# 1AC

### Plan

#### The United States federal government should diminish Nuclear Regulatory Commission staffing, manufacturing licensing, emergency planning zone, and safety restrictions for Small Modular Reactors to be consistent with the unique attributes of Small Modular Reactors.

### Environmental Leadership

#### The advantage is environmental leadership

#### Obama’s climate legitimacy is dead – only changes to domestic energy policy can reinvigorate leadership

Herz, Senior International Climate Attorney with the Sierra Club, 12-17

[12/17, Dithering In Doha: We Need To Re-Frame The Politics Of Climate, thinkprogress.org/climate/2012/12/17/1343391/dithering-in-doha-we-need-to-re-frame-the-politics-of-climate/?mobile=nc]

Just as disappointing as the outcome in Doha was the role of the United States in bringing it about. When President Obama first took office, there were great expectations that he would bring about a new era American climate leadership. Instead, the US negotiating posture too often has been characterized by a reluctance to expend real political capital, a hypersensitivity to Congressional extremism, and an unwillingness to lead by example. Still, there were good reasons to hope that Doha might be the place where the President would begin to fashion a more creative and ambitious negotiating strategy. After all, hadn’t President Obama just handily won reelection over an (opportunistically) denialist opponent, and in the flush of victory, affirmed his intent to address the climate crisis in his Second Administration? Didn’t superstorm Sandy just drive home the intolerable human costs of a significantly warmer planet in the starkest terms possible? With the election safely behind him and the devastation of Sandy laid out before him, was there ever a fiercer urgency than now? It was not to be. On every critical issue, the Obama team did just enough to avoid being called out for blocking progress, far less than what was needed, and nowhere near what real leadership required. For example, the US negotiators refused to discuss how the US could ramp up its actions at home, despite the fact that the actions countries have agreed to take before 2020 are not nearly enough to limit warming to 3.6°F, and the US has committed to do much less than other developed countries. The US also made sure that developed countries would not provide any clarity on how they would ramp up climate assistance to developing countries to meet their collective pledge to provide $100 billion a year by 2020. It has become fashionable to blame the UN process itself for the collective failure to craft an adequate international response to climate change. But the US performance in Doha cannot be attributed to a failure of international politics; it was plainly a failure of politics right here at home. Most of the blame, of course, lies with a Republican opposition that is contemptuous of science, heedless of risk, and beholden to the most regressive fossil fuel interests. But President bears much responsibility as well. Rather than using the power of the Presidency, his high public approval ratings and his peerless rhetorical gifts to change the political dynamics around climate change, he has simply taken the political space as he has found it. President Obama has two critical opportunities to re-frame America’s climate diplomacy in the coming months. First, he must select a new Secretary of State with a clear sense of the overriding strategic importance of climate change to America’s core interests, and the creativity and vision to lead the world towards more ambitious collective action. Second and more importantly, he must use his State of the Union Address to discuss the stakes and impacts, and explain why an appropriate response is essential for our long-term prosperity and security. He should commit in no uncertain terms that climate change will be a signature priority in his Second Administration. And he should propose a suite of policy initiatives that can swiftly reduce our emissions, and give other nations confidence that we will not shirk our responsibilities. Together, these actions would go a long way towards ensuring that our climate diplomacy is much more successful in the second Obama Administration than it was in the first.

#### Only support for nuclear power can resolve perceptions of international law illegality constraining US foreign policy – renewables are insufficient

Hickey, Law Professor at Hofstra, 07

[REVIVING THE NUCLEAR POWER OPTION IN THE UNITED STATES: USING DOMESTIC ENERGY LAW TO CURE TWO PERCEPTIONS OF INTERNATIONAL LAW ILLEGALITY, lawarchive.hofstra.edu/pdf/Academics/Journals/LawReview/lrv\_issues\_v35n02\_i03.pdf]

Two perceptions, right or wrong, of international law illegality on the part of the United States have arisen in the last few years with regard to both the use of military force in Iraq and to global warming. The first perception is that the United States invaded Iraq illegally to secure a significant source of foreign oil. The second perception is that the United States ignores the letter and spirit of the evolving international climate change regime to reduce greenhouse gas (“GHG”) emissions. Both perceptions of international law illegality directly reflect the domestic growth energy policy of the United States that is anchored by a present and future reliance almost exclusively on fossil fuels (oil, coal and natural gas), which both emit GHG and contribute to the dependence of the United States on foreign oil. Those perceptions of illegality could be fully cured by an aggressive use of existing domestic law to revive the nuclear power industry in the United States to replace its fossil fuel based electric supply. This would put the United States in compliance with the climate change regime (whether or not it ever participates in it) and would help both to greatly reduce the dependence of the United States on foreign oil as a factual matter and to eliminate the perception that it uses force to secure foreign oil sources as a policy matter. In turn, the benefits of removing perceptions of international law illegality ought to play a significant and positive role in weighing the benefits and costs of future domestic nuclear energy production. II. PERCEPTIONS OF INTERNATIONAL LAW ILLEGALITY The first perception of illegality is that the invasion of Iraq was all about securing a foreign oil supply. Three considerations fuel that perception: the absence of an international law justification for the invasion, the presence of large oil reserves in Iraq, and the growing dependence of the United States on foreign oil for most of its oil needs. There was little justification in international law for the invasion by the United States and the coalition of willing states. International law forbids “the threat or use of force by states against the territorial integrity or political independence of any state,” except in an act of legitimate individual or collective self-defense or if authorized to maintain or restore international peace and security by the U.N. Security Council.2 The invasion of Iraq was not an act of self-defense under either the U.N. Charter,3 or under customary international law. Iraq had not actually attacked anyone for twelve years prior to March 2003.4 The invasion also was not justified as an act of anticipatory self-defense because Iraq neither had the capability nor demonstrated any intention of launching an imminent armed attack against the United States or other coalition states.5 The alternative notion that the invasion was legally justified in international law to preempt an armed attack at some remote point in time in the distant future is a dangerous and discredited international law justification for the use of force and there is no record to support that Iraq had such long term intentions. The invasion also could not be justified in international law as an act of humanitarian intervention.6 Finally, the invasion of Iraq was not legally justified by resolutions of the U.N. Security Council.7 The only two Security Council resolutions that could be invoked to justify the invasion were Resolution 678,8 and Resolution 1441.9 Neither resolution authorized the invasion of Iraq in March 2003. Resolution 678 was over a dozen years old and only authorized force to oust Iraq from Kuwait in the Desert Storm war.10 If the United States thought Resolution 678 provided a legal predicate to invade Iraq in 2003, it would not have sought Resolution 1441 from the Security Council. Resolution 1441 did not authorize the use of force because it did not contain the “magic words” of authorization—“use all necessary means.” Two permanent members of the Security Council (Russia and France) said in voting for 1441 that they did not intend to authorize the use of force, and that the resolution itself clearly required the Security Council to take an additional decision if Iraq violated 1441.11 The Security Council subsequently never issued any resolution authorizing the use of force against Iraq. In the absence of international law justifications for the invasion, the perception persists in some quarters, rightly or wrongly, that the United States invaded Iraq primarily to secure long term foreign sources of oil. After all, the United States depends mostly on foreign oil for much of the country’s energy needs.12 “In 2005, total U.S. demand for petroleum was 20.8 million barrels per day, of which 12.5 million barrels per day, or 60 percent, was from net imports.”13 Domestic oil production is mature, is increasingly under environmental constraints, and is not expected to rise significantly in the future.14 Under the present growth energy policy of the United States, grounded in fossil fuel use, secure foreign sources of oil must be found. In this regard, Iraq is estimated to have up to 216 billion barrels of untapped oil reserves in the ground, the third highest reserves in the world behind Saudi Arabia and Canada.15 The second perception of international law illegality is that the United States is acting contrary to the letter and spirit of the emerging international law regime to deal with climate change, in particular, efforts to reduce GHG emissions that contribute to global warming that are found in the 1992 United Nations Framework Convention on Climate Change (“Climate Change Convention”) and later in the 1997 Kyoto Protocol to the Climate Change Convention (“Kyoto Protocol”). The United States is a party to the Climate Change Convention along with 188 other nations. The Climate Change Convention establishes an administrative mechanism for governments to cooperate in stabilizing and ultimately reducing man-made GHG emissions to stop global warming. It establishes a largely aspirational framework to address the problem of climate change by urging cooperation among nations, by calling for the gathering of data on GHG emissions, by the launching of strategies to facilitate needed financing and technologies, and by articulating principles (like equity, sustainable development, and the precautionary principle) to guide more substantive rules. An overall goal of the Climate Change Convention is to have developed nations reduce GHG emissions to their 1990 levels and to have them assist developing countries in dealing with GHG.20 While still a party to the Climate Change Convention, the United States, in 2001, withdrew from the Kyoto Protocol. The Kyoto Protocol, which entered into force in February 2005 and has 169 parties to it, imposed binding international law obligations on industrialized nations to cap GHG emissions. If the United States had not withdrawn from the Kyoto Protocol, it would have been obligated to reduce its GHG emissions seven percent below 1990 levels.23 Just the opposite happened. From 1990 through 2000, for example, total GHG emissions by the United States rose from 1647 million metric tons annually to 1885 million metric tons.24 In 2005, GHG emissions from the United States were seventeen percent higher than in 1990.25 The United States alone produces roughly one quarter of all the world’s energy-related carbon emissions.26 Forty percent of that total comes from electric power plants burning coal, oil, and natural gas.27 In addition, the United States domestically has refused to regulate GHG emissions from automobiles under the Clean Air Act.28 By any measure, this is a domestic energy policy position out of step with the international law regimes emerging to deal with climate change.III. REVIVING THE NUCLEAR POWER OPTION Nuclear power is one of the most readily available domestic energy sources that can be used to achieve energy independence. It has a fiftyyear record of safe operational experience with over one hundred power plants.29 There are an estimated 498 million tons of uranium ore reserves in the United States30 to fuel a revived nuclear power industry. In addition, Australia and Canada, two close U.S. allies, have most of the world’s uranium reserves. Unlike fossil fuel electric power, nuclear electric power does not produce any GHGs. In 2005, over 200 million barrels of oil were used directly for electric generation.31 This consumption can be replaced by nuclear generation, which would help to reduce U.S. foreign oil dependence. In addition, the heavy reliance on the automobile in the United States is a major source of both oil consumption and of GHG emissions. The movement to introduce electric and electric hybrid cars to the U.S. automobile market is an attempt to reduce oil use and GHG emissions. However, if electric batteries used in these cars are recharged with fossil fuel generated electricity, little is achieved to reduce GHG emissions because the source of those emissions is simply moved from the tailpipe to the smokestack. In a revived nuclear power industry, additional GHG emission reductions could be achieved by recharging electric car batteries with electricity produced from nuclear power plants. Despite these advantages, the growth of the nuclear power industry has been moribund since the late 1970s because of domestic concerns about cost, accidents, and waste disposal.32 As a result, the nuclear energy contribution to meet the nation’s total electric demand hovers at about twenty percent.33 If nothing changes in the calculus of the benefits and costs of nuclear power production, the contribution of nuclear energy to meet the rising energy needs of the United States will decline in the future. Existing nuclear plants are operating at top efficiency and they are near the end of their useful lives, with no new plants on the horizon.34 In turn, U.S. electric demand is expected to increase by fortythree percent over the next twenty years requiring between 1300 and 1900 new power plants. Without nuclear power plants, the primary fuel source for those plants will be fossil fuels (coal, natural gas and oil), which are the major contributors of GHG to the atmosphere from electric generation. Renewable energy sources presently contribute little more than two percent of the nation’s total electric generation, excluding hydroelectricity (i.e. wind, solar, geothermal) Even if renewable capacity was tripled, it would still constitute only a very small portion of the total electric energy needs of the country. Hydroelectric power provides between six and seven percent of the country’s electricity.38 It is fully developed in the sense that nearly all rivers and streams capable of being used for production of hydroelectricity have been exploited. It is estimated that fossil fuels, without a change in energy laws and policies, will provide eighty-six percent of the energy supply of the United States in 2030.39 There is also in place a comprehensive legal and administrative regime for revival of the nuclear power industry. For example, the 1954 Atomic Energy Act allows private ownership of nuclear power plants under licenses issued by the federal Nuclear Regulatory Commission.40 The 1957 Price-Anderson Act limits investment risks and encourages investment in nuclear power plants by limiting the overall liability of commercial nuclear plant operators.41 The 1969 National Environmental Policy Act requires environmental impact statements to be prepared.42 The 1982 Nuclear Waste Policy Act addresses disposal of nuclear wastes associated with nuclear power production.43 The 1992 Energy Policy Act simplifies nuclear plant licensing procedures and encourages research and development of advanced nuclear power facilities.44 Finally, the 2005 Energy Policy Act renews the Price-Anderson Act, provides for loan guarantees for new nuclear power reactors, and establishes nuclear power production tax credits.45 What then prevents a shift in domestic growth energy policy towards aggressive nuclear power development and away from reliance on fossil fuels? There are four areas of concern about the nuclear power industry that inhibit its revival: costs, safety, proliferation, and waste. First, nuclear power remains at present relatively expensive under current financial comparisons. The cost of new nuclear plant construction per kilowatt hour is roughly $1500 compared to half that for a new coal plant.46 However, those cost comparisons do not fully internalize the associated global warming costs associated with GHG emissions from coal fired power production. In addition, the cost benefits of reducing GHG emissions by using nuclear power plants is also not reflected in current cost calculations. The cost comparisons also do not reflect any of the benefits achieved by curing the perceptions of illegality with regard to the use of force or to global warming. Cost calculations could also be reduced on a short term basis with government subsidies for the first few plants until economies of scale kick in with a revived nuclear industry, which would further reduce the cost per kilowatt hour. Second, since the Three Mile Island accident in 1979 and the 1987 Chernobyl plant meltdown in the Ukraine, there are concerns about plant safety and harm from accidents. Since those accidents, many industry and government measures have been undertaken to improve safety margins at nuclear plants in the United States. In addition, nuclear plant technology has changed greatly and is continuing to change to produce safer plants. In any event, the old Chernobyl type technology has never been used in the United States.47 There is also a new concern about the possibility of terrorist strikes against nuclear power plants and those safety concerns must be taken into consideration.48 In weighting safety concerns, it must be appreciated that global warming from GHG emissions can potentially produce far more catastrophic harms to the planet than local significant releases of radiation from a nuclear plant accident or terrorist strike for that matter.49 Third, there are concerns about nuclear weapons proliferation weapons. However, proliferation is not a problem inside the United States. It is a problem abroad in countries like Iran and North Korea. In any event, the July 18, 2005 agreement of the United States to share advanced nuclear plant technology with India, which is not a party to the Nuclear Non-Proliferation Treaty, should remove concerns about proliferation from a revived U.S. nuclear power industry from the calculus.50 If the United States is not concerned about nuclear proliferation from its nuclear power plant technology being used to make bombs in India, then it should hardly be much of a factor in considering the revival of the U.S. nuclear power industry. Fourth, there are legitimate concerns about disposal and storage of nuclear waste. Throughout the fuel cycle, low level and high level radioactive waste is created. Of particular concern, is spent nuclear fuel from fuel rods that can no longer produce enough heat to make electricity.51 Those highly radioactive spent fuel rods require storage permanently and safely to prevent exposure to humans, animals and flora and fauna. The waste disposal problem can be significantly ameliorated if the United States would lift its ban on nuclear fuel reprocessing, which would allow spent fuel rods to be used again rather than stored.52 What is not taken into account in considering the revival of the nuclear power industry are the substantial and real benefits in removing perceptions of international law illegality that have arisen in the context of climate change and the use of force. These benefits are admittedly hard to quantify. However, they belong firmly in the revival calculations. IV. CONCLUSION From the 1950s through the 1970s there was a pro-nuclear power consensus in the United States that resulted in the birth and vigorous growth of the nuclear power industry. Rising costs, construction delays, accidents, and waste disposal concerns shattered the pro-nuclear power consensus and stopped the growth of the industry in its tracks. It may now be time to rebuild that consensus and revive the growth of the nuclear power industry in the United States. Our dependence on foreign oil has grown to an unacceptable degree and evidence of the dangers of irreversible global catastrophe from global warming is mounting, while the energy policy of the United States remains a prisoner of fossil fuels. This has resulted in widely held perceptions, right or wrong, that the United States violated international law on the use of force by invading Iraq to secure foreign oil sources and that it now is violating the letter and spirit of the emerging international law regime to deal with climate change. Those perceptions can be removed by a domestic growth energy policy resting on existing domestic energy laws that moves away from fossil fuels and expands nuclear power production. If fossil fuels continue to be the centerpiece of long term domestic energy policy, those perceptions of international law illegality will persist to the detriment of U.S. foreign policy for decades.

