# Wake Round 4 V. Mich AP

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### Electricity prices

#### Electricity prices are dropping and will stay low

Dallas Burtraw, one of the nation’s foremost experts on environmental regulation in the electricity sector, and studies electricity restructuring, competition, and economic deregulation, “Falling Emissions and Falling Prices: Expectations for the Domestic Natural Gas Boom,” Common Resources, August 21, 2012, <http://common-resources.org/2012/falling-emissions-and-falling-prices-expectations-for-the-domestic-natural-gas-boom/>, accessed 10-25-2012.

Moreover, the boom in domestic natural gas production could have even more immediate affects for U.S. electricity consumers. The increased supply of gas is expected to lower natural gas prices and retail electricity prices over the next 20 years, according to a [new RFF Issue Brief](http://www.rff.org/Publications/Pages/PublicationDetails.aspx?PublicationID=22019). These price decreases are expected to be even larger if demand for electricity continues on a slow-growth trajectory brought on by the economic downturn and the increased use of energy efficiency. For example, RFF analysis found that delivered natural gas prices would have been almost 35% higher in 2020 if natural gas supply projections had matched the lower estimates released by the U.S. Energy Information Administration (EIA) in 2009. Instead, with an increased gas supply, consumers can expect to pay $4.9 per MMBtu for delivered natural gas in 2020 instead of $6.6 per MMBtu. These trends are even more exaggerated if demand for electricity were to increase to levels projected by the EIA just three years ago, in 2009.This decrease in natural gas prices is expected to translate into a decrease in retail electricity prices for most electricity customers in most years out to 2020. Compared to the world with the lower gas supply projections, average national electricity prices are expected to be almost 6% lower, falling from 9.25 cents to 8.75 cents per kilowatt-hour in 2020. Residential, commercial, and industrial customers are all expected to see a price decrease, with the largest price changes occurring in parts of the country that have competitive electricity markets. All of these prices decreases translate into real savings for most electricity customers. The savings are largest for commercial customers, who stand to save $33.9 Billion (real $2009) under the new gas supply projections in 2020. Residential customers also stand to save big, with estimates of $25.8 Billion (real $2009) in savings projected for 2020.

#### New nuclear reactors drive up electricity prices

Mark Cooper, SENIOR FELLOW FOR ECONOMIC ANALYSIS INSTITUTE FOR ENERGY AND THE ENVIRONMENT¶ VERMONT LAW SCHOOL, "THE ECONOMICS OF NUCLEAR REACTORS: RENAISSANCE OR RELAPSE?," 2009, http://www.vermontlaw.edu/Documents/Cooper%20Report%20on%20Nuclear%20Economics%20FINAL%5B1%5D.pdf

Within the past year, estimates of the cost of nuclear power from a new generation of ¶ reactors have ranged from a low of 8.4 cents per kilowatt hour (kWh) to a high of 30 cents. This ¶ paper tackles the debate over the cost of building new nuclear reactors, with the key findings as ¶ follows: ¶ • The initial cost projections put out early in today’s so-called “nuclear renaissance” were about ¶ one-third of what one would have expected, based on the nuclear reactors completed in the ¶ 1990s. ¶ • The most recent cost projections for new nuclear reactors are, on average, over four times as high as the initial “nuclear renaissance” projections. ¶ • There are numerous options available to meet the need for electricity in a carbon-constrained ¶ environment that are superior to building nuclear reactors. Indeed, nuclear reactors are the worst option from the point of view of the consumer and society. ¶ • The low carbon sources that are less costly than nuclear include efficiency, cogeneration, ¶ biomass, geothermal, wind, solar thermal and natural gas. Solar photovoltaics that are presently ¶ more costly than nuclear reactors are projected to decline dramatically in price in the next ¶ decade. Fossil fuels with carbon capture and storage, which are not presently available, are ¶ projected to be somewhat more costly than nuclear reactors. ¶ • Numerous studies by Wall Street and independent energy analysts estimate efficiency and ¶ renewable costs at an average of 6 cents per kilowatt hour, while the cost of electricity from ¶ nuclear reactors is estimated in the range of 12 to 20 cents per kWh. ¶ • The additional cost of building 100 new nuclear reactors, instead of pursuing a least cost ¶ efficiency-renewable strategy, would be in the range of $1.9-$4.4 trillion over the life the ¶ reactors. ¶ Whether the burden falls on ratepayers (in electricity bills) or taxpayers (in large subsidies), ¶ incurring excess costs of that magnitude would be a substantial burden on the national economy and ¶ add immensely to the cost of electricity and the cost of reducing carbon emissions.

#### Low electricity prices sustain U.S. manufacturing which is key to the economy – re-shoring, key industries

Perry 7/31/12 (Mark, Prof of Economics @ Univ. of Michigan, "America's Energy Jackpot: Industrial Natural Gas Prices Fall to the Lowest Level in Recent History," http://mjperry.blogspot.com/2012/07/americas-energy-jackpot-industrial.html)

Building petrochemical plants could suddenly become attractive in the United States. Manufacturers will "reshore" production to take advantage of low natural gas and electricity prices. Energy costs will be lower for a long time, giving a competitive advantage to companies that invest in America, and also helping American consumers who get hit hard when energy prices spike.¶ After years of bad economic news, the natural gas windfall is very good news. Let's make the most of it." ¶ The falling natural gas prices also make the predictions in this December 2011 study by PriceWaterhouseCoopers, "Shale gas: A renaissance in US manufacturing?"all the more likely: ¶ U.S. manufacturing companies (chemicals, metals and industrial) could employ approximately one million more workers by 2025 because of abundant, low-priced natural gas.¶ Lower feedstock and energy cost could help U.S. manufacturers reduce natural gas expenses by as much as $11.6 billion annually through 2025.¶ MP: As I have emphasized lately, America's ongoing shale-based energy revolution is one of the real bright spots in an otherwise somewhat gloomy economy, and provides one of the best reasons to be bullish about America's future. The shale revolution is creating thousands of well-paying, shovel-ready jobs in Texas, North Dakota and Ohio, and thousands of indirect jobs in industries that support the shale boom (sand, drilling equipment, transportation, infrastructure, steel pipe, restaurants, etc.). In addition, the abundant shale gas is driving down energy prices for industrial, commercial, residential and electricity-generating users, which frees up billions of dollars that can be spent on other goods and services throughout the economy, providing an energy-based stimulus to the economy. ¶ Cheap natural gas is also translating into cheaper electricity rates, as low-cost natural gas displaces coal. Further, cheap and abundant natural gas is sparking a manufacturing renaissance in energy-intensive industries like chemicals, fertilizers, and steel. And unlike renewable energies like solar and wind, the natural gas boom is happening without any taxpayer-funded grants, subsidies, credits and loans. Finally, we get an environmental bonus of lower CO2 emissions as natural gas replaces coal for electricity generation. Sure seems like a win, win, win, win situation to me.

#### Global economic crisis causes war - strong statistical support - also causes great power transitions.

Jedediah Royal, 2010, Director of Cooperative Threat Reduction at the U.S. Department of Defense, “Economic Integration, Economic Signaling and the Problem of Economic Crises,” in Economics of War and Peace: Economic, Legal and Political Perspectives, ed. Goldsmith and Brauer, p. 213-14

Less intuitive is how periods of economic decline may increase the likelihood of external conflict. Political science literature has contributed a moderate degree of attention to the impact of economic decline and the security and defence behaviour of interdependent states. Research in this vein has been considered at systemic, dyadic and national levels. Several notable contributions follow. First, on the systemic level, Pollins (2008) advances Modelski and Thompson’s (1996) work on leadership cycle theory, finding that rhythms in the global economy are associated with the rise and fall of pre-eminent power and the often bloody transition from one pre-eminent leader to the next. As such, exogenous shocks such as economic crises could usher in a redistribution of relative power (see also Gilpin, 10981) that leads to uncertainty about power balances, increasing the risk of miscalculation (Fearon, 1995). Alternatively, even a relatively certain redistribution of power could lead to a permissive environment for conflict as a rising power may seek to challenge a declining power (Werner, 1999). Seperately, Polllins (1996) also shows that global economic cycles combined with parallel leadership cycles impact the likelihood of conflict among major, medium, and small powers, although he suggests that the causes and connections between global economic conditions and security conditions remain unknown. Second, on a dyadic level, Copeland’s (1996,2000) theory of trade expectations suggests that ‘future expectation of trade’ is a significant variable in understanding economic conditions and security behavior of states. He argues that interdependent states are likely to gain pacific benefits from trade so long as they have an optimistic view of future trade relations. However, if the expectation of future trade decline, particularly for difficult to replace items such as energy resources, the likelihood for conflict increases , as states will be inclined to use force to gain access to those resources. Crises could potentially be the trigger for decreased trade expectations either on its own or because it triggers protectionist moves by interdependent states. Third, others have considered the link between economic decline and external armed conflict at a national level. Blomberg and Hess (2002) find a strong correlation between internal conflict and external conflict, particularly during periods of economic downturn. They write, The linkages between internal and external conflict and prosperity are strong and mutually reinforcing. Economic conflict tends to spawn internal conflict, which in turn returns the favour. Moreover, the presence of a recession tends to amplify the extent to which international and external conflicts self-reinforce each other. (Blomberg & Hess, 2002, p.89). Economic decline has also been linked with an increase in the likelihood of terrorism (Blomberg, Hess, & Weerapana, 2004), which has the capacity to spill across borders and lead to external tensions. Furthermore, crises generally reduce the popularity of a sitting government. ‘Diversionary theory’ suggests that, when facing unpopularity arising from economic decline, sitting governments have increased incentives to create a ‘rally round the flag’ effect. Wang (1996), DeRouen (1995), and Blomberg, Hess and Thacker (2006) find supporting evidence showing that economic decline and use of force are at least indirectly correlated. Gelpi (1997) Miller (1999) and Kisanganie and Pickering (2009) suggest that the tendency towards diversionary tactics are greater for democratic states than autocratic states, due to the fact that democratic leaders are generally more susceptible to being removed from office due to lack of domestic support. DeRouen (2000) has provided evidence showing that periods of weak economic performance in the United States, and thus weak presidential popularity, are statistically linked to an increase in the use of force.

### Proliferation

#### 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.

#### 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.

#### 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.

#### Nuclear energy cannot solve proliferation – does not reduce political motive

James M. Acton is a senior associate in the Nuclear Policy Program at the Carnegie Endowment. A physicist by training, Acton specializes in deterrence, disarmament, nonproliferation, and nuclear energy, “The Myth of Proliferation-Resistant Technology,” BULLETIN OF THE ATOMIC SCIENTISTS, VOL. 65, NO. 6, NOVEMBER/DECEMBER 2009, http://www.carnegieendowment.org/2009/11/19/myth-of-proliferation-resistant-technology/bnqj, accessed 9-3-2012.

Writing in the journal Science in 1968, ecologist Garrett Hardin observed the existence of a category of problems for which there was no technical solution. Focusing on the challenge of feeding a burgeoning global population, Hardin argued, "It is fair to say that most people who anguish over the population problem are trying to find a way to avoid the evils of overpopulation without relinquishing any of the privileges they now enjoy. They think that farming the seas or developing new strains of wheat will solve the problem—technologically. I try to show here that the solution they seek cannot be found." Forty years on, Hardin’s central thesis—that it is impossible to solve a political problem with a technical solution—is still salient and applicable to more than just managing population. At the moment, a number of initiatives promote a technological approach to solve—or at least ameliorate—the problem of nuclear proliferation through the misuse of civilian nuclear facilities (particularly reactors and reprocessing plants). Their aim is to make novel nuclear technologies "proliferation resistant."

Nuclear Energy

#### IFR and Pyroprocessing are still susceptible to proliferation – just one extra chemical step is needed

Jim Green B.Med.Sci. (Hons.), PhD, honors degree in public health and was awarded a PhD in science and technology studies for his analysis of the Lucas Heights research reactor debates, studies and speaks extensively on nuclear power, national nuclear campaigner, “Nuclear Weapons and 'Generation 4' Reactors,” Friends of Earth Australia, July 2009, http://www.foe.org.au/anti-nuclear/issues/nfc/power-weapons/g4nw/, accessed 7-7-2012.

