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### OFF

Obama winning now – only an error lets Romney win

James Downie, “Obama Will Still Win the Election,” Real Clear Politics, October 5, 2012, <http://www.realclearpolitics.com/2012/10/05/obama_will_still_win_the_election_292083.html>, accessed 10-5-2012.

If Romney would have to pull off a miracle to close the gap in national polling, he has no shot at matching the president in the electoral college. As mentioned above, forecasters commonly predict that Obama already has a big lead of safe and leaning states. If we assume Romney will improve in the polls, there would be around nine “swing states”: Colorado, Florida, Iowa, North Carolina, New Hampshire, Nevada, Ohio, Virginia and Wisconsin. There’s one problem here for Romney: He is trailing, and has been consistently trailing, in all but two — North Carolina, where he’s held a small lead, and Florida, this election’s closest thing to a 50-50 state. Romney doesn’t need to win two out of those nine; in almost every scenario, he will need six or seven out of those nine to win, including at least two or three states where he is behind by several points more than he is nationally.¶ All of which brings me to the final point: Given the state of the race before last night’s debate, even most Romney backers would agree that a Romney victory would require a flawless campaign the rest of the way from Romney and a blunder or two from Obama. After six years of both these men running for and/or being president of the United States, is there really anyone out there who thinks Mitt Romney can go a month without making a single mistake? Who thinks Barack Obama, who has been playing it safe for at least several months now, will suddenly make a reckless error, as opposed to a merely lackluster performance? (Or, if you’re Sean Hannity and co., do you believe the lamestream media will suddenly forget their liberal bias and stop protecting the president while assaulting Mitt Romney?)

Loan guarantees unpopular with the public

Kaften ‘11

Cheryl, Columnist, Green Technology World, “2012 Election Survey: Politicians 'Don't Know Which Way the Wind Blows'’, http://green.tmcnet.com/channels/wind-power/articles/237194-2012-election-survey-politicians-dont-know-which-way.htm

Power brokers in Washington, D.C., are so badly out of touch with mainstream voter sentiment that they may find themselves out of office in 2012, if they continue to bash wind and solar energy and to boost coal, gas, and nuclear power.¶ Those are the findings of a survey of 1,049 Americans conducted in late October by the Princeton, New Jersey-based research firm ORC International for the nonpartisan, nonprofit Civil Society Institute (CSI), with headquarters in Newton, Massachusetts. ¶ Lobbyists are the problem, according to most U.S. voters. More than seven in 10 Americans (72 percent) – including 62 percent of Republicans, 74 percent of Independents, 83 percent of Democrats, and over half of Tea Party supporters (54 percent) – think that “America's oil, coal and natural gas companies have a disproportionate influence on Congress and the White House when it comes to making national energy policy.”¶ The research found that a relatively small minority of voters in each party –20 percent of Republicans, 9 percent of Independents, 10 percent of Democrats, and 24 percent of Tea Party supporters – would be in favor of concentrating federal energy subsidies on the coal, nuclear power , and natural gas industries.¶ Specifically, nuclear reactor loan guarantees are spurned by Americans on a bipartisan basis. More than two out of three Americans (67 percent) – including 65 percent of Republicans, 66 percent of Independents, 68 percent of Democrats, and 62 percent of Tea Party backers – disagree that they should provide “taxpayer-backed loan guarantees for the construction of new nuclear power reactors in the United States through proposed tens of billions in federal loan guarantees for new reactors.”

Approval ratings are key to the election

Cook, The National Journal Political Analyst, 11

(Charlie, October 27, “Underwater,” http://www.nationaljournal.com/columns/cook-report/the-cook-report-obama-underwater-20111027, d/a 7-20-12, ads)

The best barometer of how a president is going to fare is his approval rating, which starts taking on predictive value about a year out. As each month goes by, the rating becomes a better indicator of the eventual results. Presidents with approval numbers above 48 to 50 percent in the Gallup Poll win reelection. Those with approval ratings below that level usually lose. If voters don’t approve of the job you are doing after four years in office, they usually don’t vote for you. Of course, a candidate can win the popular vote and still lose the Electoral College. It happened to Samuel Tilden in 1876, Grover Cleveland in 1888, and Al Gore in 2000. But the popular votes and the Electoral College numbers usually come down on the same side.

Romney will bomb Iran his first month in office

Kidd 12 (Dr. Billy, research psychologist and long-term political activist, June 14, ‘Romney Strategist Prepare for War Against Iran,’ http://www.opposingviews.com/i/politics/foreign-policy/crisis-gaza/romney-strategists-prepare-war-against-iran)

The Emergency Committee for Israel is running an advertisement urging an immediate war with Iran. This organization was founded by Weekly Standard creator, and Romney strategist, William Kristol. Its message is that the evil, Jewish-hating Persian theocracy must be obliterated to make way for Israeli expansion. Sound preposterous? Well, the ploy, here, is to make Romney look like a Delta Team 6 super-commando. This supposedly will take Jewish voters away from Obama in the November election. The other purpose is to sanctify the execution of a million Iranians when Romney orders the bombing come next January.

Attacking Iran causes full-scale war with Russia

Conway January 17, 2012 Alvin Conway Author, blogger he cites Russia’s former ambassador to NATO and the Arab Times “Iranian Crisis: escalating series of troubling events sliding world towards war” http://theextinctionprotocol.wordpress.com/2012/01/17/iranian-crisis-escalating-series-of-troubling-events-sliding-world-towards-war/

Russian response could lead to WWIII: Russia would regard any military intervention linked to Iran’s nuclear program as a threat to its own security, Moscow’s departing ambassador to NATO warned on Friday. “Iran is our neighbor,” Dmitry Rogozin\* told reporters in Brussels. “And if Iran is involved in any military action, it’s a direct threat to our security.” –Arab Times

\*Ambassador Extraordinary and Plenipotentiary of Russia, vice-premier of Russian Government in charge of defense industry.

Extinction

Nick Bostrom 2002 Professor, Faculty of Philosophy, Oxford University“Existential Risks” Journal of Evolution and Technology, Vol. 9, No. 1 (2002) . http://www.nickbostrom.com/existential/risks.html

A much greater existential risk emerged with the build-up of nuclear arsenals in the US and the USSR. An all-out nuclear war was a possibility with both a substantial probability and with consequences that might have been persistent enough to qualify as global and terminal. There was a real worry among those best acquainted with the information available at the time that a nuclear Armageddon would occur and that it might annihilate our species or permanently destroy human civilization.[4] Russia and the US retain large nuclear arsenals that could be used in a future confrontation, either accidentally or deliberately. There is also a risk that other states may one day build up large nuclear arsenals. Note however that a smaller nuclear exchange, between India and Pakistan for instance, is not an existential risk, since it would not destroy or thwart humankind’s potential permanently. Such a war might however be a local terminal risk for the cities most likely to be targeted. Unfortunately, we shall see that nuclear Armageddon and comet or asteroid strikes are mere preludes to the existential risks that we will encounter in the 21st century.

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There is a global movement towards renewable energies now – government must be careful not to reverse this trend

Manish Bapna, Interim President, World Resources Institute, “2012: A Breakthrough for Renewable Energy?,” Huffington Post, February 12, 2012, http://www.huffingtonpost.com/manish-bapna/2012-a-breakthrough-for-r\_b\_1263543.html, accessed 6-20-2012.

Despite conventional wisdom, there is a growing body of evidence showing that renewables are no longer decades away from being a viable and affordable alternative to fossil fuels. Instead, onshore wind and solar photovoltaics are close to a tipping point to compete head-to-head with coal and natural gas in many countries. In fact, it’s likely that 2012 could be the year when investment in renewable energy (not counting hydropower) will surpass fossil fuels, signaling a profound shift toward a global clean energy economy. Investors are leading the charge toward a clean energy future, betting heavily on renewable energy. Global investment in clean energy generation capacity reached a record high of $260 billion in 2011, Bloomberg New Energy Finance announced last month. That was up 5 percent above 2010 levels and almost five times the 2004 total. The United States, surprisingly, led the world in renewable energy investment at nearly $56 billion, and China was second with more than $47 billion. Wind farms in China and solar panels on rooftops in Europe are the biggest signs of growth. But the renewables boom is a global phenomenon. In South and Central America, investments rose 39 percent to $13 billion. In India, they rose by 25 percent to almost $4 billion; and in the Middle East and Africa, by 104 percent to $5 billion. So what is getting investors– from asset financiers to venture capitalists— so excited? The answer is simple: wind and solar energy is becoming increasingly cost competitive with coal and natural gas. In the past few years, the costs of PV modules and wind turbines have tumbled, driven mainly by technology innovations and a maturing supply chain. The results are evident in falling clean energy prices around the world. Take just a few examples: In the United States, the authoritative National Renewable Energy Laboratory forecasts that solar PV residential electricity prices could be cost competitive by 2015 across two-thirds of the country. In Italy, Spain, Greece, Portugal, and Japan, solar PV is on course to match retail electricity fossil fuel prices next year, without the benefit of subsidies, according to Pike Research. In Brazil, wind power plants undercut natural gas competitors in bidding for government power contract tenders last summer. And in China, wind power prices are expected to be competitive with coal within two years. But before rushing to invest your entire pension in clean energy, there are some important caveats. Renewable power is not yet a mainstream global industry. It made up only a little over 3 percent of total world electricity generation, as of 2009. While its future seems bright, the outcome may hang on how two key issues play out: First is the unpredictable effect of the shale gas boom. In countries, like the United States, where low electricity prices already make it tough for renewables to become cost competitive, abundant and cheap shale gas may drive energy prices down even further and divert investment from wind and solar power. Low-priced natural gas is good for consumers, but it could slow the growth of renewable. This could have additional negative environmental consequences, including on greenhouse gas emissions. The second key issue is whether governments will keep up their investor-friendly commitments to clean energy policy and incentives. The BNEF report, Global Trends in Renewable Energy Investment 2011, showed significant progress on that front. By early 2011, some 119 countries had policies or targets in place to support renewables, more than half of them in the developing world. But given the turbulent global economy, it is likely that fiscal and political constraints will continue to bite across much of the globe in 2012. Governments may see support for wind and solar as tempting for budget cuts. In the United States, for example, wind power developers are nervous about the potential expiration of the Production Tax Credit in December 2012. If Congress fails to renew or replace it, the industry’s robust growth will likely falter. President Obama acknowledged as much during State of the Union, when he called on Congress to extend support for wind power and solar power. So the outlook for the year is still sunny, but not cloudless for renewables. Given the significant strides the industry has made, it would be unfortunate if governments and investors turned their backs now. If they forge ahead, 2012 could indeed see global investment surpass that for fossil fuels, crossing an important threshold toward a clean energy future.

Investment in nuclear power would keep funds away from renewable energy – empirically proven – this means warming

NIRS, “Keep Nuclear Power From Receiving More Subsidies at the Expense of Sustainable Energy and Energy Efficiency,” Nuclear Information and Resource Service, 2000, http://www.nirs.org/climate/background/cdmnukesnirsbackground.htm, accessed 8-12-2012.

Further investment in nuclear would also keep funds away from renewable energy development. This trade-off is exactly what has happened in the U.S. over the past 50 years. When comparing U.S. government subsidies for nuclear, solar, and wind, the nuclear power industry has received the majority (96.3%) of $150 billion in investments since 1947; that’s $145 billion for nuclear reactors and $5 billion for wind and solar. Nuclear subsidies have cost the average household a total amount of $1,411 [1998 dollars] compared to $11 for wind. The more money we spend on nuclear power, the less greenhouse gas reduction benefit we receive, while we hurt sustainable technology investment.

Anthropogenic warming causes extinction – mitigating coal in the electric power industry is key to solve.

Mudathir F. Akorede et. al, June 2012, M.Eng degree at Bayero University Kano in Electrical Engineering, tutelage engineer in the Chad Basin Development Authority’s, lectureship appointment in the Department of Electrical Engineering, University of Ilorin, professional engineer with the Council for Regulation of Engineering in Nigeria (COREN), reviewer for a number of reputable international journals, Hashim Hizam, Department of Meterology and Atmospheric Sciences, faculty, University of Putra Malaysia, M.Sc in Electrical Engineering, Polytechnic University of Brooklyn, New York, M. Z. A. Ab Kadir and I. Aris, Department of Electrical and Electronics Engineering, Faculty of Engineering University Putra Malaysia, S.D. Buba professor of Climatology University of Putra Malaysia, Ph.D. paleoclimatology, University of Oxford, M.Eng at the University of Putra Malaysia, Renewable & Sustainable Energy Reviews, Vol. 16 Issue 5, “Mitigating the anthropogenic global warming in the electric power industry,” p. 1, Ebsco Host

One of the most current and widely discussed factors that could lead to the ultimate end of man’s existence and the world at large is global warming. Global warming, described as the greatest environmental challenge in the 21st century, is the increase in the average global air temperature near the surface of the Earth, caused by the gases that trap heat in the atmosphere called greenhouse gases (GHGs). These gases are emitted to the atmosphere mostly as a result of human activities, and can lead to global climate change. The economic losses arising from climate change presently valued at $125 billion annually, has been projected to increase to $600 billion per year by 2030, unless critical measures are taken to reduce the spate of GHG emissions. Globally, the power generation sector is responsible for the largest share of GHG emissions today. The reason for this is that most power plants worldwide still feed on fossil fuels, mostly coal and consequently produce the largest amount of CO2 emitted into the atmosphere. Mitigating CO2 emissions in the power industry therefore, would significantly contribute to the global efforts to control GHGs. This paper gives a brief overview of GHGs, discusses the factors that aid global warming, and examines the expected devastating effects of this fundamental global threat on the entire planet. The study further identifies the key areas to mitigate global warming with a particular focus on the electric power industry.

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TEXT: Congressional rulemaking bodies should facilitate regulatory negotiations with relevant parties over the proposal of expanding loan guarantees for Liquid Fluoride Thorium Reactors in the United States and subsequently implement the negotiated policy.

CP competes, open ended process. Reg negs are key to expanding nuclear – mineral, siting, mining, waste, security

IAEA, “Uranium production and raw materials for the nuclear fuel cycle–Supply and demand, economics, the environment and energy security,” Proceeding Series, June 2005, <http://www.scribd.com/doc/77476229/Uranium-Production-Raw-Materials-for-Nuclear-Fuel-Cycle-Supply-Demand-Economics-Environment-Energy-Security>, accessed 9-13-2012.

We propose that the indicator mix for any site-level or sector-level CSR reporting process should respect a principle of “representative diversity”. We use this term in an intuitive way, to mean that no important consideration should be omitted. For example, it is essential to maintain the “Representative Diversity” of indicators that signal the “specificities” of individual stakeholder groups and the full spectrum of performance issues. We can also express this as a principle of ¶ ¶ equitable stakeholder visibility. This is not a purely quantitative equity. As in other forms of industrial bargaining or multi-stakeholder negotiations, compromises can be made if honour is preserved. Just as important as the retention of an individually “preferred” indicator, is the visible trace of the deliberation process and of the meaningful participation of the cross-section of stakeholders [4]. CSR reporting is not an end in itself; it is an input to wider stakeholder dialogue and governance, and it is a reference point for forward planning, investment and other strategic decisions for the plant management, companies and industrial sectors concerned. In project planning contexts, there is generally a need to identify, appraise and choose amongst the various different options or courses of action that present themselves. The different protagonists concerned will have divergent views about what is their interest, their right or their due; and they may also propose quite different principles for deciding what to do or what “should” be done. There are various degrees of uncertainty due partly to technological and natural system complexity and partly to ‘social’ indeterminacies. In this context of “complexity”, a pragmatic and robust evaluation approach is to frame the problem of ‘social choice’ as a multi-stakeholder deliberation about the merits and demerits of policy alternatives that present themselves to the society. A comparison of project or regulatory policy options (e.g., mine site development, or post-mine site management regimes, etc.) can be developed in terms of:¶ 1.¶ ¶ The exploration of options: Minerals exploitation strategies, site rehabilitation, radioactivewaste policy or other strategic perspectives are explored in terms of a small number of scenarios each of which expresses distinct technological, economic and governance features.2.¶ ¶ The diversity of stakeholders: The scenarios of distinct possible futures are to be evaluated explicitly from as many distinct stakeholder perspectives as seem germane to the task.3.¶ ¶ Multiple evaluation criteria: The stakeholders will make evaluations of each scenario interms of a range of key performance issues, using a variety of different criteria reflecting the spread of societal concerns.¶ This leads to a three-dimensional¶ Deliberation Matrix¶ (Fig. 1) as an intuitive framework for organising the judgements offered by each category of stakeholders, for each of a variety of scenarios, across a spectrum of governance or performance issues. The hypothesis is that, as the multiple perspectives are brought to bear on a common ground (viz., the scenario set) then the tensions, conflicts of interests, uncertainties and dissent (amongst scientists as well as decision makers, administrators and stakeholders from different walks of commercial activity and civil society) can be articulated and explored in a structured way. The participatory ‘evaluation’ activity proceeds through the step-by-step phase, which can be undertaken on an individual or a collective basis within the group, of the filling out of cells of the Deliberation Matrix. Individual reflection and/or exchanges of views between protagonists in a deliberation/negotiation process may lead to modifications at any or all or the steps of the choices and judgements.

