

**COMMUNICAN**

**2008-2009**

**SUPPLEMENT**

**TO**

**TEACHER'S**

**DEBATE**

**COURSE**

**RESOURCE BOOK**

**With Inserts, Exercises, Sample Arguments, and Sample  
Evidence based on the 2008-2009 Policy Resolution**

## 2008-2009 SUPPLEMENT TO TEACHER'S DEBATE COURSE RESOURCE BOOK

The materials contained in this supplement relate to the 2008-2009 high school policy debate topic “Resolved: The United States federal government should substantially increase alternative energy incentives in the United States.” The exercises and handouts are the same as those contained in the original *Teacher 's Resource Book* and last year’s supplement. The difference is that the evidence and arguments used as assignments and examples are based on this year’s resolution. This offers two important benefits. First, debaters and teachers alike will follow the course more clearly, since examples and assignments are based on the topic students are currently researching. Second, the supplement increases the number of handouts and exercises available to teachers. Teachers can use the materials of the previous text and previous supplements to enhance student comprehension. The supplement is especially useful for coaching students competing in interscholastic debate.

The chart below indicates how to combine the supplement with the previous year’s supplement. The left column lists the title of each supplementary material. The middle column indicates where in the text the materials should appear and the original item to be replaced. The right column indicates the replacements used in last year’s supplement. Note that integrating the supplement does not alter the structure or organization of the course in any way.

Supplement Material 2008-2009	Original Material	Supplement Material 2007-2008
1. Sample Affirmative Cases and Analysis: Solar Power, Cap-And-Trade, Nuclear Power, and Hydrogen	1. Sample Affirmative Cases and Analysis: Guantanamo Bay Detentions, Domestic Surveillance, Data Mining, Racial Profiling	1. Sample Affirmative Cases and Analysis: HIV/AIDS, Small Arms, Public Health & the Family Farm, Pharmaceuticals for Tropical Diseases
2. Sample Plans and Evaluation: Energy Research & Development, Solar Satellites, Methanol, and Hydrogen	2. Sample Plans and Evaluation: Data Mining, Secret Detentions, Guantanamo Bay Detentions, Haitian Refugees	2. Sample Plans and Evaluation: Maternal Health, Malaria, Health Education, Vaccines and Autism
3. Evidence Section and Key: Nuclear Power, Global Warming & Cap-And-Trade, Hydrogen & Peak Oil	3. Evidence Section and Key: Patriot Act, Library Searches, Wiretaps	3. Evidence Section and Key: Malaria, HIV/AIDS, Small Arms
4. Assignment: Identifying the Parts of Disadvantages: Federalism, Oil Prices, and Federal Inaction	4. Assignment: Soldiers, Shift from Unilateral Military Intervention	4. Assignment: Identifying the Parts of Disadvantages: Politics, Terrorism, Drug Resistance

## AFFIRMATIVE CASE CONSTRUCTION

The purpose of this section is twofold. First, it illustrates the difference in organization between the traditional “needs” case and the “comparative advantage” case. Recall that the needs case is organized around the stock issues. Each contention or main point reflects a different stock issue. In contrast, the comparative advantage case is organized around the different benefits of the affirmative plan. Each main point represents a separate benefit or advantage of the affirmative plan. Within each advantage are subpoints representing each stock issue relating to that advantage.

The comparative advantage case format is superior when the plan produces two or more advantages, each of which involves a separate problem, caused by a separate deficiency in the present system, and which will be solved by the affirmative plan for a different reason.

The needs case format is superior when the different advantages of the plan stem from one or more stock issues which are the same for each advantage. For instance, a plan may overcome more than one problem. However, the deficiency which prevents the present system from solving each problem may be the same. Likewise, the way in which the plan solves each problem may be the same. In other words, the inherency and solvency are the same for each advantage of the plan. Under the comparative advantage format, the affirmative would repeat the same inherency and solvency in each advantage or main point of the case. Using the needs case, however, the inherency and solvency are only stated once in two of the main points of the case. The different problems the plan overcomes are likewise stated in one main point of the case.

Have your debaters identify the type of format used in each of the following cases and why that format is used.

Second, this section shows that the only difference between the needs case and the comparative advantage case is the way the case is organized. Under either format, each stock issue must be defended. Have your debaters identify which stock issues are presented by each point and subpoint. This will also help your debaters construct their own affirmative cases. It will also help them better attack the stock issues of their opponent’s cases when your debaters are assigned the negative.

**CASE #1: SOLAR POWER: A BRIGHT FUTURE**

The thesis of this case is that the United States must employ solar energy in the future both because the demand for electricity is expanding dramatically and traditional sources of electric power, coal and nuclear, are restrained from dramatically increasing supply because of the environmental catastrophe which would result from such expansion. The plan offers incentives to decrease future electricity by subsidizing the retrofitting of buildings with passive solar technology. The plan offers incentives for extending active solar energy by mandating that utilities give preferences to producers of solar energy and that they facilitate the connection of solar generating plants to their networks. The plan is patterned after successful programs promoting alternative energy resources in Europe and Japan.

Plan: 1. The United States federal government will provide subsidies to the owners of existing homes and commercial buildings as an incentive to retrofit 5% per year until all homes which qualify employ appropriate passive solar technologies such as solar hot water. 2. The United States federal government will mandate that utilities give preference to producers of electricity generated from active solar technology, such as photovoltaic cells (PV) and facilitate the connection of solar generating plants to their networks. Prices paid owners of PV systems for solar generated power will be guaranteed for 20 years. 3. The plan will be financed by a charge of no more than 0.0005 cents per kilowatt hour.

**OBSERVATION:****I. AMERICA MUST EMPLOY ALTERNATIVE ENERGY TECHNOLOGY TO MEET FUTURE DEMANDS FOR ELECTRICITY.****A. THE DEMAND FOR ELECTRICITY WILL INCREASE DRAMATICALLY IN THE FUTURE.**

Rov Nersesian. (Prof., Columbia U. Center for Energy and Marine Transportation). *ENERGY FOR THE 21ST CENTURY: A COMPREHENSIVE GUIDE TO CONVENTIONAL AND ALTERNATIVE SOURCES*, 07, 18-19.

