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#### Interpretation – Financial incentives reduce producer costs – that’s distinct from creating more a favorable market

Benson 7 – J.D, University of Iowa (Christine C., Winter, “STUDENT NOTE: Putting Your Money Where Your Mouth Is: The Varied Success of Biofuel Incentive Policies in the United States and the European Union”, 16 Transnat'l L. & Contemp. Probs. 633, Lexis Law)

There are two main ways a government can promote an industry requiring support to survive and prosper. A government may use financial incentives to reduce costs to the industry at one or several points in the chain of production. n139 A government may also use regulatory mandates to impose a minimum usage requirement for certain products produced by the industry. n140

Both the United States and the EU have implemented mandates in regard to biofuels. n141 Mandates are structured goals that a government lays out for an industry to accomplish, and a government usually provides a date by which those goals should be met. n142 Mandates allow a government to define and promote a structured policy, and financial incentives provide the [\*650] means of assistance for implementing that policy. n143 Therefore, mandates are usually accompanied by some type of financial incentive. n144

Financial incentives take many forms. Loans, grants, production payments, tax credits or deductions, and tax exemptions all provide some type of financial assistance. n145 Loans and grants generally promote the development of an industry's infrastructure, research, and development. n146 Tax incentives are generally more focused on promoting long-term production of a product. n147 This Note focuses only on tax incentives, not loan and grant programs, for biofuels in the United States and the EU.

#### Violation – FIT’s are not a financial incentive – only indirectly create a better market

Joanna Lewis and Ryan Wiser – Gtown STIA Prof / LAWRENCE BERKELEY NATIONAL LABORATORY – November 2005, Fostering a Renewable Energy Technology Industry: An International Comparison of Wind Industry Policy Support Mechanisms, http://eetd.lbl.gov/ea/emp/reports/59116.pdf

Policy measures to support wind industry development can be grouped into two

categories: direct and indirect measures. Direct measures refer to policies that specifically target¶ local wind manufacturing industry development, while indirect measures are policies that support¶ wind power utilization in general and therefore indirectly create an environment suitable for a¶ local wind manufacturing industry (by creating sizable, stable markets for wind power). The¶ discussion that follows covers both of these types of measures, and is a summary of the more¶ detailed country case studies provided in Lewis and Wiser (2005).¶ 4.1. Direct Support Mechanisms¶ Policies that directly support local wind turbine or components manufacturers can be¶ crucial in countries where barriers to entry are high and competition with international leaders is¶ difficult. A variety of policy options exist to directly support local wind power technology¶ manufacturing, and several policy options have proven effective, as demonstrated in a number of¶ countries (Table 4). These various policy mechanisms do not all target the same goal; some¶ provide blanket support for both international and domestic companies to manufacture locally,¶ while others provide differential support to domestically-owned wind turbine or components¶ manufacturers. Most countries have employed a mix of the following policy tools.¶ Local Content Requirements¶ The most direct way to promote the development of a local wind manufacturing industry¶ is by requiring the use of locally manufactured technology in domestic wind turbine projects. A¶ common form of this policy mandates a certain percentage of local content for wind turbine¶ systems installed in some or all projects within a country. Such policies force wind companies¶ interested in selling to a domestic market to look for ways to shift their manufacturing base to that¶ country or to outsource components used in their turbines to domestic companies. Unless the¶ mandate is specifically targeted to domestically owned companies, it will have the blanket effect¶ of encouraging local manufacturing regardless of company nationality.¶ Local content requirements are currently being used in the wind markets of Spain, Canada,¶ Brazil and China. Spanish government agencies have long mandated the incorporation of local¶ content in wind turbines installed on Spanish soil; the creation of Gamesa in 1995 can be traced in¶ part to these policies. Even today, local content requirements are still being demanded by several¶ of Spain’s autonomous regional governments that “see local wealth in the wind”—in Navarra¶ alone, it is estimated that its 700 MW of wind power has created 4000 jobs (WPM, October¶ 2004:45). Other regions, including Castile and Leon, Galicia and Valencia, insist on local¶ assembly and manufacture of turbines and components before granting development concessions¶ (WPM, October 2004:6). The Spanish government has clearly played a pro-active role in kickstarting¶ a domestic wind industry, and the success of Gamesa and other manufacturers is very¶ likely related to these policies.¶ At least one provincial government in Canada—Quebec—is pursuing aggressive local¶ content requirements in conjunction with wind farms developed in its region. In May 2003,¶ Hydro-Quebec issued a call for tenders for 1000 MW of wind for delivery between 2006 and¶ 2012 which included a local content requirement; this 1000 MW call was twice the size initially¶ planned by the utility, but it was doubled by the Quebec government with the hope of contributing¶ to the economic revival of the Gaspe Peninsula (WPM, May 2003:35; WPM, April 2004:41). The¶ government also insisted that Quebec’s wind power development support the creation of a true¶ provincial industry that included local manufacturing and job creation by requiring that 40% of¶ the total cost of the first 200 MW be spent in the region—a proportion that rises to 50% for the¶ next 100 MW and 60% for the remaining 700 MW (WPM, May 2003:35; April 2004:41). In¶ addition, the government stipulated that the turbine nacelles be assembled in the region, and that¶ project developers include in their project bidding documents a statement from a turbine¶ manufacturer guaranteeing that it will set up assembly facilities in the region (WPM, May¶ 2003:35). GE was selected to provide the turbines for a total of 990 MW of proposed projects¶ upon its agreement to meet a 60% local content requirement, and is currently establishing three¶ manufacturing facilities in Canada (WPM, June 2005:36). In October 2005, another call for¶ tenders was released, this time for 2000 MW to be installed between 2009-2013. This call¶ requires that 30% of the cost of the equipment must be spent in the Gaspe region and 60% of the¶ entire project costs must be spent within Quebec Province (Hydro-Quebec, 2005).¶ The Brazilian government has also pursued policies governing wind farm development¶ that include stringent local content requirements, primarily through the recent Proinfa legislation¶ (the Incentive Program for Alternative Electric Generation Sources) that offers fixed-price¶ electricity purchase contracts to selected wind projects. Starting in January 2005, the Proinfa¶ legislation requires 60% of the total cost of wind plant goods and services to be sourced in Brazil;¶ only companies that can prove their ability to meet these targets can take part in the project¶ selection process. In addition, from 2007 onwards, this percentage increases to 90% (Cavaliero¶ and DaSilva, 2005).¶ China has also been using local content requirements in a variety of policy forms. China’s¶ 1997 “Ride the Wind Program” established two Sino-foreign joint venture enterprises to¶ domestically manufacture wind turbines; the turbines manufactured by these enterprises under¶ technology transfer arrangements started with a 20 percent local content requirement and a goal of¶ an increase to 80 percent as learning on the Chinese side progressed (Lew, 2000). China’s recent¶ large government wind tenders, referred to as wind concessions, have a local content requirement¶ that has been increased to 70% from an initial 50% requirement when the concession program¶ began in 2003. Local content is also required to obtain approval of most other wind projects in the¶ country, with the requirement recently increased from 40% to 70%.¶ Local content requirements require a large market size in order to lure foreign firms to¶ undertake the significant investments required in local manufacturing. If the market is not¶ sufficiently sizable or stable, or if the local content requirements are too stringent, then the¶ advantages of attracting local manufacturing may be offset by the higher cost of wind equipment¶ that results. Some concerns of this nature have already been raised in Brazil, where only one¶ wind turbine manufacturer appears currently able to meet the local content requirements. The¶ potential negative impact of local content requirements on turbine costs has also been raised in¶ Canada and China. These experiences suggest that local content requirements can work, but¶ should generally be applied in a gradual, staged fashion and only in markets with sufficient¶ market potential.¶ Financial and Tax Incentives¶ Preference for local content and local manufacturing can also be encouraged without being¶ mandated through the use of both financial and tax incentives. Financial incentives may include¶ awarding developers that select turbines made locally with low-interest loans for project¶ financing, or providing financial subsidies to wind power generated with locally-made turbines.¶ Tax incentives can be used to encourage local companies to get involved in the wind industry¶ through, for example, tax credits or deductions for investments in wind power technology¶ manufacturing or research and development. Alternatively, a reduction in sales, value-added-tax¶ (VAT), or income tax for buyers or sellers of domestic wind turbine technology (or production)¶ can increase the competitiveness of domestic manufacturers. In addition, a tax deduction could be¶ permitted for labor costs within the local wind industry. Tax or financial incentives can also be¶ applied to certain company types, such as joint ventures between foreign and local companies, in¶ order to promote international cooperation and technology transfer in the wind industry, and to¶ specifically encourage some local ownership of wind turbine manufacturing facilities.¶ Germany’s 100MW/250MW program provided a 10-year federal generation subsidy for¶ projects that helped to raise the technical standard of German wind technology, and over twothirds¶ of the total project funding for this subsidy went to projects using German-built turbines¶ (Johnson and Jacobsson, 2003). Regional support for German industrial efforts with a bias¶ towards local wind manufacturers have been reported as well (Connor, 2004). A further German¶ policy that may have preferentially supported German turbine technology was the large-scale¶ provision of “soft” loans (loans that are available significantly below market rates) for German¶ wind energy projects.¶ Canada has implemented a tax credit on wages paid out to local labor forces in an attempt¶ to encourage large wind turbine manufacturers to shift jobs to Canada. To provide a further¶ incentive for local manufacturing, a Quebec provincial government program also offers a 40% tax¶ credit on labor costs to wind industries located in the region, and a tax exemption for the entire¶ manufacturing sector through 2010 (WPM, June 2003:40). Spain’s production tax credit on windpowered¶ electricity (supplemented by incentives offered in at least one province) is granted only¶ to turbines that meet local content requirements (WPM, February 2001:20). In India, the excise¶ duty is exempted for parts used in the manufacture of electric generators (Rajsekhar et al., 1999).¶ Australia (at the national and provincial levels), China, and a number of US states have also¶ employed a variety of different tax incentives to encourage localization of wind manufacturing.¶ China provides a reduced VAT on joint venture wind companies to encourage technology¶ transfer (NREL, 2004). China has also used financial incentives to promote domestic wind¶ industry development since its 1997 “Ride the Wind Program,” which allocated new technology¶ funds to two government-facilitated joint venture enterprises to domestically manufacture wind¶ turbines. The Danish Government’s Wind Turbine Guarantee also offered long-term financing of¶ large projects using Danish-made turbines and guaranteed the loans for those projects,¶ significantly reducing the risk involved in selecting Danish turbines for a wind plant.¶ Favorable Customs Duties¶ Another way to create incentives for local manufacturing is through the manipulation of¶ customs duties to favor the import of turbine components over the import of entire turbines. This¶ creates a favorable market for firms (regardless of ownership structure) trying to manufacture or¶ assemble wind turbines domestically by allowing them to pay a lower customs duty to import¶ components than companies that are importing full, foreign-manufactured turbines. Customs¶ duties that support local turbine manufacturing by favoring the import of components over full¶ turbines have been used in Denmark, Germany, Australia, India, and China (Rajsekhar et al.,¶ 1999; Liu et al., 2002). This type of policy may be challenged in the future, however, as it could¶ be seen to create a trade barrier and therefore be illegal for WTO member countries to use against¶ other member countries.¶ Export Credit Assistance¶ Governments can support the expansion of domestic wind power industries operating in¶ overseas markets through export credit assistance, thereby providing differential support to¶ locally-owned manufacturers. Though such assistance may also come under WTO’s fire, export¶ assistance can be in the form of low-interest loans or “tied-aid” given from the country where the¶ turbine manufacturer is based to countries purchasing technology from that country. Export credit¶ assistance or development aid loans tied to the use of domestic wind power technology have been¶ used by many countries, but most extensively by Germany and Denmark, encouraging the¶ dissemination of Danish and German technology, particularly in the developing world. For¶ example, the Danish International Development Agency (DANIDA) has offered direct grants and¶ project development loans to qualified importing countries for use of Danish turbines.¶ Quality Certification¶ A fundamental way to promote the quality and credibility of an emerging wind power¶ company’s turbines is through participation in a certification and testing program that meets¶ international standards. There are currently several international standards for wind turbines in¶ use, the most common being the Danish approval system and ISO 9000 certification. Standards¶ help to build consumer confidence in an otherwise unfamiliar product, help with differentiation¶ between superior and inferior products and, if internationally recognizable, are often vital to¶ success in a global market. Denmark was the first country to promote aggressive quality¶ certification and standardization programs in wind turbine technology and is still a world leader in¶ this field; quality certification and standardization programs have since been used in Denmark,¶ Germany, Japan, India, the USA, and elsewhere, and are under development in China. They were¶ particularly valuable to Denmark in the early era of industry development when they essentially¶ mandated the use of Danish-manufactured turbines, since stringent regulations on turbines that¶ could be installed in Denmark made it very difficult for outside manufacturers to enter the market.¶ Research and Development (R&D)¶ Many studies have shown that sustained public research support for wind turbines can be¶ crucial to the success of a domestic wind industry, and such efforts can and typically do¶ differentially support locally owned companies. R&D has often been found to be most effective¶ when there is some degree of coordination between private wind companies and public¶ institutions like national laboratories and universities (Sawin, 2001; Kamp, 2002). For wind¶ turbine technology, demonstration and commercialization programs in particular can play a¶ crucial role in testing the performance and reliability of new domestic wind technology before¶ those turbines go into commercial production.¶ R&D funding has been allocated to wind turbine technology development by every¶ country mentioned in this paper, with the success of R&D programs for wind technology¶ seemingly more related to how the funding was directed than the total quantity of funding.¶ Although the US has put more money into wind power R&D than any other country, for example,¶ an early emphasis on multi-megawatt turbines and funding directed into the aerospace industry¶ are thought (in retrospect) to have rendered US funding less effective in the early years of¶ industry development than the Danish program (the same has been said about early German and¶ Dutch R&D programs). Denmark’s R&D budget, although smaller in magnitude than some other¶ countries, is thought to have been allocated more effectively among smaller wind companies¶ developing varied sizes and designs of turbines in the initial years of industry development¶ (Sawin, 2001; Kamp, 2002).¶ 4.2. Indirect Support Mechanisms¶ Earlier we demonstrated that success in a domestic market may be an essential foundation¶ for success in the international marketplace, and that fundamental to growing a domestic wind¶ manufacturing industry is a stable and sizable domestic market for wind power. Achieving a¶ sizable, stable local market requires aggressive implementation of wind power support policies.¶ The policies discussed below aim to create a demand for wind power at the domestic level.¶ Feed-in Tariffs¶ Feed-in tariffs, or fixed prices for wind power set to encourage development (Lauber,¶ 2004; Rowlands, 2005; Sijm, 2002; Cerveny and Resch, 1998), have historically offered the most¶ successful foundation for domestic wind manufacturing, as they can most directly provide a stable¶ and profitable market in which to develop wind projects. The level of tariff and its design¶ characteristics vary among countries. If well designed, including a long term reach and sufficient¶ profit margin, feed-in tariffs have been shown to be extremely valuable in creating a signal of¶ future market stability to wind farm investors and firms looking to invest in long-term wind¶ technology innovation (Sawin, 2001; Hvelplund, 2001). As discussed earlier, Germany, Denmark¶ and Spain have been the most successful countries at creating sizable, stable markets for wind¶ power; all three of these countries also have a history of stable and profitable feed-in tariff¶ policies to promote wind power development. The early US wind industry was also supported by¶ a feed-in tariff in the state of California, though this policy was not stable for a lengthy period. ¶ Among the twelve countries emphasized in this paper, the Netherlands, Japan, Brazil, and some¶ of the Indian and Chinese provinces have also experimented with feed-in tariffs, with varying¶ levels of success.7

#### Vote Neg:

#### Predictable Limits – We added a qualifier to the word “incentive” precisely because it was too broad – Including non-financial incentives explodes the topic by several new ways of doing every aff. Prefer our interpretation because it creates a clear, predictable line between incentives that change production costs per unit and mandates that increase overall demand.

#### Ground – Testing the “financial” in financial incentive is core neg CP and solvency ground – using a non-financial mechanism guts DA links too because the way voters and markets react to subsidies and tax breaks is substantially different than to a minor change in what the government decides to buy.

### 1NC PTX

#### Immigration reform likely --- Senate will quickly move first

Milani, 2/8 (Kate, 2/8/2013, Dow Jones News Service, “WSJ BLOG: White House Expects Broad Immigration Bill,” Factiva))

The White House point woman on immigration, Cecilia Muñoz, predicted a comprehensive overhaul would pass this year, and said she expects the Senate to move quickly on legislation now in the works.The director of the White House's Domestic Policy Council, speaking to David Wessel on WSJ.com's weekly Seib & Wessel video show, said this year is different than past, unsuccessful attempts because a broad swath of constituencies back reform and there is already consensus between the White House and Congress over major policy points. The president would like the Senate move forward with an immigration bill in the next four weeks to six weeks, she said. "The country understands that the system is broken and it needs to be fixed... And frankly the Latino community sent a pretty strong message in the election that I think Republicans are responding to," Ms. Muñoz said. President Barack Obama has released his own set of principles for legislation, and applauded a bipartisan Senate proposal. Both call for for new border-security measures, a tougher employer-verification system and a path to citizenship for the 11 million people now in the country illegally. But the White House rejected a Senate proposal to require that border security measures be in place before people can qualify for citizenship. There are some more minor differences between the White House and Senate, too. For instance, Mr. Obama's principles for immigration would allow gay and lesbian Americans to sponsor their same-sex partners for visas, which many Republicans oppose and the Senate framework doesn't include.

 -- Labor Union: Illegal Immigrants Deserve Citizenship

 -- Rubio: Only One Savior, and It's Not Me

 -- Obama Advisers Meet With Leaders of Business Groups

 -- Obama Urges 'Strategic' Thinking on Immigration

 -- Obama Courts CEOs, Labor Leaders on Immigration

Since the 2012 election, many Republicans have shown new interest in immigration legislation, though some stop short of endorsing citizenship for all illegal immigrants here now. On Tuesday, House Majority Leader Eric Cantor (R., Va.) came out for the principles behind the Dream Act, which would give a path to citizenship to people brought to the U.S. illegally as children. A short time ago, the White House would have welcomed such high-level GOP support for the Dream Act, but with a broader bill in sight, Ms. Muñoz said it would not be enough today. "We need a comprehensive bill. The Dream Act by itself doesn't fix what's broken in our immigration system," she said. In any case, Ms. Muñoz said the biggest obstacle to overhauling immigration law is not policy-related. "By and large there's a consensus on what the big pieces are of immigration reform," said Ms. Muñoz. "The biggest obstacle is political will and just making sure we get over the finish line."

#### Congress is fully focused on immigration reform – momentum is building for quick passage and it is key to boosting high skilled immigration

Higgins, 2/6 (John K., 2/6/2013, “Immigration Reform Could Open the Door for IT Talent,” <http://www.ecommercetimes.com/story/77241.html>))

A divided Congress may actually unite when it comes to certain immigration reform efforts, and that includes one aspect of importance to the IT industry: paving the way for more highly skilled tech workers to come to the U.S. Proposed legislation could impact the way H-1B visas and green cards are handed out, but the issue may be tied to comprehensive immigration reforms. Compare Email Marketing Systems The E-Commerce Times comparison engine helps you easily compare email marketing software based on price, customer support, email templates, delivery methods, and more. [Compare Now] The new Congress is now tackling a flurry of general proposals for comprehensive immigration reform, but only one specific, narrowly focused piece of legislation has already been introduced in the Senate: a plan to vastly increase the number of non-citizens who can pursue jobs and education in the U.S. technology sector. The bill, titled the "Immigration Innovation Act of 2013," quickly drew support from the IT community. "High-skilled immigration is a critical component in the broad effort to reform the U.S. immigration system, and this legislation effectively establishes a must-do list to enable U.S. companies to attract and retain the best innovators from around the world," said Ken Wasch, president of the Software and Information Industry Association (SIIA). "Our companies strongly support efforts to improve the U.S. research ecosystem, including efforts to permit foreign Ph. D. and Masters graduates from U.S. universities in science, technology, engineering, and mathematics (STEM) to remain in the United States," said Grant Seiffert, president of the Telecommunications Industry Association (TIA), in a letter to the Senate sponsors of the bill. "In addition, we support your efforts to increase the allotment of H-1B visas and to improve STEM education efforts in the United States." Visa Reform and High-Tech Funding The bill, also referred to as "I-Squared," focuses on three areas related to high tech talent: the expansion of "employment based non-immigrant" permits, known as H-1B visas; increased access to temporary residence "green cards" for high-skilled workers, and the utilization of fees from the issuance of visas and green cards to promote American worker retraining and education in STEM-related activities. A closer look at the bill's sections: H-1B Visas: The H-1B program allows U.S. employers to temporarily employ foreign workers in specialty occupations for an initial period of three years, extendable to six years. The Immigration Innovation Act would increase the limit for such visas from 65,000 to 115,000. If the pace of applications exceeds the cap within certain specified periods, the allotment will automatically be increased with an eventual hard cap of 300,000. The bill would facilitate the mobility of skilled foreign workers by removing current impediments and costs related to changing employers. It would also authorize employment for dependent spouses of H-1B visa holders. Green cards: The bill would increase the number of available employment-based green cards by reaching back to include green card allotments that went unused in prior years and exempting certain categories of applicants, such as STEM advanced degree holders, from counting against the annual cap. The act provides green card eligibility to "persons with extraordinary ability," and "outstanding professors and researchers," as well as to dependents of employment-based immigrant visa recipients. Current country of origin allocation limits would be eliminated. STEM funding: The fees payable to the U.S. government for H-1B and green cards would be increased. Fees vary for the H-1B documents, but the bill sets the basic fee at $2,500 per employee for firms with more than 25 workers. Green card fees would be raised to $1,000 per employee. According to an Intel analysis, the bill raises the current fee structure by 40 percent. Portions of the federal fee revenue would be channeled to a grant program to promote STEM education and worker retraining to be administered by state governments. The revenue could amount to $300 million per year, according to Sen. Amy Klobuchar (D-Minn), a co-sponsor of the bill. President Obama touched on the high tech employment issue in his second inauguration speech. "Right now, there are brilliant students from all over the world sitting in classrooms at our top universities. They're earning degrees in the fields of the future, like engineering and computer science. But once they finish school, once they earn that diploma, there's a good chance they'll have to leave our country. Think about that," he said. "If you're a foreign student who wants to pursue a career in science or technology, or a foreign entrepreneur who wants to start a business with the backing of American investors, we should help you do that here." Costs and Benefits for Tech Sector Support for the bill by the IT community underscores the need for skilled talent, as well as the readiness of firms to absorb the cost of visa/green card fees and associated legal charges. The fees could be considered a cost of doing business, or they could be viewed as an investment. "We view it as both. The fees are not insignificant and so they give reassurance to some that H-1Bs will not be used to provide a 'cheap labor' alternative to U.S. workers," David LeDuc, senior director of public policy at SIIA, told the E-Commerce Times The fees and processing costs are already so high that it usually costs companies significantly more to hire H-1Bs than U.S. workers." The fees and charges for obtaining skilled workers must also be balanced against the cost for businesses of operating without essential talent. "When considering H-1B fees, we think it's most important to remember that the current annual limit on the number of H-1B visas, along with the per-country restrictions, mean that companies simply can't hire the workers they need or that hiring is delayed. This imposes significant costs and inefficiencies on business operations, and it's part of why the whole system needs reform," Danielle Coffey, general counsel and vice-president of public policy at TIA, told the E-Commerce Times. Congressional Hurdles and Outlook How the bill fares in Congress may depend on how an overall comprehensive package of immigration reforms is handled. "The Immigration Innovation Act could stand on its own, but in the current political situation it is unlikely that immigration issues will be handled piecemeal," Bob Sakaniwa, associate director of advocacy at the American Immigration Lawyers Association, told the E-Commerce Times. "The better prospect is that it will be included within a comprehensive package and its fate will be tied to what Congress does on the overall immigration reform effort." The history of congressional immigration debates also indicates that the IT issue should be part of a comprehensive reform effort, LeDuc added. "As much as we might like, or it might seem practical to enact various reform initiatives independently, that's not a political reality at this time."The momentum now exists for comprehensive immigration reform, and issues related to highly skilled workers have already made their way into bipartisan legislative language."We know that the attention of Congress will now be fully focused on achieving comprehensive reform and a complete bill in the next few months," Coffey said. "We're hoping that they succeed, and that's where our focus is."