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Energy production is inseparable from capitalist growth—their narrow lens framing is complicit through excusing avoidance & propping up destructive forces

Clark and York ’8 Brett Clark, assistant professor of sociology at North Carolina State University, and Richard York, coeditor of Organization %26 Environment and associate professor of sociology at the University of Oregon, "Rifts and Shifts: Getting to the Root of Environmental Crises," Monthly Review, Vol. 60, Issue 06, November 2008

The development of energy production technologies provides one of the best examples of rifts and shifts, as technological fixes to energy problems create new ecological crises in the attempt to alleviate old ones. Biomass, particularly wood, has, of course, been one of the primary energy sources humans have depended on throughout their history. The development of more energy intensive processes, such as the smelting of metals, was, therefore, connected with greater pressure on forests, as trees were fed to the fires. By the time the Industrial Revolution began to emerge in Europe, vast regions of the continent had already been deforested, particularly in areas close to major sites of production, and much of this deforestation was driven by the demand for fuel. As industrialization advanced, new sources of power were desired to fuel the machines that allowed for production to take place on a growing scale. Whole forests could be devoured at an unprecedented rate, making wood ever more scarce. The tension between the desire of the capitalist owners of the new industrial technologies for expanding the accumulation of capital and the biophysical limits of Earth were apparent from the start of the Industrial Revolution. However, capitalists did not concern themselves with the internal contradictions of capitalism, except insofar as they were barriers to be transcended. Thus, efforts to achieve what we would today call sustainability were not even considered by the elite. Rather, coal (and subsequently other fossil fuels) quickly became the standard fuel of industry, temporarily sidestepping the fuelwood crisis (although forests continued to fall due to the many demands placed on them) but laying the foundations for our current global climate change crisis by dramatically increasing the emission of carbon dioxide.16 The pattern has remained similar to how it was in the early years of the Industrial Revolution. Oil was quickly added to coal as a fuel source and a variety of other energy sources were increasingly exploited. Among these was hydropower, the generation of which requires damming rivers, and thus destroying aquatic ecosystems. For example, the expansion of hydropower over the twentieth century in the U.S. Pacific Northwest was the primary force leading to the widespread depletion and extinction of salmon runs. Nuclear power was, of course, the most controversial addition to the power mix. Despite initial claims that it would provide clean, unlimited power that would be too cheap to meter, it proved to be an expensive, risky power source that produced long-lived highly radioactive waste for which safe long-term storage sites have been nearly impossible to develop. Now, in the twenty-first century, with global climate change finally being recognized by the elite as a serious problem, the proposed solutions are, as we would expect, to shift the problem from one form of energy to a new form of energy. Nuclear power, despite its drop in popularity toward the end of the last century, due to high costs and widespread public opposition, is now very much back on the agenda, with new promises of how the new nuclear plants are safer—never mind the issue of radioactive waste. We are also regaled with promises of agrofuels, ironically bringing us back to the pre-coal energy crisis. Recent scientific reports note that growing crops for agrofuel to feed cars may actually increase the carbon emitted into the atmosphere.17 But even this ignores the fact that the production of agrofuel would be based on unsustainable agricultural practices that demand massive inputs of fertilizers and would only further the depletion of soil nutrients, bringing us back to the metabolic rift that Marx originally addressed. Two recent examples of technical approaches to mitigating climate change are particularly illustrative of how technological optimism distracts us from the political-economic sources of our environmental problems. Nobel laureate Paul Crutzen, who admirably played a central role in identifying and analyzing human-generated ozone depletion in the stratosphere, recently argued that climate change can be avoided by injecting sulfur particles into the stratosphere to increase the albedo of the Earth, and thus reflect more of the sun’s energy back into space, which would counter the warming stemming from rising concentrations of greenhouse gases. Although no doubt offered sincerely and out of desperation stemming from the failure of those in power adequately to address the mounting climate crisis, the technical framing of the climate change issue makes it easy for political and business leaders to avoid addressing greenhouse gas emissions, since they can claim that technical fixes make it unnecessary to take action to preserve forests and curtail the burning of fossil fuels. Engineering the atmosphere on this scale is likely to have many far-reaching consequences (acid rain being only the most obvious), many of which have not been anticipated. In a similar vein, well-known physicist Freeman Dyson recently suggested that we can avoid global climate change by replacing one-quarter of the world’s forests with genetically engineered carbon-eating trees. The ecological consequences of such an action would likely be extraordinary. Both of these so-called solutions avoid addressing the dynamics of an economic system that is largely structured around burning fossil fuels, that must constantly renew itself on a larger scale, and that runs roughshod over nature. Often techno-solutions are proposed in a manner that suggests they are completely removed from the world as it operates. The irony is that such narrowly conceived “solutions” would only serve as a means to prop up the very forces driving ecological degradation, allowing those forces to continue to operate, as they create additional ecological rifts.18

The alternative is to do nothing – this solves the inevitability of capitalism

Zizek 08—Senior Research @ Institute for Social Studies-Ljubljana [Slavoj, Violence, p. 207-217

While the parallel holds, the concluding characterisation seems to fall short: the unsettling message of Seeing is not so much the indissolubility of both people and government as much the compulsive nature of democratic rituals of freedom. What happens is that by abstaining from voting, people effectively dissolve the government-not only in the limited sense of overthrowing the existing government, but more radically. Why is the government thrown into such a panic by the voters' abstention? It is compelled to confront the fact that it exists, that it exerts power, only insofar as it is accepted as such by its subjects-accepted even in the mode of rejection. The voters' abstention goes further than the intra-political negation, the vote of no confidence: it rejects the very frame of decision. In psychoanalytic terms, the voters' abstention is something like the psychotic Verwerfung (foreclosure, rejection/repudiation), which is a more radical move than repression (Verdrangung). According to Freud, the repressed is intellectually accepted by the subject, since it is named, and at the same time is negated because the subject refuses to recognise it, refuses to recognise him or herself in it. In contrast to this, foreclosure rejects the term from the symbolic tout court. To circumscribe the contours of this radical rejection, one is tempted to evoke Badiou's provocative thesis: "It is better to do nothing than to contribute to the invention of formal ways of rendering visible that which Empire already recognizes as existent.''6 Better to do nothing than to engage in localised acts the ultimate function of which is to make the system run more smoothly (acts such as providing space for the multitude of new subjectivities). The threat today is not passivity, but pseudoactivity, the urge to "be active," to "participate," to mask the nothingness of what goes on. People intervene all the time, "do something"; academics participate in meaningless debates, and so on. The truly difficult thing is to step back, to withdraw. Those in power often prefer even a "critical" participation, a dialogue, to silence-just to engage us in "dialogue," to make sure our ominous passivity is broken. The voters' abstention is thus a true political act: it forcefully confronts us with the vacuity of today's democracies.If one means by violence a radical upheaval of the basic social relations, then, crazy and tasteless as it may sound, the problem with historical monsters who slaughtered millions was that they were not violent enough. Sometimes doing nothing is the most violent thing to do.

### Prolif

Nuclear power dying – Fukushima, natural gas, recession

Matthew L. Wald, “Nuclear Power’s Death Somewhat Exaggerated,” New York Times, April 10, 2012, http://www.nytimes.com/2012/04/11/business/energy-environment/nuclear-powers-death-somewhat-exaggerated.html, accessed 7-8-2012.

NUCLEAR energy is going through an odd patch. It refuses to die, but it does not prosper. This is how modest the nuclear industry’s prospects now look: Senator Lamar Alexander, a Tennessee Republican who has called for building 100 reactors in the next few years, told a conference of industry specialists in late March that the long-ballyhooed “nuclear renaissance” did not really exist anymore. Now, he said, it is an “awakening to the awareness of nuclear.” But it is an awakening with a price of $30 billion or more. Mr. Alexander was speaking to a conference convened on the 33rd anniversary of the Three Mile Island accident, a few weeks after the Nuclear Regulatory Commission gave permission to build a power reactor for the first time in more than 30 years, for the twin Vogtle reactors near Augusta, Ga. Those will cost $14 billion, if all goes well, and more if it does not. A few days after he spoke, the commission approved a license for another pair of reactors in South Carolina, which will cost about the same. Several other companies are laying out hundreds of millions of dollars in planning for reactors that may or may not get to the groundbreaking stage. The industry’s three great recent stumbling blocks, the Fukushima accident of March 2011, the exceptionally low price of natural gas and a recession that has stunted demand for power, mock the idea that dozens of new reactors are waiting in the wings. But in an era of worry over global warming, support is plentiful for at least keeping a toe in the water.

The U.S. refuses to use prolif leadership and other countries will misinterpret

Richard Cleary, American Enterprise Institute Research Assistant, 8/13/12, Richard Cleary: Persuading Countries to Forgo Nuclear Fuel-Making, npolicy.org/article.php?aid=1192&tid=30

The cases above offer a common lesson: The U.S., though constrained or empowered by circumstance, can exert considerable sway in nonproliferation matters, but often elects not to apply the most powerful tools at its disposal for fear of jeopardizing other objectives. The persistent dilemma of how much to emphasize nonproliferation goals, and at what cost, has contributed to cases of nonproliferation failure. The inconsistent or incomplete application of U.S. power in nonproliferation cases is most harmful when it gives the impression to a nation that either sharing sensitive technology or developing it is, or will become, acceptable to Washington. U.S. reticence historically, with some exceptions, to prioritize nonproliferation—and in so doing reduce the chance of success in these cases—does not leave room for great optimism about future U.S. efforts at persuading countries to forgo nuclear fuel-making.

Countries will not give up weapons programs – political motivations, avoid technical constraints

Richard Cleary, American Enterprise Institute Research Assistant, 8/13/12, Richard Cleary: Persuading Countries to Forgo Nuclear Fuel-Making, npolicy.org/article.php?aid=1192&tid=30

The examples above show the limitations of both demand and supply side efforts. Supply side diplomatic interventions, made before the transfer of technology, have been at times effective, particularly in precluding nuclear fuel-making in the short term and buying time for more lasting solutions. However, as the Pakistan and Brazil cases illustrated, supply side interventions are no substitute for demand side solutions: Countries face political choices regarding nuclear fuel-making. A nation set upon an independent fuel-making capacity, such as Pakistan or Brazil, is unlikely to give up efforts because of supply side controls. Multilateral fuel-making arrangements, as proposed repeatedly by the United States, have not materialized and therefore seem to have had little tangible influence.

Thorium requires uranium and plutonium to sustain a chain reaction – this increases the risk of proliferation

Arjun Makhijani, an electrical and nuclear engineer who is President of the Institute for Energy and Environmental Research. Makhijani has written many books and reports analyzing the safety, economics, and efficiency of various energy sources. He has testified before Congress and has served as an expert witness in Nuclear Regulatory Commission proceedings, and Michele Boyd, former director of the Safe Energy Program at Physicians for Social Responsibility, “Thorium Fuel: No Panacea for Nuclear Power,” Physicians for Social Responsibility, July 2009, <http://ieer.org/wp/wp-content/uploads/2012/04/thorium2009factsheet.pdf>, accessed 10-1-2012.

Thorium is not actually a “fuel” because it is not fissile and therefore cannot be used to start ¶ or sustain a nuclear chain reaction. A fissile material, such as uranium-235 (U-235) or ¶ plutonium-239 (which is made in reactors from uranium-238), is required to kick-start the ¶ reaction. The enriched uranium fuel or plutonium fuel also maintains the chain reaction ¶ until enough of the thorium target material has been converted into fissile uranium-233 (U-¶ 233) to take over much or most of the job. An advantage of thorium is that it absorbs slow ¶ neutrons relatively efficiently (compared to uranium-238) to produce fissile uranium-233.¶ The use of enriched uranium or plutonium in thorium fuel has proliferation implications. ¶ Although U-235 is found in nature, it is only 0.7 percent of natural uranium, so the ¶ proportion of U-235 must be industrially increased to make “enriched uranium” for use in ¶ reactors. Highly enriched uranium and separated plutonium are nuclear weapons ¶ materials.

Proliferation risks are generally low unless nuclear energy and cooperation spread – this increases the risk by 500%

Matthew Fuhrmann, Stanton nuclear security fellow at the Council on Foreign Relations, research focused on international security and nuclear proliferation, current work centers on the causes and consequences of the nuclear energy renaissance, research examines topics such as nuclear weapons and coercive threats, military strikes against nuclear facilities, radiological/nuclear terrorism, and regional nuclear weapons free zones, has been an assistant professor of political science at the University of South Carolina since January 2009, associate at the Project on Managing the Atom at Harvard's Kennedy School, served as a research fellow at Harvard University's Belfer Center for Science and International Affairs, was previously a research associate at the University of Georgia's Center for International Trade and Security, holds an MS in international affairs from Georgia Tech and a PhD in political science from the University of Georgia, “Spreading Temptation: Proliferation and Peaceful Nuclear Cooperation Agreements,” International Security, Summer 2009, http://www.mitpressjournals.org/doi/abs/10.1162/isec.2009.34.1.7, accessed 9-3-2012.

Before moving to the multivariate analysis, I considered cross tabulations of nuclear cooperation agreements against nuclear weapons program onset and nuclear weapons acquisition. The results are presented in tables 2 and 3. These simple cross tabulations underscore that proliferation is a relatively rare event. Decisions to begin weapons program occur in fifteen of the observations in the sample (0.22 percent), and bomb acquisition occurs in nine observations in the sample (0.13 percent). Even though proliferation occurs infrequently, these cross tabulations show that nuclear cooperation strongly influences whether countries will go down the nuclear path. Participation in at least one nuclear cooperation agreement increases the likelihood of beginning a bomb program by about 500 percent. The combination of militarized conflict and nuclear assistance has an even larger substantive effect on program onset. Experiencing both of these phenomenon increases the probability of initiating a weapons program by about 638 percent. This simple analysis emphasizes that these relationships are not deterministic. Although countries that receive peaceful assistance were more likely to begin weapons programs, the majority of countries that benefit from such aid do not proliferate. It is also noteworthy that 80 percent of the countries that began programs did so after receiving civilian aid. The four countries that initiated nuclear weapon programs without receiving such assistance—France, the Soviet Union, the United Kingdom, and the United States—did so in the 1940s and early 1950s when peaceful nuclear cooperation was not an option. From 1955 to 2000, no country began a nuclear weapons program without first receiving civilian assistance. This suggests that after the early days of the atomic age, nuclear aid became a necessary condition for launching a nuclear weapons program.

Cooperation over nuclear energy causes proliferation – market particularly vulnerable now

Matthew Fuhrmann, Stanton nuclear security fellow at the Council on Foreign Relations, research focused on international security and nuclear proliferation, current work centers on the causes and consequences of the nuclear energy renaissance, research examines topics such as nuclear weapons and coercive threats, military strikes against nuclear facilities, radiological/nuclear terrorism, and regional nuclear weapons free zones, has been an assistant professor of political science at the University of South Carolina since January 2009, associate at the Project on Managing the Atom at Harvard's Kennedy School, served as a research fellow at Harvard University's Belfer Center for Science and International Affairs, was previously a research associate at the University of Georgia's Center for International Trade and Security, holds an MS in international affairs from Georgia Tech and a PhD in political science from the University of Georgia, “Spreading Temptation: Proliferation and Peaceful Nuclear Cooperation Agreements,” International Security, Summer 2009, http://www.mitpressjournals.org/doi/abs/10.1162/isec.2009.34.1.7, accessed 9-3-2012.

Since the early days of the atomic age, policymakers have attempted to promote the peaceful uses of nuclear energy. These initiatives were based, at least in part, on the belief that spreading technology would make states less likely to want nuclear weapons. This analysis reveals that “atoms for peace” policies have, on average, facilitated—not constrained—nuclear proliferation. Atoms for peace become atoms for war. From a nonproliferation standpoint, this is a troubling conclusion that carries tremendous policy implications, especially given the looming renaissance in nuclear power. The global nuclear marketplace is more active today than it has been in at least twenty years. Countries in Latin America, Southeast Asia, the Middle East, and Africa have expressed a desire to begin or revive civilian nuclear programs. And many of them are receiving assistance in developing such programs from France, Japan, Russia, the United States, and other capable suppliers.

No cascade of proliferation – its all alarmist rhetoric

Muthia Alagappa, pub. date: 2008, Distinguished Senior Fellow, East-West Center, “The Long Shadow: Nuclear Weapons and Security in 21st Century Asia,” accesed: 1-6-09, p. 521-2, Google Books

It will be useful at this juncture to address more directly the set of instability arguments advanced by certain policy makers and scholars: the domino effect of new nuclear weapon states, the probability of preventative action against new nuclear weapon states, and the compulsion of these states to use their small arsenals early for fear of losing them in a preventive or preemptive strike by a stronger nuclear adversary. On the domino effect, India’s and Pakistan’s nuclear weapon programs have not fueled new programs in South Asia or beyond. Iran’s quest for nuclear weapons is not a reaction to the Indian or Pakistani programs. It is grounded in that country’s security concerns about the U ntiedStates and Tehran’s regional aspirations. The North Korean test has evoked mixed reactions in Northeast Asia. Tokyo is certainly concerned; its reaction, though, has not been to initiate its own nuclear weapon program but to reaffirm and strengthen the American extended deterrence commitment to Japan. Even if the U.S.-Japan security treaty were to weaken, it is not certain that Japan would embark on a nuclear weapon program. Likewise, South Korea has sought reaffirmation of the American extended deterrence commitment, but has firmly held to its nonnuclear posture. Without dramatic change in it’s political, economic, and security circumstances, South Korea is highly unlikely to embark on a covert (or overt) nuclear weapon program as it did in the 1970s. South Korea could still become a nuclear weapon state by inheriting the nuclear weapons of North Korea should the Kim Jong Il regime collapse. Whether it retains or gives up that capability will hinge on the security circumstances of a unified Korea. The North Korean nuclear test has not spurred Taiwan or Mongolia to develop nuclear weapon capability. The point is that each country’s decision to embark on and sustain nuclear weapon programs is contingent on its particular security and other circumstances. Through appealing, the domino theory is not predictive; often it is employed to justify policy on the basis of alarmist predictions. The loss of South Vietnam, for example, did not lead to the predicted domino effect in Southeast Asia and brought about a fundamental transformation in that sub region (Lord 1993, 1996). In the nuclear arena, the nuclear programs of China, India, and Pakistan were part of a security chain reaction, not mechanically falling dominos. However, as observed earlier the Indian, Pakistani, and North Korean nuclear tests have thus far not had the domino effect predicted by alarmist analysts and policy makers. Great caution should be exercised in accepting at face value the sensational predictions of individuals who have a vested interest in accentuating the dangers of nuclear proliferation. Such analysts are now focused on the dangers of a nuclear Iran. A nuclear Iran may or may not have destabilizing effects. Such claims must be assessed on the basis of an objective reading of the drivers of national and regional security in Iran and the Middle East.

