# Round 2 vs. Cal Poly CK (Aff)

## 1AC

### Inherency

#### Observation One: Inherency

#### Obama pushing nuclear incentives now.

Pistilli 12 (Melissa, reporting on market-shaking news in the resource and mining investment sector with Resource Investing News since 2008, 10-11-12, “Nuclear Power Prominent in US Presidential Candidates’ Energy Policies” 10/11 <http://uraniuminvestingnews.com/12783/nuclear-power-united-states-energy-policies-romney-obama-election.html>)

The Obama administration’s energy policy supports the expansion of nuclear energy. Under Obama, the government’s 2012 budget allocated $36 billion in loan guarantees for new nuclear reactors and more than $800 million in loan guarantees for nuclear research, an IBISWorld report states. The research report also highlights Obama’s Clean Electricity Standard and its push for more electricity to be produced from zero-carbon sources. “These climate-change policies will lead to a boost in nuclear-energy production,” said IBISWorld. New nuclear reactors approved This year, the US approved construction of reactors for the first time in nearly 30 years; they are expected to come online by 2017. The Southern Company (NYSE:SO) won approval from the US Nuclear Regulatory Commission (NRC) to construct two new reactors at its Vogtle power plant near Waynesboro, Georgia. Currently, another 16 plants across the country have applied to the NRC to build 25 more reactors. Last month, the NRC issued a license that allows General Electric-Hitachi Global Laser Enrichment (GLE) to build and operate the first uranium enrichment plant with classified laser technology, a more cost-effective process than employing centrifuges. The plant “could provide a steady supply of uranium enriched right here in the US to the country’s nuclear reactors,” GLE CEO Chris Monetta said. The US Department of Energy (DOE) “has played a pivotal role in advancing a public-private cost-sharing program that supports the development of smaller reactors,” according to former Environmental Protection Agency administrator and former New Jersey Governor Christine Todd Whitman and Dr. Patrick More, co-founder and former leader of Greenpeace — current co-chairs of the Clean and Safe Energy Coalition. Where will waste go? However, the US nuclear revival has been held up by the fact that the country lacks a long-term plan for dealing with nuclear waste. Currently, most plants keep waste onsite in temporary storage pools, but that is only a short-term solution to a long-term problem. In June 2012, a federal appeals court ruled that the NRC has not provided “reasonable assurance” that it has a long-term waste-management solution — as a result, the NRC will not be approving any new projects for some time. The plan had been to move waste to a repository at Nevada’s Yucca Mountain. The US government has already signed contracts with several utilities, including Southern, for waste disposal at Yucca Mountain. The repository was supposed to open in 1998, but politics and legal issues stalled the project for years. Obama put the project on ice in 2010, appointing the Blue Ribbon Commission on America’s Nuclear Future to develop recommendations for creating a safe, long-term solution to nuclear waste management and storage. The Commission delivered its final report in January of this year, calling for the creation of a federal agency aimed at soliciting and evaluating voluntary proposals from states interested in hosting nuclear disposal areas. The idea is similar to what Romney proposed in October 2011 and would involve states offering disposal sites in exchange for monetary compensation. What next? The freeze on new reactor approvals hasn’t stopped the Obama administration from pushing forward on nuclear energy research and development. In late September, the US Department of Energy announced $13 million in funding for university-led nuclear innovation projects under the Nuclear Energy University Programs (NEUP). “The awards … build upon the Obama Administration’s broader efforts to promote a sustainable nuclear industry in the U.S. and cultivate the next generation of scientists and engineers,” the DOE press release states. The funding was awarded to research groups at the Georgia Institute of Technology, the University of Illinois at Urbana-Champaign and the University of Tennessee.

#### There’s global expansion of nuclear now – Fukushima and economics don’t matter.

Marketwire 12 (5/3/12, – Part of the Paragon Report on uranium ore stock future

<http://finance.yahoo.com/news/nuclear-renaissance-back-track-122000381.html>)

NEW YORK, NY--(Marketwire -05/03/12)- Last year the Fukushima disaster in Japan started a downward spiral for companies in the Uranium Industry. Approximately one year later the industry looks to be finally recovering as the Global X Uranium ETF (URA) is up nearly 12 percent year-to-date. "Fukushima put a speed bump on the road to the nuclear renaissance," Ganpat Mani, president of Converdyn, said at a nuclear industry summit. "It's not going to delay the programs around the world." The Paragon Report examines investing opportunities in the Uranium Industry and provides equity research on Cameco Corporation (CCJ - News) and Uranium One, Inc. (UUU.TO - News). Approximately 650 million people in China and India currently are living without electricity. With the high costs of fossil fuel the most viable options for these countries would be nuclear power. Indonesia, Egypt, and Chile are among some of the nations that have plans to build their first nuclear power station, the list of countries operating atomic plants currently stands at 30. According to numbers released by the World Nuclear Association there are 61 reactors that are presently under construction, and plans to build another 162. "In two years, there will be very strong demand on the market, as new reactors start operating, and as new contracts with the existing fleet kick in," Areva SA's Chief Commercial Officer Ruben Lazo said in a previous interview.

#### But, the US is not reversing course on reprocessing.

Saillan 10 (Charles, attorney with the New Mexico Environment Department, Harvard Environmental Law Review, 2010, “DISPOSAL OF SPENT NUCLEAR FUEL IN THE UNITED STATES AND EUROPE: A PERSISTENT ENVIRONMENTAL PROBLEM”, Vol. 34, RSR)

The U.S. government’s position on reprocessing changed in 1974 when India exploded a nuclear weapon in the state of Rajasthan. 150 The weapon’s plutonium was isolated with reprocessing equipment imported for “peaceful purposes.” 151 Rightly concerned about the dangers of nuclear proliferation, President Ford announced that the United States would no longer view reprocessing as a necessary step in the nuclear fuel cycle. He called on other nations to place a three-year moratorium on the export of reprocessing technology. 152 In 1977, President Carter indefinitely deferred domestic efforts at reprocessing and continued the export embargo. 153 Although President Reagan reversed the ban on domestic reprocessing in 1981, 154 the nuclear industry has not taken the opportunity to invest in the technology. In 2006, the George W. Bush Administration proposed a Global Nuclear Energy Partner ship (“GNEP”) for expanded worldwide nuclear power production. 155 As a key component of the GNEP proposal, the United States would provide other nations with a reliable supply of nuclear fuel, and it would take back the spent fuel for reprocessing at a commercial facility in the United States, thus avoiding the spread of reprocessing technology. 156 However, the Obama Administration substantially curtailed GNEP in 2009, and is “no longer pursuing domestic commercial reprocessing.” 157

### Observation 2

#### Observation Two: Waste

#### In the short term US nuclear waste is stored on-site.

Galbraith 11 (Kate, Staff Writer, “A New Urgency to the Problem of Storing Nuclear Waste”, New York Times, 11-27-11, http://www.nytimes.com/2011/11/28/business/energy-environment/a-new-urgency-to-the-problem-of-storing-nuclear-waste.html, RSR)

Other countries are also looking at waste in new ways in the post-Fukushima world. Right now, worldwide, most spent fuel waste is stored on the site of the facility that produced it, in spent-fuel pools and, after it eventually cools, dry casks. Experts say dispersed storage is expensive and that central storage would be more secure. Few countries , apart from Sweden and Finland, have moved forward on centralized disposal sites, deep in the earth, designed to hold the waste permanently. France is evaluating a permanent disposal site for spent fuel , near the remote northeastern village of Bure.

#### On-site storage is dangerous – storage pools are vulnerable to accidents.

Alvarez 12 (Robert, Senior Scholar at IPS, where he is currently focused on nuclear disarmament, environmental, and energy policies, “Improving Spent-Fuel Storage at Nuclear Reactors”, Winter, ISSUES IN SCIENCE AND TECHNOLOGY, RSR)

Until the NAS completes its study, if it agrees to do so, the bulk of current attention is focused on the NRC’s analysis of the Fukushima disaster. As in Japan, U.S. spent-fuel pools are not required to have defense-in-depth nuclear safety features. They are not covered by the types of heavy containment structures that cover reactor vessels. Reactor operators are not required have backup power supplies to circulate water in the pools and keep them cool in the event of onsite power failures. Reactor control rooms rarely have instrumentation keeping track of the pools’ water levels and chemistry. (In one incident at a U.S. reactor, water levels dropped to a potentially dangerous level after operators simply failed to look into the pool area.) Some reactors may not have the necessary capabilities to restore water to pools when needed. Quite simply, spent-fuel pools at nuclear reactors are not required to have the same level of nuclear safety protection as required for reactors, because the assumption was that they would be used only for short-term storage before the rods were removed for reprocessing or permanent storage. In its interim report, the NRC task force recognized these shortcomings and recommended that the NRC order reactor operators to: • “. . . provide sufficient safety-related instrumentation, able to withstand design-basis natural phenomena, to monitor key spent fuel pool parameters (i.e., water level, temperature, and area radiation levels) from the control room.” • “. . . revise their technical specifications to address requirements to have one train of onsite emergency electrical power operable for spent fuel pool makeup and spent fuel pool instrumentation when there is irradiated fuel in the spent fuel pool, regardless of the operational mode of the reactor.” • “. . . have an installed seismically qualified means to spray water into the spent fuel pools, including an easily accessible connection to supply the water (e.g., using a portable pump or pumper truck) at grade outside the building.” Improving pool safety is certainly important. For decades, nuclear safety research has consistently pointed out that severe accidents could occur at spent-fuel pools that would result in catastrophic consequences. A severe pool fire could render about 188 square miles around the nuclear reactor uninhabitable, cause as many as 28,000 cancer fatalities, and cause $59 billion in damage, according to a 1997 report for the NRC by Brookhaven National Laboratory. If the fuel were exposed to air and steam, the zirconium cladding around the fuel would react exothermically, catching fire at about 800 degrees Celsius. Particularly worrisome are the large amounts of cesium-137 in spent-fuel pools, because nearly all of this dangerous isotope would be released into the environment in a fire, according to the NRC. Although it is too early to know the full extent of long-term land contamination from the accident at the Dai-Ichi station, fragmentary evidence has been reported of high cesium-137 levels as far away as metropolitan Tokyo. The NRC also has reported that spent-fuel fragments were found a mile away from the reactor site. The damage from a large release of fission products, particularly cesium-137, was demonstrated at Chernobyl. More than 100,000 residents from 187 settlements were permanently evacuated because of contamination by cesium-137. The total area of this radiation-control zone is huge: more than 6,000 square miles, equal to roughly two-thirds the area of New Jersey. During the following decade, the population of this area declined by almost half because of migration to areas of lower contamination.

#### The densely packed fuel is enough to trigger a full scaled meltdown – Fukushima proves.

Kinitisch 11 (Eli, Reporter at Science Magazine, “Waste Panel Expected To Back Interim Storage”, Science Magazine, Vol. 333, 7-8-11, RSR)

In any case, experts agree, some new plan for waste storage is essential. Waste currently stored in pools and casks at U.S. sites does not pose “unmanageable … safety or security risks,” says a subcommittee report. But every ton that stays at reactor sites makes those risks slightly greater. Fuel in U.S. spent fuel pools is packed four times as densely as it was 25 years ago, raising concerns about the risk of explosions or meltdown if the pools were to empty in an accident. The tsunami that devastated the Fukushima nuclear plant in Japan in March may have resulted in a loss of water in one of its ponds (Science, 1 April, p. 24). A draft commission report says the issue of the safety of keeping fuel densely packed in pools should be “reexamined,” although “it is still too early to draw deﬁ nitive conclusions” from the Fukushima accident. It calls for an expert panel at the National Academies to tackle the subject.