Energy experts project that the demand for electricity will double again between 2002 and 2030. If this projection holds true, then 4,800 gigawatts (GW) of electricity capacity will have to be built, of which the member nations of the Organization for Economic Cooperation and Development (OECD) will have to build 2,000 GW of capacity, including an allowance for replacing one-third of the existing installed capacity slated for retirement. To put a GW, or 1,000 megawatts, or 1 billion watts into perspective, a one-GW plant can supply a city of about 1 million people. This increase in electricity-generating capacity for the OECD nations will require an investment of \$2 trillion in power generation and another \$1.8 trillion in new and replacement transmission and distribution systems. The developing nations will require 2,800 GW of new capacity, representing \$5.2 trillion in new investments in generation, transmission, and distribution systems.

**B. THE THREAT OF GLOBAL WARMING PRECLUDES MEETING THIS DEMAND WITH COAL-FIRED POWER PLANTS.**

Ken Berlin. (Former Chair. Environmental Law Institute). *GLOBAL WARMING AND THE FUTURE OF COAL: THE PATH TO CARBON CAPTURE AND STORAGE*, May 07, 8.

A dramatic increase in the rate of worldwide emissions growth due to new coal plants would make the goal of stabilizing atmospheric levels of greenhouse gases unattainable. Many experts support stabilizing atmospheric greenhouse gas levels at 450 parts per million. The 450 ppm goal is higher than the current greenhouse gas level of 380 ppm, but hopefully is low enough to prevent precipitous increases in global temperatures. However, only a sharp drop in worldwide emissions will bring the 450 ppm target within reach.

**C. THE THREAT OF NUCLEAR WASTE PRECLUDES MEETING THIS DEMAND WITH NUCLEAR POWER PLANTS.**

Allison MacFarlane. (Research Associate. MIT Program in Science, Technology & Society). *UNCERTAINTY UNDERGROUND: YUCCA MOUNTAIN AND THE NATION'S HIGH LEVEL NUCLEAR WASTE*, 06, 4.

The issue of how to deal with nuclear waste has become more pertinent in recent years with the rekindling of interest in nuclear energy. Nuclear energy is often cited as a way to produce energy without the emission of the greenhouse gases, particularly CO<sub>2</sub>, that are responsible for global warming. If nuclear power is to play an important role in the reduction of carbon emissions, however, most studies have suggested a need for a three- to tenfold increase in nuclear power production. Such an expansion would require an enormous effort to manage the additional spent fuel and high-level waste that would be generated. A tenfold increase in the number of nuclear power plants over those that existed in 2000 would result in the production of more than seventy thousand metric tons of spent fuel each year. For an open fuel cycle, in which spent fuel is not reprocessed but disposed of directly, this would require the construction and opening of a geologic repository, with the capacity of the one proposed for Yucca Mountain, every year. Such an expansion in nuclear energy production simply cannot move forward without resolving the problem of the safe disposal of nuclear waste.

Dilip Hiro, (Journalist), *BLOOD OF THE EARTH*, 07, 263-264.

In March 2006, U.S. energy secretary Samuel Bodman referred to sixteen new nuclear reactors on the drawing boards. But not a single one had yet been ordered. "It is hard to imagine people putting a \$5 billion bet on new reactors, as matters stand now, with uncertainty around climate change policy and the impossibility of getting financing for them in private markets," said Peter Bradford, a former member of the U.S. Nuclear Regulatory Commission. On the other hand, a dizzying scope for expansion was pointed out by Thomas Homer-Dixon and S. Julio Friedman, nuclear power experts. Meeting the growth in American energy demand until 2050, they said, would require building 1,200 nuclear power plants—that is, two per week.

**ADVANTAGES:****I. GOVERNMENT SUBSIDIES TO RETROFIT BUILDINGS WITH SOLAR POWER WILL SIGNIFICANTLY REDUCE THE DEMAND FOR ELECTRICITY FROM POWER PLANTS.****A. THE USE OF PASSIVE SOLAR ENERGY IN BUILDINGS CAN SIGNIFICANTLY REDUCE THE USE OF ELECTRICITY.**

Greg Pahl. (Founder, Vermont Biofuels Association). THE CITIZEN-POWERED ENERGY HANDBOOK: COMMUNITY SOLUTIONS TO A GLOBAL CRISIS, 07, 34-35.

Arguably the most cost-effective solar strategy of all is passive solar design, especially when it comes to heating and cooling your home or other structures. A properly designed and oriented passive solar building will absorb solar heat in the winter and avoid it in the summer. Best of all, passive systems operate for free and generally do not require electrical or mechanical devices to function, although some form of backup heat is usually needed in colder climates. When it is included in the original design of your home, a passive-heating system doesn't materially add to construction expenses because you are simply making more intelligent use of the basic elements that would generally be in your house anyway. Unfortunately, passive solar design is ignored in the vast majority of housing built in the United States—especially tract housing in suburbia. This means that we are wasting huge amounts of energy in this country simply on account of lazy building design, something that up until now has been subsidized by cheap energy in general, and cheap fossil fuels in particular. We can no longer afford this waste.

**B. GOVERNMENT-PROVIDED FINANCIAL INCENTIVES ARE NECESSARY TO PROMOTE THE WIDESPREAD USE OF PASSIVE SOLAR TECHNOLOGIES.**

Falk Antonv. (Scientist, Solarpraxis AG). PHOTOVOLTAICS FOR PROFESSIONALS: SOLAR ELECTRIC SYSTEMS — MARKETING DESIGN AND INSTALLATION, 07, 45.

For the development of a PV industry, the German Renewable Energy Law is a good example of how public policy can effectively and affordably support the growth of a PV industry. It provides a sustainable and growing market which enables forward planning, investment in research, development and mass production facilities, all of which are essential to bring down the costs of modules and inverters. Spain has now adopted a similar PV initiative which included a tariff of € 0.39 per kWh for systems up to 100 kW and a 25-year payment guarantee. The Spanish target is to install 400 MW by 2010. The California Solar Initiative, which was passed in January 2006, aims to install 300 MW per year in California alone for the next 10 years. It offers gradually diminishing installation rebates, but no performance payments.

**C. GOVERNMENT SUBSIDIES TO RETROFIT BUILDINGS WITH PASSIVE SOLAR TECHNOLOGIES ARE EFFECTIVE IN PROMOTING THE WIDESPREAD USE OF PASSIVE SOLAR TECHNOLOGY.**

Paul Brown. (Environment Correspondent, The Guardian), GLOBAL WARNING: THE LAST CHANCE FOR CHANGE, 07, 282.