#### Presidential leadership to address international climate concerns key to global environmental cooperation

Shepard, Natural Resources/Water Resources University Laboratory Teacher, 10

[U.S. Environmental Policy and Leadership, http://www.brighthub.com/environment/science-environmental/articles/39623.aspx?p=2]

The Bush administration’s failure to see the big picture in reference to global environmental change can clearly be seen in the resulting outcomes of his eight years as president. The withdrawal of the U.S. from the Kyoto treaty is both an important symbol of American isolationism from Europe and a direct link as to why the country (and perhaps the world as a whole) has not reduced greenhouse gas emissions and other pollutants that affect the global environment. The Kyoto agreement is not without flaws but the unwillingness to negotiate, or inaction, was not conducive to a good outcome for the global environment. "Greenhouse" Gases According to the Energy Information Administration (EIA) the United States greenhouse gas emissions went up by 1.4% in 2007. An article in the LA times states carbon dioxide emissions rose by nearly 2.0% in the U.S. in 2007 while Denmark’s went down by 8%, the U.K. and Germany 3%, and France and Australia 2%. Granted, this is only a single year, but considering the breadth of the consequences and that Bush had been in office since 2000, these numbers sum up rather well the effect of his administration on global environmental change. Bush Environmental Policies Overturned The ironic nature of the Bush administration’s response to environmental change is that the best aspect of it is reflected in policy’s that did not take effect. The administration made a habit of changing environmental regulations, many of which have been overturned by the Supreme Court. It's a tribute to our system that these efforts were not allowed to come to fruition. An example is the blocking of “changes to the rules that govern what kind of logging, mining or other activities can be allowed in national forests.” (Shogren, 2007) Carol Browner, head of the EPA in the Clinton administration and Obama energy “czarina”, is quoted as saying: "As dreadful as the Bush administration has been with respect to clean air and forests and all these environmental issues, the courts have been really our savior. And have time and time again in the last years [it has] stepped in." (Shogren, 2007) Another example of Bush environmental policy being thwarted is President Obama’s retracting of regulations inserted by Bush before he left office. One such regulation “would have opened 2 million acres of public land in Wyoming, Colorado, and Utah for oil-shale drilling.” (O'Carroll, 2009) Environment vs. Economy It appears that Bush was mired in the old ways of pitting the environment against the economy. In an April 2008 speech Bush states “The Kyoto Protocol would have required the United States to drastically reduce greenhouse gas emissions. The impact of this agreement, however, would have been to limit our economic growth…” (The White House Office of the Press Secretary, 2008) I maintain that this did not have to be, and that Obama has offered a glaring contrast to this outdated thinking. Obama campaigned on stimulating the economy in part by creating “green” jobs and fostering energy efficiency that will both save money and reduce fossil fuel use. Moving Forward There are numerous goals and programs of the new administration that were never considered by the Bush administration. These include a national Renewable Portfolio Standard, proposing a carbon cap and trade system, and already making it so states such as California can pass their own automobile fuel mileage standards that will likely be followed by other states. One of the biggest and perhaps controversial measures thus far is the April Environmental Protection Agency ruling making carbon dioxide a pollutant. A fairly novel idea being studied is to provide incentives for land owners (and money for planting in government owned forest land) to plant trees that can provide sinks for carbon. This is being carried out by a new department called the Office of Ecosystem Services and Markets. (Wilkinson, 2009) Will Obama Meet New Standards? Even with these goals and very early achievements it is unclear if the overall “political will”, no matter how different from the last eight years, is sufficient to tackle the challenges of global environmental change, particularly when the will of the presidential administration may not be enough. There are many representatives who do not share Obama’s enthusiasm for environmental issues. As pointed out previously, there have already been compromises made that have decreased funding for environmental initiatives. The American people can help by not letting the environmental agenda once again take a back seat, though only time will tell just how strong the will and influence of the Obama administration is. Opportunity for Leadership in Copenhagen The U.S. is the world superpower. I argue that the latest world economic troubles only serve to accentuate the extent to which this is true, as economies of the world are suffering due to the domino effect triggered by the collapse of the U.S. housing market. The Kyoto treaty was only a piece of paper without the U.S. on board. The other major polluting nations such as China and India will not take the problem of global environmental change seriously until America does. Copenhagen is a chance to right the ship before it is too late. Our nation is just as capable of steering the ship in the right direction as it is in the wrong direction. This means allowing Earth to take the helm, and remembering humanity adapts to her, not her to humanity. Update: Copenhagen; What happened? Dissapointment seems to be the predominant reaction from environmental organizations to the Copenhagen Climate Summit. Indeed, no binding agreement, or even a pledge to make a binding agreement in 2010 was achieved. This was not, however, the true test of the Obama administration's environmental policy. The real test is whether Obama can get a legitimate climate bill through the Senate. U.S. environmental leadership can still be the beacon it needs to be with a strong message from our lawmakers.

#### US environmental leadership key internal link to effective environmental governance

Esty & Ivanova, Director Yale Center Environmental Policy, 08

[Daniel C. Esty, Hillhouse Professor of Environmental Law and Policy at Yale University, Director of the Yale Center for Environmental Law and Policy and the Center for Business & Environment at Yale, Maria Ivanova, Assistant Professor of Government and Environmental Policy at The College of William and Mary and the Director of the Global Environmental Governance Project at the Yale Center for Environmental Law and Policy, “Reclaiming U.S. Leadership in Global Environmental Governance,” SAIS Review, Volume 28, Number 2, Summer-Fall 2008, pp. 57-75]

The Bush Administration’s “go-it-alone” strategy in security issues has mirrored a similar unilateralism in the international environmental domain. Once a leader in international environmental policy, the United States has lost much of its political influence today. What is more, U.S. withdrawal from multilateralism has left the United Nations—the imperfect but important instrument for international cooperation—“in limbo, neither strengthened nor abandoned,”1 threatening the ability of the world community to resolve fundamental global problems. Two key dynamics now mark international environmental policy. First, while it is widely recognized that U.S. engagement and cooperation is not just important, but historically seen as essential for progress, other nations today seem willing to move ahead with or without the United States. Germany, for example, announced a national greenhouse gas emissions reduction target of 40 percent by 2020 and threatened to boycott the U.S. “major emitters” initiative launched outside the Kyoto framework. That the United States could have gotten itself crosswise with so many other nations on so many issues is unprecedented. As Jonathan Lash, President of the World Resources Institute, recently observed, the extraordinary degree of anger and confrontation on environmental matters “reflects increasing alarm on climate change and the level of frustration with the U.S.”2 At the same time, many U.S. governors and mayors have launched state and local initiatives to reduce greenhouse gas emissions. Governor Arnold Schwarzenegger in California has gone so far as to open talks with the European Union on how to link his state-level initiatives with Europe’s emerging carbon market. Second, the Bush Administration’s reflexive unilateralism on international concerns—whether environmental, economic, or security—represents a break with the prevailing presumption since World War II favoring cooperation [End Page 58] and multilateralism through NATO, OECD, and other regional bodies, if not the UN. The “go-it-alone” approach is especially difficult to justify on issues that are inescapably global in scope, such as climate change. Even if the United States were able to eliminate its greenhouse gas emissions entirely, climate change would not be stopped. The build-up of atmospheric concentrations of carbon dioxide driven by rising emissions in China, India, Indonesia, and other developing countries would continue, leaving the United States exposed to the threat of global warming, increased intensity of windstorms, altered rainfall patterns, melting ice caps, and rising sea levels. These dynamics beg two questions: Can progress on any of the difficult global environmental issues be achieved without the participation and leadership of the United States? Conversely, can the United States shoulder the burden of addressing such concerns without the cooperation of the rest of the global community? In this article, we address these core questions. We argue that the next President of the United States must re-engage with other nations. Success in protecting the planet from climate change cannot be achieved by the United States acting on its own. International cooperation is essential. Similar collaborative efforts at the global scale will be required to protect the planet’s biological diversity, restore the vibrancy of the world’s fisheries, prevent the spread of persistent organic pollutants, conserve forests, and other issues that are inescapably trans-boundary in nature. We contend, moreover, that not only is U.S. participation critical, but U.S. leadership is crucial and necessary to achieve successful environmental outcomes. The U.S. environmental footprint is larger than any other country’s. The United States consumes a disproportionate share of the world’s energy and natural resources. With less than 5 percent of the world population, the United States uses 25 percent of the world’s fossil fuel resources—accounting for nearly 25 percent of the world’s annual coal burning, 26 percent of the world’s oil, and 27 percent of the world’s natural gas.3 It also accounts for 18.5 percent of the consumption of global forestry products and 13.7 percent of the world’s water usage. The United States is in a unique position. Given its economic and strategic power as well as its financial and technological prowess, U.S. leadership could influence international environmental policy and promote effective environmental governance. Conversely, the record of the past fifteen years has demonstrated that “when the United States declines to exercise leadership, the impact is significant.”4 Little progress is made without the United States. Reasserting global environmental leadership, however, will not be easy for the next U.S. president. There are considerable domestic challenges [End Page 59] as the U.S. public remains deeply ambivalent about international entanglements and international organizations—even those related to protecting the planet.

#### US environmental leadership prevents extinction – Biodiversity loss, ocean acidification, and soil erosion

Khosla, President of the International Union for Conservation of Nature, 09

(A new President for the United States: We have a dream, www.iucn.org/news\_homepage/news\_by\_date/2009\_news/january\_2009/?2595/new-President-for-the-United-States-We-have-a-dream)

A rejuvenated America, with a renewed purpose, commitment and energy to make its contribution once again towards a better world could well be the turning point that can reverse the current decline in the state of the global economy, the health of its life support systems and the morale of people everywhere. This extraordinary change in regime brings with it the promise of a deep change in attitudes and aspirations of Americans, a change that will lead, hopefully, to new directions in their nation’s policies and action. In particular, we can hope that from being a very reluctant partner in global discussions, especially on issues relating to environment and sustainable development, the United States will become an active leader in international efforts to address the Millennial threats now confronting civilization and even the survival of the human species. For the conservation of biodiversity, so essential to maintaining life on Earth, this promise of change has come not a moment too soon. It would be a mistake to put all of our hopes on the shoulder of one young man, however capable he might be. The environmental challenges the world is facing cannot be addressed by one country, let alone by one man. At the same time, an inspired US President guided by competent people, who does not shy away from exercising the true responsibilities and leadership his country is capable of, could do a lot to spur the international community into action. To paraphrase one of his illustrious predecessors, “the world asks for action and action now.” What was true in President Roosevelt’s America 77 years ago is even more appropriate today. From IUCN’s perspective, the first signals are encouraging. The US has seriously begun to discuss constructive engagement in climate change debates. With Copenhagen a mere 11 months away, this commitment is long overdue and certainly very welcome. Many governments still worry that if they set tough standards to control carbon emissions, their industry and agriculture will become uncompetitive, a fear that leads to a foot-dragging “you go first” attitude that is blocking progress. A positive intervention by the United States could provide the vital catalyst that moves the basis of the present negotiations beyond the narrowly defined national interests that lie at the heart of the current impasse. The logjam in international negotiations on climate change should not be difficult to break if the US were to lead the industrialized countries to agree that much of their wealth has been acquired at the expense of the environment (in this case greenhouse gases emitted over the past two hundred years) and that with the some of the benefits that this wealth has brought, comes the obligation to deal with the problems that have resulted as side-effects. With equitable entitlement to the common resources of the planet, an agreement that is fair and acceptable to all nations should be easy enough to achieve. Caps on emissions and sharing of energy efficient technologies are simply in the interest of everyone, rich or poor. And both rich and poor must now be ready to adopt less destructive technologies – based on renewables, efficiency and sustainability – both as a goal with intrinsic merit and also as an example to others But climate is not the only critical global environmental issue that this new administration will have to deal with. Conservation of biodiversity, a crucial prerequisite for the wellbeing of all humanity, no less America, needs as much attention, and just as urgently. The United States’ self-interest in conserving living natural resources strongly converges with the global common good in every sphere: in the oceans, by arresting the precipitate decline of fish stocks and the alarming rise of acidification; on land, by regenerating the health of our soils, forests and rivers; and in the atmosphere by reducing the massive emission of pollutants from our wasteful industries, construction, agriculture and transport systems. Historically, American consumers have acquired highly inefficient habits in the way they use natural resources – energy, materials, water. And these consumers produce enough wastes, particularly greenhouse gases, to overwhelm nature’s capacity to absorb them. US corporations have invented remarkable products that have been the source of material wellbeing for hundreds of millions around the world, but have used production systems whose unintended fallout threatens the very viability of life on our planet. These consumption patterns and production methods must change, but that does not mean going back to the Stone Age. An average citizen of Switzerland, whose per capita GDP is higher than USA’s emits one third as much CO2 as an American. And in other societies and cultures, a full and happy life can be had for one third of what the Swiss consume. Doing more with less is possible – usually by doing it differently -- and now it has become essential, an issue of planetary survival.

#### Outweighs any other impact

Chen, 2K

[Jim, Prof of law U of Minnesota, Now Dean of Law School at Louisville “Globalization and Its Losers”, 9 Minn. J. Global Trade 157’ HeinOnline]

**The** **spread of Homo sapiens around the earth have brought about mass extinctions and related ecological changes on a scale not seen since the Cretaceous** period. **In its** evolutionary **impact**, comprehensive **human colonization** of the planet easily **out- classes an ice age, or even twenty.' The previous geological event of comparable magnitude ushered out the dinosaurs; the one before that, the mass extinction that closed out the Permian period**, nearly ended the terrestrial tenure of what we arro- gantly call "higher" life forms.2 **In the last 600 million years** of geological history, **only five previous extinction spasms have taken place.3** **We are living - or perhaps more accurately, dying - through the sixth**.4 **"[Half the world's species will be extinct or on the verge of extinction" by the end of the twenty-first century.5 In environmental terms, globalization merely continues what humanity has been doing since the glaciers last re- treated:** subdue every niche within its reach. he spectacle of mass extinction gives rhetorical ammuni- tion to all opponents of globalization - not just environmental- ists, but also those who resist free trade as a threat to labor standards, cultural independence, religious values, declining languages, agricultural self-sufficiency, and the like. Just as the global expansion of a single "Terminator" primate species has sparked the Holocene epoch's ecological holocaust, the emer- gence of a global society threatens a host of human institutions. **Where a geological clock once marked the entrance and exit of species, an accelerated human stopwatch now tracks the rise and fall of regimes, religions, languages, and civilizations**. **Time and chance happen to them al**l.7 **The extinction metaphor describe**s not **only a natural world in ecological cataclysm, but also a human society buffeted by changes of unprecedented scope and seemingly relentless acceleration**. In this dual sense**, globalization is nothing short of the end of the world**.8 So apocalyptic an assertion deserves nothing less than the most grandiose of intellectual frameworks. I will examine globalization through a Darwinian lens, in the hope that an application of natural evolution as "universal acid" will "eat[ ] through just about every traditional concept, and leave[ ] in its wake a revolutionized world-view, with most of the old landmarks still recognizable, but transformed in fundamental ways."9 **In economic,** cultural, and environmental **realms, globalization unleashes the same Darwinian dynamics of adaptation, natural selection, and extinction.** But **the natural world and human society do differ fundamentally. For natural species, extinction truly is forever. The ecosystems they inhabit will not recover in any time frame that humans can meaningfully contemplate. Human institutions,** by contrast, **are much more readily preserved and revived. To the extent that globalized society must choose, it should systematically favor the environment over jobs and even culture**. One final observation bears notice. Received wisdom in American intellectual circles distrusts almost any extension of evolutionary metaphors and analogies outside the strictly bio- economic case for free trade lies beyond reasonable dispute, "so- cial issues" affecting employment and income, community and culture, and health and environment supply the primary - per- haps even exclusive - fault lines for legal debate.16 **[…] Conscious decisions to allow the extinction of a species or the destruction of an entire ecosystem epitomize the "irreversible and irretrievable commitments of resources"** that NEPA is designed to retard.312 The original Endangered Species Act gave such decisions no quarter whatsoever;313 since 1979, such decisions have rested in the hands of a solemnly convened "God Squad."314 **In its permanence and gravity, natural extinction provides the baseline by which all other types of extinction should be judged. The Endangered Species Act explicitly acknowledges the "esthetic, ecological, educational, historical, recreational, and scientific value" of endangered species and the biodiversity they represent.**315 Allied bodies of international law confirm this view:316 **global biological diversity is part of the commonly owned heritage of all humanity and deserves full legal protection.**317 **Rather remarkably, these broad assertions understate the value of biodiversity and the urgency of its protection.** A Sand County Almanac, the eloquent bible of the modern environmental movement, contains only two demonstrable bio- logical errors. It opens with one and closes with another. We can forgive Aldo Leopold's decision to close with that elegant but erroneous epigram, "ontogeny repeats phylogeny."318 What concerns us is his opening gambit: "There are some who can live without wild things, and some who cannot."319 Not quite. **None of us can live without wild things. Insects are so essential to life as we know it that if they "and other land-dwelling anthropods ... were to disappear, humanity probably could not last more than a few months."**320 **"Most of the amphibians, reptiles, birds, and mammals," along with "the bulk of the flowering plants and ... the physical structure of most forests and other terrestrial habitats" would disappear in turn.**321 **"The land would return to" something resembling its Cambrian condition, "covered by mats of recumbent wind-pollinated vegetation, sprinkled with clumps of small trees and bushes here and there, largely devoid of animal life.**"322 **From this perspective, the mere thought of valuing biodiversity is absurd, much as any attempt to quantify all of earth's planetary amenities as some trillions of dollars per year is absurd.** But the frustration inherent in enforcing the Convention on International Trade in Endangered Species (CITES) has shown that conservation cannot work without appeasing Homo economicus, the profit-seeking ape. Efforts to ban the international ivory trade through CITES have failed to stem the slaughter of African elephants.323 The preservation of biodiversity must therefore begin with a cold, calculating inventory of its benefits. Fortunately, **defending biodiversity preservation in humanity's self-interest is an easy task. As yet unexploited species might give a hungry world a larger larder than the storehouse of twenty plant species that provide nine-tenths of humanity's current food supply.**324 "**Waiting in the wings are tens of thousands of unused plant species, many demonstrably superior to those in favor."**325 **As genetic warehouses, many plants enhance the productivity of crops already in use. In the United States alone, the latest phylogeny" means that the life history of any individual organism replays the entire evolutionary history of that organism's species.** genes of wild plants have accounted for much of "the explosive growth in farm production since the 1930s."326 The contribution is worth $1 billion each year.327 **Nature's pharmacy demonstrates even more dramatic gains than nature's farm**.328 **Aspirin and penicillin, our star analgesic and antibiotic, had humble origins in the meadowsweet plant and in cheese mold.**329 **Leeches, vampire bats, and pit vipers all contribute anticoagulant drugs that reduce blood pressure, pre- vent heart attacks, and facilitate skin transplants**.330 Merck & Co., the multinational pharmaceutical company, is helping Costa Rica assay its rich biota.33' A single commercially viable product derived "from, say, any one species among... 12,000 plants and 300,000 insects ... could handsomely repay Merck's entire investment" of $1 million in 1991 dollars.332 **Wild animals, plants, and microorganisms also provide ecological services.**333 **The Supreme Court has lauded the pesticidal talents of migratory birds**.334 **Numerous organisms process the air we breathe, the water we drink, the ground we stroll.**335 **Other species serve as sentries. Just as canaries warned coal miners of lethal gases, the decline or disappearance of indicator species provides advance warning against deeper environmental threats**.336 **Species conservation yields the greatest environmental amenity of all: ecosystem protection. Saving discrete species indirectly protects the ecosystems in which they live.**337 **Some larger animals may not carry great utilitarian value in themselves, but the human urge to protect these charismatic "flagship species" helps protect their ecosystems**.338 **Indeed, to save any species, we must protect their ecosystems.**339 **Defenders of biodiversity can measure the "tangible economic value" of the pleasure derived from "visiting, photographing, painting, and just looking at wildlife."**340 In the United States alone, wildlife observation and feeding in 1991 generated $18.1 billion in consumer spending, $3 billion in tax revenues, and 766,000 jobs.341 Ecotourism gives tropical countries, home to most of the world's species, a valuable alternative to subsistence agriculture. Costa Rican rainforests preserved for ecotourism "have become many times more profitable per hectare than land cleared for pastures and fields," while the endangered gorilla has turned ecotourism into "the third most important source of income in Rwanda."342 In a globalized economy where commodities can be cultivated almost anywhere, environmentally sensitive locales can maximize their wealth by exploiting the "boutique" uses of their natural bounty. The value of endangered species and the biodiversity they embody is "literally . . . incalculable."343 What, if anything, should the law do to preserve it? There are those that invoke the story of Noah's Ark as a moral basis for biodiversity preservation.344 Others regard the entire Judeo-Christian tradition, especially the biblical stories of Creation and the Flood, as the root of the West's deplorable environmental record.345 To avoid getting bogged down in an environmental exegesis of Judeo- Christian "myth and legend," we should let Charles Darwin and evolutionary biology determine the imperatives of our moment in natural "history."346 **The loss of biological diversity is quite arguably the gravest problem facing humanity. If we cast the question as the contemporary phenomenon that "our descendants [will] most regret," the "loss of genetic and species diversity by the destruction of natural habitats" is worse than even "energy depletion, economic collapse, limited nuclear war, or conquest by a totalitarian government.**"347 Natural evolution may in due course renew the earth with a diversity of species approximating that of a world unspoiled by Homo sapiens - in ten million years, perhaps a hundred million.