#### These catastrophic meltdowns cause extinction – reactors contain 100x the radiation of nuclear bombs.

Lendman 11 (Stephen, Research Associate of the Centre for Research on Globalization,

03/ 13, “Nuclear Meltdown in Japan,”, The People’s Voice <http://www.thepeoplesvoice.org/TPV3/Voices.php/2011/03/13/nuclear-meltdown-in-japan>, accessed 8-2-12, RSR)

Reuters said the 1995 Kobe quake caused $100 billion in damage, up to then the most costly ever natural disaster. This time, from quake and tsunami damage alone, that figure will be dwarfed. Moreover, **under a worst case** core **meltdown, all bets are off as the entire region and beyond will be threatened with permanent contamination**, making the most affected areas unsafe to live in. On March 12, Stratfor Global Intelligence issued a "Red Alert: Nuclear Meltdown at Quake-Damaged Japanese Plant," saying: Fukushima Daiichi "nuclear power plant in Okuma, Japan, appears to have caused a reactor meltdown." Stratfor downplayed its seriousness, adding that such an event "does not necessarily mean a nuclear disaster," that already may have happened - the ultimate nightmare short of nuclear winter. According to Stratfor, "(A)s long as the reactor core, which is specifically designed to contain high levels of heat, pressure and radiation, remains intact, the melted fuel can be dealt with. If the (core's) breached but the containment facility built around (it) remains intact, the melted fuel can be....entombed within specialized concrete" as at Chernobyl in 1986. In fact, that disaster killed nearly one million people worldwide from nuclear radiation exposure. In their book titled, "Chernobyl: Consequences of the Catastrophe for People and the Environment," Alexey Yablokov, Vassily Nesterenko and Alexey Nesterenko said: "For the past 23 years, it has been clear that there is a danger greater than nuclear weapons concealed within nuclear power. **Emissions from** this **one reactor** exceeded a hundred**-fold the radioactive contamination of** the bombs dropped on **Hiroshima and Nagasaki.**" "**No** citizen of any **country** can be assured that he or she **can be protected from radioactive contamination. One nuclear reactor can pollute half the globe.** Chernobyl fallout covers the entire Northern Hemisphere." Stratfor explained that if Fukushima's floor cracked, "it is highly likely that the melting fuel will burn through (its) containment system and enter the ground. This has never happened before," at least not reported. If now occurring, "containment goes from being merely dangerous, time consuming and expensive to nearly impossible," making the quake, aftershocks, and tsunamis seem mild by comparison. Potentially, millions of lives will be jeopardized. Japanese officials said Fukushima's reactor container wasn't breached. Stratfor and others said it was, making the potential calamity far worse than reported. Japan's Nuclear and Industrial Safety Agency (NISA) said the explosion at Fukushima's Saiichi No. 1 facility could only have been caused by a core meltdown. In fact, 3 or more reactors are affected or at risk. Events are fluid and developing, but remain very serious. The possibility of an extreme catastrophe can't be discounted. Moreover, independent nuclear safety analyst John Large told Al Jazeera that by venting radioactive steam from the inner reactor to the outer dome, a reaction may have occurred, causing the explosion. "When I look at the size of the explosion," he said, "it is my opinion that there could be a very large leak (because) fuel continues to generate heat." Already, Fukushima way exceeds Three Mile Island that experienced a partial core meltdown in Unit 2. Finally it was brought under control, but coverup and denial concealed full details until much later. According to anti-nuclear activist Harvey Wasserman, Japan's quake fallout may cause nuclear disaster, saying: "This is a very serious situation. **If the cooling system fails** (apparently it has at two or more plants), the super-heated **radioactive fuel rods will melt**, and (if so) you could conceivably have an explosion," that, in fact, occurred. As a result, **massive radiation releases may follow**, impacting the entire region. "**It could be**, literally, **an apocalyptic event.**

#### In the long term, waste will be stored at Yucca – only option.

Tollefson 11 (Jeff, former Knight fellow in science journalism at MIT, “Battle of Yucca Mountain rages on”, Nature, Vol. 473, No. 266, 5-19-11, RSR)

The commission intends to issue a draft report in July and a final one next January. With its recommendations in hand, the administration is expected to propose legislation that would establish a new process for identifying nuclear waste storage sites. Yet such a process could well take decades, the GAO report concludes, and the government’s reversal at Yucca Mountain could serve to galvanize public opposition at other candidate sites. Since the debate began, “no states have expressed an interest in hosting a permanent repository for this spent nuclear fuel ... including the states with sites currently storing the waste”, the report adds. The commission’s scheme for an interim storage facility may prove no more appealing, given fears that ‘interim’ means permanent as long as the present impasse continues. Such fears have in the past halted interim storage proposals in states such as Wyoming. And even if one community decides that it is willing to play host to the waste, that doesn’t mean others won’t challenge nuclear-waste transportation routes. Nevertheless, the nation will need to find a permanent repository at some point, and Yucca Mountain, it seems, is down but not out. “Yucca Mountain has nine lives,” says Ed Davis, a nuclear consultant who heads the Pegasus Group in Washington DC. “And nobody knows how many lives have been used up.”

#### Yucca explosion is likely - earthquakes, volcanoes, and ground water

Warrick 98 (Joby, Staff, At Nevada Nuclear Waste Site, The Issue Is One of Liquidity; Studies Citing Risk of Water Seepage Imperil Yucca Mountain Project, The Washington Post, December 15, p. A3)

More recent studies raised different kinds of concerns. A report in March by the California Institute of Technology found new evidence of geological instability in the region, including relatively rapid shifting of the Earth's crust near the mountain. The movement raises the probability of future earthquakes or volcanic eruptions.¶ And last week, a Russian geologist claimed that hot water from deep underground had flooded the mountain at least once in the geologically recent past. Yuri V. Dublyansky, of the Siberian branch of the Russian Academy of Sciences, said flooding could happen again, with potentially calamitous results.¶ "We can be reasonably sure that Yucca Mountain was at some point in the past saturated with water. The crucial question is when," said Dublyansky, who obtained rock samples from inside the mountain while working for Nevada state officials who hope to defeat the project. "Any decision on whether Yucca Mountain should be a repository for nuclear waste should be preceded by a resolution of that question."¶ The evidence of past flooding comes from crystals of calcite and other minerals that were formed when the mountain was already old, said Dublyansky, now a research fellow for the Maryland-based Institute for Energy and Environmental Research. Microscopic bubbles inside the rocks, known as "fluid inclusions," prove that the crystals were formed in the presence of hot water -- which could only have come from underground thermal springs, Dublyansky said.¶ At his request, the findings were reviewed by independent scientists from Austria, Great Britain and Nevada -- all of whom backed his basic conclusions. But U.S. government scientists ridiculed Dublyansky's research as unscholarly. "We are disturbed," said Joe Whelan of the U.S. Geological Survey in a written critique, "by Dr. Dublyansky's shrewd and nonscientific arguments that seem to be crafted for readers unfamiliar with the specific Yucca Mountain geologic relations."¶ Szymanski, the former Energy Department geologist, also had argued that a thermal upwelling had occurred at Yucca Mountain and sees the new evidence as vindication. He thinks a combination of water and the red-hot temperatures of the nuclear waste casks could spark an explosion that could spew lethal doses of radiation into the atmosphere.¶ "This is direct evidence," Szymanski said. "And if anybody doubts the results, they can go back and measure them again. They're very easy to verify."

#### Yucca explosion results in extinction – top geologists agree.

Broad 90 (William, NYT Staff, The New York Times, November 18)

One scientist, however, has quietly but persistently warned that this vision of a safe repository is little more than a delusion.¶ Jerry S. Szymanski (pronounced sha-MAN-ski) is a geologist who works on the Yucca Mountain project for the United States Department of Energy, which is in charge of evaluating the site and would run the repository. For years, he has argued that ground water under the mountain could eventually well up, flood the facility and prompt a calamity of vast proportions. The geological action is easy to visualize. Crustal stresses in the area slowly open fractures and faults under and within the mountain. Water seeps into them. An earthquake occurs, compressing the fractures and forcing the ground water upward into the dump. As the inrushing water comes into contact with the hot canisters of nuclear waste, the water is vaporized, threatening to cause explosions, ruptures and the release of radioactivity.¶ Szymanski has worked for the D.O.E. since 1983. He takes pains to distance himself from foes of nuclear power. "This report is not the act of a disgruntled employee or an antinuclear freak," he wrote in the preface of a study he made on Yucca Mountain. "Rather, it is the act of a deeply concerned scientist, a public servant and a pro-nuclear activist."¶ He chain-smokes Winstons and drinks Scotch, neither of which seems to impair his ability to take brisk hikes up the mountain with his dog Max, a fierce-looking but friendly creature that is half Labrador, half pit bull. Szymanski's eyes flash when he speaks of those who oppose his view of the evidence. "It's banality of thought," he growls, "absence of depth." That same kind of banality, he says, was responsible for the Holocaust, around which his earliest memories revolve, and for a brutal crackdown in his native Poland, which prompted him to flee that country two decades ago with his wife and 6-month-old son. Today, he says, banality is prompting the Federal Government to court disaster.¶ Squinting in the bright Nevada sunlight, a cigarette firmly in his mouth, Szymanski walks into Trench No. 8, a deep scar on the side of Yucca Mountain dug at the behest of the Energy Department. It runs across a fault. He bends down to examine a one-yard-wide vein of rock whose creamy color stands in contrast to the dark, surrounding earth tones. His fingers play over its surface. The vein was deposited, he says, by mineral-laden water that welled up and turned this desolate site into an oasis.¶ "This is above the repository level," he says with studied understatement. The implication is clear and troubling -- where water once flowed, it might flow again.¶ The repository would hold up to 70,000 metric tons of waste. A large release would have an environmental impact that, by some estimates, would exceed that of a nuclear war. For perspective, the explosion of the Chernobyl reactor in the Soviet Union shot into the atmosphere just a few dozen pounds of highly radioactive nuclear waste, one of the most dangerous components of which was cesium 137 (it would also be a significant part of the waste at Yucca Mountain). Various studies say the consequences of Chernobyl will eventually be somewhere between 17,000 and 475,000 deaths from cancer, as well as an alarming number of serious ailments.¶ For half a decade, Szymanski's was a lone voice. His grim appraisal was opposed by almost everyone else on the Yucca Mountain project, who let their displeasure be known in subtle and not-so-subtle ways. But recently, growing ranks of geologists have backed his view. The dispute is by no means resolved.¶ If Szymanski is right and his warnings are heeded, it could mark the end of the Yucca Mountain project. The retreat would be a stunning setback for the Government and the nuclear-power industry, which is poised for a revival. If he is right and his warnings go unheeded, some experts say it might be the beginning of the ultimate end.¶ "You flood that thing and you could blow the top off the mountain," says Charles B. Archambeau, a geophysicist at the University of Colorado who has reviewed Szymanski's work and found it persuasive. "At the very least, the radioactive material would go into the ground water and spread to Death Valley, where there are hot springs all over the place, constantly bringing water up from great depths. It would be picked up by the birds, the animals, the plant life. It would start creeping out of Death Valley. You couldn't stop it. That's the nightmare. It could slowly spread to the whole biosphere. If you want to envision the end of the world, that's it."

#### Resistance to waste storage in Yucca Mountain is specifically crucial to challenge nuclear colonialism.

Endres, Associate Professor in Communication @ Utah, 2009 [Danielle, “The Rhetoric of Nuclear Colonialism: Rhetorical Exclusion of American Indian Arguments in the Yucca Mountain Nuclear Waste Siting Decision,” Communication and Critical/Cultural Studies, Vol. 6, No. 1, March 2009].

Now, with over 60 years of uranium mining, nuclear weapons production and¶ nuclear power, we face a high-level nuclear waste crisis. Once again, power brokers¶ have looked to exploit American Indian lands, resources and peoples. In the twenty-year¶ process of researching and authorizing a federal high-level nuclear waste¶ repository site, only sites on American Indian land were seriously considered. In¶ addition to the Yucca Mountain site, American Indian nations were also targeted for¶ temporary waste storage through the now-defunct Monitored Retrievable Storage¶ (MRS) program.17 And recently, a proposal by Private Fuel Storage (PFS) and the¶ Skull Valley Goshutes to temporarily store nuclear waste at Skull Valley Goshute¶ reservation was defeated by Skull Valley activists working with the State of Utah¶ against the Skull Valley government and PFS.18 The struggle over the Yucca Mountain¶ nuclear waste site is, as Kuletz pointed out, a continuation of struggles against nuclear¶ colonialism: ‘‘Indian protests over the use of Yucca Mountain as a high-level nuclear-waste¶ dump cannot be seen as an anomaly. Rather, they are a part of a persistent¶ pattern of resistance to military occupation and nuclear activity.’’19 Although we do¶ not yet know the health and environmental effects of permanent nuclear waste¶ storage, nuclear colonialism is not just about health and environmental devastation.¶ It also intersects with sovereignty, nuclearism and colonialism, to which I now turn.

#### Challenging nuclear colonialism is crucial to ending exploitation of Natives

Endres, Associate Professor in Communication @ Utah, 2009 [Danielle, “The Rhetoric of Nuclear Colonialism: Rhetorical Exclusion of American Indian Arguments in the Yucca Mountain Nuclear Waste Siting Decision,” Communication and Critical/Cultural Studies, Vol. 6, No. 1, March 2009, p. 43-44]

The present form of colonialism in the US is what Al Gedicks has called resource¶ colonialism, whereby ‘‘native peoples are under assault on every continent because¶ their lands contain a wide variety of valuable resources needed for industrial¶ development.’’24 As described by Marjene Ambler, the US government works in¶ collusion with large national and multinational corporations to facilitate leases and¶ access to indigenous resources that benefit the government and corporations to the¶ detriment of indigenous communities.25 Resource colonialism depends on ignoring¶ the land ownership rights of the colonized. As such, it also relies on the country’s¶ legal and political system to limit the rights of the colonized, specifically drawing on¶ both the domestic dependent relationship and the trust relationship that holds¶ American Indian lands and monies in ‘‘trust’’ through the Bureau of Indian Affairs.26¶ As American Indian Studies scholar Sharon O’Brien states, ‘‘today’s ‘Indian wars’ are¶ being fought in corporate boardrooms and law offices as tribes endeavor to protect¶ and control their remaining resources.’’27 Resource colonialism is a reality for many¶ tribes in the US, especially those with oil, gas, coal and uranium reserves. In the¶ American West, the Western Shoshone, Navajo, Southern Ute, Paiute and Laguna¶ nations possess a wealth of natural resources including uranium ore and vast desert¶ ‘‘wastelands’’ for nuclear waste storage. Historian Gabrielle Hecht noted that ‘‘the¶ history of uranium mining . . . shows that colonial practices and structures were¶ appropriated\*not overthrown\*by the nuclear age, and proved central to its¶ technopolitical success.’’28 Nuclear colonialism is a tale of resource colonialism.