Angela Merkel, as her first policy act as the new chancellor of Germany, decided to spend her money on energy efficiency. Over a 20-year period all older German housing will be brought up to modern standards at the rate of 5% a year, until every home in the country is both warm and energy efficient. In one stroke she has created employment for thousands of people in the former East Germany, where jobs were in short supply, and eliminated the need to build a new nuclear plant. The old plants will become redundant. The United States and Britain could adopt similar policies, but politicians in both countries seem to prefer building new power-generation plants. They show a preference for the giant and wasteful technologies of the last century.

Paul Brown. (Environment Correspondent, The Guardian), GLOBAL WARNING: THE LAST CHANCE FOR CHANGE, 07, 303-304.

Germany is a shining example of what can be done. In 1998 Germany began a 100,000 Roof Program, which gave people 10-year loans at reduced interest rates to buy photovoltaic systems. In five years the target was reached, and Germany had a competitive solar power industry. As well as boosting solar power, the German government at the same time embarked on encouraging wind power and leads the world in installed capacity. More recently, as reported in the last chapter, the government decided to bring all of its older properties up to modern energy efficiency standards at the rate of 5% a year. In 20 years all of the older housing, mostly in the former East Germany, will be brought up to modern standards. This is a classic example of how jobs can be created where they are most needed, housing stock improved, and fossil-fuel imports reduced, all at the same time. Reducing Germany's greenhouse-gas emissions and avoiding the need to replace the country's aging nuclear reactors are two other advantages. Germany has the good fortune to have one of the most environmentally aware populations in the world. The result is that individual voters are helping to drive the changes by buying into the new technologies in large numbers.

## II. A GOVERNMENT MANDATE WILL ALLOW SOLAR POWER TO PRODUCE SUFFICIENT CLEAN ENERGY TO MEET FUTURE ELECTRICITY DEMAND.

### A. THE ELECTRICITY POTENTIAL OF SOLAR VOLTAIC CELLS IS ENORMOUS.

Jav Inslee & Bracken Hendricks. (U.S. Rep., Washington & Sr. Fellow, Center for American Progress), *APOLLO'S FIRE: IGNITING AMERICA'S CLEAN-ENERGY ECONOMY*, 08, 82-83.

Our rooftops may become our Saudi Arabia of solar energy. Even using today's panels, America could produce its entire electrical load via our available rooftops. We do not need a hundred-square-mile plot of desert with wall-to-wall solar panels. Our rooftops will do nicely. It is more efficient, in any event, for our energy to be generated in a distributed fashion, in a multitude of places, to avoid the costs and inefficiencies of lengthy transmission systems; an average of 7 percent of the energy is lost in transmission. Neither will we all have to pick up and follow the Beverly Hillbillies to California to be able to enjoy the fruits of solar energy. While Washington, D.C., has 1,600 kilowatt-hours of potential solar energy per year (the number of hours the sun can produce 1 kilowatt of electricity), Seattle, Washington, gets 1,300—not that much of a difference. Things do get dicey when one reaches Barrow, Alaska, of course, where the sun does not shine for several months of the year, but even in Arctic Village, Alaska, a remote outpost two hundred miles north of the arctic circle, the locals have put solar panels on top of their community washhouse to run the washers and dryers. They understand that global warming is melting the tundra on which their houses are built, so even in the far north they are doing their part. The possibilities are enhanced when tracking systems are used to follow the sun across the sky. In 2006, the city of Chico, California, enjoyed its first year of successful operation of a 1.1-megawatt solar-tracking power plant, now powering the city's wastewater treatment plant with clean, renewable energy. Tracking systems can obtain 7 to 20 percent greater efficiency by capturing the full power of the sun's rays as it courses through its heavenly arc. Chico has done that while also preventing the release of 1.6 million pounds of CO<sub>2</sub> per year.

### B. PRESENT UNITED STATES ENERGY POLICY BLOCKS THE EXPANSION OF SOLAR VOLTAIC CELLS TO MEET FUTURE ELECTRICITY DEMAND.

#### 1. Present energy policy heavily subsidizes coal and nuclear power generation.

Greg Pahl, (Founder, Vermont Biofuels Association), *THE CITIZEN-POWERED ENERGY HANDBOOK: COMMUNITY SOLUTIONS TO A GLOBAL CRISIS*, 07, xxv.

Unfortunately, our national political leaders, especially in Washington, D.C., are in denial. The passage of the controversial Energy Policy Act by Congress in July 2005 is a perfect example. The energy bill was a golden opportunity to substantially change the direction of the nation's energy policies for the next decade or so. Yet, for the most part, it was simply business as usual. While about 25 percent of the total funding represented in the bill was allocated to a variety of token renewable energy and conservation initiatives, the lion's share — 65 percent—went to subsidize the oil, natural gas, coal, and nuclear industries.

#### 2. Present energy policy offers minimal encouragement for the research and development of solar electric power generation.

Christopher Flavin, (President, Worldwatch Institute), *AMERICAN ENERGY: THE RENEWABLE PATH TO ENERGY SECURITY*, Sept. 06, 30.

The United States led the solar heating industry in the 1980s, but since then the almost complete elimination of government incentives, combined with falling natural gas prices, left the United States far behind.

Christine Buurma, (Staff, Dow Jones Newswires), *ASSOCIATED PRESS*, Jan. 8 08. Retrieved Jan. 18, 08 from Lexis/Nexis Academic Universe.

The omission of renewed investment tax credits for solar energy in the wide-sweeping energy bill signed by President Bush late last month has put the future health of the U.S. solar power industry in question. The bill includes more stringent mandates for fuel economy and energy efficiency, but it doesn't extend the investment tax credit for companies specializing in solar power systems. That credit, which amounts to 30 percent of the value of qualified residential or commercial solar equipment, is set to revert to 10 percent at the end of 2008 unless it is extended. Solar companies also lost out because the bill didn't include a mandate that would have required utilities to produce up to 15 percent of their electricity from renewable energy sources.

### C. A GOVERNMENT MANDATE IS AN EFFECTIVE MEANS TO GUARANTEE ADEQUATE SOLAR-POWERED ELECTRICITY TO MEET FUTURE DEMANDS.

Falk Antonv. (Scientist, Solarpraxis AG). *PHOTOVOLTAICS FOR PROFESSIONALS: SOLAR ELECTRIC SYSTEMS — MARKETING DESIGN AND INSTALLATION*, 07, 43-45.