#### Overfishing causes extinction

Jackson et al, Professor at the Scripps Institution of Oceanography at the University of California San Diego, ’1 (Jeremy, July 27, “Historical Overfishing and the Recent Collapse of Coastal Ecosystems” Science, Vol 293 No 5530, p 629-637)

Ecological extinction caused by overfishing precedes all other pervasive human disturbance to coastal ecosystems, including pollution, degradation of water quality, and anthropogenic climate change. Historical abundances of large consumer species were fantastically large in comparison with recent observations. Paleoecological, archaeological, and historical data show that time lags of decades to centuries occurred between the onset of overfishing and consequent changes in ecological communities, because unfished species of similar trophic level assumed the ecological roles of overfished species until they too were overfished or died of epidemic diseases related to overcrowding. Retrospective data not only help to clarify underlying causes and rates of ecological change, but they also demonstrate achievable goals for restoration and management of coastal ecosystems that could not even be contemplated based on the limited perspective of recent observations alone.

#### Soil erosion causes extinction

Allemang ‘7 – feature writer for The Globe and Mail (John, 5/12/07, “Planet Earth has a dirty little secret,” Journal: Globe and Mail, p. 4)

Dirt is disappearing, and when it goes, we go. It's a simple fact that we're using up our finite supply of good soil faster than it can be made, and whatever our eyes choose to tell us, a crisis is looming. Of course, like so much else about dirt, even its do-or-die crisis manages to be barely perceptible. In a world prepared to welcome the inconvenient truths of environmental degradation, and even make them the markers of intellectual fashion, poor old untrendy dirt somehow falls to the bottom of the global to-do list. Air pollution, water contamination, the limited lifespan of fossil fuels, the urgent need to confront climate change no matter how far away its worst threats may be - we get it, whatever don't-worry governments and vested interests like to pretend to the contrary. But erosion as the ultimate catastrophe, the dusty death blow? Somehow it's hard to feel apocalyptic about something you buy at a garden centre, scrape off your boots before walking through the door or scrub off your lettuce before the salad can be made. "We take it for granted," agrees David R. Montgomery - which is a pretty hard admission for a man who has made it his goal to alert a distracted world to the crisis of lost soil. To his practised eyes, at least, the best part of the Earth is eroding and the danger signs are everywhere: bare plowed soil carried off by wind or rain, rivers choked by sediment from clear-cut forests, over-irrigated fields turned into salt-contaminated deserts, huge unprotected tracts of wheat or corn dependent on chemical fertilizer to replace the nutrients corporate agriculture discards, the constant stripping of topsoil to create new suburbias. Our complacency is so instinctive, our wastefulness so extreme, that Dr. Montgomery has come up with a disturbing new name for modern agriculture: soil mining. "We only have a fixed amount of soil - and we're digging it up," he says. Dr. Montgomery is a geomorphologist at the University of Washington in Seattle, a well-travelled and well-read monitor of Earth's thin skin who knows that a civilization's lifespan depends on how it treats - or mistreats - its dirt. As a student of the Earth's eons of slow but certain transformations, he is trained to spot the big-picture inevitabilities the rest of us miss, and of this he is certain: "We're on track to lose most of our agricultural soils. And even if we solve the water crisis and the climate crisis, if we don't conserve soil, then that will do us in." You hear that, and you look around at the lushness of life in the spring, and the doomsday scenario seems unconvincing. Dirt is everywhere, the fields are full of crops, the supermarket shelves have their usual cornucopia look of gross overabundance and, if there's a famine in a far-off place, as there always is, can it really all come down to a few inches of topsoil that has gone missing? Yes is the short answer, according to Dr. Montgomery's wide-ranging new book, Dirt: The Erosion of Civilizations, which is to be published this week and has been deemed "a compelling manifesto" by New Scientist magazine. He takes pains to demonstrate the key role played by soil degradation in almost every civilization that once claimed to dominate the Earth - a useful antidote to the Golden Age nostalgia for a more harmonious past that afflicts many in the environmental movement. Wrecking soil, he implies, is something humans do, given the opportunity, because we're programmed to think of immediate issues such as personal survival rather than forgoing our inheritance to benefit the farmers of the future. And one reason we can do this with a clear conscience is our belief that soil is everywhere. "People just don't realize that not all soils are good agricultural soils," Dr. Montgomery says. "And even with good soils, the pace at which it's being lost is slow by human standards even if it's quite rapid by geologic standards." You don't have to be a geologist to spot the problem. At least since the Dust Bowl crisis of the Depression era, when much of North America was blanketed by thick clouds of soil eroded off the drought-ridden prairie, soil specialists have put forward strong arguments for conservation - arguments that are all the more crucial since the western plains, as Dr. Montgomery observes, "are one of the few places on the planet that can produce agricultural surpluses and feed the world."

#### Plan key to solve global emissions

Miao, Yale Climate Institute Fellow, 12-16-12

[William Miao, Yale Climate and Energy Institute COP Fellow, Doha Talks Reporter, MEM Candidate @ The Yale School of Forestry and Environmental Studies, “OBAMA’S SECOND TERM – THE WORLD AWAITS MUCH NEEDED LEADERSHIP ON CLIMATE CHANGE,” December 16th 2012, http://environment.yale.edu/blog/2012/12/obamas-second-term-the-world-awaits-much-needed-leadership-on-climate-change/]

“We want our children to live in an America that […] isn’t threatened by the destructive power of a warming planet.” Many still remember this brief, yet hopeful and encouraging moment during Obama’s acceptance speech after his re-election in November. Observers hoped that Obama and his administration would bring much needed leadership from the top in addressing climate change issues during the UNFCCC COP18 Summit in Doha. Yet, the conference is now done and dusted, and the United States was again among the array of developed countries to block the progress with an unwillingness to commit to collective mitigation and adaptation goals. In fact, the second largest emitter has since scored not one, but four of the Fossil of the Day “Awards” civil society doles out after each day of the negotiations for its lack of cooperative will. The optimism has thus been shattered, and the world is left to re-examine the possibility of potential leadership from the Obama administration in climate change policy. Why is leadership from Obama so important? First, we need to recognise that we are in a critical time of transition. Under the UNFCCC convention, the current framework governing mitigation efforts, the only global legally-binding treaty is the Kyoto Protocol, will ends its first commitment period at the end of this year. Although the second commitment period will run from 2013 to 2020, it is now clear that this framework will only capture around 15 percent of the global emissions, and thus cannot adequately provide a solution to contain global temperature rise. On the adaptation side, the Long-term Corporative Action platform, which was established as part of the Bali Action Plan in 2007, will also conclude its work in 2012. A new convention which covers both mitigation and adaptation, called the Durban Platform, is set to be drafted and negotiated by 2015 to come into effect by 2020. This means that the world only has three years to come up with a workable, equitable and readily implementable convention concerning all parties. The time is swiftly ticking out. To move forward, there needs to be much more faith, trust and ambition, and much less empty talk, finger-pointing and reluctance to move. Here, the leadership of the US is especially important, as it will not only sent out a positive signal to the world that a historically recalcitrant nation is now ready to take responsibility, but also exert enough pressure on other major emitters to follow suit. However, taking positive leadership on the negotiation table is not possible without a different mandate from the Obama administration, as the negotiators are after all mere diplomats, not decision-makers. Why haven’t Obama and the US taken leadership in Doha? The reason is actually quite simple: the position and priority of climate change on Obama’s agenda list is not high. Climate change was neither a banner issue during Obama’s first term, nor a prominent feature of his 2012 campaign until the very end. The tide-turning event, as we all know, was Hurricane Sandy in November. The devastating impact of the storm and its potential link to climate change enabled (and to some extent propelled) Obama to campaign for climate change to capture this newly sparked sentiment among voters. But it has only been a few weeks since climate change made it on to Obama’s “bucket list.” So even if Obama wishes to go full throttle ahead with this issue, there is simply not enough time for the administration to formulate a concrete policy plan to back up any promises at the international level. Furthermore, the administration is still fretted by many more pressing issues: the fiscal cliff, Syrian unrest, and perhaps now gun-control discussions, just to name a few. So it was not completely unexpected that no new mandate was given to the envoys, and no new commitment was seen in Doha.

#### Climate change and environmental destruction disproportionately hurt womyn

Whitty, ’07

[Julia Whitty, Motherjones Reporter, “Climate Change Will Affect Women More Severely Than Men,” March 8th 2007, <http://www.motherjones.com/blue-marble/2007/03/climate-change-will-affect-women-more-severely-men>]

Though the IUCN (World Conservation Union) has celebrated by releasing a disturbing report on global warming predicting that the physical, economic, social, and cultural impacts of global warming will jeopardize women far more then men. Just as Hurricane Katrina and the 2004 Indian Ocean Tsunami disproportionately affected women far more then men. The report, Gender and Climate Change (available here as a PDF), concludes that women are more severely affected by climate change and natural disasters because of their social roles and because of discrimination and poverty. To make matters worse, they're also underrepresented in decision-making about climate change, greenhouse gas emissions, and, most critically, discussions and decisions about adaptation and mitigation. From the report:

For example, the 20,000 people who died in France during the extreme heat wave in Europe in 2003 included significantly more elderly women than men. In natural disasters that have occurred in recent years, both in developing and in developed countries, it is primarily the poor who have suffered—and all over the world, the majority of the poor are women, who at all levels earn less than men. In developing countries, women living in poverty bear a disproportionate burden of climate change consequences. Because of women's marginalized status and dependence on local natural resources, their domestic burdens are increased, including additional work to fetch water, or to collect fuel and fodder. In some areas, climate change generates resource shortages and unreliable job markets, which lead to increased male-out migration and more women left behind with additional agricultural and households duties. Poor women's lack of access to and control over natural resources, technologies and credit mean that they have fewer resources to cope with seasonal and episodic weather and natural disasters. Consequently traditional roles are reinforced, girls' education suffers, and women's ability to diversify their livelihoods (and therefore their capacity to access income-generating jobs) is diminished.

The report notes examples from other sources, including this:

An Oxfam Report (March 2005) on the impact of the 2004 Asia Tsunami on women raised alarms about gender imbalances since the majority of those killed and among those least able to recover were women. In Aceh, for example, more than 75 percent of those who died were women, resulting in a male-female ratio of 3:1 among the survivors. As so many mothers died, there have been major consequences with respect to infant mortality, early marriage of girls, neglect of girls' education, sexual assault, trafficking in women and prostitution. These woes, however, are largely neglected in the media coverage.

And this:

In a study executed on behalf of ACTIONAID in 1993-1994 in the Himalayan region of Nepal, it became clear that environmental degradation has compounded stress within households and pressure on scarce resources. This meant that the pressure on children, particularly girl children, to do more work and at an earlier age was increasing. Girls do the hardiest work, have the least say and the fewest education options. Programmes that concentrate only on sending more girls to school were failing as the environmental and social conditions of the families deteriorated.

#### Environmental governance creates a new global community grounded in “foresight intelligence” – that reverses evolutionary biases towards short-term threats and organizes policy responses towards long-term, global threats – only environmental governance creates a narrative concerned for future generations

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.

#### Only fostering a future-oriented approach within students solves social inequality and avoids a violent, reactive approach towards conflicts

Kurasawa‘4,

(Fuyuki, Assistant Prof. of Sociology @ York University, Cautionary Tales, Constellations Vol. 11, No. 4, Blackwell Synergy)

In the previous section, I described how the capacity to produce, disseminate, and receive warning signals regarding disasters on the world stage has developed in global civil society. Yet the fact remains that audiences may let a recklessness or insouciance toward the future prevail, instead of listening to and acting upon such warnings. There is no doubt that the short-sightedness and presentism are strong dynamics in contemporary society, which is enveloped by a “temporal myopia” that encourages most individuals to live in a state of chronological self-referentiality whereby they screen out anything that is not of the moment.22 The commercial media, advertising, and entertainment industries are major contributors to this “tyranny of real time”23 that feeds a societal addiction to the ‘live’ and the immediate while eroding the principle of farsightedness. The infamous quip attributed to Madame de Pompadour, ‘après nous, le déluge,’ perfectly captures a sense of utter callousness about the future that represents one of presentism’s most acute manifestations. Two closely related notions underlie it: the belief that we should only concern ourselves with whether our actions, or lack thereof, have deleterious consequences visible to us in the short-to medium-term (temporally limited responsibility); and sheer indifference toward the plight of those who will come after us (generational self-centeredness). Substantively, the two are not much different because they shift the costs and risks of present-day decisions onto our descendants. “The crisis of the future is a measure of the deficiency of our societies, incapable as they are of assessing what is involved in relationships with others,” Bindé writes. “This temporal myopia brings into play the same processes of denial of others as social shortsightedness. The absence of solidarity in time between generations merely reproduces selfishness in space within the same generation.”24 Thus, to the NIMBY (‘not-in-my-back-yard’) politics of the last few decades can be added the ‘not-in-my-lifetime’ or ‘not-to-my-children’ lines of reasoning. For members of dominant groups in the North Atlantic region, disasters are something for others to worry about – that is, those who are socio-economically marginal, or geographically and temporally distant. The variations on these themes are numerous. One is the oft-stated belief that prevention is a luxury that we can scarcely afford, or even an unwarranted conceit. Accordingly, by minimizing the urgency or gravity of potential threats, procrastination appears legitimate. Why squander time, energy, and resources to anticipate and thwart what are, after all, only hypothetical dangers? Why act today when, in any case, others will do so in the future? Why not limit ourselves to reacting to cataclysms if and when they occur? A ‘bad faith’ version of this argument goes even further by seeking to discredit, reject, or deny evidence pointing to upcoming catastrophes. Here, we enter into the domain of deliberate negligence and “culpable ignorance,”25 as manifest in the apathy of US Republican administrations toward climate change or the Clinton White House’s disengenuous and belated responses to the genocides in ex-Yugoslavia and Rwanda. At another level, instrumental-strategic forms of thought and action, so pervasive in modern societies because institutionally entrenched in the state and the market, are rarely compatible with the demands of farsightedness. The calculation of the most technically efficient means to attain a particular bureaucratic or corporate objective, and the subsequent relentless pursuit of it, intrinsically exclude broader questions of long-term prospects or negative side-effects. What matters is the maximization of profits or national self-interest with the least effort, and as rapidly as possible. Growing risks and perils are transferred to future generations through a series of trade-offs: economic growth versus environmental protection, innovation versus safety, instant gratification versus future well-being. What can be done in the face of short-sightedness? Cosmopolitanism provides some of the clues to an answer, thanks to its formulation of a universal duty of care for humankind that transcends all geographical and socio-cultural borders. I want to expand the notion of cosmopolitan universalism in a temporal direction, so that it can become applicable to future generations and thereby nourish a vibrant culture of prevention. Consequently, we need to begin thinking about a farsighted cosmopolitanism, a chrono-cosmopolitics that takes seriously a sense ¶ of “intergenerational solidarity” toward human beings who will live in our wake as much as those living amidst us today.26 But for a farsighted cosmopolitanism to take root in global civil society, the latter must adopt a thicker regulative principle of care for the future than the one currently in vogue (which amounts to little more than an afterthought of the non-descript ‘don’t forget later generations’ ilk). Hans Jonas’s “imperative of responsibility” is valuable precisely because it prescribes an ethico-political relationship to the future consonant with the work of farsightedness.27 Fully appreciating Jonas’s position requires that we grasp the rupture it establishes with the presentist assumptions imbedded in the intentionalist tradition of Western ethics. In brief, intentionalism can be explained by reference to its best-known formulation, the Kantian categorical imperative, according to which the moral worth of a deed depends upon whether the a priori “principle of the will” or “volition” of the person performing it – that is, his or her intention – should become a universal law.28 Ex post facto evaluation of an act’s outcomes, and of whether they correspond to the initial intention, is peripheral to moral judgment. A variant of this logic is found in Weber’s discussion of the “ethic of absolute ends,” the “passionate devotion to a cause” elevating the realization of a vision of the world above all other considerations; conviction without the restraint of caution and prudence is intensely presentist.29 By contrast, Jonas’s strong consequentialism takes a cue from Weber’s “ethic of responsibility,” which stipulates that we must carefully ponder the potential impacts of our actions and assume responsibility for them – even for the incidence of unexpected and unintended results. Neither the contingency of outcomes nor the retrospective nature of certain moral judgments exempts an act from normative evaluation. On the contrary, consequentialism reconnects what intentionalism prefers to keep distinct: the moral worth of ends partly depends upon the means selected to attain them (and vice versa), while the correspondence between intentions and results is crucial. At the same time, Jonas goes further than Weber in breaking with presentism by advocating an “ethic of long-range responsibility” that refuses to accept the future’s indeterminacy, gesturing instead toward a practice of farsighted preparation for crises that could occur.30 From a consequentialist perspective, then, intergenerational solidarity would consist of striving to prevent our endeavors from causing large-scale human suffering and damage to the natural world over time. Jonas reformulates the categorical imperative along these lines: “Act so that the effects of your action are compatible with the permanence of genuine human life,” or “Act so that the effects of your action are not destructive of the future possibility of such life.”31 What we find here, I would hold, is a substantive and future-oriented ethos on the basis of which civic associations can enact the work of preventive foresight.