In short, IFRs could produce lots of greenhouse-friendly energy and while they're at it they can 'eat' nuclear waste and convert fissile materials, which might otherwise find their way into nuclear weapons, into useful energy. Too good to be true? Sadly, yes. Nuclear engineer Dave Lochbaum from the Union of Concerned Scientists writes: "The IFR looks good on paper. So good, in fact, that we should leave it on paper. For it only gets ugly in moving from blueprint to backyard." Complete IFR systems don't exist. Fast neutron reactors exist but experience is limited and they have had a troubled history. The pyroprocessing and waste transmutation technologies intended to operate as part of IFR systems are some distance from being mature. But even if the technologies were fully developed and successfully integrated, IFRs would still fail a crucial test − they can too easily be used to produce fissile materials for nuclear weapons. IFRs and nuclear weapons George Stanford, who worked on an IFR R&D program in the US, notes that proliferators "could do [with IFRs] what they could do with any other reactor − operate it on a special cycle to produce good quality weapons material." As with conventional reactors, IFRs can be used to produce weapon grade plutonium in the fuel (using a shorter-than-usual irradiation time) or by irradiating a uranium or depleted uranium 'blanket' or targets. Conventional PUREX reprocessing can be used to separate the plutonium. Another option is to separate reactor grade plutonium from IFR fuel and to use that in weapons instead of weapon grade plutonium. The debate isn't helped by the muddle-headed inaccuracies of some IFR advocates, including some who should know better. For example, Prof. Barry Brook from Adelaide University says: "IFRs cannot produce weapons-grade plutonium. The integral fast reactor is a systems design with a sodium-cooled reactor with metal fuels and pyroprocessing on-site. To produce weapons-grade plutonium you would have to build an IFR+HSHVHSORF (highly specialised, highly visible, heavily shielded off-site reprocessing facility). You would also need to run your IFR on a short cycle." Or to paraphrase: IFRs can't produce weapon grade plutonium, IFRs can produce weapon grade plutonium. Go figure. Presumably Brook's point is that IFR-produced plutonium cannot be separated on-site from irradiated materials (fuel/blanket/targets); it would need to be separated from irradiated materials at a separate reprocessing plant. If so, it is a banal point which also applies to conventional reactors, and it remains the case that IFRs can certainly produce weapon grade plutonium. Brooks' HSHVHSORFs are conventional PUREX plants − technology which is well within the reach of most or all nation states. Existing reprocessing plants would suffice for low-burn-up IFR-irradiated materials while more elaborate shielding might be required to safely process materials irradiated for a longer period. IFR advocate Tom Blees notes that: "IFRs are certainly not the panacea that removes all threat of proliferation, and extracting plutonium from it would require the same sort of techniques as extracting it from spent fuel from light water reactors."

#### The separation of fissile material in pyroprocessing can produce 27,000 nuclear weapons

Jim Green B.Med.Sci. (Hons.), PhD, honors degree in public health and was awarded a PhD in science and technology studies for his analysis of the Lucas Heights research reactor debates, studies and speaks extensively on nuclear power, national nuclear campaigner, “Nuclear Weapons and 'Generation 4' Reactors,” Friends of Earth Australia, July 2009, http://www.foe.org.au/anti-nuclear/issues/nfc/power-weapons/g4nw/, accessed 7-7-2012.

IFR advocates propose using them to draw down global stockpiles of fissile material, whether derived from nuclear research, power or WMD programs. However, IFRs have no need for outside sources of fissile material beyond their initial fuel load. Whether they are used to irradiate outside sources of fissile material to any significant extent would depend on a confluence of commercial, political and military interests. History shows that non-proliferation objectives receive low priority. Conventional reprocessing with the use of separated plutonium as fuel (in breeders or MOX reactors) has the same potential to drawn down fissile material stockpiles, but has increased rather than decreased proliferation risks. Very little plutonium has been used as reactor fuel in breeders or MOX reactors. But the separation of plutonium from spent fuel continues and stockpiles of separated 'civil' plutonium − which can be used directly in weapons − are increasing by about five tonnes annually and amount to over 270 tonnes, enough for 27,000 nuclear weapons.

#### IFRs do not eliminate nuclear waste – still produce enough radioactive and weapons material to be accident, prolif, and terrorism risks

Amory B. Lovins, Rocky Mountain Institute Reprinted from Nuclear Monitor #690, June 26,

2009 <http://www.nirs.org/factsheets/lovinsonifretc.pdf>

IFRs are often claimed to “burn up nuclear waste” and make its “time of concern . . . less than 500 years” rather than 10,000–100,000 years or more. That’s wrong: most of the radioactivity comes from fission products, including very-long-lived isotopes like iodine-129 and technicium-99, and their mix is broadly similar in any nuclear fuel cycle. IFRs’ wastes may contain less transuranics, but at prohibitive cost and with worse occupational exposures, routine releases, accident and terrorism risks, proliferation, and disposal needs for intermediate- and low-level wastes. It’s simply a dishonest fantasy to claim that such hypothetical and uneconomic ways to recover energy or other value from spent LWR fuel mean “There is no such thing as nuclear waste.” Of course, the nuclear industry wishes this were true.

#### Pyroprocessing leads to plutonium breeding that can be used for WMDs

Charles D. Ferguson is the president of the Federation of American Scientists, based in Washington, D.C., “Controlling Asia's Nuclear Power Tigers,” Forbes, May 4, 2010, http://www.forbes.com/2010/05/04/asia-nuclear-power-markets-economy-national-security.html, accessed 7-7-2012.

Some South Korean nuclear industry officials believe a possible solution is to build a pyro- processing plant. Pyro processing is claimed to offer proliferation resistance because it mixes plutonium with other radioactive materials. It is not proliferation-proof, however, because with a little additional chemistry pure plutonium could be extracted. Pyro processing may provide a way to alleviate the nuclear waste problem if the recycled fuel can be consumed in fast reactors. Such reactors are well suited for burning up long-lived fissionable materials, which require more than 100,000 years of storage. By burning them up completely, the waste storage requirement reduces to about a few hundred years for the remaining fission products. But fast reactors have a huge price tag. This technology has also suffered technical setbacks. Except for Russia, no country has a commercial fast reactor running. The Russians have spent considerable financial and technical resources to keep its fast reactor operating. Even so, China, India, France, Japan and South Korea remain committed to a future filled with fast reactors. But most experts agree that the earliest possible time for this to happen is midcentury or later. The proliferation downside to fast reactors is that this technology can also breed lots of weapons plutonium.

#### No cascade of proliferation – it’s all alarmist rhetoric

Muthia Alagappa, 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.

### Warming

#### No impact to anthropogenic warming – multiple reasons\*\*\*

Peter Ferrara, 3-1-2012, Director of Entitlement and Budget Policy for the Heartland Institute, General Counsel for the American Civil Rights Union, and Senior Fellow at the National Center for Policy Analysis, Forbes, “Fakegate: The Obnoxious Fabrication of Global Warming,” <http://www.forbes.com/sites/peterferrara/2012/03/01/fakegate-the-obnoxious-fabrication-of-global-warming/3/>

The bottom line is that the temperature records are not consistent with the theory that human “greenhouse” gas emissions are the primary cause of global warming. Those records do not show temperatures rising in conjunction with such ever rising emissions as the globe increasingly industrializes. Instead, the temperature record shows an up and down pattern that follows the pattern of natural influences on global temperatures, such as cyclical sunspots and solar flares, and cycles of ocean churning from warmer to colder temperatures and back, such as the Pacific Decadal Oscillation (PDO). Moreover, the incorruptible and objective satellite temperature records show only modest warming starting in the late 1970s, which stopped roughly 10 years ago, with more recent declines. That is consistent with temperature proxy records found in nature, such as tree rings and ice cores. But that diverges significantly from the corruptible and subjectively compiled land based records, the repeated manipulation of which has prompted several prominent climate scientists to call for an investigation. Perhaps Gleick’s skills in falsification can be found more broadly among his colleagues. In addition, the work of the UN’s IPCC is based on numerous climate models that attempt to project temperatures decades into the future. Those models are all based on the circular assumption that the theory of man caused global warming is true. As 16 world leading climate scientists recently reported in a letter to the Wall Street Journal, “[A]n important gauge of scientific expertise is the ability to make successful predictions. When predictions fail, we say that the theory is ‘falsified’ and we should look for the reasons for the failure. Shown in the nearby graph is the measured annual temperature of the earth since 1989, just before the first report of the Intergovernmental Panel on Climate Change (IPCC). Also shown are the projections of the likely increase of temperature, as published in the Summaries of each of the four IPCC reports, the first in the year 1990 and the last in the year 2007. “From the graph it appears that the projections [of the models] exaggerate, substantially, the response of the earth’s temperature to CO2 which increased by about 11% from 1989 through 2011. Furthermore, when one examines the historical temperature record throughout the 20th century and into the 21st, the data strongly suggest a much lower CO2 effect than almost all models calculate.” Seems like the models have been falsified. The likely reason for that failure is that while the models recognize that increased CO2 itself will not produce a big, catastrophic increase in global temperatures, the models assume that the very small amount of warming caused by increased CO2 will result in much larger temperature increases caused by positive feedbacks. The real, emerging science, as the Heartland publications indicate, is that the feedbacks are more likely to be offset by negative feedbacks, resulting in a much smaller net temperature change. Scientists have pointed out that much higher CO2 concentrations deep in the earth’s history, as shown by proxy records, did not result in catastrophic temperature increases, a very powerful rebuttal to the idea today’s relatively low CO2 levels could trigger catastrophic global warming. The results of the latest, most advanced data collection also suggest that CO2 is not responsible for the modest global warming of the late 20th century. The UN models agree with established science that if human greenhouse gas emissions were causing global warming, there should be a hot spot of higher temperatures in the troposphere above the tropics, where collected concentrations would have the greatest effect, and the warming would show up first. This is known in the literature on climate science as “the fingerprint” for man caused global warming. But data from global weather satellites and more comprehensive weather balloons show no hotspot, and no fingerprint, which means no serious global warming due to human greenhouse gas emissions. QED. Moreover, satellites also have been measuring the energy entering the earth’s atmosphere from the sun, and the energy escaping back out to space. If the theory of man caused global warming is correct, then the energy escaping back out should be less than the energy entering, as the greenhouse gases capture some of the energy in the atmosphere. But the satellite data show negligible difference. The real cutting edge in climate science was publicly exposed recently in a book by one of the long time leaders of the German environmental movement, Fritz Vahrenholt, in his new book, The Cold Sun. The book expresses the growing concern among more careful real climate scientists, rather than political scientists, that trends in solar activity portend a return to the cold, limited agricultural output, and widespread disease of the Little Ice Age, or even a more full blown, overdue by historical standards, real ice age. The consolation is that those threatening developments are still centuries away. In an interview with Spiegel magazine, titled “I Feel Duped on Climate Change,” Vahrenholt tells readers that the UN’s forecasts on the severity of climate change are exaggerated and supported by weak science. The American version would be Al Gore producing a movie with the title, “The Most Inconvenient Truth: I Was Wrong.” The root of the global warming confusion is that the UN is not a disinterested party that can be trusted to compile and interpret the climate science on which the world’s policymakers can rely. The UN sees the theory of man caused catastrophic global warming as a tremendous opportunity for gaining the regulatory and taxation powers of a world government.

#### Warming models overblown - C02 is good for the environment – be skeptical of their evidence.

Claude Allegre et. al, 2-23-2012, former director of the Institute for the Study of the Earth, University of Paris, J. Scott Armstrong, cofounder of the Journal of Forecasting and the International Journal of Forecasting, Jan Breslow, head of the Laboratory of Biochemical Genetics and Metabolism, Rockefeller University, Roger Cohen, fellow, American Physical Society, Edward David, member, National Academy of Engineering and National Academy of Sciences, William Happer, professor of physics, Princeton, Michael Kelly, professor of technology, University of Cambridge, U.K., William Kininmonth, former head of climate research at the Australian Bureau of Meteorology, Richard Lindzen, professor of atmospheric sciences, MIT, James McGrath, professor of chemistry, Virginia Technical University, Rodney Nichols, former president and CEO of the New York Academy of Sciences, Burt Rutan, aerospace engineer, designer of Voyager and SpaceShipOne, Harrison H. Schmitt, Apollo 17 astronaut and former U.S. senator, Nir Shaviv, professor of astrophysics, Hebrew University, Jerusalem, Henk Tennekes, former director, Royal Dutch Meteorological Service, Antonio Zichichi, president of the World Federation of Scientists, Geneva, The Wall Street Journal, “No Need to Panic About Global Warming,” <http://online.wsj.com/article/SB10001424052970204301404577171531838421366.html>

The lack of warming for more than a decade—indeed, the smaller-than-predicted warming over the 22 years since the U.N.'s Intergovernmental Panel on Climate Change (IPCC) began issuing projections—suggests that computer models have greatly exaggerated how much warming additional CO2 can cause. Faced with this embarrassment, those promoting alarm have shifted their drumbeat from warming to weather extremes, to enable anything unusual that happens in our chaotic climate to be ascribed to CO2. The fact is that CO2 is not a pollutant. CO2 is a colorless and odorless gas, exhaled at high concentrations by each of us, and a key component of the biosphere's life cycle. Plants do so much better with more CO2 that greenhouse operators often increase the CO2 concentrations by factors of three or four to get better growth. This is no surprise since plants and animals evolved when CO2 concentrations were about 10 times larger than they are today. Better plant varieties, chemical fertilizers and agricultural management contributed to the great increase in agricultural yields of the past century, but part of the increase almost certainly came from additional CO2 in the atmosphere. Although the number of publicly dissenting scientists is growing, many young scientists furtively say that while they also have serious doubts about the global-warming message, they are afraid to speak up for fear of not being promoted—or worse. They have good reason to worry. In 2003, Dr. Chris de Freitas, the editor of the journal Climate Research, dared to publish a peer-reviewed article with the politically incorrect (but factually correct) conclusion that the recent warming is not unusual in the context of climate changes over the past thousand years. The international warming establishment quickly mounted a determined campaign to have Dr. de Freitas removed from his editorial job and fired from his university position. Fortunately, Dr. de Freitas was able to keep his university job. This is not the way science is supposed to work, but we have seen it before—for example, in the frightening period when Trofim Lysenko hijacked biology in the Soviet Union. Soviet biologists who revealed that they believed in genes, which Lysenko maintained were a bourgeois fiction, were fired from their jobs. Many were sent to the gulag and some were condemned to death.