The growth in the number of PV installations and of the PV industry in Germany was a result of the country's innovative Renewable Energy Law. The law set up a legal and financial framework designed to increase the amount of electricity produced from renewable sources to 12% by 2010 and to 20% by 2020. At the time of writing (2005) it is 11%. All renewable energy technologies that produce electricity sold onto the grid are covered by the law, not just PV. Previous attempts to kickstart the PV industry in Germany had not been very effective.

## CASE ANALYSIS

This is a comparative advantage case. The case has two advantages, each of them involving a unique benefit of the plan over the status quo. Note that while the inherency (or “causation”) and the reasons the plan overcomes the problem (solvency) are different for each advantage, the significance of harm (global warming) is the same for each advantage. Rather than restate the same harm point within each advantage, the case isolates the harm in the form of an observation at the beginning of the case, so it need be stated only once.

The observation defends significance of harm because it shows that the prospect of global warming is a major problem.

The “B” subpoint of Advantage I and Advantage II defends the inherency by illustrating the causes perpetuating the harm.

The “C” subpoint of Advantage I and Advantage II defends solvency because they show how the plan overcomes the deficiency in present policy and solves the harms caused by that policy.

**CASE #2: FROM GLOBAL WARMING TO CAP-AND-TRADE: A QUESTION OF HUMAN SURVIVAL**

The thesis of this case is that human induced global warming from the burning of fossil fuels threatens human civilization and even human survival. The plan essentially adopts the Lieberman-McCain Climate Stewardship and Innovation Act of 2007, which establishes caps on carbon dioxide emissions as well as a market-based trading system for emission permits. This increases the costs of burning fossil fuels, providing an incentive for those using fossil fuels to shift to non-fossil fuel alternatives as their energy source. The cap-and-trade system, thus, provides a transition away from fossil fuels, protecting the world from dangerous levels of global warming.

Plan: 1. The United States federal government will adopt the Lieberman-McCain Climate Stewardship and Innovation Act of 2007 which would institute CO<sub>2</sub> emission caps and establish a market-based trading system for permission permits. 2. The funding will be provided by auctioning of emission permits.

**CONTENTIONS:****I. GLOBAL WARMING THREATENS THE WORLD.****A. GLOBAL WARMING RISKS DRAMATIC CLIMATE CHANGE.**

William Sweet. (Sr. News Editor. IEEE Spectrum. The Flagship Publication of the Institute of Electrical and Electronic Engineers). KICKING THE CARBON HABIT: GLOBAL WARMING AND THE CASE FOR RENEWABLE AND NUCLEAR ENERGY, 06, 60.

Climate scientists have found in the last fifty years that climate change can be sudden and cataclysmic. Changes in greenhouse gas levels associated with past climate catastrophes have been smaller than the changes we are inducing now. We don't and can't know whether what we are doing to the atmosphere today could bring on a climate cataclysm in the lives of our children or grandchildren, but we cannot dismiss the possibility.

James Howard Kunstler. (Journalist). THE LONG EMERGENCY: SURVIVING THE END OF OIL. CLIMATE CHANGE, AND OTHER CONVERGING CATASTROPHES OF THE TWENTY-FIRST CENTURY, 06, 152.

The transition from the last ice age into the present Holocene was intensely wobbly, including the Younger-Dryas episode. As Elizabeth Kolbert reports: "The temperature did not rise slowly or even steadily; instead the climate flipped several times from temperate conditions back into those of the ice age, and back again. Around fifteen thousand years ago, Greenland abruptly warmed by sixteen degrees in fifteen years or less. In one particularly traumatic episode some twelve thousand years ago, the mean temperature in Greenland shot up by fifteen degrees in a single decade."

**B. DRAMATIC CLIMATE CHANGE THREATENS HUMAN CIVILIZATION.**

Nicholas Stern. (Former Chief Economist. World Bank), ECONOMICS OF CLIMATE CHANGE, Senate Comm. on Energy & Natural Resources Hrg., Feb. 13, 07, 15.

The damages from climate change will accelerate as the world gets warmer. Higher temperatures will increase the chance of triggering abrupt and large-scale changes. Warming may induce sudden shifts in regional weather patterns such as the monsoon rains in South Asia or the El Nino phenomenon—changes that would have severe consequences for water availability and flooding in tropical regions and threaten the livelihoods of millions of people.

John Podesta. (Prof., Law. Georgetown U. Law Center). CAPTURING THE ENERGY OPPORTUNITY: CREATING A LOW-CARBON ECONOMY, Nov. 07, 68.

Nothing short of nuclear war poses a greater long-term threat to civilization than the ecological dangers that confront us, and none of these ecological threats is as profound as climate change.

**C. DRAMATIC CLIMATE CHANGE THREATENS HUMAN SURVIVAL.**

Thomas Homer-Dixon. (Dir., Trudeau Center for Peace & Conflict Studies. U. Toronto). THE UPSIDE OF DOWN: CATASTROPHE, CREATIVITY, AND THE RENEWAL OF CIVILIZATION, 06, 167.

We can debate whether humankind can cope with a doubling of carbon dioxide because there's room for doubt about its consequences. But there's no ambiguity about the ultimate implications of a quadrupling. Harvard University's John Holdren, one of the world's leading authorities on energy, carbon emissions, and climate change, puts it bluntly. "A quadrupled-CO<sub>2</sub> world would be a roasted world, with weather patterns and extremes of heat unlike anything yet experienced during the tenure of human beings on the planet. It would be a catastrophe for the human condition."

Mark Lynas, (Journalist), SIX DEGREES: OUR FUTURE ON A HOTTER PLANET, 08, 236.

A drastic reduction in human populations is unambiguously the most likely outcome of a rise in global temperatures toward five degrees—what James Lovelock unhappily terms "the cull." Even at present numbers, the planet will have trouble supporting human society indefinitely, as we already see in a myriad of ways from overfishing to soil erosion. But with human population growth projected to add still further to our ballooning numbers, the overall situation will become steadily more precarious as the world warms up. I find it difficult to avoid the conclusion that millions, and later billions, of people will die in such a scenario. In Gaian terms, I suppose, the planet would be trying to restore a balance. It goes almost without saying that this is scant consolation for all the individual human tragedies that would inevitably accompany such a grim future.