#### Environmental sustainability framing fails – it produces backlash and is too all-encompassing to create effective public engagement – their lack of a blueprint for the alt uniquely dooms solvency

Fahey, ’10

(Anna, Senior Communications Strategist, MA in political comm from U Washington, “Who me? An environmentalist?”, May 1, http://daily.sightline.org/2010/05/01/earthjusticeflashcard/)

Environmental Sainthood. Somewhat revered by the most eco-minded Americans, environmentalists are chastised by others for their blind dedication. Real or not, the perception that environmentalists are willing to sacrifice all self-interest to save the earth sets an unattainable standard. Many people will take simple steps such as recycling, but beyond that, they throw up their hands because they feel that then can never be green enough. Environmental Elitism. Having the time and money to be green seems out of reach for many. The cost premiums often associated with eco-friendly choices, as well as the stereotype of environmentalists as white, urban professional elites, turns off many people. Ironically, income and race are not the strongest determinants of environmental concern, there are Americans in at all income levels and of all races who believe that living in a clean environment, having access to the outdoors, and eating healthy food shouldn’t be a luxury. Environmental Fatalism. Having a sense that something can be done about the environment and that individuals can help effect that change makes all the difference in engagement on environmental issues. Unfortunately, the majority of Americans don’t see the point in getting involved. Values such as social isolation, meaningless life and future, civic disengagement, and ecological fatalism dominate American culture overall and have done so since the early 1990s. This is particularly true with younger Americans, who generally distrust any kind of institution and the political process. Environmental Cognition. Our brains are wired to process information that conveys a simple cause and effect. But the fundamental interconnectedness of environmental issues makes direct cause and effect difficult to ascertain. It doesn’t help that environmental professionals communicate at an expert level, often failing to make the connections between the environment and the issues people care most about—their jobs, their health, and their families. The groups with the highest education levels have the highest levels of ecological concern, but even they want simple answers to environmental challenges. Environmental Overload. The public, for the most part, finds environmental issues overwhelming. They can’t determine which issues are most important, can’t tell environmental groups and other actors apart, and can’t decide how best to respond. Without a compelling vision of what can be done, problems can seem overwhelming and solutions inadequate.

#### Changing production is a pre-requisite to changing consumption – corporations can use more direct and radical messaging and avoid public backlash

Roberts, ’13

(David, Energy and Politics writer for Grist, “Super Bowl ad brawl: SodaStream does what Sierra Club can’t”, http://grist.org/business-technology/super-bowl-ad-brawl-sodastream-does-what-sierra-club-cant/)

That is some powerful language. It’s not just about cutting down on waste at the margins, getting a bit “greener.” It’s about an entire product category — a ubiquitous product category — being illegitimate, morally unacceptable. This is the kind of thing that mainstream environmental groups are terrified to say. They are hypersensitive about questioning consumer choices or lifestyles in any but the most gentle, cheerful, not-that-there’s-anything-wrong-with-that sort of way. They fear backlash, probably with good reason. But a company that is pushing an alternative product can get away with it. It’s not that the message itself is any different, it’s just that a private company enjoys a certain degree of leeway. The company’s financial interest, in an odd way, protects it from the kind of resentment that greets do-gooders when they say the same things. I wouldn’t want to overstate this, or call it a trend yet, but one can envision a kind of Nixon-goes-to-China thing happening with the cultural push against overconsumption and waste. The Sierra Club can’t tell you that we’ll some day view private car ownership the way we now view cigarettes, but a car-sharing company might. NRDC can’t tell you that we’ll some day view coal electricity the way we now view cigarettes, but a solar company might. Companies selling us de-materializing and de-fossilizing products might end up being the ones best able to sell the de-materializing and de-fossilizing message. Weirder things have happened.

### Solvency

#### NRC regulations are an absolute barrier to SMR commercialization – providing an easier path to licensing ensures widespread adoption

Spencer & Loris, Nuclear Research Fellow @ Thomas Roe Institute, ’11

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

If SMRs Are So Great, Where Is the Construction? While some designs are closer to market introduction than others, the fact is that America’s regulatory and policy environment is not sufficient to support a robust expansion of existing nuclear technologies, much less new ones. New reactor designs are difficult to license efficiently, and the lack of a sustainable nuclear waste management policy causes significant risk to private investment. Many politicians are attempting to mitigate these market challenges by offering subsidies, such as loan guarantees. While this approach still enjoys broad support in Congress and industry, the reality is that it has not worked. Despite a lavish suite of subsidies offered in the Energy Policy Act of 2005, including loan guarantees, insurance against government delays, and production tax credits, no new reactors have been permitted, much less constructed. These subsidies are in addition to existing technology development cost-sharing programs that have been in place for years and defer significant research and development costs from industry to the taxpayer. The problem with this approach is that it ignores the larger systemic problems that create the unstable marketplace to begin with. These systemic problems generally fall into three categories: Licensing. The Nuclear Regulatory Commission (NRC) is ill prepared to build the regulatory framework for new reactor technologies, and no reactor can be offered commercially without an NRC license. In a September 2009 interview, former NRC chairman Dale E. Klein said that small nuclear reactors pose a dilemma for the NRC because the commission is uneasy with new and unproven technologies and feels more comfortable with large light water reactors, which have been in operation for years and has a long safety record.[11] The result is that enthusiasm for building non-light-water SMRs is generally squashed at the NRC as potential customers realize that there is little chance that the NRC will permit the project within a timeframe that would promote near-term investment. So, regardless of which attributes an SMR might bring to the market, the regulatory risk is such that real progress on commercialization is difficult to attain. This then leaves large light water reactors, and to a lesser extent, small ones, as the least risky option, which pushes potential customers toward that technology, which then undermines long-term progress, competition, and innovation. Nuclear Waste Management. The lack of a sustainable nuclear waste management solution is perhaps the greatest obstacle to a broad expansion of U.S. nuclear power. The federal government has failed to meet its obligations under the 1982 Nuclear Waste Policy Act, as amended, to begin collecting nuclear waste for disposal in Yucca Mountain. The Obama Administration’s attempts to shutter the existing program to put waste in Yucca Mountain without having a backup plan has worsened the situation. This outcome was predictable because the current program is based on the flawed premise that the federal government is the appropriate entity to manage nuclear waste. Under the current system, waste producers are able to largely ignore waste management because the federal government is responsible. The key to a sustainable waste management policy is to directly connect financial responsibility for waste management to waste production. This will increase demand for more waste-efficient reactor technologies and drive innovation on waste-management technologies, such as reprocessing. Because SMRs consume fuel and produce waste differently than LWRs, they could contribute greatly to an economically efficient and sustainable nuclear waste management strategy. Government Intervention. Too many policymakers believe that Washington is equipped to guide the nuclear industry to success. So, instead of creating a stable regulatory environment where the market value of different nuclear technologies can determine their success and evolution, they choose to create programs to help industry succeed. Two recent Senate bills from the 111th Congress, the Nuclear Energy Research Initiative Improvement Act (S. 2052) and the Nuclear Power 2021 Act (S. 2812), are cases in point. Government intervention distorts the normal market processes that, if allowed to work, would yield the most efficient, cost-effective, and appropriate nuclear technologies. Instead, the federal government picks winners and losers through programs where bureaucrats and well-connected lobbyists decide which technologies are permitted, and provides capital subsidies that allow investors to ignore the systemic problems that drive risk and costs artificially high. This approach is especially detrimental to SMRs because subsidies to LWRs distort the relative benefit of other reactor designs by artificially lowering the cost and risk of a more mature technology that already dominates the marketplace. How to Fix a Broken System At the Global Nuclear Renaissance Summit on July 24, 2008, then-NRC chairman Dale Klein said that a nuclear renaissance with regard to small reactors will take “decades to unfold.”[12] If Members of Congress and government agencies do not reform their current approach to nuclear energy, this will most certainly be the case. However, a new, market-based approach could lead to a different outcome. Instead of relying on the policies of the past, Congress, the Department of Energy, and the NRC should pursue a new, 21st-century model for small and alternative reactor technologies by doing the following: Reject additional loan guarantees. Loan guarantee proponents argue that high up-front costs of new large reactors make them unaffordable without loan guarantees. Presumably, then, a smaller, less expensive modular option would be very attractive to private investors even without government intervention. But loan guarantees undermine this advantage by subsidizing the capital costs and risk associated with large reactors. A small reactor industry without loan guarantees would also provide competition and downward price pressure on large light water reactors. At a minimum, Congress should limit guarantees to no more than two plants of any reactor design and limit to two-thirds the amount of any expanded loan guarantee program that can support a single technology. Such eligibility limits will prevent support from going only to a single basic technology, such as large light water reactors.[13] Avoid subsidies. Subsidies do not work if the objective is a diverse and economically sustainable nuclear industry. Despite continued attempts to subsidize the nuclear industry into success, the evidence demonstrates that such efforts invariably fail. The nuclear industry’s success stories are rooted in the free market. Two examples include the efficiency and low costs of today’s existing plants, and the emergence of a private uranium enrichment industry. Government intervention is the problem, as illustrated by the government’s inability to meet its nuclear waste disposal obligations. Build expertise at the Nuclear Regulatory Commission. The NRC is built to regulate large light water reactors. It simply does not have the regulatory capability and resources to efficiently regulate other technologies, and building that expertise takes time. Helping the NRC to develop that expertise now would help bring new technologies into the marketplace more smoothly. Congress should direct and resource the NRC to develop additional broad expertise for liquid metal-cooled, fast reactors and high-temperature, gas-cooled reactors. With its existing expertise in light water technology, this additional expertise would position the NRC to effectively regulate an emerging SMR industry. Establish a new licensing pathway. The current licensing pathway relies on reactor customers to drive the regulatory process. But absent an efficient and predictable regulatory pathway, few customers will pursue these reactor technologies. The problem is that the legal, regulatory, and policy apparatus is built to support large light water reactors, effectively discriminating against other technologies. Establishing an alternative licensing pathway that takes the unique attributes of small reactors into consideration could help build the necessary regulatory support on which commercialization ultimately depends.[14] Resolve staffing, security, construction criteria, and fee-structure issues by December 31, 2011. The similarity of U.S. reactors has meant that the NRC could establish a common fee structure and many general regulatory guidelines for areas, such as staffing levels, security requirements, and construction criteria. But these regulations are inappropriate for many SMR designs that often have smaller staff requirements, unique control room specifications, diverse security requirements, and that employ off-site construction techniques. Subjecting SMRs to regulations built for large light water reactors would add cost and result in less effective regulation. The NRC has acknowledged the need for this to be resolved and has committed to doing so, including developing the budget requirements to achieve it. It has not committed to a specific timeline.[15] Congress should demand that these issues be resolved by the end of 2011. Reform waste management. The federal government’s inability to fulfill its legal obligations under the 1982 Nuclear Waste Policy Act has often been cited as a significant obstacle to building additional nuclear power plants. Given nuclear power’s potential to help solve many of the nation’s energy problems, now is the time to break the impasse over managing the nation’s used nuclear fuel. The current system is driven by government programs and politics. There is little connection between used-fuel management programs, economics, and the needs of the nuclear industry. Any successful plan must grow out of the private sector, be driven by sound economics, and provide access to the funds that have been set aside for nuclear waste management.[16] Such an approach would propel the development of SMRs by placing market value on their potential waste management attributes. Transitioning to a New Era of Nuclear Power It is an exciting time for the nuclear industry in the United States and around the world, but that excitement could quickly dwindle if Congress and the White House do not usher in a new path forward for nuclear energy. New technologies have the potential to revolutionize how people produce and consume energy, but if the same bureaucratic approach is taken, it will create the same problems of dependency and stagnation that led to the demise of the commercial nuclear industry decades ago. Congress and the Administration have the opportunity to create a robust, competitive market for nuclear power and should implement the necessary reforms to make this happen.

#### Staffing, Security, and Safety regulations are the primary obstacles

Marston, CTO Electric Power Research Institute, ’12

[Dr. Theodore U. Marston, Former Chief Technology Officer of the Electric Power Research Institute, PhD Mechanical Engineering from the University of Michigan, Fellow of the American Society of Mechanical Engineers, “Status of Small Modular Light Water Reactors in the US,” The Nuclear Decarbonization Option: Profiles of Selected Advanced Reactor Technologies, March 2012]

l Staffing – Current control room staffing requirements are based on large reactors with fully analog control room technology. The control rooms and I&C systems for the smLWRs should be fully digital, possibly with a separate analog system to provide redundancy and diversity in the shutdown of the smLWRs. The inherent safety of the new smLWR designs in conjunction with the fully digital control systems with a high degree of automation should permit the safe operation of the smLWRs without the tradition one control team for each reactor, used in the existing plants. Alternative staffing requirements are under discussion. l Security – Security requirements for US LWRs have increased substantially since the terrorist events of 11 Sept 2001. The requirements are based on new threats and the ability for existing reactors to respond to those threats. The smLWR designs include security in the design and have taken major steps to reduce the security needs. For example, the entire nuclear steam supply system (NSSS), spent fuel pool and containment for all designs are located below grade. The access to control and radioactive material areas is significantly reduced over the existing plants. State of the art security and intrusion detection systems are part of the design. Therefore, it is believed that adequate security of a smLWR can be maintained with simplified security requirements. Proposed simplifications are under development for smLWRs. l Emergency planning – size of emergency planning zones – The emergency planning and the zone of evacuation for US plants is based on the existing fleet. The smLWRs are significantly different in terms of source term in the case of a core melt event. The smLWR core damage frequencies are orders of magnitude lower than what is required in the NRC regulations. 10 The containments are located below grade and the long term cooling needs of a beyond design basis core damage event are much less. For these reasons, the industry believes the current emergency planning zones and notification requirements can be greatly simplified and still protect the health and safety of the public. Proposed simplifications of emergency planning for the smLWRs are currently under development. Such simplification is required to locate a smLWR near regions of high populations, such as those surrounding the existing coal plants that will likely be shut down. This simplification will be a major challenge in light of the 2011 Fukushima accident in Japan. Regulatory challenges could make smLWRs noncompetitive. If the licensing of smLWRs become protracted affairs, the attractiveness of such small plants will vanish. The best hope for smLWRs to be competitive lies in the assumption that they can be licensed, built and commissioned quickly.

#### Our solvency is reverse causal – a strong SMR nuclear renaissance will follow reduction of NRC regulations

Wheeler, Power Engineering Editor, ’11

[Brian Wheeler, Associate Editor, Power Engineering, “Small Modular Reactors are ‘Hot’,” February 1st 2011, http://www.power-eng.com/articles/print/volume-115/issue-2/departments/nuclear-reactions/small-modular-reactors-are-hot.html]

One of the “hottest” topics being discussed in the U.S. nuclear industry is the viability of deploying small modular reactors (SMR), those under 300 MW, into the nuclear fleet to help address environmental concerns while keeping up with the demand for power. The U.S. electricity demand is projected to increase by 28 percent by 2035. And annual CO2 emissions are projected to increase by 275 million metric tons, according to the Department of Energy. The DOE has a goal to decrease 28 percent of greenhouse gas emissions by 2020 and it expects that the goal can be met with the help of small modular reactors. The concept is to install the small modular reactors to areas and applications underserved by large plants, or sites that may not be able to support a large unit. “But it is not a competition between large and small reactors,” said Paul Genoa, director of policy development at trade group the Nuclear Energy Institute. But the idea of the SMR is not new in the U.S. The U.S. Navy has been using small reactors on vessels for over 50 years. Using this design in the energy industry, though, is new. Currently, the U.S. does not currently have any SMRs producing commercial power, but vendors such as Babcock and Wilcox are moving forward towards design certification. Although, the NRC expects the first deployment of an SMR in the U.S. may not come until the 2018 to 2020 timeframe. The distant timeframe is for numerous reasons. The plan is to build a SMR, start generating power and bring more online to form a larger nuclear plant, as needed. The SMRs are expected to be ready, as the DOE calls it, to “plug and play” when the reactor arrives on-site. Sounds simple? There are still obstacles that need to be defeated before the arrival of a commercial SMR. Licensing is the number one challenge at this point. The Nuclear Regulatory Commission established the Advanced Reactor Program in 2009 to focus on new licensing technologies. NRC is studying several pre-application reviews to identify possible technical issues, such as safety, security and emergency planning. The light water small reactors may be very similar to large designs, but they still must go through a separate licensing process. Vendors that engage the NRC early can resolve these technical issues. To address safety and security concerns, the small reactors will be built with post-9/11 safety concepts into the designs. NRC expects the first application submission by 2012. The funds for the research and development of the SMR could pose a problem as well. But the Obama administration has requested $38.9 million for the 2011 fiscal year budget for the development of SMRs. The DOE supports public and private partnerships to advance mature SMR designs and supports “research and development activities to advance the understanding and demonstration of innovative reactor technologies and concepts.” Among other goals, in FY2011 the DOE plans to “solicit, select and award project(s) with industry partners for cost-sharing the U.S. NRC review of design certification document for up to two of the most promising light water SMR concept(s) for near-term licensing and deployment” and “develop recommendations, in collaboration with NRC and industry, for changes in NRC policy, regulations or guidance to license and enable SMRs for deployment in the U.S.” And as the general public’s interest in energy continues to grow, so does the interest in SMRs, said Philip Moor, vice president of consulting and management firm High Bridge Associates. If approved, the funding towards the development of small reactors in the U.S. may play a part of the International Atomic Energy Agency’s estimate of between 49 to 97 SMRs built by 2030. Utilities may have more interest in SMRs once the NRC gains more expertise and the uncertainty of deploying these reactors in the U.S. can be addressed. And if the regulator approves any of the designs for licensing, the U.S. may see a stronger nuclear renaissance take place. As we have seen, some operators have scaled back or completely pulled out on plans to build new large reactors due to the cost. The ability to construct these reactors in factories could lead to lower costs and shorter construction times. Of course, the upfront capital to develop and engineer the facility is going to be needed. But after that, the reactors can be built in the controlled environment in repetition to lower cost, which could in return lead to more clean energy on the grid.