#### Green house gas emissions are key to staving off the next ice-age – decrease in emissions causes run-away cooling.

Andrew A. Lacis et. al, 10-15-2010, M.A. in Astronomy, PhD in climate and astrophysics University of Iowa, joint Institute for Laboratory Astrophysics of the National Bureau of Standards and the University of Colorado, Boulder, Asst, Climate and Radiation Studies at NASA Science and Exploration Directorate, Gavin A. Schmidt is a climatologist and climate modeler at the NASA Goddard Institute for Space Studies (GISS), helped develop the GISS ocean and coupled GCMs to improve the representation of the present day climate, American Geophysical Union was awarded its inaugural Climate Communications Prize, PhD at University College London, David H. Rind, NASA Goddard Institute for Space Studies, Ph.D., Columbia University, and Reto A. Ruedy, Science Magazine, "Atmospheric CO2: Principal Control Knob Governing Earth's Temperature,” Science Direct

If the global atmospheric temperatures were to fall to as low as TS = TE, the Clausius-Clapeyron relation would imply that the sustainable amount of atmospheric water vapor would become less than 10% of the current atmospheric value. This would result in (radiative) forcing reduced by ~30 W/m2, causing much of the remaining water vapor to precipitate, thus enhancing the snow/ice albedo to further diminish the absorbed solar radiation. Such a condition would inevitably lead to runaway glaciation, producing an ice ball Earth. Claims that removing all CO2 from the atmosphere “would lead to a 1°C decrease in global warming” (7), or “by 3.53°C when 40% cloud cover is assumed” (8) are still being heard. A clear demonstration is needed to show that water vapor and clouds do indeed behave as fast feedback processes and that their atmospheric distributions are regulated by the sustained radiative forcing due to the noncondensing GHGs. To this end, we performed a simple climate experiment with the GISS 2° × 2.5° AR5 version of ModelE, using the Q-flux ocean with a mixed-layer depth of 250 m, zeroing out all the noncondensing GHGs and aerosols. The results, summarized in Fig. 2, show unequivocally that the radiative forcing by noncondensing GHGs is essential to sustain the atmospheric temperatures that are needed for significant levels of water vapor and cloud feedback. Without this noncondensable GHG forcing, the physics of this model send the climate of Earth plunging rapidly and irrevocably to an icebound state, though perhaps not to total ocean freezeover. Time evolution of global surface temperature, TOA net flux, column water vapor, planetary albedo, sea ice cover, and cloud cover, after the zeroing out of the noncondensing GHGs. The model used in the experiment is the GISS 2°× 2.5° AR5 version of ModelE, with the Q-flux ocean and a mixed-layer depth of 250 m. Model initial conditions are for a preindustrial atmosphere. Surface temperature and TOA net flux use the lefthand scale. The scope of the climate impact becomes apparent in just 10 years. During the first year alone, global mean surface temperature falls by 4.6°C. After 50 years, the global temperature stands at –21°C, a decrease of 34.8°C. Atmospheric water vapor is at ~10% of the control climate value (22.6 to 2.2 mm). Global cloud cover increases from its 58% control value to more than 75%, and the global sea ice fraction goes from 4.6% to 46.7%, causing the planetary albedo of Earth to also increase from ~29% to 41.8%. This has the effect of reducing the absorbed solar energy to further exacerbate the global cooling. After 50 years, a third of the ocean surface still remains ice-free, even though the global surface temperature is colder than –21°C. At tropical latitudes, incident solar radiation is sufficient to keep the ocean from freezing. Although this thermal oasis within an otherwise icebound Earth appears to be stable, further calculations with an interactive ocean would be needed to verify the potential for long-term stability. The surface temperatures in Fig. 3 are only marginally warmer than 1°C within the remaining low-latitude heat island. From the foregoing, it is clear that CO2 is the key atmospheric gas that exerts principal control over the strength of the terrestrial greenhouse effect. Water vapor and clouds are fast-acting feedback effects, and as such are controlled by the radiative forcings supplied by the noncondensing GHGs. There is telling evidence that atmospheric CO2 also governs the temperature of Earth on geological time scales, suggesting the related question of what the geological processes that control atmospheric CO2 are. The geological evidence of glaciation at tropical latitudes from 650 to 750 million years ago supports the snowball Earth hypothesis (9), and by inference, that escape from the snowball Earth condition is also achievable.

#### Ice age causes extinction - outweighs warming.

Phil Chapman, 4-23-2008, geophysicist and astronautical engineer, degree in Physics and Mathematics from Sydney University, a master of science degree in Aeronautics and Astronautics from the Massachusetts Institute of Technology (MIT), The Australian, “Sorry to ruin the fun, but an ice age cometh,” <http://www.theaustralian.com.au/news/sorry-to-ruin-the-fun-but-an-ice-age-cometh/story-e6frg73o-1111116134873>

What is scary about the picture is that there is only one tiny sunspot. Disconcerting as it may be to true believers in global warming, the average temperature on Earth has remained steady or slowly declined during the past decade, despite the continued increase in the atmospheric concentration of carbon dioxide, and now the global temperature is falling precipitously. All four agencies that track Earth's temperature (the Hadley Climate Research Unit in Britain, the NASA Goddard Institute for Space Studies in New York, the Christy group at the University of Alabama, and Remote Sensing Systems Inc in California) report that it cooled by about 0.7C in 2007. This is the fastest temperature change in the instrumental record and it puts us back where we were in 1930. If the temperature does not soon recover, we will have to conclude that global warming is over. There is also plenty of anecdotal evidence that 2007 was exceptionally cold. It snowed in Baghdad for the first time in centuries, the winter in China was simply terrible and the extent of Antarctic sea ice in the austral winter was the greatest on record since James Cook discovered the place in 1770. It is generally not possible to draw conclusions about climatic trends from events in a single year, so I would normally dismiss this cold snap as transient, pending what happens in the next few years. This is where SOHO comes in. The sunspot number follows a cycle of somewhat variable length, averaging 11 years. The most recent minimum was in March last year. The new cycle, No.24, was supposed to start soon after that, with a gradual build-up in sunspot numbers. It didn't happen. The first sunspot appeared in January this year and lasted only two days. A tiny spot appeared last Monday but vanished within 24 hours. Another little spot appeared this Monday. Pray that there will be many more, and soon. The reason this matters is that there is a close correlation between variations in the sunspot cycle and Earth's climate. The previous time a cycle was delayed like this was in the Dalton Minimum, an especially cold period that lasted several decades from 1790. Northern winters became ferocious: in particular, the rout of Napoleon's Grand Army during the retreat from Moscow in 1812 was at least partly due to the lack of sunspots. That the rapid temperature decline in 2007 coincided with the failure of cycle No.24 to begin on schedule is not proof of a causal connection but it is cause for concern. It is time to put aside the global warming dogma, at least to begin contingency planning about what to do if we are moving into another little ice age, similar to the one that lasted from 1100 to 1850. There is no doubt that the next little ice age would be much worse than the previous one and much more harmful than anything warming may do. There are many more people now and we have become dependent on a few temperate agricultural areas, especially in the US and Canada. Global warming would increase agricultural output, but global cooling will decrease it. Millions will starve if we do nothing to prepare for it (such as planning changes in agriculture to compensate), and millions more will die from cold-related diseases. There is also another possibility, remote but much more serious. The Greenland and Antarctic ice cores and other evidence show that for the past several million years, severe glaciation has almost always afflicted our planet. The bleak truth is that, under normal conditions, most of North America and Europe are buried under about 1.5km of ice. This bitterly frigid climate is interrupted occasionally by brief warm interglacials, typically lasting less than 10,000 years. The interglacial we have enjoyed throughout recorded human history, called the Holocene, began 11,000 years ago, so the ice is overdue. We also know that glaciation can occur quickly: the required decline in global temperature is about 12C and it can happen in 20 years. The next descent into an ice age is inevitable but may not happen for another 1000 years. On the other hand, it must be noted that the cooling in 2007 was even faster than in typical glacial transitions. If it continued for 20 years, the temperature would be 14C cooler in 2027. By then, most of the advanced nations would have ceased to exist, vanishing under the ice, and the rest of the world would be faced with a catastrophe beyond imagining. Australia may escape total annihilation but would surely be overrun by millions of refugees. Once the glaciation starts, it will last 1000 centuries, an incomprehensible stretch of time. If the ice age is coming, there is a small chance that we could prevent or at least delay the transition, if we are prepared to take action soon enough and on a large enough scale. For example: We could gather all the bulldozers in the world and use them to dirty the snow in Canada and Siberia in the hope of reducing the reflectance so as to absorb more warmth from the sun. We also may be able to release enormous floods of methane (a potent greenhouse gas) from the hydrates under the Arctic permafrost and on the continental shelves, perhaps using nuclear weapons to destabilise the deposits. We cannot really know, but my guess is that the odds are at least 50-50 that we will see significant cooling rather than warming in coming decades. The probability that we are witnessing the onset of a real ice age is much less, perhaps one in 500, but not totally negligible. All those urging action to curb global warming need to take off the blinkers and give some thought to what we should do if we are facing global cooling instead. It will be difficult for people to face the truth when their reputations, careers, government grants or hopes for social change depend on global warming, but the fate of civilization may be at stake. In the famous words of Oliver Cromwell, "I beseech you, in the bowels of Christ, think it possible you may be mistaken."

#### No impact or link between climate change for resource wars.

Hans Günter Brauch, February 2008, Adj. Professor, Free University of Berlin, Otto-Suhr Institute, Berlin Fellow, Institute on Environment and Human Security of the United Nations University (UNU-EHS) in Bonn, Chairman, Peace Research and European Security Studies, ISA Peace Studies Section with Environmental Studies Section, “Securitizing Climate Change,” p. 8, Ebsco Host

However, their conflict definition excludes small-scale violence, e.g. tribal clashes between herders and resi-dent farmers, mass protests, e.g. in the Sahel zone to which many case studies refer (Kahl 2003, 2006; Suliman 1993, 1999), as well as food riots due to multiple causes. 6 Given the lack of both structured, focused, and comparable cases studies (George/Bennett 2005) addressing the complex causal chain and non-existing statistical research based on a large number of cases, it is premature to conclude whether and which causal linkages have existed between physical and social effects of climate change and their impacts on internal displacement, distress migration, domestic crises, and conflicts. Neither comparative case studies nor statistical research can analyse potential conflict constellations in vulnerable hot-spots and in a world where the average annual temperature has increased by 2°C (certain), or 4°C (probable) or even 6°C (possible under business as usual scenarios) by the year 2100. This requires both different methods (modelling, simulation, and scenario analysis) of non-linear interactions that may lead to tipping points of the climate system.

#### 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.

#### No water wars – all the data is on our side

Masimba Biriwasha. "Will Water Fuel an Armageddon?" ECO Worldy. 9 July 2008. http://ecoworldly.com/2008/07/09/will-water-fuel-an-armageddon/

There is no consensus among water analysts on whether there will be global wars over water ownership. According to UNESCO, globally there are 262 international river basins: 59 in Africa, 52 in Asia, 73 in Europe, 61 in Latin America and the Caribbean and 17 in North America — overall, 145 countries have territories that include at least one shared river basin. UNESCO states that between 1948 and 1999, there have been 1,831 “international interactions” recorded, including 507 conflicts, 96 neutral or non-significant events and, most importantly, 1,228 instances of cooperation around water-related issues. As a result, some experts argue that the idea of water wars is rather farfetched given the precedent of water cooperation that has been exhibited by many of the countries around the world. “Despite the potential problem, history has demonstrated that cooperation, rather than conflict, is likely in shared basins,” says UNESCO. However, the fact remains that throughout the world water supplies are running dry and the situation is being compounded by inappropriate management of water resources that will likely unravel previous international cooperation around water.

