar radiation and radiation from coronal mass ejections the energies of the particles responsible make **shielding astronauts extremely difficult**. And finally, there's the travel time. Two and a half years to Jupiter system; six months to Mars. Now, these problems are subject to a variety of approaches — including medical ones: does it matter if cosmic radiation causes long-term cumulative radiation exposure leading to cancers if we have advanced side-effect-free cancer treatments? Better still, if hydrogen sulphide-induced hibernation turns out to be a practical technique in human beings, we may be able to sleep through the trip. But even so, when you get down to it, there's not really any economically viable activity on the horizon for people to engage in that would require them to settle on a planet or asteroid and live there for the rest of their lives. In general, when we need to extract resources from a hostile environment we tend to build infrastructure to exploit them (such as oil platforms) but we don't exactly scurry to move our families there. Rather, crews go out to work a long shift, then return home to take their leave. After all, there's no there there — just a howling wilderness of north Atlantic gales and frigid water that will kill you within five minutes of exposure. And that, I submit, is the closest metaphor we'll find for interplanetary colonization. Most of the heavy lifting more than a million kilometres from Earth will be done by robots, overseen by human supervisors who will be itching to get home and spend their hardship pay. And closer to home, the **commercialization of space** will be incremental and slow, driven by our increasing dependence on near-earth space for communications, positioning, weather forecasting, and (still in its embryonic stages) tourism. But the domed city on Mars is going to have to wait for a magic wand or two to do something about the climate, or reinvent a kind of human being who can thrive in an airless, inhospitable environment.

### \*\*\*1NR\*\*\*

### Turns Space Cooperation

**Solves science diplomacy**

Pickering and Agre, ‘10 - former under secretary of State from 1997 to 2000 and chairs the advisory council of the Civilian Research and Development Foundation, director of the Johns Hopkins Malaria Research Institute and president of the American Association for the Advancement of Science

Thomas and Peter, Baltimore Sun, “Leverage Science Diplomacy Now to Boost U.S. Foreign Policy,” Baltimore Sun, Lexis

In 1979, a science and technology agreement between the United States and China paved the way for bilateral scientific cooperation that continues to benefit American science and society more broadly. Now, science diplomacy may help America open a door toward improved relations with Pyongyang, too. In December, six Americans representing leading scientific organizations sat down with their North Korean counterparts. The meeting took place on the heels of U.S. Special Envoy Stephen Bosworth's first official bilateral meeting with North Korea. Science, an international enterprise that relies on a lively exchange of ideas and data, can help build trust and expand understanding when government-to-government contacts may be strained. The North Korea visit, plus the first-ever U.S. science envoys, represent a fine beginning to a new era of international research cooperation. But the White House, the State Department and Congress must do far more to bolster science diplomacy. In particular, the U.S. government should quickly and significantly increase the number of H1-B visas being approved for specialized foreign workers such as doctors, scientists and engineers. Their contributions are critical to improving human welfare as well as our economy. Foreign scientists working or studying in U.S. universities also become informal goodwill ambassadors for America globally - an important benefit in the developing world, where senior scientists and engineers often enter national politics. More broadly, we urgently need to expand and deepen links between the U.S. and foreign scientific communities to advance solutions to common challenges. Climate change, sustainable development, pandemic disease, malnutrition, protection for oceans and wildlife, national security and innovative energy technologies all demand solutions that draw on science and technology. Fortunately, U.S. technological leadership is admired worldwide, suggesting a way to promote dialogue with countries where we otherwise lack access and leverage. A June 2004 Zogby International poll commissioned by the Arab American Institute found that only 11 percent of Moroccans surveyed had a favorable overall view of the United States - but 90 percent had a positive view of U.S. science and technology. Only 15 percent of Jordanians had a positive overall view, but 83 percent registered admiration for U.S. science and technology. Similarly, Pew polling data from 43 countries show that favorable views of U.S. science and technology exceed overall views of the United States by an average of 23 points. The recent mission to North Korea exemplified the vast potential of science for U.S. diplomacy. Within the scientific community, after all, journals routinely publish articles co-written by scientists from different nations, and scholars convene frequent conferences to extend those ties. Science demands an intellectually honest atmosphere, peer review and a common language for professional discourse. Basic values of transparency, vigorous inquiry and respectful debate are all inherent to science. Nations that cooperate on science strengthen the same values that support peaceful conflict resolution and improved public safety. U.S. and Soviet nongovernmental organizations contributed to a thaw in the Cold War through scientific exchanges, with little government support other than travel visas.