#### Funding for SMR commercialization exists now – reducing NRC barriers ensures fast development

Cunningham, Policy Analyst for Energy and Climate at the American Security Project, October, ’12

[Small Modular Reactors: A Possible Path Forward for Nuclear Power. americansecurityproject.org/ASP%20Reports/Ref%200087%20-%20Small%20Modular%20Reactors.pdf]

Finally, the rapid increase in demand for electricity around the world over the next several decades presents the U.S. with a huge opportunity to create jobs through exporting nuclear technology. Demand for nuclear power is expected to increase by 70% over the next 20 years, and America is well-positioned to capture much of that new business. The Nuclear Industry Has Stalled A variety of factors have conspired in the last several decades to halt the advance of nuclear power. Many plants experienced construction delays and cost overruns in the 1970s and 1980s, forcing utilities to shift to alternatives. Concerns over safety have made siting extremely difficult. Public outcry over several infamous incidents – Three Mile Island, Chernobyl, and Fukushima – has forced societies around the globe to reconsider nuclear power. 3 Even when nuclear power makes financial sense for both ratepayers and utilities, the long-term payback for assets that have lifetimes of up to 60 years make investors nervous, driving up the cost of finance. Despite these challenges, in recent years many believed a nuclear “renaissance” was afoot. Rising energy demand and concerns over climate change led to plans for new power plants. However, the renaissance came to an abrupt standstill due to the financial crisis and low natural gas prices, at least in the United States. A few projects are under construction, but the industry remains stalled. The major problems that keep utilities from investing in new nuclear power plants can be addressed if the industry shifts towards Small Modular Reactors. There are many advantages of SMRs over conventional large reactors and they will be discussed below.There are several features of SMRs that provide greater flexibility relative to conventional large reactors. First, SMRs can be added incrementally to load centers as demand increases. If electricity demand is increasing at a slow rate, a large nuclear reactor might greatly exceed the required load capacity, making it difficult to justify to ratepayers. Adding small reactors incrementally may better match supply with demand. Second, once a reactor is constructed, additional reactors at the same site will be easier and cheaper to build. Once an initial reactor is approved, the regulatory process for obtaining permits for subsequent reactors would be less onerous.8 Third, utilities can site SMRs on the same sites as other power plants. The rapidly aging fleet of coal plants will result in a wave of retirements in the coming years, and coal plants can be swapped with SMRs to take advantage of the existing sites and connections to the grid.9 Fourth, SMRs can be used for a variety of energy applications that conventional large reactors cannot, such as desalination, industrial processes, hydrogen production, oil shale recovery, and district heating.10 Such versatility allows for SMRs to meet energy needs for more than just large baseload power. Fifth, multiple small reactors can also improve operating time, as a single site can have three or four SMRs, allowing one to go off-line for refueling while the other reactors stay online.11 This allows power to be continuously generated, whereas in a conventional nuclear reactor, the entire plant must go offline to refuel. Finally, SMRs can be built to be “grid-independent.”12 For military bases that want to avoid the vulnerability to the commercial electric power grid, SMRs can provide an off-grid solution. Also, in remote areas where it would not be cost-effective to build a larger nuclear power plant, or in places where the transmission grid is not well-developed (i.e. developing countries), SMRs can provide a source of baseload power. Reduced Safety and Weapons Proliferation Concerns SMRs can offer improved safety and security over conventional large reactors because of specific design features inherent to small reactors. First, one danger from nuclear power plants is the radiation from the reactor core. SMRs offer a reduction in danger from radiation because a smaller reactor core produces less radiation.13 Second, due to their small size, SMRs are better able to incorporate passive safety features – those that do not require human or electronic actions to function properly.14 These include cooling systems that use gravity instead of relying on access to power, natural convection systems, and passive heat removal.15 For example, in the event something goes wrong, Westinghouse’s SMR is designed to keep the reactor cool for several days without the need for operators or power.16 While the latest reactor designs are incorporating passive safety features, including for large reactors, passive safety features are inherently easier with small designs due to a smaller reactor core. Third, SMRs can benefit from a simplification of design, using less components, resulting in a more compact reactor.17 SMR designs can eliminate the need for coolant pipes, which are considered the most significant safety challenge during the development of nuclear power plants An integral design, in which the primary reactor core, the steam generator, and the pressurizer are incorporated into a single common pressure vessel, is only possible in a small design.19 In comparison, large reactors have components outside the containment vessel, increasing the chance of an accident. Fourth, unlike large reactors, SMRs can be installed underground, reducing the vulnerability to a terrorist attack or natural disaster.20 A design from Gen4, a nuclear reactor vendor, seals off the reactor underground. This allows for it to never be opened once it is installed, enhancing proliferation resistance.21 It would also operate for 10 years before refueling would be needed, compared to conventional large reactors that require refueling every 18-24 months.22 Lower Upfront Costs The greatest challenge facing the nuclear power industry is the upfront costs of new reactors. Although large reactors should be able to take advantage of economies of scale, there are economic advantages to small designs. Large reactors require substantial upfront investment, with long permitting and construction times before a return on investment can be realized. These upfront costs make investing in a large nuclear power plant highly risky even if the final cost per kilowatt-hour is profitable. A large nuclear power plant can cost between $6 and $9 billion, often exceeding the financing capabilities of most financial institutions, utilities, or even small countries.23 Conversely, small modular reactors at commercial scale could produce a 100 MW plant for $250 million.24 Due to lower upfront costs and shorter lead times, SMRs would present lower financial risks, allowing for significantly lower costs of financing. The shorter lead times for SMRs allow for more certainty for investors, and the ability to change with market conditions. The smaller project size of each additional reactor also reduces the risks of cost-overruns. This translates not only to lower absolute costs, but also lower upfront capital costs, making it easier for projects to attract financing, at better rates. Shorter construction times also provide a quicker revenue stream. SMRs can be built in roughly one-half to one-third of the time required for conventional plants. Even comparing multiple small reactors to the equivalent installed capacity of one large reactor, SMRs allow incremental capacity to come online while the large reactor is still under construction. SMRs create revenue generation immediately after each small unit is completed, and the owner can retire debt before the next increment is constructed. Similarly, the SMR units can be under parallel construction (multiple reactors under construction simultaneously), allowing the full SMR project to be completed before the large nuclear reactor, a significant cost advantage for SMRs over large reactors.30 Another major drawback for conventional large reactors is the lack of standardization. This leads to long, expensive, and uncertain time periods for licensing and siting. SMRs can overcome this hurdle with standardized designs, standardized components, and enhanced safety from reduced reactor size, all of which are not easy to accomplish with large reactors.31 Small Modular Reactors, as their name suggests, can be “modularized”. SMRs can be constructed in factories and actually shipped to site. Factory construction allows for greater quality control, predictability and scheduling. In contrast, large reactors are designed and built uniquely for each project, which can lead to delays and inflated costs. 32 Major Challenges for SMRs There are, however, several obstacles that are slowing the development of SMRs. Institutional Obstacles The most difficult challenge currently facing SMRs is the institutional barriers. Currently, the Nuclear Regulatory Commission has not certified a single SMR design. Despite the variety of SMR designs from several nuclear vendors, the NRC has lacked sufficient human and technical capacity to license small modular reactors in the past.33 Even as policymakers have expressed greater interest in SMRs in recent years, the licensing process for a new design takes several years at a cost of hundreds of millions of dollars.34 Also, many regulations create a difficult environment for small reactors and favor large reactors. For example, the NRC requires 10 mile emergency planning zones around nuclear power plants, making it difficult to site a small reactor near urban centers where it could be used for energy applications other than centralized electricity generation.35 SMRs will need to overcome this long history of institutional bias towards large reactors. As the most prominent licensing body for the nuclear industry worldwide, the NRC to a certain degree, shapes the global future for nuclear power. If the NRC does not lead on small modular reactors, it may be an uphill battle for the SMR industry. No Performance History The nuclear industry has maintained a high performance standard with its fleet of large light water reactors, and SMRs would need to demonstrate the same high performance. However, as with any new technology, SMRs have no track record to prove their performance. The industry lacks a credible demonstration project that would inform future projects and inspire confidence.36 SMRS need to demonstrate advantages over conventional plants, including advantages in cost, safety and flexibility. Looking forward, this creates a “chicken and egg” problem. In order to bring costs down, nuclear vendors will need a high-tech manufacturing facility to mass produce small reactors. However, in order to justify the construction of such a facility, the industry estimates it will need to book dozens of orders upfront. It cannot book these orders without proof of cost, safety and performance. Industry leaders are hesitant to be the “first-mover” in an uncertain market, and governments are reluctant to provide incentives or invest in unproven products. Safety Concerns While there are real safety benefits of SMRs, critics site new safety concerns with SMRs that are not associated with conventional nuclear plants. The owner of small modular reactors would need to manage, inspect, and maintain more reactors for the same amount of power output as a single large reactor.37 The industry needs to prove that the inherent safety benefits of SMRs over large reactors outweigh the downsides. Nuclear Waste Disposal of spent nuclear fuel has confounded the nuclear industry for decades and the problem of waste disposal will still need to be dealt with for SMRs. While large reactors suffer from the same problem, expanding the use of SMRs would mean waste from more reactor sites would need to be coordinated.38 The quantity of waste may not change, but a given amount of waste is easier to manage from one site, rather than multiple. The problem of disposing nuclear waste is a serious one, and the lack of a solution despite 30 years of debate is troubling. In January 2010, President Obama setup a Blue Ribbon Commission (BRC) to study the problem and to recommend actions to finally address the nuclear waste problem. The BRC recommended the establishment of a consent-based approach to siting a waste facility, the development of interim storage facilities, the creation of a separate government entity tasked only with addressing nuclear waste, as well as several other recommendations.39 The recommendations will be difficult to pass through Congress, but until resolved, the nuclear waste problem will bedevil the entire nuclear industry, including SMRs. Low Natural Gas Prices Another problem that is not unique to SMRs, but plagues the nuclear industry as a whole, is the current low prices of natural gas. Due to major advances in hydraulic fracturing and horizontal drilling, the U.S. is awash in natural gas. Prices have plummeted, and the Energy Information Administration (EIA) estimates that prices will rise very slowly over the next two decades. For example, in their 2012 Annual Energy Outlook, the EIA predicts that natural gas prices will not rise back above $6 per million Btu until around 2030.40 SMRs may need natural gas prices to reach $7 or $8 per million Btu to be competitive.41 This makes any new nuclear power plant, including an SMR, uneconomical compared to natural gas. Unless natural gas prices rise more quickly than expected, or Congress implements a price on carbon, nuclear power may struggle to compete. Progress in Rolling Out SMRs In recent years, the government has tried to provide incentives to kick-start the moribund nuclear industry. As part of the Energy Policy Act of 2005, loan guarantees and risk insurance were extended to new nuclear power plants.42 However, although loan guarantees have provided enough support to help four new reactors move forward, these have proven to be the exception. Looking foward, it will be exceedingly difficult to build additional large nuclear power plants. Policymakers have become increasingly interested in making SMRs a reality as an alternative to large plants. In January 2012, the Department of Energy announced a new initiative to support SMR development. DOE plans on spending $452 million over the next five years (subject to congressional appropriations) to help nuclear vendors through the design and licensing process. The program will provide 50% of the cost in the form of a grant while the industry would need to pay for the other half. DOE stated that it is looking for designs that can be licensed and up and running by 2022. Several companies have applied for the funding. More Needs To Be Done Several of the issues discussed above – difficult in licensing, unproven projects, and a “first-mover” problem – present a role for the government. The NRC can work with nuclear vendors through the licensing process to reduce the time required for licenses to be issued. Reducing the time and cost for design licensing will accelerate the development of SMRs.

#### Debating the aff is key to solve it – imaginative familiarity with nuclear power creates trust and overcomes public misunderstanding – creates tipping point for new facilities

Butler, Parkhill, & Pidgeon 11

(Catherine, Research Fellow at Cardiff University, Karen, Research Fellow at Cardiff University, Nicholas, Professor of Environmental Psychology at Cardiff University, “Nuclear Power After Japan: The Social Dimensions”, November-December 2011, http://www.environmentmagazine.org/Archives/Back%20Issues/2011/November-December%202011/Nuclear-full.html)

Nuclear power has, beyond its beginnings where “glamorous reactors” were anticipated with “a great sense of excitement,” had a tumultuous relationship with the public.18 It has been characterized as a “uniquely dreaded” technology due to its long-standing association with atomic weaponry, invisible and long-lasting effects of radiation, and concerns about waste disposal.19 In the 1980s after the nuclear incident at Three Mile Island (1979) and the disaster at Chernobyl (1986), public opposition to nuclear power was at an all-time high in many countries. Indeed, data from the United States even before Chernobyl suggested that public opposition to nuclear new build rose from around 20% in the 1970s to more than 60% in the early 1980s.20 Other research has identified public distrust of regulators, government, and the nuclear industry to manage risks responsibly and provide truthful information to the public as a key reason for erosion of support.21¶ Over the past 10 years opinion polling has indicated a reduction in opposition. For example, a global poll by the Organization for Economic Cooperation and Development (OECD) and the Nuclear Energy Agency showed in 2010 that support for nuclear energy had increased in countries such as the United States, Japan, Sweden, Finland, and the United Kingdom.22 Looking specifically at the United Kingdom, polling of the British public conducted in early 2010 found a very balanced picture, with 46% of those questioned favoring replacement or expansion of the existing nuclear capacity in Britain as compared to 47% who wanted it closed or phased out at the end of the existing program.23 However, a closer look at the national polling data shows a more complex picture, with a large proportion of recent national support remaining fragile—a conditional or “reluctant acceptance” at best.24¶ From such research we can posit that during the short to medium term following Fukushima, many “reluctant acceptors” may withdraw their support for nuclear power and in particular for nuclear new build. Thus opposition during this time would correspondingly increase. Early polling research suggests this is exactly the case, with many countries seeing a rise in opposition that outweighs support even by the thinnest margins; the United States is a notable exception where support for nuclear power is marginally higher than opposition (see Figure 1).25 In the case of Japan, more than half of those who indicated they now oppose nuclear energy to produce electricity do so due to the events in Japan; significant proportions of the public in other countries also state this is the case (see Figure 1). On the basis of such findings, we might expect that those communities who are proposed as hosts for a new reactor may now oppose such developments.¶ For communities with no experience with a nuclear facility, it is likely that within the short to medium term, potential public contestation surrounding nuclear power may indeed prove to be a stumbling block.26 However, this is not necessarily true of all proposed reactor sites. For example, in the United Kingdom proposed sites are either on or adjacent to an existing nuclear power station. Previous research tells us that the response of people in such communities does not always mirror that obtained from national samples. While reluctant acceptance may be a feature of discourse in such communities and Fukushima may prompt the “extraordinariness” of living close to a nuclear facility to cause momentary reframings of nuclear power as a risk and threat issue, there are some important qualitative nuances to public perceptions that may lead to differing medium- to long-trends following Fukushima.27 Examples include the importance of social familiarity, which through social networks connected to the power station (i.e., either being or knowing a power station worker) or through imaginary positioning (being able to imagine how workers think, feel, and follow working practices) demystifies the power station as a distant institutional organization.28 As such, trust in power station workers is engendered. Although hidden anxieties may come to the surface in light of Fukushima, these could also be moderated by the distancing of the events as irrelevant to localized contexts and working practices, serving to reify the perceived safety of local plants (and trust in plant operators) rather than undermining it.29

#### Imagining the plan specifically is key – public opposition is grounded in misunderstanding and ignorance about new tech like SMRs – reversing that trend is key to solve multiple scenarios for extinction that only nuclear solves

Kotler 11

(Stephen, Journalist covering the collision between science and culture, “Meltdown or Mother Lode: Is Nuclear Energy Safe?”, 19 March 2011, http://ecohearth.com/eco-zine/green-issues/391-meltdown-or-mother-lode-the-new-truth-about-nuclear-power.html)