### China

Technological competition, not leadership, is key to U.S. hegemony – we will absorb global progress

Titus Galama, Ph.D. in economics, Tilburg University; Ph.D. and M.Sc. in physics, University of Amsterdam; M.B.A., INSEAD, Fontainebleau, France, economist at the RAND Corporation and a professor at the Pardee RAND Graduate School, and James Hosek, Ph.D. and M.A. in economics, University of Chicago; B.A. in English, Cornell University, senior economist at the RAND Corporation and a professor at the Pardee RAND Graduate School, U.S. Competitiveness in Science and Technology, 2008, <http://books.google.com/books?id=0F3-LD4SdRAC&pg=PA39&lpg=PA39&dq=%22and+innovation+in+many+countries+suggests+a+future+of+significant+innovation%22&source=bl&ots=YGT1nHnMYW&sig=g2iZFPoUV_0DPJ-F1JBhB8sqBWk&hl=en#v=onepage&q=%22and%20innovation%20in%20many%20countries%20suggests%20a%20future%20of%20significant%20innovation%22&f=false>, accessed 9-15-2012.

High growth in R&D expenditures, employment of scientists and engineers, and patents suggests that U.S. S&T has remained vigorous. These U.S. developments occur at a time when increases (though at different rates) in each of these measures are also seen in the EU-15, Japan, China, Korea, and many other nations/regions. In other words, strong growth of R&D activity, S&E employment, and innovation in many countries suggests a future of significant innovation activity, and, because of the greater diffusion of technology in a globalized world, the promise of economic growth for those nations that are capable of absorbing (making economic use of) the new technology. Scientifically advanced nations and regions such as the United States, the EU, and Japan are highly capable of implementing new technology and will benefit from it.. Developing nations such as China and India have par- tial capability, but are well ahead of Latin America, the Middle East, and Africa. Though, as we will discuss in more detail later, develop- ing nations can continue to grow their economies rapidly by absorbing existing technology in addition to new technology.

China has barely started looking into Thorium and will eventually give up

Eifion Rees for the Ecologist, “Don't believe the spin on thorium being a greener nuclear option,” The Guardian, June 23, 2011, <http://www.guardian.co.uk/environment/2011/jun/23/thorium-nuclear-uranium>, accessed 10-1-2012.

There is a significant sticking point to the promotion of thorium as the 'great green hope' of clean energy production: it remains unproven on a commercial scale. While it has been around since the 1950s (and an experimental 10MW LFTR did run for five years during the 1960s at Oak Ridge National Laboratory in the US, though using uranium and plutonium as fuel) it is still a next generation nuclear technology – theoretical.¶ China did announce this year that it intended to develop a thorium MSR, but nuclear radiologist Peter Karamoskos, of the International Campaign to Abolish Nuclear Weapons (ICAN), says the world shouldn't hold its breath.¶ 'Without exception, [thorium reactors] have never been commercially viable, nor do any of the intended new designs even remotely seem to be viable. Like all nuclear power production they rely on extensive taxpayer subsidies; the only difference is that with thorium and other breeder reactors these are of an order of magnitude greater, which is why no government has ever continued their funding.'¶ China's development will persist until it experiences the ongoing major technical hurdles the rest of the nuclear club have discovered, he says.

China is pursuing renewable energy

Yan Yan, “China targets renewables to cut energy dependence,” RSC, September 12, 2012, <http://www.rsc.org/chemistryworld/2012/09/china-renewables-five-year-plan-biomass>, accessed 10-4-2012.

The Chinese National Energy Administration (NEA) has unveiled its 12th five-year plan for renewable energy. Unsurprisingly, the plan focuses on the mature renewable technologies of hydropower, wind power, solar energy and biomass. And this should give the country's fledgling biofuel and biological chemistry industry a leg up. ¶ The plan introduces a new goal for renewable energy that should see renewable energy use in China rise to the equivalent of 478 million tonnes of standard coal by 2015. If achieved, more than more than 9.5% of the country’s total energy will come from renewables. Breaking the figures down, by 2015 hydroelectric capacity should increase to 290,000MW, cumulative grid-connected wind power to 100,000MW, solar power to 21,000MW and biomass production should hit the equivalent of 50 million tonnes of coal. The NEA predicts that 150 million tonnes of biomass will be used in 2015, including biomass fuels, bioethanol and biodiesel.¶ Against a backdrop of consumers enduring substantial fuel price fluctuations, Chinese experts are cautiously optimistic that the new biomass energy targets could help. However, some experts point out that the term biomass energy encompasses a wider definition than that used in the last five year plan and includes such burning wood for cooking. Theoretically, traditional energy sources, such as biomass briquettes and biogas, could potentially go a long toward helping the country meet its targets.

The U.S. and China will cooperate on thorium

Mark Halper, has written for TIME, Fortune, Financial Times, the UK's Independent on Sunday, Forbes, New York Times, Wired, Variety and The Guardian, “U.S. partners with China on new nuclear,” Smart Planet, June 26, 2012, <http://www.smartplanet.com/blog/intelligent-energy/us-partners-with-china-on-new-nuclear/17037>, accessed 10-1-2012.

The U.S. Department of Energy is quietly collaborating with China on an alternative nuclear power design known as a molten salt reactor that could run on thorium fuel rather than on more hazardous uranium, SmartPlanet understands.¶ DOE’s assistant secretary for nuclear energy Peter Lyons is co-chairing the partnership’s executive committee, along with Jiang Mianheng from the Chinese Academy of Sciences (CAS), according to a March presentation by CAS on thorium molten salt reactors. Beijing-based CAS is a state group overseeing about 100 research institutes. It and the DOE have established what CAS calls the “CAS and DOE Nuclear Energy Cooperation Memorandum of Understanding.”¶ As SmartPlanet reported late last year, Jiang - the son of former Chinese leader Jiang Zemin - led a Chinese delegation visiting DOE’s Oak Ridge National Laboratory to discuss ORNL’s thorium molten salt reactor (MSR) technology. Some sources identify him as a vice president of CAS. ORNL developed a thorium MSR in the 1960s.¶ The 48-page presentation, entitled “TMSR Project of CAS” (TMSR stands for thorium molten salt reactor) is dated March 12, 2012 throughout, except on the cover page, which gives a March 18 date. It names the author as Xiaohan Yu from CAS’ TMSR Research Center, based at the Shanghai Institute of Applied Physics.

Heg doesn’t solve war

Barbara Conry (former associate policy analyst, was a public relations consultant at Hensley Segal Rentschler and an expert on security issues in the Middle East, Western Europe, and Central Asia at the CATO Institute) and Charles V. Pena (Senior Fellow at the Independent Institute as well as a senior fellow with the Coalition for a Realistic Foreign Policy, and an adviser on the Straus Military Reform Project at the CATO Institute) 2003 “47. US Security Strategy” CATO Handbook for Congress, http://www.cato.org/pubs/handbook/hb108/hb108-47.pdf

Another rationale for attempting to manage global security is that a world without U.S. hegemony would soon degenerate into a tangle of chaos and instability, in which weapons proliferation, genocide, terrorism, and other offensive activities would be rampant. Prophets of such a development hint that if the United States fails to exercise robust political and military leadership today, the world is condemned to repeat the biggest mistakes of the 20th century—or perhaps do something even worse. Such thinking is seriously flawed. First, instability in the international system is nothing new, and most episodes do not affect U.S. vital interests. Furthermore, to assert that U.S. global leadership can stave off otherwise inevitable global chaos vastly overstates the power of any single country to influence world events. Indeed, many of the problems that plague the world today, such as civil wars and ethnic strife, are largely impervious to external solutions. There is little to back up an assertion that only Washington’s management of international security can save the world from political, economic, or military conflagration.

Perception of U.S. tech leadership is increasingly positive and energy is not the cause for concern – tech leaders want the government out of energy

Rob Preston, VP & Editor in Chief, InformationWeek, “U.S. Tech Leadership On Solid Ground, IT Pros Say,” Information Week, July 9, 2012, http://www.informationweek.com/global-cio/interviews/us-tech-leadership-on-solid-ground-it-pr/240002852, accessed 9-3-2012.

Two years ago, under the moniker Innovation Mandate, InformationWeek fielded a survey and conducted scores of interviews to gauge whether U.S. IT pros and the industry at large think this country is declining as a global technology leader--and if so, what we can do about it. When asked to describe where the U.S. stands in the global IT industry, 63% of the 624 business technology pros who responded to that 2010 survey characterized the U.S. as "a strong player, but losing its lead on a global scale," while 5% saw the U.S. as "a former leader whose best days are behind it." Only 32% of respondents still saw the U.S. IT industry as "a global leader positioned to grow its influence." How have views changed in two years? We fielded an updated survey in April (download our full, updated Innovation Mandate report), and the results are in: IT pros are slightly more optimistic about the state of U.S. technology leadership, though their opinions about the most pressing priorities and competitive threats, as well as which IT vendors and nations are taking the mantle of leadership and which are falling behind, have shifted a bit in two years. Responding to our latest survey were 552 business technology pros at a range of U.S. companies, educational institutions, and government organizations. The same percentage as in 2010--63%--think the U.S. is a strong IT player but losing its global lead. The percentage who are more optimistic--who think it's a global leader positioned to grow its influence--rose slightly, to 34% from 32%. Only 3% of respondents think the U.S. is a former IT leader, compared with 5% two years ago. What, Me Worry? As for the main factors preventing the U.S. from growing as a global IT leader, the results of the recent survey are pretty consistent with those from 2010. Still topping the list of concerns is "shortsighted decisions that are shipping tech jobs and ultimately innovation abroad," selected as one of the most important three factors by 67% of the 362 survey respondents who think the U.S. is a former technology leader or is losing its lead, compared with 66% two years ago. Likewise, the No. 2 and No. 3 factors thought to be limiting U.S. technology leadership are the same in the 2012 survey as in 2010: "failure of the educational system to produce workers who excel in STEM" and "lack of leadership at the federal policy-making level" (see chart below). The biggest shifts since 2010 have to do with intellectual property and perceptions about U.S. IT worker productivity and ambition. In the 2010 survey, only 18% of respondents cited "failure to protect intellectual property developed in the U.S." as one of the top three factors holding back the U.S. IT industry. But that percentage jumped to 28% this year, as more technology R&D and design work gets farmed out to companies in other countries, or as news surfaces that foreign companies and governments are trying to steal that U.S. IP. Meantime, 21% of the IT pros we surveyed in 2010 worried about "a corporate culture where tech workers no longer are 'hungry' enough to out-innovate counterparts based abroad," but only 15% see that as a top concern today. Responses to our question about what the U.S. government's role should be in supporting IT innovation show attitudes shifting subtly away from such reliance. (Multiple responses were allowed.) About the same percentage of respondents to our 2012 and 2010 surveys think the government's role should be to support basic and applied research at the university level (59% vs. 60%) and federal level (58% in both surveys). But the percentage of respondents who want the government to provide R&D tax credits to private industry declined, to 54% from 63%. Also declining is the percentage of respondents who want the government to fund big technology programs such as broadband, smart grid, and electronic medical records (38% in 2012 versus 45% in 2010). Where IT pros want more government involvement (or, more accurately, don't want less) is in regulation: 51% of respondents called for less IT regulation two years ago compared with 46% this year.

Allowing other countries to lead technological progress does not harm the U.S.

Titus Galama, Ph.D. in economics, Tilburg University; Ph.D. and M.Sc. in physics, University of Amsterdam; M.B.A., INSEAD, Fontainebleau, France, economist at the RAND Corporation and a professor at the Pardee RAND Graduate School, and James Hosek, Ph.D. and M.A. in economics, University of Chicago; B.A. in English, Cornell University, senior economist at the RAND Corporation and a professor at the Pardee RAND Graduate School, U.S. Competitiveness in Science and Technology, 2008, <http://books.google.com/books?id=0F3-LD4SdRAC&pg=PA39&lpg=PA39&dq=%22and+innovation+in+many+countries+suggests+a+future+of+significant+innovation%22&source=bl&ots=YGT1nHnMYW&sig=g2iZFPoUV_0DPJ-F1JBhB8sqBWk&hl=en#v=onepage&q=%22and%20innovation%20in%20many%20countries%20suggests%20a%20future%20of%20significant%20innovation%22&f=false>, accessed 9-15-2012.

Given the complexity of the problem, economists and policymakers do not know what the “right” amount of effort and investment in S&T is for a nation; at a minimum, we can compare the United States with other nations to learn how much they have chosen to invest and with what results, and reflect on that in considering how much the United States should invest. The comparison with other countries is made from this perspective and not from the viewpoint of competition between nations in S&T, which is the more common motivation for such comparisons. As we discussed earlier, the notion of competition can he mis- leading when applied to a comparison of countries.. Neither international trade nor S&T progress is a zero-slim game, and improvement in one country does not necessarily imply a loss for another country.

Thorium reactors have no design plan in R&D for commercialization – no electricity produced, granular cracking, and moderator distortion means it’s unsafe.

Dylan Ryan, 2011, Masters in Mechanical Engineering, specialization in technical aided engineering & materials, and a PhD in engineering energy systems from Stanford University, 15 years’ experience in natural convection and heat transfer, daryanenergyblog , “The Molten Salt Reactor concept,” <http://daryanenergyblog.wordpress.com/ca/part-8-msr-lftr/>

Firstly, there is a view that the LFTR concept has been “proven” already via the Molten-Salt Reactor Experiment (MSRE) project in the 1960’s. While it is certainly true that such a reactor ran successfully for 4 years and that this project proved that some of the ideas behind the MSR have merit, there are a couple of key things it didn’t do. Notably, it never generated a single watt of electricity. As I’ve mentioned previously the turbo generator systems for high temperature reactors is technically challenging, especially for the LFTR as the molten salt presents a number of design challenges. That said, the goal of the MSR experiment was to prove the reactor concept, not develop turbo machinery kit, which would have been a serious (and costly) distraction. The molten salts at the MSRE were passed through a cooling loop and fans used to blow the pipe work cool again. Stories of said pipe work glowing red (see below) are worrying, as it indicates they were operating well within the thermal creep zone. At the time very little was known about thermal creep, in particular the delirious effects of neutron bombardment on exacerbating the problem. Consequently, it’s unlikely one could utilize the same design spec today for a commercial plant. Indeed, reports of distortions in the graphite moderator after just a few years exposure and worse inter-granular cracking (a corrosion related failure phenomenon usually caused by excessively high temperatures) of some metal components exposed to the molten salt, suggest it was operating well outside the limits of what would count as a reasonable safe technical envelope (at least for a commercial reactor with a long operating life). As I will detail later this has significant design implications. The reactor also spent a good deal of its time down for maintenance. The cooling circuit of the MSRE glows red hot due to its high operating temperature Also, the MSRE never included the trickier Chemical Processing Plant. One was designed by ORNL but never installed. Aside from using a chemical spray technique to separate out the nastier neutron “poisons”, such as Xenon-135, much of the remaining “chemical plant” functions of this reactor design have never been tested. While the MSRE did run once on U-233, this was generated off site, not by the reactor itself. Finally, as I hinted earlier, 40 years is a long time. Very little of the technical side of building this reactor would be relevant today given how much technology, especially material science has changed. Many of the scientists who worked on it are either dead or retired. While one won’t be starting off with a blank sheet of paper, you probably won’t find yourself far removed from that.

Extra steps in thorium make it cost-prohibitive

Arjun Makhijani, n electrical and nuclear engineer who is President of the Institute for Energy and Environmental Research. Makhijani has written many books and reports analyzing the safety, economics, and efficiency of various energy sources. He has testified before Congress and has served as an expert witness in Nuclear Regulatory Commission proceedings, and Michele Boyd, former director of the Safe Energy Program at Physicians for Social Responsibility, “Thorium Fuel: No Panacea for Nuclear Power,” Physicians for Social Responsibility, July 2009, <http://ieer.org/wp/wp-content/uploads/2012/04/thorium2009factsheet.pdf>, accessed 10-1-2012.

Thorium may be abundant and possess certain technical advantages, but it does not mean ¶ that it is economical. Compared to uranium, the thorium fuel cycle is likely to be even more ¶ costly. In a once-through mode, it will need both uranium enrichment (or plutonium ¶ separation) and thorium target rod production. In a breeder configuration, it will need ¶ reprocessing, which is costly. In addition, as noted, inhalation of thorium-232 produces a ¶ higher dose than the same amount of uranium-238 (either by radioactivity or by weight). ¶ Reprocessed thorium creates even more risks due to the highly radioactive U-232 created ¶ in the reactor. This makes worker protection more difficult and expensive for a given level ¶ of annual dose.

Thorium doesn’t solve – multiple hurdles for commercialization and an increase in the risk of proliferation.