## 2NC

### Electricity prices

#### Conflict now is highly likely given other economic stressors

Mootry 9 (Primus, B.A. Northern Illinois University “Americans likely to face more difficult times” - The Herald Bulletin, http://www.theheraldbulletin.com/columns/local\_story\_282184703.html?keyword=secondarystory)

These are difficult times. The direct and indirect costs associated with the war on Iraq have nearly wrecked our economy. The recent $700 billion bailout, bank failures, and the failure of many small and large businesses across the nation will take years — perhaps decades — to surmount. Along with these rampant business failures, we have seen unemployment rates skyrocket, record numbers of home foreclosures, an explosion of uninsured Americans, and other economic woes that together have politicians now openly willing to mention the "D" word: Depression. These are difficult days. We have seen our international reputation sink to all time lows. We have seen great natural disasters such as hurricanes Ike and Katrina leaving hundreds of thousands of citizens stripped of all they own or permanently dislocated. In all my years, I have never seen a time such as this. To make matters worse, we are witnessing a resurgence of animosities between the United States and Russia, as well as the rapid growth of India and China. As to the growth of these two huge countries, the problem for us is that they are demanding more and more oil — millions of barrels more each week — and there is not much we can say or do about it. In the meantime, if America does not get the oil it needs, our entire economy will grind to a halt. In short, the challenges we face are complex and enormous. Incidentally, one of the factors that makes this time unlike any other in history is the potential for worldwide nuclear conflict. There has never been a time in the long history of man when, through his own technologies — and his arrogance — he can destroy the planet. Given the tensions around the world, a mere spark could lead to global conflagration.[This evidence has been gender paraphrased].

#### Econ decline tanks nuke power – undermines necessary investment

Simpson 9 (Fiona, associate director of New York University's Center on International Cooperation, Bulletin of Atomic Scientists, "The recession alone won't stop nuclear power's growth," http://www.thebulletin.org/web-edition/features/the-recession-alone-wont-stop-nuclear-powers-growth)

None of the IAEA's projections, however, account for the financial crisis, which may negatively impact the appeal of nuclear energy. Clearly, investors that need credit to build new nuclear plants face a great deal more uncertainty and difficulty securing financing. Such a situation, on the surface, would indicate that nuclear power will be less attractive to investors. The downturn also may reduce electricity demand and thus, potentially, make the need for new power plants less urgent.¶ At the same time, prices for natural gas and oil have fallen from earlier highs, increasing their attractiveness as energy sources (although the price of each has increased recently). Additionally, nuclear power plants have significant "front-loaded" costs, requiring much more investment at the outset than fossil-fuel burning plants, even if nuclear plants may eventually be cheaper to run. In light of the ongoing credit crunch, investors in countries that don't rely on state-owned enterprises may find the economic circumstances simply too difficult to justify an investment in nuclear power--especially if there's reliable (and domestic) access to natural gas, coal, or oil. One also would expect private lenders to shy from nuclear projects--both because they have less money to lend and because of nuclear power's history of cost overruns and delays. Finally, from the point of view of developing countries interested in nuclear power, multilateral development banks, such as the World Bank, tend to prohibit investment in new nuclear projects.

#### Turns proliferation… desperation is a catalyst for hasty decisions like proliferating… their prolif impacts are all about miscalc which is more likely in economic decline, also turns resource wars

Bernardo V. Lopez BusinessWorld 9/10/1998, HEADLINE: Global recession phase two: Catastrophic (Private sector views)

 What would it be like if global recession becomes full bloom? The results will be catastrophic. Certainly, global recession will spawn wars of all kinds. Ethnic wars can easily escalate in the grapple for dwindling food stocks as in India-Pakistan-Afghanistan, Yugoslavia, Ethiopia-Eritrea, Indonesia. Regional conflicts in key flashpoints can easily erupt such as in the Middle East, Korea, and Taiwan. In the Philippines, as in some Latin American countries, splintered insurgency forces may take advantage of the economic drought to regroup and reemerge in the countryside. Unemployment worldwide will be in the billions. Famine can be triggered in key Third World nations with India, North Korea, Ethiopia and other African countries as first candidates. Food riots and the breakdown of law and order are possibilities. Global recession will see the deferment of globalization, the shrinking of international trade - especially of high-technology commodities such as in the computer, telecommunications, electronic and automotive industries. There will be a return to basics with food security being a prime concern of all governments, over industrialization and trade expansions. Protectionism will reemerge and trade liberalization will suffer a big setback. The WTO-GATT may have to redefine its provisions to adjust to the changing times. Even the World Bank-IMF consortium will experience continued crisis in dealing with financial hemorrhages. There will not be enough funds to rescue ailing economies. A few will get a windfall from the disaster with the erratic movement in world prices of basic goods. But the majority, especially the small and medium enterprises (SMEs), will suffer serious shrinkage. Mega-mergers and acquisitions will rock the corporate landscape. Capital markets will shrink and credit crisis and spiralling interest rates will spread internationally. And environmental advocacy will be shelved in the name of survival. Domestic markets will flourish but only on basic commodities. The focus of enterprise will shift into basic goods in the medium term. Agrarian economies are at an advantage since they are the food producers. Highly industrialized nations will be more affected by the recession. Technologies will concentrate on servicing domestic markets and the agrarian economy will be the first to regrow. The setback on research and development and high-end technologies will be compensated in its eventual focus on agrarian activity. A return to the rural areas will decongest the big cities and the ensuing real estate glut will send prices tumbling down. Tourism and travel will regress by a decade and airlines worldwide will need rescue. Among the indigenous communities and agrarian peasantry, many will shift back to prehistoric subsistence economy. But there will be a more crowded upland situation as lowlanders seek more lands for production. The current crisis for land of indigenous communities will worsen. Land conflicts will increase with the indigenous communities who have nowhere else to go either being massacred in armed conflicts or dying of starvation. Backyard gardens will be precious and home-based food production will flourish. As unemployment expands, labor will shift to self-reliant microenterprises if the little capital available can be sourced. In the past, the US could afford amnesty for millions of illegal migrants because of its resilient economy. But with unemployment increasing, the US will be forced to clamp down on a reemerging illegal migration which will increase rapidly. Unemployment in the US will be the hardest to cope with since it may have very little capability for subsistence economy and its agrarian base is automated and controlled by a few. The riots and looting of stores in New York City in the late '70s because of a state-wide brownout hint of the type of anarchy in the cities. Such looting in this most affluent nation is not impossible. The weapons industry may also grow rapidly because of the ensuing wars. Arms escalation will have primacy over food production if wars escalate. The US will depend increasingly on weapons exports to nurse its economy back to health. This will further induce wars and conflicts which will aggravate US recession rather than solve it. The US may depend more and more on the use of force and its superiority to get its ways internationally.

#### High energy prices jack up food prices – means drastic cuts in food aid

Tom Capehart, Specialist in Agricultural Policy¶ Resources, Science and Industry Division, and ¶ Joe Richardson¶ Specialist in Domestic Social Policy¶ Domestic Social Policy Division, “Food Price Inflation: Causes and Impacts,” Congressional Research Service, April 10, 2008, <http://assets.opencrs.com/rpts/RS22859_20080410.pdf>, accessed 10-25-2012.

Higher commodity and food prices reduce our ability to provide food aid to other¶ countries without additional appropriations. Food aid usually takes the form of basic food¶ grains such as wheat, sorghum, and corn, and vegetable oil — commodities critical to¶ developing-country diets. Since there is very little value added for these commodities,¶ shifts in prices translate directly into higher prices for food-insecure countries or reduced¶ food aid contributions per dollar spent. Also, higher energy costs have increased shipping¶ costs for both food purchases and food aid. Unlike some domestic nutrition programs,¶ foreign food aid is not adjusted to account for changing costs. After a long period of¶ declining food costs, developing countries are facing increased food import bills — for¶ some countries as high as 25% in 2007.¶ 13¶ The U.S. Agency for International Development (USAID) has indicated that rising¶ food and fuel prices would result in a significant reduction in emergency food aid.¶ According to press reports in March 2008, USAID expects a $200 million shortfall in¶ funding to meet emergency food aid needs. For FY2008, Congress appropriated $1.2¶ billion for P.L. 480 food aid, the same as FY2007. For FY2009, the President’s budget¶ again requested $1.2 billion. In six out of ten years since 1999, supplemental funding for¶ P.L. 480 Title II food aid has been appropriated.¶ Last year, the U.N. World Food Program (WFP) estimated it would need $2.9 billion¶ to cover 2008 food aid needs. Recent commodity, energy, and food cost increases have¶ boosted this estimate to $3.4 billion. According to the WFP, the current price increases¶ force the world’s poorest people to spend a larger proportion of their income on food.

#### Chemical industry key to solve disease mutation

NRC 02

[National Research Council Committee on Challenges for Chemical Sciences in the 21st century “National Security and Homeland Defense” -- P 28.]

Many drugs are produced by either chemical synthesis or biosynthetic processes. Recent advances in synthetic organic chemistry, catalysis, biotechnology, and combinatorial chemistry have made it possible to synthesize many chemicals that are not found in nature or have heretofore been difficult to produce. Current chemical drugs, such as antibiotics, used to combat infectious diseases are threatened by bacterial abilities to quickly mutate into a drug-resistant form. Concern also exists for purposefully genetically modified organisms used for terrorist attacks. Consequently, there is a need to constantly develop new chemical drugs for fighting infectious diseases caused by new biological agents. As we know more about human genomics, many new drugs, whether small-molecule chemicals or large proteins, can be developed to better target the diseases.¶ Rapid production of small-molecule drugs will require the development of new organic reactions that maximally increase chemical complexity and that are highly selective. Advances in automation and miniaturization will be required to expedite discovery of synthesis sequences for large-scale drug preparation.

#### Mutations ensure extinction

Yu 9

Victoria Yu, Dartmouth Journal of Undergraduate Science, “Human Extinction: The Uncertainty of Our Fate”, 5-22-09 http://dujs.dartmouth.edu/spring-2009/human-extinction-the-uncertainty-of-our-fate

A pandemic will kill off all humans.¶ In the past, humans have indeed fallen victim to viruses. Perhaps the best-known case was the bubonic plague that killed up to one third of the European population in the mid-14th century (7). While vaccines have been developed for the plague and some other infectious diseases, new viral strains are constantly emerging — a process that maintains the possibility of a pandemic-facilitated human extinction.¶ Some surveyed students mentioned AIDS as a potential pandemic-causing virus. It is true that scientists have been unable thus far to find a sustainable cure for AIDS, mainly due to HIV’s rapid and constant evolution. Specifically, two factors account for the virus’s abnormally high mutation rate: 1. HIV’s use of reverse transcriptase, which does not have a proof-reading mechanism, and 2. the lack of an error-correction mechanism in HIV DNA polymerase (8). Luckily, though, there are certain characteristics of HIV that make it a poor candidate for a large-scale global infection: HIV can lie dormant in the human body for years without manifesting itself, and AIDS itself does not kill directly, but rather through the weakening of the immune system. ¶ However, for more easily transmitted viruses such as influenza, the evolution of new strains could prove far more consequential. The simultaneous occurrence of antigenic drift (point mutations that lead to new strains) and antigenic shift (the inter-species transfer of disease) in the influenza virus could produce a new version of influenza for which scientists may not immediately find a cure. Since influenza can spread quickly, this lag time could potentially lead to a “global influenza pandemic,” according to the Centers for Disease Control and Prevention (9). The most recent scare of this variety came in 1918 when bird flu managed to kill over 50 million people around the world in what is sometimes referred to as the Spanish flu pandemic. Perhaps even more frightening is the fact that only 25 mutations were required to convert the original viral strain — which could only infect birds — into a human-viable strain (10).

#### Energy prices are low now –

#### 1. Electricity prices are still decreasing in relation to the market – price shifts are stable and only due to weather

EIA, “SHORT-TERM ENERGY AND WINTER FUELS OUTLOOK,” U.S. Energy Information Administration, October 10, 2012, <http://www.eia.gov/forecasts/steo/report/electricity.cfm>, accessed 10-25-2012.