In the past four decades, there’s been a nuclear revolution brewing. Most likely you haven’t heard about it. Most likely, if you’re reading this on an environmental website like EcoHearth.com, you tow the green “no nukes” party line. The problem with that is actually simple: overpopulation, global warming, resource scarcity and energy shortages are real. Many very smart scientists are saying that nuclear energy is the only way to deal with these issues. Perhaps you think they have their facts wrong. Unfortunately, the inverse is often true: those of us who firmly oppose nuclear power often don’t know all the facts.¶ Or worse—the facts we know are actually 40 years out of date.¶ What follows is a seven-part investigation into nuclear power, an attempt to put all those facts on the table so at least we can start having a reasonable discussion. After all, the clock is ticking. Part One: The Atom and Its Eve¶ First there was the atom. The idea of a fundamental particle from which all things are made came from India, dating to Sixth-century BCE Hindu philosopher Kanada. A hundred years later the notion emigrated to Greece, where Leuccipus of Miletus popularized it. His pupil, Democritus, gave us a word to describe the particle, taking atom from atomos, Greek for “indivisible.” This concept held fast until the late nineteenth century, then crumbled within four decades of the twentieth.¶ In 1895, German physicist Wilhelm Roentgen discovered x-rays. Next, Marie Curie found radium and polonium—the first two radioactive elements, while Ernest Rutherford gave us the mechanics of radioactive decay. In 1905, Albert Einstein’s Special Theory of Relativity suggested that a large amount of energy could be stored in a very small amount of matter. Twenty-seven years later Ernest Walton and John Cockcroft verified this suspicion and proved Democritus wrong. Turns out, the atom is divisible.¶ In 1935, Enrico Fermi and Leo Szilard leveraged this knowledge to build the Chicago Pile-1, the world’s first nuclear reactor. It went—and you’ve got to love this word—“critical” on December 2, 1942. (“Critical” refers to having the minimum amount of nuclear material necessary to create a sustained nuclear reaction.)¶ In 1951, an experiment in Idaho, dubbed EBR-1, became the first reactor to produce electricity. EBR-1 melted down in 1955—also another first—though not many people outside of Idaho noticed. Eisenhower’s 1953 “Atoms for Peace” speech and US Atomic Energy Commission Chairman Lewis Strauss’s promise of a nuclear future with electricity “too cheap to meter” had us dazzled. The nuclear age was upon us.¶ In 1956, Calder Hall, in Sellafield, England, started pumping out an annual 50 megawatts (MW) and the world had its first commercial nuclear power station. The following year, the US got reactors in Shippingport, Pennsylvania, and Santa Susana, California, and not coincidentally the Price-Anderson Act passed, limiting the financial risk of nuclear-plant owners in the event of a catastrophe.¶ 1957 marked the appearance of the International Atomic Energy Agency (IAEA), its 18 member countries committed to promoting the peaceful use of nuclear energy while curtailing the spread of nuclear weapons (and, um, good luck with that one, fellows). Many feel that the real future of the industry arrived on November 9, 1965, when a blackout left the Northeastern United States without electricity for about twelve hours. Add in the brownouts of the early 1970s and it’s no surprise that 1973 was a banner year for the industry: 41 new plants ordered and no end in sight. But then… “China Syndrome” is shorthand hyperbole for what happens when an American nuclear reactor melts down—it melts straight through to China. The disaster movie of the same name came out on March 16, 1979, twelve days before unit 2 at Pennsylvania’s Three Mile Island partially melted down; this wasn’t a winning combination. Not long after, when Mad magazine’s Alfred E. Newman posed in front of the cooling towers and said, “Yes, me worry,” he spoke for much of the country. In 1984, a Forbes magazine cover story called the nuclear industry “the largest managerial disaster in business history.” In 1986, Ukraine’s Chernobyl became a bigger disaster and, as Allan Winkler points out in his excellent book, Life under a Cloud: American Anxiety about the Atom, “Some Americans masked their concerns with black humor: ‘What’s the weather report from Kiev? Overcast and 10,000 degrees.’”¶ Popular wisdom holds that Three Mile Island slowed the industry down, while Chernobyl ground it to a halt, but nuclear experts feel that cost overruns were a much worse problem. In the end it didn’t matter. Dozens of new plants were cancelled. One became a coal factory. The last reactor to come online in the US was unit 1 of Tennessee Valley Authority’s Watts Bar. The original order was placed in 1973. It was completed in 1996. Construction on unit 2 was halted in 1988. No new plants have been ordered in the US in over thirty years. As far as most were concerned, that was the end of the story. Part Two: Atomic Phoenix Rising¶ This might have stayed the end of that story except, in the early 2000s, we started hearing a number of other tales. Global warming, peak oil, resource wars, a current species extinction rate 1000 times greater than ever before in history, to name a few. A year ago, Rajendra Pachuari, head of the UN Intergovernmental Panel on Climate Change, said: “If there’s no action before 2012, that’s too late. What we do in the next two to three years will determine the future.” And determining that future has put the nuclear option back on the table, a process well summed by Peter Schwartz and Spencer Reiss in a recent Wired magazine story: “Burning hydrocarbons is a luxury that a planet with six billion energy-hungry souls can’t afford. There is only one sane, practical alternative: nuclear power.”¶ Of course, back in 2001, when Dick Cheney’s energy task force reached similar conclusions, many dismissed those outright. By then, cases of cronyism were already dogging the Vice President and Bechtel, a company whose board of directors once included a significant portion of both Reagan and Bush Sr.’s cabinet and which had built more commercial nuclear plants than any other in the world. But after that task-force report, the VP got support from some strange places. Environmentalists like Whole Earth Catalog founder Stewart Brand, Gaia theorist James Lovelock, and early Greenpeace activist Patrick Moore (often, though mistakenly, referred to as a co-founder) all came out in favor of the technology.¶ In late 2007, Congress gave the nuclear industry $18.5 billion in loan guarantees for up to 80% of the cost of new units. The IAEA says there are 31 new nuclear power plants under construction in 13 different countries and even more promised. China has plans for 26. In the US, power companies are currently in the process of submitting applications for 30. All of this, experts say, might signal the end of our energy woes or may signal the end of the world. The problem is that no one is quite sure which. Disagreements are everywhere. Even something as seemingly straightforward as what happened at Three Mile Island remains in contention. In 2004, Patrick Moore wrote a now-famous article in the IAEA Bulletin entitled “Nuclear Re-think,” claiming: “Three Mile Island was a success story. The concrete containment structure did what it was designed to do: it prevented radiation from escaping into the environment.” Though, as Greenpeace Nuclear Analyst Jim Ricco points out, “It appears that Moore didn’t bother to check his facts. The US Nuclear Regulatory Commission’s (NRC) fact sheet acknowledges that the meltdown resulted in ‘a significant release of radiation (10 million curies according to the NRC).’ Even the IAEA, which published Moore’s article, acknowledges that the TMI meltdown released radiation into the surrounding community. As a result, they rank the accident as Level 5 on a scale of 7—an ‘Accident with Wider Consequences.’ Only Chernobyl and the Soviet nuclear-waste-tank explosion in 1957 rank worse.”¶ Among other things at stake in this debate are our fears about industry safety and security, and the boatload of regulations meant to allay those fears. Since the cost of licensing a new reactor in America is roughly $1 billion, “those regulations,” as pointed out by Heritage Foundation nuclear energy analyst Jack Spenser, “amount to an industry killer.” The debate is ongoing, but some believe it’s misdirected. “When most people argue about nuclear energy,” says Tom Blees, author of Prescription for the Planet: The Painless Remedy for Our Energy & Environmental Crisis, “they’re arguing about TMI and 1970s technology—which is about when the US nuclear industry ground to a halt. But research didn’t die off, just new construction. We’re two generations beyond that earlier tech and the changes have been massive.” In light of all this, the better question might be: What do we mean by safe?

#### Nuclear power inevitable globally – not in the US

WNN, 9-26

[World Nuclear News, “Nuclear growth slowing not stalling,” September 26th 2012, <http://www.world-nuclear-news.org/NP-Nuclear_growth_slowing_not_stalling-2609127.html>]

Growth rates may have slowed but world nuclear energy capacity will nevertheless continue to increase over the coming decades, according to the latest projections from the International Atomic Energy Agency (IAEA). When IAEA director general Yukiya Amano referred to the findings of the 32nd edition of the IAEA's annually updated Reference Data Series No. 1 in his address to the agency's 56th General Conference in Vienna recently, he noted that although the 2011 Fukushima Daiichi accident raised "fundamental questions" on nuclear's future, the atom will remain an important option for many countries, with developing countries continuing to show a keen interest in nuclear power. The newly released report - full title Energy, Electricity and Nuclear Power Estimates for the Period up to 2050 - contains high and low projections of energy, electricity and nuclear power trends over the coming years. Under the low scenario, installed nuclear capacity is predicted to grow from 2011's 370 GWe to reach 456 GWe by 2030, about 9% down on the increase projected in 2011. A ten-year delay in growth anticipated before the Fukushima accident is observed, with nuclear capacity taking until 2030 to reach levels that had previously been anticipated for 2020. The high scenario predicts nuclear capacity reaching 740 GWe by 2040. Projected growth is strongest in the east Asia, including China and South Korea, where regional capacity is forecast to grow from 80 GWe at the end of 2011 to 153 GWe in 2030 in the low scenario and 274 GWe in the high scenario. Growth is expected in all regions of the world under the high scenario, although total Western European nuclear capacity could decline from 115 GWe in 2011 to 70 GWe in 2030 under the low scenario. The low scenario also sees a slight decrease for nuclear capacity in North America. The figures on nuclear are based on actual statistical data collected by the IAEA, with country-by-country estimates of future nuclear capacity established by a group of experts using a 'bottom up' approach. All possible licence renewals, planned shutdowns and plausible construction projects are taken into consideration. conservative low scenario assumes the continuation of current trends and few unexpected policy changes, although it is compatible with a potential decline in nuclear's share of Japan's electricity mix. The more optimistic high scenario assumes that current global financial and economic crises are overcome relatively soon and global policies are implemented to mitigate climate change. Both scenarios are plausible and technically feasible, the IAEA maintains. The report recognises the on-going global financial crisis, the low price of natural gas and reduced electricity demand in some regions, in addition to responses to Fukushima, as challenges that will serve to temporarily delay the deployment of some nuclear power plants. Eighteen months on from the Fukushima Daiichi nuclear accident there is still uncertainty about the full extent of the effects of individual policy responses to regional projections. Nevertheless, the report says, the "underlying fundamentals of population growth and demand for electricity in the developing world," coupled with concerns over climate change, energy security and price volatility for other fuels, "continue to point to nuclear generating capacity playing an important role in the energy mix in the longer term."

#### Nuclear byproducts have no serious short-term or long-term effects on health – even large-scale meltdowns don’t cause major spikes in disease rates

Lynas & Goodall, ’11

[Mark, Visiting Research Associate at Oxford University’s School of Geography and the Environment, Chris, environmental contributor to the Guardian and financial analyst, “The dangers of nuclear power in light of Fukushima”, http://www.marklynas.org/2011/03/the-dangers-of-nuclear-power-in-light-of-fukushima/]

Overall the average UK person ets approximately 0.2% of his or her radiation exposure from the fallout from nuclear plants (and from nuclear accidents) and less than 0.1% from nuclear waste disposal. This compares to about 15% from medical imaging and other medicinal exposures and about 10% from the natural decay of potassium 40 and carbon 14 in the body. Naturally-occurring radon is many hundreds of times more important as a source of radiation than nuclear power stations and nuclear fallout. Even for those who believe in a direct linear relationship between radiation levels and the number of cancer deaths, the effect on mortality of normal operation of nuclear power stations would be impossible to discern statistically and in our opinion is likely to be non-existent. It can only be in the event of a serious accident that we have any reason to be really concerned about nuclear power. We have tried to show in this article that even when such accidents occur the effects may be much less extensive than many people imagine, particularly given the constant media coverage devoted to Fukushima. Chernobyl killed 28 people in the immediate aftermath of the disaster. All these people had experienced huge doses of radiation in a short period. Mortality since the accident among the most heavily dosed workers has not been exceptionally high. And many studies after Chernobyl have suggested that – with the exception of the thyroid variant – cancer rates have only increased very marginally even among those exposed to high doses of radiation after the accident. While reported rates of other, non-cancer, illnesses may have risen, researchers seem to think that much of this rise is due to the impact of other factors, such as the need to evacuate from the area, increased smoking, drinking and other risky behaviours, or even the wider effect of the breakup of the Soviet Union soon after the accident. There is substantial evidence, as the UN reports on Chernobyl attest, that the psychological impacts of fear of radiation far outweigh the actual biological impacts of radiation. Thus, misinformation about exaggerated dangers of radiation is actually likely to be harmful to large numbers of people – a point which should be borne in mind by anti-nuclear campaigners. This appears certainly to have been the case after Chernobyl and Three Mile Island (in the latter case the radiation released was negligible, but the political fallout immense). We hope that a more rational sense of risk and an appreciation of what we have learned from past experience will prevent the repeat of this experience after Fukushima. It is important to appreciate that whilst radiation levels at the boundary fence are still high, they are dropping sharply. Even today, March 28th, the radiation exposure of a person a few kilometres from the plant (in the precautionary exclusion zone) is likely to be lower than experienced by many people living in Cornwall or other places with high radon density. Similarly, the peak levels of radiation in the water supply have constantly been well below levels regarded as safe in other parts of the world. No technology is completely safe, and we don’t wish to argue that nuclear power is any different. But its dangers must be weighed against the costs of continuing to operate fossil fuel plants. Just down the road from us is Didcot A power station, a large coal-burning plant with poor pollution control and therefore with substantial effects on local air quality, as well as more substantial emissions of radiation than from any UK nuclear power station and a Co2 output of about 8 million tonnes a year. We offer a view that Didcot has caused far more deaths from respiratory diseases than all the deaths ever associated with nuclear energy in the UK, and that coal power is a far more legitimate target of environmental protest than nuclear.

# 2AC

### 2AC MNC

#### Green consumption fails – can’t solve MNCs or efficiency problems – production-focused globalization is key

Dauvergne – Chair in Environmental Politics, U British Columbia – 8

(Peter, Professor of Political Science, Canada Research Chair in Global Environmental Politics, and Director of the Liu Institute for Global Issues at the University of British Columbia, The Shadows of Consumption:

Consequences for the Global Environment, pgs. 16-17)

Of course, to some extent every consumer is responsible, although not all share equal responsibility. Those with power and wealth are consuming far more of the world’s ecological resources: a life of luxury in Philadelphia deflects more environmental damage farther than a life of poverty in Harare. Still, no single consumer, no matter how wasteful or profligate, can cause an ecological shadow to form or shift direction, although this does not absolve consumers who ignore the effects of their personal choices on the sustainability of life for others. Accepting that these effects are “real” is essential for sustaining the collective will for reforms. Yet far-reaching change will require far more than educating some consumers in some cultures to consume a few things more thoughtfully. As this chapter reveals, it will require tackling structural features of a world order that deflects environmental costs of consumption into spaces with relatively less power. In particular, governing mechanisms will need to guide globalization more effectively, strengthening environmentalism in ways that rein in the shadow effects of corporations, trade, financing, and local policies. Immediate action is imperative. As the global population races toward 9–11 billion, worldwide economic growth shows every sign of racing even faster, global consumerism every sign of consolidating further, and the next wave of globalization every sign of increasing both the scale and the speed of the ecological changes brought about by the shifting global patterns of consumption. In all likelihood, the globalization of environmentalism will continue both to improve the efficiency of producing, using, and recycling consumer goods and to promote further advances in global governance, from greener corporate codes of conduct, to stricter international environmental laws, to stronger cultural norms of “appropriate” consumption. But, as things now stand, and as chapter 23 will elaborate in the conclusion to this book, it will do so at a pace that is too slow and too incremental to prevent the intensity and spread of ecological shadows from escalating. The costs to the global environment and human health, as chapter 2 will make clear, are already too great not to take immediate action.

#### Green consumption causes greater environmental destruction – create guilt-free green consumption and cause third-world dumping and environmental destruction

Dauvergne – Chair in Environmental Politics, U British Columbia – 8

(Peter, Professor of Political Science, Canada Research Chair in Global Environmental Politics, and Director of the Liu Institute for Global Issues at the University of British Columbia, “The Problem of Consumption”, *Global Environmental Politics*, May 2010, Vol. 10, No. 2, Pages 1-10)

Influencing individual consumers to act more sustainably, then, is one of the most complex and difficult challenges for environmental governance. Influencing enough consumers to affect global change is an even greater challenge. And transforming major systemic drivers of consumption is still more difficult and complex. The overall system of global environmental governance is improving management on some measures, most notably by gradually expanding markets for more efacient products with less per unit environmental impacts. One ex- ample, among thousands, is the history of the increasing energy efficiency of new refrigerators since the global phase down of CFCs beginning in the early 1990s. But, because these advances tend to require or contribute to more con- sumption, and because they tend to do little to influence the drivers of con- sumption or mitigate the indirect costs of producing, transporting, and dispos- ing of consumer goods, much of the so-called “progress” is incremental, local, or temporary, unable on a global scale to produce enough change to mitigate the damaging environmental consequences of buying and using most consumer products. Sometimes this progress is even causing the costs of consumption to intensify further, with environmental conditions improving in developed countries and deteriorating in developing ones that produce and import more damaging products. This helps to explain why so many global environ- mental efforts are failing. It also helps to explain why so many involved in the global policy process are overly optimistic about the value of incremental environmentalism, as those with more power and wealth shift many of the costs of consumption to those with less. International environmental laws to control transboundary pollution are helping a little to mitigate the environmental damage of consumption (e.g., the 1989 Basel Convention on the Control of Transboundary Movements of Haz- ardous Wastes and their Disposal, and the 2001 Stockholm Convention on Per- sistent Organic Pollutants). So are consumer labels to certify that products are from sustainable sources (e.g., the Forest Stewardship Council and the Marine Stewardship Council). So are corporate policies to increase environmental and social accountability (e.g., Electrolux’s policy to audit suppliers in developing countries like China and Brazil to monitor compliance with its corporate code of conduct). And so are incentives for manufacturers to include disposal costs into the price of consumer goods (e.g., the European Commission’s End-of-Life Vehicles directive, which requires manufacturers to “de-pollute” and recycle used vehicles with their logo). Yet the big picture is clear. Even as global environmental governance con- tinues to strengthen incrementally, the “global environment” that is being “gov- erned” is continuing to slide into an ever-greater crisis, creating an ever-more difacult problem to “govern.” To be effective on a global scale, far more needs to be done, faster, to reimagine and reorganize an unbalanced global economy, and to shift more of the benefits to the world’s poorest people and less of the costs of producing, using, and disposing of consumer goods to the most vulner- able ecosystems. This will require international policy processes to tackle head on the systemic drivers of consumption.

### 2AC FW

#### The primary purpose of debate should be to improve our skills as decision-makers. We are all individual policy-makers who make choices every day that affect us and those around us. We have an obligation to the people affected by our decisions to use debate as a method for honing these critical thinking and information processing abilities.