James Lovelock. (Visiting Fellow, Oxford University), REVENGE OF GAIA: EARTH'S CLIMATE CRISIS AND THE FATE OF HUMANITY, 06, 147.

Now the evidence coming in from the watchers around the world brings news of an imminent shift in our climate towards one that could easily be described as Hell: so hot, so deadly that only a handful of the teeming billions now alive will survive. We have made this appalling mess of the planet and mostly with rampant liberal good intentions.

## II. HUMAN USE OF FOSSIL FUELS IS THE CAUSE OF GLOBAL WARMING.

### A. BURNING FOSSIL FUELS INCREASES HEAT-TRAPPING GASES IN THE EARTH'S ATMOSPHERE.

Emma Carlson Berne, (Journalist), GLOBAL WARMING AND CLIMATE CHANGE, 08, 24.

Most scientists now agree on two key points: that carbon dioxide in large amounts helps to warm Earth and that the excess of carbon dioxide in the atmosphere today is a result of human activity—namely, industrialization and the invention of coal-burning devices.

Union of Concerned Scientists, CURRENT CONTROVERSIES: POLLUTION, 07, 181.

The burning of fossil fuel (oil, coal, and natural gas) alone accounts for about 75 percent of annual CO<sup>2</sup> emissions from human activities.

### B. THERE IS A CONSENSUS AMONG CLIMATE SCIENTISTS THAT THE HUMAN RACE'S BURNING OF FOSSIL FUELS IS THE CAUSE OF GLOBAL WARMING.

Charles D. Ferguson. (Fellow for Science and Technology, Council on Foreign Relations), NUCLEAR ENERGY: BALANCING BENEFITS AND RISKS, Apr. 07, 10.

In February 2007, the Intergovernmental Panel on Climate Change, which includes about 2,500 of the world's top climate scientists, assessed a "very high confidence that the globally averaged net effect of human activities since 1750 has been one of warming."

Julianne Smith. (Dir. Europe Program, Center for Strategic and International Studies), WASHINGTON QUARTERLY, Winter 07/08, 148.

The Fourth Assessment Report in 2007 had an even greater impact, confirming with near certainty that carbon dioxide and other greenhouse gases from human activity are the main cause of global warming.

Naomi Oreskes, (Prof., History, U. California, San Diego), GLOBAL WARMING: OPPOSING VIEWPOINTS, 06, 38-39.

In recent years, all major scientific bodies in the United States whose members' expertise bears directly on the matter have issued similar statements. For example, the National Academy of Sciences report, Climate Change Science: An Analysis- of Some Key Questions, begins: "Greenhouse gases are accumulating in Earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise."

## III. A CAP-AND-TRADE SYSTEM WILL SIGNIFICANTLY REDUCE THE THREAT OF GLOBAL WARMING.

### A. THE PRESENT SYSTEM IS INCAPABLE OF MOVING FROM RELIANCE ON FOSSIL FUELS TO CLEAN ALTERNATIVE ENERGY RESOURCES.

#### 1. Present energy policy provides substantial subsidies to producers of fossil fuels.

John Podesta, (Prof., Law, Georgetown U. Law Center), CAPTURING THE ENERGY OPPORTUNITY: CREATING A LOW-CARBON ECONOMY, Nov. 07, 22.

The federal government currently invests billions of dollars annually in tax breaks and other subsidies for oil and gas, including royalty relief, research and development subsidies, and "accounting gimmicks". Given the high price of oil, oil companies are making record profits and do not need this government assistance. It is time to shift this federal investment—more than \$6 billion per year—away from high-carbon dirty sources of energy and towards the clean energy necessary to power a low-carbon economy. Redirecting this investment towards policies to promote low-carbon energy alternatives will help the transform our economy and capture the energy opportunity this transformation provides.

Lester R. Brown, (President, Earth Policy Institute), PLAN B 2.0: RESCUING A PLANET UNDER STRESS AND A CIVILIZATION IN TROUBLE, 06, 74-75.

Many subsidies are largely hidden from taxpayers. This is especially true of the fossil fuel industry, whose subsidies include such things as a depletion allowance for oil pumping in the United States. Even more dramatic are the routine U.S. military expenditures to protect access to Middle Eastern oil, which were calculated by analysts at the Rand Corporation before the most recent Iraq war to fall between \$30 billion and \$60 billion a year, while the oil imported from the region was worth only \$20 billion. A 2001 study by Redefining Progress shows U.S. taxpayers subsidizing automobile use at \$257 billion a year, or roughly \$2,000 per taxpayer. In addition to subsidizing carbon emissions, this also means that taxpayers who do not own automobiles, including those too poor to afford them, are subsidizing those who do.

2. Present energy policy retards the development of alternatives to fossil fuels.

Paul Roberts, (Journalist), OIL: OPPOSING VIEWPOINTS, 06, 37, 47.

A true energy revolution—one that begins moving away from fossil fuels entirely—can't succeed or even get started until we can somehow induce the market to "see" the true costs of energy, and, specifically, just how environmentally and politically expensive "cheap" fossil fuels really are.

Ron Pernick, (Dir., Clean Edge), THE CLEAN TECH REVOLUTION: THE NEXT BIG GROWTH AND INVESTMENT OPPORTUNITY, 07, 12-13.

The administration of President George W. Bush has fallen far behind other nations in pursuing aggressive clean-tech initiatives and providing long-term guidance and incentives. While Japan and Germany have been championing clean tech for some time, the U.S. federal government has basically been missing in action. Once the U.S. federal government finally gets on board, in an aggressive way, it will augment significant developments already in place at the state level and around the globe.

**B. A POLICY WHICH CAPS FOSSIL FUEL USE WILL SIGNIFICANTLY REDUCE THE THREAT OF GLOBAL WARMING.**

1. Capping fossil fuel use will provide a strong incentive to seek alternative energy resources.

Jay Inslee & Bracken Hendricks, (U.S. Rep., Washington & Sr. Fellow, Center for American Progress), APOLLO'S FIRE: IGNITING AMERICA'S CLEAN-ENERGY ECONOMY, 08, 291-292.