#### Obama’s capital is key

Shifter, 12/27 --- adjunct professor of Latin American politics at Georgetown University’s School of Foreign Service (12/27/2012, Michael, Revista Ideel, “Will Obama Kick the Can Down the Road?” <http://www.thedialogue.org/page.cfm?pageID=32&pubID=3186>)

There is, however, a notable change in Obama’s style compared to the first term. He is far more confident and is proclaiming clear positions on key issues, such as raising tax rates on the most wealthy. Previously, Obama had been quite passive and would ask the Congress to present him with a proposal. Today, buoyed by a decisive win in November and more enthusiastic and expectant Democratic supporters, Obama is more inclined to take the initiative and draw some clear lines. How the “fiscal cliff” question is managed and ultimately resolved will likely shape the tenor and climate for Obama’s second-term agenda. If it leaves a bitter taste, then the rest of Obama’s domestic priorities will be more difficult to achieve. If both parties think they gained something in the bargain, prospects for results in other areas will improve. Not surprisingly, Obama has been explicit that reforming the US’s shameful and broken immigration system will be a top priority in his second term. There is every indication that he intends to use some of his precious political capital – especially in the first year – to push for serious change. The biggest lesson of the last election was that the “Latino vote” was decisive. No one doubts that it will be even more so in future elections. During the campaign, many Republicans -- inexplicably -- frightened immigrants with offensive rhetoric. But the day after the election, there was talk, in both parties, of comprehensive immigration reform. Despite the sudden optimism about immigration reform, there is, of course, no guarantee that it will happen. It will require a lot of negotiation and deal-making. Obama will have to invest a lot of his time and political capital -- twisting some arms, even in his own party. Resistance will not disappear. There is also a chance that something unexpected could happen that would put off consideration of immigration reform. Following the horrific massacre at a Connecticut elementary school on December 14, for example, public pressure understandably mounted for gun control, at least the ban of assault weapons. But a decision to pursue that measure -- though desperately needed -- would take away energy and time from other priorities like immigration.

#### Massive political opposition to the plan

Roselund, 12/12 --- covers the global solar industry for trade publication Solar Server (12/12/2012, Christian, “Europe's Energy Transformation, and Why We're Being Left in the Dust,” <http://truth-out.org/opinion/item/13231-learning-from-europes-energy-transformation>)

Can we learn?

A national feed-in tariff will attract political opposition from private utilities, fossil fuel interests, and the nuclear lobby. But let's not kid ourselves. Every potentially effective proposal to move the United States away from fossil fuels has and will meet strong political opposition.

#### Immigration reform is key to both hard and soft power

Nye, 12-10 --- Harvard Prof and former US assistant secretary of defense, state and chairman of the US National Intelligence Council (12/10/2013, “Immigration and American Power,” <http://www.project-syndicate.org/commentary/obama-needs-immigration-reform-to-maintain-america-s-strength-by-joseph-s--nye>)

CAMBRIDGE – The United States is a nation of immigrants. Except for a small number of Native Americans, everyone is originally from somewhere else, and even recent immigrants can rise to top economic and political roles. President Franklin Roosevelt once famously addressed the Daughters of the American Revolution – a group that prided itself on the early arrival of its ancestors – as “fellow immigrants.” In recent years, however, US politics has had a strong anti-immigration slant, and the issue played an important role in the Republican Party’s presidential nomination battle in 2012. But Barack Obama’s re-election demonstrated the electoral power of Latino voters, who rejected Republican presidential candidate Mitt Romney by a 3-1 majority, as did Asian-Americans. As a result, several prominent Republican politicians are now urging their party to reconsider its anti-immigration policies, and plans for immigration reform will be on the agenda at the beginning of Obama’s second term. Successful reform will be an important step in preventing the decline of American power.Fears about the impact of immigration on national values and on a coherent sense of American identity are not new. The nineteenth-century “Know Nothing” movement was built on opposition to immigrants, particularly the Irish. Chinese were singled out for exclusion from 1882 onward, and, with the more restrictive Immigration Act of 1924, immigration in general slowed for the next four decades. During the twentieth century, the US recorded its highest percentage of foreign-born residents, 14.7%, in 1910. A century later, according to the 2010 census, 13% of the American population is foreign born. But, despite being a nation of immigrants, more Americans are skeptical about immigration than are sympathetic to it. Various opinion polls show either a plurality or a majority favoring less immigration. The recession exacerbated such views: in 2009, one-half of the US public favored allowing fewer immigrants, up from 39% in 2008. Both the number of immigrants and their origin have caused concerns about immigration’s effects on American culture. Demographers portray a country in 2050 in which non-Hispanic whites will be only a slim majority. Hispanics will comprise 25% of the population, with African- and Asian-Americans making up 14% and 8%, respectively. But mass communications and market forces produce powerful incentives to master the English language and accept a degree of assimilation. Modern media help new immigrants to learn more about their new country beforehand than immigrants did a century ago. Indeed, most of the evidence suggests that the latest immigrants are assimilating at least as quickly as their predecessors. While too rapid a rate of immigration can cause social problems, over the long term, immigration strengthens US power. It is estimated that at least 83 countries and territories currently have fertility rates that are below the level needed to keep their population constant. Whereas most developed countries will experience a shortage of people as the century progresses, America is one of the few that may avoid demographic decline and maintain its share of world population. For example, to maintain its current population size, Japan would have to accept 350,000 newcomers annually for the next 50 years, which is difficult for a culture that has historically been hostile to immigration. In contrast, the Census Bureau projects that the US population will grow by 49% over the next four decades. Today, the US is the world’s third most populous country; 50 years from now it is still likely to be third (after only China and India). This is highly relevant to economic power: whereas nearly all other developed countries will face a growing burden of providing for the older generation, immigration could help to attenuate the policy problem for the US.In addition, though studies suggest that the short-term economic benefits of immigration are relatively small, and that unskilled workers may suffer from competition, skilled immigrants can be important to particular sectors – and to long-term growth. There is a strong correlation between the number of visas for skilled applicants and patents filed in the US. At the beginning of this century, Chinese- and Indian-born engineers were running one-quarter of Silicon Valley’s technology businesses, which accounted for $17.8 billion in sales; and, in 2005, immigrants had helped to start one-quarter of all US technology start-ups during the previous decade. Immigrants or children of immigrants founded roughly 40% of the 2010 Fortune 500 companies. Equally important are immigration’s benefits for America’s soft power. The fact that people want to come to the US enhances its appeal, and immigrants’ upward mobility is attractive to people in other countries. The US is a magnet, and many people can envisage themselves as Americans, in part because so many successful Americans look like them. Moreover, connections between immigrants and their families and friends back home help to convey accurate and positive information about the US. Likewise, because the presence of many cultures creates avenues of connection with other countries, it helps to broaden Americans’ attitudes and views of the world in an era of globalization. Rather than diluting hard and soft power, immigration enhances both. Singapore’s former leader, Lee Kwan Yew, an astute observer of both the US and China, argues that China will not surpass the US as the leading power of the twenty-first century, precisely because the US attracts the best and brightest from the rest of the world and melds them into a diverse culture of creativity. China has a larger population to recruit from domestically, but, in Lee’s view, its Sino-centric culture will make it less creative than the US. That is a view that Americans should take to heart. If Obama succeeds in enacting immigration reform in his second term, he will have gone a long way toward fulfilling his promise to maintain the strength of the US.

#### [Short]

#### Decline causes great power wars

Zhang & Shi, Researcher @ The Carnegie Endowment, ’11

[Yuhan Zhang, Researcher at the Carnegie Endowment for International Peace, Lin Shi, Columbia University, Independent consultant for the Eurasia Group, Consultant for the World Bank, “[America’s decline: A harbinger of conflict and rivalry](http://www.eastasiaforum.org/2011/01/22/americas-decline-a-harbinger-of-conflict-and-rivalry/),” January 22nd 2011, <http://www.eastasiaforum.org/2011/01/22/americas-decline-a-harbinger-of-conflict-and-rivalry/>]

Over the past two decades, no other state has had the ability to seriously challenge the US military. Under these circumstances, motivated by both opportunity and fear, many actors have bandwagoned with US hegemony and accepted a subordinate role. Canada, most of Western Europe, India, Japan, South Korea, Australia, Singapore and the Philippines have all joined the US, creating a status quo that has tended to mute great power conflicts. However, [as the hegemony that drew these powers together withers](http://www.cfr.org/publication/23537/belttightening_for_us_foreign_policy.html), so will the pulling power behind the US alliance. The result will be an international order where power is more diffuse, American interests and influence can be more readily challenged, and conflicts or wars may be harder to avoid. As history attests, power decline and redistribution result in military confrontation. For example, in the late 19th century America’s emergence as a regional power saw it launch its first overseas war of conquest towards Spain. By the turn of the 20th century, accompanying the increase in US power and waning of British power, the American Navy had begun to challenge the notion that Britain ‘rules the waves.’ Such a notion would eventually see the US attain the status of sole guardians of the Western Hemisphere’s security to become the order-creating Leviathan shaping the international system with democracy and rule of law. Defining this US-centred system are three key characteristics: enforcement of property rights, constraints on the actions of powerful individuals and groups and some degree of equal opportunities for broad segments of society. As a result of such political stability, free markets, liberal trade and flexible financial mechanisms have appeared. And, with this, many countries have sought opportunities to enter this system, proliferating stable and cooperative relations. However, what will happen to these advances as America’s influence declines? Given that America’s authority, although sullied at times, has benefited people across much of Latin America, Central and Eastern Europe, the Balkans, as well as parts of Africa and, quite extensively, Asia, the answer to this question could affect global society in a profoundly detrimental way. Public imagination and academia have anticipated that a post-hegemonic world would return to the problems of the 1930s: regional blocs, trade conflicts and strategic rivalry. Furthermore, multilateral institutions such as the IMF, the World Bank or the WTO might give way to regional organisations. For example, Europe and East Asia would each step forward to fill the vacuum left by Washington’s withering leadership to pursue their own visions of regional political and economic orders. Free markets would become more politicised — and, well, less free — and major powers would compete for supremacy. Additionally, such power plays have historically possessed a zero-sum element. In the late 1960s and 1970s, US economic power declined relative to the rise of the Japanese and Western European economies, with the US dollar also becoming less attractive. And, as American power eroded, so did international regimes (such as the Bretton Woods System in 1973). A world without American hegemony is one where great power wars re-emerge, the liberal international system is supplanted by an authoritarian one, and trade protectionism devolves into restrictive, anti-globalisation barriers. This, at least, is one possibility we can forecast in a future that will inevitably be devoid of unrivalled US primacy.

### K 1NC

#### You should view consumption as a complex network of environmental pressures – addressing one “hotspot” for environmental collapse distracts focus from the broader system and produces efficiency gains that are only re-invested for more consumption – only a reduction in consumption patterns can solve inevitable human extinction

Ehrlich & Ehrlich 13

(Paul, Professor of Biology and President of the Center for Conservation Biology at Stanford University, and Adjunct Professor at the University of Technology, Sydney, Anne, Senior Research Scientist in Biology at Stanford, “Can a collapse of global civilization be avoided?”, January 9, 2013, *Proceedings of the Royal Society of Biological Sciences*)

But today, for the first time, humanity's global civilization—the worldwide, increasingly interconnected, highly technological society in which we all are to one degree or another, embedded—is threatened with collapse by an array of environmental problems. Humankind finds itself engaged in what Prince Charles described as ‘an act of suicide on a grand scale’ [4], facing what the UK's Chief Scientific Advisor John Beddington called a ‘perfect storm’ of environmental problems [5]. The most serious of these problems show signs of rapidly escalating severity, especially climate disruption. But other elements could potentially also contribute to a collapse: an accelerating extinction of animal and plant populations and species, which could lead to a loss of ecosystem services essential for human survival; land degradation and land-use change; a pole-to-pole spread of toxic compounds; ocean acidification and eutrophication (dead zones); worsening of some aspects of the epidemiological environment (factors that make human populations susceptible to infectious diseases); depletion of increasingly scarce resources [6,7], including especially groundwater, which is being overexploited in many key agricultural areas [8]; and resource wars [9]. These are not separate problems; rather they interact in two gigantic complex adaptive systems: the biosphere system and the human socio-economic system. The negative manifestations of these interactions are often referred to as ‘the human predicament’ [10], and determining how to prevent it from generating a global collapse is perhaps the foremost challenge confronting humanity. The human predicament is driven by overpopulation, overconsumption of natural resources and the use of unnecessarily environmentally damaging technologies and socio-economic-political arrangements to service Homo sapiens’ aggregate consumption [11–17]. How far the human population size now is above the planet's long-term carrying capacity is suggested (conservatively) by ecological footprint analysis [18–20]. It shows that to support today's population of seven billion sustainably (i.e. with business as usual, including current technologies and standards of living) would require roughly half an additional planet; to do so, if all citizens of Earth consumed resources at the US level would take four to five more Earths. Adding the projected 2.5 billion more people by 2050 would make the human assault on civilization's life-support systems disproportionately worse, because almost everywhere people face systems with nonlinear responses [11,21–23], in which environmental damage increases at a rate that becomes faster with each additional person. Of course, the claim is often made that humanity will expand Earth's carrying capacity dramatically with technological innovation [24], but it is widely recognized that technologies can both add and subtract from carrying capacity. The plough evidently first expanded it and now appears to be reducing it [3]. Overall, careful analysis of the prospects does not provide much confidence that technology will save us [25] or that gross domestic product can be disengaged from resource use [26].

#### **Solar energy mystifies existing consumption practices, greening them to remove guilt for our unsustainable ecological footprint**

Byrne & Toly 6

(Josh, director of the Center for Energy and Environmental Policy and distinguished professor of energy and climate policy at the University of Delaware, Noah, Associate Professor of Urban Studies and Politics & International Relations, Director of Urban Studies Program at Wheaton, “Energy as a Social Project: Recovering a Discourse”, pgs. 1-32 in Transforming Power: Energy, Environment, and Society in Conflict, eds. Josh Byrne, Noah Toly, and Leigh Glover)

In this regard, ironically, Small-is-Beautiful Solar shares with Big Wind the aspiration to re-order the energy regime without changing society. Despite modern society’s technological, economic, and political addiction to large-scale, cheap energy systems that solar energy cannot mimic, most PV proponents hope to revolutionize the technological foundation of modernity, without disturbing its social base. A new professional cadre of solar architects and engineers are exhorted to find innovative ways of embedding PV technology in the skin of buildings (Strong, 1999; Benemann, Chehab, and Schaar-Gabriel, 2001), while transportation engineers and urban planners are to coordinate in launching “smart growth” communities where vehicles are powered by hydrogen derived from PV-powered electrolysis to move about in communities optimized for “location efficiency” (Ogden, 1999; Holtzclaw et al., 2002). The wildly oversized ecological footprint of urban societies (Rees and Wackernagel, 1996) is unquestioned as PV decorates its structure. These tools for erecting a Solar Society intend to halt anthropogenic changes to the chemistry of the atmosphere, rain, and soil mantle while enabling unlimited economic growth. In the Solar Society of tomorrow, we will make what we want, in the amounts we desire, without worry, because all of its energy is derived from the benign, renewable radiation supplied by our galaxy’s sun. Compared to Big Wind, PV may cost more but it promises to deliver an equivalent social result (minus the avian and landscape threats of the former) and, just possibly, with a technical elegance that surpasses the clunky mechanicalness of turbines propelled by wind. In this respect, Solar Society makes its peace with modernity by leaving undisturbed the latter’s cornucopian dreams19 and, likewise, poses no serious challenge to the social and political structures of the modern era. At this precise point, inequality and conflict can only be conceived in Solar Society as the results of willful meanness and greed. While the solar variety of technological politics guiding society may be relatively minimalist—no towering new monuments or spectacular devices are planned—it would be no less committed to the ideals of technique in shaping social experience and its self-assessment. Similarly, its economics would warmly embrace a form of consumptive capitalism, although with cleaner inputs (and possibly throughputs) than before. While the discussion here of sustainable energy advocacy has concentrated on its wind- and solar-animated versions, we believe that strategies anticipating significant roles for geothermal, biomass, micro-hydro, and hydrogen harvested from factories fueled by renewables anticipate variants of the social narratives depicted for the two currently most prominent renewable energy options. The aim of producing more with advancing ecological efficiency in order to consume more with equally advancing consumerist satisfaction underpins the sustainable energy future in a way that would seamlessly tie it to the modernization project.20

#### Solar tech relies on rare earth mineral extraction that causes massive global instability and collapses democracy and trade – it relies on corruption and social inequality to maintain economic production

Bringezu & Bleischwitz ‘11

(Stefan, director of material flows and resource management at the Wuppertal Institute, Germany, and a member of the International Panel for Sustainable Resource Management, Raimund, co-director of material flows and resource management at the Wuppertal Institute and professor at the College of Europe, Bruges, Belgium, “Preventing a resource curse fuelled by the green economy”, Global Corruption Report: Climate Change, pg. 199-201 http://www.transparency.org/publications/gcr/gcr\_climate\_change2)

Mining, a second activity necessary to support the green economy, carries significant opportunities for corruption. The industry is believed to be one of the business sectors most likely to bribe public officials or to influence political processes unduly.12 The industry is characterized by opacity and confidentiality, which enable companies to conspire with government officials to rig the bidding process. By developing personal relationships with influential members of the political elite, or offering bribes, corporate representatives may secure contracts or political decisions in their favour.13 Host governments may launder money offshore or direct funds towards spending that benefits the interests of the political elite. The scaling up of renewable energy will require significant mineral resources for new supply facilities and energy distribution, however. Telecommunication and other information technologies, increasingly used to reduce the need for global travel and transportation, depend on microelectronic devices that require speciality metals. As these and other solutions for reducing greenhouse gas (GHG) emissions are more widely embraced, demand will increase for many types of minerals. Lithium ion batteries, currently used in electronic devices, are expected to play a growing role in future demand for electric cars. Although forecasts are sensitive to public policy, Credit Suisse’s estimate of annual growth rates for lithium demand of about 10 per cent14 seems conservative but reliable. Increased demand for lithium will lead to additional extraction activities at a limited number of salt lakes, such as in Argentina, Bolivia and Chile. In Bolivia, the government’s early planning for joint exploitation projects with international companies and governments has been met with much public approval, but it has also raised concerns from some civil society and environmental organizations regarding the transparency of negotiations and the reliability of environmental assessments15 (see the Bolivia case study following this section). Photovoltaic cells for solar arrays and LED-dependent energy-efficient lighting16 rely on the aluminium by-product gallium. Gallium demand for green technology development is forecast to exceed current total world production by a factor of six by 2030.17 This could lead to enhanced bauxite mining18 in countries such as Guinea, China, Russia and Kazakhstan. Mining for tantalum, which is used for capacitors in microelectronics such as mobile phones and PCs, has increased in the Democratic Republic of the Congo (DRC), where the militarization of mining is well documented19 and illegal trade revenues have been linked to the financing of civil war activities. Platinum group metals (PGMs) are important chemical catalysts used for pollution control, such as in exhaust catalysts in cars and fuel cells. PGM mining and refining is concentrated in a few regions in the world, though supply is not sufficient to meet expected demand. Platinum is mined in South Africa, and PGMs are produced as a by-product of nickel and copper mining in Russia and Canada. The market for rare earth metals, used in defence technologies and also crucial for low-fossil-carbon technologies such as wind turbines and hybrid cars, is worth some US$1.3 billion annually. China, one of the few countries currently mining rare earth metals, has considered significantly curbing or ending their export altogether, prompting a rush on mines in Russia, Kazakhstan, South Africa, Botswana, Vietnam and Malaysia.20 Rising demand for many of these mineral resources will probably coincide with a shifting pattern of mining activity. Emerging economies such as Brazil, China and India are expected to reach a period of high metal intensity as their development approaches the levels of Organisation for Economic Co-operation and Development (OECD) countries. As mining companies from these countries transition from trading into production, they can be expected to meet domestic demand for raw materials through direct investment throughout the world, and particularly in Africa. This new buying power may not be matched by high standards in business integrity. In 2008 companies from Brazil, Russia, India and China were perceived by the business community to be among the most likely to engage in bribery when doing business abroad.21 Indeed, China and India have no law making foreign bribery a criminal offence.22 With the exception of Brazil, the adoption of international anti-corruption standards is weak. India has ratified neither the UN Convention against Corruption (UNCAC) nor the OECD Convention on Combating Bribery of Foreign Public Officials, while China and Russia have ratified only the former.23

Our alternative is to reject the politics of technological production

Rather than focusing on production of technology, we should embrace our ability to shape and transform our subjectivity as consumers, embracing voluntary simplicity – this debate offers a crucial moment to produce alternative knowledge about everyday living practices

Alexander ‘11

(Samuel, University of Melbourne; Office for Environmental Programs/Simplicity Institute, “