Science diplomacy solves multiple scenarios for extinction

Federoff 08 (Nina, science and technology adviser to the Sec of State, http://www.gpo.gov/fdsys/pkg/CHRG-110hhrg41470/html/CHRG-110hhrg41470.htm)

Chairman Baird, Ranking Member Ehlers, and distinguished members of the Subcommittee, thank you for this opportunity to discuss science diplomacy at the U.S. Department of State. The U.S. is recognized globally for its leadership in science and technology. Our scientific strength is both a tool of ``soft power''--part of our strategic diplomatic arsenal--and a basis for creating partnerships with countries as they move beyond basic economic and social development. Science diplomacy is a central element of the Secretary's transformational diplomacy initiative, because science and technology are essential to achieving stability and strengthening failed and fragile states. S&T advances have immediate and enormous influence on national and global economies, and thus on the international relations between societies. Nation states, nongovernmental organizations, and multinational corporations are largely shaped by their expertise in and access to intellectual and physical capital in science, technology, and engineering. Even as S&T advances of our modern era provide opportunities for economic prosperity, some also challenge the relative position of countries in the world order, and influence our social institutions and principles. America must remain at the forefront of this new world by maintaining its technological edge, and leading the way internationally through science diplomacy and engagement. The Public Diplomacy Role of Science Science by its nature facilitates diplomacy because it strengthens political relationships, embodies powerful ideals, and creates opportunities for all. The global scientific community embraces principles Americans cherish: transparency, meritocracy, accountability, the objective evaluation of evidence, and broad and frequently democratic participation. Science is inherently democratic, respecting evidence and truth above all. Science is also a common global language, able to bridge deep political and religious divides. Scientists share a common language. Scientific interactions serve to keep open lines of communication and cultural understanding. As scientists everywhere have a common evidentiary external reference system, members of ideologically divergent societies can use the common language of science to cooperatively address both domestic and the increasingly trans-national and global problems confronting humanity in the 21st century. There is a growing recognition that science and technology will increasingly drive the successful economies of the 21st century. Science and technology provide an immeasurable benefit to the U.S. by bringing scientists and students here, especially from developing countries, where they see democracy in action, make friends in the international scientific community, become familiar with American technology, and contribute to the U.S. and global economy. For example, in 2005, over 50 percent of physical science and engineering graduate students and postdoctoral researchers trained in the U.S. have been foreign nationals. Moreover, many foreign-born scientists who were educated and have worked in the U.S. eventually progress in their careers to hold influential positions in ministries and institutions both in this country and in their home countries. They also contribute to U.S. scientific and technologic development: According to the National Science Board's 2008 Science and Engineering Indicators, 47 percent of full-time doctoral science and engineering faculty in U.S. research institutions were foreign-born. Finally, some types of science--particularly those that address the grand challenges in science and technology--are inherently international in scope and collaborative by necessity. The ITER Project, an international fusion research and development collaboration, is a product of the thaw in superpower relations between Soviet President Mikhail Gorbachev and U.S. President Ronald Reagan. This reactor will harness the power of nuclear fusion as a possible new and viable energy source by bringing a star to Earth. ITER serves as a symbol of international scientific cooperation among key scientific leaders in the developed and developing world--Japan, Korea, China, E.U., India, Russia, and United States--representing 70 percent of the world's current population. The recent elimination of funding for FY08 U.S. contributions to the ITER project comes at an inopportune time as the Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project had entered into force only on October 2007. The elimination of the promised U.S. contribution drew our allies to question our commitment and credibility in international cooperative ventures. More problematically, it jeopardizes a platform for reaffirming U.S. relations with key states. It should be noted that even at the height of the cold war, the United States used science diplomacy as a means to maintain communications and avoid misunderstanding between the world's two nuclear powers--the Soviet Union and the United States. In a complex multi-polar world, relations are more challenging, the threats perhaps greater, and the need for engagement more paramount. Using Science Diplomacy to Achieve National Security Objectives The welfare and stability of countries and regions in many parts of the globe require a concerted effort by the developed world to address the causal factors that render countries fragile and cause states to fail. Countries that are unable to defend their people against starvation, or fail to provide economic opportunity, are susceptible to extremist ideologies, autocratic rule, and abuses of human rights. As well, the world faces common threats, among them climate change, energy and water shortages, public health emergencies, environmental degradation, poverty, food insecurity, and religious extremism. These threats can undermine the national security of the United States, both directly and indirectly. Many are blind to political boundaries, becoming regional or global threats. The United States has no monopoly on knowledge in a globalizing world and the scientific challenges facing humankind are enormous. Addressing these common challenges demands common solutions and necessitates scientific cooperation, common standards, and common goals. We must increasingly harness the power of American ingenuity in science and technology through strong partnerships with the science community in both academia and the private sector, in the U.S. and abroad among our allies, to advance U.S. interests in foreign policy.