The bottom line is this, however: Of all possible policies, a cap-and-auction system is the most feasible, most powerful, and most important arrow in our clean-energy quiver. It would set the framework within which the regulations, investments, and incentives outlined above would operate. The cap-and-trade route where carbon permits are auctioned to emitters has two distinct virtues and one difficulty. Its prime virtue is that it sets a hard ceiling on CO<sub>2</sub> emissions. We set a cap on total emissions, and we stick to it. It is a known number and is not subject to the winds of uncertainty. Second, a cap-and-trade approach uses the market to encourage the most cost-effective solutions. There are many things we can do about carbon, but they vary wildly in cost. A cap-and-trade system would drive the economy toward the most cost-effective measures possible and away from the most expensive in quite elegant ways. It does so, for example, when emitters bid for pollution permits if they need them and trade them to other firms if they don't. Put another way, businesses can choose whether to reduce their own carbon emissions or buy the reductions of someone else who can do it at a lower price, which saves money for the economy as a whole or allows deeper reductions for the same cost. Plants that are more costly to retrofit will buy the credits and drive new money to cleaner-energy producers. Through the auctioning of emission credits, such a system could also generate tens to hundreds of billions of dollars per year in revenue to help industry and workers make the transition to the new energy economy, to defray any regressive impacts from changing energy prices, and to invest in the commercialization of new technology. A safe estimate is that such a system could generate \$75 billion each year to fund the clean energy transition.

2. Increasing the market for alternative energy resources will promote the transition to alternative energy resources.

Todd Stern, (Sr. Fellow, Center for American Progress), WASHINGTON QUARTERLY, Winter 07/08, 178.

A cap-and-trade plan would set a national limit on emissions, decreasing over time, which would be subdivided among carbon-emitting entities such as oil refineries, power plants, and energy-intensive industries. In any given year, the government would either allocate emissions rights or auction them, and companies would then buy and sell the rights among themselves, depending on whether they had more or fewer permits than they needed to meet their obligations. Auctioning most permits is the better approach. Auction revenue could be used to offset higher energy costs for low- and moderate-income people, ease the transition for businesses and workers hurt by low-carbon policies, and finance clean energy investments. Allocating more than roughly 15 percent of the permits would result in a windfall for companies because they will pass on their higher costs to consumers in any event. As a result of the program, carbon would finally have a price, which would spur businesses and families to use more energy-efficient products and low-carbon fuels.

3. The transition to alternative energy resources will significantly reduce the threat of global warming.

Janet Sawin, (Project Director, Worldwatch Institute), AMERICAN ENERGY: THE PATH TO RENEWABLE ENERGY, Sept. 06, 7.

A new economic analysis by the Rand Corporation for the Energy Future Coalition concludes that if the United States were to get 25 percent of its electric power and transportation fuels from renewable energy by 2025, the country's energy costs would be reduced, with large savings occurring by 2015. And national carbon dioxide emissions would fall by one billion tons.

Union of Concerned Scientists, CURRENT CONTROVERSIES: POLLUTION, 07, 183.

More than half of America's electricity is produced from outdated, coal-burning power plants that dump pollutants and heat-trapping gases into our atmosphere. In fact, power plants are the single largest source of CO<sub>2</sub>—one-third of the U.S. total. However, cost effective, clean energy sources do exist. By increasing our use of clean renewable energy, investing in energy efficiency, and reducing pollution from fossil fuel plants we can save money for consumers, reduce heat-trapping emissions, and lessen the need for new coal or gas power plants. A study by the Union of Concerned Scientists [UCS] found that we could reduce power plant CO<sub>2</sub> emissions by 60 percent compared with government forecasts for 2020.

### CASE ANALYSIS

This is a needs case. It is a needs case because it is divided into contentions, and each contention defends a different stock issue.

Contention “I” defends the significance of the case because it discusses the extent and severity of a problem that exists under the present system.

Contention “II” defends the inherency of the case because it identifies a defect in present policies that cause the problem.

Contention “III” defends the solveny of the case because it shows that the affirmative plan will overcome the defect in present policies and reduce the problem described in Contention I.

**CASE #3: NUCLEAR POWER: A FAUSTIAN BARGAIN**

The thesis of this case is that the United States federal government is currently committed to expanding nuclear power as a response to global warming. The case argues that this is a bad strategy both because nuclear power is extremely dangerous and because clean, safe renewable energy resources could provide the same amount of energy at the same or lower cost. The plan switches the federal government's incentives to research and develop nuclear power to an alternative portfolio of alternative energy techniques utilizing renewable energy resources.

Plan: 1. The United States federal government will refuse to issue any licenses for building nuclear power plants in the United States. 2. The United States federal government will provide long-term economic incentives for the development of renewable alternative energy resources to replace nuclear power. 3. The plan will be funded by the version of financial research resources currently directed toward the nuclear industry's research and development efforts.

**I. ADVANTAGE: ALTERNATIVE ENERGY PROMOTION AVOIDS A NUCLEAR DISASTER.****A. THE EXPANSION OF NUCLEAR POWER IS INHERENTLY DANGEROUS.****1. RADIATION FROM NUCLEAR PLANTS IS DANGEROUS.****a. Nuclear power plants emit dangerous radiation.**

Helen Caldicott, (President, Nuclear Policy Research Institute), *ENERGY ALTERNATIVES*, 06, 75.

Contrary to the nuclear industry's propaganda, nuclear power is therefore not green and it is certainly not clean. Nuclear reactors consistently release millions of curies of radioactive isotopes into the air and water each year. These releases are unregulated because the nuclear industry considers these particular radioactive elements to be biologically inconsequential. This is not so. These unregulated isotopes include the noble gases krypton, xenon and argon, which are fat-soluble and if inhaled by persons living near a nuclear reactor, are absorbed through the lungs, migrating to the fatty tissues of the body, including the abdominal fat pad and upper thighs, near the reproductive organs. These radioactive elements, which emit high-energy gamma radiation, can mutate the genes in the eggs and sperm and cause genetic disease.

**b. Accidents at nuclear power plants produce dangerous radiation.**

Helen Caldicott, (Founder, Physicians for Social Responsibility), *NUCLEAR POWER IS NOT THE ANSWER*, 06, 102.

The NRC performed a study in 1997, which calculated that a fire at a spent fuel pool could produce between 54,000 to 143,000 cancer deaths and would render 2,000 to 70,000 square kilometres of agricultural land uninhabitable. In addition, \$117 billion to \$566 billion would need to be spent evacuating hundreds of thousands of people from contaminated areas. The study, by Alveraz and others, determined that if just 10% of the cooling pool cesium 137 were released by fire, the area contaminated would be five to nine times larger than the area affected to a similar degree by Chernobyl. If 100% were released, the contamination would affect an area about seventy times larger than that of Chernobyl.