During this past winter, U.S. heating degree days during the fourth quarter of 2011 and the first quarter of 2012 totaled 18 percent below the 30-year normal. Temperatures this winter are expected to be colder than last winter. In particular, projected heating degree days in the southern states, where a majority of homes heat with electricity, are 27 percent higher than last winter. As a result of the colder weather, EIA projects retail sales of electricity to the residential sector this winter will average 6.2 percent more than retail sales last winter. U.S. Electricity Generation¶ Natural gas prices have risen steadily since this past spring. In September, the Henry Hub price averaged $2.85 per million Btu, which was 46 percent higher than the average in April. With higher natural gas prices EIA expects natural gas to lose some of its recent gains in electricity generation market share. The share of total generation fueled by natural gas in the fourth quarter of 2012 is projected to average 27.8 percent compared with 25.4 percent during the same period last year. By the beginning of 2013, higher natural gas prices should contribute to year-over-year declines in natural gas's share of total generation. EIA expects natural gas to fuel 25.8 percent of generation during the first quarter of 2013, which is 2.8 percentage points lower than during the first quarter of 2012. U.S. Electricity Retail Prices¶ EIA expects the nominal U.S. residential electricity price will rise by 0.4 percent during 2012 to an average of 11.84 cents per kilowatthour. During 2013, U.S. residential retail electricity prices increase 1.3 percent over the average 2012 price. When measured in real terms, the U.S. residential electricity price declines by 1.7 percent in 2012 and by 0.3 percent in 2013.

#### 2. Even if electricity prices rise, it will be small and stable with the broader trend still being a decline in prices

EIA, “Short-term energy outlook," September 11, 2011, http://www.eia.gov/forecasts/steo/report/electricity.cfm

EIA expects the nominal U.S. residential electricity price will rise by 1.0 percent during 2012 to an average of 11.91 cents per kilowatthour. During 2013, U.S. residential retail electricity prices increase 0.9 percent over the average 2012 price. When measured in real terms, the U.S. residential electricity price declines by an annual average of 0.8 percent in both 2012 and 2013.

#### 3. U.S. court decisions guarantee no regulation-induced price increases

Platts Energy Week 8/27/12 ("Platts Energy Week TV: Analyst Sees $2 drop in U.S. Electricity Prices," http://www.platts.com/PressReleases/2012/082712/No)

A U.S. federal court decision last week striking down the Environmental Protection Agency's (EPA) attempt at regulating interstate emissions from coal-fired power plants will likely mean electricity prices will drop between $1 and $2 per megawatt hour (MWh) over the next two years, an analyst for Standard & Poor's said Sunday on the all-energy news and talk program Platts Energy Week.

#### 4. Their evidence is a snapshot of U.S. energy markets – prefer predictive evidence accounting for inflation

ACCCE 12 (American Coalition for Clean Coal Electricity, "Energy Cost Impacts on American Families,

2001-2012," Feb., http://www.americaspower.org/sites/default/files/Energy\_Cost\_Impacts\_2012\_FINAL.pdf)

Electricity is the bargain among all consumer energy products. Among consumer ¶ energy goods and services, electricity has maintained relatively lower annual ¶ average price increases compared to residential natural gas and gasoline. ¶ Electricity prices have increased by 51% in nominal dollars since 1990, well ¶ below the 72% rate of inflation in the Consumer Price Index. The nominal prices ¶ of residential natural gas and gasoline have nearly doubled and tripled, ¶ respectively, over this period.

#### 5. Any increase in natural gas prices is managed on electric bills through a switch back to coal which is decreasing in price

Scott DiSavino, “U.S. utilities may return to coal as natgas prices rise,” Reuters, September 27, 2012, <http://in.reuters.com/article/2012/09/27/us-utilities-coal-gas-idINBRE88Q11S20120927>, accessed 10-25-2012.

The recent rise in U.S. natural gas prices and decline in coal prices is set to put a dent in demand for natural gas as some utilities resume using more coal to generate electricity.¶ A mild winter that left a huge amount of gas in inventory and record-high natural gas production pushed prices to 10-year lows in April, luring power companies away from coal.¶ But the spread between NYMEX Central Appalachian coal and Henry Hub natural gas futures on Thursday reached its widest in more than a year as gas prices rebounded from lows plumbed earlier this year, making gas less of a bargain.¶ The relative price difference on Thursday reached $1.25 per million British thermal units (mmBtu), according to Reuters data -- the widest since August 2011, which could be enough to discourage more use of natural gas in electricity generation.¶ Energy traders have said it costs about $1 per mmBtu to transport Eastern coal, so when natural gas prices are higher and the coal discount is over $1 per mmBtu, it starts to make economic sense to burn coal rather than natural gas.¶ If the coal-to-gas spread reaches $2 mmBtu (with gas $2 more expensive than coal) it would be the first time it was that wide since January 2011.¶ In April, natural gas, historically more expensive than coal, traded at a 10-year low of $1.902 due to oversupply, while coal fetched about $2.13, according to the Reuters data. The 22-cent discount was the lowest since 2001.¶ Since then, gas prices have rebounded to $3.28 per mmBtu, but coal, which is typically priced per ton, dipped to about $52 per short ton, or the gas price equivalent of $2.03 per mmBtu.¶ Some power plants are already moving back to coal, a trend set to increase with gas prices expected to continue rising ahead of the peak-demand winter heating season.¶ The biggest U.S. coal-fired power companies include units of American Electric Power Co Inc (AEP.N), Duke Energy Corp (DUK.N), Tennessee Valley Authority, Southern Co (SO.N), Xcel Energy Inc (XEL.N), NRG Energy Inc (NRG.N), GenOn Energy Inc (GEN.N) and FirstEnergy Corp (FE.N).

#### 2. High risk of nuclear energy means rates increase immediately, people start shifting away from natural gas – advanced cost recovery, breaks down consumer protection

Cooper 3/19/12 (Mark, Senior Fellow for Economic Analysis, Institute for Energy and the Environment - Vermont Law School, "Nuclear Power," http://iowa.sierraclub.org/Nuclear/nuclearhome.htm)

The effort by the Senate Commerce Committee to put a consumer protection band aid over a high caliber bullet hole in the heart of traditional ratepayer protection only makes the absurdity of the early cost recovery for nuclear reactors even more apparent.¶ Because the bill removes nuclear power from “traditional ratemaking principles or traditional cost recovery mechanisms,” consumer bills will increase dramatically. As passed out of Committee:¶ · Mid-American customers will be forced to pay for nuclear reactors long before they produce any electricity with no hope of recovering those prepayments should the reactors not be completed.¶ · The IUB is not allowed to reject the utility-determined level of prepayments because there are less costly alternatives available.¶ · Although the risk of building and operating a nuclear reactor is shifted to ratepayers, the utility is guaranteed a rate of return that will be higher than it earns on other projects.¶ This mismatch of risk and reward gives the utility strong incentives to maximize profits at the expense of ratepayers

and strips the Utility Board of the powers necessary to protect ratepayers. Notwithstanding the amendments, the harmful effects identified by the Staff of the Utility Board in the original bill are still in place.¶ · By conferring a special advantage on nuclear, it threatens to distort the utility and regulatory decision making process and gives utilities an incentive to choose investments and make construction decisions that harm ratepayers.¶ · Beyond the initial choice of projects, shifting the risk of nuclear reactor construction onto the backs of ratepayers creates an ongoing problem because it diminishes the incentive to drive a hard bargain with vendors that protects ratepayers or recover costs from joint owners.¶ · By excusing nuclear reactors from rigorous comparative analysis of alternatives, it all but guarantees less costly alternatives will be passed over.¶ · Because nuclear reactors are so risky and impossible to finance in normal capital market, the utilities are pushing for advanced and guaranteed recovery of all costs, but certainty denies regulators the flexibility that is needed in an uncertain and rapidly changing environment and ties the hands of the IUB in its efforts to balance the interest of ratepayers and utility shareholders.¶ · The need to accelerate cost recovery creates severe intergenerational inequities in cost recovery, violating the fundamental principle that those who consume the output of a plant should bear its costs.¶ · Having guaranteed utilities cost recovery on an annual basis, the IUB will be under greater pressure to approve “incremental” additions to cost even when those costs are the result of utility error.¶ In its press release, MidAmerican trumpets the fact that “MidAmerican Energy Iowa’s electric customers have enjoyed stable base electricity rates for 16 years” and takes credit for that accomplishment. It conveniently ignores the important role that traditional ratemaking principles and traditional cost recovery mechanism have played in ensuring utilities deliver least cost power. By excusing the most risky, high cost options available today from those principles, this bill destroys the consumer protections that have produced stable rates in the past. The inevitable result will be that the future rates paid by MidAmerican electricity customers will be higher than they could and should be.

#### 3. Even failed projects jack up costs – high upfront costs guarantees that ratepayers bear the burden

Travis Madsen et al, Analyst @ Frontier Group and Maryland PIRG Foundation, Johanna Neumann @ Maryland PIRG Foundation, and Emily Rusch @ CalPIRG Education Fund, "The High Cost of Nuclear Power," 2009, http://www.nirs.org/nukerelapse/calvert/highcostnpower\_mdpirg.pdf

N o power company has successfully ¶ ordered a nuclear reactor in the ¶ United States since 1973. Despite¶ promises of power that would be “too ¶ cheap to meter,” the last generation of ¶ nuclear reactors ran aground on skyrocketing construction costs. Of 75 nuclear¶ reactors completed between 1966 and¶ 1986, the average reactor cost more than¶ triple its original construction budget.¶ 1¶ Later-built reactors came in as much ¶ as 1,200 percent over-budget.¶ 2¶ In 1985,¶ Forbes magazine wrote that “the failure ¶ of the U.S. nuclear power program ranks ¶ as the largest managerial disaster in business history, a disaster on a monumental ¶ scale.”¶ 3¶ Electricity customers ended up paying¶ the price. Only one-half of the reactors¶ proposed were ever built, and ratepayers ¶ often had to bear the costs of abandoned ¶ projects. Where reactor projects were¶ completed, rates often increased. Finally,¶ during the restructuring of the electricity ¶ industry in the 1990s, ratepayers were¶ saddled with billions in “stranded costs” ¶ from failed investments in nuclear power, ¶ saving nuclear power plant owners (and¶ their shareholders) from huge losses.

#### No accidents – US-Russian measures.

Ford, 2008 (Dr. Christopher A., Senior Fellow and Director of the Center for Technology and Global Security at the Hudson Institute in Washington. D.C. He previously served as U.S. Special Representative for Nuclear Nonproliferation, and as a Principal Deputy Assistant Secretary of State, “Dilemmas of Nuclear Force “De-Alerting”” October 7)

• De-alerting is not the only way to reduce accident risks. Unlike de-alerting measures – which are opposed by the main nuclear powers – the United States and Russia, for instance, have already agreed in principle to transparency and confidence-building measures (e.g., JDEC) designed to ameliorate some of the very accident and error risks that advocates of de-alerting seek to address. Moreover, proposals such as JDEC would not entail the crisis stability costs that would be imposed by de-alerting measures such as the physical warhead separation recommended by the Canberra Commission. (Indeed, something like JDEC might be very valuable as a transparency and confidence-building measure in time of crisis.)

#### No Russian accidents – three reasons (severed communication links, disengaged detonation systems, and authorization codes).

Busch, 2004 (Nathan E., “No end in sight: the continuing menace of nuclear proliferation” p. 107-8)

Russia has instituted a number of technical and procedural controls that greatly reduce the chance of an accidental ICBM launch. First, the communication links for the Kazbek system are disconnected under normal circumstances. A command to launch the missiles cannot be transmitted accidentally during these times. Second, because the warhead detonation systems on Russian ICBMs appear to be disengaged during normal circumstances, if an ICBM were accidentally launched during these times, it would probably not result in a nuclear yield.117 Third, because Russia’s ICBMs require authorization codes to be entered before they can be launched, no one can accidentally launch an ICBM by pushing the wrong button. In May 1994, U.S. president Bill Clinton and Russian president Boris Yeltsin agreed to stop aiming strategic missiles at each other. Although this detargeting agreement was highly touted by the Clinton administration, it is likely that it had only a marginal effect in reducing the nuclear danger. Although the Russians claimed that it would take over ten minutes to retarget the missiles,” some extremely reliable U.S. sources—including James Woolsey, former Director of Central Intelligence—argue that the retargeting of Russian ICBMs would take less than a minute.” If this is true, then the detargeting agreement would therefore not dramatically reduce the dangers of an inadvertent launch that accompany the quick decision-making necessary for launch-on-warning military postures.’120 However, the detargeting agreement could reduce the catastrophic consequences of an accidental launch if the missile defaults were set to launch a missile harmlessly toward the ocean. But there are conflicting accounts of whether the default settings on Russian missiles have been reprogrammed in this way. According to Blair, in the event of an accidental or unauthorized launch, Russian ICBMs would revert to their old Cold War targets.’2’ On the other hand, James Woolsey argues that the detargeting would render the Russian missiles harmless in these circumstances.’ One thing is certain, however: if an accidental launch were to occur, Russia probably would not be able to destroy the missile in mid-flight. According to Colonel General Vladimir Yakovlev, the former commander of the Russian Strategic Rocket Forces, although Russian test missiles are fitted with a self-destruct mechanism, the actual combat missiles are not.’23 If the defaults on Russia’s missiles are still set for their old Cold War targets, there would be no way to stop a missile from hitting the United States in the unlikely event of an accidental launch.’24 Nevertheless, as we have seen, there are in fact a number of procedures and controls for Russian ICBMs that would protect against accidental launches. For this reason, the most careful and reliable assessments of Russia’s strategic nuclear systems have determined that the risk of an accidental ICBM launch is currently quite small.’’