Arjun Makhijani & Michele Boyd, 2009, President of IEER, holds a Ph.D. in engineering (specialization: nuclear fusion) from the University of California at Berkeley. He has produced many studies and articles on nuclear fuel cycle related issues, including weapons production, testing, and nuclear waste, over the past twenty years, Michele Boyd is the former director of the Safe Energy Program at Physicians for Social Responsibility, was the legislative director of Public Citizen’s Energy Program where she advocated for sound federal energy legislation and led the coalition to terminate the federal reprocessing program (GNEP), Global Outreach Coordinator and Staff Scientist at the Institute for Energy and Environmental Research (IEER), master’s degree in environmental policy from the University of Michigan, Physicians for Social Responsibility, “Thorium Fuel: No Panacea for Nuclear Power,” <http://ieer.org/wp/wp-content/uploads/2012/04/thorium2009factsheet.pdf>

Thorium “fuel” has been proposed as an alternative to uranium fuel in nuclear reactors. There are not “thorium reactors,” but rather proposals to use thorium as a “fuel” in different types of reactors, including existing light-water reactors and various fast breeder reactor designs. Thorium, which refers to thorium-232, is a radioactive metal that is about three times more abundant than uranium in the natural environment. Large known deposits are in Australia, India, and Norway. Some of the largest reserves are found in Idaho in the U.S. The primary U.S. company advocating for thorium fuel is Thorium Power (www.thoriumpower.com). Contrary to the claims made or implied by thorium proponents, however, thorium doesn’t solve the proliferation, waste, safety, or cost problems of nuclear power, and it still faces major technical hurdles for commercialization. Not a Proliferation Solution Thorium is not actually a “fuel” because it is not fissile and therefore cannot be used to start or sustain a nuclear chain reaction. A fissile material, such as uranium-235 (U-235) or plutonium-239 (which is made in reactors from uranium-238), is required to kick-start the reaction. The enriched uranium fuel or plutonium fuel also maintains the chain reaction until enough of the thorium target material has been converted into fissile uranium-233 (U-233) to take over much or most of the job. An advantage of thorium is that it absorbs slow neutrons relatively efficiently (compared to uranium-238) to produce fissile uranium-233. The use of enriched uranium or plutonium in thorium fuel has proliferation implications. Although U-235 is found in nature, it is only 0.7 percent of natural uranium, so the proportion of U-235 must be industrially increased to make “enriched uranium” for use in reactors. Highly enriched uranium and separated plutonium are nuclear weapons materials. In addition, U-233 is as effective as plutonium-239 for making nuclear bombs. In most proposed thorium fuel cycles, reprocessing is required to separate out the U-233 for use in fresh fuel. This means that, like uranium fuel with reprocessing, bomb-making material is separated out, making it vulnerable to theft or diversion. Some proposed thorium fuel cycles even require 20% enriched uranium in order to get the chain reaction started in existing reactors using thorium fuel. It takes 90% enrichment to make weapons-usable 2 uranium, but very little additional work is needed to move from 20% enrichment to 90% enrichment. Most of the separative work is needed to go from natural uranium, which has 0.7% uranium-235, to 20% U-235.

Very long timeframe even with optimal market conditions – an increase in incentives for thorium still won’t get fuel vendors on board.

UK NNL (National Nuclear Laboratory), August 2010, “The Thorium Fuel Cycle,” <http://ripassetseu.s3.amazonaws.com/www.nnl.co.uk/_files/documents/aug_11/NNL__1314092891_Thorium_Cycle_Position_Paper.pdf>

ThorEnergy advocates using plutonium as the initial “seed” material (the fissile material used to generate the neutrons to enable breeding to take place in the fertile thorium) for LWRs, prior to U-233 becoming available at a later stage. The plutonium would be incorporated in Th-Pu MOX fuel. They argue that Th-Pu MOX is fundamentally very similar to U-Pu MOX fuel and therefore that the R&D requirements would be much less onerous than would be necessary for a more radical design change. Nevertheless, ThorEnergy recognize that the large R&D investment will still be required and the timescale to commercial readiness will be long. There have been many other international thorium fuel studies, including several demonstration programs in the Shipping port prototype Pressurized Water Reactor (PWR) and High Temperature Reactors (HTRs). However, these were not subsequently progressed to full commercial deployment. The main reason has been that thorium is competing with the uranium/plutonium fuel cycle which is already very mature. To progress to commercial deployment would demand major investments from fuel vendors and utilities. Such investment has yet to be justified by market conditions and there is no immediate prospect of change in the next ten years. Beyond that, however, the conditions may favor thorium if uranium ore prices increase and/or uranium reserves become more scarce. In the event of thorium fuel cycles being adopted commercially in existing LWRs, the technology can be considered to be well understood, but not fully demonstrated. The historic experience in the Shipping port PWR cannot now be considered adequate to cover modern operating regimes and discharge burnups. Demonstration of thorium/U-233 fuels in commercial LWRs will therefore demand small scale testing in research reactors, followed by large scale tests in commercial reactors. Based on NNL’s knowledge and experience of introducing new fuels into modern reactors, it is estimated that this is likely to take 10 to 15 years even with a concerted R&D effort and investment before the thorium fuel cycle could be established in current reactors and much longer for any future reactor systems. Therefore it is not envisaged that thorium fuel in LWRs will be established in the next decade, but could be feasible in the following ten years if the market conditions are conducive.

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### CP

1. Faster, more creative, better for the environment – cooperation

EPA, “Policy on Alternative Dispute Resolution,” Federal Register, December 18, 2000, <http://www.pubklaw.com/hi/65fr81858.html>, accessed 9-10-2012.

The U.S. Environmental Protection Agency (EPA or the Agency) ¶ strongly supports the use of alternative dispute resolution (ADR) to ¶ deal with disputes and potential conflicts. ADR refers to voluntary ¶ techniques for preventing and resolving conflict with the help of ¶ neutral third parties. Experience within this Agency and elsewhere ¶ shows that ADR techniques for preventing and resolving conflicts can ¶ have many benefits including:¶ Faster resolution of issues;¶ More creative, satisfying and enduring solutions;¶ Reduced transaction costs;¶ Fostering a culture of respect and trust among EPA, its ¶ stakeholders, and its employees;¶ Improved working relationships;¶ [[Page 81859]]¶ Increased likelihood of compliance with environmental laws ¶ and regulation;¶ Broader stakeholder support for agency programs; and¶ Better environmental outcomes.¶ ADR techniques can be effective in both internal Agency ¶ disagreements and external conflicts. ADR allows the Agency to have a ¶ more productive work environment and to work better with State, Tribal, ¶ and local governments, the regulated community, environmental and ¶ public health organizations, and the public. This policy is intended to ¶ be flexible enough to respond to the full range of disputes EPA faces, ¶ and to achieve these objectives:¶ Promote understanding of ADR techniques;¶ Encourage routine consideration of ADR approaches to ¶ anticipate, prevent, and resolve disputes;¶ Increase the use of ADR in EPA business;¶ Highlight the importance of addressing confidentiality ¶ concerns in ADR processes;¶ Promote systematic evaluation and reporting on ADR at EPA; ¶ and¶ Further the Agency's overall mission through ADR program ¶ development.¶ What does EPA mean by the term ``ADR'?¶ EPA adopts the definition of ADR in the Administrative Dispute ¶ Resolution Act of 1996 (ADRA): ``any procedure that is used to resolve ¶ issues in controversy, including but not limited to, conciliation, ¶ facilitation, mediation, fact finding, minitrials, arbitration, and use ¶ of ombuds, or any combination thereof.'' 5 U.S.C. 571(3). All these ¶ techniques involve a neutral third party. Depending on the ¶ circumstances of a particular dispute, neutrals may be Agency employees ¶ or may come from outside EPA. Typically, all aspects of ADR are ¶ voluntary, including the decision to participate, the type of process ¶ used, and the content of any final agreement.¶ In what types of situations does EPA encourage the use of ADR?¶ EPA encourages the use of ADR techniques to prevent and resolve ¶ disputes with external parties in many contexts, including ¶ adjudications, rulemaking, policy development, administrative and civil ¶ judicial enforcement actions, permit issuance, protests of contract ¶ awards, administration of contracts and grants, stakeholder ¶ involvement, negotiations, and litigation. In addition, EPA encourages ¶ the use of ADR techniques to prevent and resolve internal disputes such ¶ as workplace grievances and equal employment opportunity complaints, ¶ and to improve labor-management partnerships.¶ While ADR may be appropriate in any of these contexts, the decision ¶ to use an ADR technique in a particular matter must reflect an ¶ assessment of the specific parties, issues, and other factors. ¶ Considerations relevant to the appropriateness of ADR for any ¶ particular matter include, at a minimum, the guidelines in section 572 ¶ of the ADRA and any applicable Agency guidance on particular ADR ¶ techniques or ADR use in specific types of disputes. ADR program staff ¶ at EPA headquarters and in the Regions can help the parties assess ¶ whether and which form of ADR should be used in a particular matter.

2. Better policy – information sharing

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Negotiation should hardly be viewed as a panacea for the various difficulties that typically confront the policymaker. Used in the right context, however, negotiation can be a useful tool in the establishment, implementation, and enforcement of environmental and occupational safety and health policy. Negotiation can facilitate a better understanding of issues, concerns, facts, and positions among adversaries. It can also promote the sharing of relevant information, and can provide an opportunity for creative problem-solving. Whether negotiation will be better than other, generally more adversarial mechanisms as a means of fostering improved environmental, health, and safety outcomes, or of stimulating meaningful technological change, will depend on the situation in which it is used. In general, negotiation would appear to work best a means of securing these goals in situations in which the necessary regulatory signals for improvement and innovation are already in place.¶ This is one of the reasons that EPA's use of negotiated compliance, as embodied in its SEP policy, has been as successful as it has been. To the firm that is the target of the enforcement action, the "stakes" are clear: so long as it believes it faces higher costs (in the form of a larger fine and/or higher transaction costs) if it does not identify and execute a SEP that is acceptable to EPA, the firm has a meaningful incentive to participate in good faith in the SEP process. And, because the agency has structured the program to allow maximum credit for pollution prevention projects, pollution prevention can become the focus, and the goal, of the negotiations. The pollution prevention results of the SEP program have been relatively modest - mostly diffusion and, sometimes, incremental innovation - but this is in keeping with the relatively modest nature of the financial incentives typically involved, and with the relatively short time period within which the SEP typically must be identified and completed. Especially because negotiation is the traditional means of resolving enforcement disputes, even outside of the SEP process, negotiation appears to work well here. ¶ One would also expect negotiation to work well in those negotiated implementation situations that have a clear, formal focus on technological change, such as the innovation waiver opportunities created by certain environmental statutes. The chief signal to innovate - the new regulatory standard - is already in place (or clearly on the horizon) before negotiation over the waiver or variance begins, and the statutes typically provide an extended period of time for the firm to develop and test the proposed innovation. Thus, so long as the new standard is stringent enough to command the firm's attention, firms should have a meaningful incentive to negotiate time to pursue an innovative compliance alternative.

3. Avoids plan’s litigation, guarantees no roll-back

CNA, Center for Negotiation Analysis, not-for-profit research institute established in 1993 devoted to studying, training, and providingg practical advisory support concerning negotiations, mediation, and other forms of conflict resolution at the national, regional and international levels, “Regulatory Negotiations,” February 1, 2004, <http://www.negotiations.org/reg-neg1.htm>, accessed 9-12-2012.

The traditional process of regulatory development is typically top-down. Government initiates, formulates and proposes the rules. In centralized or closed systems, regulations are imposed; in more open systems, businesses, groups or individuals may comment on the proposals in public hearings, but with little possibility of making major structural and functional modifications to the regulations. This process, while well-intentioned, often leaves stakeholders feeling far removed from the process and disempowered. They may feel that they have minimal voice in designing the regulations, standards and provisions that must be obeyed, and, as a result, compliance may be low and enforcement costs high -- a double-edged sword.¶ Stakeholder reactions to top-down regulatory development can have negative implications. If penalties are increased to discourage noncompliance, businesses may migrate into a "shadow economy," thereby fueling corruption, reducing tax revenues and evading the regulatory regime altogether. In some societies, lengthy and costly litigation in the courts is sometimes pursued by civil society groups to modify or eliminate imposed regulations. Antagonistic and adversarial relations between regulatory agencies and the regulated parties may ensue, resulting in delay or outright disregard for the regulation’s intent. The lack of effective and frank dialogue between the regulators and the regulated is usually blamed for these negative consequences.¶ There is an alternative approach to the traditional process of regulatory formulation and implementation – negotiated rulemaking or regulatory negotiation (reg-neg). Negotiated rulemaking brings together affected stakeholder groups -- businesses, organizations, and citizens -- with the relevant government agency and a neutral mediator or facilitator to build a consensus on the features of a new regulation before it is proposed officially by the agency. Regulatory provisions are developed as a bottom-up participatory process of negotiation.¶ Negotiated rulemaking is a fully collaborative process, in which all interested groups are convened in an "Advisory Committee." Key issues and concerns are identified, the interests of all sides are compared and contrasted, negotiations take place, and hopefully, agreements based on consensus are developed.¶ In the United States, negotiated rulemaking became an officially recommended approach to develop new regulations by federal government agencies in 1990 when the Negotiated Rulemaking Act (5 U.S.C. 561-570) was passed by Congress. A September 1993 Executive Order from the White House requires all federal agencies to consider applying negotiated rulemaking strategies in future regulatory actions. However, the approach has been used informally by government agencies since the 1970s. The Department of Labor, the Environmental Protection Agency (EPA), and the Department of the Interior, are its principal proponents. By far, the EPA has been the most frequent user of negotiated rulemaking. Over 50 federal negotiated rulemaking cases have been documented between 1982 and 1995; many more applications have been conducted in the United States at the state level . Examples of environmental regulations developed using negotiated rulemaking in the United States include:¶ Penalties for businesses for noncompliance with the Clean Air Act¶ Exceptions for licensing pesticides¶ Performance standards for wood burning stoves¶ Controls on volatile organic chemical equipment leaks¶ Standards for transporting hazardous wastes¶ Standards for chemicals used in manufacturing wood furniture.¶ The experience with negotiated rulemaking in the United States has produced several benefits:¶ While negotiated rulemaking takes more time and effort upfront than traditional modes of developing regulations, all the stakeholders, including government agencies, are more satisfied with the results. ¶ Participants find that with a negotiated process, the resulting regulations tend not to be challenged in court. (In contrast, about 80 percent of all EPA regulations have been challenged in court and about 30 percent have been changed as a result.)¶ Less time, money and effort are expended on enforcing the regulations.¶ Final regulations are technically more accurate and clear to everyone.¶ Final regulations can be implemented earlier and with a higher compliance rate.¶ More cooperative relationships are established between the agency and the regulated parties.

A. Litigation expenses for businesses trades-off with poverty-reduction initiatives

Jerry J. McCoy, McCoy is an independent attorney in Washington, D.C., specializing in charitable tax planning and foundations, and Bernard Marcus American pharmacist and retail entrepreneur. He co-founded Home Depot and was the company's first CEO; he served as Chairman of the Board until retiring in 2002. He has also been an active philanthropist, “Solutions for the Litigation Crisis,” Philanthropy Roundtable, June 2004, <http://www.philanthropyroundtable.org/site/print/solutions_for_the_litigation_crisis>, accessed 10-5-2012.

PHILANTHROPY: The link between legal system abuses and charitable giving and participation is probably not clear to a lot of Americans.¶ MR. MARCUS: You’re exactly right. It’s easy to see business and charity as two separate spheres, and forget that abuses of the legal system have a negative impact on both. The first thing to remember is that charities, non-profits, and foundations are every bit as much in the legal crosshairs as businesses. As a result, volunteers for non-profits are harder to recruit because of their fear of being sued. It can be difficult to get people to serve on boards because they fear, with reason, that they might get dragged into a lawsuit. Remember, we’re living in an era when Little League umpires are sued by parents for calling junior “out” at home plate. It all adds up to a soaring liability problem that, for many organizations, has been ruinous. Without a doubt, skyrocketing litigation-related costs have come at the expense of programs that should be helping needy and needful Americans.¶ PHILANTHROPY: And because businesses face the same pressures, they have less money to contribute to worthy causes?¶ MR. MARCUS: Yes. I hope more Americans start to realize this. Jack Welch has probably made the point better than anyone: If companies aren’t making profits, or if they have to spend a lot of money on legal expenses, they have less to give back to the community. So do their shareholders. So do their workers. When companies are doing well, the community does well. During Jack’s reign at GE, for instance, GE engineers volunteered to raise the standards of a Cincinnati school, a school that once sent 5 percent of its students to college and now sends 60 percent on to higher education. That’s an incredible improvement! That’s the way business involvement in the community is supposed to work. But the sad fact is that I couldn’t have started the Home Depot in the current legal climate. That means many thousands of Americans would not have had the jobs we provided, or been able to help others in their communities. And we would not have been able to donate the many millions of dollars we have to charities.¶ PHILANTHROPY: What impact do lawsuits have on our overall economy?¶ MR. MARCUS: Let me use a metaphor here. When I read news stories about the possibility of an asteroid hitting the earth, I think that our legal system has already been hit by an asteroid called the litigation explosion. We have by far the most expensive tort system in the world—over $233 billion a year—or 2.23 percent of GDP. The average American family of four pays a hidden “tort tax” of more than $3,200 a year—or $809 a person, according to insurance consultancy Tillinghast-Towers Perrin. The U.S. Chamber’s Institute for Legal Reform reports that in 2002 more than 16.3 million lawsuits were filed in state courts. That’s one every two seconds, which is a national scandal and diverts enormous time and resources away from productive endeavors. You see the damage across the board—in lost jobs, slower growth, and increased bankruptcies.

B. Corporate investment solves legitimacy issues in global poverty reduction

George Lodge, an American professor and former politician, in 1954 he became Director of Information at the U.S. Department of Labor, currently the Jaime and Josefina Chua Tiampo Professor of Business Administration, Emeritus at Harvard, and Craig Wilson, columnist, “A Corporate Solution to Global Poverty: How Multinationals Can Help the Poor and Invigorate Their Own Legitimacy,” 2006, pgs. 2-4.