#### Reprocessing would remove the waste problem – the waste we currently store can be reused

Bastin 8 (Clinton, Former Chemical Engineer at the Atomic Energy Commission, 21st Century Science and Technology, “We Need to Reprocess Spent Nuclear Fuel, And Can Do It Safely, At Reasonable Cost”, 2008, [http://www.21stcenturysciencetech.com/Articles%202008/ Summer\_2008/Reprocessing.pdf](http://www.21stcenturysciencetech.com/Articles%202008/Summer_2008/Reprocessing.pdf), RSR)

The concept of used nuclear fuel as “nuclear waste” is a fiction created by the opponents of nuclear energy. Used nuclear fuel isn’t waste at all, but a renewable resource that can be reprocessed into new nuclear fuel and valuable isotopes. When we entered the nuclear age, the great promise of nuclear energy wasitsrenewability, making it an inexpensive and efficient way to produce electricity. It was assumed that the nations making use of nuclear energy would reprocess their spent fuel, completing the nuclear fuel cycle by recycling the nuclear fuel after it was burned in a reactor, to extract the 95 to 99 percent of unused uranium in it that can be turned into new fuel. This means that if the United States buries its 70,000 metric tons of spent nuclear fuel, we would be wasting 66,000 metric tons of uranium-28, which could be used to make new fuel. In addition, we would be wasting about 1,200 metric tons of fissile uranium-25 and plutonium-29, which can also be burned as fuel. Because of the high energy density in the nucleus, this relatively small amount of U.S. spent fuel (it would fit in one small house) is equivalent in energy to about 20 percent of the U.S. oil reserves. About 96 percent of the spent fuel the United States is now storing can be turned into new fuel. The 4 percent of the socalled waste that remains—2,500 metric tons—consists of highly radioactive materials, but these are also usable. There are about 80 tons each of cesium-17 and strontium-90 that could be separated out for use in medical applications, such as sterilization of medical supplies. Using isotope separation techniques, and fast-neutron bombardment for transmutation (technologies that the United States pioneered but now refuses to develop), we could separate out all sorts of isotopes, like americium, which is used in smoke detectors, or isotopes used in medical testing and treatment. Right now, the United Statesmust import 90 percent of its medical isotopes, used in 40,000 medical procedures daily. The diagram shows a closed nuclear fuel cycle. At present, the United States has no reprocessing, and stores spent fuel in pools or dry storage at nuclear plants. Existing nuclear reactors use only about 1 percent of the total energy value in uranium resources; fast reactors with fuel recycle would use essentially 100 percent, burning up all of the uranium and actinides, the long-lived fission products. In a properly managed and safeguarded system, the plutonium produced in fast reactors would remain in its spent fuel until needed for recycle.Thus, there need be no excess buildup of accessible plutonium. The plutonium could also be fabricated directly into new reactor fuel assemblies to be burned in nuclear plants.

#### Reprocessing solves the storage of waste in Yucca Mountain.

Broad 95 (William, NYT staff, Scientists fear atomic explosion of buried waste, The New York Times, March 5, p. 1)

Dr. Bowman says the explosion thesis is alive and well. On Friday he finished an 11-page draft paper thick with graphs and equations that lays it out in new detail.¶ The team criticisms, he said in an interview, repeatedly fall flat. For instance, dispersal could happen relatively quickly, especially if water percolated through the dump. Even if slow, plutonium 239 decays into uranium 235, which harbors the same explosive risks but requires millions of years to decay into less dangerous elements.¶ So too with the other criticisms, he says. Water could aid the slowing of neutrons and make sure the reaction went forward rather than automatically slowing down. And a pile could explode, he insists, while conceding that the blast from a single one might have a force of a few hundred tons of high explosive rather than the thousand or more originally envisioned.¶ On the other hand, his new paper says plutonium in amounts as small as one kilogram, or 2.2 pounds, could be dangerous.¶ "We got some helpful criticism and that, combined with additional work, has made our thesis even stronger," he said.¶ The most basic solution, Dr. Bowman said, would be removing all fissionable material from nuclear waste in a process known as reprocessing or by transmuting it in his proposed accelerator. Other possible steps would include making steel canisters smaller and spreading them out over larger areas in underground galleries -- expensive steps in a project already expected to cost $15 billion or more.¶ A different precaution, Dr. Bowman said, would be to abandon the Yucca site, where the volcanic ground is relatively soluble. Instead, the deep repository might be dug in granite, where migration of materials would be slower and more difficult.

### Observation 3

#### Observation Three: Warming

#### Warming is real and anthropogenic – carbon dioxide increase, polar ice records, melting glaciers, sea level rise all prove.

Prothero 12 (Donald, Lecturer in Geobiology at Cal Tech and Professor of Geology at Occidental College, 3-1-12, “How We Know Global Warming is Real and Human Caused," Skeptic, vol 17 no 2, EBSCO)

Converging Lines of Evidence¶ How do we know that global warming is real and primarily human caused? There are numerous lines of evidence that converge toward this conclusion.¶ 1. Carbon Dioxide Increase.¶ Carbon dioxide in our atmosphere has increased at an unprecedented rate in the past 200 years. Not one data set collected over a long enough span of time shows otherwise. Mann et al. (1999) compiled the past 900 years' worth of temperature data from tree rings, ice cores, corals, and direct measurements in the past few centuries, and the sudden increase of temperature of the past century stands out like a sore thumb. This famous graph is now known as the "hockey stick" because it is long and straight through most of its length, then bends sharply upward at the end like the blade of a hockey stick. Other graphs show that climate was very stable within a narrow range of variation through the past 1000, 2000, or even 10,000 years since the end of the last Ice Age. There were minor warming events during the Climatic Optimum about 7000 years ago, the Medieval Warm Period, and the slight cooling of the Little Ice Age in die 1700s and 1800s. But the magnitude and rapidity of the warming represented by the last 200 years is simply unmatched in all of human history. More revealing, die timing of this warming coincides with the Industrial Revolution, when humans first began massive deforestation and released carbon dioxide into the atmosphere by burning an unprecedented amount of coal, gas, and oil.¶ 2. Melting Polar Ice Caps.¶ The polar icecaps are thinning and breaking up at an alarming rate. In 2000, my former graduate advisor Malcolm McKenna was one of the first humans to fly over the North Pole in summer time and see no ice, just open water. The Arctic ice cap has been frozen solid for at least the past 3 million years (and maybe longer),4 but now the entire ice sheet is breaking up so fast that by 2030 (and possibly sooner) less than half of the Arctic will be ice covered in the summer.5 As one can see from watching the news, this is an ecological disaster for everything that lives up there, from the polar bears to the seals and walruses to the animals they feed upon, to the 4 million people whose world is melting beneath their feet. The Antarctic is thawing even faster. In February-March 2002, the Larsen B ice shelf - over 3000 square km (the size of Rhode Island) and 220 m (700 feet) thick- broke up in just a few months, a story typical of nearly all the ice shelves in Antarctica. The Larsen B shelf had survived all the previous ice ages and interglacial warming episodes over the past 3 million years, and even the warmest periods of the last 10,000 years- yet it and nearly all the other thick ice sheets on the Arctic, Greenland, and Antarctic are vanishing at a rate never before seen in geologic history.¶ 3. Melting Glaciers.¶ Glaciers are all retreating at the highest rates ever documented. Many of those glaciers, along with snow melt, especially in the Himalayas, Andes, Alps, and Sierras, provide most of the freshwater that the populations below the mountains depend upon - yet this fresh water supply is vanishing. Just think about the percentage of world's population in southern Asia (especially India) that depend on Himalayan snowmelt for their fresh water. The implications are staggering. The permafrost that once remained solidly frozen even in the summer has now Üiawed, damaging the Inuit villages on the Arctic coast and threatening all our pipelines to die North Slope of Alaska. This is catastrophic not only for life on the permafrost, but as it thaws, the permafrost releases huge amounts of greenhouse gases which are one of the major contributors to global warming. Not only is the ice vanishing, but we have seen record heat waves over and over again, killing thousands of people, as each year joins the list of the hottest years on record. (2010 just topped that list as the hottest year, surpassing the previous record in 2009, and we shall know about 2011 soon enough). Natural animal and plant populations are being devastated all over the globe as their environments change.6 Many animals respond by moving their ranges to formerly cold climates, so now places that once did not have to worry about disease-bearing mosquitoes are infested as the climate warms and allows them to breed further north.¶ 4. Sea Level Rise.¶ All that melted ice eventually ends up in the ocean, causing sea levels to rise, as it has many times in the geologic past. At present, the sea level is rising about 3-4 mm per year, more than ten times the rate of 0.10.2 mm/year that has occurred over the past 3000 years. Geological data show Üiat ttie sea level was virtually unchanged over the past 10,000 years since the present interglacial began. A few mm here or there doesn't impress people, until you consider that the rate is accelerating and that most scientists predict sea levels will rise 80-130 cm in just the next century. A sea level rise of 1.3 m (almost 4 feet) would drown many of the world's low-elevation cities, such as Venice and New Orleans, and low-lying countries such as the Netherlands or Bangladesh. A number of tiny island nations such as Vanuatu and the Maldives, which barely poke out above the ocean now, are already vanishing beneath the waves. Eventually their entire population will have to move someplace else.7 Even a small sea level rise might not drown all these areas, but they are much more vulnerable to the large waves of a storm surge (as happened with Hurricane Katrina), which could do much more damage than sea level rise alone. If sea level rose by 6 m (20 feet), most of die world's coastal plains and low-lying areas (such as the Louisiana bayous, Florida, and most of the world's river deltas) would be drowned.¶ Most of the world's population lives in lowelevation coastal cities such as New York, Boston, Philadelphia, Baltimore, Washington, D.C., Miami, and Shanghai. All of those cities would be partially or completely under water with such a sea level rise. If all the glacial ice caps melted completely (as they have several times before during past greenhouse episodes in the geologic past), sea level would rise by 65 m (215 feet)! The entire Mississippi Valley would flood, so you could dock an ocean liner in Cairo, Illinois. Such a sea level rise would drown nearly every coastal region under hundreds of feet of water, and inundate New York City, London and Paris. All that would remain would be the tall landmarks such as the Empire State Building, Big Ben, and the Eiffel Tower. You could tie your boats to these pinnacles, but the rest of these drowned cities would lie deep underwater.

#### We must act quickly with long term technological innovation to avoid the irreversible climate change triggered by 2°C.

Peters, et al. 12(Glen (Center for International Climate and Environmental Research – Oslo); Robbie Andrew (Center for International Climate and Environmental Research – Oslo); Tom Boden (Carbon Dioxide Information Analysis Center (CDIAC), Oak Ridge National Laboratory); Josep Canadell (Global Carbon Project, CSIRO Marine and Atmospheric Research, Canberra, Australia); Philippe Ciais (Laboratoire des Sciences du Climat et de l’Environnement, Gif sur Yvette, France); Corinne Le Quéré (Tyndall Centre for Climate Change Research, University of East Anglia, Norwich, UK); Gregg Marland (Research Institute for Environment, Energy, and Economics, Appalachian State University); Michael R. Raupach (Global Carbon Project, CSIRO Marine and Atmospheric Research, Canberra, Australia); and Charlie Wilson (Tyndall Centre for Climate Change Research, University of East Anglia, Norwich, UK), “The challenge to keep global warming below 2 °C”, Nature Climate Change, 12-2-12, RSR)