### Prolif

#### 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.

#### 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.

#### It doesn’t matter what the intention is of a nuclear power system – over 20 countries have used this as a cover for weapons development

Jim Green, B.Med.Sci. (Hons.), PhD, honors degree in public health and was awarded a PhD in science and technology studies for his analysis of the Lucas Heights research reactor debates, studies and speaks extensively on nuclear power, national nuclear campaigner, “Nuclear Weapons and 'Generation 4' Reactors,” Friends of Earth Australia, July 2009, http://www.foe.org.au/anti-nuclear/issues/nfc/power-weapons/g4nw/, accessed 7-7-2012.

IFRs and other plutonium-based nuclear power concepts fail the WMD proliferation test, i.e. they can too easily be used to produce fissile material for nuclear weapons. Conventional reactors also fail the test because they produce plutonium and because they legitimise the operation of enrichment plants and reprocessing plants. The use of thorium as a nuclear fuel doesn't solve the WMD proliferation problem. Irradiation of thorium (indirectly) produces uranium-233, a fissile material which can be used in nuclear weapons. The US has successfully tested weapons using uranium-233 (and France may have too). India's thorium program must have a WMD component − as evidenced by India's refusal to allow IAEA safeguards to apply to its thorium program. Thorium fuelled reactors could also be used to irradiate uranium to produce weapon grade plutonium. The possible use of highly enriched uranium (HEU) or plutonium to initiate a thorium-232/uranium-233 reaction, or proposed systems using thorium in conjunction with HEU or plutonium as fuel, present further risks of diversion of HEU or plutonium for weapons production as well as providing a rationale for the ongoing operation of dual-use enrichment and reprocessing plants. Some proponents of nuclear fusion power falsely claim that it would pose no risk of contributing to weapons proliferation. In fact, there are several risks, the most important of which is the use of fusion reactors to irradiate uranium to produce plutonium or to irradiate thorium-232 to produce uranium-233. Fusion power has yet to generate a single Watt of useful electricity but it has already contributed to proliferation problems. According to Khidhir Hamza, a senior nuclear scientist involved in Iraq's weapons program in the 1980s: "Iraq took full advantage of the IAEA's recommendation in the mid 1980s to start a plasma physics program for "peaceful" fusion research. We thought that buying a plasma focus device ... would provide an excellent cover for buying and learning about fast electronics technology, which could be used to trigger atomic bombs." All existing and proposed nuclear power concepts pose WMD proliferation risks. History gives us some indication of the scale of the problem. Over 20 countries have used their 'peaceful' nuclear facilities for some level of weapons research and five countries developed nuclear weapons under cover of a civil program.

#### Pyroreprocessing becomes more of a threat for proliferation as it progresses technologically

Daniel Horner, “Pyroprocessing Is Reprocessing: U.S. Official,” Arms Control Association, April 2011, http://www.armscontrol.org/act/2011\_04/Pyroprocessing, accessed 7-6-2012.

In what appears to be the U.S. government’s strongest public statement to date on the issue, a Department of State official said last month that the U.S. government now views pyroprocessing, a spent fuel treatment process that South Korea is developing, as a form of reprocessing with proliferation risks similar to those of other forms. In March 29 remarks at a nuclear policy conference in Washington, Richard Stratford, the State Department official who is responsible for U.S. nuclear cooperation agreements, said the Department of Energy “states frankly and positively that pyroprocessing is reprocessing. Period. Full stop.” The Energy Department, which is the U.S. government’s main source of technical expertise on nuclear issues, “did not say that five years ago when we started down the road of cooperation on pyroprocessing,” Stratford said. “Then the product was not weapons usable.” However, he said, electroreduction and electrorefining, the key elements of pyroprocessing, have “moved to the point that the product is dangerous from a proliferation point of view. So, for that reason, pyroprocessing is reprocessing, and that’s part of the problem.” Previous public statements on pyroprocessing by the Bush and Obama administrations had indicated proliferation concerns about the technology, but had not been as unequivocal as Stratford’s. (See ACT, July/August 2009.)

#### The opaque nature of modern proliferation ensures stability – tacit communication virtually negates the possibility of preemptive strikes between nuclear states\*\*\*

Devin T. Hagerty (lecturer in International Politics in the Department of Government and Public Administration at the University of Sydney, Australia) 1998 “The Consequences of Nuclear Proliferation; Lessons from South Asia” p 58-9

AN ALTERNATIVE VIEW. These views of opacity's impact on crisis stability are debatable. As discussed in Chapter 1, nuclear preemp­tion under any circumstances is a dicey prospect, given the insistent logic of first-strike uncertainty. To reiterate, decision-makers contem­plating a preemptive strike against an adversary's nuclear forces would require full confidence in their ability to knock out all of the opponent's forces. The survival of one or a few of the adversary's deliverable nuclear warheads would allow a devastating response, an attack that might not be limited to counterforce targets, given the magnitude of the provocation. A less-than-perfect preemptive strike could well be suicidal. History discloses an unblemished record of political leaders resisting the temptation to cripple their enemies' existing nuclear forces. Contrary to the prevailing wisdom, opacity enhances rather than diminishes this caution.

 After all, opaque nuclear forces are even less attractive targets for a nuclear first strike than transparent ones because they are even more veiled. How many weapons does the opponent have? Are they assembled? If so, where are they located and in what mode? Are they mobile or hidden? Which are real? Which are dummies? If the weapons are unassem­bled, are the warheads stored near the delivery systems? These are crucial but impossible-to-answer questions, given the limited intelli­gence capabilities of the second-generation proliferants. In sum, it is difficult to imagine any policymaker in a regional nuclear arms com­petition giving the green light to a preemptive strike. Another consideration is that the nuclear discourse between opaque proliferants is not as barren as some analysts make it out to be. As I have argued, although opaque proliferants communicate with one another in different ways than the first-generation nuclear weapon states, the fact remains that they do communicate. Rather than a total absence of discourse between the parties, there is a dif­ferent type of discourse, one that is less formal, less direct, and often tacit, but still mutually understandable. Over the years this discourse establishes certain fundamental understandings between opaque proliferants. Admittedly, these are not as clear as those between the overt nuclear powers, but they are compelling nonetheless. As these understandings develop, it becomes exceedingly unlikely that deci­sion-makers in opaque nuclear weapon states will fail to comprehend the possibilities that confront them. Opaque proliferants deny pos­sessing nuclear weapons, but they, no less than transparent nuclear powers, manipulate their presumed ability to launch a nuclear strike. Feldman and Burns apply the logic of stages of nuclear development embodied in first-generation proliferation without realizing the irrelevance of that logic with opaque proliferation. At any given point in time, the opaque proliferant's adversary simply does not know the exact nature of its capabilities. To argue, as Feldman does, that at a certain point of its nuclear weapon development, a country's transi­tion into nuclear weapon status is "inevitable" and can be managed, misses opacity's essential logic; so does Burns's argument about the need to make nuclear postures overt once new proliferants actually deploy nuclear weapons. How do we know when these points of inevitability are reached? Is it when the proliferant can produce a small amount of fissile material? When it can transform that materi­al into bomb cores? When it has nuclear-capable transport aircraft? Advanced fighter bombers? Ballistic missiles? Even in the unlikely event that an adversary could confidently pinpoint these develop­ments, which one would constitute the moment of inevitability

#### No cascade of proliferation

Marko Beljac (PhD from Monash University) April 2010 “Have We Really Reached a Nuclear Tipping Point?”, Nuclear Resonances, http://scisec.net/?p=338

The image invokes what in network theory is called a global cascade. The cascade of proliferation argument is highly reliant on the spread of nuclear technology, especially fuel cycle technology such as uranium enrichment and plutonium reprocessing plants. This is often spoken of in the context of a global renaissance in the use of nuclear energy, especially in Asia. We currently have 9 nuclear weapon states. Since 1945 that equates to a pretty slow rate of proliferation. Furthermore, the empirical record does not really support the cascade idea. I do not believe it is possible to argue that we have 9 nuclear weapon states because of an interlinked cascade effect that operated between these 9 states. One might want to argue, however, that the cascade model fits in Asia. China proliferated, then India adopted a recessed deterrent then did Pakistan. In 1998 India and Pakistan went from a recessed to an overt deterrent. Nuclear weapons cascades happen, thereby, in vulnerable local clusters. China and South Asia was a vulnerable cluster. Some argue that North Korea, Japan and South Korea represents another vulnerable cluster. Thus far North Korean proliferation has not led to a localised cascade.

## 1NR

### Warming

#### Warming not real – satellite data, ice measurements, and weak correlation.

Randall Hoven, 5-3-2012, Boeing Technical Fellow, adjunct professor in the Engineering School of Southern Illinois University, Johns Hopkins University Applied Physics Laboratory, American Thinker, “Global Warming Melts Away,” <http://www.americanthinker.com/2012/05/global_warming_melts_away.html>

Correlating Temperature and CO2. The chart below shows global temperatures vs. measured atmospheric CO2. The data cover the years from 1959 through 2011. The correlation between CO2 and temperature is clear to the eye. The calculated correlation coefficient is 0.91. In blaming man's activities for global warming, this is as close to the "smoking gun" as it gets. A correlation coefficient of 0.91 appears high. But the correlation coefficient between temperatures and year is also a high 0.89. Simply put, both CO2 and temperatures went up over time. Inferring that CO2 is the cause of the temperature increase is a bit of a stretch. Anything that went up in that timeframe would have similar correlation. For example, here is another chart: global temperature anomaly vs. federal debt (in millions of dollars). The correlation coefficient between global temperature and U.S. federal debt is also 0.91. If you use correlation to convict CO2 of climate change, then federal debt is just as guilty. Even if you believe in the correlation-is-causation theory, that correlation has broken down recently. Look at the chart below. It shows that the correlation between CO2 and temperature has entirely disappeared in the last decade. In fact, the correlation is negative since 2002. What the data show. Whether you think the globe is getting warmer or not largely depends on your timeframe. If your timeframe is the entire time that modern temperature records have been kept, meaning since the 19th century, then the trend is indeed warming: about half a degree Celsius (about one degree Fahrenheit) per century. That is less than the difference in average July temperatures between Cape Hatteras and Charlotte, NC, for example. If your time frame is more recent, like the last 15 years, then no warming can be detected. In fact, the trend has been cooling for about the last dozen years. This is apparent in NASA's data, the U.K.'s Met Office data, and measurements of both Arctic and Antarctic sea ice. Indeed, Antarctic sea ice has been growing for the 32 years since satellite measurements have been available. The main link between man's activities and global temperatures, other than pure (all-else-equal) theory and assumption-filled computer programs, has been the correlation between measured atmospheric CO2 and measured temperatures. But that correlation suffers from at least two drawbacks: (1) correlation is not causation, and the correlation between federal debt and temperatures is just as strong and that between CO2 and temperatures. And (2) that correlation has broken down in the last decade, coinciding with the cooling trends in temperatures noted above. In short, the data show nothing alarming at all: very mild warming over the long term, and actual cooling over the short term. Please look at just one more chart, below. That chart is the global temperature anomaly as provided by the Hadley Center. Usually you might see it plotted on a scale that spans about one degree Celsius, making the trend look alarming. On this chart I chose the total vertical scale to match the difference in average June temperatures between Flagstaff and Yuma, Arizona (about 16 deg C).

#### Growing consensus of scientists find alarmist warming models wrong – natural oscillations from solar irradiance and ocean-atmosphere interaction.