Often, however, the corporate response to these expectations is¶ hamstrung by a lack of legitimacy, a crippling but hitherto inadequately diagnosed problem that reduces the ability of big business to¶ respond as meaningfully as it otherwise could. This is something of a¶ classic catch-22. Managers of global corporations—everyone from the¶ CEOs to their subordinates far down the corporate ladder—who lack¶ the necessary legitimacy can’t effectively respond to these challenges¶ because their response requires them to cooperate with people (the¶ community) who don’t trust their intentions. The community, broadly¶ speaking, is no longer satisfied that managers and their corporations¶ are fully law-abiding as they go about increasing shareholder value.¶ Communities want more. But they don’t trust managers to provide¶ “more” because they haven’t in the past. And so the cycle of distrust¶ continues. Demands and expectations are rising in the face of declining¶ legitimacy.¶ In this book, we aim to help corporate managers find a way to regain¶ their legitimacy, which will allow them to respond to the demands increasingly being made on their organizations to do more to alleviate the¶ poverty that plagues much of the world. But they can do so only with the help of leaders of international development institutions and non¶ governmental organizations concerned with poverty reduction. Together, these two groups—corporations and development organiza-tioNs—can make more effective use of their resources and capacities¶ to ameliorate developing-country poverty.¶ We realize that we are not alone in recognizing the decline of corporate legitimacy around the world. Let us list a few points. First, this¶ decline is rooted in a number of factors, including revelations of large-¶ scale abuse in corporate governance as well as changing public expectations concerning the impact of global companies on society. In addition,¶ the old ideas from which multinational corporations (MNCs) derive¶ their legitimacy are proving inadequate: maximizing shareholder value¶ by competing to satisfy consumer desires in the marketplace is not¶ enough. Corporations are increasingly being pressed to serve a variety¶ of community needs. Normally this pressure is applied by governments¶ that define those needs and impose regulations to ensure that they are¶ met. The problem is that there are some needs—notably poverty reduction in the developing world—which many governments are not only¶ unwilling or unable to fullfill by themselves but are also reluctant or¶ unable to press corporations to address. Thus, the corporation suffers a¶ legitimacy problem in that it is not fulfilling expectations; it is not serving community needs—including poverty reduction—as well as it can¶ and as well as many think it should. Second, we found these legitimacy problems to be broad-based and¶ unrelenting. There are no signs on the horizon of the decline in MNC¶ legitimacy abating or reversing. This is a huge concern for global business. Presenting a plan on how MNCs can navigate the gap is imperative to prevent their floundering through the process, which would cost¶ us—all of us—precious time and resources.¶ Third, our research showed that in recent times the world’s largest¶ companies have often responded imaginatively, if sometimes awkwardly¶ and haphazardly, to the challenge to their legitimacy, principally by¶ working to lessen their environmental impact and better align their activities with social considerations. Notwithstanding varying views on¶ the matter, the manifold forms of corporate social responsibility are one¶ manifestation of this.¶ Fourth, it became clear that despite both this corporate response and¶ the continuing legitimacy problem, the international consensus on the¶ need for global poverty reduction is only growing stronger. It’s as if all¶ of the half-measures that MNCs have adopted have only spurred on those who demand more of them. And MNCs are being called on to¶ do yet more to meet that need. This call is taking on ever greater urgency because of the continuing disappointing results of the broad array¶ of antipoverty efforts led by national and international development¶ organizations.¶ When we reviewed the work and policies of the relevant international¶ development institutions, nongovernmental organizations (NGOs), and¶ national governments, we discovered that the interface between their efforts and the mainstream operations of the world’s major corporations¶ was extremely limited, notwithstanding the existence of a few embryonic¶ pilot and partnership projects. If one agrees that the world’s large corporations are in fact the greatest drivers of wealth creation, then the degree¶ of their separation from formalized international poverty-reduction ef¶ forts is startling. This lack of interaction is all the more surprising given¶ the growing call from many quarters for MNCs to do more to help reduce¶ global poverty and the growing reliance on public-private initiatives in¶ other arenas. This is especially so given the fact that over the years multi¶ national corporate investment and activity has been a—1f not the—major¶ factor in reducing poverty in developing countries.

C. Resolving wealth disparities solves for conflict and terrorism – extinction

Joshua Goldstein, Professor of International Relations – American University, "Changing World Order – Engaging the South", International Relations, 2010, <http://wps.ablongman.com/long_goldstein_ir_7/38/9780/2503754.cw/index.html>, accessed 10-6-2012.

In the last chapter’s “Changing World Order” section, there was mention of how a smallpox epidemic launched from the global South and aimed at the global North would most likely return to do most damage in the South. This quality of global rebound operates from North to South as well. Actions the North takes in the South, such as arming Islamic extremists to fight Soviet occupiers in Afghanistan in the 1980s, come back to haunt the North later—as when Afghan-based Islamic extremists attacked the United States. The problem of unintended consequences of distant actions has been called “blowback.”\*¶ September 2001 demonstrated the increased interdependence of the global North and South. The extreme disparities of wealth and power between North and South create conflicts and resentments that can reach out of the South to punish the privileged citizens of the North who had been oblivious to the problems of poor countries. In the world order of the 1990s, disparities sharpened and prosperity cut unevenly with both winners and losers. The continent of Africa, along with zones of festering war and poverty in countries like Afghanistan, were losers in the 1990s.¶ To let a continent or even a country descend into despair may no longer be practical in the era of terrorism. Their fate ultimately may be the fate of the North that ignores them. This is the century in which desperate African states will be able to press their demands with weapons of mass destruction, and in which fanatics may destroy cities with nuclear weapons. To combat terrorism may—though this is disputed—require addressing poverty, repression, and war throughout the poorest world regions. Furthermore, these issues may be less amenable to unilateral U.S. actions than are military responses to terrorism. Thus, the need to address “root causes” of terrorism may draw the United States into closer cooperation with the UN and other international institutions in the years to come.¶ It is unclear how these relationships will play out in practice. But if in fact the new world order is moving toward closer engagement of the global North with the South, and toward seriously addressing the South’s problems, this move would mark a shift from the world order that was developing in the 1990s, with its sharpened disparities. Do you think that investing in development, democracy, and peace in the world’s poorest countries is an important principle that should govern world order in the era of terrorist attacks? If you think this is a good idea, should it extend globally or just to countries currently “breeding” terrorists? Can Argentina or Democratic Congo fall apart without upsetting the rest of the world? Could all of Latin America or all of Africa? Will the emerging world order bring together the North and South in new ways?

The NRC has suspended the licensing of new nuclear reactors and plants. Only meetings can resolve this.

Peter A. Bradford, 3-24-2009, former member of the U.S. Nuclear Regulatory Commission and former chair of the Maine and New York utility commissions, testimony before the Senate Committee on Environment and Public Works Subcommittee on Clean Air and Nuclear Safety, Hearing on “Three Mile Island: Thirty Years of Lessons Learned,” http://www.nuclearfiles.org/menu/key-issues/nuclear-energy/issues/bradford\_tmi\_testimony.pdf

Finally, a word about the lessons of Three Mile Island for Congressional Oversight. If the message that the NRC gets from the Congressional oversight committees is that what’s wanted is strong commission focus on expedited licensing of new reactors and deemphasized enforcement, that message will have an effect over time. Senator Pete Domenici asserted in his 1998 book that he singled-handedly changed NRCs priorities in a 1998 meeting with the NRC chair in which he threatened to cut the agency’s budget by one-third if the NRC did not modify its “adversarial attitude” toward the industry.

A/T Perms – Do CP

Perm is illegitimate… severs certainty and immediacy

1. Resolved is a firm decision

The New Oxford American Dictionary 2005 "resolution n” , second edition. Ed. Erin McKean. Oxford University Press, 2005. Oxford Reference Online. Oxford University Press. http://www.oxfordreference.com/views/ENTRY.html?subview=Main&entry=t183.e65284

a firm decision to do or not to do something: she kept her resolution not to see Anne any more a New Year's resolution

2. Should guarantees an action that occurs immediately

<http://www.catholicculture.org/commentary/otr.cfm?id=3113> unfit for priestly service Novus744 - Oct. 06, 2005

Actually, AbrahamT, most people don't even know what the word "should" means. It is, in actuality, the present tense of the word "shall". It denotes obligation. Meaning that if it says that someone SHOULD do something, it means that he has the OBLIGATION to do it.

4. Increase is a mandate

HEFC, “Memorandum from the Higher Education Funding Council for England (DCH 137),” Parliament, Higher Education Funding Council, September 2004, <http://www.publications.parliament.uk/pa/jt200304/jtselect/jtchar/167/167we98.htm>, accessed 10-5-2012.

The Draft Bill creates an obligation on the principal regulator to do all that it "reasonably can to meet the compliance objective in relation to the charity".[45] The Draft Bill defines the compliance objective as "to increase compliance by the charity trustees with their legal obligations in exercising control and management of the administration of the charity".[46] ¶ 9.2 Although the word "increase" is used in relation to the functions of a number of statutory bodies,[47] such examples demonstrate that "increase" is used in relation to considerations to be taken into account in the exercise of a function, rather than an objective in itself.¶ 9.3 HEFCE is concerned that an obligation on principal regulators to "increase" compliance per se is unworkable, in so far as it does not adequately define the limits or nature of the statutory duty. Indeed, the obligation could be considered to be ever-increasing.

A/T Perms Do Both and Do Plan and What They Agree

Can’t do both – reg negs are an alternative to notice-and-comment – perm undercuts potential of reg neg

Sara Pirk, J.D., University of Oregon School of Law, 2002, Environmental and Natural Resources Law Certiﬁcate; B.A., University¶ of Minnesota, Twin Cities, International Relations (Environmental Policy focus) and Political Science, 1999, “Expanding Public Participation in Environmental Justice: Methods, Legislation, Litigation and Beyond,” University of Oregon¶ Journal of Environmental Law and Litigation, Spring 2002, <http://www.temple.edu/lawschool/iilpp/EnvironmentalRoundtableResearchDocs/Pirk%20-%20Expanding.pdf>, accessed 9-10-2012.

Regulatory negotiation is an alternative to notice and comment participation and was developed to form dialogue among¶ regulators, regulated parties, and interested parties. n33 It is used in rule--making and is considered an efﬁcient way¶ to form rules with which everyone can live. n34 Regulatory negotiation is also considered a good method of public¶ participation because it produces better results. Through negotiation over rules in a small forum, the groups involved are¶ more likely to cooperate and problem--solve rather than take sides and defend their positions. n35¶ Regulatory negotiation gives parties involved in following and enacting rules, as well as interest groups, a chance to¶ directly participate in formulating rules that they will have to follow. n36 This differs from notice and comment public¶ participation where only the enacting agency makes the rules and then announces them to other parties who never had the¶ chance to inﬂuence the decision making process when it counted. By having all the parties work together on the rules,¶ working relationships are formed that can be beneﬁcial in the future. The parties, including agencies such as the EPA, are¶ more satisﬁed because they have a direct role in rule—making.

Any deviation from a strictly reg neg approach means parties lose interest and negotiations fail

Herbert J. Martin, partner in the law firm of Crowell & Moring. ¶ Washington. D.C ., and represents clients In energy and transportation ¶ Matters, holds B.A. and M.A. degrees from Fordham University ¶ and is a graduate of the Catholic University Law School in Washington. D.C., “Alternative Dispute Resolution: ¶ Coming to Proceedings Near You,” 1992, <http://ftp.resource.org/acus.gov/raw_scans/gov.acus.1992.alt.pdf>, accessed 9-10-2012.

The act also includes highly detailed provisions governing the use of binding arbitration in agency proceedings" ¶ The focus on arbitration and the level of detail devoted to ¶ it appears to be a function of the binding nature or this ¶ form of dispute resolution. The act allows the head of an ¶ agency to terminate an arbitration proceeding or vacate an ¶ arbitration award before it becomes final. If this power is ¶ exercised to vacate an award, parties may recover their ¶ attorney fees and expenses incurred in connection with the ¶ arbitration, unless the agency head determines that such ¶ recovery would be unjust. These provisions were inserted ¶ to satisfy the concerns of the Department of Justice that ¶ arbitration decisions binding the government would constitute an unlawful delegation of executive authority. The ¶ expectation is that this summary power will be exercised ¶ rarely: otherwise, parties will quickly lose faith in arbitrations involving the government. In fact, despite the focus ¶ on binding arbitration in the act, other nonbinding forms ¶ of dispute resolution may find greater favor in agency ¶ proceedings.

A/T CP Bad

2. Process focus is good for policy making – guarantees support

Philip J. Harter, professor of law at University of Missouri, “Collaboration: The Future of Governance,” Journal of Dispute Resolution, 2009, Lexis.

So much of the discussion of collaborative governance is at a high level of abstraction or philosophy. Before one can be serious about it, however, one needs to understand or at least examine a bit of plumbing: the details are important. Ironically, even those who are ardent supporters of collaboration often overlook the essential details. n41 But, as was urged early on, some important fixed points-nodes in the system-need to be addressed. Thus, before we can fully appreciate collaborative governance, we need to examine a bit of just how it is done.¶ Federal agencies are authorized to use alternative means of dispute resolution to resolve issues in controversy that relate to an administrative program. n42 The Negotiated Rulemaking Act (Act) makes this general authority explicit with respect to developing regulations via consensus among the interests that would be significantly affected by the rule. n43 The Act then sets out the procedures to be followed in negotiating a consensus on a proposed rule. n44 While the Act only addresses negotiating rules, n45 the same process can be used to develop other forms of policy. What follows is an elaboration on that process.¶ A. Purpose¶ In a negotiated rulemaking, representatives of the interests that will be significantly affected by the rule negotiate a consensus-an actual agreement-on a proposed rule or policy. The agency typically agrees to use the agreement as the basis for a Notice of Proposed Rulemaking (NPRM), and the private parties agree to support that proposal. The agency will also frequently express its intent to issue a final rule based on the notice and hence on the agreement. n46

3. Process and implementation focus are uniquely key to energy policy

Sean Nolon¶ Associate Professor of Law¶ and¶ Dispute Resolution Program Director¶ Vermont Law School, “Negotiating the Wind:¶ A Framework to Engage Citizens in Siting Wind Turbines,” Vermont Law School, November 10, 2011, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1898814>, accessed 10-5-2012.

Despite demonstrated need and available technology, the¶ promise of wind energy has yet to live up to its potential. As a¶ society, we see the benefits of renewable sources of energy but¶ struggle to implement our vision through siting of new facilities. In some instances, this gap results from opposition caused by applicants’¶ and regulators’ emphasis (read: overemphasis) on the substance¶ rather than the process of decision-making. Applicants¶ often enter an approval process expecting that doling out concessions¶ will adequately address citizen opposition. The resulting opposition¶ is often as much a product of what was proposed as how it¶ was proposed.210 Attending to procedural needs as well as substantive¶ needs can offer some solace to weary and suspicious citizens¶ and provide the substrate on which a satisfactory solution can be¶ reached.¶ What this commitment to the minimal level of citizen involvement¶ fails to acknowledge is that citizens are also looking for assurances¶ that regulations will be effective and that applicants can be¶ trusted. Citizens want to be assured that their vision of the community¶ will be protected. Applicants and regulators who fail to¶ make those assurances through the robust involvement of citizens¶ will continue to struggle when siting wind turbines, or any renewable¶ energy facility. They will find that the general societal support¶ enjoyed by renewable resources may not translate to site-specific¶ support. Pairing substantive mitigation (such as setbacks, buried¶ wires, property loss compensation) with procedural mitigations¶ that encourage more citizen involvement (such as participatory¶ planning, reg-neg, and siting negotiation) has been used to bridge¶ this divide between general support and local opposition. For the¶ purposes of siting wind turbines, collaborative approaches should¶ be the centerpiece of any governmental policy aimed at improving¶ wind turbine siting.

5. Legislative support for reg neg guarantees a strong literature base

John S. Applegate¶ Indiana University Maurer School of Law, “Beyond the Usual Suspects: The Use of Citizens¶ Advisory Boards in Environmental¶ Decisionmaking,” Indiana Law Journal, July 1, 1998, <http://www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1939&context=ilj>, accessed 10-5-2012.

62. There is substantial literature on negotiated rulemaking. The interested reader might¶ begin with the Negotiated Rulemaking Act of 1990, 5 U.S.C. §§ 561-570 (1994 & Supp. II¶ 1996), Freeman, supra note 53, Philip J. Harter, Negotiating Regulations: A Cure for Malaise,¶ 71 GEO. L.J. I (1982), Henry E. Perritt, Jr., Negotiated Rulemaking Before Federal Agencids:¶ Evaluation of the Recommendations by the Administrative Conference of the United States, 74¶ GEO. L.J. 1625 (1986), Lawrence Susskind & Gerard McMahon, The Theory and Practice of¶ Negotiated Rulemaking, 3 YALE J. ON REG. 133 (1985), and an excellent, just-published issue¶ on regulatory negotiation, Twenty-Eighth AnnualAdministrative Law Issue, 46 DUKE L.J. 1255¶ (1997).¶ For more skeptical views, see Cary Coglianese, Assessing Consensus: The Promise and¶ Performance of Negotiated Rulemaking, 46 DUKE L.J. 1255 (1997), William Funk, When¶ Smoke Gets in Your Eyes: Regulatory Negotiation and the Public Interest-EPA 's Woodstove¶ Standards, 18 ENvTL. L. 55 (1987), Susan Rose-Ackerman, Consensus Versus Incentives: A¶ Skeptical Look at Regulatory Negotiation, 43 DuKE L.J. 1206 (1994), and Patricia M. Wald,¶ Negotiation of Environmental Disputes: A New Role for the Courts?, 10 COLUM. J. ENVTL. L.¶ 1(1985).¶ A very useful dialogue on regulatory negotiation as a form of citizen participation may be¶ found in Daniel Fiorino, Regulatory Negotiation as a Form of Public Participation, in¶ FAIRNESS AND COMPETENCE IN CITIZEN PARTICIPATION 223 (Ortwin Renn et al. eds., 1995),¶ and Susan G. Hadden, Regulatory Negotiation as Citizen Participation: A Critique, in¶ FAIRNESS AND COMPETENCE IN CITIZEN PARTICIPATION, supra, at 239.