It is important to regularly re-assess the relevance of emissions scenarios in light of changing global circumstances3,8. In the past, decadal trends in CO2 emissions have responded slowly to changes in the underlying emission drivers because of inertia and path dependence in technical, social and political systems9. Inertia and path dependence are unlikely to be affected by short-term fluctuations2,3,9 — such as financial crises10 — and it is probable that emissions will continue to rise for a period even after global mitigation has started11. Thermal inertia and vertical mixing in the ocean, also delay the temperature response to CO2 emissions12. Because of inertia, path dependence and changing global circumstances, there is value in comparing observed decadal emission trends with emission scenarios to help inform the prospect of different futures being realized, explore the feasibility of desired changes in the current emission trajectory and help to identify whether new scenarios may be needed. Global CO2 emissions have increased from 6.1±0.3 Pg C in 1990 to 9.5±0.5 Pg C in 2011 (3% over 2010), with average annual growth rates of 1.9% per year in the 1980s, 1.0% per year in the 1990s, and 3.1% per year since 2000. We estimate that emissions in 2012 will be 9.7±0.5 Pg C or 2.6% above 2011 (range of 1.9–3.5%) and 58% greater than 1990 (Supplementary Information and ref. 13). The observed growth rates are at the top end of all four generations of emissions scenarios (Figs 1 and 2). Of the previous illustrative IPCC scenarios, only IS92-E, IS92-F and SRES A1B exceed the observed emissions (Fig. 1) or their rates of growth (Fig. 2), with RCP8.5 lower but within uncertainty bounds of observed emissions. Observed emission trends are in line with SA90-A, IS92-E and IS92-F, SRES A1FI, A1B and A2, and RCP8.5 (Fig. 2). The SRES scenarios A1FI and A2 and RCP8.5 lead to the highest temperature projections among the scenarios, with a mean temperature increase of 4.2–5.0 °C in 2100 (range of 3.5–6.2 °C)14, whereas the SRES A1B scenario has decreasing emissions after 2050 leading to a lower temperature increase of 3.5 °C (range 2.9–4.4°C)14. Earlier research has noted that observed emissions have tracked the upper SRES scenarios15,16 and Fig. 1 confirms this for all four scenario generations. This indicates that the space of possible pathways could be extended above the top-end scenarios to accommodate the possibility of even higher emission rates in the future. The new RCPs are particularly relevant because, in contrast to the earlier scenarios, mitigation efforts consistent with longterm policy objectives are included among the pathways2,. RCP3-PD (peak and decline in concentration) leads to a mean temperature increase of 1.5 °C in 2100 (range of 1.3–1.9 °C)14. RCP3–PD requires net negative emissions (for example, bioenergy with carbon capture and storage) from 2070, but some scenarios suggest it is possible to stay below 2 °C without negative emissions17–19. RCP4.5 and RCP6 — which lie between RCP3–PD and RCP8.5 in the longer term — lead to a mean temperature increase of 2.4 °C (range of 1.0–3.0 °C) and 3.0 °C (range of 2.6–3.7 °C) in 2100, respectively14. For RCP4.5, RCP6 and RCP8.5, temperatures will continue to increase after 2100 due to on-going emissions14 and inertia in the climate system12. Current emissions are tracking slightly above RCP8.5, and given the growing gap between the other RCPs (Fig. 1), significant emission reductions are needed by 2020 to keep 2 °C as a feasible goal18–20. To follow an emission trend that can keep the temperature increase below 2 °C (RCP3-PD) requires sustained global CO2 mitigation rates of around 3% per year, if global emissions peak before 202011,19. A delay in starting mitigation activities will lead to higher mitigation rates11, higher costs21,22, and the target of remaining below 2 °C may become unfeasible18,20. If participation is low, then higher rates of mitigation are needed in individual countries, and this may even increase mitigation costs for all countries22. Many of these rates assume that negative emissions will be possible and affordable later this century11,17,18,20. Reliance on negative emissions has high risks because of potential delays or failure in the development and large-scale deployment of emerging technologies such as carbon capture and storage, particularly those connected to bioenergy17,18. Although current emissions are tracking the higher scenarios, it is still possible to transition towards pathways consistent with keeping temperatures below 2 °C (refs 17,19,20). The historical record shows that some countries have reduced CO2 emissions over 10-year periods, through a combination of (non-climate) policy intervention and economic adjustments to changing resource availability. The oil crisis of 1973 led to new policies on energy supply and energy savings, which produced a decrease in the share of fossil fuels (oil shifted to nuclear) in the energy supply of Belgium, France and Sweden, with emission reductions of 4–5% per year sustained over 10 or more years (Supplementary Figs S17–19). A continuous shift to natural gas — partially substituting coal and oil — led to sustained mitigation rates of 1–2% per year in the UK in the 1970s and again in the 2000s, 2% per year in Denmark in the 1990–2000s, and 1.4% per year since 2005 in the USA (Supplementary Figs S10–12). These examples highlight the practical feasibility of emission reductions through fuel substitution and efficiency improvements, but additional factors such as carbon leakage23 need to be considered. These types of emission reduction can help initiate a transition towards trajectories consistent with keeping temperatures below 2 °C, but further mitigation measures are needed to complete and sustain the reductions. Similar energy transitions could be encouraged and co-ordinated across countries in the next 10 years using available technologies19, but well-targeted technological innovations24 are required to sustain the mitigation rates for longer periods17. To move below the RCP8.5 scenario — avoiding the worst climate impacts — requires early action17,18,21 and sustained mitigation from the largest emitters22 such as China, the United States, the European Union and India. These four regions together account for over half of global CO2 emissions, and have strong and centralized governing bodies capable of co-ordinating such actions. If similar energy transitions are repeated over many decades in a broader range of developed and emerging economies, the current emission trend could be pulled down to make RCP3‑PD, RCP4.5 and RCP6 all feasible futures. A shift to a pathway with the highest likelihood to remain below 2 °C above preindustrial levels (for example, RCP3-PD), requires high levels of technological, social and political innovations, and an increasing need to rely on net negative emissions in the future11,17,18. The timing of mitigation efforts needs to account for delayed responses in both CO2 emissions9 (because of inertia in technical, social and political systems) and also in global temperature12 (because of inertia in the climate system). Unless large and concerted global mitigation efforts are initiated soon, the goal of remaining below 2 °C will very soon become unachievable.

#### Despite CO2 fertilization, massive rise of temperature due to warming causes food shortages —the result is extinction.

Strom 7 (Robert, Professor Emeritus of planetary sciences in the Department of Planetary Sciences at the University of Arizona, studied climate change for 15 years, the former Director of the Space Imagery Center, a NASA Regional Planetary Image Facility, “Hot House”, SpringerLink, p. 211-216)

THE future consequences of global warming are the least known aspect of the problem. They are based on highly complex computer models that rely on inputs that are sometimes not well known or factors that may be completely unforeseen. Most models assume certain scenarios concerning the rise in greenhouse gases. Some assume that we continue to release them at the current rate of increase while others assume that we curtail greenhouse gas release to one degree or another. Furthermore, we are in completely unknown territory. The current greenhouse gas content of the atmosphere has not been as high in at least the past 650,000 years, and the rise in temperature has not been as rapid since civilization began some 10,000 years ago. What lies ahead for us is not completely understood, but it certainly will not be good, and it could be catastrophic. We know that relatively minor climatic events have had strong adverse effects on humanity, and some of these were mentioned in previous chapters. A recent example is the strong El Nin~o event of 1997-1998 that caused weather damage around the world totaling $100 billion: major flooding events in China, massive fires in Borneo and the Amazon jungle, and extreme drought in Mexico and Central America. That event was nothing compared to what lies in store for us in the future if we do nothing to curb global warming. We currently face the greatest threat to humanity since civilization began. This is the crucial, central question, but it is very difficult to answer (Mastrandea and Schneider, 2004). An even more important question is: "At what temperature and environmental conditions is a threshold crossed that leads to an abrupt and catastrophic climate change?'' It is not possible to answer that question now, but we must be aware that in our ignorance it could happen in the not too distant future. At least the question of a critical temperature is possible to estimate from studies in the current science literature. This has been done by the Potsdam Institute for Climate Impact Research, Germany's leading climate change research institute (Hare, 2005). According to this study, global warming impacts multiply and accelerate rapidly as the average global temperature rises. We are certainly beginning to see that now. According to the study, as the average global temperature anomaly rises to 1 °C within the next 25 years (it is already 0.6'C in the Northern Hemisphere), some specialized ecosystems become very stressed, and in some developing countries food production will begin a serious decline, water shortage problems will worsen, and there will be net losses in the gross domestic product (GDP). At least one study finds that because of the time lags between changes in radiative forcing we are in for a 1 °C increase before equilibrating even if the radiative forcing is fixed at today's level (Wetherald et al., 2001). It is apparently when the temperature anomaly reaches 2 °C that serious effects will start to come rapidly and with brute force (International Climate Change Taskforce, 2005). At the current rate of increase this is expected to happen sometime in the middle of this century. At that point there is nothing to do but try to adapt to the changes. Besides the loss of animal and plant species and the rapid exacerbation of our present problems, there are likely to be large numbers of hungry, diseased and starving people, and at least 1.5 billion people facing severe water shortages. GDP losses will be significant and the spread of diseases will be widespread (see below). We are only about 30 years away from the 440 ppm CO2 level where the eventual 2'C global average temperature is probable. When the temperature reaches 3 'C above today's level, the effects appear to become absolutely critical. At the current rate of greenhouse gas emission, that point is expected to be reached in the second half of the century. For example, it is expected that the Amazon rainforest will become irreversibly damaged leading to its collapse, and that the complete destruction of coral reefs will be widespread. As these things are already happening, this picture may be optimistic. As for humans, there will be widespread hunger and starvation with up to 5.5 billion people living in regions with large crop losses and another 3 billion people with serious water shortages. If the Amazon rainforest collapses due to severe drought it would result in decreased uptake of CO2 from the soil and vegetation of about 270 billion tons, resulting in an enormous increase in the atmospheric level of CO2. This, of course, would lead to even hotter temperatures with catastrophic results for civilization. A Regional Climate Change Index has been established that estimates the impact of global warming on various regions of the world (Giorgi, 2006). The index is based on four variables that include changes in surface temperature and precipitation in 2080-2099 compared to the period 1960-1979. All regions of the world are affected significantly, but some regions are much more vulnerable than others. The biggest impacts occur in the Mediterranean and northeastern European regions, followed by high-latitude Northern Hemisphere regions and Central America. Central America is the most affected tropical region followed by southern equatorial Africa and southeast Asia. Other prominent mid-latitude regions very vulnerable to global warming are eastern North America and central Asia. It is entirely obvious that we must start curtailing greenhouse gas emissions now, not 5 or 10 or 20 years from now. Keeping the global average temperature anomaly under 2'C will not be easy according to a recent report (Scientific Expert Group Report on Climate Change, 2007). It will require a rapid worldwide reduction in methane, and global CO2 emissions must level off to a concentration not much greater than the present amount by about 2020. Emissions would then have to decline to about a third of that level by 2100. Delaying action will only insure a grim future for our children and grandchildren. If the current generation does not drastically reduce its greenhouse gas emission, then, unfortunately, our grandchildren will get what we deserve. There are three consequences that have not been discussed in previous chapters but could have devastating impacts on humans: food production, health, and the economy. In a sense, all of these topics are interrelated, because they affect each other. Food Production Agriculture is critical to the survival of civilization. Crops feed not only us but also the domestic animals we use for food. Any disruption in food production means a disruption of the economy, government, and health. The increase in CO2 will result in some growth of crops, and rising temperatures will open new areas to crop production at higher latitudes and over longer growing seasons; however, the overall result will be decreased crop production in most parts of the world. A 1993 study of the effects of a doubling of CO2 (550 ppm) above pre-industrial levels shows that there will be substantial decreases in the world food supply (Rosenzweig et al., 1993). In their research they studied the effects of global warming on four crops (wheat, rice, protein feed, and coarse grain) using four scenarios involving various adaptations of crops to temperature change and CO2 abundance. They found that the amount of world food reduction ranged from 1 to 27%. However, the optimistic value of 1% is almost certainly much too low, because it assumed that the amount of degradation would be offset by more growth from "CO2 fertilization." We now know that this is not the case, as explained below and in Chapter 7. The most probable value is a worldwide food reduction between 16 and 27%. These scenarios are based on temperature and CO2 rises that may be too low, as discussed in Chapter 7. However, even a decrease in world food production of 16% would lead to large-scale starvation in many regions of the world. Large-scale experiments called Free-Air Concentration Enrichment have shown that the effects of higher CO2 levels on crop growth is about 50% less than experiments in enclosure studies (Long et al., 2006). This shows that the projections that conclude that rising CO2 will fully offset the losses due to higher temperatures are wrong. The downside of climate change will far outweigh the benefits of increased CO2 and longer growing seasons. One researcher (Prof. Long) from the University of Illinois put it this way: Growing crops much closer to real conditions has shown that increased levels of carbon dioxide in the atmosphere will have roughly half the beneficial effects previously hoped for in the event of climate change. In addition, ground-level ozone, which is also predicted to rise but has not been extensively studied before, has been shown to result in a loss of photosynthesis and 20 per cent reduction in crop yield. Both these results show that we need to seriously re-examine our predictions for future global food production, as they are likely to be far lower than previously estimated. Also, studies in Britain and Denmark show that only a few days of hot temperatures can severely reduce the yield of major food crops such as wheat, soy beans, rice, and groundnuts if they coincide with the flowering of these crops. This suggests that there are certain thresholds above which crops become very vulnerable to climate change. The European heat wave in the summer of 2003 provided a large-scale experiment on the behavior of crops to increased temperatures. Scientists from several European research institutes and universities found that the growth of plants during the heat wave was reduced by nearly a third (Ciais et al., 2005). In Italy, the growth of corn dropped by about 36% while oak and pine had a growth reduction of 30%. In the affected areas of the mid- west and California the summer heat wave of 2006 resulted in a 35% loss of crops, and in California a 15% decline in dairy production due to the heat-caused death of dairy cattle. It has been projected that a 2 °C rise in local temperature will result in a $92 million loss to agriculture in the Yakima Valley of Washington due to the reduction of the snow pack. A 4'C increase will result in a loss of about $163 million. For the first time, the world's grain harvests have fallen below the consumption level for the past four years according to the Earth Policy Institute (Brown, 2003). Furthermore, the shortfall in grain production increased each year, from 16 million tons in 2000 to 93 million tons in 2003. These studies were done in industrialized nations where agricultural practices are the best in the world. In developing nations the impact will be much more severe. It is here that the impact of global warming on crops and domestic animals will be most felt. In general, the world's most crucial staple food crops could fall by as much as one-third because of resistance to flowering and setting of seeds due to rising temperatures. Crop ecologists believe that many crops grown in the tropics are near, or at, their thermal limits. Already research in the Philippines has linked higher night-time temperatures to a reduction in rice yield. It is estimated that for rice, wheat, and corn, the grain yields are likely to decline by 10% for every local 1 °C increase in temperature. With a decreasing availability of food, malnutrition will become more frequent accompanied by damage to the immune system. This will result in a greater susceptibility to spreading diseases. For an extreme rise in global temperature (> 6 'C), it is likely that worldwide crop failures will lead to mass starvation, and political and economic chaos with all their ramifications for civilization.

#### Only allowing for reprocessing allows for nuclear power to transition to a carbon free economy fast enough to avoid catastrophic warming – best modeling flows aff.