Austin J. Freeley and David L. Steinberg – John Carroll University / U Miami – 2009, Argumentation and Debate: Critical Thinking for Reasoned Decision Making, p. 1-4, googlebooks

After several days of intense debate, first the United States House of Representatives and then the U.S. Senate voted to authorize President George W. Bush to attack Iraq if Saddam Hussein refused to give up weapons of mass destruction as required by United Nations's resolutions. Debate about a possible military\* action against Iraq continued in various governmental bodies and in the public for six months, until President Bush ordered an attack on Baghdad, beginning Operation Iraqi Freedom, the military campaign against the Iraqi regime of Saddam Hussein. He did so despite the unwillingness of the U.N. Security Council to support the military action, and in the face of significant international opposition.¶ Meanwhile, and perhaps equally difficult for the parties involved, a young couple deliberated over whether they should purchase a large home to accommodate their growing family or should sacrifice living space to reside in an area with better public schools; elsewhere a college sophomore reconsidered his major and a senior her choice of law school, graduate school, or a job. Each of these\* situations called for decisions to be made. Each decision maker worked hard to make well-reasoned decisions.¶ Decision making is a thoughtful process of choosing among a variety of options for acting or thinking. It requires that the decider make a choice. Life demands decision making. We make countless individual decisions every day. To make some of those decisions, we work hard to employ care and consideration; others seem to just happen. Couples, families, groups of friends, and coworkers come together to make choices, and decision-making bodies from committees to juries to the U.S. Congress and the United Nations make decisions that impact us all. Every profession requires effective and ethical decision making, as do our school, community, and social organizations.¶ We all make many decisions every day. To refinance or sell one's home, to buy a high-performance SUV or an economical hybrid car. what major to select, what to have for dinner, what candidate to vote for, paper or plastic, all present us with choices. Should the president deal with an international crisis through military invasion or diplomacy? How should the U.S. Congress act to address illegal immigration?¶ Is the defendant guilty as accused? The Daily Show or the ball game? And upon what information should I rely to make my decision? Certainly some of these decisions are more consequential than others. Which amendment to vote for, what television program to watch, what course to take, which phone plan to purchase, and which diet to pursue all present unique challenges. At our best, we seek out research and data to inform our decisions. Yet even the choice of which information to attend to requires decision making. In 2006, TIME magazine named YOU its "Person of the Year." Congratulations! Its selection was based on the participation not of ''great men" in the creation of history, but rather on the contributions of a community of anonymous participants in the evolution of information. Through blogs. online networking. You Tube. Facebook, MySpace, Wikipedia, and many other "wikis," knowledge and "truth" are created from the bottom up, bypassing the authoritarian control of newspeople, academics, and publishers. We have access to infinite quantities of information, but how do we sort through it and select the best information for our needs?¶ The ability of every decision maker to make good, reasoned, and ethical decisions relies heavily upon their ability to think critically. Critical thinking enables one to break argumentation down to its component parts in order to evaluate its relative validity and strength. Critical thinkers are better users of information, as well as better advocates.¶ Colleges and universities expect their students to develop their critical thinking skills and may require students to take designated courses to that end. The importance and value of such study is widely recognized.¶ Much of the most significant communication of our lives is conducted in the form of debates. These may take place in intrapersonal communications, in which we weigh the pros and cons of an important decision in our own minds, or they may take place in interpersonal communications, in which we listen to arguments intended to influence our decision or participate in exchanges to influence the decisions of others.¶ Our success or failure in life is largely determined by our ability to make wise decisions for ourselves and to influence the decisions of others in ways that are beneficial to us. Much of our significant, purposeful activity is concerned with making decisions. Whether to join a campus organization, go to graduate school, accept a job oiler, buy a car or house, move to another city, invest in a certain stock, or vote for Garcia—these are just a few of the thousands of decisions we may have to make. Often, intelligent self-interest or a sense of responsibility will require us to win the support of others. We may want a scholarship or a particular job for ourselves, a customer for out product, or a vote for our favored political candidate.

#### A focus on policy is necessary to learn the pragmatic details of powerful institutions – acting without this knowledge is doomed to fail in the face of policy professionals who make the decisions that actually affect outcomes

McClean, Adjunct Professor of Philosophy at Molloy College in New York, 2001

(David E., “The Cultural Left and the Limits of Social Hope”, Conference of the Society for the Advancement of American Philosophy, http://www.americanphilosophy.org/archives/past\_conference\_programs/pc2001/)

Or we might take Foucault who, at best, has provided us with what may reasonably be described as a very long and eccentric footnote to Nietzsche (I have once been accused, by a Foucaltian true believer, of "gelding" Foucault with other similar remarks). Foucault, who has provided the Left of the late 1960s through the present with such notions as "governmentality," "Limit," "archeology," "discourse" "power" and "ethics," creating or redefining their meanings, has made it overabundantly clear that all of our moralities and practices are the successors of previous ones which derive from certain configurations of savoir and connaisance arising from or created by, respectively, the discourses of the various scientific schools. But I have not yet found in anything Foucault wrote or said how such observations may be translated into a political movement or hammered into a political document or theory (let alone public policies) that can be justified or founded on more than an arbitrary aesthetic experimentalism. In fact, Foucault would have shuddered if any one ever did, since he thought that anything as grand as a movement went far beyond what he thought appropriate. This leads me to mildly rehabilitate Habermas, for at least he has been useful in exposing Foucault's shortcomings in this regard, just as he has been useful in exposing the shortcomings of others enamored with the abstractions of various Marxian-Freudian social critiques. Yet for some reason, at least partially explicated in Richard Rorty's Achieving Our Country, a book that I think is long overdue, leftist critics continue to cite and refer to the eccentric and often a priori ruminations of people like those just mentioned, and a litany of others including Derrida, Deleuze, Lyotard, Jameson, and Lacan, who are to me hugely more irrelevant than Habermas in their narrative attempts to suggest policy prescriptions (when they actually do suggest them) aimed at curing the ills of homelessness, poverty, market greed, national belligerence and racism. I would like to suggest that it is time for American social critics who are enamored with this group, those who actually want to be relevant, to recognize that they have a disease, and a disease regarding which I myself must remember to stay faithful to my own twelve step program of recovery. The disease is the need for elaborate theoretical "remedies" wrapped in neological and multi-syllabic jargon. These elaborate theoretical remedies are more "interesting," to be sure, than the pragmatically settled questions about what shape democracy should take in various contexts, or whether private property should be protected by the state, or regarding our basic human nature (described, if not defined (heaven forbid!), in such statements as "We don't like to starve" and "We like to speak our minds without fear of death" and "We like to keep our children safe from poverty"). As Rorty puts it, "When one of today's academic leftists says that some topic has been 'inadequately theorized,' you can be pretty certain that he or she is going to drag in either philosophy of language, or Lacanian psychoanalysis, or some neo-Marxist version of economic determinism. . . . These futile attempts to philosophize one's way into political relevance are a symptom of what happens when a Left retreats from activism and adopts a spectatorial approach to the problems of its country. Disengagement from practice produces theoretical hallucinations"(italics mine).(1) Or as John Dewey put it in his The Need for a Recovery of Philosophy, "I believe that philosophy in America will be lost between chewing a historical cud long since reduced to woody fiber, or an apologetics for lost causes, . . . . or a scholastic, schematic formalism, unless it can somehow bring to consciousness America's own needs and its own implicit principle of successful action." Those who suffer or have suffered from this disease Rorty refers to as the Cultural Left, which left is juxtaposed to the Political Left that Rorty prefers and prefers for good reason. Another attribute of the Cultural Left is that its members fancy themselves pure culture critics who view the successes of America and the West, rather than some of the barbarous methods for achieving those successes, as mostly evil, and who view anything like national pride as equally evil even when that pride is tempered with the knowledge and admission of the nation's shortcomings. In other words, the Cultural Left, in this country, too often dismiss American society as beyond reform and redemption. And Rorty correctly argues that this is a disastrous conclusion, i.e. disastrous for the Cultural Left. I think it may also be disastrous for our social hopes, as I will explain. Leftist American culture critics might put their considerable talents to better use if they bury some of their cynicism about America's social and political prospects and help forge public and political possibilities in a spirit of determination to, indeed, achieve our country - the country of Jefferson and King; the country of John Dewey and Malcom X; the country of Franklin Roosevelt and Bayard Rustin, and of the later George Wallace and the later Barry Goldwater. To invoke the words of King, and with reference to the American society, the time is always ripe to seize the opportunity to help create the "beloved community," one woven with the thread of agape into a conceptually single yet diverse tapestry that shoots for nothing less than a true intra-American cosmopolitan ethos, one wherein both same sex unions and faith-based initiatives will be able to be part of the same social reality, one wherein business interests and the university are not seen as belonging to two separate galaxies but as part of the same answer to the threat of social and ethical nihilism. We who fancy ourselves philosophers would do well to create from within ourselves and from within our ranks a new kind of public intellectual who has both a hungry theoretical mind and who is yet capable of seeing the need to move past high theory to other important questions that are less bedazzling and "interesting" but more important to the prospect of our flourishing - questions such as "How is it possible to develop a citizenry that cherishes a certain hexis, one which prizes the character of the Samaritan on the road to Jericho almost more than any other?" or "How can we square the political dogma that undergirds the fantasy of a missile defense system with the need to treat America as but one member in a community of nations under a "law of peoples?" The new public philosopher might seek to understand labor law and military and trade theory and doctrine as much as theories of surplus value; the logic of international markets and trade agreements as much as critiques of commodification, and the politics of complexity as much as the politics of power (all of which can still be done from our arm chairs.) This means going down deep into the guts of our quotidian social institutions, into the grimy pragmatic details where intellectuals are loathe to dwell but where the officers and bureaucrats of those institutions take difficult and often unpleasant, imperfect decisions that affect other peoples' lives, and it means making honest attempts to truly understand how those institutions actually function in the actual world before howling for their overthrow commences. This might help keep us from being slapped down in debates by true policy pros who actually know what they are talking about but who lack awareness of the dogmatic assumptions from which they proceed, and who have not yet found a good reason to listen to jargon-riddled lectures from philosophers and culture critics with their snobish disrespect for the so-called "managerial class."

### 2AC Environment K

#### Absent these questions shifts in knowledge production are useless – governments will continue abusing the environment because of the tragedy of the commons even if individuals change their mindsets

Wight – Professor of IR @ University of Sydney – 6

(Colin, Agents, Structures and International Relations: Politics as Ontology, pgs. 48-50

One important aspect of this relational ontology is that these relations constitute our identity as social actors. According to this relational model of societies, one is what one is, by virtue of the relations within which one is embedded. A worker is only a worker by virtue of his/her relationship to his/her employer and vice versa. ‘Our social being is constituted by relations and our social acts presuppose them.’ At any particular moment in time an individual may be implicated in all manner of relations, each exerting its own peculiar causal effects. This ‘lattice-work’ of relations constitutes the structure of particular societies and endures despite changes in the individuals occupying them. Thus, the relations, the structures, are ontologically distinct from the individuals who enter into them. At a minimum, the social sciences are concerned with two distinct, although mutually interdependent, strata. There is an ontological difference between people and structures: ‘people are not relations, societies are not conscious agents’. Any attempt to explain one in terms of the other should be rejected. If there is an ontological difference between society and people, however, we need to elaborate on the relationship between them. Bhaskar argues that we need a system of mediating concepts, encompassing both aspects of the duality of praxis into which active subjects must fit in order to reproduce it: that is, a system of concepts designating the ‘point of contact’ between human agency and social structures. This is known as a ‘positioned practice’ system. In many respects, the idea of ‘positioned practice’ is very similar to Pierre Bourdieu’s notion of *habitus*. Bourdieu is primarily concerned with what individuals do in their daily lives. He is keen to refute the idea that social activity can be understood solely in terms of individual decision-making, or as determined by surpa-individual objective structures. Bourdieu’s notion of the *habitus* can be viewed as a bridge-building exercise across the explanatory gap between two extremes. Importantly, the notion of a habitus can only be understood in relation to the concept of a ‘social field’. According to Bourdieu, a social field is ‘a network, or a configuration, of objective relations between positions objectively defined’. A social field, then, refers to a structured system of social positions occupied by individuals and/or institutions – the nature of which defines the situation for their occupants. This is a social field whose form is constituted in terms of the relations which define it as a field of a certain type. A *habitus* (positioned practices) is a mediating link between individuals’ subjective worlds and the socio-cultural world into which they are born and which they share with others. The power of the habitus derives from the thoughtlessness of habit and habituation, rather than consciously learned rules. The habitus is imprinted and encoded in a socializing process that commences during early childhood. It is inculcated more by experience than by explicit teaching. Socially competent performances are produced as a matter of routine, without explicit reference to a body of codified knowledge, and without the actors necessarily knowing what they are doing (in the sense of being able adequately to explain what they are doing). As such, the *habitus* can be seen as the site of ‘internalization of reality and the externalization of internality.’ Thus social practices are produced in, and by, the encounter between: (1) the *habitus* and its dispositions; (2) the constraints and demands of the socio-cultural field to which the habitus is appropriate or within; and (3) the dispositions of the individual agents located within both the socio-cultural field and the *habitus*. When placed within Bhaskar’s stratified complex social ontology the model we have is as depicted in Figure 1. The explanation of practices will require all three levels. Society, as field of relations, exists prior to, and is independent of, individual and collective understandings at any particular moment in time; that is, social action requires the conditions for action. Likewise, given that behavior is seemingly recurrent, patterned, ordered, institutionalised, and displays a degree of stability over time, there must be sets of relations and rules that govern it. Contrary to individualist theory, these relations, rules and roles are not dependent upon either knowledge of them by particular individuals, or the existence of actions by particular individuals; that is, their explanation cannot be reduced to consciousness or to the attributes of individuals. These emergent social forms must possess emergent powers. This leads on to arguments for the reality of society based on a causal criterion. Society, as opposed to the individuals that constitute it, is, as Foucault has put it, ‘a complex and independent reality that has its own laws and mechanisms of reaction, its regulations as well as its possibility of disturbance. This new reality is society…It becomes necessary to reflect upon it, upon its specific characteristics, its constants and its variables’.

#### Our simulation of environmental diplomacy is good – integration of ecological concerns into IR creates a psychological preference for cooperation and a future-oriented ethos in students

Ali & Mueller 10

(Saleem, Professor of Environmental Studies, University of Vermont, Markus, assistant professor for social and organizational psychology at Catholic University Eichstaett-Ingolstadt, Germany, “Simulating Environmental Diplomacy”, June 23, 2010, http://www.policyinnovations.org/ideas/innovations/data/000168)

Environmental policy issues are often framed in terms of resource scarcity, spurring a scramble for that last blade of grass or last drop of water in a "tragedy of the commons." Yet human perceptions of access to resources can be shifted from a mindset of competitive conflict to one of cooperative relationships. The psychological aspects of such a transformation are often best illustrated through simulations. For example, a distributive conflict premised on resource quantity can be reframed to highlight cooperation in maintaining resource quality. Lakes present a classic example where it is easy to show how a common resource will be degraded for all users. A similar case is harder to make in river simulations where upstream parties have far greater power and much less to lose as a result of pollution or scarcity downstream. Lessons from these simulation techniques are under-utilized in international diplomacy. Not only can simulations be useful in changing the narrative of environmental conflicts, but environmental issues can be useful in changing the tone of political conflicts. For example, if two countries distrust each other over religious or ethnic differences, environmental cooperation may present a neutral means of building bridges. Building a Methodology A simulation can also be useful as an experimental tool to further evaluate the efficacy of environmental factors in conflict resolution. What would such a methodology look like? We might start by using vignettes that describe conflicts between stakeholders from neighboring nations—with students, border military guards, and political activists as participants in the simulation. The inclusion of environmental issues in the conflict descriptions would be the main independent variable. The level of severity would also vary in the vignettes, as would its impact on vested interests. The conflicts could range from environmental threats as a common aversion (like the scarcity of water or other resources), to nature as an end in itself that should be protected (perhaps a transboundary protected area without important natural resources), to situations without environmental issues. In order to separate the effect of environmental issues from the effect of cooperative discussion itself, a control group could be told that the two countries are cooperating over trade talks. We expect the inclusion of environmental issues to affect the willingness of the two parties to positively cooperate, given some initial research from the field of conservation psychology. In a typical vignette, participants might read about an incident between two neighboring countries in which citizens of one country were accidentally killed when military exercises by the other country mistakenly shelled the wrong target. (For student participants, this would be presented as a real incident. For the senior diplomats, who are better informed, we would merely ask them to treat this as a hypothetical incident.) Some of the participants will also be told that the two countries are engaged in cooperative discussions over how to protect a shared environmentally sensitive area. Others will be told that the two countries are engaged in discussions over how to allocate shared, and contested, water resources. A third group will be told that the two countries are engaged in cooperative trade talks, and a last group will not be told about any discussions between the two countries. The exact mechanics of the simulation would be worked out after a series of consultations with experts on behavioral methodologies and the running of test groups. Dependent variable measures for the vignettes as well as the ensuing studies will include resource allocation between groups, stereotyping of the "other," moral exclusion of the other, perceived justice, as well as the willingness to employ different strategies of negotiation. Assessment of one party's willingness to interact with the other group will be adapted for each vignette from the Transgression-Related Interpersonal Motivations Inventory, a widely used method in psychology. This technique has previously been adapted for similar use to assess attitudes about appropriate relations between nations. Sample items would be: "Country A should continue to cooperate with country B," "Country A should avoid involvement with Country B," "Country A should forgive Country B," "Country A should fear future aggressive actions by Country B" (scaled 1–5, strongly disagree to strongly agree). In other words, people do not have to choose between identifying with the original group or identifying with the larger collective; they can identify with both. When groups cooperate, they develop trust in each other as well as a perception of shared characteristics. Working together to protect a shared ecosystem may allow nations to experience the same effects: Trust that is established through work on one project may generalize to a greater level of trust on other issues; perceived similarity in value for nature may help to overcome tendencies toward stereotyping and moral exclusion. The Horizon of Cooperation Yet another potential mechanism of the psychological impact of peace parks is in encouraging a reduction of temporal discounting. Although this work is still in the preliminary stages, there is some evidence that consideration of environmental issues promotes a longer time horizon compared to some other issues. Robert Axelrod empirically showed in his classic work The Evolution of Cooperation that increasing the "shadow of the future" (the likelihood and importance of future interaction) promotes cooperation. If we can frame environmental issues in the context of longer-term interactions between humans and the planet, there are likely to be derivative cooperative benefits from this mechanism. Such an approach would blend the use of simulations in collaborative planning with psychological techniques—potentially offering a mechanism for "ecological cooperation." In August 2010, the American Psychological Association is hosting a special session on environment, peace, and conflict at which we intend to discuss the prospects for engaging in research to test this hypothesis with actual stakeholders in a conflict situation. In the meantime, scholars, practitioners, and students can consider testing this proposition on their own, experimenting with different ecological vignettes. There can also be variations in the simulation before and after environmental education programs to evaluate the effectiveness of ecoliteracy programs. Environmental awareness, coupled with strong leadership in using ecological variables in diplomacy, may well provide us with a new policy innovation for dealing with intractable conflicts.

#### Management is inevitable – it’s only a question of what kind of intervention is used. Past interventions will result in extinction unless actively reversed.