Voluntary Simplicity as an Aesthetics of Existence”, Social Sciences Research Network, http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1941087)

The aim of this paper, however, is not to present a thorough analysis of Foucault’s notion of an aesthetics of existence. Several such analyses have appeared in recent times (after years of unfortunate scholarly neglect), and much of this emerging commentary is very probing and insightful.12 But this is not the time to focus on furthering that critical discussion or even providing a comprehensive literature review of it. Instead, after providing a brief exposition of Foucault’s ethics, this paper will undertake to actually apply the idea of an aesthetics of existence to a particular subject of ethical concern, namely, to our role as ‘consumers’ in the context of First World overconsumption. This is an area that raises ethical questions concerning how we ought to live for two main reasons: firstly, due to the impact Western--‐style consumers are having on the natural environment; and secondly, due to the continued existence of poverty amidst plenty. There is, however, another perspective to consider also. A large body of sociological and psychological literature now exists indicating that Western--‐style consumption practices are often failing to provide meaning and fulfillment, even to those who have ‘succeeded’ in attaining a high material standard of living.13 These three consumption--‐related issues – ecological degradation, poverty amidst plenty, and consumer malaise – provide ample grounds for thinking that consumption is a proper subject for ethical engagement, in the Foucauldian sense of ethics as ‘the self enfgaging the self.’ If it is the case that our individual identities have been shaped, insidiously perhaps, by a social system that celebrates and encourages consumption without apparent limit – and it would not be unfair to describe consumer societies in these terms14 – then it may be that ethical practice today calls for a rethinking of our assumptions and attitudes concerning consumption, which might involve a deliberate reshaping of the self by the self. This paper will explore the possibility of such an ethics of consumption in the following ways. First, by explaining how neoclassical economics, which is arguably the most influential paradigm of thought in the world today, conceptualizes consumption as something that benefits both ‘self’ and ‘other’ and, therefore, as something that should be maximized. To the extent that modern consumers have internalized this conception of consumption, an ethics of consumption might involve engaging the self for the purpose of changing the self and creating something new. The second way an ethics of consumption will be explored will be through an examination of the theory and practice of ‘voluntary simplicity,’ a term that refers to an oppositional living strategy or ‘way of life’ with which people, somewhat paradoxically, perhaps, seek an increased quality of life through a reduction and restraint of one’s level of consumption.15 The paradox, so-­‐ called, consists in the attempt to live ‘more with less.’ Since voluntarily living simply means heading in the opposite direction to where most people in consumer societies (and increasingly elsewhere) seem to want to go, one would expect living simply to require a fundamentally creative engagement with life and culture, especially in contemporary consumer societies that seem to be predicated on the assumption that ‘more consumption is always better.’ This need for a fundamentally creative engagement with life is what prompted the present attempt to elucidate the idea of ‘voluntary simplicity as aesthetics of existence,’ and it is this attempt to infuse Foucauldian ethics with an emerging post-­‐consumerist philosophy of life that constitutes the original contribution of this paper. It is hoped that this practical application of Foucault’s ethics might also prompt others to consider how ethical engagement might produce new ways of being that are freer, more fulfilling, and yet less resource-­‐intensive and damaging than the modes of being which are dominant in consumer societies today. Could it be, for example, that the ‘Death of Man,’ to use Foucault’s phrase, was actually the first (and a necessary) phase in the demise of what one might call ‘homo consumicus’? And what forms of life, what modes of being, would or could materialize with the voluntary emergence of ‘homo post-­‐consumicus’? These are the large questions that motivated this study and in the following pages a preliminary attempt is made to grapple with them. The aim, however, is not to legitimate ‘what is already known,’16 since that would not be a very Foucauldian endeavor; rather, the aim is to explore whether or to what extent it is possible to ‘free thought from what it silently thinks,’17 in the hope that this might open up space to ‘think differently,’18 to think otherwise.

### CCS 1NC – Renewables

#### Natural gas prices are rising now – causes utilities to shift to coal

Litvak 2012 (November 9, Anya, “Pennsylvania coal industry faces changing future” <http://www.bizjournals.com/pittsburgh/print-edition/2012/11/09/coal-industry-faces-changing-future.html?page=all>)

When having a discussion on the future of coal, it would be unlikely to hear natural gas go unmentioned. Natural gas is a cleaner burning fuel whose recently made available reserves have brought down prices to historic lows. “It is economics driving this move from coal to gas, at least right now,” said Paul Sotkiewicz, chief economist for PJM, the nation’s largest grid operator that controls the flow of electricity in 13 states, including Pennsylvania. In the first six months of this year, under 42 percent of electricity in PJM came from coal, while nearly 20 percent came from gas — a record high and a record low, respectively. Five years ago, coal was at 57 percent and gas below 6 percent. Over the past two years, new gas units coming into the grid have doubled, while nearly 18 gigawatts of coal generation will be deactivated. “Gas prices will be between $4-$5 per British thermal unit in the near term range and coal prices are only going to continue marching forward,” Sotkiewicz said. “We’re looking at a huge reconfiguration of the fleet.” In spite of all that, he warned, in paraphrasing Mark Twain, “the death of coal has been greatly exaggerated.” This year, Ohio-based FirstEnergy Corp. (NYSE: FE), the largest utility in Pennsylvania and owner of West Penn Power, said it was considering co-burning natural gas with coal at five of its power plants, including three in the state. More than 60 percent of FirstEnergy’s fuel comes from coal plants. Its first gas co-firing test target would be Hatfield’s Ferry, a three-boiler coal plant in Masontown with a capacity of 1,710 megawatts. Spokesman Mark Durbin said it’s unlikely FirstEnergy would go through with co-firing if natural gas prices go beyond $3 per MBtu (million British thermal units). That would make gas uncompetitive with the price of coal, he said. For the first part of 2012, the average price of a million Btus of coal at electric utilities was $2.44, according to the Energy Information Administration. The average price of natural gas was $2.50 per MBtu. Usually, the gap is much greater. In 2009, Consol Energy Inc. (NYSE: CNX), a 148-year-old coal company, entered the shale business, partly as a hedge against its traditional fuel. “We made a $3.5 billion bet that gas was going to be the fuel of the future,” said Randy Albert, COO of Consol’s gas division. Alpha Natural Resources (NYSE: ANR) did the same a year later, partnering with Rice Energy to explore the Marcellus Shale in Washington and Greene counties. Right now, low natural gas prices are actually hurting both sides of their business. They handicap the profits the companies can make on the gas side and make coal less competitive for utilities, thereby decreasing demand. However, when the price of one fuel goes up, the other follows. “People in the gas market are sitting there rooting for exports to Asia so they can get the price of coal up, so that can drive the prices of gas up,” said John Hynes, a partner with West Virginia-based Excidian LLC. In late September, natural gas finally broke the $3 mark for the first time this year and has since been on the rise. Already, Consol is seeing the upside of that trend, said Robert Pusateri, executive vice president of energy sales and transportation services. “Favorable natural gas price trends have enabled us to conclude several large thermal coal agreements for 2013,” Pusateri told investors during an earnings call last month. “In a recent conversation that I had with a fuel buyer, he commented that with the recent uptick of natural gas pricing, that this was making him rethink his coal purchase strategy for 2013 so that he didn’t get himself caught short as gas prices continually trend up.” With natural gas prices on the rebound, coal may regain its traditional rank as a stable, low-cost fuel. “Cheap energy’s not a right, it’s a privilege,” Albert said. “And at the end of the day, American people won’t stand for that privilege to be taken away.”

#### Expansive deployment of renewables drives down natural gas prices

Blake, Editor of the Washington Monthly, 09

(The Rooftop Revolution, www.washingtonmonthly.com/features/2009/0903.blake.html)

In some nations where feed-in tariffs have reached critical mass, there is evidence that they have actually driven down the overall price of electricity. This may seem counterintuitive—after all, renewable energy is more expensive on average than, say, coal power. But the price of electricity is often driven by natural gas, a costly and volatile fuel that is frequently used to meet peak power needs. If you have a large volume of renewable energy (particularly less-expensive wind power) you can cut your use of natural gas, bringing prices down across the board.

#### EPA regulations mean low natural gas prices stop the shift to CCS

McCarthy and Copeland 2011 - Specialist in Environmental Policy AND Specialist in Resources and Environmental Policy (August 8, James E. and Claudia, “EPA’s Regulation of Coal-Fired Power: Is a “Train Wreck” Coming? ” <http://www.lawandenvironment.com/uploads/file/CRS-EPA.pdf>)

What these scenarios tell us is that utilities will look at the impending regulations and decide what to do largely based on their assumptions regarding the cost of the alternatives—natural gas (where it’s available) being the most often discussed, but others include conservation, wind, and other renewable resources. If they expect the price of gas to remain low or the cost of other alternatives to be competitive, their primary method of compliance likely will be to retire old coal plants and switch to gas or the alternatives. If they expect the price of gas or other alternatives to be high, they’ll invest the money in retrofitting the coal plants to reduce their emissions. As the NERC report stated: Unit retirement is assumed when the generic required cost of compliance with the proposed environmental regulation exceeds the cost of replacement power.... For the purpose of this assessment, replacement power costs were based on new natural gas generation capacity. If the unit’s retrofit costs are less than the cost of replacement power, then the unit is marked to be upgraded and retrofitted to meet the requirements of the potential environmental regulation., i.e., it is not considered “economically vulnerable” for retirement. 99 As utilities attempt to forecast the price of natural gas, their conclusions will be based in large part on assumptions as to whether gas will be available in sufficient quantities to meet the increased demands of electric power generation. Natural gas faces its own controversies, as domestic production increasingly relies on “unconventional” sources such as shale, from which gas is obtained by hydraulic fracturing. (For additional information on this practice, see CRS Report R41760, Hydraulic Fracturing and Safe Drinking Water Act Issues, by Mary Tiemann and Adam Vann.) Nevertheless, a 2009 NERC report stated: Concerns regarding the availability and deliverability of natural gas have diminished during 2009 as North American production has begun to trend upward due to a shift toward unconventional gas production from shale, tight sands, and coal-bed methane reservoirs. In its latest biennial assessment, the Potential Gas Committee increased U.S. natural gas resources by nearly 45 percent to 1,836 TCF [trillion cubic feet], largely because of increases in unconventional gas across many geographic areas. Pipeline capacity has similarly increased, by 15 BCFD [billion cubic feet per day] in 2007 and 44 BCFD in 2008, with an increase of 35 BCFD expected in 2009. Storage capacity has also increased substantially. 100 In short, the “train wreck” facing the coal-fired electric generating industry, to the extent that it exists, is being caused by cheap, abundant natural gas as much as by EPA regulations. As John Rowe, Chairman and CEO of Exelon Corporation, recently stated: “These regulations will not kill coal.... In fact, modeling done on the impacts of these rules shows that up to 50% of retirements are due to the current economics of the plant due to natural gas and coal prices.

#### The coal industry is key to maintain commercial freight railroads

AAR 2012 – Association of American Railroads (June, “Railroads and Coal ” <https://www.aar.org/keyissues/Documents/Background-Papers/Railroads-and-Coal.pdf>)

Coal is the most important single commodity carried by U.S. freight railroads. In 2011, it accounted for 43.3 percent of tonnage, 23.5 percent of carloads, and 24.7 percent of gross revenue for U.S. Class I railroads. Coal is also an important commodity for many non-Class I railroads. Coal accounts for approximately one in five railroad jobs. In 2011, Class I railroads originated 7.06 million carloads of coal, down 0.1 percent from 2010’s 7.07 million tons but down 8.5 percent from the peak of 7.71 million tons in 2008. Put another way, Class I railroads originated nearly 658,000 fewer carloads of coal in 2011 than they did in 2008. If you assume, for simplicity, 110 carloads per coal train, that’s nearly 6,000 fewer trainloads of coal in 2011 than in 2008. Class I railroads originated 816.0 million tons of coal in 2011, up 0.2 percent from 2010’s 814.5 million tons but down 7.1 percent from 2008’s peak of 878.6 million tons. The decline in rail coal tonnage in 2011 from 2008 was 62.6 million tons. Railroads have typically derived more revenue from coal than from any other commodity (though the broad “intermodal” category accounted for more revenue than coal from 2003 to 2007). Gross Class I rail revenue from coal was $16.1 billion in 2011. As noted above, in recent periods coal’s share of U.S. electricity generation has fallen sharply due to a surge in generation from inexpensive natural gas and, to a lesser extent, more electricity generation from renewable sources like wind and solar. The recent mild winter also cut into coal-based generation. Recent rail coal traffic has suffered accordingly. Year-over-year U.S. rail coal traffic was down sharply each month in 2009, often by double digits, because of the recession and much lower coal exports in 2009 than in 2008 (exports are discussed further below). In the first five months of 2012, year-over-year U.S. rail carloads of coal were again down sharply. Average weekly U.S. coal carloads of 107,379 in April 2012 were the lowest of any month since July 1993; average weekly coal carloads in May 2012 of 108,501 weren’t much better (see the chart on the top right of the next page). In percentage terms, coal carloads were down by double-digit amounts in four of the first five months of 2012 (see chart on the top left of the next page). How rail coal traffic behaves in the months and years ahead will depend on the same factors that have affected coal recently, including the competitiveness of fuels other than coal for electricity generation, weather, the level of coal exports, environmental laws and regulations, and more.

#### Strong commercial freight railroads are key to readiness

Robert S. Korpanty is a licensed professional engineer employed by the Military Traffic Management Command Transportation Engineering Agency in Newport News, Virginia, December 1999, "Preserving Strategic Rail Mobility," [www.almc.army.mil/alog/issues/NovDec99/MS455.htm](http://www.almc.army.mil/alog/issues/NovDec99/MS455.htm)

Tell any mechanized maneuver commander he has to fight a battle without his Abrams tanks or Bradley fighting vehicles, and you probably will see a puzzled look on his face that could be interpreted as, "What planet are you from?" or, "What language are you speaking?" Since it is doubtful that a major conflict will occur just outside the gates of Fort Stewart, Georgia, or Fort Hood, Texas, a key element of a successful engagement will be getting combat power wherever it is needed on time. Without a reliable commercial rail infrastructure, it is doubtful the tanks and Bradleys will make it to their place of business. To make sure they do, the Military Traffic Management Command developed the Railroads for National Defense (RND) Program in 1976. In 1991, the RND Program was assigned to the Military Traffic Management Command Transportation Engineering Agency (MTMCTEA), which now executes the program on behalf of the U.S. Transportation Command. This program ensures that the commercial rail infrastructure in the United States meets Department of Defense (DOD) requirements for deploying a force. The RND Program works to preserve our strategic rail mobility. RND's Functions The poor condition of the rail industry in the mid- 1970's led to development of the RND Program. At that time, the rail industry was characterized by poor track maintenance that caused several derailments and the bankruptcy of six major eastern carriers and foretold a questionable future. DOD experienced on-post derailments that delayed deployment exercises. At this point, DOD realized how important the rail infrastructure was and became concerned about the state of the commercial rail industry. DOD also realized that it did not know which installations required rail service or which commercial rail lines between installations and ports were important to national defense.

#### Training is key to readiness which is key to global deterrence – decline causes lashout and war

Spencer, Senior Research Fellow at Heritage, 2000

(The Facts About Military Readiness, www.heritage.org/research/reports/2000/09/bg1394-the-facts-about-military-readiness

Military readiness is vital because declines in America's military readiness signal to the rest of the world that the United States is not prepared to defend its interests. Therefore, potentially hostile nations will be more likely to lash out against American allies and interests, inevitably leading to U.S. involvement in combat. A high state of military readiness is more likely to deter potentially hostile nations from acting aggressively in regions of vital national interest, thereby preserving peace. Readiness Defined. Readiness measures the ability of a military unit, such as an Army division or a carrier battle group, to accomplish its assigned mission. Logistics, available spare parts, training, equipment, and morale all contribute to readiness. The military recognizes four grades of readiness.7 At the highest level, a unit is prepared to move into position and accomplish its mission. At the lowest level, a unit requires further manpower, training, equipment, and/or logistics to accomplish its mission. There is evidence of a widespread lack of readiness within the U.S. armed forces. Recently leaked Army documents report that 12 of the 20 schools training soldiers in skills such as field artillery, infantry, and aviation have received the lowest readiness rating. They also disclose that over half of the Army's combat and support training centers are rated at the lowest readiness grade.8 As recently as last November, two of the Army's 10 active divisions were rated at the lowest readiness level, and none were rated at the highest.9 Every division required additional manpower, equipment, or training before it would be prepared for combat, due largely to the units' commitments to operations in the Balkans.10 And 23 percent of the Army's Chinook cargo helicopters, 19 percent of its Blackhawk helicopters, and 16 percent of its Apaches are not "mission-capable."11 In other words, they are not ready. The Facts about Military Readiness The reduction in forces of the U.S. armed forces began in the early 1990s. After the end of the Cold War, the Bush Administration began to reduce the size of the military so that it would be consistent with post-Cold War threats.12 Under the Clinton Administration, however, that reduction in forces escalated too rapidly at the same time that U.S. forces were deployed too often with too little funding. The result was decreased readiness as personnel, equipment, training, and location suffered. Since the Persian Gulf War in 1991, the U.S. military has been deployed on over 50 peacekeeping and peace-enforcement operations.13 Yet the resources available to fund these missions have steadily decreased: The number of total active personnel has decreased nearly 30 percent, and funding for the armed services has decreased 16 percent. The strain on the armed forces shows clearly now as the reduced forces deploy for too long with insufficient and antiquated equipment. The result is indisputable: Readiness is in decline. Because the security of the United States is at stake, it is imperative to present the facts about military readiness: FACT #1. The size of the U.S. military has been cut drastically in the past decade. Between 1992 and 2000, the Clinton Administration cut national defense by more than half a million personnel and $50 billion in inflation-adjusted dollars.14 (See Table 1.) The Army alone has lost four active divisions and two Reserve divisions. Because of such cuts, the Army has lost more than 205,000 soldiers, or 30 percent of its staff, although its missions have increased significantly throughout the 1990s. In 1992, the U.S. Air Force consisted of 57 tactical squadrons and 270 bombers. Today the Air Force has 52 squadrons and 178 bombers. The total number of active personnel has decreased by nearly 30 percent. In the Navy, the total number of ships has decreased significantly as well. In 1992, there were around 393 ships in the fleet, while today there are only 316, a decrease of 20 percent. The number of Navy personnel has fallen by over 30 percent. In 1992, the Marine Corps consisted of three divisions. The Corps still has three divisions, but since 1992, it has lost 22,000 active duty personnel, or 11 percent of its total. The Clinton Administration also cut the Marine Corps to 39,000 reserve personnel from 42,300 in 1992. Effect on Readiness. In spite of these drastic force reductions, missions and operations tempo have increased, resulting in decreased military readiness. Because every mission affects far greater numbers of servicemen than those directly involved, most operations other than warfare, such as peacekeeping, have a significant negative impact on readiness. For each serviceman who participates in a military operation, two others are involved in the mission: one who is preparing to take the participant's place, and another who is recovering from having participated and retraining. Therefore, if 10,000 troops are on peace operations in the Balkans, 30,000 troops are actually being taken away from preparing for combat. Ten thousand are actively participating, while 10,000 are recovering, and 10,000 are preparing to go. Coupled with declining personnel, increased tempo has a devastating effect on readiness. Morale problems stemming from prolonged deployments, equipment that wears out too quickly, and decreased combat training levels heighten when troops are committed to non-combat operations. Further exacerbating the military's declining readiness is the tendency to take troops with special skills from non-deployed units. Thus, a mission may affect non-deployed units as well because they will not be able to train properly. The soldiers integral to the non-deployed mission are not present, and there is no one to take their place. A mission's spillover effects are clearly illustrated by a July 2000 report by the U.S. General Accounting Office (GAO) on the U.S. commitments in the Balkans: In January 2000 ... four active divisions and one Guard division were affected by these operations [in the Balkans]. Among the active divisions, the 1st Cavalry Division was recovering from a 1-year deployment in Bosnia, the 10th Mountain Division was deployed there, and elements of the Guard's 49th Armored Division were preparing to deploy there. At the same time, the European-based 1st Infantry Division was deployed to Kosovo, and the 1st Armored Division was preparing to deploy there. Although none of these divisions deployed in its entirety, deployment of key components--especially headquarters--makes these divisions unavailable for deployment elsewhere in case of a major war.15 Simultaneously, the military's budget has continuously decreased over the past eight years; and, thus, the services are being forced to choose between funding quality of life improvements, procurement, training, and other essential spending. Consequently, none is adequately funded. For example, the Army is short by thousands of night vision goggles, binoculars, global positioning systems and hundreds of generator sets, battery chargers, and chemical agent monitors. (See Table 2.) According to the Office of the Army Deputy Chief of Staff for Logistics, these shortages are due to "recent increases in requirements," "slowed procurement funding," and "use of operations and maintenance funds for higher priorities."16 Furthermore, when smaller forces deploy for more missions, the result is increased wear-and-tear on equipment and longer deployments for servicemen. Coupled with too little money, the result is a military weakened by aging equipment, low morale, and poor training. FACT #2. Military deployments have increased dramatically throughout the 1990s. The pace of deployments has increased 16-fold since the end of the Cold War.17 According to Representative Curt Weldon (R-PA), the Clinton Administration has deployed U.S. forces 34 times in less than eight years. During the entire 40-year period of the Cold War, the military was committed to comparable deployments just 10 times.18 Between 1960 and 1991, the Army conducted 10 operations outside of normal training and alliance commitments, but between 1992 and 1998, the Army conducted 26 such operations. Similarly, the Marines conducted 15 contingency operations between 1982 and 1989, and 62 since 1989.19 During the 1990s, U.S. forces of 20,000 or more troops were engaged in non-warfighting missions in Somalia (1993), Haiti (1994), Bosnia (1996), and Iraq and Kuwait (1998).20 In 1998, before U.S. interventions in Kosovo and East Timor, General Henry Shelton, the Chairman of the Joint Chiefs of Staff, warned, "In the past four years we've conducted some four dozen major operations. And today, in support of our national strategy, we have more than 50,000 troops deployed in 12 major operations--and, I might add, many smaller ones--in dozens of countries around the world." Today the Army has 144,716 soldiers in 126 countries.21 Throughout the 1990s, U.S. taxpayers spent an average of $3 billion per year on peace operations.22 In 1990, the U.S. Department of Defense (DOD) spent around $200 million on peace operations. Today that amount has ballooned to $3.6 billion.23 The 78-day Kosovo campaign in 1999 cost around $5 billion, not including the ongoing peace mission.24 Operations Southern and North Watch in Iraq cost $1.1 billion per year; the Haiti operation cost a total of $2.4 billion; and to date, the Balkans have cost over $15 billion.25 (See Table 3.) Effect on Readiness. This dramatic increase in the use of America's armed forces has had a detrimental effect on overall combat readiness. According to General Shelton, "our experience in the Balkans underscores the reality that multiple, persistent commitments place a significant strain on our people and can erode warfighting readiness."26 Both people and equipment wear out faster under frequent use. For example, units deployed in Somalia took 10 months to restore their equipment to predeployment readiness levels.27 According to a Congressional Budget Office (CBO) survey of Army leaders who participated in peace missions, almost two-thirds said that their units' training readiness had declined.28 Training is a key component of readiness, and frequent missions cause the armed forces to reduce training schedules. For example, Operation Allied Force caused 22 joint exercises to be cancelled in 1999. Joint training exercises were reduced from 277 in fiscal year (FY) 1996 to 189 in FY 2000.