Neil Schlager, (Journalist), *ALTERNATIVE ENERGY*, 06, 196.

A catastrophic accident at a nuclear plant could have enormous effects on the surrounding environment, effects that would last for decades, if not longer. Nuclear opponents believe that the risk is simply too great. One mistake, one faulty component, one operator error could create an environmental catastrophe. The margin for error is nearly zero. While the risk of a nuclear catastrophe is low, such a catastrophe would have high consequences.

Harvey Blatt, (Geologist), *ENERGY ALTERNATIVES*, 06, 91.

As of the end of 1998, 73,000 Ukrainians not yet killed by the [Chernobyl] disaster have been recognized by their government as being fully disabled by it, and another 323,000 adults and 1.1 million children are entitled to government aid for Chernobyl-related health problems. In 1996, 10 years after the disaster, Ukraine and Belarus still had 200 times more radiation in their affected areas than Hiroshima and Nagasaki had a decade after they were bombed to end World War II. The eventual death toll from the Chernobyl disaster will be in the millions over many decades.

**2. RADIOACTIVE WASTE FROM NUCLEAR POWER PLANTS THREATENS FUTURE GENERATIONS.****a. Radioactive waste from nuclear power plants is dangerous for thousands of years.**

Helen Caldicott, (Founder, Physicians for Social Responsibility), *NUCLEAR POWER IS NOT THE ANSWER*, 06, 107.

Never in its sixty-five-year history has the nuclear industry taken responsibility for the massive amounts of profoundly lethal radioactive waste that it has continued to produce at an ever-increasing pace. As it is impossible for mere mortals to fathom the concept of infinity of time and space, so it is impossible to comprehend the true gravity of mutagenic carcinogens lasting for half-a-million years.

b. There is no safe way to dispose of nuclear waste.

Sven Teske, (Analyst, Greenpeace International), ENERGY [R]EVOLUTION, Jan. 07, 14.

There is not a single final storage facility for nuclear waste available anywhere in the world. Safe secure storage of high level waste over thousands of years remains unproven, leaving a deadly legacy for future generations. Despite this the nuclear industry continues to generate more and more waste each day.

Charles D. Ferguson, (Fellow for Science and Technology, Council on Foreign Relations), NUCLEAR ENERGY: BALANCING BENEFITS AND RISKS, Apr. 07, 28.

More than fifty years of commercial nuclear energy use has left the world with a legacy of tens of thousands of tons of highly radioactive waste that will last for tens of thousands of years. If nuclear power production expands substantially in the coming decades, the amount of waste requiring safe and secure disposal will also significantly increase. Although several countries are exploring various long-term disposal options, no country has begun to store waste from commercial power plants in permanent repositories.

3. EXPANSION OF NUCLEAR POWER PLANTS RISKS THE USE OF NUCLEAR BOMBS BY INTERNATIONAL TERRORISTS.

Charles D. Ferguson. (Fellow for Science and Technology, Council on Foreign Relations), NUCLEAR ENERGY: BALANCING BENEFITS AND RISKS, Apr. 07, 29.

Spent fuel is accumulating in pools at nuclear power plants, increasing the risk of radioactive release from sabotage or attack at these facilities. A recent U.S. National Academy of Sciences study has concluded that "successful terrorist attacks on spent fuel pools, though difficult, are possible." Zirconium cladding provides a protective barrier around the spent fuel, but the cladding could catch fire under some attack scenarios. According to the National Academy study, "If an attack leads to a propagating zirconium cladding fire, it could result in the release of large amounts of radioactive materials."

David Lowry, (Research Fellow, Energy & Environment Research Unit, The Open University), NUCLEAR OR NOT? DOES NUCLEAR POWER HAVE A PLACE IN A SUSTAINABLE ENERGY FUTURE?, 07, 146.

There are security issues associated with each phase of the nuclear fuel cycle. Enrichment and reprocessing operations attract particular concern since they can involve the production of materials which can be used in weapons. But equally, waste storage and the transport of nuclear materials present possibilities for direct attack or theft, while nuclear facilities represent potentially attractive high-profile targets for terrorist assault. In a world where terrorism is on the increase, it would seem foolish to offer more targets, particularly by increasing unnecessary transports in plant decommissioning, and indeed more tools.

B. PRESENT UNITED STATES ENERGY POLICY PROMOTES THE EXPANSION OF NUCLEAR POWER.

1. UNITED STATES ENERGY POLICY PROMOTES EXPANSION OF NUCLEAR POWER TO ADDRESS CONCERNS ABOUT GLOBAL WARMING.

Greg Edwards. (Staff), RICHMOND TIMES-DISPATCH, Dec. 10, 07. Retrieved Jan. 18, 08 from Lexis/Nexis Academic Universe.

The nation's Nuclear Regulatory Commission says it expects to receive applications for 25 more reactors from 13 additional companies by the end of 2009.

Charles Pope, (Staff), THE OREGONIAN, Dec. 30, 07, A1.

Nuclear's resurgence came into clear view as Congress struggled to pass a giant spending bill before Christmas. Included in the bill was \$20.5 billion in loan guarantees for nuclear energy. That's twice as much as was given for renewable energy. The new political reality of climate change has opened the door to serious discussion of the possibility of squeezing power from ocean currents and algae, and persuaded Congress to provide billions of dollars of subsidies and grants to new fuels that even two years ago were considered fool's gold. Economic changes have helped, too. Expensive oil and higher coal prices are making nuclear more competitive. Concerns about the safety of plants have lessened since the 1979 explosion at the Three Mile Island station in Pennsylvania.

2. UNITED STATES ENERGY POLICY PROVIDES ENORMOUS SUBSIDIES FOR THE EXPANSION OF NUCLEAR POWER.

Vaclav Smil, (Prof., Natural Sciences, U. Manitoba), ENERGY AT THE CROSSROADS, May 17, 06, 18.