A/T Makes Uncertain

Reg negs guarantee regulatory certainty for the industry – the regulated participates

J. Walton Blackburn, and Willa Marie Bruce, “Mediating Environmental Conflicts,” 1995, pg 213., accessed 9-10-2012.

Regulatory outcome. A primary benefit of Reg-Neg for EPA is that the rule it is¶ required by law to promulgate actually gets developed and promulgated, often¶ with little or no litigation by industrial or environmental groups. At times, the¶ agency has experienced early implementation and compliance with the regulation.¶ This is because the regulated community, state and environmental interests have¶ been involved in the process all along and know what the contents and requirements of the rule will be. Most parties agree that a rule developed under Reg-Neg¶ is better than a rule that EPA develops in the traditional manner, because more of¶ the affected parties are involved, allowing more issues to be addressed.¶ Participants from state agencies and environmental groups see regulatory benefits as well. Often, state and environmental groups’ primary interests are to have a¶ rule in place that mandates specific requirements for the reduction of a variety of¶ pollutants. With a successful Reg-Neg, such a rule is developed. Often the Reg¶ Neg rule is more readily implemented and enforced than a traditionally developed¶ rule, which may be litigated for years. Thus, the environmental benefits of specific¶ pollution reduction goals are achieved on schedule and sometimes much earlier.¶ Finally, the regulated community experiences benefits from Reg-Neg as well.¶ By participating in Reg-Neg, it is able to transmit and analyze critical data upon¶ which regulatory decisions will be made. Participation allows the regulated community to have input into the design of the final regulation, which gives it certainty¶ regarding what the regulation will require. This certainty often results in earlier¶ and more consistent implementation and enforcement of the final rule.

A/T Delay

Reg negs make future policy making even quicker – established trust and cooperation

Jennifer Leigh Peyser¶ B.S. Environmental Science¶ B.A. French¶ Iowa State University, 2001, “How Does Participation in the Framing, Review, and Incorporation of Scientific¶ Information Affect Stakeholder Perspectives on Resource Management Decisions?,” MIT, 2005, <http://web.mit.edu/dusp/epp/music/pdf/jpeyser.thesis.FINAL.pdf>, accessed 9-10-2012.

In implementing the agreement, the group should also consider how the decision’s efficacy¶ will be monitored. In the event that unanticipated issues arise as a result of the group’s¶ decision, participants should also consider setting up a procedure to reopen the process and¶ revisit the agreement. Finally, stakeholder groups should evaluate their own participation and¶ consider “lessons learned” for their next collaborative effort.¶ Assessments of Consensus-based Approaches – Benefits and Shortcomings¶ The federal government has recognized the benefits of convening a stakeholder group to¶ inform decision-making processes,¶ 27¶ including¶ • rules that are more sensitive to the needs and limitations of both the parties and the¶ agency;¶ • rules that are more pragmatic and more easily implemented at an earlier date;¶ • a reduction in the number and a more moderate tenor of public comments;¶ • a reduction in the number of substantive changes required before the rule is made final;¶ and¶ • greater creativity in rule making.¶ ¶ 27¶ David Pritzker and Deborah Dalton. 1990. Negotiated Rulemaking Sourcebook. Washington, D.C.: Office of the¶ Chairman, Administrative Conference of the U.S.36¶ In addition to improved decision-making outcomes, proponents of consensus-based¶ processes have also asserted a number of positive secondary effects. Birkhoff and Lowry¶ summarized four “levels” of outcomes and benefits that speak to the promise of consensus-based¶ processes:¶ 28¶ • Individual-level outcomes, such as met interests and needs; satisfaction with process and¶ outcomes; empowerment through increased influence and access to decision makers and¶ information; capacity building in technical information and skills such as negotiation and¶ coalition building; and personal transformation through greater understanding of other¶ parties’ perspectives;¶ • Relationship-level outcomes, such as increased trust and establishment of shared norms¶ between parties that can lead to future cooperation;¶ • Social-level outcomes, such as the formation of new networks; increased social capacity¶ to resolve disputes; and institutionalization of public participation and civic engagement;¶ and¶ • Ecological-level outcomes, including more sustainable, creative, and adaptive solutions¶ through increased participation and inclusion of different perspectives and sources of¶ knowledge

### 2NC – Case

Countries make nuclear decisions based off of internal issues

Jeffrey Lewis, director of the East Asia Nonproliferation Program at the James Martin Center for Nonproliferation, August 1, 2012, It's Not as Easy as 1-2-3, www.foreignpolicy.com/articles/2012/08/01/it\_s\_not\_as\_easy\_as\_1\_2\_3?page=full

Creating market incentives to discourage the spread of enrichment and reprocessing seems like a reasonable thing to do - except that most states make nuclear decisions on something other than a cost basis. Nuclear power enthusiasts have been no strangers to wishful thinking, starting with claims that nuclear energy would be "too cheap to meter." Government decisions about nuclear power tend to prioritize concerns about sovereignty and keeping technological pace with neighbors. It is not hard to see national nuclear programs as something akin to national airlines - money-losing prestige projects that barely take market forces into account. Often, aspiring nuclear states look to countries like the United States and Japan as models. If such countries invest heavily in fuel-cycle services, developing states might try to copy them rather than simply become their customers.

Nations have already moved on from U.S. prolif leadership

Fred McGoldrick, CSIS, spent 30 years at the U.S. State and Energy Departments and at the U.S. mission to the IAEA, negotiated peaceful nuclear cooperation agreements with a number of countries and helped shape the policy of the United States to prevent the spread of nuclear weapons, November 30, 2010, The U.S.-UAE Peaceful Nuclear Cooperation Agreement: A Gold Standard or Fool’s Gold?, http://csis.org/files/publication/101130\_McGoldrick\_USUAENuclear.pdf

In sum, the United States is facing an uphill battle to compete in the international nuclear market and cannot dictate nonproliferation conditions that others will find unacceptable. Nations embarking on new nuclear programs do not need to rely on the United States for their nuclear fuel, equipment, components, or technology. They have alternatives and lots of them, as other states with nuclear programs have steadily built up their nuclear export capacities, which in some cases are state run or state supported.

All types of nuclear cooperation raise the risk of proliferation

Matthew Fuhrmann, Stanton nuclear security fellow at the Council on Foreign Relations, research focused on international security and nuclear proliferation, current work centers on the causes and consequences of the nuclear energy renaissance, research examines topics such as nuclear weapons and coercive threats, military strikes against nuclear facilities, radiological/nuclear terrorism, and regional nuclear weapons free zones, has been an assistant professor of political science at the University of South Carolina since January 2009, associate at the Project on Managing the Atom at Harvard's Kennedy School, served as a research fellow at Harvard University's Belfer Center for Science and International Affairs, was previously a research associate at the University of Georgia's Center for International Trade and Security, holds an MS in international affairs from Georgia Tech and a PhD in political science from the University of Georgia, “Spreading Temptation: Proliferation and Peaceful Nuclear Cooperation Agreements,” International Security, Summer 2009, http://www.mitpressjournals.org/doi/abs/10.1162/isec.2009.34.1.7, accessed 9-3-2012.

Peaceful nuclear cooperation—the transfer of nuclear technology, materials, or knowledge from one state to another for peaceful purposes—has argued prominently in international politics since the dawn of the atomic age. 1 During an address before the United Nations General Assembly in December 1953, U.S. President Dwight Eisenhower encouraged the nuclear suppliers to promote international peace and prosperity by sharing their technology and know-how. 2 Since this “atoms for peace” speech, countries have signed more than 2,000 bilateral civilian nuclear cooperation agreements (NCAs) pledging to exchange nuclear technology, materials, or knowledge for peaceful purposes. 3 Recently, NCAs have been signed at an increasingly rapid rate, as countries look for solutions to global climate change and for assistance in combating energy shortages and high oil prices. For example, since coming to office in May 2007, French President Nicolas Sarkozy has signed NCAs with a plethora of states seeking to begin or revive civilian nuclear programs, including Algeria, Jordan, Libya, Qatar, the United Arab Emirates, and Vietnam. This article examines the relationship between peaceful nuclear cooperation and nuclear weapons proliferation. Specifically, it explores whether countries receiving civilian nuclear aid over time are more likely to initiate weapons programs and build the bomb. The conventional wisdom is that civilian nuclear cooperation does not lead to proliferation. Most scholars argue that nuclear weapons spread when states have a demand for the bomb—not when they have the technical capacity to proliferate. 4 Those who recognize the importance of the supply side of proliferation argue that certain types of nuclear assistance enable countries to build nuclear weapons but that others are innocuous or even positive from a nonproliferation standpoint. Nuclear suppliers, for instance, generally restrict the sale of uranium enrichment or plutonium reprocessing facilities because these can be used directly to produce fissile material for a bomb, but suppliers routinely build research or power reactors in other countries and train foreign scientists. 5 A recent study finds that countries receiving enrichment and reprocessing facilities, bomb designs, or significant quantities of weapons-grade fissile material are more likely to acquire the bomb. 6 The implication of this research is that other forms of atomic assistance do not lead to the spread of nuclear weapons. This article argues that the conventional wisdom is wrong—and dangerous. All types of civilian nuclear assistance raise the risks of proliferation. Peaceful nuclear cooperation and proliferation are causally connected because of the dual-use nature of nuclear technology and know-how. 7 Civilian cooperation provides technology and materials necessary for a nuclear weapons program and helps to establish expertise in matters relevant to building the bomb.

No cascade of proliferation – its historically wrong and based on alarmist predictions – China, India, Pakistan, North Korea, Iran, South Africa, Libya all pursued nuclear weapons and none caused a cascade. Prefer our evidence - their lit base is all lobbyist scaremongering

Steve Kidd (Director of Strategy & Research at the World Nuclear Association, where he has worked since 1995 (when it was the Uranium Institute)) June 2010 “Nuclear proliferation risk – is it vastly overrated?” http://www.waterpowermagazine.com/story.asp?sc=2056931

The real problem is that nuclear non-proliferation and security have powerful lobby groups behind them, largely claiming to have nothing against nuclear power as such, apart from the dangers of misuse of nuclear technology. In fact in Washington DC, home of the US federal government, there is a cottage industry of lobby groups dedicated to this. Those who oppose their scaremongering (and it essentially amounts to no more than this) are castigated as being in the industry’s pocket or acting unresponsively to allegedly genuinely expressed public fears. Pointing out that very few new countries will acquire nuclear power by even 2030, and that very few of these will likely express any interest in acquiring enrichment or reprocessing facilities, seems to go completely over their heads. In any case, nuclear fuel cycle technologies are very expensive to acquire and it makes perfect sense to buy nuclear fuel from the existing commercial international supply chain. This already guarantees security of supply, so moves towards international fuel banks are essentially irrelevant, while measures supposedly to increase the proliferation resistance of the fuel cycle are unwarranted, particularly if they impose additional costs on the industry

Prefer our evidence – it’s the only one based on robust empirical studies

Victor Asal and Kyle Beardsley, pub. date: 2007, Assistant Prof. Pol. Sci. – SUNY Albany, and Kyle Beardsley, Asst. Prof. Pol. Sci. – Emory Univ., Journal of Peace Research, “Proliferation and International Crisis Behavior,” accessed: 12-18-09, http://jpr.sagepub.com/cgi/reprint/44/2/139

Much of the literature on the impact of nuclear weapons does not empirically test the arguments made (Geller, 2003: 37; Huth & Russett, 1988: 34). Here, we strive to move beyond speculation to observe the impact of nuclear proliferation on the level of violence used in crises. We examine the relationship between the severity of the violence in crises in the International Crisis Behavior (ICB) dataset and the number of involved states with nuclear weapons, controlling for other factors that increase the likelihood of severe violence.1 We find that crises involving nuclear actors are more likely to end without violence. Also, as the number of nuclear actors involved in a crisis increases, the likelihood of war continues to drop. Drawing from Waltz (Sagan & Waltz, 2003) and the rational deterrence literature, we argue that states facing the possibility of a nuclear attack will be more willing to concede or back down from violent conflict

China

The U.S. is the tech leader – inclusive institutions

Kamer Daron Acemoğlu is a Turkish-American economist of Armenian origin. He is currently the Elizabeth and James Killian Professor of Economics at Massachusetts Institute of Technology and winner of the 2005 John Bates Clark Medal, and James Robinson is David Florence Professor of Government at Harvard University and a faculty associate at the Institute for Quantitative Social Science and the Weatherhead Center for International Affairs, “World's next technology leader will be US, not China – if America can shape up,” Christian Science Monitor, April 19, 2012, http://www.csmonitor.com/Commentary/Global-Viewpoint/2012/0419/World-s-next-technology-leader-will-be-US-not-China-if-America-can-shape-up, accessed 9-3-2012.

So the right question to ask is not who will be the military leader of the next century, but who will be the technological leader. The answer must be: most probably the US – but only if it can clean up its act. OPINION: 3 reasons why China isn't overtaking the US The odds favor the US not only because it is technologically more advanced and innovative than China at the moment, with an income per capita more than six times that of China. They do so also because innovation ultimately depends on a country’s institutions. Inclusive political institutions distribute political power equally in society and constrain how that power can be exercised. They tend to underpin inclusive economic institutions, which encourage innovation and investment and provide a level playing field so that the talents of a broad cross-section of society can be best deployed. Despite all of the challenges that they are facing, US institutions are broadly inclusive, and thus more conducive to innovation. Despite all of the resources that China is pouring into science and technology at the moment, its political institutions are extractive, and as such, unless overhauled and revolutionized soon, they will be an impediment to innovation. China may continue to grow in the near term, but this is growth under extractive institutions – mostly relying on politically connected businesses and technological transfer and catch-up. The next stage of economic growth – generating genuine innovation – will be much more difficult unless China's political institutions change to create an environment that rewards the challenging of established interests, technologies, firms, and authority.

Globalized R&D means the U.S. gets better technologies without having to provide them

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Nations trade with one another on the basis of comparative advantage, and international leadership in science and technology gives the United States its comparative advantage in the global economy. Loss of comparative advantage could hurt the United States, as it would have to reallocate resources, reduce wages, and forego market-leader rents from new products or innovations. As more centers of scientific excel- lence develop abroad, R&D will become more globalized, but it is not clear that the United States is fated to lose as this occurs. Eaton and Kortum’s (2006) model of innovation, technology diffusion, and trade suggests that as long as trade barriers are not too high, faster diffusion shifts research activity toward the country that does it better (which in many fields is the United States). This shift in research activity raises the relative wage there. It can even mean that, with more diffusion, the country better at research eventually obtains a larger share of tech- nologies in its exclusive domain.. Increased trade and faster diffusion of technology will probably not affect all sectors alike, however, and a loss of leadership in some areas mav be accompanied by a gain of leadership in others. Freeman (2006, 2007) argues that populous, low-income countries such as China and India have a cost advantage and may be able to compete with the United States in high tech by focusing in a specific area and by having many S&IE workers, even though they are only a small fraction of their workforces.

Empirically proven

Christopher J. Fettweis (Professor of national security affairs @ U.S. Naval War College) 2010 “Threat and Anxiety in US Foreign Policy,” Survival, Volume 52, Issue 2 April 2010 , pages 59 – 82

One potential explanation for the growth of global peace can be dismissed fairly quickly: US actions do not seem to have contributed much. The limited evidence suggests that there is little reason to believe in the stabilising power of the US hegemon, and that there is no relation between the relative level of American activism and international stability. During the 1990s, the United States cut back on its defence spending fairly substantially. By 1998, the United States was spending $100 billion less on defence in real terms than it had in 1990, a 25% reduction.29 To internationalists, defence hawks and other believers in hegemonic stability, this irresponsible 'peace dividend' endangered both national and global security. 'No serious analyst of American military capabilities', argued neo-conservatives William Kristol and Robert Kagan in 1996, 'doubts that the defense budget has been cut much too far to meet America's responsibilities to itself and to world peace'.30 And yet the verdict from the 1990s is fairly plain: the world grew more peaceful while the United States cut its forces. No state seemed to believe that its security was endangered by a less-capable US military, or at least none took any action that would suggest such a belief. No militaries were enhanced to address power vacuums; no security dilemmas drove insecurity or arms races; no regional balancing occurred once the stabilis-ing presence of the US military was diminished. The rest of the world acted as if the threat of international war was not a pressing concern, despite the reduction in US military capabilities. Most of all, the United States was no less safe. The incidence and magnitude of global conflict declined while the United States cut its military spending under President Bill Clinton, and kept declining as the George W. Bush administration ramped the spending back up. Complex statistical analysis is unnecessary to reach the conclusion that world peace and US military expenditure are unrelated.

International system resilient – no conflict

Christopher Preble (director of foreign policy studies at the Cato Institute) August 2010 “U.S. Military Power: Preeminence for What Purpose?” http://www.cato-at-liberty.org/u-s-military-power-preeminence-for-what-purpose/

Most in Washington still embraces the notion that America is, and forever will be, the world’s indispensable nation. Some scholars, however, questioned the logic of hegemonic stability theory from the very beginning. A number continue to do so today. They advance arguments diametrically at odds with the primacist consensus. Trade routes need not be policed by a single dominant power; the international economy is complex and resilient. Supply disruptions are likely to be temporary, and the costs of mitigating their effects should be borne by those who stand to lose — or gain — the most. Islamic extremists are scary, but hardly comparable to the threat posed by a globe-straddling Soviet Union armed with thousands of nuclear weapons. It is frankly absurd that we spend more today to fight Osama bin Laden and his tiny band of murderous thugs than we spent to face down Joseph Stalin and Chairman Mao. Many factors have contributed to the dramatic decline in the number of wars between nation-states; it is unrealistic to expect that a new spasm of global conflict would erupt if the United States were to modestly refocus its efforts, draw down its military power, and call on other countries to play a larger role in their own defense, and in the security of their respective regions. But while there are credible alternatives to the United States serving in its current dual role as world policeman / armed social worker, the foreign policy establishment in Washington has no interest in exploring them. The people here have grown accustomed to living at the center of the earth, and indeed, of the universe. The tangible benefits of all this military spending flow disproportionately to this tiny corner of the United States while the schlubs in fly-over country pick up the tab.