Levy 99- PhD @ Centre for Critical Theory at Monash

Neil, “Discourses of the Environment,” ed: Eric Darier, p. 215

If the ‘technological fix’ is unlikely to be more successful than strategies of limitation of our use of resources, we are, nevertheless unable simply to leave the environment as it is. There is a real and pressing need for space, and more accurate, technical and scientific information about the non-human world. For we are faced with a situation in which the processes we have already set in train will continue to impact upon that world, and therefore us for centuries. It is therefore necessary, not only to stop cutting down the rain forests, but to develop real, concrete proposals for action, to reverse or at least limit the effects of our previous interventions. Moreover, there is another reason why our behavior towards the non-human cannot simply be a matter of leaving it as it is, at least in so far as our goals are not only environmental but also involve social justice. For if we simply preserve what remains to us of wilderness, of the countryside and of park land, we also preserve patterns of very unequal access to their resources and their consolations (Soper 1995: 207).in fact, we risk exacerbating these inequalities. It is not us, but the poor of Brazil, who will bear the brunt of the misery which would result from a strictly enforced policy of leaving the Amazonian rain forest untouched, in the absence of alternative means of providing for their livelihood. It is the development of policies to provide such ecologically sustainable alternatives which we require, as well as the development of technical means for replacing our current greenhouse gas-emitting sources of energy. Such policies and proposals for concrete action must be formulated by ecologists, environmentalists, people with expertise concerning the functioning of ecosystems and the impact which our actions have upon them. Such proposals are, therefore, very much the province of Foucault’s specific intellectual, the one who works ‘within specific sectors, at the precise points where their own conditions of life or work situate them’ (Foucault 1980g: 126). For who could be more fittingly described as ‘the strategists of life and death’ than these environmentalists? After the end of the Cold War, it is in this sphere, more than any other, that man’s ‘politics places his existence as a living being in question’ (Foucault 1976: 143). For it is in facing the consequences of our intervention in the non-human world that the hate of our species, and of those with whom we share this planet, will be decided?

#### Economic rationality is ethical – solves war and environmental collapse – self-interest motivates individuals to sacrifice some autonomy to produce security and protect the rights of others

Aasland ‘9

(Dag, Prof. of Economics @ U of Agder, Norway, Ethics and Economy: After Levinas, pgs. 65-66)

**Business ethics**, in the sense of ethics *for* business, illustrates this: its **perspective is** that of an **‘enlightened self-interest’ where the constraints that are put on the individual, thanks to the ability to see the unfortunate consequences for oneself, postpone** the **‘war’**, in a direct or metaphoric sense of the word (*ibid.*: 70-71). This **enlightened self-interest forms the base not only of** the **market economy, but also of** a social organization and manifestation of **human rights**, and even of some ethical theories. **It is a calculated** and voluntary **renunciation of one’s own freedom in order to obtain** in return **security** and other common goals (*ibid.*: 72). **The fact that economic**, political and legal **theories appeal to enlightened self-interest does not imply**, however, **that we should discard them**. Nor should we reject proclamations of human rights, legal constraints of individual freedom and, for that matter, business ethics, even if they are based on an enlightened self-interest. **It is rather the opposite: such institutions and knowledge are indispensable because the primary quality of** the **enlightened self-interest is that it restricts egocentricity**. Our *practical reason* (which was Kant’s words for the reason that governs our acts, where the moral law is embedded as a principle) includes the knowledge that it can be rational to lay certain restrictions on individual freedom. In this way **practical reason may postpone** (for an indefinite time) **violence** and murder **among people**. **This has** primarily **been the raison-d’être of** politics and **the state, but it is today taken over** more and more **by corporate organizations**, as expressed in the new term for business ethics, as *corporate social responsibility* and *corporate citizenship* (see chapter 2). **Thanks to this ‘postponement of violence’ provided by** politics and **economic rationality, people may unfold their freedom** within the laws and regulations set up by society (Burggraeve, 2003: 77).

### 2AC Fluck

#### Their epistemology K is flawed – social constructions are knowable – they pre-exist individuals and constrain action in predictable ways – prefer the specificity of the aff to broad philosophical indictments

Fluck, PhD in International Politics from Aberystwyth, ’10 (Matthew, November, “Truth, Values and the Value of Truth in Critical International Relations Theory” Millennium Journal of International Studies, Vol 39 No 2, SagePub)

Critical Realists arrive at their understanding of truth by inverting the post-positivist attitude; rather than asking what knowledge is like and structuring their account of the world accordingly, they assume that knowledge is possible and ask what the world must be like for that to be the case. 36 This position has its roots in the realist philosophy of science, where it is argued that scientists must assume that the theoretical entities they describe – atoms, gravity, bacteria and so on – are real, that they exist independently of thoughts or discourse. 37 Whereas positivists identify causal laws with recurrent phenomena, realists believe they are real tendencies and mechanisms. They argue that the only plausible explanation for the remarkable success of science is that theories refer to these real entities and mechanisms which exist independently of human experience. 38 Against this background, the Critical Realist philosopher Roy Bhaskar has argued that truth must have a dual aspect. On the one hand, it must refer to epistemic conditions and activities such as ‘reporting judgements’ and ‘assigning values’. On the other hand, it has an inescapably ontic aspect which involves ‘designating the states of affairs expressed and in virtue of which judgements are assigned the value “true’’’. In many respects the epistemic aspect must dominate; we can only identify truth through certain epistemic procedures and from within certain social contexts. Nevertheless, these procedures are oriented towards independent reality. The status of the conclusions they lead us to is not dependent on epistemic factors alone, but also on independently existing states of affairs. For this reason, Bhaskar argues that truth has a ‘genuinely ontological’ use. 39 Post-positivists would, of course, reply that whilst such an understanding of truth might be unproblematic in the natural sciences, in the social sciences the knower is part of the object known. This being the case, there cannot be an ontic aspect to the truths identified. Critical Realists accept that in social science there is interaction between subject and object; social structures involve the actions and ideas of social actors. 40 They add, however, that it does not follow that the structures in question are the creations of social scientists or that they are simply constituted through the ideas shared within society at a given moment. 41 According to Bhaskar, since we are born into a world of structures which precede us, we can ascribe independent existence to social structures on the basis of their pre-existence. We can recognise that they are real on the basis of their causal power – they have a constraining effect on our activity. 42 Critical Realists are happy to agree to an ‘epistemological relativism’ according to which knowledge is a social product created from a pre-existing set of beliefs, 43 but they maintain that the reality of social structures means that our beliefs about them can be more or less accurate – we must distinguish between the way things appear to us and the way they really are. There are procedures which enable us to rationally choose between accounts of reality and thereby arrive at more accurate understandings; epistemological relativism does not preclude judgemental rationalism. 44 It therefore remains possible to pursue the truth about social reality.

### 2AC Enviro Racism

#### Environmental impacts disproportionately impact people of color – must reverse ecological damage to resolve racism

Gokhale, ’96

(Veena, Former Program Manager, India and Regional Programs, South Asia Partnership (SAP) Canada, Former Program Officer, Public Affairs, Canadian Council for International Cooperation, “Environmental Racism, Environmental Justice”, www.veenago.com/nonfiction/Environmental\_justice.pdf)

Environmental and social issues are two sides of the same coin. Multinational corporations now decide the fate of local environments and communities while governments back away from former committments to ensure the well-being of their citizens. The central question is who pays for and who benefits from the current economic systems? Who are the communities and countries that get dumped on and who does the dumping? ``In the United States, race interacts with class to create special environmental and health vulnerabilities. People of colour, however, face elevated toxic exposure levels even when social class variables (income, education, and occupational status) are held constant. Race has been found to be an independent factor...in predicting the distribution of air pollution, contaminated fish consumption, the location of abandoned toxic waste dumps and lead poisioning in children," writes Robert Bullard, author of `Dumping in Dixie.' Many studies have shown the unholy alliance between race and poisoned environments. A landmark study was undertaken by the Commission for Racial Justice (CRJ) in 1987. Some of the conclusions of the report titled Toxic Wastes and Race in the United States - A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites were: \* Communities with the greatest number of commercial hazardous waste facilities had the highest composition of ethnic residents. \* Three of the five largest commercial hazardous waste landfills in the USA were located in predominantly black or Hispanic communities. \* Three of every black and Hispanic Americans lived in communities with one or more such sites. Rev. Benjamin Chavis, the director of CRJ, a grassroots organization in the USA fighting environmental racism can be credited with coining the term `environmental racism.' He defines it as, ``racial discrimination in environmental policy making and the enforcement of regulations and laws, the deliberate targeting of people of colour communities for toxic waste facilities, the official sanctioning of the life-threatening presence of poisons and pollutants in our communities, and the history of excluding people of colour from leadership in the environmental movement." Environmental racism gets played out on a global scale, reinforcing the inequities between the so-called First and Third worlds. The so-called developing countries are a prime target for locating polluting industries and dispatching hazardous industrial and nuclear wastes. Here is just one example of `toxic colonialism': ``Today more than 1,900 maquiladoras, assembly plants operated by American, Japanese and other foreign countries are located along the 2000-mile U.S.-Mexico border. These plants use cheap Mexican labour to assemble products from imported components and raw materials, and then ship them back to the United States. Nearly half a million Mexicans work in the maquiladoras. They earn an average of $3.75 a day. While these plants bring jobs, albeit low-paying ones, they exacerbate local pollution byt overcrowding the border towns, straining sewage and water systems and reducing air quality...The Mexican environmental regulatory agency is understaffed and ill-equipped to adequately enforce the country's laws." writes Bullard. Why are people of colour targeted? Very simply because they are seen as weak, vulnerable and helpless. Many people in low pay, low skill jobs do not have the power to choose the conditions under which they work or live. In today's see-saw economy the fear of job loss has undermined the power of workers and unions even further, making environmental racism more widespread.

### 2AC Environment

#### Turn – the alt causes coal fill-in – that’s 100x worse for the environment – critiques of nuke production are idealistic and treat the energy in a vacuum, not in context

Monbiot ‘11

(George, columnist for The Guardian, has held visiting fellowships or professorships at the universities of Oxford (environmental policy), Bristol (philosophy), Keele (politics), Oxford Brookes (planning), and East London (environmental science), March 21, 2011, “Why Fukushima made me stop worrying and love nuclear power”, http://www.guardian.co.uk/commentisfree/2011/mar/21/pro-nuclear-japan-fukushima)

But the energy source to which most economies will revert if they shut down their nuclear plants is not wood, water, wind or sun, but fossil fuel. On every measure (climate change, mining impact, local pollution, industrial injury and death, even radioactive discharges) coal is 100 times worse than nuclear power. Thanks to the expansion of shale gas production, the impacts of natural gas are catching up fast. Yes, I still loathe the liars who run the nuclear industry. Yes, I would prefer to see the entire sector shut down, if there were harmless alternatives. But there are no ideal solutions. Every energy technology carries a cost; so does the absence of energy technologies. Atomic energy has just been subjected to one of the harshest of possible tests, and the impact on people and the planet has been small. The crisis at Fukushima has converted me to the cause of nuclear power.

# 1AR

#### Imagining the plan specifically is key – public opposition is grounded in misunderstanding and ignorance about new tech like SMRs – reversing that trend is key to solve multiple scenarios for extinction that only nuclear solves

Kotler 11

(Stephen, Journalist covering the collision between science and culture, “Meltdown or Mother Lode: Is Nuclear Energy Safe?”, 19 March 2011, http://ecohearth.com/eco-zine/green-issues/391-meltdown-or-mother-lode-the-new-truth-about-nuclear-power.html)

In the past four decades, there’s been a nuclear revolution brewing. Most likely you haven’t heard about it. Most likely, if you’re reading this on an environmental website like EcoHearth.com, you tow the green “no nukes” party line. The problem with that is actually simple: overpopulation, global warming, resource scarcity and energy shortages are real. Many very smart scientists are saying that nuclear energy is the only way to deal with these issues. Perhaps you think they have their facts wrong. Unfortunately, the inverse is often true: those of us who firmly oppose nuclear power often don’t know all the facts.¶ Or worse—the facts we know are actually 40 years out of date.¶ What follows is a seven-part investigation into nuclear power, an attempt to put all those facts on the table so at least we can start having a reasonable discussion. After all, the clock is ticking. Part One: The Atom and Its Eve¶ First there was the atom. The idea of a fundamental particle from which all things are made came from India, dating to Sixth-century BCE Hindu philosopher Kanada. A hundred years later the notion emigrated to Greece, where Leuccipus of Miletus popularized it. His pupil, Democritus, gave us a word to describe the particle, taking atom from atomos, Greek for “indivisible.” This concept held fast until the late nineteenth century, then crumbled within four decades of the twentieth.¶ In 1895, German physicist Wilhelm Roentgen discovered x-rays. Next, Marie Curie found radium and polonium—the first two radioactive elements, while Ernest Rutherford gave us the mechanics of radioactive decay. In 1905, Albert Einstein’s Special Theory of Relativity suggested that a large amount of energy could be stored in a very small amount of matter. Twenty-seven years later Ernest Walton and John Cockcroft verified this suspicion and proved Democritus wrong. Turns out, the atom is divisible.¶ In 1935, Enrico Fermi and Leo Szilard leveraged this knowledge to build the Chicago Pile-1, the world’s first nuclear reactor. It went—and you’ve got to love this word—“critical” on December 2, 1942. (“Critical” refers to having the minimum amount of nuclear material necessary to create a sustained nuclear reaction.)¶ In 1951, an experiment in Idaho, dubbed EBR-1, became the first reactor to produce electricity. EBR-1 melted down in 1955—also another first—though not many people outside of Idaho noticed. Eisenhower’s 1953 “Atoms for Peace” speech and US Atomic Energy Commission Chairman Lewis Strauss’s promise of a nuclear future with electricity “too cheap to meter” had us dazzled. The nuclear age was upon us.¶ In 1956, Calder Hall, in Sellafield, England, started pumping out an annual 50 megawatts (MW) and the world had its first commercial nuclear power station. The following year, the US got reactors in Shippingport, Pennsylvania, and Santa Susana, California, and not coincidentally the Price-Anderson Act passed, limiting the financial risk of nuclear-plant owners in the event of a catastrophe.¶ 1957 marked the appearance of the International Atomic Energy Agency (IAEA), its 18 member countries committed to promoting the peaceful use of nuclear energy while curtailing the spread of nuclear weapons (and, um, good luck with that one, fellows). Many feel that the real future of the industry arrived on November 9, 1965, when a blackout left the Northeastern United States without electricity for about twelve hours. Add in the brownouts of the early 1970s and it’s no surprise that 1973 was a banner year for the industry: 41 new plants ordered and no end in sight. But then… “China Syndrome” is shorthand hyperbole for what happens when an American nuclear reactor melts down—it melts straight through to China. The disaster movie of the same name came out on March 16, 1979, twelve days before unit 2 at Pennsylvania’s Three Mile Island partially melted down; this wasn’t a winning combination. Not long after, when Mad magazine’s Alfred E. Newman posed in front of the cooling towers and said, “Yes, me worry,” he spoke for much of the country. In 1984, a Forbes magazine cover story called the nuclear industry “the largest managerial disaster in business history.” In 1986, Ukraine’s Chernobyl became a bigger disaster and, as Allan Winkler points out in his excellent book, Life under a Cloud: American Anxiety about the Atom, “Some Americans masked their concerns with black humor: ‘What’s the weather report from Kiev? Overcast and 10,000 degrees.’”¶ Popular wisdom holds that Three Mile Island slowed the industry down, while Chernobyl ground it to a halt, but nuclear experts feel that cost overruns were a much worse problem. In the end it didn’t matter. Dozens of new plants were cancelled. One became a coal factory. The last reactor to come online in the US was unit 1 of Tennessee Valley Authority’s Watts Bar. The original order was placed in 1973. It was completed in 1996. Construction on unit 2 was halted in 1988. No new plants have been ordered in the US in over thirty years. As far as most were concerned, that was the end of the story. Part Two: Atomic Phoenix Rising¶ This might have stayed the end of that story except, in the early 2000s, we started hearing a number of other tales. Global warming, peak oil, resource wars, a current species extinction rate 1000 times greater than ever before in history, to name a few. A year ago, Rajendra Pachuari, head of the UN Intergovernmental Panel on Climate Change, said: “If there’s no action before 2012, that’s too late. What we do in the next two to three years will determine the future.” And determining that future has put the nuclear option back on the table, a process well summed by Peter Schwartz and Spencer Reiss in a recent Wired magazine story: “Burning hydrocarbons is a luxury that a planet with six billion energy-hungry souls can’t afford. There is only one sane, practical alternative: nuclear power.”¶ Of course, back in 2001, when Dick Cheney’s energy task force reached similar conclusions, many dismissed those outright. By then, cases of cronyism were already dogging the Vice President and Bechtel, a company whose board of directors once included a significant portion of both Reagan and Bush Sr.’s cabinet and which had built more commercial nuclear plants than any other in the world. But after that task-force report, the VP got support from some strange places. Environmentalists like Whole Earth Catalog founder Stewart Brand, Gaia theorist James Lovelock, and early Greenpeace activist Patrick Moore (often, though mistakenly, referred to as a co-founder) all came out in favor of the technology.¶ In late 2007, Congress gave the nuclear industry $18.5 billion in loan guarantees for up to 80% of the cost of new units. The IAEA says there are 31 new nuclear power plants under construction in 13 different countries and even more promised. China has plans for 26. In the US, power companies are currently in the process of submitting applications for 30. All of this, experts say, might signal the end of our energy woes or may signal the end of the world. The problem is that no one is quite sure which. Disagreements are everywhere. Even something as seemingly straightforward as what happened at Three Mile Island remains in contention. In 2004, Patrick Moore wrote a now-famous article in the IAEA Bulletin entitled “Nuclear Re-think,” claiming: “Three Mile Island was a success story. The concrete containment structure did what it was designed to do: it prevented radiation from escaping into the environment.” Though, as Greenpeace Nuclear Analyst Jim Ricco points out, “It appears that Moore didn’t bother to check his facts. The US Nuclear Regulatory Commission’s (NRC) fact sheet acknowledges that the meltdown resulted in ‘a significant release of radiation (10 million curies according to the NRC).’ Even the IAEA, which published Moore’s article, acknowledges that the TMI meltdown released radiation into the surrounding community. As a result, they rank the accident as Level 5 on a scale of 7—an ‘Accident with Wider Consequences.’ Only Chernobyl and the Soviet nuclear-waste-tank explosion in 1957 rank worse.”¶ Among other things at stake in this debate are our fears about industry safety and security, and the boatload of regulations meant to allay those fears. Since the cost of licensing a new reactor in America is roughly $1 billion, “those regulations,” as pointed out by Heritage Foundation nuclear energy analyst Jack Spenser, “amount to an industry killer.” The debate is ongoing, but some believe it’s misdirected. “When most people argue about nuclear energy,” says Tom Blees, author of Prescription for the Planet: The Painless Remedy for Our Energy & Environmental Crisis, “they’re arguing about TMI and 1970s technology—which is about when the US nuclear industry ground to a halt. But research didn’t die off, just new construction. We’re two generations beyond that earlier tech and the changes have been massive.” In light of all this, the better question might be: What do we mean by safe?