Chakravorty et al. 12 (Ujjayant (Professor and Canada Research Chair, Alberta School of Business and Department of Economics); Bertrand Magne (OECD Environment Directorate, Paris, France); Michel Moreaux (Emeritus Professor and IDEI Researcher, Toulouse School of Economics, University of Toulouse), “RESOURCE USE UNDER CLIMATE STABILIZATION: CAN NUCLEAR POWER PROVIDE CLEAN ENERGY?”, Journal of Public Economic Theory, Vol. 14, Issue 2, 2012, RSR)

This paper applies a model with price-induced substitution across resources to examine the role of nuclear power in achieving a climate stabilization target, such as that advocated by the Intergovernmental Panel on Climate Change (IPCC). It asks an important policy question: is nuclear power a viable carbon-free energy source for the future? If so, then at what cost? The main insight is that nuclear power can help us switch quickly to carbon free energy, and if historical growth rates of nuclear capacity are preserved, the costs of reaching climate stabilization goals decline signiﬁcantly and may therefore be at the lower end of cost estimates that are reported by many studies. However, it is also clear from our results that nuclear is economical anyway, even without environmental regulation. Regulation only plays a major part when fast breeders are available and that too, in the somewhat distant future, towards the end of the century. To some extent, recent increases in efﬁciency in U.S. nuclear power attest to its economic advantages, even in a market with no environmental regulation (Davis and Wolfram 2011). The climate goal of 550 ppm of carbon can be achieved at a surplus cost of about 800 billion dollars, or about 1.3% of current world GDP, if no nuclear expansion is undertaken. Achieving this goal using nuclear power will result in a tripling of the share of world nuclear electricity generation by mid century with welfare gains of about half a trillion dollars (in discounted terms). The cost of providing energy will decrease by about $1.3 trillion or 2% of current world GDP, compared to the case in which the level of nuclear generation is frozen. These estimates of cost savings from nuclear power are signiﬁcant, and unlike in previous studies, are derived from an economic model with an explicit nuclear fuel cycle. However, nuclear power can be cost-effective for about 50 years or so, beyond which period, other technologies are likely to take over, including renewables, clean coal and next generation nuclear technologies that are much more efﬁcient in recycling waste materials. Ultimately, large-scale adoption of nuclear power will be hindered by the rising cost of uranium and the problem of waste disposal. Only signiﬁcant new developments such as the availability of new generation nuclear technology that is able to recycle nuclear waste may lead to a steady state where nuclear energy plays an important role. 31

#### US leadership on nuclear reprocessing leads to a spillover of the technology internationally.

Acton 9 (James, J. associate in the Nonproliferation Program at the Carnegie Endowment for International Peace, Survival, Vol. 51, No. 4, “Nuclear Power, Disarmament and Technological Restraint”, RSR)

Thus, not only does reprocessing clearly not help with facilitating take back, but if advanced nuclear states adopt it as a tool for waste management, it will be virtually impossible for them to argue against others doing likewise. Today, waste management is probably the most important driver for reprocessing. Indeed, the Bush administration’s interest in this technology was born out of a desire to stretch the capacity of Yucca Mountain as far as possible. If the United States and others reprocess they will hand a powerful argument to lobbies within a state – typically the nuclear R&D community – that support the development of reprocessing.

### Plan Text

#### Thus the plan: The United States Federal Government should provide a twenty-percent investment tax credit for the deployment of domestic nuclear fuel recycling.

### Solvency

#### Observation Four: Solvency

#### Tax incentives would solve for reprocessing – makes it commercially more desirable

Lagus 5 (Todd, 2005 WISE Intern, University of Minnesota, WISE, “Reprocessing of Spent Nuclear Fuel: A Policy Analysis” <http://www.wise-intern.org/journal/2005/lagus.pdf>, RSR)

The economic analysis shows that the reprocessing or even the once through nuclear cycle is not yet economically desirable to investors. However, changes in government policies, including environmental regulations already mentioned and economic policies, could improve the competitiveness of both technologies. The University of Chicago nuclear power study analyzes the effects of government involvement in the future of the once through cycle using several different forms of support: loan guarantees, accelerated depreciation, and investment tax credits. Loan guarantees in this case refer to the obligation of the government to repay part of the loan should a utility company not be able to repay. The 2005 Energy Bill, which passed in July 2005, would make advanced nuclear power plants eligible for federal loan guarantees and provide a tax credit for nuclear power production. This would lessen the risks associated with capital costs for investors, and according to the Chicago study, reduce the LCOE for a nuclear reactor by 4 mills/kWh to 6 mills/kWh. The next financial subject, accelerated depreciation, refers to the ability of an investor to utilize the investment tax deductions early on in the lifetime of the payment rather than receive the same deduction each year in a linear fashion. Accelerated depreciation helps investors absorb capital costs, which for nuclear power generation are large. The University of Chicago study calculates a reduction in the LCOE for a 7 year depreciation policy of 3 mills/kWh to 4 mills/kWh. Tax incentives for nuclear power production are the final policies that could make nuclear power and reprocessing more desirable. An investment tax credit of 10 percent would create an LCOE reduction between 6 mills/kWh and 8 mills/kWh, while a 20 percent credit could create cost reductions between 9 mills/kWh and 13 mills/kWh. 39 Production tax credits on a per kWh basis may also be used. Since reprocessing and the once through cycle are not appreciably different for the price, it is sufficient to assume 12 that similar effects for all three of these government policies would occur with policies applied to reprocessing. While it is no secret that monetary incentives would help the nuclear reprocessing investments, there is still the question of whether or not the government should provide economic support to the industry. As with any government funding, it is politically important not to be viewed by other energy generation industries, i.e. gas and coal, as favoring nuclear power over other sources. Given the recent concerns for global warming, tax incentives and loan guarantees for nuclear technologies seem like a realistic option especially in the absence of emission regulations. Accelerated depreciation also is an unobtrusive option that could help the industry by easing capital costs.

#### Government investment key – necessary to mitigate risks from government regulations.

Selyukh 10 (Alina, Staff Writer, “Nuclear waste issue could be solved, if...”, 8-17-10, Reuters,

<http://www.reuters.com/article/2010/08/17/us-nuclear-waste-recycling-idUSTRE67G0NM20100817>, RSR)

Since the U.S. agency declared spent fuel reprocessing too costly, U.S. research into new technologies has slowed. President George W. Bush offered federal backing for nuclear waste management alternatives, but over the years the policy has meandered and had few incentives to lure companies, said Steven Kraft, senior director of used-fuel management at the Nuclear Energy Institute, the industry's trade organization. Being able to burn through rather inexpensive uranium to produce energy, companies are wary of investing millions into recycling technology that may go against the national policy. Still, industry support for the ideas is strong, if not for the procedure itself then for allowing the market -- not the government -- to determine its cost-effectiveness and fate. Duke Energy, which operates seven nuclear plants, would support nuclear recycling if there was a cost-effective national policy, spokeswoman Rita Sipe said. GE Hitachi has proposed a new generation of fast reactors that, they say, could return to the grid up to 99 percent of energy contained in the uranium, compared to recovering 2 or 3 percent from a common light water reactor. But they want federal support for more research and, ultimately, commercialization of the technology, said chief consulting engineer Erik Loewen. That support, in essence, would have to come in a form of subsidies such as cost sharing or loan guarantees, said Jack Spencer, nuclear energy policy research fellow at the Heritage Foundation think tank. "What the industry needs... is something to mitigate government-imposed risks," he said of the regulatory regime.

#### **Reprocessing acknowledges and deals with the secondary costs to waste. It causes a mindset shift away from status quo consumption.**

Rawles, Lecturer at the University of Edinburgh, 2k

[Richard, “Coyote Learns to Glow”, Part of “Learning to Glow: A Nuclear Reader”, RSR]

Humans, having gathered uranium from the New Mexican desert not all that far from Yucca Mountain, have harnessed the energy within the atom, for commercial and security purposes, in effect by “tricking" nature out of its secret power. We are aided in our industry by this supposedly "free” energy source. As Martin Heidegger observed, we regard the natural world as a “standing reserve:’ there for the plundering-the military metaphor is more than apt in this case. Having stolen from nature its hidden fire, we delude ourselves into believing that there’s no reckoning, no balancing of accounts, despite even the scientific evidence, which tells us there are no free meals in nature’s unforgiving cycles. We are burdened by the waste from this virtual cornucopia, much as the Greeks of the early classical period projected into Pandora's box of woes the burdens of civilizing fire—its destructive aspects, along with the rituals needed to maintain the fire.

#### Government investment necessary – provides appropriate risk mitigation and shortens the timeframe for completion.

IAEA 8 (International Atomic Energy Agency, “Spent Fuel Reprocessing Options”, August 2008, RSR)

With the expected high costs and significant risks involved in constructing new nuclear facilities, e.g., reprocessing facilities, the impact of various ownership options need to be considered. These options include government funding, regulated funding, private funding, and combinations of public and private funding. These different funding approaches may significantly impact the costs of fuel cycle services. Given the very long time frames associated with building reprocessing facilities, there exist risks other than technological or economic, which need to be dealt with. These include evolving government policy, public and political acceptance, and licensing risks. As a result, private investors are unlikely to provide capital unless the initial high risks factors are mitigated through appropriate risk sharing agreements (e.g., loan guarantees, equity protection plans, tax credits, etc.) with government entities.

## 2AC

### Case

#### They say Yucca’s not long term – NIMBY attitudes and political pressure prevents the feasibility of other options. Empirically proven with proposals in Wyoming. That’s Tollefson.

#### Yucca Mountain will survive in the long term – politically bipartisan.

Kasperowicz, Staff Writer, ‘12

[Pete, The Hill, 5-31-12, “House members slam Obama on closing Yucca Mountain nuclear waste site”,

<http://thehill.com/blogs/floor-action/house/230397-house-members-slam-obama-on-yucca-mountain-policy>, RSR]

Republicans and Democrats in the House slammed the Obama administration's plan to close the nuclear waste disposal site at Yucca Mountain in Nevada, as both praised a bill that would keep that site open, and indicated they would try to add more money to keep the site active. Members were debating the Energy and Water Development and Related Agencies Appropriations Act late Thursday. The bill, H.R. 5325, includes $25 million for Yucca Mountain, which Rep. Rodney Frelinghuysen (R-N.J.) said would keep the site useable in the future. "Research and development activities to support Yucca are permitted," he said. "This will ensure that we keep Congress in the driver's seat for nuclear waste policy." House Appropriations Committee ranking member Norm Dicks (D-Wash.) added that he supports that language, and would try to add more money to send a signal that Congress opposes efforts to close the site. "I want to applaud the chairman and ranking member for continuing the funding for the Yucca Mountain nuclear waste storage facility," Dicks said. He said adding money in an amendment would "underscore the strong bipartisan support in the House for moving ahead with a plan to open the nation's high-level waste storage facility." "I believe as many do in the House that administration's position to close the Yucca Mountain site runs counter to the letter and spirit of the Nuclear Waste Policy Act passed by the Congress," he said.

#### Terrorists can’t reprocess, and no state would transfer it.

Rizer, Adjunct Professor of Law at Georgetown University’s Law Center, ‘11

[Arthur, prosecutor with the United States Department of Justice, Criminal Division, “The National Security Threat of Energy Dependence: A Call for a Nuclear Renaissance”, Harvard National Security Journal, Vol. 2, 2011]

The primary concern with nuclear proliferation is the scenario in which a terrorist organization acquires nuclear material. 254 However, it is widely agreed that enriching uranium or reprocessing plutonium is outside the capabilities of even the most sophisticated terrorist organization. 255 Thus, Michael Levi, in his book On Nuclear Terrorism, argues that the answer is not preventing nuclear material from being made, but from preventing terrorists from acquiring it, through better security and surveillance. 256 Indeed, according to Levi, no nuclear capable nation “would ever want to allow terrorists access to a bomb or to the materials needed to make one. A more contentious debate exists over what Pakistan and North Korea might do with their arsenals, but many believe that they would not part with them either.” 257 Therefore, through protection, control, and accounting of nuclear material, the possibility of terrorists gaining nuclear material from a peaceful power reactor could be minimized. 258

#### They don’t read an impact to nuclear terrorism.

### Free Market CP

#### Perm do both.

#### Can’t solve the aff.

#### Tax incentives are the only way to make it economically feasible for adoption. Leads to reductions of 13 million dollar per kilowatt hour. That’s Lagus.

#### Doesn’t solve the aff – absent the plan, companies would be vary of going against NATIONAL policy because it could kill the industry. That’s Selyukh 10.

#### Government investment necessary - provides appropriate risk mitigation and shortens the timeframe for completion. That’s IAEA.

#### CP can’t solve – federal investment is necessary to remove the perceptual ban on reprocessing.

Adams, ‘8

[Rod, “What Do You Do About the Waste? Recycle and Reuse”, Clean Technica, 5-29-2008,

<http://cleantechnica.com/2008/05/29/what-do-you-do-about-the-waste-recycle-and-reuse/>, RSR]

The US used to have a plan to recycle our fuel as well, but a great deal of marketing and pressure by people that do not like the idea of using plutonium as a source of commercial heat resulted in President Ford issuing a presidential order to temporarily halt nuclear fuel recycling in 1976. President Carter, a man who claimed to be a nuclear engineer, made that ban permanent in the hopes that forcing US companies to avoid fuel recycling would cause others to abandon the very logical idea. That effort did not work as planned, but the people who had invested large amounts of time and money into building three recycling plants in the US only to have them shut down with the stroke of a pen decided “once bitten, twice shy.” Though President Reagan removed the ban, President Clinton essentially reinstated it and no commercial company has been willing to build a facility and risk having it turn into a white elephant after an election.