No credible threats now

Doug Bandow (senior fellow at the Cato Institute. He is a former special assistant to President Reagan) January 2010 “Military Spending — For What?” http://www.cato.org/pub\_display.php?pub\_id=11143

The United States dominates the globe militarily. The threats facing America pale compared to its capabilities. Why, then, is Washington spending so much on the military? In 2010 the U.S. will spend roughly $700 billion on the military. This is an increase of 2 percent (after inflation) from the Obama administration's original nonwar defense budget of $534 billion. Despite initial plans for zero growth in defense spending in coming years, there are rumors that the Department of Defense will receive a 2 percent increase in real outlays through 2015. Still, some conservatives want to enshrine a military buildup in a law mandating fixed outlays at 4, 5 or even 6 percent of gross domestic product. Hawks focus on the percentage of GDP going to the military — currently about 4.4 percent — since that figure has fallen over the years. America spends more inflation- adjusted dollars on the military today than at any time since the end of World War II. Figured in 2000 dollars, the U.S. devoted $774.6 billion to the military in 1945, the final year of World War II. In 1953, the final year of the Korean War, military outlay ran to $416.1 billion. Expenditure during the Vietnam War peaked at $421.3 billion in 1968. By contrast, in 2010 — even before the Afghan surge and other unplanned expenditure — the administration expected to spend $517.8 billion. That's more than during the lengthy, but often warm, Cold War. Expenditure as a percentage of GDP has fallen because the U.S. economy has grown. GDP in 2010 (in 2000 dollars) will run to about $11.7 trillion. That is almost twice as much as in 1986, more than three times as much as in 1968, and nearly six times as much as in 1953. Military outlay should be tied to threats, not economic growth. Can anyone credibly claim the military threat facing America is two, three, or six times as great today as during those years? Today the U.S. does not face a significant military threat.As Colin Powell famously declared in 1991 when chairman of the Joint Chiefs of Staff: "I'm running out of enemies. I'm down to Castro and Kim Il Sung." The U.S. has no great power enemies. Relations with China and Russia are at times uneasy, but not confrontational, let alone warlike. Washington is allied with every other industrialized state. America possesses the most sophisticated nuclear arsenal and the most powerful conventional force. Washington's reach exceeds that of Rome and Britain at their respective peaks. Other nations, most notably China, are stirring, but it will take years before they match, let alone overtake, the U.S. Even subtracting the costs of the Afghanistan and Iraq wars leaves American military outlay around five times that of China and 10 times that of Russia. Combine a gaggle of adversaries, enemies and rogues — Burma, Cuba, Iran, North Korea, Syria — and the U.S. spends perhaps 25 times as much. The United States is not alone. The European Union has 10 times the GDP and three times the population of Russia. Military outlay by the U.S. plus its NATO allies accounts for about 70 percent of world military spending. Add in America's other allies and friends, such as South Korea, and the total share of global military outlay hits 80 percent. In short, Washington spends what it spends not to defend America but to maintain the ability to overpower other nations. But it will become increasingly expensive for America to preserve the ability to attack countries like China. Terrorism remains a pressing security threat. However, terrorist attacks, though horrid, do not pose an existential danger. Al-Qaida is no replacement for Nazism and Communism, nuclear-topped ICBMs and armored divisions. Nor is traditional military force the best way to combat terrorism. Indeed, foreign intervention often promotes terrorism, like swatting a hornet's nest. America's military spending is determined by its foreign policy. America's commitments are a matter of choice. They don't make sense today. Engagement is good, but military force is not the only form of engagement. And any international involvement must balance costs and benefits. Adjusting commitments would allow a vastly different, and less expensive, force structure. The U.S. could make significant cuts and still maintain the globe's strongest and most sophisticated military — one well able to defend Americans.

## 1NR

No resource wars

Idean Salehyan (Professor of Political Science at the University of North Texas) May 2008 “From Climate Change to Conflict? No Consensus Yet\*” Journal of Peace Research, vol. 45, no. 3 http://emergingsustainability.org/files/resolver%20climate%20change%20and%20conflict.pdf

First, the deterministic view has poor predictive power as to where and when conflicts will break out. For every potential example of an environmental catastrophe or resource shortfall that leads to violence, there are many more counter-examples in which conflict never occurs. But popular accounts typically do not look at the dogs that do not bark. Darfur is frequently cited as a case where desertification led to food scarcity, water scarcity, and famine, in turn leading to civil war and ethnic cleansing.5 Yet, food scarcity and hunger are problems endemic to many countries – particularly in sub-Saharan Africa – but similar problems elsewhere have not led to large-scale violence. According to the Food and Agriculture Organization of the United Nations, food shortages and malnutrition affect more than a third of the population in Malawi, Zambia, the Comoros, North Korea, and Tanzania,6 although none of these countries have experienced fullblown civil war and state failure. Hurricanes, coastal flooding, and droughts – which are all likely to intensify as the climate warms – are frequent occurrences which rarely lead to violence. The Asian Tsunami of 2004, although caused by an oceanic earthquake, led to severe loss of life and property, flooding, population displacement, and resource scarcity, but it did not trigger new wars in Southeast Asia. Large-scale migration has the potential to provoke conflict in receiving areas (see Reuveny, 2007; Salehyan & Gleditsch, 2006), yet most migration flows do not lead to conflict, and, in this regard, social integration and citizenship policies are particularly important (Gleditsch, Nordås & Salehyan, 2007). In short, resource scarcity, natural disasters, and long-term climatic shifts are ubiquitous, while armed conflict is rare; therefore, environmental conditions, by themselves, cannot predict violent outbreaks. Second, even if local skirmishes over access to resources arise, these do not always escalate to open warfare and state collapse. While interpersonal violence is more or less common and may intensify under resource pressures, sustained armed conflict on a massive scale is difficult to conduct. Meier, Bond & Bond (2007) show that, under certain circumstances, environmental conditions have led to cattle raiding among pastoralists in East Africa, but these conflicts rarely escalate to sustained violence. Martin (2005) presents evidence from Ethiopia that, while a large refugee influx and population pressures led to localized conflict over natural resources, effective resource management regimes were able to ameliorate these tensions. Both of these studies emphasize the role of local dispute-resolution regimes and institutions – not just the response of central governments – in preventing resource conflicts from spinning out of control. Martin’s analysis also points to the importance of international organizations, notably the UN High Commissioner for Refugees, in implementing effective policies governing refugee camps. Therefore, local hostilities need not escalate to serious armed conflict and can be managed if there is the political will to do so. Third, states often bear responsibility for environmental degradation and resource shortfalls, either through their own projects and initiatives or through neglect of the environment. Clearly, climate change itself is an exogenous stressor beyond the control of individual governments. However, government policies and neglect can compound the effects of climate change. Nobel Prizewinning economist Amartya Sen finds that, even in the face of acute environmental scarcities, countries with democratic institutions and press freedoms work to prevent famine because such states are accountable to their citizens (Sen, 1999). Others have similarly shown a strong relationship between democracy and protection of the environment (Li & Reuveny, 2006). Faced with global warming, some states will take the necessary steps to conserve water and land, redistribute resources to those who need them most, and develop disaster-warning and -response systems. Others will do little to respond to this threat. While a state’s level of income and technological capacity are certainly important, democracy – or, more precisely, the accountability of political leaders to their publics – is likely to be a critical determinant of how states respond to the challenge. Fourth, violent conflict is an inefficient and sub-optimal reaction to changes in the environment and resource scarcities. As environmental conditions change, several possible responses are available, although many journalists and policymakers have focused on the potential for warfare. Individuals can migrate internally or across borders, or they can invest in technological improvements, develop conservation strategies, and shift to less climate-sensitive livelihoods, among other adaptation mechanisms. Engaging in armed rebellion is quite costly and risky and requires large-scale collective action. Individuals and households are more likely to engage in simpler, personal, or smallscale coping strategies. Thus, organized violence is inefficient at the individual level. But, more importantly, armed violence against the state is used as a means to gain leverage over governments so as to gain some form of accommodation, namely, the redistribution of economic resources and political power. Organized armed violence rarely (if ever) arises spontaneously but is usually pursued when people perceive their government to be unwilling to listen to peaceful petitions. As mentioned above, rebellion does not distribute resources by itself, and protracted civil wars can have devastating effects on the economy and the natural environment, leaving fewer resources to bargain over. Thus, organized violence is inefficient at the collective level. Responsive, accountable political leaders – at all levels of government – are more likely to listen to citizen demands for greater access to resources and the means to secure their livelihoods. Political sensitivity to peaceful action can immunize states from armed insurrection.

Renewable energies are more effective in solving global warming – the AFF still emits CO2 through extraction and processing

NREL, “Strengthening U.S. Leadership of International Clean Energy Cooperation,” December 2008, http://www.nrel.gov/international/pdfs/44261.pdf, accessed 6-20-2012.

Greenhouse Gas Impacts The primary environmental benefit of the U.S.-led global clean energy market transformation will be reduced greenhouse gas emissions of 50-80% by 2050, which scientists think will prevent catastrophic climate change impacts—a large benefit to the U.S. and the global community. Clean energy technologies will provide more than half of the reductions needed to achieve that goal (Figure 3).4 Other Environmental Benefits Significant local air quality and other environmental benefits will accompany the reductions in greenhouse gas emissions. Reduced air emissions translate to improved health, lower health care costs, improved visibility, and reduced impacts on natural ecosystems. Increased use of clean energy also will reduce impacts from fossil fuel extraction and processing. Increased access to clean energy in the poorest regions of the world will reduce the use of firewood, enabling cleaner indoor air quality and contributing to local sustainable development.

U.S. market for solar set to double in 2012 – solar panel costs falling.

Cassandra Sweet, “U.S. Solar-Panel Demand Expected to Double,” Wall Street Journal, June 13, 2012, http://online.wsj.com/article/SB10001424052702303901504577463530018881206.html, accessed 6-26-2012.

The U.S. market for solar panels is likely to double in 2012, thanks to government policies and falling prices, although new tariffs on panels imported from China could contribute to slower growth in 2013, according to a new study. U.S. developers are likely to install about 3,300 megawatts of solar panels this year, nearly double the amount installed in 2011, according to a study released Wednesday by the Solar Energy Industries Association and GTM Research. The global solar-power market has been turbulent for manufacturers, as prices have plunged amid an oversupply of panels. But the falling prices, as well as faster development for large-scale solar-power plants, have driven strong demand for solar equipment in the U.S., the report found. The report predicted that global solar-panel installations this year will reach nearly 30 gigawatts, which would make the U.S. the fourth-largest solar market, with an 11% share of the global market. But clouds loom in 2013, when the full effect of new U.S. tariffs on Chinese solar-panel imports will be felt, the report said. The U.S. Commerce Department established countervailing-duty tariffs of 3% to 5% on Chinese solar panels in March and in May ordered additional tariffs of 31% to nearly 250% on the panels to combat alleged dumping. The tariffs were established by preliminary decisions that could be changed before they are finalized later this year. The tariffs are the result of a trade case filed by the U.S. unit of SolarWorld AG SWV.XE +1.93% and other U.S. solar firms against Chinese rivals. Meanwhile, more than 500 megawatts of solar panels were installed in New Jersey, California, Arizona, Massachusetts and other states in the first quarter, which is usually a slow time for solar installations due to winter weather, the report said. Solar-panel installations the rest of the year are likely to rise, the report predicted.

Wind power has become affordable

Ucilia Wang, journalist covering renewable energy and other green tech topics, “What Electric Grid Operators Want: Good Wind Energy Forecasts,” Forbes, May 30, 2012, http://www.forbes.com/sites/uciliawang/2012/05/30/what-electric-grid-operators-want-good-wind-energy-forecasts/, accessed 6-26-2012.

Improving wind energy forecasts is critical for integrating this variable power source into the U.S. power grid, especially when the country has seen a big jump in wind energy generation, according to a report released on Wednesday on whether various regional grids in the country will be ready to meet peak energy demand this summer. Technology advancements to cut production costs, as well as government incentives and mandates for adding more clean power, have boosted wind energy output from 6 billion kilowatt hours in 2000 to about 120 billion kilowatt hours in 2011, according to the report from the North American Electric Reliability Corporation. Wind energy generation will meet about 2% of the peak demand during this summer, from June 1 through Sept. 30, the report said. Power plants that run on natural gas, coal and nuclear will collectively meet 77% of the summer peak demand. Hydro power plants will provide 13% while solar energy will supply 0.48%. The electric reliability corporation, which is overseen by the Federal Energy Regulatory Commission, is responsible for ensuring the nation’s grid is in good shape. The wind industry installed 6,816 megawatts of wind power plants in 2011, up 31 percent from 2010. Overall, the country has over 46,900 megawatts of wind farms, according to the American Wind Energy Association. In five states, wind energy makes up more than 10 percent of their power supplies in 2011. The states are South Dakota (22.3%), Iowa (18.8%), North Dakota (14.7%), Minnesota (12.7%) and Wyoming (10.1%). While the installation figures are impressive, they don’t come close to showing how much power can realistically be produced by wind turbines. In fact, a wind farm’s actual production when demand is at the highest usually falls between zero and 21.3% of its stated generation capacity (so a 100-megawatt wind farm will at most send 21 megawatts of power to the grid when people are using a lot of electricity), the report said.

Global shift towards renewables happening now – still on shaky footing and changes in incentives policies would reverse

Fiona Harvey, environment correspondent, “Global investment in renewable energy at record high,” The Guardian, June 11, 2012, http://www.guardian.co.uk/environment/2012/jun/11/renewable-energy-global-investment-solar-power#start-of-comments, accessed 6-20-2012.

Global investment in renewable energy surged to a new high last year, despite the widespread recession. But experts warned that the rate of growth was showing signs of slowing, and would need to speed up if the world's economies are to be transformed on to a low-carbon footing. Last year, investment in renewable energy reached $257bn (£165bn), a rise of 17% on the previous year. The record investment was a six-fold increase on the 2004 figure and nearly double the total in 2007, the year before the world financial crisis, according to a report from the United Nations Environment Programme (UNEP) and the Renewable Energy Policy Network for the 21st Century (REN21). However, the rate of growth has fallen year on year – last year's growth of 17% on the previous year failed to match the 37% increase in investment from 2010 to 2011. "We need to do more, if we are to combat climate change and use low-carbon technology, said a representative for REN21. "These figures are very good, but there is still a long way to go." The US and China were the top investors in renewables last year. US investments continued despite the shale gas boom and obstacles because of uncertainty over policy. However, the boom – which saw investment of $51bn (£33bn) – may be shortlived as investors are rushing to take advantage of key incentive schemes before they are scrapped.

Renewables can provide base-load power – multiple warrants.

Dr Mark Diesendorf is Deputy Director of the Institute of Environmental Studies at University of New South Wales., previously, as a Principal Research Scientist in CSIRO, he led a research group on the integration of wind power into electricity grids, author and co-author of several national energy scenario studies, “The Base Load Fallacy and other Fallacies disseminated by Renewable Energy Deniers,” Energy Science Coalition, March 2010, http://www.energyscience.org.au/BP16%20BaseLoad.pdf, accessed 8-17-2012.

Opponents of renewable energy, from the coal and nuclear industries and from NIMBY (Not In My Backyard) groups, are disseminating the Base-Load Fallacy, that is, the fallacy that renewable energy cannot provide base-load (24-hour) power to substitute for coal-fired electricity. In Australia, even Government Ministers and some journalists are propagating this conventional ‘wisdom’, although it is false. This fallacy is the principal weapon of renewable energy deniers. Other fallacies are discussed briefly in the appendix. The political implications are that, if these fallacies become widely believed, renewable energy would always have to remain a niche market, rather than achieve its true potential of becoming a set of mainstream energy supply technologies with the capacity to supply all of Australia’s and indeed the world’s electricity. The refutation of the fallacy has the following key logical steps: • With or without renewable energy, there is no such thing as a perfectly reliable power station or electricity generating system. Both coal and nuclear power are only partially reliable. • Electricity grids are already designed to handle variability in both demand and supply. To do this, they have different types of power station (base-load, intermediate-load and peak-load) and reserve power stations. • Wind power and solar power without storage provide additional sources of variability to be integrated into a system that already has to balance a variable conventional supply against a variable demand. • The variability of small amounts of wind and solar power in a grid is indistinguishable from variations in demand. Therefore, existing peak-load plant and reserve plant can handle small amounts of wind and solar power at negligible extra cost. • Some renewable electricity sources (e.g. bioenergy, solar thermal electricity with thermal storage and geothermal) have similar patterns of variability to coal-fired power stations and so they can be operated as base-load. They can be integrated without any additional back-up, as can efficient energy use. • Other renewable electricity sources (e.g. wind, solar without storage, and run-of-river hydro) have different kinds of variability from coal-fired power stations and so have to be considered separately. • Single wind turbines cut-in and cut-out suddenly in low wind speeds and so can be described as ‘intermittent’. • But, for large amounts of wind power connected to the grid from several wind farms that are geographically dispersed in different wind regimes, total wind power generally varies smoothly and therefore cannot be described accurately as ‘intermittent’. Like coal and 3 nuclear power, wind power is a partially reliable source of power (Sinden 2007). However, its statistics are different from those of coal and nuclear power. • As the penetration into the grid of wind energy increases substantially, so do the additional costs of reserve plant and fuel used for balancing wind power variations. However, when wind power supplies up to 20% of electricity generation, these additional costs are relatively small.

CO2 has a larger anthropogenic effect on warming then water vapor – infrared band absorption.