### 1nc California CP

#### The government of the state of California should \_\_\_\_\_\_\_\_\_\_.

#### The counterplan solves the case and isn’t preempted --- federal policies get watered down more

Keppley, 12 --- M.A. Candidate, International Relations and Environmental Policy at Boston University (Summer 2012, Jesse M., The Josef Korbel Journal of Advanced International Studies, “A Comparative Analysis of California and German Renewable Energy Policy: ACTORS AND OUTCOMES,” http://www.du.edu/korbel/jais/journal/volume4/volume4\_keppley.pdf)

Implications of the California Case

Because renewable energy policy at the federal level is limited, California has taken a strong role in this policy field. While this has led to tensions between the state and federal level, this bottom-up approach does have benefits. On the one hand, the subsidiarity principle, which suggests that regulatory action should be taken as close to the affected source as possible, suggests that leaving policymaking to the state is optimal. This allows California policymakers to account for the state’s unique geographical features, robust economic specializations, and long history of environmentalism. In theory, a more uniform federal “top-down” policy would either not do enough to spur increased renewable generation, in which case California would attempt to augment the policy itself anyway, or would do too much, putting undue burdens on states that do not have the environmental aspirations that Californians have. From a legal and theoretical perspective, if California citizens, and by extension policymakers, want to meet their electricity needs with any amount of renewable generation, there is nothing explicitly stopping them at the federal level.

Historically, this has worked to California’s advantage. In the wake of the energy crisis of the early 2000s, California policymakers have highlighted the importance of accelerating renewable energy development and promoting customer and utility owned generation (California Energy Action Plan 2003). The RPS and AB 32 were ways to not only promote environmental leadership, but were also ways to develop a domestic green tech industry. The onus thus falls on the state to implement the correct balance of costs and benefits to maximize the effectiveness of these goals. Also, while powerful organized interests like AIR and the state utilities shaped renewable energy policy in California, similar policies at the federal levels would risk even further concessions as addressing stakeholder concerns moved to the national scale where organized interests wield even more influence.

#### Federal government will empirically model

Keppley, 12 --- M.A. Candidate, International Relations and Environmental Policy at Boston University (Summer 2012, Jesse M., The Josef Korbel Journal of Advanced International Studies, “A Comparative Analysis of California and German Renewable Energy Policy: ACTORS AND OUTCOMES,” http://www.du.edu/korbel/jais/journal/volume4/volume4\_keppley.pdf)

Conclusion

Renewable energy policy is sure to continue evolving over the coming decades. Moving beyond policy differences to examine the way actors pursue policy goals within unique institutional structures provides a useful framework for comparative analysis. Both Germany and California have enacted aggressive policies in pursuit of their renewable energy goals. While it might seem, given the similar federal systems within which they operate, that these policies should have evolved in a similar manner, this is far from the case. A comparative approach demonstrates how in California policymakers were forced to incorporate interest group concerns to eventually arrive at acceptable policy outcomes. As AIR v. CARB demonstrates, this was not always a smooth process. The federal government also played a crucial role in limiting the options available to California, while at the same time allowing the state to experiment with aggressive policies. As climate change climbs up the political agenda, California’s unique leadership position within the U.S. federal system places it in a desirable position moving forward. California has a long history of driving change at the federal level (Rabe, 2009). Thus, if the history of U.S. environmental policymaking is any indication, the increased interest in renewable energy policies at the state level should eventually force more consolidated change at the federal level. Again if prior history is any indication, it would appear reasonable to expect future federal policies to build off of the model established by California.

### AT: Warming

#### State RPSs are substantially expanding renewables now

Wyant, 1/28 --- Agri-Pulse Editor (1/28/2013, Sara, “Will states continue push for more renewable energy?” http://www.hpj.com/archives/2013/jan13/jan28/0122Agripulse1chartsr.cfm))

State requirements key

But wind and other forms of renewable energy have also been bolstered by state-based Renewable Portfolio Standards. While some have argued against state mandates, there's no question that they have played a key role in developing a new clean energy economy. Electric power generated under state Renewable Portfolio Standards represented 54 percent of all retail electricity sales in the United States in 2012, despite renewable power having virtually no share of the market 15 years ago, data from the DOE's Lawrence Berkeley National Lab shows. An RPS requires that a certain percentage of the market be supplied by new renewable energy sources, including anaerobic digesters on animal operations, wind farms and solar energy facilities all found in rural areas across the country. In other parts of the country where there are significant biomass markets, farmers and ranchers are providing feedstocks for co-generation with coal and natural gas in many power plants. Facilities built since 1998 are now producing some 53 gigawatts of non-hydro renewable electricity. A gigawatt, or one thousand megawatts, is enough to power a medium-sized city. Some 63 percent of the 53 GW in capacity developed over the past 15 years is coming from states with an RPS. "State RPS policies appear to be motivating substantial renewable capacity development," says Galen L. Barbose, a principle scientific engineering associate in the Electricity Markets and Policy Group at LBNL and presenter of the data at a recent Renewable Portfolio Standards summit held in Washington. American agriculture is helping meet the goals established by those state standards by harvesting wind power, biopower and other renewables, says Patrick Mazza, research director at Climate Solutions, a regional non-profit group based in Seattle. "America's farmers and working lands have the capacity to bring abundant clean energy supplies to the marketplace," Mazza says, adding that the energy market generates new revenues, "spurs economic renaissance in farm belts across the country and gives new generations a chance to stay in rural communities." "These policies lead to cleaner air, economic development, and a more resilient electrical grid," says Richard Caperton, the director of Clean Energy Investment at the Washington-based think tank Center for American Progress. Currently, 29 states and the District of Columbia have Renewable Portfolio Standards, while another five states have established renewable electricity goals but impose no penalties for failure to meet them. The standards, which are principally imposed on major public and investor-owned utilities, vary widely from state to state, with some requiring only five percent of the generated power to come from renewable resources. At the other end, California recently raised its RPS target to 33 percent by 2020. Early last year, the wind industry there reached a milestone by providing five percent of the state's electricity. However, not all share the confidence in state RPS policies expressed by Barbose, the LBNL and other renewable energy advocates. The American Legislative Exchange Council, a conservative coalition of state legislators, has been recruiting state lawmakers to introduce legislation that would repeal the RPS in targeted states. ALEC leaders say RPSs essentially impose a tax on consumers by making them pay more for new energy sources over more conventional fossil fuels like coal and natural gas. However, efforts to repeal the RPS in 10 states over the last two years have failed a setback attributable in part to the fact that electric rates have risen less than 5 percent. Furthermore, advocates say Renewable Portfolio Standards have helped drive investments in renewable electricity facilities that are dropping costs dramatically, particularly in the past five to 10 years. The Solar Energy Industries Association says the average price of a solar panel has declined by 47 percent since the beginning of 2011. And the American Wind Energy Association says there's been a drop of 90 percent in wind costs since incentives began in the 1980s, and that wind development has attracted private investment of $15 billion in each of the past five years. "Consumers in 29 states are seeing the benefits of renewable energy today thanks to renewable energy standards," says American Progress' Caperton. "They have access to cleaner air, reliable power, and growing economies, all of which are benefits of a simple, common-sense policy."

#### Renewables also expanding on military bases

Choudhury, 1/8 (Nilima, 1/8/2013, “Financing complete for largest solar powered US military community,” <http://www.pv-tech.org/news/financing_complete_for_largest_solar_powered_us_military_community>))

True Green Capital Management and financier CIT Group have announced the closing of a US$35 million contract for the construction of a 12.3MW installation at a US military housing base. Installed by Trinity Solar, the solar power plant will provide electricity at a reduced rate for a period of 20 years to the privatised military family housing community at Joint Base McGuire-Dix-Lakehurst, New Jersey. In addition to equity contributed by True Green Capital Management, CIT Energy served as sole lead arranger in a US$24 million senior secured credit facility provided by CIT Bank, the US commercial bank subsidiary of CIT Group. Terms of the transaction were not disclosed. The project under construction currently employs over 120 engineering, electrical, installation and maintenance workers and upon completion scheduled for the second half of 2013 will generate an estimated 13.7 million kilowatt hours of renewable electric power annually. According to the Environmental Protection Agency, this annual level of clean, sustainable power production offsets in excess of 1 million gallons of gasoline or approximately 22 million barrels of foreign crude oil each year. Mike Haydinger of United Communities commented: "The estimated 13.7 million kilowatt hours produced each year by the full rooftop solar system will represent roughly 40 percent of the annual electricity usage of our 2,104 military family homes at Joint Base McGuire-Dix-Lakehurst. After careful evaluation of parties with which to partner for a solar solution to meet our goals of energy savings and efficiency, we are pleased to bring the project to fruition at United Communities in partnership with True Green Capital Management and installer Trinity Solar."

#### Warming inevitable and there’s nothing you can do about it

Solomon et al, IPCC Climate Science Co-Chair, ‘09 (Susan- member of the US National Academy of Sciences, the European Academy of Sciences, and the Academy of Sciences of France, Nobel Peace Prize Winner, Chairwoman of the IPCC, February 10, “Irreversible climate change due to carbon dioxide emissions” PNAS, Vol 106, http://www.pnas.org/content/early/2009/01/28/0812721106.full.pdf)

Over the 20th century, the atmospheric concentrations of key greenhouse gases increased due to human activities. The stated objective (Article 2) of the United Nations Framework Convention on Climate Change (UNFCCC) is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a low enough level to prevent ‘‘dangerous anthropogenic interference with the climate system.’’ Many studies have focused on projections of possible 21st century dangers (1–3). However, the principles (Article 3) of the UNFCCC specifically emphasize ‘‘threats of serious or irreversible damage,’’ underscoring the importance of the longer term. While some irreversible climate changes such as ice sheet collapse are possible but highly uncertain (1, 4), others can now be identified with greater confidence, and examples among the latter are presented in this paper. It is not generally appreciated that the atmospheric temperature increases caused by rising carbon dioxide concentrations are not expected to decrease significantly even if carbon emissions were to completely cease (5–7) (see Fig. 1). Future carbon dioxide emissions in the 21st century will hence lead to adverse climate changes on both short and long time scales that would be essentially irreversible (where irreversible is defined here as a time scale exceeding the end of the millennium in year 3000; note that we do not consider geo-engineering measures that might be able to remove gases already in the atmosphere or to introduce active cooling to counteract warming). For the same reason, the physical climate changes that are due to anthropogenic carbon dioxide already in the atmosphere today are expected to be largely irreversible. Such climate changes will lead to a range of damaging impacts in different regions and sectors, some of which occur promptly in association with warming, while others build up under sustained warming because of the time lags of the processes involved. Here we illustrate 2 such aspects of the irreversibly altered world that should be expected. These aspects are among reasons for concern but are not comprehensive; other possible climate impacts include Arctic sea ice retreat, increases in heavy rainfall and flooding, permafrost melt, loss of glaciers and snowpack with attendant changes in water supply, increased intensity of hurricanes, etc. A complete climate impacts review is presented elsewhere (8) and is beyond the scope of this paper. We focus on illustrative adverse and irreversible climate impacts for which 3 criteria are met: (i) observed changes are already occurring and there is evidence for anthropogenic contributions to these changes, (ii) the phenomenon is based upon physical principles thought to be well understood, and (iii) projections are available and are broadly robust across models. Advances in modeling have led not only to improvements in complex Atmosphere–Ocean General Circulation Models (AOGCMs) for projecting 21st century climate, but also to the implementation of Earth System Models of Intermediate Complexity (EMICs) for millennial time scales. These 2 types of models are used in this paper to show how different peak carbon dioxide concentrations that could be attained in the 21st century are expected to lead to substantial and irreversible decreases in dry-season rainfall in a number of already-dry subtropical areas and lower limits to eventual sea level rise of the order of meters, implying unavoidable inundation of many small islands and low-lying coastal areas. Results Longevity of an Atmospheric CO2 Perturbation. As has long been known, the removal of carbon dioxide from the atmosphere involves multiple processes including rapid exchange with the land biosphere and the surface layer of the ocean through air–sea exchange and much slower penetration to the ocean interior that is dependent upon the buffering effect of ocean chemistry along with vertical transport (9–12). On the time scale of a millennium addressed here, the CO2 equilibrates largely between the atmosphere and the ocean and, depending on associated increases in acidity and in ocean warming (i.e., an increase in the Revelle or ‘‘buffer’’ factor, see below), typically 20% of the added tonnes of CO2 remain in the atmosphere while 80% are mixed into the ocean. Carbon isotope studies provide important observational constraints on these processes and time constants. On multimil- lenium and longer time scales, geochemical and geological processes could restore atmospheric carbon dioxide to its pre- industrial values (10, 11), but are not included here. Fig. 1 illustrates how the concentrations of carbon dioxide would be expected to fall off through the coming millennium if manmade emissions were to cease immediately following an illustrative future rate of emission increase of 2% per year [comparable to observations over the past decade (ref. 13)] up to peak concentrations of 450, 550, 650, 750, 850, or 1,200 ppmv; similar results were obtained across a range of EMICs that were assessed in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (5, 7). This is not intended to be a realistic scenario but rather to represent a test case whose purpose is to probe physical climate system changes. A more gradual reduction of carbon dioxide emission (as is more likely), or a faster or slower adopted rate of emissions in the growth period, would lead to long-term behavior qualitatively similar to that illustrated in Fig. 1 (see also Fig. S1). The example of a sudden cessation of emissions provides an upper bound to how much reversibility is possible, if, for example, unexpectedly damaging climate changes were to be observed. Carbon dioxide is the only greenhouse gas whose falloff displays multiple rather than single time constants (see Fig. S2). Current emissions of major non-CO2 greenhouse gases such as methane or nitrous oxide are significant for climate change in the next few decades or century, but these gases do not persist over time in the same way as carbon dioxide (14). Fig. 1 shows that a quasi-equilibrium amount of CO2 is expected to be retained in the atmosphere by the end of the millennium that is surprisingly large: typically 40% of the peak concentration enhancement over preindustrial values ( 280 ppmv). This can be easily understood on the basis of the observed instantaneous airborne fraction (AFpeak) of 50% of anthropogenic carbon emissions retained during their buildup in the atmosphere, together with well-established ocean chemistry and physics that require 20% of the emitted carbon to remain in the atmosphere on thousand-year timescales [quasi- equilibrium airborne fraction (AFequi), determined largely by the Revelle factor governing the long-term partitioning of carbon between the ocean and atmosphere/biosphere system] (9–11). Assuming given cumulative emissions, EMI, the peak concen- tration, CO2peak (increase over the preindustrial value CO20), and the resulting 1,000-year quasi-equilibrium concentration, CO2equi can be expressed as COpeak 2 = CO02 + AFpeak EMI [1] COequi 2 = CO02 + AFequi EMI [2] so that COequi2 – CO0 2 = AFequi/AFpeak (COpeak 2 – CO02) [3] Given an instantaneous airborne fraction (AFpeak) of 50% during the period of rising CO2, and a quasi-equilbrium airborne factor (AFequi) of 20%, it follows that the quasi-equilibrium enhancement of CO2 concentration above its preindustrial value is 40% of the peak enhancement. For example, if the CO2 concentration were to peak at 800 ppmv followed by zero emissions, the quasi-equilibrium CO2 concentration would still be far above the preindustrial value at 500 ppmv. Additional carbon cycle feedbacks could reduce the efficiency of the ocean and biosphere to remove the anthropogenic CO2 and thereby increase these CO2 values (15, 16). Further, a longer decay time and increased CO2 concentrations at year 1000 are expected for large total carbon emissions (17). Irreversible Climate Change: Atmospheric Warming. Global average temperatures increase while CO2 is increasing and then remain approximately constant (within 0.5 °C) until the end of the millennium despite zero further emissions in all of the test cases shown in Fig. 1. This important result is due to a near balance between the long-term decrease of radiative forcing due to CO2 concentration decay and reduced cooling through heat loss to the oceans. It arises because long-term carbon dioxide removal and ocean heat uptake are both dependent on the same physics of deep-ocean mixing. Sea level rise due to thermal expansion accompanies mixing of heat into the ocean long after carbon dioxide emissions have stopped. For larger carbon dioxide concentrations, warming and thermal sea level rise show greater increases and display transient changes that can be very rapid (i.e., the rapid changes in Fig. 1 Middle), mainly because of changes in ocean circulation (18). Paleoclimatic evidence suggests that additional contributions from melting of glaciers and ice sheets may be comparable to or greater than thermal expansion (discussed further below), but these are not included in Fig. 1. Fig. 2 explores how close the modeled temperature changes are to thermal equilibrium with respect to the changing carbon dioxide concentration over time, sometimes called the realized warming fraction (19) (shown for the different peak CO2 cases). Fig. 2 Left shows how the calculated warmings compare to those expected if temperatures were in equilibrium with the carbon dioxide concentrations vs. time, while Fig. 2 Right shows the ratio of these calculated time-dependent and equilibrium tempera- tures. During the period when carbon dioxide is increasing, the realized global warming fraction is 50–60% of the equilibrium warming, close to values obtained in other models (5, 19). After emissions cease, the temperature change approaches equilib- rium with respect to the slowly decreasing carbon dioxide concentrations (cyan lines in Fig. 2 Right). The continuing warming through year 3000 is maintained at 40–60% of the equilibrium warming corresponding to the peak CO2 concentration (magenta lines in Fig. 2 Right). Related changes in fast-responding atmospheric climate variables such as precipitation, water vapor, heat waves, cloudiness, etc., are expected to occur largely simultaneously with the temperature changes. Irreversible Climate Change: Precipitation Changes. Warming is expected to be linked to changes in rainfall (20), which can adversely affect the supply of water for humans, agriculture, and ecosystems. Precipitation is highly variable but long-term rainfall decreases have been observed in some large regions including, e.g., the Mediterranean, southern Africa, and parts of south- western North America (21–25). Confident projection of future changes remains elusive over many parts of the globe and at small scales. However, well-known physics (the Clausius–Clapeyron law) implies that increased temperature causes increased atmospheric water vapor concentrations, and changes in water vapor transport and the hydrologic cycle can hence be expected (26–28). Further, advances in modeling show that a robust characteristic of anthropogenic climate change is poleward expansion of the Hadley cell and shifting of the pattern of precipitation minus evaporation (P–E) and the storm tracks (22, 26), and hence a pattern of drying over much of the already-dry subtropics in a warmer world ( 15°-40° latitude in each hemi- sphere) (5, 26). Attribution studies suggest that such a drying pattern is already occurring in a manner consistent with models including anthropogenic forcing (23), particularly in the south- western United States (22) and Mediterranean basin (24, 25). We use a suite of 22 available AOGCM projections based upon the evaluation in the IPCC 2007 report (5, 29) to characterize precipitation changes. Changes in precipitation are expected (5, 20, 30) to scale approximately linearly with increasing warming (see Fig. S3). The equilibrium relationship between precipitation and temperature may be slightly smaller (by 15%) than the transient values, due to changes in the land/ ocean thermal contrast (31). On the other hand, the observed 20th century changes follow a similar latitudinal pattern but presently exceed those calculated by AOGCMs (23). Models that include more complex representations of the land surface, soil, and vegetation interactively are likely to display additional feedbacks so that larger precipitation responses are possible. Here we evaluate the relationship between temperature and precipitation averaged for each month and over a decade at each grid point. One ensemble member is used for each model so that all AOGCMs are equally weighted in the multimodel ensemble; results are nearly identical if all available model ensemble members are used. Fig. 3 presents a map of the expected dry-season (3 driest consecutive months at each grid point) precipitation trends per degree of global warming. Fig. 3 shows that large uncertainties remain in the projections for many regions (white areas). How- ever, it also shows that there are some subtropical locations on every inhabited continent where dry seasons are expected to become drier in the decadal average by up to 10% per degree of warming. Some of these grid points occur in desert regions that are already very dry, but many occur in currently more temperate and semiarid locations. We find that model results are more robust over land across the available models over wider areas for drying of the dry season than for the annual mean or wet season (see Fig. S4). The Insets in Fig. 3 show the monthly mean projected precipitation changes averaged over several large regions as delineated on the map. Increased drying of respective dry seasons is projected by 90% of the models averaged over the indicated regions of southern Europe, northern Africa, southern Africa, and southwestern North America and by 80% of the models for eastern South America and western Australia (see Fig. S3). Although given particular years would show exceptions, the long-term irreversible warming and mean rainfall changes as suggested by Figs. 1 and 3 would have important consequences in many regions. While some relief can be expected in the wet season for some regions (Fig. S4), changes in dry-season precipitation in northern Africa, southern Europe, and western Australia are expected to be near 20% for 2 °C warming, and those of southwestern North America, eastern South America, and southern Africa would be 10% for 2 °C of global mean warming. For comparison, the American ‘‘dust bowl’’ was associated with averaged rainfall decreases of 10% over 10–20 years, similar to major droughts in Europe and western Australia in the 1940s and 1950s (22, 32). The spatial changes in precipitation as shown in Fig. 3 imply greater challenges in the distribution of food and water supplies than those with which the world has had difficulty coping in the past. Such changes occurring not just for a few decades but over centuries are expected to have a range of impacts that differ by region. These include, e.g., human water supplies (25), effects on dry-season wheat and maize agriculture in certain regions of rain-fed farming such as Africa (33, 34), increased fire frequency, ecosystem change, and desertification (24, 35–38). Fig. 4 Upper relates the expected irreversible changes in regional dry-season precipitation shown in Fig. 3 to best estimates of the corresponding peak and long-term CO2 concentrations. We use 3 °C as the best estimate of climate sensitivity across the suite of AOGCMs for a doubling of carbon dioxide from preindustrial values (5) along with the regional drying values depicted in Fig. 3 and assuming that 40% of the carbon dioxide peak concentration is retained after 1000 years. Fig. 4 shows that if carbon dioxide were to peak at levels of 450 ppmv, irreversible decreases of 8–10% in dry-season precipitation would be expected on average over each of the indicated large regions of southern Europe, western Australia, and northern Africa, while a carbon dioxide peak value near 600 ppmv would be expected to lead to sustained rainfall decreases of 13–16% in the dry seasons in these areas; smaller but statistically significant irreversible changes would also be expected for southwestern North America, eastern South America, and Southern Africa. Irreversible Climate Change: Sea Level Rise. Anthropogenic carbon dioxide will cause irrevocable sea level rise. There are 2 relatively well-understood processes that contribute to this and a third that may be much more important but is also very uncertain. Warm- ing causes the ocean to expand and sea levels to rise as shown in Fig. 1; this has been the dominant source of sea level rise in the past decade at least (39). Loss of land ice also makes important contributions to sea level rise as the world warms. Mountain glaciers in many locations are observed to be retreating due to warming, and this contribution to sea level rise is also relatively well understood. Warming may also lead to large losses of the Greenland and/or Antarctic ice sheets. Additional rapid ice losses from particular parts of the ice sheets of Greenland and Antarctica have recently been observed (40–42). One recent study uses current ice discharge data to suggest ice sheet contributions of up to 1–2 m to sea level rise by 2100 (42), but other studies suggest that changes in winds rather than warming may account for currently observed rapid ice sheet flow (43), rendering quantitative extrapolation into the future uncertain. In addition to rapid ice flow, slow ice sheet mass balance processes are another mechanism for potential large sea level rise. Paleoclimatic data demonstrate large contributions of ice sheet loss to sea level rise (1, 4) but provide limited constraints on the rate of such processes. Some recent studies suggest that ice sheet surface mass balance loss for peak CO2 concentrations of 400–800 ppmv may be even slower than the removal of manmade carbon dioxide following cessation of emis- sions, so that this loss could contribute less than a meter to irreversible sea level rise even after many thousands of years (44, 45). It is evident that the contribution from the ice sheets could be large in the future, but the dependence upon carbon dioxide levels is extremely uncertain not only over the coming century but also in the millennial time scale. An assessed range of models suggests that the eventual contribution to sea level rise from thermal expansion of the ocean is expected to be 0.2–0.6 m per degree of global warming (5). Fig. 4 uses this range together with a best estimate for climate sensitivity of 3 °C (5) to estimate lower limits to eventual sea level rise due to thermal expansion alone. Fig. 4 shows that even with zero emissions after reaching a peak concentration, irreversible global average sea level rise of at least 0.4–1.0 m is expected if 21st century CO2 concentrations exceed 600 ppmv and as much as 1.9 m for a peak CO2 concentration exceeding 1,000 ppmv. Loss of glaciers and small ice caps is relatively well understood and is expected to be largely complete under sustained warming of, for example, 4 °C within 500 years (46). For lower values of warming, partial remnants of glaciers might be retained, but this has not been examined in detail for realistic representations of glacier shrinkage and is not quantified here. Complete losses of glaciers and small ice caps have the potential to raise future sea level by 0.2–0.7 m (46, 47) in addition to thermal expansion. Further contributions due to partial loss of the great ice sheets of Antarctica and/or Greenland could add several meters or more to these values but for what warming levels and on what time scales are still poorly characterized. Sea level rise can be expected to affect many coastal regions (48). While sea walls and other adaptation measures might combat some of this sea level rise, Fig. 4 shows that carbon dioxide peak concentrations that could be reached in the future for the conservative lower limit defined by thermal expansion alone can be expected to be associated with substantial irreversible commitments to future changes in the geography of the Earth because many coastal and island features would ultimately become submerged. Discussion: Some Policy Implications It is sometimes imagined that slow processes such as climate changes pose small risks, on the basis of the assumption that a choice can always be made to quickly reduce emissions and thereby reverse any harm within a few years or decades. We have shown that this assumption is incorrect for carbon dioxide emissions, because of the longevity of the atmospheric CO2 perturbation and ocean warming. Irreversible climate changes due to carbon dioxide emissions have already taken place, and future carbon dioxide emissions would imply further irreversible effects on the planet, with attendant long legacies for choices made by contemporary society. Discount rates used in some estimates of economic trade-offs assume that more efficient climate mitigation can occur in a future richer world, but neglect the irreversibility shown here. Similarly, understanding of irreversibility reveals limitations in trading of greenhouse gases on the basis of 100-year estimated climate changes (global warming potentials, GWPs), because this metric neglects carbon dioxide’s unique long-term effects. In this paper we have quantified how societal decisions regarding carbon dioxide concentrations that have already occurred or could occur in the coming century imply irreversible dangers relating to climate change for some illustrative populations and regions. These and other dangers pose substantial challenges to humanity and nature, with a magnitude that is directly linked to the peak level of carbon dioxide reached.