#### Fed key – needs to send the market signal.

Duarte ‘11

[Gary J , “US Nuclear Energy Foundation A little of our opinion about nuclear fuel reprocessing”, U.S. Nuclear Energy Foundation, 10-12-2011, http://usnuclearenergy.org/REPROCESSING.htm]

To begin with **the massive upfront costs** related to the nuclear energy industry **and** exhaustive **regulation systems** that are **applied by** U. S. agencies to nuclear power plants are responsible for making them the safest large volume 24/7 365 energy producers on the planet. At the same time, we have been trying for 30 years to make renewable sources cost effective and this challenge continues. We have not educated the public throughout the world that nuclear energy “economics” must be “projected” at 60 to 100 years of “operation” as these are what the plants are designed for. Now, these are not “estimates” we have thirty years of nuclear plant track records and zero public fatalities in the U. S. This is unprecedented in ANY other base load power generation method on the planet. The long and short of the reprocessing assessment, since President Reagan “lifted” the U. S. ban on commercial reprocessing of spent nuclear fuels in 1981 has always been the economics (some still believe it is banned, it’s not). A commercial reprocessing facility with the capacity to complete between 800 and 1,000 metric tons annually may cost 10 billion dollars to build in China’s “economics” but 30 billion to build in the U. S. economics. For the past 30 years nearly all of the indecisiveness related to a U. S. reprocessing direction has been the difficulty in facing the economics. Also, over these years, technology has advanced several new and/or different methods for reprocessing, basically introducing yet another decision dilemma. This is why such intense projects have to be decided by the “science community” because the “political community” changes every four-eight years and the capacity to focus is lost. In essence, the DOE and NRC have failed to enlighten Congress and the American public to the scientific need and economic commitment to make reprocessing a “national initiative”; this is what needs to be done. Its costs can only be justified if the program is “painted” as a 100 year mission. Remember, many of us are convinced that America still needs another 150 new nuclear plants to serve our future energy growth and be “energy cost competitive” worldwide. And still, these added plants will also need 6% FINAL deep geologic storage. Then there are those who say that Thorium fuels, pebble bed reactors, etc. will eliminate everything in today’s nuclear waste cycle. Some of our “reality” friends will say many of these are STILL laboratory projects and we will get there in time . . . but we need to START builds based on “TODAY’S functioning technology” over the next twenty years then see wshere the lab projects are at that time. These same “technology advances” will be occurring with solar and wind, biomass, etc. We must drive these technologies scientifically, but build today’s projects economically. “If” we were to consider a full scale reprocessing facility; estimates are about 12,000 jobs, including 1,000 design jobs during the construction and about 2,500 permanent jobs for decades of operation. A project of this magnitude has the potential to evoke a substantial economic impact on any community and create up to 70,000 jobs overall. Based on the current costs of natural uranium fuel, the “potential value” of the current U. S. stockpile of 66,000 metric tons of commercial reactor spent nuclear fuel would be; $130,000 X 66,000 tons = 8,580,000,000 (8 billion 580 million dollars). We looked at the values of two different opinions, to determine an estimated value of 7 to 11 billion dollars with its reprocessed cost price competitive to natural uranium fuel costs after enrichment. And, as one can see, our current stockpile is only 1/3 the cost for the facility. Now, as we mentioned above, as we build 150 new plants those 6% waste additions will amortize our 30 billion dollar reprocessing facility over 60 – 100 years, fully amortize its cost and generate revenue. (Maybe even be foolish enough to offer “our reprocessing services” to other countries for income and American jobs). With the “experience” of negative U. S. political interests in a strong nuclear build and reprocessing, NO private company or investors are going to risk building such a facility until they see the full “long term” support of the politics and public policy in America as a “national initiative”. This is the single largest deterrent to “commercial scale” reprocessing in the U. S. The science and engineering is accomplished, proven and functional. This entire dialogue that America has studied for 30 years is a fundamental reason that “We the People” must speak up and “separate science from politics” and allow technology to advance the sciences we need to benefit our lives and as a nation be “energy economically competitive”. Science and engineering understand the U. S. need for expanding our nuclear fleet but the government does not, putting most of its attention on (still expensive) renewable energy with only a few waving the nuclear flag. No matter what administration is at the helm, government MUST re-affirm our need for nuclear expansion. Again here, it needs to be a “national initiative”. Nuclear should be re-classified as “green” and allotted government commitment. The nuclear industry has been wrongly battered by government and the environmental movements for years. It needs government to offer the industry 30 – 50% investment tax credits or working loan guarantees for all who build carbon free baseload power, or a tax holiday for the first ten years of operation of carbon free facilities. These incentives would be available to wind, solar and nuclear development. We must raise the success potential for such projects which have been unfairly brutalized in the past.

#### Plan sends the key signal to jumpstart cooperation with Russia—they’ll say yes.

Rojansky, deputy director Russia and Eurasia Program at Carnegie, ‘10

[Matthew, “As New START Debate Rages, Quiet Nuclear Progress With Russia”, U.S. News and World Report, 12-9-2010,

http://www.usnews.com/opinion/articles/2010/12/09/as-new-start-debate-rages-quiet-nuclear-progress-with-russia]

Beyond benefiting relations, cooperation on peaceful nuclear energy makes financial sense. The United States and Russia have invested substantially in civilian nuclear research and development, and both share basic interests in capitalizing on the global "nuclear energy renaissance" by developing proliferation-resistant reactor technologies, increasing environmental safety, and making nuclear energy more economically competitive. And when it comes to civil nuclear power, Russia brings a lot to the table. For instance, the United States does not operate so-called "fast breeder" reactors and reprocessing facilities that don't produce nuclear waste that can be used for weapons, but Russia does. And, while the United States hasn't built a single new n uclear power plant since 1973, Russia opened its first fast breeder reactor that very year and plans to bring 26 new nuclear facilities online before 2030. And the Kremlin has already allocated some $3.6 billion for research on fast breeders and other projects under a program dedicated to the next generation of nuclear technology. With U.S. support, Russia has developed a sophisticated infrastructure to securely store spent nuclear fuel—and Moscow even offered to store and reprocess spent fuel from the United States, while no American state has been willing to do the same. Russian companies already supply roughly half of the uranium consumed in U.S. and European power plants and will need to supply more in the future as the United States is only able to produce a fifth—at most—of its nuclear fuel stock domestically. Fortunately, Russia's nuclear industry is interested in expanding its uranium enrichment and reprocessing activity in the U.S. market and potentially cooperating with American firms, including GE and Westinghouse, on bids for contracts in other countries. Closer U.S.-Russia cooperation on nuclear power means better nuclear security. As a major player in civil nuclear markets worldwide, Russia has a unique window into potential risks and opportunities to insist on measures that protect sensitive sites and technologies. Russia, with U.S. support, also has the chance to compete more effectively with China's nuclear industry, which is less scrupulous in its nonproliferation commitments. The importance of partnering with Russia was made clear during Secretary Clinton's recent trip to Central Asia. Belarus, the former Soviet republic, agreed to give up its stock of highly enriched uranium by 2012 in return for U.S. help in developing a new nuclear power reactor. But Russia has had its eye on this potentially lucrative project, and has the right experience to work effectively with Belarus's Soviet-era infrastructure. Washington should cooperate—instead of compete—with Moscow to build an environmentally safe, proliferation-proof reactor in Belarus. A quarter century after the Chernobyl disaster, this would be a powerful symbol that both sides can move beyond the Cold War legacy.

#### Effective relations solve nuclear war

Lukyanov ’11

(Fyodor, editor-in-chief of Russia in Global Politics magazine, “Nuclear destruction remains the basis of relations”, The Telegraph, 1-5-2011, http://www.telegraph.co.uk/sponsored/russianow/opinion/8241050/Nuclear-destruction-remains-the-basis-of-Russia-US-relations.html)

When President Dmitry Medvedev warned in his latest state-of-the-nation address that a new arms race could begin in the next decade, the hall erupted in applause. No wonder. For many of the Russian senators in the audience, that term calls to mind their younger years, something pleasant in and of itself. Added to which many people on both sides of the Atlantic, it seems, sorely miss those “good old days” when everything was clear: two worlds, two systems, and explicit rules of the game.¶ One finds oneself thinking of the advantages of a systemic confrontation, given the political and legal free-for-all into which the planet has been sinking ever since.¶ But reminiscences aside, what did the president mean? And we should consider that Prime Minister Vladimir Putin also said in his recent interview with Larry King that an arms race would lead not only to the failure of the anti-missile defence shield but also to the non-ratification of Start II. The latter is doubtful: that agreement is not of such calibre. But as for the anti-missile defences, Moscow’s logic is understandable.¶ The question remains: can Russia and the US break the vicious circle of mutual nuclear containment, or will this type of relationship, frankly absurd today, be preserved in future?¶ Whatever Moscow and Washington do, the material and technological basis of their relations remains not simply restraint, but Mutually Assured Destruction. Another use for the vast arsenals they amassed up to the late Eighties simply does not exist. No international problem requires such a quantity of nuclear charges and missiles. The political logic of that period has long since lost its force; the whole world has changed. But you can’t argue with weapons: the logic of arsenals still dictates, no matter how often Russia and the United States reiterate that they no longer see each other as adversaries.¶ A quick liquidation of stockpiles will not be achieved. First of all, strategic nuclear forces are mainly political weapons and a matter of status. No one will simply give these up. This is especially true of Russia, which no longer has any other features of a superpower. And, judging by discussions underway in Washington, idealists there are being squeezed on all sides, too.¶ Second, one needs at the very least a qualitatively different level of trust between Russia and the United States; the first shoots that appeared during the “reset” may very soon be trampled.¶ And finally, the time when these two giants set the tone in the nuclear sphere has long since past. Proliferation goes on, quietly. China’s nuclear arsenal, though only a fraction of Russia’s and America’s, is becoming an increasingly important factor in that country’s growing influence. Neither Washington nor Moscow can allow the other to be in the same “league” with Beijing because then the counterweights to its influence would be even less.¶ Nevertheless, the needlessness of assured destruction is obvious, and this situation must be somehow overcome. The only way is a gradual rapprochement in the strategic sphere which will make the nuclear containment of Russia and the United States an anachronism. And for this, joint work on anti-missile defences would be ideal. If this is undertaken in earnest, sooner or later it will become apparent that missiles aimed at each other are patently absurd given that the “adversaries” are building a joint shield. This is a long, hard road, the success of which, though not guaranteed, is none the less possible. Especially when one realises the real threats facing both countries in the 21st century.¶ On the other hand, it’s obvious what will happen if, in the sphere of anti-missile defence, nothing comes together and they each go their own way. In that case, the old type of relations will inevitably recur since that same nuclear rubicon will be preserved. An American missile defence system would be built against any other country possessing missile potential, including, of course, Russia – even if Russia were not the main object. Moscow would then automatically begin searching for ways of overcoming that anti-missile shield.¶ No one will abolish mutual nuclear deterrence as the basis of balance so long as the two nuclear superpowers are not engaged in a common cause. All of this goes beyond the bounds of rational argument, but the burden of arsenals aimed at one another will continue to return us to the confrontation of 30 years ago, even if in a farcical form.¶ One must not forget that all this is a game of nerves. These gigantic arsenals are inapplicable; the anti-missile system is virtual since most likely it will never be created. The paradox is that the political effect of the idea of an anti-missile shield is more than real since it touches the heart of the problem of strategic stability.¶ To imagine an arms race of the classic kind that existed in the latter half of the 20th century is impossible. The entire developed world is too concerned with budget deficits and national debt: in reality these problems represent a far greater threat to stability than do any classic threats. True, in that situation nuclear weapons regain the significance they seemed to be losing. Meanwhile, Nato’s just-published strategic conception clearly states that nuclear weapons, primarily American, are that alliance’s supreme guarantee of security. So say goodbye to a non-nuclear world. And in the United States, where only recently there was talk of investing in hi-tech conventional weapons of a new generation, cost estimates now show that preserving the nuclear component would be cheaper.¶ Be that as it may, anti-missile defence represents a fork in the road: one way leads to a new system of relations between Russia and the United States, with both sides ceasing to view the other as a strategic threat; the other leads back to a model of the Cold War – albeit a wittingly senseless one.

### Picking Winners DA

#### Picking winners is the SQUO. Policy is specifically tilted against reprocessing due to the perceptual ban on it via government policy. That’s 1AC Selyukh and Saillan.

#### CA ev from CP that fed policy is key to get private capital on board. That’s Adams.

#### Already government investment in nuclear, meaning it’s inevitable. Pistilli.

#### Picking winners good --- enhances growth.

Blattman, Assistant Professor of Political Science and International and Public Affairs at Colombia, ‘12

[Chris, “"The Case for industrial policy (a paper and a rant)", May 7, chrisblattman.com/2012/05/07/the-case-for-industrial-policy-a-paper-and-a-rant/?utm\_source=feedburner&utm\_medium=feed&utm\_campaign=Feed%3A+chrisblattman+%28Chris+Blattman%29]

A new paper, where some very good economists look at data from Chinese medium and large firms:¶ …sectoral policy aimed at targeting production activities to one particular sector, can enhance growth and efficiency if it made competition-friendly.¶ …if subsidies are allocated to competitive sectors… and allocated in such a way as to preserve or increase competition, then the net impacts of subsidies, tax holidays, and tariffs on total factor productivity levels or growth become positive and significant.¶ “You can’t pick winners” is the knee-jerk retort to the mention of anything that even rhymes with industrial policy. I would call it the triumph of ideology over evidence, except that even “ideology” feels like a generous term. Lazy thinking might be a more accurate description. Some have given the question a great deal of thought, but most have not.¶ I’m not suggesting that the paper above has the right answer (odds are, like most papers, it does not). I’m also not suggesting that governments can pick winners (probably they can’t). Nor am I forgetting that industrial policy is easily politicized and distorted (as surely it is). So what am I talking about?¶ I’ll make two claims. The first: industrialization is the most important and essential process of development. Everything from lower poverty, reduced inequality, and tax bases to support education and health and welfare systems will (and must) spring from high value-added production. Anything policymakers can do to hasten the process will have unparalleled benefits. The problem? We have little to no idea how to do that. And many of the tools in the current policy tool box are deeply flawed.¶ Some take this as evidence economists and researchers should focus on other things. This brings us to the second part of my argument, where I make the opposite claim: there is no more important or promising frontier of knowledge. The fact that we know so little, and the tools are so poor, suggests (to me) that the marginal gains from more research are huge. there is no more important place for scholars to spend their time.¶ As for the worry that industrial policy is too easily politicized or captured, I say: what policy is not? Again, this is simply a yet more promising opportunity for experimentation and learning.