### Overview Effect

Turns Overview Effect—

**The Atlantic 1-17**-2013 [“Reform Immigration, but Don't Create Second-Class Non-Citizens” <http://www.theatlantic.com/politics/archive/2013/01/reform-immigration-but-dont-create-second-class-non-citizens/267277/>]

Immigration still divides the Republican Party. Its restrictionist wing occasionally gets riled up and flexes its muscles, inspiring politicians like Joe Arpaio and Tom Tancredo to seize upon the issue. But the fervor always dies down, advisers like Karl Rove reassert the importance of the Hispanic vote, and presidential aspirants -- George W. Bush and John McCain during the aughts, Marco Rubio and Paul Ryan today -- start talking about "comprehensive immigration reform," a term also embraced by liberals looking for a bipartisan deal. The business community would get a guest-worker program. Illegal immigrants would get a "path to citizenship." Restrictionists would theoretically get better border enforcement than there is today.¶ It isn't a deal that I like. ¶ I'm all for more legal immigration, especially for highly skilled workers, and I want people who sneaked into the United States, worked or studied, and committed no crimes to get citizenship. ¶ But a guest-worker program? ¶ I'd rather permit more new citizens to come here permanently, as prospective citizens, than to institutionalize a sort of second-class non-citizenship that treats people as labor. I am here today, along with most of the restrictionists in America, because the legislators of bygone decades permitted waves of immigrants to come here legally (and not as guest workers, either -- as full citizens). When I read deep into New York City history about the crowded tenements, street gangs, ethnic machine politics, and disease outbreaks associated with the waves of European immigration, and then hear people who are far less affected complaining bitterly today about (and this is a thing) having to press one for English, I wonder, as the tiniest violins play, if they ever stop to reflect that they wouldn't be here if bygone generations were as restrictionist as they are. ¶ That isn't to say that immigration today, legal and illegal, doesn't have costs in addition to its benefits. For example, it makes economic competition tougher for Americans without high-school diplomas. There are still immigrant gangs. And kids who grow up in non-English-speaking homes impose higher costs on public schools. I feel for Americans who are made worse off as a result, but they were lucky enough to be born in one of the world's richest countries, and the fact that immigration makes them a bit worse off isn't a reason to stop it given that (1) it makes many Americans better off and (2) it makes the immigrants themselves a lot better off. ¶ Crime is down. And while it's tough to face increased wage competition in America, it's not nearly so tough as knowing that your family is unable to escape a country that'll consign you and your children to suffering and poverty. ¶ So anyway, Rubio and Ryan are speaking up in favor of "comprehensive immigration reform," and Mark Krikorian, National Review's resident restrictionist, doesn't like it. This is partly because he doesn't believe the "tougher border enforcement" piece of the compromise is actually going to happen. Well, let's be honest, he's probably right -- I don't think immigration enforcement is likely to get much better than it is now. And yet he is wrong, too. Here's how he puts it:¶ There's one central question that Rubio and Ryan need to be asked: Do they trust President Obama to enforce the immigration laws in the future, after today's illegals have been legalized? If they answer "yes," then they need to explain why they think he'd suddenly become committed to enforcement after four years of downgrading immigration law enforcement, and more generally acting as though the U.S. Code were a body of suggestions rather than laws. ¶ This is written as if Obama has been an especially unreliable president on border enforcement. As best I can tell, that isn't true. Here's how Politifact sums up his tenure thus far: ¶ According to current figures from Immigration and Customs Enforcement -- the federal agency responsible for deportations -- Obama has removed 1.4 million people during his 42 months in office so far. Technically, that's fewer than under George W. Bush, whose cumulative total was 2 million. But Bush's number covers eight full years, which doesn't allow an apples-to-apples comparison. If you instead compare the two presidents' monthly averages, it works out to 32,886 for Obama and 20,964 for Bush, putting Obama clearly in the lead. Bill Clinton is far behind with 869,676 total and 9,059 per month. All previous occupants of the White House going back to 1892 fell well short of the level of the three most recent presidents.¶ In what sense has Obama presided over "four years of downgrading immigration law enforcement"? It's Obama's record-breaking deportations that make me think restrictionists have nothing to gain from "comprehensive immigration reform." The "amnesty for tougher enforcement" compromise doesn't make sense if you're someone for whom tougher enforcement is the draw. Personally, I think you'd substantially decrease both human misery and the pathologies associated with "living in the shadows" if a "path to citizenship" were passed. Krikorian won't go along with that because he's worried it'll lead to "another 11 million illegal aliens a few years down the road." Given economic conditions in the U.S. and Mexico, which I take to be the main factors influencing immigration, I doubt he's right. We ought to be able to pass an immigration-reform bill that improves on the status quo.¶ Restrictionists can take solace in the fact that if amnesty happens, there might not be more immigrants, just fewer people breaking the law. Or maybe they'll manage to get riled up as in years past and stop "comprehensive reform." But I doubt Rubio and Ryan are betting on the side that winds up losing this fight.