John W. Farley, July/August 2008, is a professor in the department of physics and astronomy at the University of Nevada, Las Vegas, where he has won several awards for distinguished teaching, Monthly Review: An Independent Socialist Magazine, Vol. 60 Issue 3, “The Scientific Case for Modern Anthropogenic Global Warming,” p. 82, Ebsco Host

Cockburn thinks water vapor is more important than CO2 as a greenhouse gas by a factor of 20. Cockburn did not cite any source for this number. It’s true that CO 2 has a smaller greenhouse effect than water vapor, but only by a factor of 2.5 to 4.0 (as shown above), and it is the concentration of CO2 in the atmosphere that has been changing rapidly due to anthropogenic forces. The effect of CO 2 is appreciable. The numbers advanced by Cockburn, claiming that CO 2 is negligible, are wrong. These numbers circulate among the contrarians. The large absorption in the infrared band caused by CO 2 is in and of itself clear evidence of the importance of CO 2.

CO2 absorption is wrong anthropogenic warming is happening – new scientists are making the same old mistakes.

John W. Farley, July/August 2008, is a professor in the department of physics and astronomy at the University of Nevada, Las Vegas, where he has won several awards for distinguished teaching, Monthly Review: An Independent Socialist Magazine, Vol. 60 Issue 3, “The Scientific Case for Modern Anthropogenic Global Warming,” p. 86-7, Ebsco Host

Shortly after C. D. Keeling began his measurement of atmospheric CO2in 1958, it became clear that atmospheric CO 2 was accumulating. This ruled out the short lifetimes: If atmospheric CO 2 could dissolve in the ocean in a year or two, it would not be accumulating in the atmo-sphere. Modern scientists understand that the dissolving of atmospheric CO2into the oceans is a three-step process: (1) transfer of CO 2 across the air-sea interface, (2) chemical interaction of dissolved CO 2 with seawater constituents, and (3) transport of CO 2 to the deep ocean by vertical mixing. Steps 2 and 3 are the rate-limiting steps—i.e., these are the pro-cesses that happen fairly slowly, making the absorption of atmospheric CO2 by the oceans take decades or centuries, rather than years. The chemistry of seawater is complicated. A thorough treatment of CO 2 in seawater involves the bicarbonate ion (HCO 3 – ), boric acid (B[OH] 3 ) and the borate ion (B[OH] 4 – ). The inclusion of the last two species is sur-prising to many scientists without a background in ocean chemistry. The subject is complicated enough to merit a 356-page monograph. 22 For a long time, many scientists misunderstood the problem. They looked up the solubility of CO 2 in water, and there seemed to be noth-ing to prevent CO 2 from dissolving rapidly in the ocean. However, these scientists misconceived the problem. The solubility tells you whether all the atmospheric CO 2 can dissolve eventually in the ocean. And all the CO2 can dissolve, but it takes a long time to reach equilibrium. This is the wrong approach. It’s not an equilibrium problem. Instead, it’s a transient problem. The real question is: How long does the system take to reach equilibrium? This was not understood by scientists until the mid-1950s. It has been estimated that of 100 molecules of CO 2 injected into the atmosphere, 6 molecules will dissolve in the ocean in 1 year; 29 mole-cules will dissolve in 10 years; 59 molecules will dissolve in 60 years; 84 molecules will dissolve in 360 years; and the last 16 molecules will take over 1,000 years. 23 This is the result of a number of different processes taking place on different time scales. There is not a single time scale for dissolving CO 2 in the ocean, but it takes a long time. Because it was once a very conten-tious area, there were lots of naïve ideas circulating, that are now known to be wrong. Those ideas don’t ever totally die away. Since 1960, many new people have entered the field of climatology, and people with technical backgrounds but little experience in climatology have inves-tigated this issue. People who are new to the field are prone to repeat the same mistakes that climate scientists were making in the 1950s and earlier.

Anthropogenic warming causes rapid sea level rise and a collapse in biodiversity.

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Of the many predictions for climate change in the next cen-tury, a general consensus is emerging that global tempera-tures will increase by 2–4 ◦ C and possibly beyond (Mein-shausenet al., 2009), sea levels will rise (1m±0.5 m), and atmospheric CO2 will increase by up to 1000 ppmv (Solomonet al., 2007). It is also widely suggested that the magnitude and rate of these changes will result in many plants and animals going extinct, for example within the next century, over 35% of some biota will have gone ex-tinct (Thomaset al., 2004; Solomonet al., 2007) and there will be extensive die-back of the tropical rainforest due to climate change (e.g. Huntingford et al., 2008). These predictions, based predominantly on models constructed using the present-day static distribution of species in rela-tion to present-day climate, paint a depressing picture. And it is these predictions that pervade the scientific and non-scientific literature to highlight the potential perils of future climate change and leading to the oft-cited sentiment that future climate change poses an equal or greater extinction threat to global biodiversity than land-use change (Parme-san & Yohe, 2003; Thomaset al., 2004).

Biodiversity loss causes extinction.

Ruth Young, 2-9-2010, Ph.D. specialising in coastal marine ecology, “Biodiversity: what it is and why it’s important,” <http://www.talkingnature.com/2010/02/Biodiversity/Biodiversity-what-and-why/>

Different species within ecosystems fill particular roles, they all have a function, they all have a niche. They interact with each other and the physical environment to provide ecosystem services that are vital for our survival. For example plant species convert carbon dioxide (CO2) from the atmosphere and energy from the sun into useful things such as food, medicines and timber. A bee pollinating a flower (Image: ClearlyAmbiguous Flickr) Pollination carried out by insects such as bees enables the production of ⅓ of our food crops. Diverse mangrove and coral reef ecosystems provide a wide variety of habitats that are essential for many fishery species. To make it simpler for economists to comprehend the magnitude of services offered by Biodiversity, a team of researchers estimated their value – it amounted to $US33 trillion per year. “By protecting Biodiversity we maintain ecosystem services” Certain species play a “keystone” role in maintaining ecosystem services. Similar to the removal of a keystone from an arch, the removal of these species can result in the collapse of an ecosystem and the subsequent removal of ecosystem services. The most well known example of this occurred during the 19th century when sea otters were almost hunted to extinction by fur traders along the west coast of the USA. This led to a population explosion in the sea otters’ main source of prey, sea urchins. Because the urchins graze on kelp their booming population decimated the underwater kelp forests. This loss of habitat led to declines in local fish populations. Sea otters are a keystone species once hunted for their fur (Image: Mike Baird) Eventually a treaty protecting sea otters allowed the numbers of otters to increase which inturn controlled the urchin population, leading to the recovery of the kelp forests and fish stocks. In other cases, ecosystem services are maintained by entire functional groups, such as apex predators (See Jeremy Hance’s post at Mongabay). During the last 35 years, over fishing of large shark species along the US Atlantic coast has led to a population explosion of skates and rays. These skates and rays eat bay scallops and their out of control population has led to the closure of a century long scallop fishery. These are just two examples demonstrating how Biodiversity can maintain the services that ecosystems provide for us, such as fisheries. One could argue that to maintain ecosystem services we don’t need to protect Biodiversity but rather, we only need to protect the species and functional groups that fill the keystone roles. However, there are a couple of problems with this idea. First of all, for most ecosystems we don’t know which species are the keystones! Ecosystems are so complex that we are still discovering which species play vital roles in maintaining them. In some cases its groups of species not just one species that are vital for the ecosystem. Second, even if we did complete the enormous task of identifying and protecting all keystone species, what back-up plan would we have if an unforseen event (e.g. pollution or disease) led to the demise of these ‘keystone’ species? Would there be another species to save the day and take over this role? Classifying some species as ‘keystone’ implies that the others are not important. This may lead to the non-keystone species being considered ecologically worthless and subsequently over-exploited. Sometimes we may not even know which species are likely to fill the keystone roles. An example of this was discovered on Australia’s Great Barrier Reef. This research examined what would happen to a coral reef if it were over-fished. The “over-fishing” was simulated by fencing off coral bommies thereby excluding and removing fish from them for three years. By the end of the experiment, the reefs had changed from a coral to an algae dominated ecosystem – the coral became overgrown with algae. When the time came to remove the fences the researchers expected herbivorous species of fish like the parrot fish (Scarus spp.) to eat the algae and enable the reef to switch back to a coral dominated ecosystem. But, surprisingly, the shift back to coral was driven by a supposed ‘unimportant’ species – the bat fish (Platax pinnatus). The bat fish was previously thought to feed on invertebrates – small crabs and shrimp, but when offered a big patch of algae it turned into a hungry herbivore – a cow of the sea – grazing the algae in no time. So a fish previously thought to be ‘unimportant’ is actually a keystone species in the recovery of coral reefs overgrown by algae! Who knows how many other species are out there with unknown ecosystem roles! In some cases it’s easy to see who the keystone species are but in many ecosystems seemingly unimportant or redundant species are also capable of changing niches and maintaining ecosystems. The more Biodiversityiverse an ecosystem is, the more likely these species will be present and the more resilient an ecosystem is to future impacts. Presently we’re only scratching the surface of understanding the full importance of Biodiversity and how it helps maintain ecosystem function. The scope of this task is immense. In the meantime, a wise insurance policy for maintaining ecosystem services would be to conserve Biodiversity. In doing so, we increase the chance of maintaining our ecosystem services in the event of future impacts such as disease, invasive species and of course, climate change. This is the international year of Biodiversity – a time to recognize that Biodiversity makes our survival on this planet possible and that our protection of Biodiversity maintains this service.

U.S. energy leadership is declining – not shifting to renewable energies leaves us behind.

NREL, “Strengthening U.S. Leadership of International Clean Energy Cooperation,” December 2008, http://www.nrel.gov/international/pdfs/44261.pdf, accessed 6-20-2012.

Rationale for Enhanced U.S. International Clean Energy Leadership Climate change, the growing demand for fossil fuel resources, energy security, and sustainable development issues are recognized worldwide as critical challenges that require immediate attention. These concerns have helped create a growing consensus that global energy systems need to undergo a fundamental transformation toward clean energy technologies in the coming decades. At the same time, U.S. leadership in global clean energy markets has declined and economic opportunities are being lost to other countries. Through revitalized international clean energy programs, the United States can reap substantial economic, energy security, environmental, and global sustainable development benefits. These benefits include: o Providing direct economic benefits to the United States—jobs, price reductions, economic stability, and enhanced trade balance o Speeding the rate of development and market introduction of advanced clean energy technologies o Enhancing the competitiveness of U.S. industry o Tackling climate change and energy security through international cooperation These benefits are summarized in Table 2 and presented in quantitative terms in the opportunity and benefits assessment section that follows.

Renewable energy boosts the economy in the short term and long term

MatteR Network, “Experts Say Renewable Energy Key to Economic Recovery,” October 17, 2008, http://www.matternetwork.com/2008/10/experts-say-renewable-energy-key.cfm, accessed 8-12-2012.

Meanwhile, the Center for American Progress, a Washington, D.C. think tank and 25x'25 endorsing partner, says the United States can create 2 million jobs over two years by investing in a rapid "green" economic recovery program. In a recently issued report, the group says a $100-billion public/private investment package would create nearly four times more jobs - including a vast majority paying at least $16 per hour than spending the same amount of money within the oil industry, and would reduce the unemployment rate from the 5.7 percent recorded in July of this year down to 4.4 percent over two years. The report, Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy, which was prepared by the Political Economy Research Institute at the University of Massachusetts-Amherst under commission by the Center for American Progress, also shows that the proposed green economic recovery package would boost construction and manufacturing employment. The report says the green recovery program, at the least, can restore some 800,000 construction jobs lost, from 8 million to 7.2 million, over the past two years due to the housing bubble collapse. John Podesta, president and CEO of the Center for American Progress, says falling home prices, foreclosures, bank failures, a weaker dollar, steep prices for gas, food, and steel, and layoffs in the banking, construction and manufacturing sectors are all indicators of serious economic strain. "What's more, evidence suggests the current downturn will continue for at least another year," he says. "At the same time, we face a growing climate crisis that will require us to rapidly invest in new energy infrastructure, cleaner sources of power, and more efficient use of electricity and fuels in order to cut global warming pollution." Podesta says the time is now "for a new vision for the economic revitalization of the nation and a restoration of American leadership in the world" and "at the heart of this opportunity is clean energy, remaking the vast energy systems that power the nation and the world." He says the economic opportunities provided by a fundamental change in the way energy is produced and consumed, are vast. The $100 billion package envisioned by the Center would include $50 billion for tax credits, $46 billion in direct government spending, and $4 billion for federal loan guarantees. By comparison, U.S. crude oil imports during the first eight months of this year totaled $251 billion, according to the U.S. Bureau of Economic Analysis. "The green economic recovery program addresses the immediate need to boost our struggling economy and accelerate the adoption of a comprehensive clean energy agenda," says Podesta, noting that combining tax credits and loan guarantees for private businesses along with direct public investment spending would retrofit buildings to increase energy efficiency, expand mass transit and freight rail, construct "smart" electrical grid transmission systems, and boost wind energy, solar power and advanced biofuels.

Than nuclear power, incentives for nuclear crowd out renewable fuels.

Christian Parenti is the author of "The Freedom: Shadows and Hallucinations in Occupied Iraq" (New Press) and a visiting fellow at CUNY's Center for Place, Culture and Politics, “Why Nuclear Power Is Not the Answer to Global Warming,” AlterNet, April 4, 2012, http://www.alternet.org/environment/154854/why\_nuclear\_power\_is\_not\_the\_answer\_to\_global\_warming/?page=1, accessed 7-8-2012.

The World Watch Institute reports that between 2004 and 2009, global electricity from wind (not capacity, but actual power output) grew by 27 percent, while solar grew by 54 percent. Over the same time, nuclear power output actually declined by half a percent. What would a nuke build out really cost? Mark Cooper, senior fellow for economic analysis at the Vermont Law School, has found that adding 100 new reactors to the U.S. power grid would cost $1.9 to $4.1 trillion, and that would take at least a decade to do. In a comparative analysis of U.S. states, Cooper found that the states that invested heavily in nuclear power had worse track records on efficiency and developing renewables than those that did not have large nuclear programs. In other words, investing in nuclear technology crowded out developing clean energy. Only when clean technologies—like wind, solar, hydropower, and electric vehicles—are cheaper than other options will the world economy make the switch away from fossil fuels. Right now, alternatives are slightly cheaper than nukes, come on line faster, and are growing robustly.

Trades off with renewables – scarce resources.

Alice Slater, NY Director of the Nuclear Age Peace Foundation, serves as its UN NGO representative, member of the Global Council of Abolition 2000, directs the network’s Sustainable Energy Working Group which produced a model statute for an International Renewable Energy Agency, on the Board of the Lawyer’s Committee for Nuclear Policy and the Executive Committee of the Middle Powers Initiative, serves on the Energy Committee of the New York City Bar Association and has also served on its Military Affairs Committee, the Committee on International Security Affairs and the UN Working Group, “Towards an international renewable energy agency Nuclear power no solution to global warming,” Pacific Ecologist, Winter 2008, http://www.wagingpeace.org/articles/2008/08/18\_slater\_towards\_irena.pdf, accessed 8-12-2012.

Equally important, nuclear power is the slowest and costliest way to reduce CO2 emissions, as financing nuclear power diverts scarce resources from investments in renewable energy and energy efficiency. The enormous costs of nuclear power per unit of reduced carbon emissions would actually worsen our ability to abate climate change as we would buy less carbon-free energy per dollar spent on nuclear power compared to emissions we would save by investing those dollars in solar, wind or energy efficiency. According to a Massachusetts Institute of Technology study on the future of nuclear power, 1,500 new nuclear reactors would have to be constructed worldwide by mid-century for nuclear power to have a modest impact on the reduction of greenhouse gasses.4 Nuclear power’s role in mitigating climate change is further constrained because its impact is limited to producing only electricity.

Nuclear power squeezes out renewables – companies set up renewables to fail.

Greenpeace, “The Case Against Nuclear Power,” January 9, 2008, http://www.greenpeace.org.uk/files/pdfs/nuclear/nuclear-power-briefing.pdf, accessed 8-12-2012.

In reality going nuclear would squeeze out renewables. Indeed, then Secretary of State for Business Patricia Hewitt said in Commons debate on 2003 Energy White Paper: “It would have been foolish to announce …. that we would embark on a new generation of nuclear power stations because that would have guaranteed that we would not make the necessary investment and effort in both energy efficiency and in renewables.” Since then nothing has changed. Another insider, Jeremy Leggett, says: “The DTI set up a renewables advisory board to advise ministers how to execute the white paper plan in November 2002. By September 2003 the board's industry members, of which I was one, were already troubled by slow progress and issued a statement of concern. One warned me DTI officials would deliberately go slowly, to keep their hopes for nuclear alive; renewables would be teed up to fail. I didn't believe it at the time, but recently I have heard two of Tony Blair's senior colleagues confirm that the DTI has long suppressed renewables to make space for nuclear.”

Nuclear energy spun as an answer to climate change diverts attention from renewable energy

Greenpeace, “Climate Change - Nuclear not the answer,” April 30, 2007, http://www.greenpeace.org/international/PageFiles/24507/briefing-nuclear-not-answer-apr07.pdf, accessed 7-6-2012.

The potential of renewable energy is vast and far greater than that of nuclear power or climate changing fossil fuels. With today’s technology we can generate almost six times the current global energy demand.1 Why listen to the nuclear industry, which time and time again has offered us false promises and lies? Why let it drag us backwards to the past and believe that nuclear power is needed to tackle climate change when we can look to the future, a clean future based on renewable energy sources; a future free of more radioactive waste and the nuclear proliferation nightmare that accompanies nuclear power? The choice is not just about how to replace existing power plants. One third of the world’s population, some two billion people have no reliable access to energy supplies, this inequity cannot be relieved by the 1950s nuclear ightmare, but only by the efficient use of diverse and decentralised renewable energy systems. The promotion of nuclear power as the answer to climate change is a dangerous diversion from the real solutions: a massive uptake of renewable energy and the adoption of energy efficiency are the only effective ways to combat climate change. They are available now; they are clean, cheap and have the added benefit of providing energy security. Nuclear power belongs in the dustbin of history; it is a target for terrorists, and a source of nuclear weapons. The uture can be nuclear free. Renewable energy is peaceful energy and it is available today.