#### Tax credit does not pick winners. It doesn’t target funding at a specific group.

#### Picking winners good – overwhelming empirical evidence and especially true for new technologies.

Milford, Founder and President of Clean Energy Group, ‘11

[Lewis, “Picking Winners or Losers”, Clean Energy Group, 8-26-11,

http://www.cleanegroup.org/blog/picking-winners-or-losers/]

Some arguments never die. Recently, some members of Congress criticized Energy Secretary Chu for “picking winners’ through his research and development programs like ARPA-E. This is an old canard that often comes from people who really think that the private sector alone, without government help, creates products and services. The evidence is so overwhelming to the contrary that the debate seems almost one sided by now. Everything from computer chips to cars is a result of long-term government research and development—as well illustrated in a recent Breakthrough Institute report. The argument against picking winners is especially wrong for emerging technologies that require deep and persistent public support. In the late 1990s, two Harvard professors in a book titled “Investing in Innovation: Creating Research and Innovation Policy that Works” demolished the myth that government should not be in the business of “picking winners.” And they came up with some surprising conclusions about the role of government in technology innovation. Branscomb and Keller describe how this bias against a government technology role can lead to two incorrect conclusions: …First, that markets do that most effectively; and second, that pork barrel politics is more likely to support the losers anyway. This neat two-step eliminates from the role of technology policy everything for which government is institutionally well-suited, from infrastructure building and investment incentives to support of skills training. It then notes that what is left is, of course, institutionally more appropriate for the market. The argument is legitimated simultaneously by our ancient faith in markets and our recent cynicism about politics. They admitted that the “picking winners and losers argument” might apply to some government efforts but not to the development of new technologies. Here’s why: \* Private markets often under-investment in new technologies; “empirical evidence suggests that as a result of spillovers of all kinds, the social returns to R&D spending on new technologies far exceed the private returns, perhaps by as much as 50 to 100 percent.” Private rates of return may not equal social rates of return—companies often cannot appropriate all the social benefits of an innovation and so fail to invest in what could be socially optimal technology. \* Because innovation is highly contingent—the actions of developers, governments and users are highly uncertain, making good information hard to come by, leading to great risks for investment—there is an inevitable misallocation of resources. “Some bets will pay off; some not at all. Winners and losers can only be positively identified in the revealing gaze of hindsight.” \* And finally, “…there is absolutely no evidence, beyond the economist’s leap of faith, that private investment is any more capable than public investment of separating the winners from the losers before the fact. The major difference is that private losers exit the market, while publicly backed losers are held to the higher standard of wasting taxpayers’ money.” Further, they confront another myth about government technology policy—that the federal government has in the past and in the future should only focus on R&D rather than commercial diffusion and use. Instead, they point out, in those areas where success has occurred, government has in fact played a much more expansive role than simply research and development. The most unlikely proof is in the defense area. Referring to the post-World War Two period in the U.S. regarding defense industry support as the most obvious time when many government policy tools were used, they note: Public spending supported the enormous development costs of relevant new technologies…In these cases, government underwrote the basic science research at universities and labs; direct R&D contracts accelerated the development of the technology; and defense procurement at premium prices constituted a highly effective initial launch market…A variety of mechanisms, ranging from patent pooling and hardware leasing (such as machine tool pools) to loan guarantees for building production facilities, helped to lower entry costs, diffused technology widely among competitors and set the stage for commercial market penetration. Aspects of this support model were adapted for government investment in other sectors, notably for public health, and produced similarly beneficial results… In the defense area, the U.S. government did not limit its role to only R&D, the typical critic’s myth, but “to the successful launch and diffusion of a technology development path—a trajectory—whose characteristics corresponded to the requirements of the commercial marketplace.” So to those who say, don’t pick winners, say it has always been so, and the country is better off for it. The alternative is to let losers win, and who wants that.

#### No green bubble and it doesn’t apply to nuclear.

Hamilton, Editor-in-chief of Corporate Knights Magazine and a business columnist for the Toronto Star, ‘12

[Tyler, “Clean energy technologies? No bubble bursting there. Future is growth, growth, growth”, 8/6/2012]

That usually means cleaning it up, making it smarter and more reliable, and investing in clean technologies — from Canada, perhaps — that make it more robust and efficient.¶ There are some commentators out there who like to point to very specific events as evidence that the clean energy and technology boom has gone bust. They point to the exaggerated Solyndra “scandal,” which saw the bankruptcy of the solar manufacturing start-up after it received — and had already burned through — funding that was secured via a $535 million (U.S.) loan guarantee from the U.S. Department of Energy.¶ It makes for great politics, but the reality is that companies do sometimes fail and the public does often have flesh in the game. It’s not unique to clean energy. The loan guarantee program, after all, was designed for high-risk bets. Looked at objectively, the program has actually outperformed expectations. Solyndra and a handful of others are falling stars in a galaxy of promise.¶ But Solyndra is just the start. Clean energy skeptics point to company closures and the collapse of many solar, wind and other cleantech-themed stocks. They cite how U.S. government stimulus spending for clean energy projects is coming to an end. They flag how several jurisdictions in Europe, which is dealing with unrelated economic problems, are reducing subsidies for renewable energy projects.¶ The green dream is dead — or dying. It’s the message you get when listening to those, mostly living in a North American bubble, who doubted the vision in the first place.¶ This cacophony ignores the incredible needs of countries like India, which is already among the top spenders in the world on clean-energy projects, having spent $10.2 billion on renewable energy in 2011. As the blackout suggests, the need to accelerate that spending has grown more urgent.¶ Japan, meanwhile, is embracing renewable energy in a big way in the aftermath of the nuclear disaster at Fukushima. It just launched its own feed-in-tariff program —similar to the one in Ontario —aimed at aggressively spurring solar, wind and geothermal development to help reduce the country’s dependence on nuclear power.¶ Bloomberg New Energy Finance reported this month that global investment in clean energy surged to $57 billion in the second quarter of 2012, up 24 per cent from the first quarter and carried largely by a stunning 92 per cent spending increase out of China. Investment is still down year-over- year —2011 wasn’t a great year generally, right? —but it’s on the upswing in 2012, hardly the sign of collapse.¶ That boost from China is expected to continue, particularly in solar. As part of its 12th five-year economic plan, released in 2011, China originally expected to increase solar installations 20-fold by 2020. Last month it decided to draw forward that target to 2015, when it hopes to have 21 gigawatts of solar power capacity in place —enough to supply all of Ontario on a sunny spring day.¶ Why is China moving in this direction? Economically, it carries long-term strategic importance. But China’s citizens are also growing fed up with unbearable air, water and soil pollution, so much so that there is a rise in violent protests breaking out across the country.¶ The reason why clean energy isn’t a fad or a bursting bubble is that global problems such as climate change, pollution, poverty, food scarcity, crumbling legacy infrastructure, and access to clean water aren’t going away anytime soon. Renewable energy and other clean technologies may not be the only solution, but they are a big and growing part of it.¶ Will nuclear help out? Maybe, but don’t count on it. Jeff Immelt, chief executive of General Electric, a big supplier of nuclear technology, told the Financial Times this week that it’s “really hard” these days to justify the cost of nuclear. “I think some combination of gas, and either wind or solar … that’s where we see most countries around the world going.”¶ Ontario may want to reconsider plans for new nukes at Darlington.¶ Fact is, renewable energy costs are falling fast, and that’s part of the reason there are layoffs, profit warnings, bankruptcies and falling share prices in the industry. Subsidies are supposed to gradually fade away, something the fossil fuel industry hasn’t learned after 100 years of handouts.¶ There was oversupply in clean energy equipment. Weak companies are struggling and some are failing. Those intent on surviving figure out how to innovate, adjust, enter new geographic markets and come out stronger – the cycle is not unique to clean energy.¶ “Any emerging market will experience growth problems and will have winners and losers. And the losers’ problems do not necessarily indicate the absence of a long-term market,” says Craig Tighe, a partner with global law firm DLA Piper. “Were that the case, the loss of Palm and Handspring would mean that the smart phone market is not sustainable, which is manifestly not the case.”¶ Growth in clean energy is happening. What’s changing is the pace of that growth and the players who get to benefit.¶ There’s no bubble bursting here.

#### Nuclear leadership in reprocessing is key to overall technical leadership – brain drain.

Martin, Chairman of the Nuclear Energy Advisory Committee, and Ahearne, Vice-Chairman, 8 (William F. and John, Nuclear Energy: Policies and Technology for the 21st Century, Nuclear Energy Advisory Committee, November 2008, http://www.ne.doe.gov/neac/neacPDFs/NEAC\_Final\_Report\_Web%20Version.pdf, da 9-1-12)

The consequences of a weakened nuclear infrastructure in the United States include reduced domestic capability to support the role of nuclear energy as well as the related problem of the reduced ability to attract and retain the talent at all levels—from technicians to engineers to Ph.D.’s—needed to develop and sustain active U.S. participation in the domestic and global nuclear marketplace. In that vein, NEAC recommends that both university and industry programs in nuclear R&D be strengthened, and that laboratories and facilities in the DOE complex be modernized and made more efficient. These programs should be developed in consultation with relevant government agencies and scientists, DOE national laboratories, private industry, and the academic community. NEAC makes the following recommendations: • The DOE lead the establishment and implementation of a nuclear energy R&D roadmap, in consultation with appropriate parties. • University and industry programs in nuclear R&D be strengthened, and that laboratories and facilities in the DOE complex be modernized and made more efficient. • The DOE review existing nuclear fuel cycle research and development to assure that it is meeting U.S. needs in the nuclear fuel cycle.

### Water DA

#### Supply of water is not the problem.

Radford 8

[Benjamin, Writer for Skeptical Inquirer, “The Water Shortage Myth”, 6-23, <http://www.livescience.com/environment/080623-bad-water-shortage.html>]

Our planet is not running out of water, nor is it losing water. There's about 360 quintillion gallons of water on the planet, and it's not going anywhere except in a circle. Earth's hydrologic cycle is a closed system, and the process is as old as time: evaporation, condensation, precipitation, infiltration, and so on. In fact, there is probably more liquid water on Earth than there was just a few decades *ago*, due in part to global warming and melting polar ice caps.The problemsNo, there is plenty of water. The problem is that the vast majority of Earth's water is contained in the oceans as saltwater, and must be desalinated before it can be used for drinking or farming.Large-scale desalination can be done, but it is expensive. But nor is the world running out of freshwater, either. There's plenty of freshwater on our blue globe; it is not raining any less these days than it did millennia ago. As with any other resource, there are of course regional shortages, and they are getting worse. But the real problems areavailability and transport; moving the freshwater from where it is plentiful (such as Canada, South America, and Russia) to where it is scarce (such as the Middle East, India, and Africa). Water is heavy and costly to transport, and those who can afford it will always have water.Water, not global warming, is likely to be the greatest environmental challenge facing the world in the coming decades and centuries.To find solutions, it's important to understand the problem. Water is never really "wasted." It simply moves from one place to another. If you let your faucet drip all day, that's clean water going back into the system, the water isn't "lost." What is lost is usefulness, money, and energy, because it takes energy to purify and distribute the water.

#### Nuclear renaissance now but reprocessing necessary to move it completely forward – waste disposal is the biggest stumbling block.

Szabo, J.D., George Washington University Law School; Financial Analyst, United States

Nuclear Regulatory Commission (NRC), ‘10

[Aaron, 2010, “Reprocessing: The Future Of Nuclear Waste”, Temple Journal of Science, Technology & Environmental Law, Vol. 29, No. 2, RSR]

However, one of the key concerns about a nuclear renaissance' 6 is the dilemma of the byproduct of commercial nuclear reactors: spent fuel. The half-life of spent fuel spans thousands of years, raising questions about storage.'7 Initially, President Obama slashed funds for Yucca Mountain significantly in his budget, ' and because Independent Spent Fuel Storage Installations (ISFSI)19 (in the form of dry cask storage facilities) 20 are only intended as temporary storage, the challenge is either to build an alternative storage facility or to reduce the amount of spent fuel. Due to political complications associated with building a permanent spent fuel storage facility, the most feasible way to remove spent fuel from ISFSIs is to reprocess it.

#### That means we allow for the development of SMRs specifically

Covert 12

Adrian is the Editorial Assistant at Gizmodo Magazine, “The US Government Is Banking on Small Nuclear Reactors for Future Energy”, March 12, 2012, http://gizmodo.com/5890394/the-us-government-is-banking-on-small-nuclear-reactors-for-future-energy

Ever since Fukushima, nuclear power has not been a warmly-received concept when it comes to energy solutions. But still, small modular reactors have remained one iteration of nuclear power that people are optimistic about due to their relative safety and manageability. That's why the US Department of Energy has entered into partnerships with the top SMR makers to help nurture the tiny wonders.¶ According to Ars Technica, the governement is going to offer up land at the Savannah River Nuclear Lab to work on research and build test sites for development. In addition to their size and relative stability, SMRs are popular because reactors are never opened on site, and are sent back to a central facility for refueling, which eases concerns about security. Sure they may not generate Gigawatts, but Megawatts aren't so bad either.

#### Nuclear renaissance now. Pistilli says nuclear is already receiving subsidies and building plants.

#### **Global nuclear expansion now.** Over 200 reactors are going to be constructed in the next five years. That’s 1AC Marketwire.