Norman Paterson, March 2011, is a Professional Engineer and Consulting Geophysicist with 60 years’ experience in Mineral and Environmental Geophysics, he obtained his Ph. D in Geophysics at the University of Toronto, and was elected Fellow, Royal Society of Canada, Geoscience Canada, Vol. 38 Issue 1, “Global Warming: A Critique of the Anthropogenic Model and its Consequences,” p. 41, Ebsco Host

According to popular belief, recent global warming has been caused largely by greenhouse gases, primarily CO2, accruing in the atmosphere, and man is responsible for most of the ~120 ppm increase in CO2 over the last 100 years. This article cites a number of recent peer-reviewed scientific papers, and finds that contrary arguments by a growing body of scientists are generally supported by better empirical data than those that favour the ‘anthropogenic warming’ hypothesis. These arguments invoke the effects of solar irradiance and ocean–atmosphere interactions, both of which have been shown to have warming effects at least as great as those claimed for CO2, and to be based on sound, well-understood scientific theory. Furthermore, the global warming models used by the Intergovernmental Panel on Climate Change (IPCC) and others have in some cases been shown to be incorrect and contrary to current temperature statistics. For these and other reasons, the CO2-driven, anthropogenic warming hypothesis is regarded by many as suspect and lacking in empirical evidence. The difficulty of refuting this popular hypothesis is exacerbated by the IPCC’s United Nations mandate to advise governments on the severity of man-made global warming, a mandate that they have followed faithfully, encouraging the emergence of a large body of funded research that supports their view. This presents a problem for global society, as the human-caused warming scenario diverts attention from other, at least equally serious environmental impacts of our industrial society. Recently, however, there appears to be a tilting of public opinion away from global warming alarmism, which may fundamentally affect the direction of the climate change debate.

#### Peer-reviewed studies show anthropogenic warming isn’t happening – too many natural factors.

Norman Paterson, March 2011, is a Professional Engineer and Consulting Geophysicist with 60 years’ experience in Mineral and Environmental Geophysics, he obtained his Ph. D in Geophysics at the University of Toronto, and was elected Fellow, Royal Society of Canada, Geoscience Canada, Vol. 38 Issue 1, “Global Warming: A Critique of the Anthropogenic Model and its Consequences,” p. 42-4, Ebsco Host

It is likely that the cyclical warming and cooling of the earth results from a number of different causes, none of which, taken alone, is dominant enough to be entirely responsible. The more important ones are solar changes (including both irradiance and magnetic field effects), atmosphere–ocean interaction (including both multidecadal climatic oscillations and unforced internal variability), and greenhouse gases. All of these factors have been discussed by IPCC, but the first two have been dismissed as negligible in comparison with the greenhousegas effect and man’s contribution to it through anthropogenic CO2. It is claimed (e.g. Revelle and Suess 1957) that the particular infrared absorption bands of CO2 provide it with a special ability to absorb and reradiate the sun’s longer wavelength radiation, causing warming of the troposphere and an increase in high-altitude (cirrus) cloud, further amplifying the heating process. Detailed arguments against this conclusion can be found in Spencer et al. (2007) and Gerlich and Tscheuschner (2009). These scientists point out (among other arguments, which include the logarithmic decrease in absorptive power of CO2 at increasing concentrations), that clouds have poor ability to emit radiation and that the transfer of heat from the atmosphere to a warmer body (the earth) defies the Second Law of Thermodynamics. They argue that the Plank and Stefan-Boltzman equations used in calculations of radiative heat transfer cannot be applied to gases in the atmosphere because of the highly complex multi-body nature of the problem. Veizer (2005) explains that, to play a significant role, CO2 requires an amplifier, in this case water vapour. He concludes that water vapour plays the dominant role in global warming and that solar effects are the driver, rather than CO2. A comprehensive critique of the greenhouse gas theory is provided by Hutton (2009). It is firmly established that the sun is the primary heat source for the global climate system, and that the atmosphere and oceans modify and redirect the sun’s heat. According to Veizer (2005), cosmic rays from outer space cause clouds to form in the troposphere; these clouds shield the earth and provide a cooling effect. Solar radiation, on the other hand, produces a thermal energy flux which, combined with the solar magnetic field, acts as a shield against cosmic rays and thereby leads to global warming. Figures 3 and 4 illustrate both the cooling by cosmic rays (cosmic ray flux, or CRF) and warming by solar irradiation (total solar irradiance, or TSI) in the long term (500 Ma) and short term (50 years), respectively. CRF shows an excellent negative correlation with temperature, apart from a short period around 250 Ma (Fig. 3). In contrast, the reconstructed, oxygen isotope-based temperature curve illustrates a lack of correlation with CO2 except for a period around 350 Ma. Other studies have highlighted the overriding effect of solar radiation on global heating. Soon (2005) studied solar irradiance as a possible agent for medium-term variations in Arctic temperatures over the past 135 years, and found a close correlation in both decadal (5–10 years) and multi-decadal (40–80 years) changes (Fig. 5). As to the control on this variation, the indirect effect of solar irradiance on cloud cover undoubtedly results in modulations of the sun’s direct warming of the earth. Veizer (2005) estimated that the heat reflected by cloud cover is about 78 watts/m2, compared to an insolation effect of 342 watts/m2, a modulation of more than 25%. This contrasts with an IPCC estimate of 1.46 watts/m2, or about 0.5% of TSI, for the radiative effect of anthropogenic CO2 accumulated in the modern industrial era (IPCC 2001).

#### Temperature fluctuations over 2000 years disprove anthropogenic warming.

Horst-Joachim Lüdecke, 2011, University for geosciences and physics of Saarland, Ewert of the European Institute for Climate and Energy, Energy & Environment, Vol. 22 Issue 6, “Long-Term Instrumental and Reconstructed Temperature Records Contradict Anthropogenic Global Warming,” p. 741-2, Ebsco Host

Instrumental records going back a maximum of about 250 years from the present show the falls in temperature in the 19th century and the rises in the 20th to be of similar magnitudes. If we assume anthropogenic CO2 to be the agent behind the 20th century rise, we are faced with a problem when it comes to the 19th century. The detrended fluctuation analysis (DFA2) evaluated – for the five records selected here – very small natural probabilities for both centennial events. Therefore, the probability that they are the result of deterministic trends is high, but what actually caused the trends to be diametrically opposed remains unknown. In contrast, two high-quality long-range records, SPA12 and MOB, show frequent centennial rises and falls of equal and greater magnitudes than their shorter instrumental counterparts during the last 2000 years. Smoothed SPA12 and MOB records are reported to be in accordance with other biological proxies, indicating that centennial fluctuations at least as strong as those of Long-term instrumental and reconstructed temperature records global warming 741 contradict anthropogenic Figure 10: (Color online) F2(s) graph of the detrended fluctuation analysis (DFA2) for the combined monthly record CSS of Eq. (12) over a total period of 17,880 months (1490 years). The cross-over shown between 500- and 900 months (42–75 years) indicates a lower limit for a possible detection of the sun’s influence by DFA2 in the medium-range records. On the left of it, the Hurst exponent α2 corresponds to the medium-range records at α2 ≈ 0.6 (see Figure 4 and Table 2) and, on the right, to the long-range records SPA12 and MOB at α2 ≈ 0.9 (see Figure 8). Because the reliability of F2(s) is restricted to s N/4 by Eq. (9) the medium-range records are too short for DFA2 to reveal the cross-over that can be identified in Figure 10. the past 250 years were indeed common events. This is further confirmed by the DFA Hurst exponents of α2 ≈ 0.9 for SPA12 and MOB that are far higher than the α2 ≈ 0.6 of the instrumental records. As a consequence, the impact of anthropogenic greenhouse gases is most probably a minor effect and – in view of the 19th century temperature fall of similar magnitude – not appropriate as an authoritative explanation for any temperature rise in the northern hemisphere during the 20th century. The consequence for environmental policies is of no concern to science, but would clearly not require the reduction of ‘anthropogenic greenhouse gas’ emissions or even the promotion of ‘decarbonisation’ policies. Because no reliable explanation can be given for the conflict between the different Hurst exponents and probabilities in the instrumental and reconstructed records, a speculative hypothesis of solar influence (manifesting itself in long-term sunspot fluctuations) could be put forward to explain the contradiction. A monthly synthetic record covering about 1500 years and using a Hurst exponent of α 0.6 (which corresponds to the instrumental records) was therefore superimposed on the trend of the sunspot numbers. The DFA2 result for this combined record shows that it embodies both the short persistence of the instrumental data and the long persistence of the reconstructed data. The hypothesis expressed here suggests that the sun could be responsible for the 100-year-long rises and falls in temperature over the last 2000 years.

#### Climategate has shown anthropogenic warming lacks any scientific validity – manipulation of information and political momentum\*\*

J. Scott Armstrong et. al, 2011, is an author, forecasting and marketing expert, and a professor of Marketing at the Wharton School of the University of Pennsylvania, Founder of the International Journal of Forecasting, Kesten C. Green is a PhD, Senior Lecturer, Managerial Economics, International Graduate School of Business, and Senior Research Associate of the Ehrenberg-Bass Institute for Marketing Science, University of South Australia, and Willie Soon is an astrophysicist at the Solar and Stellar Physics Division of the Harvard-Smithsonian Center for Astrophysics, has been chief science adviser to the Science and Public Policy Institute, Energy & Environment, Vol. 22 Issue 8, “Research on Forecasting for the Manmade Global Warming Alarm,” p. 1099, Ebsco Host

Global warming alarmists have used improper procedures and, most importantly, have violated the general scientific principles of objectivity and full disclosure. They also fail to correct their errors or to cite relevant literature that reaches unfavorable conclusions. They also have been deleting information from Wikipedia that is unfavorable to the alarmists’ viewpoint5 (e.g., my entry has been frequently revised by them). These departures from the scientific method are apparently intentional. Some alarmists claim that there is no need for them to follow scientific principles. For example, the late Stanford University biology professor Stephen Schneider said, “each of us has to decide what is the right balance between being effective and being honest.” He also said, “we have to offer up scary scenarios” (October 1989, Discover Magazine interview). Interestingly, Schneider had been a leader in the 1970s movement to get the government to take action to prevent global cooling. ClimateGate also documented many violations of objectivity and full disclosure committed by some of the climate experts that were in one way or another associated with the IPCC. The alarmists’ lack of interest in scientific forecasting procedures6 and the evidence from opinion polls (Pew Research Center 2008) have led us to conclude that global warming is a political movement in the U.S. and elsewhere (Klaus 2009). It is a product of advocacy, rather than of the scientific testing of multiple hypotheses. Using a process known as “structured analogies,” we predicted the likely outcome of the global warming movement. Our validation test of structured analogies method was provided in Green and Armstrong (2007b). Global warming alarmism has the characteristics of a political movement. In an ongoing study, we have been searching for situations that are “alarms over predictions of serious environmental harm that could only be averted at great cost.”

#### Anthropogenic warming predictions are false – they don’t past any tests used for scientific validity.

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The validity of the manmade global warming alarm requires the support of scientific forecasts of (1) a substantive long-term rise in global mean temperatures in the absence of regulations, (2) serious net harmful effects due to global warming, and (3) cost-effective regulations that would produce net beneficial effects versus alternatives policies, including doing nothing. Without scientific forecasts for all three aspects of the alarm, there is no scientific basis to enact regulations. In effect, the warming alarm is like a three-legged stool: each leg needs to be strong. Despite repeated appeals to global warming alarmists, we have been unable to find scientific forecasts for any of the three legs. We drew upon scientific (evidence-based) forecasting principles to audit the forecasting procedures used to forecast global mean temperatures by the Intergovernmental Panel on Climate Change (IPCC) — leg “1” of the stool. This audit found that the IPCC procedures violated 81% of the 89 relevant forecasting principles. We also audited forecasting procedures, used in two papers that were written to support regulation regarding the protection of polar bears from global warming — leg “3” of the stool. On average, the forecasting procedures violated 85% of the 90 relevant principles. The warming alarmists have not demonstrated the predictive validity of their procedures. Instead, their argument for predictive validity is based on their claim that nearly all scientists agree with the forecasts. This count of “votes” by scientists is not only an incorrect tally of scientific opinion, it is also, and most importantly, contrary to the scientific method. We conducted a validation test of the IPCC forecasts that were based on the assumption that there would be no regulations. The errors for the IPCC model long-term forecasts (for 91 to 100 years in the future) were 12.6 times larger than those from an evidence-based “no change” model. Based on our own analyses and the documented unscientific behavior of global warming alarmists, we concluded that the global warming alarm is the product of an anti-scientific political movement. Having come to this conclusion, we turned to the “structured analogies” method to forecast the likely outcomes of the warming alarmist movement. In our ongoing study we have, to date, identified 26 similar historical alarmist movements. None of the forecasts behind the analogous alarms proved correct. Twenty-five alarms involved calls for government intervention and the government imposed regulations in 23. None of the 23 interventions was effective and harm was caused by 20 of them.