### Hirsch

PC key to force a vote

Ronald Brownstein, National Jouranl, 1/31/13, On Immigration, What Obama Can Learn From Bush's Failed Efforts, www.nationaljournal.com/columns/political-connections/on-immigration-what-obama-can-learn-from-bush-s-failed-efforts-20130131

The prospects for major immigration reform are now the brightest in years, but for key players in Washington, a shadow still looms: the ghost of 2006. That was the last time the stars were aligned for a breakthrough. Immigration reform that included a path to citizenship for those in the United States illegally had the support of President Bush, a broad labor-business-faith coalition, and a bipartisan Senate majority. Yet that armada ultimately splintered against the stony refusal of House Republican leaders to consider a bill opposed by a majority of their majority. Any of that sound familiar? Already many of the same dynamics are developing, with President Obama stamping immigration reform as a top priority, a bipartisan Senate coalition reassembling, a broad outside alliance of support groups coalescing—and most House Republicans rejecting anything that hints at “amnesty” for illegal immigrants. Yet the contrasts between now and 2006, particularly in the political climate, are also significant. Understanding both the similarities and the differences will be critical for reform advocates if they are to avoid replicating the disappointment they suffered under Bush. Presidential interest was then, as it is now, critical in elevating immigration reform. Since his days as Texas governor, Bush had courted Hispanics, and—even during the 2000 GOP presidential primary campaign—he strikingly defended illegal immigrants as “moms and dads” trying to make a better life for their children. Together with his political “architect,” Karl Rove, Bush saw comprehensive reform that coupled a path to citizenship with tougher enforcement as an opportunity to consolidate the beachhead that allowed him to capture more than 40 percent of Hispanic voters in his 2004 reelection. But Bush largely looked away when Republicans who controlled the House channeled that impulse in a very different direction. In December 2005, they passed an enforcement-only bill drafted by Judiciary Committee Chairman Jim Sensenbrenner of Wisconsin, that, for the first time, designated all undocumented immigrants as felons. (Previously, illegal presence in the U.S. had been a civil, not criminal, violation.) Initially, debate in the GOP-controlled Senate drifted. Majority Leader Bill Frist, considering a 2008 presidential bid, pushed his own enforcement-only bill. But amid the backdrop of huge public rallies against Sensenbrenner’s proposal, Sen. Arlen Specter unexpectedly joined with three other Republicans and all eight Judiciary Committee Democrats in late March to approve a comprehensive plan, including a path to citizenship, that followed a blueprint negotiated by Sens. Edward Kennedy and John McCain. When broader Senate agreement teetered over the terms of legalization, Republican Sens. Chuck Hagel and Mel Martinez devised a compromise that divided illegal immigrants into three categories, requiring those here less than two years to leave but allowing those with deeper roots to eventually earn citizenship by paying fines and learning English. After Bush finally delivered a national address on immigration, a bill embodying that plan cleared the Senate with 62 votes, including support from 23 Republicans. House Republicans immediately signaled their disinterest by refusing to appoint a conference committee and instead scheduled hearings in border communities to highlight security lapses. “Border security reigned supreme,” recalls Ron Bonjean, the communications director for then-Speaker Dennis Hastert. “I remember being in a meeting with … the leadership where pollsters came in and said border security was the key to our reelection.” Even in 2006, something like the Senate plan likely could have attracted 218 votes in the House—but not a majority of Republicans. Faced with a collision between his two political