#### SMRs solve water shortages - desalination

EPI 10

(Energy Policy Institute, June 2010, “Economic and Employment Impacts of Small Modular Nuclear Reactors” http://epi.boisestate.edu/media/3494/economic%20and%20employment%20impacts%20of%20smrs.pdf)

Desalination. The IAEA has identified desalination as possibly the leading non-­‐electric civilian use for nuclear energy. Water scarcity is becoming an increasingly problematic global issue in both developed and developing countries. As noted in an IAEA (2007) report,¶ Because of population growth, surface water resources are increasingly stressed in many parts of the world, developed and developing regions alike. Water stress is counter to sustainable development; it engenders disease; diverts natural flows, endangering flora and fauna of rivers, lakes wetlands, deltas and oceans; and it incites regional conflicts over water rights. In the developing world, more than one billion people currently lack access to safe drinking water; nearly two and a half billion lack access to adequate sanitation services. This would only get these trends, many opportunities in both developed and developing countries are foreseen for supply of potable water generated using nuclear process heat or off-­‐peak electricity (p. 23).¶ The desalination of sea water requires large amounts of energy and is not dependent on a particular fuel production of potable water from sea water in a facility in which a nuclear reactor is used as the source of energy for the desalination. The three technologies that comprise nuclear desalination are nuclear, the desalination method, and the system that couples them together (IAEA, 2000). The feasibility of integrated nuclear desalination plants has been proven with over 175 reactor-­‐years of experience worldwide (IAEA, 2007a). Large-­‐scale, proven commercial technologies for desalination can be grouped into distillation processes and the reverse osmosis process. Distillation technologies require heat to create steam which condenses and separates fresh water from brine. Reverse osmosis requires only electricity to push fresh water from the higher pressure saltwater side of a semi-­‐permeable membrane to the lower pressure freshwater side. An IAEA study (2007a) on the economics of nuclear desalination reported that SMRs offer the largest potential as coupling options to nuclear desalination systems in developing countries (p. 4). Furthermore, the study found that the costs for nuclear desalination are roughly similar to that of natural gas desalination, and could be substantially lower depending on fuel costs (IAEA, 2007a). Based on a preliminary assessment of the global desalination market through 2030, particularly in developing countries, desalination has the potential to provide a strong market for SMRs if they can successfully compete with conventional nuclear plants and other sources of generation (Arthur, 2010).

#### Plan solves for the DA. Their evidence says that climate change causes water tensions. We solve for climate change.

### Environmental Security K

#### Our interpretation is that debate should be a question of the aff plan versus a competitive policy option.

#### This is key to ground and predictability – infinite number of possible kritik alternatives or things the negative could reject explodes the research burden. That’s a voting issue.

#### Focusing on statism and security is key to real world change.

Buzan 4 (Barry , December, Montague Burton Prof. of International Relations @ the London School of Economics and honorary prof. @ the University of Copenhagen, "Realism vs. Cosmopolitanism" <http://www.polity.co.uk/global/realism-vs-cosmopolitanism.asp>

**A.Mc.:** But would not a realist response be that the very issues David seeks to highlight are largely marginal to the central dilemmas of world politics: the critical issues of war and peace, life and death. **B.B.:** Again, that is a difficult question for realism because in traditional realism there was a rather clear distinction between 'high' and 'low' politics, high politics being about diplomacy and war, and low politics being about economics and society and many issues like the weather and disease. And because of the change in the importance of the different sectors that I mentioned earlier, this becomes problematic for realism. But the realists have been fairly agile. The realist line of defence would be that in most areas of world politics - again the emphasis on politics - states are still the principle authorities. And there is nothing that stops them from co-operating with each other. Thus, realists, or at least a good proportion of realists, can live quite comfortably with the idea of international regimes in which states, as the basic holders of political authority in the system, get together sometimes with other actors, sometimes just with other states, to discuss issues of joint concern, and sometimes they can hammer out of a set of policies, a set of rules of the game, which enable them to co-ordinate their behaviour. Now, this certainly does not feel like traditional power politics realism. You can think of it to some extent in terms of power politics by looking at issue power; who are the big players in relation to any big issue? Who are the people who have any kind of control? Who loses out?, etc.. There is, therefore, an element of power politics in this whole notion of regimes, and it does retain a strong element of state centrism. I think the realist would say: if you discount the state, where is politics? Where is it located? You cannot eliminate politics, as some liberals sometimes seem to do. To wish the state away, to wish politics away, is not going to generate results. The good dyed-in-the-wool realist would argue that power politics is a permanent condition of human existence. It will come in one form or another, in one domain or another, in relation to one issue or another, but it will always be there. It will be politics and it will be about relative power. And at the moment the state is still an important player in the game.

#### Case outweighs: by failing to solve the impending waste crisis, they allow waste on-site and Yucca Mountain to eventually blow up, leading to extinction. Rejecting securitization on the issue won’t resolve problems on-site or at Yucca.

#### Permutation do both.

#### Single-issue piecemeal reforms are key to challenge the root causes of environmental destruction

Stewart 03[Keith: wrote his Ph.D. dissertation on environmental politics in Ontario and currently works for the Toronto Environmental Alliance, Canadian Dimension, 9-1].

Most Environmentalists Are against the System Precisely because capitalism keeps inventing new ways to muck up the planet, the environmental movement--or at least large chunks of it--is constantly engaged in challenging the right of corporations to make money by whatever eco-destructive means are most profitable. These fights take place on multiple fronts at various spatial scales, use a bewildering variety of strategies and tactics by constantly changing coalitions of groups and individuals motivated by an equally diverse set of ideas about protecting nature. But if you spend some time with environmentalists, rather than simply absorbing whatever makes it through the filter of the mainstream media, you'll find that issue-specific solutions (save this park, better public transit, phase out that toxin) are usually couched within a broader context. At the risk of over-generalizing (and how can I not if I'm to speak of the environmental movement as if it was a coherent entity) I would argue that there is a widespread recognition within the environmental movement, particularly among those who've been around for a while, that there is a system that is lighting all these fires (climate change, deforestation, toxic contamination, radioactive waste, species extinction, etc.) that we spend all of our time running around trying to put out. Most days I label this system capitalism, but others might call it patriarchy, spiritually empty consumerism, racism, or simply big, mean corporations. And none of us would be wrong. That the planet-sized pyromaniac in question isn't always labeled capitalism is perhaps because capitalism isn't the cause of all of the world's evil, the weakness of the socialist movement in Canada and the ecologically regrettable record of "actually existing socialism." You also have to remember that few activists come to movements fresh from graduate degrees where they studied Marx--the "big picture" stuff comes out of lived experience combined with a lot of reading. Environmental activists are typically born out of a sense that something precious is in peril. Our victories seem always temporary, while defeats risk becoming permanent. It is this sense of urgency and an attachment to very particular bits of "nature"--a forest, a river, your child's smog-scarred lungs, the planet's atmosphere--or outrage at some particular assault--the toxic dump next door, the contaminated workplace, the carcinogen being sprayed on your neighbourhood park to kill those vicious dandelions--which move individuals and communities to action. Typically this action initially takes the form of seeking out practical, achievable solutions like the Kyoto Protocol, a ban in your community on the use of pesticides for cosmetic purposes, or saving the local wetland. These "reformist" solutions are not to be despised, for you can't build a movement without victories. Indeed, to dream of a movement that suddenly overthrows the existing order and replaces it with a socially and environmentally superior alternative without having won any victories along the way to inspire the collective imagination and from which to learn practical lessons is ludicrous.

#### Their evidence says that military buildup is a bad reaction to issues like warming. However, it says things like financial incentives to combat it is good. It calls for things like emissions reductions, etc.

#### We don’t securitize the environment. We don’t read any instances of conflict happening. We merely prevent environmental + technical threats to the environment.

#### Excluding environmentally securitizing discourse cedes its rhetorical power to militant elites, framing the environment as a security issues allows effective response and a formation of a non-militaristic concept of “security”

Liftin, prof of political science at Univ. of Washington, 98

(Karen T., “Constructing Environmental Security and Ecological Interdependence”, Global Governance 5 (1998)) NG

It may be tempting to jettison environmental security, but there are strong practical and epistemological reasons for not doing so. First, the two principal trends that have thrown the field of security studies into tumult-the declining utility of force and the growing salience of nonstate actors-are likely to persist. Alternative formulations of security will therefore continue to demand a hearing. Second, climate change, land degradation and desertification, the largest wave of species extinctions since the dinosaurs, and multifarious pollutants are real and growing sources of insecurity. Third, limiting security language to military threats cedes too much ground to the security traditionalists. If security is a discursive practice, then it can be constructed by a mulitiplicity of social actors. Security discourse can be rehabilitated to encompass environmental dangers, however, only if certain caveats are prudently observed. These have mostly to do with the twin dangers of bolstering a traditional state-centric threat-defense conception of security, and falling into an objectivism that ignores the socially constructed element of all security concerns. To claim that environmental problems are social constructions is not to deny their physical character; to believe otherwise would be ecologically and politically irresponsible. One of the pitfalls of security language is the presumption that security signifies some reality with a concrete external referent. As Ole Wrever argues, rather than being a sign for an objective referent, security is most aptly understood as a speech act: "The utterance itself is the act."19 Although his critique could provide the basis for a more reflective conception of security as a socially constructed set of concerns, Waever opposes an expanded notion of security, including the "securitization of the environment," on the grounds that "security is articulated only from aspecific prace, in an institutional voice, by elites."20 In other words, only those concerned with classic state-centric threat-defense dynamics are entitled to perform security speech acts. This reading not only ignores the fact that security speech acts are performed on a daily basis by an increasingly diffuse group of scholars and practitioners, but it also abdicates too much terrain to the security traditionalists. The state is not the sole subject of security, nor is coercive power the sole means of seeking it. If Cold War hawks could seize on the ambiguous symbol of national security, then contemporary analysts may also deploy the ambiguous symbol of environmental security. But to do so reflectively, without falling prey to the sorts of ideological excess that characterized Cold War security discourse, they must be conscious of how they construct their speech acts.

#### Environmental security is necessary to ensure fast responses in times of crisis relative to climate change

Barnett et al 2010 (Jon Barnett, Richard A. Matthew, and Karen L. O’Brien, Reader and Australian Research Council Fellow in the Department of Resource Management and Geography at the University of Melbourne, Director of the Center for Unconventional Security Affairs and Associate Professor of International and Environmental Politics in the Schools of Social Ecology and Social Science at the University of California at Irvine, Professor in the Department of Sociology and Human Geography at the University of Oslo Norway, Global and environmental change and human security,p.4-32, 2010) AM

¶The second explanation is that there has been a tendency to downplay¶ issues of development, equity, ethics, power relations, and social justice¶ in global change research, prioritizing instead a general, aggregated notion¶ of welfare. Although social drivers of change are well recognized¶ in global environmental change research, analyses have historically¶ tended to focus on the absolute numbers of people and on talks of amorphous¶ and aggregated social categories such as ‘‘humanity,’’ ‘‘society,’’¶ ‘‘Africa,’’ ‘‘small islands,’’ and so on. Consequently, the potential contributions¶ of social sciences to global change research have been undervalued,¶ despite the fact that global environmental change is a social¶ problem as much as it is a natural system phenomenon. Almost all environmental¶ change problems are the by-products of modern development¶ practices and the social disparities they produce. For example, climate¶ change is caused by the emissions of gases from fossil fuel use and land¶ use changes; forests are cleared to meet the demand for paper, timber,¶ and new land for agriculture and grazing; biodiversity is lost through¶ land clearing for agriculture and infrastructure; rivers are dammed and¶ diverted to control flooding, for hydropower and to secure the supply of water to irrigators; coasts and reefs are modified to support human settlements¶ and are then polluted or destroyed by those settlements; fisheries¶ are depleted by more intense applications of more efficient fishing¶ techniques; and land is degraded by unsustainable farming practices.¶ Global environmental change is thus an inherently social problem, and¶ one that has the potential to undermine human security—namely, the¶ needs, rights, and values of people and communities. Human insecurity¶ from environmental change is a function of many social processes that¶ cause some people to be more sensitive and less able to prepare for and¶ respond to sudden and incremental environmental changes. § Marked 13:26 § People who¶ are most dependent on natural resources and ecosystem services for their¶ livelihoods are often the most sensitive to environmental change (Adger¶ 1999, 2003; Blaikie et al. 1994; Bohle, Downing, and Watts 1994). For¶ example, in terms of needs, a change in soil moisture can undermine¶ nutrition in subsistence farming households, a decline in fish abundance¶ can undermine nutrition and income for fishers, and a decline in surface¶ or groundwater quality can undermine maternal and child health in¶ communities without reticulated water supply. Just as important as¶ sensitivity is people’s capacity to anticipate, plan for, and adapt to¶ environmental changes. These response strategies are functions of various¶ social factors, including institutions, information, health, education,¶ and access to food and nutrition, money and resources, and social¶ support networks. Underlying many of these determinants of adaptive¶ capacity is the effectiveness of the state. States that consciously or unconsciously,¶ actively (through violence) or passively (through denial of entitlements),¶ discriminate against social groups on the basis of political¶ opposition, class, ethnicity, and/or location create vulnerable groups.

## 1AR

### Picking Winners DA

#### We need nuclear power in the interim since renewables are not progressing fast enough.

Harvey 12 (Fiona, Environment Correspondent, “Nuclear power is only solution to climate change, says Jeffrey Sachs”, The Guardian, 5-3-12,

<http://www.guardian.co.uk/environment/2012/may/03/nuclear-power-solution-climate-change>, RSR)

Combating climate change will require an expansion of nuclear power, respected economist Jeffrey Sachs said on Thursday, in remarks that are likely to dismay some sections of the environmental movement. Prof Sachs said atomic energy was needed because it provided a low-carbon source of power, while renewable energy was not making up enough of the world's energy mix and new technologies such as carbon capture and storage were not progressing fast enough. "We won't meet the carbon targets if nuclear is taken off the table," he said. He said coal was likely to continue to be cheaper than renewables and other low-carbon forms of energy, unless the effects of the climate were taken into account.