### AT: China Adv

#### Can’t solve --- the market will determine proper energy application and trying fight it with government policies will backfire

Glover, 1/25 --- European associate editor for the independent online magazine Energy Tribune (1/25/2013, Peter C., “Obama’s Bonfire of Green Energy Inanities,” [http://www.energytribune.com/71647/obamas-bonfire-of-green-energy-inanities)](http://www.energytribune.com/71647/obamas-bonfire-of-green-energy-inanities%29))

Just as President Obama re-commits his administration to a renewed assault – code for more massive subsidies – in favour of green energy, the US and European wind and solar industries are in obvious turmoil. Around 30 percent of the green jobs President Obama promised in his first-term have already been lost through bankruptcies. Other green jobs were lost to the Chinese market. Not that there is a shortage of energy investors. It’s just that they prefer to invest their money sensibly in the soaring success of much cheaper forms of energy, including low-cost natural, especially shale, gas and new sources of oil. Only bureaucrats are still fuelling the investment bonfires of green energy inanities.It seems the naiveté of politicians who believe they can buck the market knows no bounds. By the time President Obama leaves office in 2016 we’ll all be wondering how we could possibly have been so gullible as to allow bureaucrats to sell us a lame duck renewable energy policy that fritters away so much of our money. How could we, for instance, have bought into claims that wind power really is a viable economic alternative to hydrocarbon power? How could we allow ourselves to have our pockets picked by bureaucrats with a vision to reverse the industrial revolution by proving that sailing ships really could be a serious commercial competitor to ‘new-fangled’ steam ships? But then, if you are raking in the kind of money government bureaucrats make, or the windfall profits guaranteed to green energy entrepreneurs, you can afford to invest your own money in wind power – and buy yourself a yacht. Why should they care that those forced into fuel poverty are paying for it?

#### Solar empirically fails --- not realistic and proponents sensationalize its benefits

Stover, 1/29 --- science writer based in the Pacific Northwest and is a contributing editor at the Bulletin (1/29/2013, Dawn, “Reality check,” [http://www.thebulletin.org/web-edition/columnists/dawn-stover/reality-check)](http://www.thebulletin.org/web-edition/columnists/dawn-stover/reality-check%29))

In January the World Wildlife Fund released a report asserting that Indonesia, Madagascar, Mexico, Morocco, South Africa, Turkey, and the Indian state of Madhya Pradesh could meet 100 percent of their projected electricity needs in 2050 by installing solar photovoltaic power plants on less than one percent of their total land area. Which would be excellent news if all anyone needed to make electricity was land and sunshine. Unfortunately, the WWF has let fantasy overtake reality in its dream of an all-renewables future. Never mind the challenges of obtaining and assembling the materials for a project of this scale. Never mind the infrastructure required for transmitting solar electricity to all who need it, and storing some for a rainy day. Never mind that the report was co-written by three solar power companies. The problem is that this report is a dream, rather than a plan. It is written by visionaries, in a world that desperately needs actionaries. When renewable energy experts get together, they tend to rhapsodize about the possibilities, believing that this will somehow inspire others to make their visions come true. But ambitious plans to power entire countries on solar energy (or wind or nuclear power, for that matter) don't have a snowball's chance in Australia. Such schemes are doomed to fail, and not because of the economic "reality" or the political "reality" -- however daunting those may be. They are doomed because of the physical reality: It's simply not physically possible for the world's human population to continue growing in numbers, affluence, and energy consumption without trashing the planet. Reality is a buzzkill. So perhaps it's no wonder that many otherwise reasonable people have fallen victim to utopian visions of a world free of poverty, hunger, and climate-altering air pollution -- all thanks to (insert "clean" energy technology of your choice here). The numbers, however, just don't add up. Pretending otherwise merely guarantees future disillusionment. We simply don't have an alternative to fossil fuels that can be rapidly scaled up, doesn't require a daunting input of raw materials and energy, and has a relatively low output of air-polluting emissions. As Derek Abbott has reported elsewhere in the Bulletin, nuclear power is not globally scalable because of the limited availability of the relatively scarce metals used to construct reactor vessels and cores, which appears to be a harder limit than the supply of uranium fuel. Experts who have considered the difficulty of powering the world without fossil fuels or nuclear power have come up with mind-blowing numbers. In an article published in Scientific American in 2009, engineer Mark Z. Jacobson and research scientist Mark A. Delucci tallied up what it would take to power the whole planet on renewable energy alone by 2030: billions of rooftop photovoltaic systems, millions of jumbo-size wind turbines, hundreds of thousands of wave devices and tidal turbines, tens of thousands of concentrated solar power plants and photovoltaic plants, thousands of geothermal plants, and hundreds of hydroelectric dams. But the construction work doesn't end there, because population and living standards are expected to continue rising after 2030. At best, such a plan simply kicks the can down the road. Lately it is physicists -- better known for their heady talk about time travel and multiple universes -- who are providing a reality check on energy. These are the people, after all, who study the physical world. Take solar power, for example: It's appealing because it seems virtually limitless. In only one hour, the sun delivers as much energy to Earth's surface as humanity consumes in a year. This apparent abundance is deceptive, though. In his "Do the Math" blog, astrophysicist Tom Murphy calculates that, even with an annual energy growth rate of only 2.3 percent, a civilization powered by solar energy would have to cover every square inch of Earth's land area with 100-percent-efficient solar panels within a few hundred years. Even if we covered the oceans too, and surrounded the sun and other nearby stars with solar panels, eventually there would not be enough energy in the galaxy to meet the growing demand. Yet many energy experts treat growth as a given, focusing only on which technology can best satisfy the insatiable demand. While it's theoretically possible to power an entire society on renewable energy, that certainly wouldn't be cheap or painless, and any solution would only be a temporary one. Replacing fossil fuels is a wicked problem, and it doesn't help when researchers and environmental groups try to make it sound easy. There's another way to approach the problem: start with supply instead of demand, and work backward from there. In his book Sustainable Energy -- Without the Hot Air, physicist David J.C. MacKay calculates how much energy could sustainably be produced in the United Kingdom with a massive expansion of existing technology. The total turns out to be less than the nation's energy consumption, which suggests to MacKay that the only path forward is to reduce demand -- through energy efficiency improvements, for example -- until it balances with supply. Renewable energy advocates typically support conservation efforts, but they don't make reducing consumption their primary goal. Panicked by the urgency of the climate crisis, and rightfully so, their knee-jerk response is a "just do it" approach to technology. "Why don't we just build more solar panels and wind turbines?" they ask. To which I say: Why don't we just not do it? Let's not build any new power plants except to replace old, inefficient ones. Let's not dig up all the oil. Let's not drive to work alone. Let's not eat meat every day. Let's not turn the thermostat up so high. Let's not buy so many things we don't really need. And above all, let's not accept continued energy growth as a necessary or even desirable way of life.

#### **Doesn’t kill the economy and can’t solve – China is already taking action**

Plumer, author @ Washington Post, 2012,

10-5, Brad, “China may soon stop handing out cheap solar panels for everyone,” http://www.washingtonpost.com/blogs/ezra-klein/wp/2012/10/05/china-may-soon-stop-handing-out-cheap-solar-panels-for-everyone/

But the party may end soon. Bradsher reports that China’s economic planners want to cut off loans for all but the strongest solar manufacturers and let the rest go bankrupt. Would that be a good thing? It depends. The price of Chinese solar panels would likely rise as a result. That would provide a boost to U.S. solar manufacturers who have been struggling against cheaper Chinese imports. (In May, the U.S. Commerce Department slapped a 31 percent tariff on imports of silicon photovoltaic cells from certain Chinese manufacturers, alleging that they were unfairly subsidized.)¶ Over at Resources for the Future, Nathan Richardson takes a different view: “[C]heap solar panels are fantastic in their own right,” he notes. “It doesn’t really matter who makes them. If we can buy cheap panels from China, we can spend the resources we’d otherwise use on other things. … China’s solar policy may not be a good idea economically (for China). But they are doing their bit, perhaps unintentionally, to build the technology that can avert climate change.”¶ In any case, not all analysts are convinced that the surge in U.S. solar installations would collapse if China were to consolidate its solar industry. Back in May, in a policy brief for the Center for American Progress, Melanie Hart and Kate Gordon pointed out that the key drivers of America’s solar surge have been demand-side policies, such as tax credits for installation or state-level renewable energy standards, and not low Chinese prices. “If you look within the U.S. market,” Hart and Gordon write, “there is a huge amount of variation from state to state, and that variation is primarily due to differences in state incentives.”¶ So China’s frantic push to hand out cheap solar panels (and wind turbines) to the rest of the world could soon slow down. But that won’t necessarily mean the end of the world’s recent solar-power boom — that will depend on whether countries like the United States enact further policies to boost renewables or not.

#### Worst case China will buoy remaining companies with state loans

Plumer, author @ Washington Post, 2012,

10-5, Brad, “China may soon stop handing out cheap solar panels for everyone,” http://www.washingtonpost.com/blogs/ezra-klein/wp/2012/10/05/china-may-soon-stop-handing-out-cheap-solar-panels-for-everyone/

By contrast, China’s state-owned banks alone have shelled out $18 billion in low-rate, preferential loans to solar companies over the past five years — most of which have gone to basic factories and manufacturers. In addition, China’s local governments have provided a slew of loan guarantees and cheap land to solar producers. Bradsher reports that the total subsidies could come to $50 billion over the next 20 years for every 10 gigawatts of solar power installed. That’s an enormous difference.

# 2NC

## Case

### 2NC FITs Fail

#### FiTs empirically fail and get rolled back

Michaels, 12 --- senior fellow in environmental studies at the Cato (Patrick J., 1/6/2012, “A Sustainable Depression,” <http://www.cato.org/publications/commentary/sustainable-depression>)

If the Dow fell 85 percent, most folks would call that a depression. So why doesn’t that apply to the “sustainable” energy business — mainly solar and wind power — where shares have fallen an average of 85 percent to 90 percent, even excluding the bankrupt Solyndras, Evergreens and Solons? This depression is global, hitting Chinese Suntech, the world’s largest producer of solar panels, as well. Suntech has seen its shares plunge 88 percent. As in other depressions, scads of real money has been lost, sustained by the snake oil that global warming is such a threat to us all that we should not just encourage, but legally compel,people to install the most economically inefficient form of electrical generation on the planet — solar photovoltaic, and its sibling in inconstancy, wind power. In various states and around the world, these are legislated by “renewable portfolio standards.” What we get is a sustainable depression. The impetus for this originated in Germany with the 1990 Stromeinspeisungsgesetz, which sort of translates as “Law on Feeding Electricity Into the Grid.” This law initially required utilities to purchase “renewable” (i.e. solar and wind) energy at the market price. It didn’t exactly shock the electricity world that this would not work. Solar and wind were too expensive, so in 2000, the law was changed to become a welfare program for anyone who put a solar panel on a roof. Now called the Act Granting Priority to Renewable Energy Sources, it guaranteed an ultimate profit, sort of like buying your own slot machine and inviting the neighbors. In the beginning, Germans paid a “feed-in tariff” of 65 cents per kilowatt-hour for power from the roof; the total comparable cost for power from a new gas plant in the United States is about 6 cents. Solar panels sprouted everywhere. Q-Cells Corp. became the world’s largest producer. Investors piled on. Q-Cells rose from $30 a share in October 2006 to a peak of $97.60 in 13 months. Today it is trading at 55 cents. A grand total of 1.9 percent of Germany’s power comes from solar.Germany gradually reduced the tariff by about 50 percent, which substantially lengthened the time in which a panel will pay for itself. A huge supply of solar panels glutted the market, and the carnage is industrywide. A person who invested $2,500 in the Guggenheim Solar Energy Fund in 2008 (symbol: TAN) would have $267 today, typical for this sector. Seeing rich Germans sunning in Cadiz gave Spain the idea, so Royal Decree 661 in 2007 provided a feed-in tariff to the owner of a solar panel or a windmill of about 58 cents per kilowatt-hour, guaranteed for 25 years. Hey, why work when you can just populate your pasture with cash cows? Massive solar farms sprang up in sunny Spain. Land prices escalated, and the Spanish government realized that many of the facilities simply would never pay for themselves. Spain’s massive subsidy program soon got out of hand, sending the country further and further into hock, and Spain finally cut it back, which further tanked the solar industry, which never should have expanded so much. But didn’t all this sprout “green jobs”? After all, someone has to go up on the roof in Germany, and someone has to keep the panels clean in dusty Spain. Robbing Peter, in fact, did affect Paul, at a cost of about $800,000 per “green,” job, according to King Juan Carlos University economist Gabriel Calzada. Two people got fired for every one who was hired. Then the sustainable contagion spread to the United Kingdom, which has done for wind what Spain did with the sun. It slapped utilities with a “renewables obligation” of 15 percent of their power in a little more than three years (current contribution: 4 percent). Consumers pay both feed-in tariffs for the windmill down the road and capital costs for transmission and backup power. The political rebellion in the United Kingdom is palpable, and in response, Prime Minister David Cameron, who promised the “greenest government ever,” recently cut the solar feed-in tariff in cloudy Britain by 50 percent.

### No Impact

#### No conflict from economic decline – recession proves

Barnett, 09 – Senior Managing Director of Enterra Solutions LLC, Contributing Editor and Online Columnist for Esquire (Thomas P.M, “The New Rules: Security Remains Stable Amid Financial Crisis,” Aprodex, Asset Protection Index, 8/25/09 <http://www.aprodex.com/the-new-rules--security-remains-stable-amid-financial-crisis-398-bl.aspx>)

When the global financial crisis struck roughly a year ago, the blogosphere was ablaze with all sorts of scary predictions of, and commentary regarding, ensuing conflict and wars -- a rerun of the Great Depression leading to world war, as it were. Now, as global economic news brightens and recovery -- surprisingly led by China and emerging markets -- is the talk of the day, it's interesting to look back over the past year and realize how globalization's first truly worldwide recession has had virtually no impact whatsoever on the international security landscape. None of the more than three-dozen ongoing conflicts listed by GlobalSecurity.org can be clearly attributed to the global recession. Indeed, the last new entry (civil conflict between Hamas and Fatah in the Palestine) predates the economic crisis by a year, and three quarters of the chronic struggles began in the last century. Ditto for the 15 low-intensity conflicts listed by Wikipedia (where the latest entry is the Mexican "drug war" begun in 2006). Certainly, the Russia-Georgia conflict last August was specifically timed, but by most accounts the opening ceremony of the Beijing Olympics was the most important external trigger (followed by the U.S. presidential campaign) for that sudden spike in an almost two-decade long struggle between Georgia and its two breakaway regions. Looking over the various databases, then, we see a most familiar picture: the usual mix of civil conflicts, insurgencies, and liberation-themed terrorist movements. Besides the recent Russia-Georgia dust-up, the only two potential state-on-state wars (North v. South Korea, Israel v. Iran) are both tied to one side acquiring a nuclear weapon capacity -- a process wholly unrelated to global economic trends. And with the United States effectively tied down by its two ongoing major interventions (Iraq and Afghanistan-bleeding-into-Pakistan), our involvement elsewhere around the planet has been quite modest, both leading up to and following the onset of the economic crisis: e.g., the usual counter-drug efforts in Latin America, the usual military exercises with allies across Asia, mixing it up with pirates off Somalia's coast). Everywhere else we find serious instability we pretty much let it burn, occasionally pressing the Chinese -- unsuccessfully -- to do something. Our new Africa Command, for example, hasn't led us to anything beyond advising and training local forces. So, to sum up: No significant uptick in mass violence or unrest (remember the smattering of urban riots last year in places like Greece, Moldova and Latvia?); The usual frequency maintained in civil conflicts (in all the usual places); Not a single state-on-state war directly caused (and no great-power-on-great-power crises even triggered); No great improvement or disruption in great-power cooperation regarding the emergence of new nuclear powers (despite all that diplomacy); A modest scaling back of international policing efforts by the system's acknowledged Leviathan power (inevitable given the strain); and No serious efforts by any rising great power to challenge that Leviathan or supplant its role. (The worst things we can cite are Moscow's occasional deployments of strategic assets to the Western hemisphere and its weak efforts to outbid the United States on basing rights in Kyrgyzstan; but the best include China and India stepping up their aid and investments in Afghanistan and Iraq.) Sure, we've finally seen global defense spending surpass the previous world record set in the late 1980s, but even that's likely to wane given the stress on public budgets created by all this unprecedented "stimulus" spending. If anything, the friendly cooperation on such stimulus packaging was the most notable great-power dynamic caused by the crisis. Can we say that the world has suffered a distinct shift to political radicalism as a result of the economic crisis? Indeed, no. The world's major economies remain governed by center-left or center-right political factions that remain decidedly friendly to both markets and trade. In the short run, there were attempts across the board to insulate economies from immediate damage (in effect, as much protectionism as allowed under current trade rules), but there was no great slide into "trade wars." Instead, the World Trade Organization is functioning as it was designed to function, and regional efforts toward free-trade agreements have not slowed. Can we say Islamic radicalism was inflamed by the economic crisis? If it was, that shift was clearly overwhelmed by the Islamic world's growing disenchantment with the brutality displayed by violent extremist groups such as al-Qaida. And looking forward, austere economic times are just as likely to breed connecting evangelicalism as disconnecting fundamentalism. At the end of the day, the economic crisis did not prove to be sufficiently frightening to provoke major economies into establishing global regulatory schemes, even as it has sparked a spirited -- and much needed, as I argued last week -- discussion of the continuing viability of the U.S. dollar as the world's primary reserve currency. Naturally, plenty of experts and pundits have attached great significance to this debate, seeing in it the beginning of "economic warfare" and the like between "fading" America and "rising" China. And yet, in a world of globally integrated production chains and interconnected financial markets, such "diverging interests" hardly constitute signposts for wars up ahead. Frankly, I don't welcome a world in which America's fiscal profligacy goes undisciplined, so bring it on -- please! Add it all up and it's fair to say that this global financial crisis has proven the great resilience of America's post-World War II international liberal trade order. Do I expect to read any analyses along those lines in the blogosphere any time soon? Absolutely not. I expect the fantastic fear-mongering to proceed apace. That's what the Internet is for.