imperatives—courting Hispanics and mobilizing conservatives—Bush blinked, allowing House leaders to replace the Senate bill with enforcement-only legislation, which he signed that fall. These choices began the GOP’s slide among Hispanics that continues unabated: Hispanic support for Republican House candidates plummeted from 44 percent in 2004 to just 29 percent in 2006, presaging Mitt Romney’s disastrous 27 percent showing among those voters in 2012. That slippage is one of the two most important differences in the political environment around immigration between 2006 and today. Back then, as Bonjean notes, hardly any House Republicans argued that the GOP needed to pass a plan attractive to minorities. But many GOP leaders now see that as self-preservation. “The political imperative has shifted the tectonic plates,” says Frank Sharry, a key player in the 2006 debate who remains central as executive director of America’s Voice, which backs full citizenship for immigrants. “Immigration was viewed as a wedge issue for Republicans in 2006. Now it’s viewed as a wedge issue for Democrats.” The “Gang of Eight” proposal released this week makes it likely that, as in 2006, the Senate will eventually pass a bipartisan immigration bill. Once again, there are probably 218 House votes for such a plan, but not a majority of the majority Republicans. That raises another key difference from 2006: Hastert faced little pressure to consider the Senate bill, because Bush bit his tongue when the speaker buried it. If House Republicans shelve another bipartisan Senate plan in 2013, they should expect much more public heat, because Obama won’t be as deferential.

And momentum

Bill Keller, NYTimes, 2/3/13, Selling Amnesty, www.nytimes.com/2013/02/04/opinion/keller-selling-amnesty.html?pagewanted=print

The good news is that the anti-immigration side has no lobbying equivalent of the National Rifle Association, no group with its hands so firmly on the throats of Congress that it can override public opinion. But the bill will face a reservoir of popular fear, resentment and misunderstanding. President Obama and the indefatigable Senator Charles Schumer will work the Democratic constituencies and rally public support, but the hard sell is up to a few key Republicans who understand that this is their party’s best hope of redemption with the surging Latino electorate. So far the most effective antidote to right-wing opposition has been Senator Rubio. In the days after the Gang of Eight unveiled its proposal the Floridian made the rounds of the shouting heads on the conservative media circuit, arguing the case. By the time Rubio was done, Rush Limbaugh was unconvinced but muted, and Sean Hannity, who announced after the November election that he had “evolved” on the issue, was calling it “the most thoughtful proposal that I’ve heard.” Karl Rove, another Fox talker, who tried unsuccessfully to sell immigration reform when he was President George W. Bush’s right arm, called the Senate principles “a huge step forward.” Fox pundits, perhaps mindful that their owner, Rupert Murdoch, recently came out for a path to citizenship, have avoided using the A-word to describe the latest proposals. Rubio could bolster the case for legalizing undocumented immigrants by making more of the economics. My conservative colleague David Brooks has spelled out the rosiest economic case for increased immigration, including legalization of the undocumented. I would add a point made by Gordon Hanson, who studies immigration economics at the University of California, San Diego. Hanson points out that giving the 11 million undocumented immigrants provisional legal status would greatly improve the odds that their children would become educated, productive, taxpaying members of society rather than drains on the economy. Supporters of reform are moving with unusual speed, hoping to build up momentum that will carry over to the House. They aim to get a bill through the Senate this summer, leaving much of 2013 for the House to act before representatives are completely immersed in midterm electoral politics.