#### Anthropogenic GHG emissions key to prevent an ice age.

Chronis Tzedakis et. al, 1-9-2012, Professor of Physical Geography at University College London, James Channell, Professor in the Department of Geological Sciences at the University of Florida, David Hodell, Professor at the Department of Earth Sciences at the Universit of Cambridge, Luke Skinner, Department of Earth Science and the Bjerknes Centre for Climate Research, UNI Research, Nature Geoscience, “Determining the natural length of the current interglacial,” <http://www.nature.com.proxy.lib.umich.edu/ngeo/journal/v5/n2/pdf/ngeo1358.pdf>

No glacial inception is projected to occur at the current atmospheric CO2 concentrations of 390 ppmv (ref. 1). Indeed, model experiments suggest that in the current orbital conﬁguration—which is characterized by a weak minimum in summer insolation—glacial inception would require CO2 concentrations below preindustrial levels of 280 ppmv (refs 2–4). However, the precise CO2 threshold 4–6 as well as the timing of the hypothetical next glaciation 7 remain unclear. Past interglacials can be used to draw analogies with the present, provided their duration is known. Here we propose that the minimum age of a glacial inception is constrained by the onset of bipolar-seesaw climate variability, which requires ice-sheets large enough to produce iceberg discharges that disrupt the ocean circulation. We identify the bipolar seesaw in ice-core and North Atlantic marine records by the appearance of a distinct phasing of interhemispheric climate and hydrographic changes and ice-rafted debris. The glacial inception during Marine Isotope sub-Stage 19c, a close analogue for the present interglacial, occurred near the summer insolation minimum, suggesting that the interglacial was not prolonged by subdued radiative forcing 7 . Assuming that ice growth mainly responds to insolation and CO2 forcing, this analogy suggests that the end of the current interglacial would occur within the next 1500 years, if atmospheric CO2 concentrations did not exceed 240 5 ppmv. radi The notion that the Holocene (or Marine Isotope Stage 1, MIS1), already 11.6 thousand years (kyr) old, may be drawing to a close has been based on the observation that the duration of recent interglacials was approximately half a precession cycle (11 kyr; ref. 8). However, uncertainty over an imminent hypothetical glaciation arises from the current subdued amplitude of insolation variations as a result of low orbital eccentricity (Fig. 1). It has thus been proposed that at times of weak eccentricityprecession forcing, obliquity is the dominant astronomical parameter driving ice-volume changes, leading to extended interglacial duration of approximately half an obliquity cycle (21 kyr; ref. 9). In this view, the next glacial inception would occur near the obliquity minimum 10 kyr from now 7 . Climate modelling studies show that a reduction in boreal summer insolation is the primary trigger for glacial inception, with CO2 playing a secondary role 3,5 . Lowering CO2 shifts the inception threshold to higher insolation values 1 , but modelling experiments indicate that preindustrial concentrations of 280 ppmv would not be sufficiently low to lead to new ice growth given the subdued insolation minimum24 . However, the extent to which preindustrial CO2 levels were `natural' has been challenged 10,11 by the suggestion that anthropogenic interference since the mid Holocene led to increased greenhouse gas (GHG) concentrations, which countered the natural cooling trend and prevented a glacial inception. The overdue glaciation hypothesis has been tested by climate simulations using lower preindustrial GHG concentrations, with contrasting results, ranging from no ice growth 5 to a linear increase in ice volume 4 to large increases in perennial ice cover 6 .

#### More evidence.

Chronis Tzedakis et. al, 1-9-2012, Professor of Physical Geography at University College London, James Channell, Professor in the Department of Geological Sciences at the University of Florida, David Hodell, Professor at the Department of Earth Sciences at the Universit of Cambridge, Luke Skinner, Department of Earth Science and the Bjerknes Centre for Climate Research, UNI Research, Nature Geoscience, “Determining the natural length of the current interglacial,” <http://www.nature.com.proxy.lib.umich.edu/ngeo/journal/v5/n2/pdf/ngeo1358.pdf>

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#### Human induced warming key to staves off an ice age.

Freeman Dyson, 2007, professor of physics at the Institute for Advanced Study, in Princeton, “HERETICAL THOUGHTS ABOUT SCIENCE AND SOCIETY,” <http://www.edge.org/documents/archive/edge219.html#dysonf>

Another environmental danger that is even more poorly understood is the possible coming of a new ice-age. A new ice-age would mean the burial of half of North America and half of Europe under massive ice-sheets. We know that there is a natural cycle that has been operating for the last eight hundred thousand years. The length of the cycle is a hundred thousand years. In each hundred-thousand year period, there is an ice-age that lasts about ninety thousand years and a warm interglacial period that lasts about ten thousand years. We are at present in a warm period that began twelve thousand years ago, so the onset of the next ice-age is overdue. If human activities were not disturbing the climate, a new ice-age might already have begun. We do not know how to answer the most important question: do our human activities in general, and our burning of fossil fuels in particular, make the onset of the next ice-age more likely or less likely? There are good arguments on both sides of this question. On the one side, we know that the level of carbon dioxide in the atmosphere was much lower during past ice-ages than during warm periods, so it is reasonable to expect that an artificially high level of carbon dioxide might stop an ice-age from beginning. On the other side, the oceanographer Wallace Broecker [Broecker, 1997] has argued that the present warm climate in Europe depends on a circulation of ocean water, with the Gulf Stream flowing north on the surface and bringing warmth to Europe, and with a counter-current of cold water flowing south in the deep ocean. So a new ice-age could begin whenever the cold deep counter-current is interrupted. The counter-current could be interrupted when the surface water in the Arctic becomes less salty and fails to sink, and the water could become less salty when the warming climate increases the Arctic rainfall. Thus Broecker argues that a warm climate in the Arctic may paradoxically cause an ice-age to begin. Since we are confronted with two plausible arguments leading to opposite conclusions, the only rational response is to admit our ignorance. Until the causes of ice-ages are understood, we cannot know whether the increase of carbon-dioxide in the atmosphere is increasing or decreasing the danger.

#### We can adapt to warming – the coming ice age comparatively outweighs.

James Reynolds. 6-7-2005, Environment Correspondent, The Scotsman, “Global warming 'less threat to diversity than habitat damage by man',” [http://search.proquest.com.proxy.lib.umich.edu/docview/327190917](http://search.proquest.com.proxy.lib.umich.edu/docview/327190917%29//PC)

\*\*\*cites Prof. Godfrey Hewitt an evolutionary biologist at the University of East Anglia\*\*\*

GLOBAL warming may not have the catastrophic effect on the diversity of the world's species that has been forecast, according to a new book. Plants and animals may actually be able to respond to the temperature rises that are expected to occur over the next century, the University of East Anglia's Professor Godfrey Hewitt claims. Drawing on the fact that many species have survived ice ages without becoming extinct, Prof Hewitt believes man's destruction of habitats is a far greater threat to biodiversity. The theory is put forward in Climate Change and Biodiversity, to be published this Friday. Prof Hewitt, an evolutionary biologist, said: "Most [species] can probably cope with the small increases in temperature we are seeing. Far more serious would be a sudden large drop in temperature, possibly the beginning of a new ice age. This is linked to another real worry, which is the destruction by man of habitats where species have survived many such major climate changes." The book suggests that the threat of global warming to biodiversity should take account of longer-term climate changes. Species have endured repeated global cooling and warming through several ice-age cycles, which for northern Europe oscillated between ice cover and conditions warmer than today. Elements of certain species will move north as temperatures rise, leading to potential genetic change in those species. Prof Hewitt added: "Organisms may adapt to new conditions, change their range with suitable environments, or go extinct." The migration of species may also lead to genetic change, and loss of genetic diversity, although this probably poses no threat to humans.

#### Warming can't cause an ice age - models ignore currents and winds.

Curt Stager, 2011, Biology and geology Ph.D. from Duke University, paleoclimatologist, Deep future: the next 100,000 years of life on Earth, p. 17-9, Google Books

But wait. Isn't global warming supposed to trigger the next ice age? Isn't that what we saw happen in the apocalyptic enviro-thriller movie The Day After Tomorrow, in which the greenhouse effect suddenly shuts down climatically important ocean currents in the North Atlantic and triggers a superglaciation? The movie isn't totally wrong, in that the warm Gulf Stream really does help to keep northwestern Europe from becoming cooler than it already is. It's part of a huge global conveyor belt system of intercon­nected currents that draws solar-heated tropical water into the cold sur­face of the North Atlantic, where it cools off and then sinks for a deep return journey southward. Some scientists worry that future climatic changes could disrupt that conveyor and trigger a sudden regional cool­ing; hence the movie scene in which a fierce wind seizes Manhattan with remorseless fangs of frost. But as gripping as that storyline is, serious questions remain about the real role of the conveyor in past and future climate change. The engine driving the conveyor goes by several dry technical names, most recently the meridional overturning circulation, or MOC. It is also sometimes called THC, an abbreviation that is in no way connected to marijuana smoking (and tetrahydrocannabinol) but rather, re­flects the upgrading of a simpler concept, that of thermohaline circulation, whose basic premise is that changes in temperature and saltiness drive major circulation currents of the oceans. Warm water on the surfaces of the tropical oceans loses moisture to evaporation, which makes it saltier than average seawater. When the Gulf Stream ﬂows from the hot latitudes between West Africa and the Caribbean into the cooler North Atlantic. it doesn't easily mix with those northern waters because its tropical heat content makes it less dense (warming makes both water and air expand). But the Gulf Stream gradu- ally releases much of that heat into the cooler air over the North Atlantic. and when it ﬁnally does chill down its extra load of salt leaves it denser than usual. That extra density makes some of the Gulf Stream water sink be- neath the surface and continue its riverlike meanderings at greater depths. By the time it resurfaces, the deep ﬂow has wormed its way around the southern tip of Africa and entered the Indian and Paciﬁc oceans. Back on the surface again, the current recurves back across those oceans, rounds the tip of South Africa, and returns to the North Atlantic, picking up new loads of equatorial warmth along the way. Additional branches also oper- ate in the Southern Ocean and Arabian Sea, adding extra loops to the tortuous path of the global conveyor. There’s a lot more to the picture than that, however, and when illustrations of this common version of the THC concept appear in professional slide presentations, they can become what one speaker at a recent meeting of the British Royal Society called “oceanographer detectors," because they make specialists in the audience "go visibly pale at the vast oversimpliﬁcation." The THC model is not so much wrong as incomplete. Most sci- entists have now switched the focus of ocean-climate discussions to the more comprehensive MOC formulation because temperature and salin- ity aren't the only drivers of ocean currents after all; winds and tides are at least as inﬂuential. THC-style flow does occur, but midlatitude westerly winds and tropical easterly trades do much of the actual push- ing. So why does marine MOC aﬂ’ect climate? As heat rises into the air from the Gulf Stream, it warms the westerly winds that blow toward Europe. Without those ocean-tempered winds, London might be as cold as . . . well, look at a map to see what lies at the same latitude on the op- posite side of the Atlantic, and you'll ﬁnd snowy Labrador. With this basic introduction to the topic, you're already well enough equipped to take a pot shot at The Day After Tomorrow. The pre- vailing winds over Manhattan blow offshore toward the Atlantic, not from it, so why should a Gulf Stream shutdown freeze the city? The ﬁlm also unrealistically subjects Europe to severe winter conditions year- round. Even if it really did become a climatic equivalent of Labrador, northern Europe would still warm up quite a bit in summer, just as Lab- rador does. In reality, a MOC slowdown alone couldn’t turn Europe into a climatic twin of Labrador because it lies downwind of a temperature- modulating ocean rather than the interior of a continent. And because prevailing winds spin the North Atlantic surface current system clock- wise regardless of what the salinity or temperature of the water is, some version of the Gulf Stream will exist as long as these winds continue to blow over it. Although some computer models do simulate moderate conveyor slowdowns in a warmer future, a truly severe disruption would require extremely large ﬂoods of freshwater to pour into the sea, presumably from the melting of land-based ice. lf, say, a major ice sheet were to slide oﬂ’ into the North Atlantic where some critical sinking zone is operating, then perhaps it might cap the ocean off with dilute, buoyant meltwater. ln i999, oceanographer Wallace Broecker published a striking theo- retical description of just such a total MOC collapse under perfect-storm conditions. Tundra replaces Scandinavian forests. Ireland becomes the cli- matic equivalent of Spitsbergen, an island in the Norwegian Arctic. When climate modelers working at Britain's Hadley Center several years ago told 1 their computers to "kill the MOC," the virtual air outside their lab cooled by 8°F (5°C) within ten years, at least on the digital screen. But Broecker maintains that such a scenario is unlikely today, be- cause those theoretical events only played out in a world that had already been cooled by a prolonged ice age. Nowadays, however, we don't have nearly enough readily meltable ice left in the Northern Hemisphere to do the job. To reset that stage we'd have to cover Canada, northern and cen- tral Europe, and Scandinavia with thick ice caps, and that would require colder, rather than warmer, conditions in the future.