## K

#### The aff’s calls for pragmatism and specificity are a farce – their change in energy strategy represents conscious adoption of larger institutional logics, not an incremental change in existing policy – only radical analysis of the energy system takes the aff’s change seriously and avoids error replication

Byrne & Toly 6

(Josh, director of the Center for Energy and Environmental Policy and distinguished professor of energy and climate policy at the University of Delaware, Noah, Associate Professor of Urban Studies and Politics & International Relations, Director of Urban Studies Program at Wheaton, “Energy as a Social Project: Recovering a Discourse”, pgs. 1-32 in Transforming Power: Energy, Environment, and Society in Conflict, eds. Josh Byrne, Noah Toly, and Leigh Glover)

When measured in social and political-economic terms, the current energy discourse appears impoverished. Many of its leading voices proclaim great things will issue from the adoption of their strategies (conventional or sustainable), yet inquiry into the social and political-economic interests that power promises of greatness by either camp is mostly absent. In reply, some participants may petition for a progressive middle ground, acknowledging that energy regimes are only part of larger institutional formations that organize political and economic power. It is true that the political economy of energy is only a component of systemic power in the modern order, but it hardly follows that pragmatism toward energy policy and politics is the reasonable social response. Advocates of energy strategies associate their contributions with distinct pathways of social development and define the choice of energy strategy as central to the types of future(s) that can unfold. Therefore, acceptance of appeals for pragmatist assessments of energy proposals, that hardly envision incremental consequences, would indulge a form of selfdeception rather than represent a serious discursive position. An extensive social analysis of energy regimes of the type that Mumford (1934; 1966; 1970), Nye (1999), and others have envisioned is overdue. The preceding examinations of the two strategies potentiate conclusions about both the governance ideology and the political economy of modernist energy transitions that, by design, leave modernism undisturbed (except, perhaps, for its environmental performance).

### AT Perm/Link Turn

#### They cause a corresponding increase in consumption

Foster et al 10

(John Bellamy, prof of sociology @ U of Oregon, Brett Clark, asst prof of sociology @ NC-State, Richard York, associate prof of sociology @ U of Oregon, The Ecological Rift, pgs. 183-191)

Eco-Efficiency of National Economies Stephen Bunker, an environmental sociologist, found that over a long stretch of recent history, the world economy as a whole showed substantial improvements in resource efficiency (economic output per unit of natural resource), but that the total resource consumption of the global economy continually escalated. Similarly, recent research has shown that at the national level, high levels of affluence are, counter intuitively, associated with both greater eco-efficiency—GDP output per unit of ecological footprint—of the economy as a whole and with a higher per capita ecological footprint, suggesting that empirical conditions characteristic of the Jevons Paradox often may be applicable to the generalized aggregate level. Indeed, this type of pattern appears to be quite common. Statistical analyses using elasticity models of the effect of economic development (GDP per capita) on environmental impacts, such as carbon dioxide emissions, have shed light on the relationship between efficiency and total environmental impact. With such a model, an elasticity coefficient for GDP per capita (which indicates the percentage increase in the environmental impact of nations for a 1 percent increase in GDP per capita) of between 0 and 1 (indicating a positive inelastic relationship) implies a condition where the aggregate eco-efficiency of the economy improves with development but the expansion of the economy exceeds improvements in efficiency, leading to a net increase in environmental impact. This type of research does not establish a causal link between efficiency and total environmental impact or resource consumption, but it does empirically demonstrate that an association between rising efficiency and rising environmental impacts may be common, at least at the national level. These findings also suggest that improving eco-efficiency in a nation is not necessarily, or even typically, indicative of a decline in resource consumption. Fuel Efficiency of Automobiles The fuel efficiency of automobiles is obviously an issue of substantial importance, since motor vehicles consume a large share of the world’s oil. It would seem reasonable to expect that improvements in the efficiency of engines and refinements in the aerodynamics of automobiles would help to curb motor fuel consumption. However, and examination of recent trends in the fuel consumption of motor vehicles suggests a paradoxical situation where improvements in efficiency are associated with increases in fuel consumption. For example, in the United States an examination of a reasonable indicator of fuel efficiency of automobiles stemming from overall engineering techniques, pound-miles per gallon (or kilogram-kilometers per liter) of fuel, supports the contention that the efficiency of the light-duty fleet (which includes passenger cars and light trucks) improved substantially between 1984 and 2001, whereas the total and average fuel consumption of the fleet *increased*. For the purposes of calculating CAFE (corporate average fuel economy) performance of the nation’s automobile fleet, the light-duty fleet is divided into two categories, passenger cars and light trucks (which includes sports utility vehicles), each of which has a different legally enforced CAFE standard. In 1984 the total light-truck fleet CAFÉ miles per gallon (MPG) was 20.6 (~8.8 kilometers per liter; KPL) and the average equivalent test weight was 3,804 pounds (~1,725 kilograms), indicating that the average pound-miles per gallon was 78,362 (20.6 x 3,804) (~15,100 kilogram-KPL). By 2001, the total light truck fleet CAFÉ MPG had improved slightly to 21.0 (~8.9 KPL), while the average vehicle weight had increased substantially, to 4,501 pounds (~2,040 kilograms). Therefore the pound-miles per gallon had increased to 94,521 (21.0 x 4,501) (~18,200 kilogram-KPL), a 20.6 percent improvement in efficiency from 1984. A similar trend happened in passenger cars over this same period . In 1984 the total passenger car fleet CAFÉ was 29.6 MPG (~11.4 KPL) and the average equivalent test weight was 3,170 pounds (~1,440 kilograms), indicating that the pound-miles per gallon was 85,273 (26.9 x 3,170)(~16,400 kilogram-KPL). By 2001, the total passenger car fleet CAFÉ MPG had improved to 28.7 (~12.2 KPL) while the average vehicle weight had increased to 3,446 pounds (~1,560 kilograms), making the average fleet pound-miles per gallon 98,900 (28.7 x 2,446) (~19,070 kilogram-KPL)—a 16 percent improvement since 1984. Clearly engineering advances had substantially improved the efficiency of both light trucks and passenger cars in terms of pound-MPG (or kilogram-KPL) between 1984 and 2001. The observation of this fact in isolation might lead tone to expect that these improvements in efficiency were associated with a reduction in the fuel consumption of the total light-duty fleet. However, this is not what happened. Over this period, light; trucks, which on average are heavier and consume more fuel than passenger cars, grew from 24.4 percent of the light truck duty fleet to 46.6 percent. Because of this shift in composition, the CAFÉ MPG for the combined light-duty fleet declined from 25.0 to 24.5 (~10.6 to ~10.4 KPL), a 2 percent decrease. Clearly, engineering advances had improved the efficiency of engines and other aspects of automobiles, but this did not lead to a less-fuel thirsty fleet since the size of vehicles increased substantially, particularly due to a shift from passenger cars to light trucks among a large segment of drivers. It is worth noting that even if the total fleet MPG had improved, a reduction in fuel consumption would have been unlikely to follow, since over this period the distance traveled by drivers per year increased from little more than 15,000 km (~9,300 miles) per car, on average, to over 19,000 km (~11,800 miles). And, finally, an increase in the number of drivers and cars on the road drove up fuel consumption even further. For example, between 1990 and 1999, the number of motor vehicles in the United States increased from 189 million to 217 million due to both population growth and a 2.8 percent increase in the number of motor vehicles per 1,000 people (from 758 to 779). It appears that technological advances that improved the engineering of cars were in large part implemented, at least in the United States, in expanding the size of vehicles, rather than reducing the fuel the average vehicle consumed. The causal explanations for this are likely complex, but the fact that, despite engineering improvements, the U.S. light-duty fleet increased its total and average fuel consumption over the past two decades does suggest that technological refinements are unlikely in and of themselves to lead to the conservation of natural resources. Furthermore, it is possible that improvements in efficiency may actually contribute to the expansion of resource consumption, since it is at least plausible that success at improving the MPG/KPL of a nation’s automobile fleet may encourage drivers to travel more frequently by car, due to the reduction in fuel consumption per mile/kilometer—a situation directly analogous to the one Jevons observed regarding coal use by industry. The Paperless Office Paradox Paper is typically made from wood fiber, so paper consumption puts substantial pressure on the world’s forest ecosystems. It would seem on the face of it that the rise of the computer and the capacity for the storage of documents in electronic form would lead to a decline in paper consumption, and eventually, the emergence of the “paperless office”—which would be decidedly good news for forests. This, however, has not been the case, as Abigail J. Sellen and Richard H.R. Harper clearly document in their aptly titled book *The Myth of the Paperless Office*. Contrary to the expectations of some, computers, email, and the World Wide Web are associated with an increase in paper consumption. For example consumption of the most common type of office paper (uncoated free-sheet) increased by 14.7 percent in the United States between the years 1995 and 2000, embarrassing those who predicted the emergence of the paperless office. Sellen and Harper also point to research indicating that “the introduction of e-mail into an organization caused, on average, a 40% increase in paper consumption.” This observation suggests that there may be a direct causal link between the rise of electronic mediums of data storage and paper consumption, although further research is necessary to firmly establish the validity of this causal link. The failure of computers and electronic storage mediums to bring about the paperless office points to an interesting paradox, which we label the Paperless Office Paradox: the development of a substitute for a natural resource is sometimes associated with an increase in consumption of that resource. This paradox has potentially profound implications for efforts to conserve natural resources. One prominent method advocated for reducing consumption of a particular resource is to develop substitutes for it. For example, the development of renewable energy resources, such as wind and solar power, are commonly identified as a way to reduce dependence on fossil fuel, based on the assumption that the development of alternative sources of energy will displace, at least to some extent, fossil fuel consumption. However, just as the Jevons Paradox points to the fact that efficiency not lead to a reduction in resource consumption, the Paperless Office Paradox points to the fact that the development of substitutes may not lead to a reduction in resource consumption. The reasons that computers led to a rise in paper consumption are not particularly surprising. Although computers allow for the electronic storage of documents, they also allow for ready access to innumerable documents that can be easily printed using increasingly ubiquitous printers, which explains in large part the reason for escalating office paper consumption. Due to the particularistic reasons for the association between electronic storage mediums and paper consumption, the Paperless Office Paradox may not represent a generality about the development of substitutes and resource consumption. However, this paradox does emphasize the point that one should *not* assume that the development of substitutes for a natural resource will lead to a reduction in consumption of that resource. For example, over the past two centuries we have seen the rise of fossil fuel technologies and the development of nuclear power, so that whereas in the eighteenth century biomass was the principal source of energy in the world, biomass now only provides a small proportion of global energy production. However, it is worth noting that even though substitutes for biomass—such as fossil fuel and nuclear power—have expanded dramatically, the absolute quantity of biomass consumed for energy in the world has *increased* since the nineteenth century. This is likely due, at least in part, to the fact that new energy sources fostered economic and population growth, which in turn expanded the demand for energy sources of all types, including biomass. This observation raises the prospect that the expansion of renewable energy production technologies, such as wind turbines and photovoltaic cells, may not displace fossil fuel or other energy sources, but merely add a new source on top of them, and potentially foster conditions that expand the demand for energy. Clearly, further theoretical development and empirical research aimed at assessing the extent to which substitutes actually lead to reductions in resource consumption is called for, and faith that technological developments will solve our natural resource challenges should at least be called into question. Coda Here, we have drawn attention to two ecological paradoxes in economics, the Jevons Paradox and the Paperless Office Paradox. The Jevons Paradox is a classical one, based on the Jevons observation that rising efficiency in the utilization of coal led to an escalation of coal consumption. We presented two examples, which suggest that the Jevons Paradox may have general applicability to a variety of circumstances. The Paperless Office Paradox is a new one, and draws attention to the fact that the development of computers and electronic storage mediums has not led to a decline in paper consumption, as some predicted, but rather to more paper consumption. It is important to note that these are empirically established paradoxes—they point to the correlation between efficiency or substitutes and resource consumption. Each paradox may actually house phenomenon that have a diversity of theoretical explanations. Therefore, underlying these two paradoxes may be many forces that need to be theorized. Together, these paradoxes suggest that improvements in the efficiency of use of a natural resource may not lead to reductions in consumption of that resource—in some circumstances they may even lead to an escalation of consumption of that resource. Although improvements in efficiency and utilization of substitutes will reduce consumption of a resource *all else being equal* (if the scale of production remains constant), economies are complex and dynamic systems with innumerable interactions among factors. Changes in the type and efficiency of resource utilization will likely influence many other conditions, thus ensuring that all else will rarely be equal. Relying on technological advances alone to solve our environmental problems may have disastrous consequences. The two paradoxes we present here suggest that social and economic systems need to be modified if technological advances are to be translated into natural resource conservation.

#### Sequencing DA – centering consumption as a subject of ethical concern is a pre-requisite to the aff – their “production-focused” change to energy policy only marginalizes consumption practices by treating them as a given outside of politics

Alexander ‘11

(Samuel, University of Melbourne; Office for Environmental Programs/Simplicity Institute, “

Voluntary Simplicity as an Aesthetics of Existence”, Social Sciences Research Network, http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1941087)

For present purposes, the third and final point about how neoclassicism marginalizes consumption concerns the way in which any problems caused by market activity are always approached from the ‘production angle,’ never the ‘consumption angle.’70 The reasoning is as follows. Despite the first two ways in which neoclassicists conceptualize consumption as unquestionably good, no one, not even neoclassicists, can deny that market activity is causing, and has always caused, some real problems. Think, for example, of the many ecological crises we are facing today, such as climate change, the mass extinction of species, pollution, deforestation, the depletion of the ocean’s fisheries, soil erosion, etc. One might have thought that these crises would have prompted neoclassicists to finally rethink their uncritical attitudes toward consumption, to finally acknowledge that, perhaps, consumption is not unquestionably good. But this has proven to be a false hope, and perhaps this should have come as no surprise. Neoclassicism, after all, is a grand, totalizing meta‐narrative, which claims to have an answer to all criticisms, such that all and any of the problems caused by market activity have a purported solution within the free market system and without needing to rethink or revise any of the neoclassical assumptions (including the assumptions about consumption). If there is a problem caused by market activity, neoclassicists argue, this simply indicates that there has been what is called a ‘market failure,’ which typically means that the costs of production have somehow been externalized, leading to artificially cheap commodities which, in turn, leads to the overconsumption of such commodities. But the neoclassical solution to such overconsumption does not require questioning consumption in any way. Consumption, as we have seen, is sacrosanct! Rather, the solution to such market failures is simply to attempt to internalize all externalities from the production angle – that is, to try to find ways to make sure that the costs of production reflect the ‘true’ costs (i.e. the costs all things considered). Once this has been achieved – if it can be achieved – any consumption that takes place is once again assumed to be at an ‘optimal’ level, which is to say, at a level that maximizes overall utility. In this way, neoclassicism manages to retain perfect faith in the virtue of consumption. We might conclude, therefore, consciously or unconsciously, that since consumption is a virtue, it need not be a subject of ethical concern. Acts of consumption are beyond ethics, or, as neoclassicists put it, such acts are simply ‘given.’ The point of all this has been to suggest that the paradigm of neoclassical economics may be responsible, and surely is responsible, for why consumption has been marginalized as a subject of ethical concern within market societies and beyond. And given the essentially hegemonic role neoclassical economics plays in the world today – manifesting in the globalized political sphere as ‘neoliberalism’71 or ‘Empire’72 – perhaps it should come as no surprise to discover that all of us may have internalized its precepts to some degree. That is, even those who have never studied or even heard of neoclassical economics – indeed, even those who dedicate considerable amounts of time to criticizing the ideology! – may still have imbibed some of its reasoning simply by virtue of living in a world that is so fundamentally shaped by it. We are, after all, social constructs, and, as explained earlier, our perception of the world and of ourselves is a function of the paradigm of understanding that we bring to experience and that we use to make sense of the world. We do not get to choose which paradigm we think with, however, since the act of choosing would be an act of thinking, and in order to think in the first place a paradigm of understanding already has to be in place. As Martin Heidegger once asserted, somewhat cryptically, ‘language speaks man,’73 by which he meant, we can suppose, that our notions of ‘self’ are not independent of language but a function of it. Donald Davidson made a similar point, but more clearly, when he wrote that ‘there is no chance that someone can take up a vantage point for comparing conceptual schemes by temporarily shedding his own.’74 We must begin, that is, from where we are, with whom we are, rebuilding the boat of understanding one plank at a time, without ever being able to begin again from scratch. If neoclassical economics has been internalized to some extent, consciously or unconsciously – in particular, if one has internalized the neoclassical understanding of consumption as unquestionably good – this means that the first step in any ethics of consumption might involve engaging the self by the self for the purpose of centering consumption; that is, for the purpose of deliberately bringing consumption into focus as a subject of ethical concern. Every conceptual framework conceals as it reveals, and whatever enlightenment one might gain from neoclassical economics, it must be acknowledged that its impressive edifice also casts shadows. Consumption, for reasons just explained, lies in the dark. An ethics of consumption must begin, therefore, by casting light in its direction, and this can only be achieved by deliberately giving the subject increased attention. Obviously, if one does not look for, or cannot see, a subject of ethical concern, it will not be a subject of ethical concern. However, even when the possibility of dedicating increased attention to consumption has been raised, which is perhaps the most difficult step, there is a second step, and that is to actually maintain the attention. The third step is to determine how, exactly, and in what ways, one could engage the self by the self with respect to consumption (an endeavor that is taken up in the next two sections). Notice, here, that the terrain of ethical activity lies within the self, at least at first, rather than being external to it. Someone who is cognizant of the three consumption-­‐ related problems outlined above – ecological degradation, poverty amidst plenty, and consumer malaise – might initially think that living in opposition to those problems must require, say, attending rallies, campaigning for political reform, engaging in civil disobedience, volunteering, engaging with and trying to mobilize the community, etc. These are surely all important things, but if our minds are not in order, then it may be that we end up directing our time and energies to pointless or even counter‐productive activity. One thinks here of the young Alcibiades, who wanted to leap into a political career, but who was ultimately persuaded by Socrates that, before he tried to take care of and assume control over others, he should first make sure he had taken care of and was in control of himself.75 Otherwise, even the best intentions might go astray. Socrates was to reproach Alcibiades for being so presumptuous: ‘you are not only ignorant of the greatest things, but while not knowing them you think that you do.’76 Importantly, however, Socrates was not assuming the role of advisor on the basis that he knew more than Alcibiades; rather, in typical fashion, Socrates assumed his role on the basis that he better understood the limits of knowledge; better understood that if he knew anything, it was that he knew not. In other words, Socrates knew better than any other that human understanding always has blind spots. The analysis above was intended to suggest that consumption might be one such blind spot.

### Impact

Their environment defense doesn’t assume the effect of solar on all levels of the supply chain. The resource extraction and resulting increased consumption destabilize the fragile environmental balance present now. It’s talking about current levels of consumption, not the escalated levels post-plan.

#### There are too many sources of environmental collapse they aren’t able to solve – the Crist card says the predate warming, proves t

#### You should view consumption as a complex network of environmental pressures – addressing one “hotspot” for environmental collapse distracts focus from the broader system and produces efficiency gains that are only re-invested for more consumption – only a reduction in consumption patterns can solve inevitable human extinction

Ehrlich & Ehrlich 13

(Paul, Professor of Biology and President of the Center for Conservation Biology at Stanford University, and Adjunct Professor at the University of Technology, Sydney, Anne, Senior Research Scientist in Biology at Stanford, “Can a collapse of global civilization be avoided?”, January 9, 2013, *Proceedings of the Royal Society of Biological Sciences*)

But today, for the first time, humanity's global civilization—the worldwide, increasingly interconnected, highly technological society in which we all are to one degree or another, embedded—is threatened with collapse by an array of environmental problems. Humankind finds itself engaged in what Prince Charles described as ‘an act of suicide on a grand scale’ [4], facing what the UK's Chief Scientific Advisor John Beddington called a ‘perfect storm’ of environmental problems [5]. The most serious of these problems show signs of rapidly escalating severity, especially climate disruption. But other elements could potentially also contribute to a collapse: an accelerating extinction of animal and plant populations and species, which could lead to a loss of ecosystem services essential for human survival; land degradation and land-use change; a pole-to-pole spread of toxic compounds; ocean acidification and eutrophication (dead zones); worsening of some aspects of the epidemiological environment (factors that make human populations susceptible to infectious diseases); depletion of increasingly scarce resources [6,7], including especially groundwater, which is being overexploited in many key agricultural areas [8]; and resource wars [9]. These are not separate problems; rather they interact in two gigantic complex adaptive systems: the biosphere system and the human socio-economic system. The negative manifestations of these interactions are often referred to as ‘the human predicament’ [10], and determining how to prevent it from generating a global collapse is perhaps the foremost challenge confronting humanity. The human predicament is driven by overpopulation, overconsumption of natural resources and the use of unnecessarily environmentally damaging technologies and socio-economic-political arrangements to service Homo sapiens’ aggregate consumption [11–17]. How far the human population size now is above the planet's long-term carrying capacity is suggested (conservatively) by ecological footprint analysis [18–20]. It shows that to support today's population of seven billion sustainably (i.e. with business as usual, including current technologies and standards of living) would require roughly half an additional planet; to do so, if all citizens of Earth consumed resources at the US level would take four to five more Earths. Adding the projected 2.5 billion more people by 2050 would make the human assault on civilization's life-support systems disproportionately worse, because almost everywhere people face systems with nonlinear responses [11,21–23], in which environmental damage increases at a rate that becomes faster with each additional person. Of course, the claim is often made that humanity will expand Earth's carrying capacity dramatically with technological innovation [24], but it is widely recognized that technologies can both add and subtract from carrying capacity. The plough evidently first expanded it and now appears to be reducing it [3]. Overall, careful analysis of the prospects does not provide much confidence that technology will save us [25] or that gross domestic product can be disengaged from resource use [26].