Obama capital key to lobbying pressure—it’s empirically successful

David Nakamura, WaPo, 2/4/13, Obama to meet with labor, business leaders on immigration, www.washingtonpost.com/blogs/post-politics/wp/2013/02/04/obama-to-meet-with-labor-business-leaders-on-immigration/?wprss=rss\_politics

President Obama will meet separately Tuesday with labor and business leaders on immigration reform, as the White House seeks to enlist the often at-odds interest groups in a common push toward a comprehensive legislative package. Obama has invited 16 labor and progressive leaders, including the heads of the AFL-CIO and NAACP, to the White House at 11 a.m., and a dozen big business chief executives, including the heads of Coca Cola, Goldman Sachs and Yahoo, at 3:20 p.m. The president “will continue his dialogue with outside leaders on a number of issues – including immigration reform and how it fits into his broader economic agenda, and his efforts to achieve balanced deficit reduction,” the White House announced. The lobbying strategy is similar to the script Obama followed in the recent negotiations over the fiscal cliff, when he also met with labor and business groups. The White House believes that increasing pressure on Congress from different interest groups with large networks outside Washington will help Obama in his pursuit of an ambitious second-term agenda, including stricter gun-control laws and immigration reform.

Hirsch agrees

Michael Hirsh, National Journal, 2/7/13, There’s No Such Thing as Political Capital, 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.”

### Agency

Yes blame

Cox and Rodriguez ‘9 – \* Professor of Law, University of Chicago Law School AND \*\* Professor of Law, New York University School of Law (ADAM B. COX AND CRISTINA M. RODRIGUEZ, December, “The President and Immigration Law”, 119 Yale L.J. 458, Lexis Law, dheidt)

Two routes to more formalized Presidential power over ex ante screening could be pursued: a claim of inherent executive authority on the one hand, and direct congressional delegation on the other. With respect to the first theory, one could imagine that a proactive Executive with an interest in reducing its enforcement costs, as well as in shifting the illegal population into legal status, might seek recourse in its inherent executive authority over immigration, much as Presidents Roosevelt and Truman seized the initiative in addressing farm worker shortages during and immediately after World War II. Though the question of inherent authority has never been definitely resolved, we are fairly confident that this option would not be viable in the contemporary political environment. The assertion of inherent authority would be too disruptive to the conventions that have evolved over time regarding Congress's leadership in this arena (and in administrative law generally). Indeed, even when he was riding high politically between 2002 and 2004, it did not occur to President Bush to propose publicly a large-scale guest worker program without congressional authorization. n265

EVEN if the agency is in charge of the energy’s product – Obama is still involved in the initial process

Agencies link to politics

Thomas McGarity, Endowed Chair in Administrative Law, University of Texas School of Law, May 2012, ARTICLE: ADMINISTRATIVE LAW AS BLOOD SPORT: POLICY EROSION IN A HIGHLY PARTISAN AGE, 61 Duke L.J. 1671

The interchange-fee rulemaking experience illustrates how stakeholders in high-stakes rulemakings have begun going beyond the conventional responses to rulemaking initiatives by adopting a new toolbox of strategies better suited to the deeply divided political economy. If the players on one side of the policy debate perceive that they are unlikely to prevail in the administrative arena, they will move the implementation game to another arena - the White House, a congressional hearing, a political fundraising dinner, a think-tank white paper, talk-radio programs, attack advertising, telephone solicitation and "push polls," or Internet blogs. Many of these new venues were amply used in the battle that accompanied the interchange-fee rulemaking. In addition, although lawyers for the stakeholders employ the careful language of administrative law in arenas in which that language is expected, spokespersons and allies also employ the heated rhetoric of modern political discourse in arenas in which that language is more likely to succeed. This Part probes these, among other, contours of blood-sport rulemaking.