### 2nc Foresight Intelligence Alt

#### **Secondly – you should use a longer time horizon to calculate impacts – there is an historical bias**

Ehrlich & Ehrlich 13

(Paul, Professor of Biology and President of the Center for Conservation Biology at Stanford University, and Adjunct Professor at the University of Technology, Sydney, Anne, Senior Research Scientist in Biology at Stanford, “Can a collapse of global civilization be avoided?”, January 9, 2013, *Proceedings of the Royal Society of Biological Sciences*)

Until very recently, our ancestors had no reason to respond genetically or culturally to long-term issues. If the global climate were changing rapidly for Australopithecus or even ancient Romans, then they were not causing it and could do nothing about it. The forces of genetic and cultural selection were not creating brains or institutions capable of looking generations ahead; there would have been no selection pressures in that direction. Indeed, quite the opposite, selection probably favoured mechanisms to keep perception of the environmental background steady so that rapid changes (e.g. leopard approaching) would be obvious [132, pp. 135–136]. But now slow changes in that background are the most lethal threats. Societies have a long history of mobilizing efforts, making sacrifices and changes, to defeat an enemy at the gates, or even just to compete more successfully with a rival. But there is not much evidence of societies mobilizing and making sacrifices to meet gradually worsening conditions that threaten real disaster for future generations. Yet that is exactly the sort of mobilization that we believe is required to avoid a collapse. Perhaps the biggest challenge in avoiding collapse is convincing people, especially politicians and economists, to break this ancient mould and alter their behaviour relative to the basic population-consumption drivers of environmental deterioration. We know that simply informing people of the scientific consensus on a serious problem does not ordinarily produce rapid changes in institutional or individual behaviour. That was amply demonstrated in the case of cigarettes [68], air pollution and other environmental problems [69] and is now being demonstrated in the obesity epidemic [133] as well as climate disruption. Obvious parallels exist regarding reproduction and overconsumption, which are especially visible in what amounts to a cultural addiction to continued economic growth among the already well-off [134]. One might think that the mathematics of compound interest would have convinced everyone long ago that growth of an industrialized economy at 3.5 per cent annually cannot long continue. Unfortunately, most ‘educated’ people are immersed in a culture that does not recognize that, in the real world, a short history (a few centuries) of exponential growth does not imply a long future of such growth. Besides focusing their research on ways to avoid collapse, there is a need for natural scientists to collaborate with social scientists, especially those who study the dynamics of social movements. Such collaborations could develop ways to stimulate a significant increase in popular support for decisive and immediate action on the predicament. Unfortunately, awareness among scientists that humanity is in deep trouble has not been accompanied by popular awareness and pressure to counter the political and economic influences implicated in the current crisis. Without significant pressure from the public demanding action, we fear there is little chance of changing course fast enough to forestall disaster. The needed pressure, however, might be generated by a popular movement based in academia and civil society to help guide humanity towards developing a new multiple intelligence [135], ‘foresight intelligence’ to provide the long-term analysis and planning that markets cannot supply. Foresight intelligence could not only systematically look ahead but also guide cultural changes towards desirable outcomes such as increased socio-economic resilience. Helping develop such a movement and foresight intelligence are major challenges facing scientists today, a cutting edge for research that must slice fast if the chances of averting a collapse are to be improved. If foresight intelligence became established, many more scientists and policy planners (and society) might, for example, understand the demographic contributions to the predicament [136], stop treating population growth as a ‘given’

 and consider the nutritional, health and social benefits of humanely ending growth well below nine billion and starting a slow decline. This would be a monumental task, considering the momentum of population growth. Monumental, but not impossible if the political will could be generated globally to give full rights, education and opportunities to women, and provide all sexually active human beings with modern contraception and backup abortion. The degree to which those steps would reduce fertility rates is controversial [137–139], but they are a likely win-win for societies [140]. Obviously, especially with the growing endarkenment, there are huge cultural and institutional barriers to establishing such policies in some parts of the world. After all, there is not a single nation where women are truly treated as equal to men. Despite that, the population driver should not be ignored simply because limiting overconsumption can, at least in theory, be achieved more rapidly. The difficulties of changing demographic trajectories mean that the problem should have been addressed sooner, rather than later. That halting population growth inevitably leads to changes in age structure is no excuse for bemoaning drops in fertility rates, as is common in European government circles [141]. Reduction of population size in those over-consuming nations is a very positive trend, and sensible planning can deal with the problems of population aging [142]. While rapid policy change to head off collapse is essential, fundamental institutional change to keep things on track is necessary as well. This is especially true of educational systems, which today fail to inform most people of how the world works and thus perpetuate a vast culture gap [54]. The academic challenge is especially great for economists, who could help set the background for avoiding collapse by designing steady-state economic systems [107,134,143], and along the way destroying fables such as ‘growth can continue forever if it's in service industries’, or ‘technological innovation will save us’. Issues such as the importance of comparative advantage under current global circumstances [144], the development of new models that better reflect the irrational behaviour of individuals and groups [145], reduction of the worship of ‘free’ markets that infests the discipline, and tasks such as making information more symmetrical, moving towards sustainability and enhancing equity (including redistribution) all require re-examination. In that re-examination, they would be following the lead of distinguished economists [146–148] in dealing with the real world of biophysical constraints and human well-being. At the global level, the loose network of agreements that now tie countries together [149,150], developed in a relatively recent stage of cultural evolution since modern nation states appeared, is utterly inadequate to grapple with the human predicament. Strengthening global environmental governance [151] and addressing the related problem of avoiding failed statehood [152] are tasks humanity has so far refused to tackle comprehensively even as cultural evolution in technology has rendered the present international system (as it has educational systems) obsolete. Serious global environmental problems can only be solved and a collapse avoided with an unprecedented level of international cooperation [122]. Regardless of one's estimate of civilization's potential longevity, the time to start restructuring the international system is right now. If people do not do that, nature will restructure civilization for us. Similarly, widely based cultural change is required to reduce humanely both population size and overconsumption by the rich. Both go against cultural norms, and, as long feared [153], the overconsumption norm has understandably been adopted by the increasingly rich subpopulations of developing nations, notably India and China. One can be thrilled by the numbers of people raised from poverty while being apprehensive about the enormous and possibly lethal environmental and social costs that may eventually result [154,155]. The industrial revolution set civilization on the road to collapse, spurring population growth, which contributed slightly more than overconsumption to environmental degradation [136]. Now population combined with affluence growth may finish the job. Needless to say, dealing with economic and racial inequities will be critically important in getting large numbers of people from culturally diverse groups [156] to focus their minds on solving the human predicament, something globalization should help [157]. These tasks will be pursued, along with an emphasis on developing ‘foresight intelligence’, by the nascent Millennium Alliance for Humanity and the Biosphere (the MAHB; http://mahb.stanford.edu). One of its central goals is to try to accelerate change towards sustainability. Since simply giving the scientific facts to the public will not do it, among other things, this means finding frames and narratives to convince the public of the need to make changes. We know that societies can evolve fundamentally and unexpectedly [158, p. 334], as was dramatically demonstrated by the collapse of communist regimes in Europe in 1989 [159]. Rather than tinkering around the edges and making feeble or empty gestures towards one or another of the interdependent problems we face, we need a powerful and comprehensive approach. In addressing climate change, for instance, developing nations need to be convinced that they (along with the rest of the world) cannot afford (and do not need) to delay action while they ‘catch up’ in development. Indeed, development on the old model is counterproductive; they have a great opportunity to pioneer new approaches and technologies. All nations need to stop waiting for others to act and be willing to do everything they can to mitigate emissions and hasten the energy transition, regardless of what others are doing. With climate and many other global environmental problems, polycentric solutions may be more readily found than global ones. Complex, multi-level systems may be better able to cope with complex, multi-level problems [160], and institutional change is required at many levels in many polities. What scientists understand about cultural evolution suggests that, while improbable, it may be possible to move cultures in such directions [161,162]. Whether solutions will be global or polycentric, international negotiations will be needed, existing international agencies that deal with them will need strengthening, and new institutions will need to be formed.

### Resource 2NC

#### Rare earth minerals produce massive toxic waste and environmental destruction – increased demand motivates poor environmental accounting and encourages global ecological violence for short-term profit

Ives 13

(Mike, writer based in Hanoi, Vietnam whose work has appeared in the Los Angeles Times, The Washington Post, Smithsonian Online, and other publications. In Vietnam he reports for the Associated Press. In earlier articles for Yale Environment 360, he reported on efforts to reintroduce native tree species to Vietnam’s war-scarred landscape and how melting glaciers are exacerbating water shortages in northwestern China, “Boom in Mining Rare Earths Poses Mounting Toxic Risks”, January 28, 2013, http://e360.yale.edu/feature/boom\_in\_mining\_rare\_earths\_poses\_mounting\_toxic\_risks/2614/)

All of these projects, however, must come to grips with the toxic and radioactive legacy of rare earth mining. Scientists say under-regulated rare earths projects can produce wastewater and tailings ponds that leak acids, heavy metals and radioactive elements into groundwater, and they point out that market pressures for cheap and reliable rare earths may lead project managers to skimp on environmental protections. In Malaysia, Mitsubishi Chemical is now engaged in a $100 million cleanup of its Bukit Merah rare earths processing site, which it closed in 1992 amid opposition from local residents and Japanese politicians and environmentalists. It is one of Asia’s largest radioactive waste cleanup sites, and local physicians said the thorium contamination from the plant has led to an increase in leukemia and other ailments. The legacy of that project has led many Malaysians to be wary of rare earths mines. Few independent studies chart the industry’s global ecological fallout. But no country has as many rare earths processing plants, and their attendant environmental problems, as China. Last year, China’s State Council reported that the country’s rare earths operations are causing “increasingly significant” environmental problems. A half century of rare earths mining and processing has “severely damaged surface vegetation, caused soil erosion, pollution, and acidification, and reduced or even eliminated food crop output,” the council reported, adding that Chinese rare earths plants typically produce wastewater with a “high concentration” of radioactive residues. Bayan-Obo, China’s largest rare earths project, has been operating for more than four decades. According to the Germany-based Institute for Applied Ecology, the site now has an 11-square-kilometer waste pond — about three times the size of New York City’s Central Park — with toxic sludge that contains elevated concentrations of thorium. China’s lax environmental standards have enabled it to produce rare earths at roughly a third the price of its international competitors, according to a 2010 report on the country’s rare earths industry by the Washington-based Institute for the Analysis of Global Security. The report noted that China “has never actually worked out pollutant discharge standards for the rare earth industry.” Like nuclear power plants, rare earths projects require strict independent auditing in order to prevent environmental damage, according to Peter Karamoskos, a nuclear radiologist and the public’s representative at Australia’s Radiation Protection and Nuclear Safety Agency. But as the rare earths industry expands to developing countries like Malaysia and Vietnam, such oversight will be unlikely. “A regulator will either be in the pocket of the industry or a government,” he says. According to Gavin Mudd, an environmental engineer at Australia’s Monash University, rare earths mining provides a wide range of economic and social benefits and can be exploited in a responsible way. However, he says no company — including Mitsubishi and Lynas — has managed to set a good example. Mudd says Lynas decided to process its rare earths in Malaysia rather than Australia, where they are mined, because it received tax incentives. But he says that Lynas hasn’t meaningfully engaged Malaysian communities to hear their concerns. A key problem with the company’s proposals, he adds, is that it never took a baseline sample of the environment before it began operations, making it difficult to gauge the future environmental impacts. “Their approach to solid waste management has been very haphazard,” says Mudd, who has offered unpaid advice to both the company and the activists who oppose its plans.

#### Toxification causes extinction

Ehrlich & Ehrlich 13

(Paul, Professor of Biology and President of the Center for Conservation Biology at Stanford University, and Adjunct Professor at the University of Technology, Sydney, Anne, Senior Research Scientist in Biology at Stanford, “Can a collapse of global civilization be avoided?”, January 9, 2013, *Proceedings of the Royal Society of Biological Sciences*)

Another possible threat to the continuation of civilization is global toxification. Adverse symptoms of exposure to synthetic chemicals are making some scientists increasingly nervous about effects on the human population [77–79]. Should a global threat materialize, however, no planned mitigating responses (analogous to the ecologically and politically risky ‘geoengineering’ projects often proposed to ameliorate climate disruption [80]) are waiting in the wings ready for deployment.

### Warming Link

#### Their framing of global warming as a techno-fix blocks broader efforts to transform society’s relationship to the Earth, and displaces concern for other environmental issues – their depictions *actively produce* biodiversity loss, topsoil erosion, deforestation, and ocean acidification

Crist 7

(Eileen, has been teaching at Virginia Tech in the Department of Science and Technology in Society since 1997, where she is advisor for the undergraduate program Humanities, Science, and Environment, “Beyond the Climate Crisis: A Critique of Climate Change Discourse”, *Telos*, 141 (Winter 2007): 29–55.)

While the dangers of climate change are real, I argue that there are even greater dangers in representing it as the most urgent problem we face. Framing climate change in such a manner deserves to be challenged for two reasons: it encourages the restriction of proposed solutions to the technical realm, by powerfully insinuating that the needed approaches are those that directly address the problem; and it detracts attention from the planet’s ecological predicament as a whole, by virtue of claiming the limelight for the one issue that trumps all others. Identifying climate change as the biggest threat to civilization, and ushering it into center stage as the highest priority problem, has bolstered the proliferation of technical proposals that address the specific challenge. The race is on for figuring out what technologies, or portfolio thereof, will solve “the problem.” Whether the call is for reviving nuclear power, boosting the installation of wind turbines, using a variety of renewable energy sources, increasing the efficiency of fossil-fuel use, developing carbon-sequestering technologies, or placing mirrors in space to deflect the sun’s rays, the narrow character of such proposals is evident: confront the problem of greenhouse gas emissions by technologically phasing them out, superseding them, capturing them, or mitigating their heating effects. In his The Revenge of Gaia, for example, Lovelock briefly mentions the need to face climate change by “changing our whole style of living.”16 But the thrust of this work, what readers and policy-makers come away with, is his repeated and strident call for investing in nuclear energy as, in his words, “the one lifeline we can use immediately.”17 In the policy realm, the first step toward the technological fix for global warming is often identified with implementing the Kyoto protocol. Biologist Tim Flannery agitates for the treaty, comparing the need for its successful endorsement to that of the Montreal protocol that phased out the ozone-depleting CFCs. “The Montreal protocol,” he submits, “marks a signal moment in human societal development, representing the first ever victory by humanity over a global pollution problem.”18 He hopes for a similar victory for the global climate-change problem. Yet the deepening realization of the threat of climate change, virtually in the wake of stratospheric ozone depletion, also suggests that dealing with global problems treaty-by-treaty is no solution to the planet’s predicament. Just as the risks of unanticipated ozone depletion have been followed by the dangers of a long underappreciated climate crisis, so it would be naïve not to anticipate another (perhaps even entirely unforeseeable) catastrophe arising after the (hoped-for) resolution of the above two. Furthermore, if greenhouse gases were restricted successfully by means of technological shifts and innovations, the root cause of the ecological crisis as a whole would remain unaddressed. The destructive patterns of production, trade, extraction, land-use, waste proliferation, and consumption, coupled with population growth, would go unchallenged, continuing to run down the integrity, beauty, and biological richness of the Earth. Industrial-consumer civilization has entrenched a form of life that admits virtually no limits to its expansiveness within, and perceived entitlement to, the entire planet.19 But questioning this civilization is by and large sidestepped in climate-change discourse, with its single-minded quest for a global-warming techno-fix.20 Instead of confronting the forms of social organization that are causing the climate crisis—among numerous other catastrophes—climate-change literature often focuses on how global warming is endangering the culprit, and agonizes over what technological means can save it from impending tipping points.21 The dominant frame of climate change funnels cognitive and pragmatic work toward specifically addressing global warming, while muting a host of equally monumental issues. Climate change looms so huge on the environmental and political agenda today that it has contributed to downplaying other facets of the ecological crisis:

mass extinction of species, the devastation of the oceans by industrial fishing, continued old-growth deforestation, topsoil losses and desertification, endocrine disruption, incessant development, and so on, are made to appear secondary and more forgiving by comparison with “dangerous anthropogenic interference” with the climate system. In what follows, I will focus specifically on how climate-change discourse encourages the continued marginalization of the biodiversity crisis—a crisis that has been soberly described as a holocaust,22 and which despite decades of scientific and environmentalist pleas remains a virtual non-topic in society, the mass media, and humanistic and other academic literatures. Several works on climate change (though by no means all) extensively examine the consequences of global warming for biodiversity, 23 but rarely is it mentioned that biodepletion predates dangerous greenhouse-gas buildup by decades, centuries, or longer, and will not be stopped by a technological resolution of global warming. Climate change is poised to exacerbate species and ecosystem losses—indeed, is doing so already. But while technologically preempting the worst of climate change may temporarily avert some of those losses, such a resolution of the climate quandary will not put an end to—will barely address—the ongoing destruction of life on Earth.

# 1NR

### CCS Good – Warming

#### US CCS is key to mitigate warming – solves globally

Der 2010 - Principal Deputy Assistant Secretary for Fossil Energy @ U.S. Department of Energy Dr. Victor K. Der (Former Director of the Office of Clean Energy Systems where he directed large-scale demonstration programs, including the Clean Coal Technology Demonstration program, the Power Plant Improvement Initiative, the Clean Coal Power Initiative, and FutureGen, a program for near-zero coal emissions. PhD in Mechanical Engineering from University of Maryland), “ARTICLE: CARBON CAPTURE AND STORAGE: AN OPTION FOR HELPING TO MEET GROWING GLOBAL ENERGY DEMAND WHILE COUNTERING CLIMATE CHANGE,” University of Richmond Law Review, March 2010, 44 U. Rich. L. Rev. 937

Top coal producing nations, including the United States, China, and India, hold domestic coal reserves so abundant that exploration for the resource appears neglected. [n12](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n12)These nations are also [\*939] vested in an often extensive, dependent infrastructure. [n13](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n13) Included in this infrastructure are coal-based generating plants with useful lives measured in decades, for which large investments have been made in response to long-term market signals. [n14](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n14) A combination of considerations, including the length of plant service, investment requirements, significant lead-times needed to build energy infrastructure and gain cost improvements, and coal's relative abundance as an energy resource, make it unlikely that any country currently depending on this default fuel option will completely replace its reliance in the short and intermediate term. [n16](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n16) Even nations earnestly striving to move to more efficient or greener technologies in response to long-range market trends will need time to do so. Additionally, an estimated 1.5 billion people or more currently live without electricity. If those nations create and utilize a fossil-fuel-powered grid [n18](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n18) without the prospect of a scalable means for capturing CO(2), the global atmospheric buildup of this GHG would be direly exacerbated. For the past several decades, the international research community, of which the U.S. Department of Energy's ("DOE") Office of Fossil Energy is an important part, has traveled a road of growing discovery regarding global climate change. During this period, policy and scientific debates about the role played by anthropogenic (i.e., human-induced) GHG emissions in warming the Earth's climate have continued. [n19](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n19) Meanwhile, researchers [\*940] have progressively built a body of knowledge based on experiments, observations, modeling, theory testing, the study of ancient ice cores, and examination of historical and current weather data. [n20](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n20) The consensus among the scientific community emanating from this gradual accumulation of evidence and analysis is that rising fossil fuel CO(2) emissions are contributing significantly to more extreme temperature swings and could permanently and adversely impact the Earth's climate. [n21](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n21) Complicating matters, the formidable challenge of reducing GHG emissions is coming at a time when significantly more energy will be needed to meet expected future demand, much of which will come from developing countries. [n22](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n22) While alternative sources of energy exist, short-and intermediate-term forecasts demonstrate there are barriers to global substitution, including expense, intermittency, adjustability, geographic concentration, and long development lead-times. [n23](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n23) The practical challenge facing the United States and other developed nations is how to continue to depend on coal as a primary electricity source while assuring this reliance is both economically and environmentally sustainable. Of equal importance in resolving this issue, however, is an associated philosophical challenge: in an increasingly carbon-constrained world, what workable solution can we provide for coal-producing and consuming nations, whose participation in the effort to resolve atmospheric CO(2) buildup is critical to success? Underlying all of these issues is the fact that climate change is a complex and challenging problem with many variables and no all-encompassing answer. As a result, many think developing a portfolio or range of options is the most suitable, potentially effective, and sustainable response. [n24](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n24) While energy efficiency improvements, increased use of renewables, and greater utilization [\*941] of nuclear power are important components of this portfolio, among the most promising potential solutions for countries reliant on large fossil fuel reserves is CO(2) capture and storage ("CCS"), also known as sequestration. [n25](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n25) This procedure can reduce CO(2) output from present stationary emitting sources and help avoid future atmospheric emissions. [n26](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n26) For a number of years, DOE has been at the forefront of domestic and international research and development ("R&D") efforts to actively pursue the capture and storage of CO(2) emissions from fossil fuel power and industrial plants. [n27](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n27) For example, over thirty years ago, DOE improved enhanced oil recovery ("EOR") with low temperature CO(2) flooding, as disclosed in the Comberiati patent application from 1979. [n28](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n28) Because of CCS research and other worldwide R&D initiatives, [n29](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n29) if there is a sufficient price placed on emitting CO(2) within the decade, CCS could transition from experimental and demonstration levels to global commercial deployment. While substantial progress has been made, CCS is at a critical stage of development: there are still several significant technical and non-technical hurdles [n30](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n30) that must be overcome before this transition can occur and the technology is firmly established as an effective option for reducing CO(2) emissions. Many of these challenges are being addressed directly and indirectly through both the DOE R&D program and international partnerships. Although significant and complex, none of these hurdles [\*942] appear insurmountable, [n31](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n31) yet failure to deal with them in a timely and effective fashion could delay - or even prevent - expedited and comprehensive CCS deployment. The atmosphere of international urgency for dealing with the climate change issue is further driving an accelerated deployment of CCS. Some experts suggest cost-competitive CCS must be deployed in a majority of countries and situations by 2020. [n32](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n32) Many also believe this action is necessary to reduce energy-related CO(2) emissions enough to begin the process of stabilizing atmospheric GHG concentrations to help avoid possibly catastrophic warming later in the century. [n33](http://www.lexisnexis.com/lnacui2api/frame.do?reloadEntirePage=true&rand=1359961931260&returnToKey=20_T16600385760&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.699260.3443241271#n33) The crux of the matter is this: the manner in which these issues are resolved will likely impact not only the effectiveness of CCS as part of a portfolio solution, but also global energy supply, use, and cost, as well as the growth of economies primarily dependent on coal for electricity. Cumulatively, these issues add up to a daunting challenge that the international community recognizes it must address with alacrity.

### 2NC Flaring Impact

#### Low prices cause flaring

Weber, Associate Professor of Mechanical Engineering at The University of Texas at Austin, 12

(May, THE LOOMING NATURAL GAS TRANSITION IN THE UNITED STATES, [www.c2es.org/docUploads/natural-gas-transition-us.pdf](http://www.c2es.org/docUploads/natural-gas-transition-us.pdf))

These attractive market opportunities are offset in some respects by the negative environmental impacts that are occurring from production in the Bakken and Eagle Ford shale plays in North Dakota and Texas. At those locations, significant volumes of gases are flared because the gas is too inexpensive to justify rapid construction of the pricey distribution systems that would be necessary to move the fuel to markets. Consequently, for many operators it ends up being cheaper in many cases to flare the gas rather than to harness and distribute it.