Best studies prove

Thomas McGarity, Endowed Chair in Administrative Law, University of Texas School of Law, May 2012, ARTICLE: ADMINISTRATIVE LAW AS BLOOD SPORT: POLICY EROSION IN A HIGHLY PARTISAN AGE, 61 Duke L.J. 1671

In this Article, I raise the possibility that the nation has entered a period in which the population is so deeply divided about the proper role of government, regulated industries are so willing to spend millions of dollars to vindicate their interests, and political discourse is so unrestrained that an even more expansive model of implementation may be warranted, at least in the context of high-stakes rulemaking initiatives. n23 First, the implementation game has spread to arenas that are far less structured and far more political than the agency hearing rooms and appellate courtrooms of the past. Second, the roster of players has expanded beyond agency and OIRA staffs, advocates for the regulated industry and beneficiary groups, and congressional aides to include individuals and organizations with broad policy agendas, such as the U.S. Chamber of Commerce, think tanks, grassroots organizations, media pundits, and Internet bloggers. Third, because many parties play the implementation game in multiple arenas, the game has become far more strategic and the range of allowable tactics has widened rather dramatically. Finally, in this deeply divided political economy, the players in the implementation game no longer make a pretense of separation between the domains of politics and administrative law, and they are far less restrained in the rhetoric they employ to influence agency policymaking. n24

In this new milieu, "winning" can mean more than compelling unreasonable delays in agency action, invoking APA procedures to impede the policymaking process, or persuading the agency to accept a particular position on the relevant law and facts. Winning can consist of extracting promises from nominees during the confirmation process, preventing the confirmation of disfavored nominees, or preventing the confirmation of any agency leaders until the administration has agreed to change the agency's decisionmaking structure. Winning can also mean incapacitating the agency by reducing its annual appropriation, repealing the agency's organic act, or whittling away its regulatory authority through rifle-shot riders attached to must-pass legislation. n25 The players are less reluctant to attack agencies and the statutes those agencies administer head on. The players launch their attacks much earlier in the evolution of regulatory programs, and they feel free to go beyond attacks on the agencies as institutions to launch ad hominem attacks on agency decisionmakers. In short, I raise the possibility that, for some high-stakes rulemaking initiatives in some areas of regulation, implementation is not so much "politics by other means" as it is "politics as usual." And because politics is so very different from the deliberative, lawyer-dominated domain of traditional administrative law, the word "law" may no longer be an accurate descriptor. Former U.S. [\*1681] Securities and Exchange Commission (SEC) Chairman Arthur Levitt referred in 2010 to federal regulation as a "kind of a blood sport" in which the regulated industries attempt "to make the particular agency" promulgating an unwelcome regulation "look stupid or inept or venal." n27 If the implementation of regulatory statutes has become a blood sport in important contexts, and if the goal of administrative law extends beyond ensuring procedural regularity to a concern about the effective implementation of legislation, then it would behoove administrative-law scholars to pay attention to the larger setting in which informal rulemaking now takes place and to begin thinking about the implications of these developments for the field.

### Unfocused

Will pass – bipartisan house committee

Berman 2/22 (Russell, The Hill, “Bipartisan House Immigration Group reports “Incredible Progress,” http://thehill.com/homenews/house/284409-house-immigration-group-reports-incredible-progress)

A bipartisan House group is making “really good progress” on immigration reform legislation despite missing a target date for an agreement, a top Republican participant said.¶ “I am now more sure than ever that we’re going to have a bipartisan bill,” a longtime advocate of comprehensive reform, Rep. Mario Diaz-Balart (R-Fla.), said in an interview. “We’re making incredible progress.”¶ Diaz-Balart is a member of a House group that includes more than a half dozen liberal and conservative lawmakers who have been working for years behind closed doors on an immigration overhaul. As talks accelerated in recent months, people involved in the effort said the group had hoped to announce an agreement around President Obama’s State of the Union address.¶ That date came and went, and now aides say that while the talks are ongoing, participants are not setting a deadline or target date for releasing legislation.¶ “There is no timetable. There is no target. There is no expiration date,” a House Democratic aide said.¶ Diaz-Balart said that the group hoped to unveil a bill soon but, as would be expected with any sensitive effort of this magnitude, lawmakers do not want to go public prematurely. Members are also wary of setting target dates out of the fear that if they are missed, it will send a signal that talks have stalled.¶ Diaz Balart would not discuss details of the group’s deliberations but said there are “still a couple of sticking points.”¶ A light legislative schedule in Washington has slowed face-to-face meetings of the group in recent weeks, but the hope is that the pace will quicken when the House is in session more frequently in March.