#### Flaring depletes the ozone layer - extinction

Osai, Professor of Social Sciences at The Rivers State College of Arts and Science, 02

(SHELL AS AGAMA LIZARD, www.waado.org/Environment/OilCompanies/Shell-Communities/ShellsFalsePR.html)

Talking of the impact of gas flaring on the environment, in 1984/85, I was part of a team of professors and graduate students from the Faculty of Social Sciences of the University of Port Harcourt that undertook a field trip to what is now called the Orashi Region. I guided the team to the gas flare site at Obagi, Obrikom, Ebocha, Ukwugba and Izombe. From one site to another, we took sample of cassava and other crops; we observed the plantains, palm trees and the general vegetation within a certain radius of the gas flared racks and we noted that though the cassava stems and leaves looked unaffected, their tubers were rotten. We also observed a pathetic degeneration from the lush vegetation with giant trees that used to be a rustic meadow; giant racks, spewing roaring flames into the sky had taken the place of the giant trees. These findings were published in Newswatch. It is, therefore, an insult on the collective intellect of the peoples of the Niger Delta for Shell to aver that "gas flaring is not detrimental to the immediate environment." Matter-of-factly, the statement is an insult on the collective intellect of humanity, which is facing imminent extinction as a result of the depletion of the ozone layer - a phenomenon that gas flaring contributes immensely to. Incidentally, I did my administrative internship in 1977 at the Cleveland Division of Air Pollution Control, Cleveland, Ohio, USA and I think I learned quite a bit about pollution and its negative impact on the environment - immediate or otherwise.

#### Ozone depletion causes warming

Mikhailov, Shafer Institute of Cosmophysical Research and Aeronomy, 04

(Ozone Layer and the Formation of the Ozone Hole, arxiv.org/ftp/physics/papers/0401/0401135.pdf)

As it was reported in newspapers several years ago, one fine day above the southern region of Chile, near Punta-Arenas the ozone hole is appeared. As a result of the ultraviolet action, the hundreds of cows and sheep’s became blinded, people caught burns. Also, the decrease of the total thickness of the ozone layer will cause the noticeable warming of climate, because ozone takes an active part in the creation of a frame effect. Thereby, the significant changes of weather in some regions of the Earth, floods, a higher of the ocean water level and other very serious consequences would be expected. As a result of people activities, more and more pollution substances penetrate into the atmosphere. A part of these substances is harmful for ozone, promoting its destruction. Among these are the compounds of nitrogen, hydrogen and chlorine. Nitrogen penetrates into the atmosphere in the shape of nitrogenous oxides, when nitrogenous fertilizers are used and at an ejection of spent gases in flights of high-altitude airplanes. The enterprises emitting methane into the atmosphere and also the flights of the highaltitude airplanes and rockets are the major contributes of hydrogen compounds. Chlorine penetrates into the atmosphere as a result of the use of chlorine’s organic components, first of all freon, in the home and industrially.

### 2NC Coal Uniqueness – Assumes EPA

#### Coal will remain stable now even under extreme regulations – EPA analysis

McCarthy and Copeland 2011 - Specialist in Environmental Policy AND Specialist in Resources and Environmental Policy (August 8, James E. and Claudia, “EPA’s Regulation of Coal-Fired Power: Is a “Train Wreck” Coming? ” <http://www.lawandenvironment.com/uploads/file/CRS-EPA.pdf>)

Virtually all the analyses agree that coal will continue to play a substantial role in powering electric generation for decades to come. EPA, for example, in the Utility MACT RIA, concluded that coal-fired generation will be roughly the same in 2015 as it was in 2008, despite the impact of the MACT and other rules. 72 By 2030, the agency projects that 43% of the nation’s electricity will still be powered by coal. 73 (The current level is 45%.) EEI projected that coal will be responsible for 36% to 46% of electricity generation in 2020, depending on the scenario. There will be retirements of coal-fired capacity, however, as all of the analyses conclude. The number of these retirements, and the role of EPA regulations in causing them, are matters of dispute. The most extreme scenario in EEI’s analysis showed 76 GW of coal-fired capacity retirements by 2020 (a little less than 25% of current capacity) as a result of the regulations it analyzed. As noted in the discussion of the individual regulations, in many cases EEI’s analysis assumed regulations far more stringent than EPA actually proposed. The units that would retire are the least economic and/or those currently operating with minimal pollution controls. As noted in Figure 5, there are 110 GW of coal-fired plants (about one-third of all coal-fired capacity) that began operating between 1940 and 1969, and two-thirds of these plants do not have scrubbers. These are the prime candidates for retirement.

### **AT: Coal Bad**

#### Coal inevitable internationally – just a question of transition to CCS

LA Times 2012 (July 27, “Dirty but essential -- that's coal” <http://articles.latimes.com/2012/jul/27/opinion/la-oe-adv-bryce-coal-epa-climate-20120727>)

But the EPA and the Obama administration know their attack on coal is little more than a token gesture. The rest of the world will continue to burn coal, and lots of it. Reducing the use of coal in the U.S. may force Americans to pay higher prices for electricity, but it will have nearly no effect on climate change. There's no denying that coal has earned its reputation as a relatively dirty fuel. On one particularly nasty day in London in 1812, a combination of coal smoke and fog became so dense that, according to one report, "for the greater part of the day it was impossible to read or write at a window without artificial light." About 200 years later, the New York Times reported that in Datong, China, known as the City of Coal, the air pollution on some winter days is so bad that "even during the daytime, people drive with their lights on." Air pollution is only part of the coal industry's toll. It damages the Earth's surface with strip mines, mountaintop removal and ash ponds at power plants. In addition, thousands of workers die each year in coal mines. But U.S. policymakers are mostly focused on carbon dioxide. The proposed EPA rule would cap the amount of CO2 that new fossil-fuel electricity generation units could emit at 1,000 pounds per megawatt-hour. Absent "carbon capture and storage," a process that isn't commercially viable, that standard will rule out coal-fired units, which emit about 1,800 pounds of CO2 per megawatt-hour. (Natural gas units emit about 800 pounds per megawatt-hour.) Prohibiting new coal-fired power plants may please President Obama's domestic supporters, but it would leave global coal demand and CO2 emissions almost unchanged. Indeed, over the last decade, even if CO2 emissions in the U.S. had fallen to zero, global emissions still would have increased. Consider Vietnam, where electricity use increased by 227% from 2001 to 2010. Its coal demand jumped by 175% during the same period, and it had the world's fastest percentage growth in CO2 emissions. Meanwhile, China has about 650,000 megawatts of coal-fired electricity generation capacity (more than twice the capacity in the U.S.), and it plans to build an additional 273,000 megawatts of coal-fired capacity. Those numbers help explain this fact: Over the last decade, global coal consumption has increased by more than the growth in oil, natural gas and hydro and nuclear power combined. We needn't look only at developing countries to see the essential role of coal. After the disaster at Japan'sFukushima nuclear power plant, Germany is rushing to shutter its reactors. Although renewable-energy projects are the darling of European politicians, nearly 14,000 of the 36,000 megawatts of new electricity generation capacity that will be built in Germany over the next few years probably will be coal-fired facilities. Coal is helping meet the world's electricity demands for a simple reason: It's cheap, thanks to the fact that deposits are abundant, widely dispersed, easily mined and not controlled by any OPEC-like cartels. According to theU.S. Department of Energy, from 1999 through 2010, coal cost about half as much per BTU as the next cheapest fuel, natural gas. And coal will continue to be a low-cost option. ExxonMobil predicts that in 2030, the cheapest form of electricity production will remain coal-fired generation units, with a total cost of about $0.06 per kilowatt-hour, less than the cost of electricity produced by natural gas, nuclear, wind or solar photovoltaic panels.

### **AT: CCS Too Expensive**

#### CCS is part of the cheapest possible solution

Fellet 2012 - holds a PhD in chemistry from Washington University in St. Louis (November 28, Melissae, “The promises and pitfalls of carbon capture” <http://arstechnica.com/science/2012/11/the-promises-and-pitfalls-of-carbon-capture/>)

Carbon capture and storage (CCS) technologies could be part of our low-carbon energy future. Calculations from the International Energy Agency estimate that the cheapest suite of emissions reductions technologies operating by 2050 includes a 14 percent contribution from CCS. If that scenario played out as imagined, CCS would capture about 123 gigatonnes of CO2 by 2050. Currently, 16 operating or planned large-scale CCS projects will collectively capture about 0.03 percent of that CO2 yearly by 2015 (36 million metric tons). Most of that gas comes from natural sources or existing industrial processing streams. Only a few projects, like Boundary Dam in Canada and Kemper County in Mississippi, apply CCS to power plants. Taken together, current CCS projects may not look like they’re on track to help reduce global carbon emissions as there are so few industrial-scale capture projects—particularly on power plants. But these projects are necessary baby steps for scaling up CCS technologies. Every capture plant and storage project is an opportunity to improve and develop the technology for the future while curbing CO2 emissions today, says Charles Freeman, a researcher at the Pacific Northwest National Laboratory in Washington state.

#### Warming is inevitable – status quo CO2 levels linger for hundreds of years which guarantees warming until the year 3000 assuming we completely stop emitting in the status quo – which is impossible and significantly less than what the plan accomplishes – even if CO2 levels somehow decline, positive ocean feedbacks have already been triggered which guarantee warming – that’s Solomon – prefer her study because it cites the most advanced computer modeling and she’s one of the lead IPCC authors – no bias

Warming tipping points inevitable – too late
NPR 9 (1/26, Global Warming Is Irreversible, Study Says, All Things Considered, <http://www.npr.org/templates/story/story.php?storyId=99888903>)

Climate change is essentially irreversible, according to a sobering new scientific study. As carbon dioxide emissions continue to rise, the world will experience more and more long-term environmental disruption. The damage will persist even when, and if, emissions are brought under control, says study author Susan Solomon, who is among the world's top climate scientists. "We're used to thinking about pollution problems as things that we can fix," Solomon says. "Smog, we just cut back and everything will be better later. Or haze, you know, it'll go away pretty quickly." That's the case for some of the gases that contribute to climate change, such as methane and nitrous oxide. But as Solomon and colleagues suggest in a new study published in the Proceedings of the National Academy of Sciences, it is not true for the most abundant greenhouse gas: carbon dioxide. Turning off the carbon dioxide emissions won't stop global warming. "People have imagined that if we stopped emitting carbon dioxide that the climate would go back to normal in 100 years or 200 years. What we're showing here is that's not right. It's essentially an irreversible change that will last for more than a thousand years," Solomon says. This is because the oceans are currently soaking up a lot of the planet's excess heat — and a lot of the carbon dioxide put into the air. The carbon dioxide and heat will eventually start coming out of the ocean. And that will take place for many hundreds of years. Solomon is a scientist with the National Oceanic and Atmospheric Administration. Her new study looked at the consequences of this long-term effect in terms of sea level rise and drought.

#### No impact – empirics

Willis et. al, ’10 [Kathy J. Willis, Keith D. Bennett, Shonil A. Bhagwat & H. John B. Birks (2010): 4 °C and beyond: what did this mean for biodiversity in the past?, Systematics and Biodiversity, 8:1, 3-9, <http://www.tandfonline.com/doi/pdf/10.1080/14772000903495833>, ]

The most recent climate models and fossil evidence for the early Eocene Climatic Optimum (53–51 million years ago) indicate that during this time interval atmospheric CO2 would have exceeded 1200 ppmv and tropical temperatures were between 5–10 ◦ C warmer than modern values (Zachos et al., 2008). There is also evidence for relatively rapid intervals of extreme global warmth and massive carbon addition when global temperatures increased by 5 ◦ C in less than 10 000 years (Zachos et al., 2001). So what was the response of biota to these ‘climate extremes’ and do we see the large-scale extinctions (especially in the Neotropics) predicted by some of the most recent models associated with future climate changes (Huntingford et al., 2008)? In fact the fossil record for the early Eocene Climatic Optimum demonstrates the very opposite. All the evidence from low-latitude records indicates that, at least in the plant fossil record, this was one of the most biodiverse intervals of time in the Neotropics (Jaramillo et al., 2006). It was also a time when the tropical forest biome was the most extensive in Earth’s history, extending to mid-latitudes in both the northern and southern hemispheres – and there was also no ice at the Poles and Antarctica was covered by needle-leaved forest (Morley, 2007). There were certainly novel ecosystems, and an increase in community turnover with a mixture of tropical and temperate species in mid latitudes and plants persisting in areas that are currently polar deserts. [It should be noted; however, that at the earlier Palaeocene–Eocene Thermal Maximum (PETM) at 55.8 million years ago in the US Gulf Coast, there was a rapid vegetation response to climate change. There was major compositional turnover, palynological richness decreased, and regional extinctions occurred (Harrington & Jaramillo, 2007). Reasons for these changes are unclear, but they may have resulted from continental drying, negative feedbacks on vegetation to changing CO2 (assuming that CO2 changed during the PETM), rapid cooling immediately after the PETM, or subtle changes in plant–animal interactions (Harrington & Jaramillo, 2007).]

#### The modern climate crisis is NBD – species have adapted to bigger, faster warming

Willis, et. al, ‘10 [Kathy J. Willis, Keith D. Bennett, Shonil A. Bhagwat & H. John B. Birks (2010): 4 °C and beyond: what did this mean for biodiversity in the past?, Systematics and Biodiversity, 8:1, 3-9, <http://www.tandfonline.com/doi/pdf/10.1080/14772000903495833>, ]

Given that this temperature increase was greater in magnitude and rate to anything predicted for the next century, it is an extremely useful time interval to examine possible biotic responses to 4 ◦ C and beyond. In order to assess biotic responses, however, it is also important to have records with a good temporal resolution, ideally annual resolution. A review of the vegetational responses recorded in 11 sedimentary sequences with a suitably high temporal resolution from around the North Atlantic region (Williams et al., 2002), indicates that in North America and Europe, in less than 100 years, vegetation responded to the rapid climate change 11 600 years ago. For tree populations, this change often occurred in less than two or three generations. The nature of the response depended upon the former vegetation; in central Europe (e.g. Willis et al., 1997; Feurdean et al., 2007) and parts of eastern North America, for example, there is evidence in many regions for a change from needle-leaved dominated to broad-leaved dominated forest, often in less than 100 years. In comparison, closer to the ice-sheets, in western Norway, there was a rapid expansion in the herbaceous and shrub ﬂora and a later arrival of trees, probably due to a time lag for migration from refugial areas (Birks & Birks, 2008). The increase in tree populations, however, even in these northerly regions was still rapid (Birks & Ammann, 2000). A recent study from the East Baltic region, for example, indicates that those trees that survived in northerly refugial populations (Betula, Pinus, Picea) established within a century, suggesting climatedriven ecosystem changes rather than gradual plant succession on new deglaciated land (Heikkila¨ et al., 2009). Thus some species expanded very fast in response to late-glacial warming. There is also evidence, however, for species that expanded slowly or largely failed to expand from their refugia in response to this interval of rapid climate warming (Svenning & Skov, 2007) suggesting that persistence and expansion is also dependent on being in a location that was continuously suitable during the glacial–interglacial ‘cycle’ (Bennett et al., 1991). Biotic responses to this interval of rapid climate warming throughout Europe and North America therefore include evidence for (i) rapid expansion of in situ populations, (ii) large-scale species range shifts (Birks & Willis, 2008), (iii) community turnover (Birks & Birks, 2008) and (iv) the formation of novel community assemblages (Williams & Jackson, 2007). However, at no site yet studied, anywhere in the world, is there evidence in the fossil record for largescale climate-driven extinction during this interval of rapid climate change (Botkin et al., 2007). In some regions there was local or regional extinction, as is apparent throughout the cold-stages of the Quaternary when increasing numbers of tropical species went locally or regionally extinct in Europe (Tallis, 1991; Svenning, 2003; Willis & Niklas, 2004). There is evidence in the fossil record for the total extinction of only one species, the east North American spruce Picea critchﬁeldii (Jackson & Weng, 1999), but evidence for widespread global extinction of plants in this interval of very rapid climate warming has yet to be demonstrated. It had been argued previously that the large-scale megafaunal extinction that occurred at the end of the Pleistocene was climatically driven, but a large number of studies now suggests that this was a predominantly human-driven extinction event that spanned thousands of years (Koch & Barnosky, 2006; Johnson, 2009) rather than a rapid response to the large temperature increase at the late-glacial/post-glacial transition.

#### Framing issue – their evidence is speculative on the effect of warming – prefer historical analysis in determining warming –

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So why is there this discrepancy between what the fossil and historical records are telling us about extinctions driven by climate change and those predicted through models? Many biota, using evidence from fossil plant records, likely have much wider ecological tolerances than are usually assigned in models. Also, the present-day distribution of species, especially in mid to high latitudes, often has a strong historical/pre-historical cultural imprint (e.g. Bradshaw & Lindbladh, 2005) which again is often not taken into account in the models. However, the discrepancy is also in part due to the coarse scale of the models used to estimate climate change-induced habitat loss. For example, a recent study to assess whether climate change-induced habitat losses predicted at the European scale (16 km × 16 km grid cells) are also predicted from local-scale data and modelling (25 m × 25 m grid cells) in two regions of the Swiss Alps indicated that whereas the European-scale model predict loss of all suitable habitats, local-scale models predict persistence of suitable habitats in up to 100% of species (Randin et al., 2009). A similar conclusion was also reached in a study to assess the predictive accuracy of bioclimatic envelope models for the future distribution of European butterﬂies (Luoto & Heikkinen, 2008). Here, of the 100 species studied, a model that included topography predicted only half of the species losses for the period 2051–2080 compared with those predicted by a climate-only model. In contrast, the number of species predicted to disappear from ﬂatlands doubled. It would appear from both these studies that habitat heterogeneity resulting from topographic diversity may be an essential factor for persistence of biota in a future changing climate (Willis & Bhagwat, 2009). Based on these studies, and many others using fossil and historical records, we argue that evidence for the widely cited view that future climate change poses an equal or greater threat to global biodiversity than anthropogenic land-use change and habitat loss (Thomas et al., 2004) is equivocal: extinctions driven by the latter processes of habitat loss pose a far greater threat to global biodiversity. It is also questionable, however, whether it is even possible to now separate the two processes, given that over 80% of the Earth’s terrestrial biomes now have evidence of an anthropogenic impact upon them (Ellis & Ramankutty, 2008). What we probably need to be considering is the synergistic effect of these two factors on biodiversity (Travis, 2003)

Their internal link assumes the US is to be a player in international negotiations after it gets other countries on board – congressional opposition means that will never happen

Falkner 5 – Robert Falkner, Department of International Relations, London School of Economics, 2005, "American Hegemony and the Global Environment," International Studies Review, Volume 7, Issue 4, pages 585-599

As the experience with US policy on biodiversity and climate change suggests, US presidential leadership abroad is easily trumped by Congressional opposition at home. The split between the executive and legislative branches of government became all too apparent in the 1990s. Because the Clinton administration lacked Congressional support for its international environmental ambitions, it had to backtrack from its support of the CBD and the Kyoto Protocol, and it was unable to live up to its earlier promises to take the country back into the multilateral policymaking arena. These two examples suggest that a critical condition for environmental leadership is, therefore, the building of domestic coalitions in support of an active foreign policy (Paarlberg 1997:137). Although the success of domestic coalition building will be influenced by the political landscape of the day, there are structural reasons to suggest that stable and broad-based coalitions are likely to be the exception rather than the norm, and that domestic fragmentation will remain a pervasive aspect of foreign environmental policy in the United States. One important reason for this fragmentation lies in the nature of the American political system. With its decentralized decision-making process and power separation between the executive, legislative, and judiciary, US environmental politics proceeds in an often erratic fashion and can lead to considerable deadlock between competing institutional interests (Kraft 2004:chap. 3). Presidential leadership can easily be blocked through concerted efforts on Capital Hill, where lobbyists are likely to find a receptive audience, especially in the runup to Congressional elections. And although the executive has greater room for initiative in foreign policy, the need for Congressional approval of international agreements and domestic programs acts as a dampener on international leadership efforts that are not backed by a broader coalition of interests at home. Congress's powerful position in US foreign environmental policy is based on its constitutional role in the policymaking process in three particularly sensitive areas: its authority to ratify international treaties; its budgetary and fiscal powers that affect proposals for environmental taxation, international environmental aid, and other environmental spending programs; and its general legislative role in establishing and reviewing environmental regulations. All three of these areas are critical to foreign environmental policy. They affect the ability of the United States to accede to agreements it has negotiated and signed; they determine the extent to which US environmental leadership is backed up by promises of international environmental aid; and they influence the ability of the United States to provide a model for policy innovation through effective domestic regulation. Decentralization and the separation of powers in the American political system make it more difficult for the government to sustain support for international environmental institutions. The example of global biodiversity policy shows how limited the powers of the White House can be when faced with determined opposition in Congress. Despite achieving major concessions at the 1992 Earth Summit in Rio, the United States refused to sign the CBD, mainly over concerns for intellectual property protection and in response to intense industry lobbying. The Clinton administration sought to reverse the image of the United States as a global environmental laggard and negotiated with leading biotechnology firms a solution that would allow the country to sign the Convention. This was to be done through an interpretation to be submitted with the US signature, which would prevent the convention from infringing on patent rights or commercial opportunities for research and innovation. In the end, however, it was Congress that refused to ratify the Convention, despite a broad consensus between industry, environmental groups, and the White House. Until today, Republican opposition to this particular Convention has prevented full participation by the United States in this area of international environmental regulation (Falkner 2001:169–171).

Can’t Solve

A) US Leadership Fails

Falkner, ‘05 – (November 15, 2005. “American Hegemony and the Global Environment” International Studies Review. Volume 7, Issue 4. JSTOR.)

Throughout the history of international environmental politics, the United States has played an active role in the creation and design of international regimes and has used its power to pursue its preferred policy objectives. To be sure, US hegemony has not translated into international policy outcomes in a straightforward manner. Nor has US foreign environmental policy been consistent over time in terms of its overall direction. Depending on the environmental issue that is the focus of attention and its broader international context, America’s hegemony has formed the basis for both international leadership and veto power in environmental regime formation. There is, thus, no simple correlation between the US position in the international system and its environmental objectives. As will be argued below, the inﬂuence of competing domestic interest groups and the fragmented nature of the foreign policy system in the United States are largely responsible for the considerable variation in US foreign environmental policy over time and across issue areas

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