### Overshoot

Empirically denied—immigration’s been surging for decades.

Rector 2006 - Senior Research Fellow in Domestic Policy Studies at the Heritage Foundation, master's degree in political science from Johns Hopkins (5/12, Robert, "Amnesty and Continued Low Skill Immigration Will Substantially Raise Welfare Costs and Poverty", http://www.heritage.org/research/immigration/bg1936.cfm, WEA)

Current Trends in Immigration

Over the last 40 years, immigration into the United States has surged. Our nation is now experiencing a second “great migration” similar to the great waves of immigrants that transformed America in the late 19th and early 20th centuries. In 2004, an estimated 35.7 million foreign-born per sons lived in the U.S. While in 1970 one person in twenty was foreign born, by 2004 the number had risen to one in eight. About one-third of all foreign-born persons in the U.S. are illegal aliens. There are between 10 and 12 million illegal aliens currently living in the U.S.[1] Illegal aliens now comprise 3 to 4 percent of the total U.S. population. Each year approximately 1.3 million new immigrants enter the U.S.[2] Some 700,000 of these entrants are illegal.[3]

No Link-most immigrants affected are already living in the US

Susan Martin ‘06-Director, Institute for the Study of International Migration at Georgetown University “US Employment-Based Admissions: Permanent and Temporary.” <http://www.migrationpolicy.org/ITFIAF/PB\_15\_1.06.pdf>

Because the US system is employer/employee driven and a job offer is essential, most of those admitted to permanent residence in the employment-based categories are already in the United States. Due to delays in labor certification, employers tend to use temporary visa categories to bridge the gap between the decision to hire the worker and the government’s grant of permanent resident status. As a result, the recruitment process required by labor certification rules is often a farce, the employer having already hired the foreign worker.

Institutional barriers check flooding.

Leech &Greenwood ’10. Seth R. Leech & Emma Greenwood ‘10 Leech-Partner with Whiteman Osterman & Hanna LLP and is a member of the Firm’s Immigration and International Trade and Business Practice Groups and adjunct professor of immigration law at Albany Law School. Greenwood-Graduate of the law program at Oxford University in the United Kingdom. “Keeping America Competitive: A Proposal to Eliminate the Employment-Based Immigrant Visa Quota.” Albany Law Review Vol. 3 2010. http://www.albanygovernmentlawreview.org/files/Spring\_Book\_Leech.pdf MG

It is widely believed that the current American EB immigration system is broken. The system unnecessarily provides major hurdles to those immigrants that America needs most to remain globally competitive and maintain or regain a robust economy. Chief among these hurdles is the annual cap on the number of EB green cards. The cap is an artificial and unnecessary restraint on EB immigrants and is now severely outdated—not having been changed in nearly two decades. These two decades have seen a rapid expansion in both the U.S. economy and American population, and the quota of 140,000 imposed two decades ago no longer satisfies America’s needs. Floodgate arguments are irrelevant in the EB immigrant visa context because both the law and the economy put numerous checks, beyond the immigrant visa quotas, on EB immigrants. The PERM labor certification system, the primary means of EB immigration, provides substantial protections to the American workforce. The PERM system requires that employers demonstrate that there are no minimally qualified

American workers available before certifying a foreign worker for immigration. In this way, PERM acts as a filter to ensure that only those that meet a specific labor need are allowed to immigrate. The labor certification system exempts immigrant visa categories for aliens of Extraordinary Ability, Multinational Managers, Outstanding Researchers, and those whose presence is in America’s national interest. The certification system allows only those who meet very strictly enforced standards and those who are presumed to be of benefit to the country, to immigrate permanently.The current category-based system filters in only those who will contribute to the U.S. economy. Because of the strict standards embedded in the EB immigrant categories, the caps are redundant.