Excessive research spending has been bestowed on all forms of nuclear generation: the U.S. nuclear industry received more than 96% of \$145 billion disbursed by the Congress between 1947 and 1998. Moreover, in 1954 the Price-Anderson Act reduced private liability by guaranteeing public compensation in the event of a catastrophic accident in commercial nuclear generation. No other industry has enjoyed such a sweeping state protection. And the U.S. is not alone in favoring nuclear energy: of the roughly \$ 9.4 billion spent in the year 2004 on energy R&D by all IEA countries, \$ 3.1 billion went for fission and even fusion (at \$ 700 million) received nearly twice as much as PV, an inexcusable disparity given the magnitude and the power density of insolation and its lasting potential for solving the global energy challenge in thermally invariant and carbon-free way.

Jonathan M. Harris. (Prof., Global Development And Environment Institute, Tufts U.). ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS: A CONTEMPORARY APPROACH, 06, 296.

Nuclear power has benefited from substantial government subsidies. Between 1974 and 1998, the U.S. government spent more than \$40 billion (in 1999 dollars) for research and development of nuclear technology. Another important subsidy is provided by the Price-Anderson Act, which limits the liability of nuclear power operators in the event of an accident. About half of all government-financed energy research and development in developed countries is currently directed toward nuclear power.

### 3. UNITED STATES FOREIGN POLICY PROMOTES THE INTERNATIONAL EXPANSION OF NUCLEAR POWER.

David Elliott. (Prof., Technology Policy, The Open University). NUCLEAR OR NOT? DOES NUCLEAR POWER HAVE A PLACE IN A SUSTAINABLE ENERGY FUTURE?, 07, 244-245.

While China, India and Japan have their own ongoing nuclear expansion programmes, the United States is promoting a Global Nuclear Energy Partnership (GNEP). Under this scheme, the United States would help developing countries to build small modular plants, like the pebble bed reactor, using sealed fuel capsules leased from the United States. Once the fuel was used up, the capsules would be returned to the United States for reprocessing, to extract the plutonium for use in a new fleet of U.S. reactors. U.S. Energy Secretary Samuel Bodman claimed that 'GNEP brings the promise of virtually limitless energy to emerging economies around the globe.

## C. CHANGING UNITED STATES POLICY TO PROMOTE ALTERNATIVE ENERGY RESOURCES WILL PROVIDE A SAFE SOURCE OF ENERGY TO REPLACE NUCLEAR POWER.

### 1. ALTERNATIVE ENERGY RESOURCES CAN ELIMINATE ANY JUSTIFICATION FOR THE EXPANSION OF NUCLEAR POWER.

Catherine Mitchell and Bridget Woodman. (Research Fellows, Warwick Business School). NUCLEAR OR NOT? DOES NUCLEAR POWER HAVE A PLACE IN A SUSTAINABLE ENERGY FUTURE?, 07, 157.

The costs of different forms of electricity generation in 2020 are unknown. Projections behind the Performance and Innovative Unit's (PIU) Energy Review and the 2003 Energy White Paper (EWP) showed that some renewable technologies were projected to be among the cheapest generating technologies by 2020, as their prices fell compared to gas. Some technologies (onshore and offshore wind, some biomass and possibly some wave) were projected to be cheaper than nuclear power.

Commission on Sustainable Development, NUCLEAR POWER: UNSUSTAINABLE, UNECONOMIC, DIRTY AND DANGEROUS, May 4, 06, 9.

Apart from nuclear power's risks of accidents, inherent proliferation dangers, and problems with its waste, human and economic resources wasted on nuclear power will not be spent on renewable energy — which is cheaper and more effective in producing electricity and reducing carbon.

### 2. INADEQUATE GOVERNMENT INCENTIVES INHERENTLY LIMIT THE EXPANSION OF ALTERNATIVE ENERGY RESOURCES.

Sven Teske, (Analyst, Greenpeace International), ENERGY [R]EVOLUTION, Jan. 07, 82.

Without political support, however, renewable energy remains at a disadvantage, marginalised by distortions in the world's electricity markets created by decades of massive financial, political and structural support to conventional technologies and the failure to internalise environmental and social costs in price of energy. Developing renewables will therefore require strong political and economic efforts, especially through laws that guarantee stable tariffs over a period of up to 20 years. At present new renewable energy generators have to compete with old nuclear and fossil fuelled power stations which produce electricity at marginal costs because consumers and taxpayers have already paid the interest and depreciation on the original investments. Political action is needed to overcome these distortions and create a level playing field.

Jim Wells. (Dir., Natural Resources & Environment, Government Accountability Office). DEPARTMENT OF ENERGY: KEY CHALLENGES REMAIN FOR DEVELOPING AND DEPLOYING ADVANCED ENERGY TECHNOLOGIES, Dec. 06, 54.

The duration of certain federal tax incentives has been insufficient to stimulate investment decisions to deploy advanced energy technologies. For example, renewable energy industry representatives have stated that the 2-year extension of the production tax credit in the Energy Policy Act of 2005 does not provide sufficient certainty to stimulate investment. In providing a production tax credit to stimulate the construction of projects using advanced technologies, the credit's duration is key to encouraging companies and their lenders to undertake the substantial investments and build an industry over time.

### 3. GOVERNMENT INCENTIVES WILL PROVIDE A SAFE ALTERNATIVE TO THE EXPANSION OF NUCLEAR POWER.

Helen Caldicott, (Founder, Physicians for Social Responsibility), NUCLEAR POWER IS NOT THE ANSWER, 06, xvi.

The potential for growth in the renewable non- CO2 producing sectors is enormous. All that is required is a commitment by government leaders to urgently enact serious laws mandating energy conservation, and to shift the subsidies currently provided to the nuclear power industry to alternative and renewable electricity generation.

## CASE ANALYSIS

This is a comparative advantage case. The case has one advantage offering a unique benefit of the plan over the status quo. Note that the advantages contains subpoints establishing (a) what is wrong at the present time — significance of harm; (b) why the present system is unable to address the harm — inherency; and (c) how the affirmative plan will overcome the harm — solvency.

Note that even though the case follows a comparative advantage format, there is still a necessity to fulfill the stock issues of harm, inherency, and solvency. It is not possible to show how something will be *better* without showing what is *worse*. The whole point of “comparison” is contrast the harms of the present system to the advantages of adopting the affirmative plan.

**CASE #4: HYDROGEN: WITHDRAWAL FROM AMERICA'S OIL ADDICTION**

The thesis of this case is that United States dependence on foreign oil threatens the American economy. Much of our imported oil comes from parts of the world which are unstable. Because there is little excess capacity in the oil production industry, shutdowns and production may result in supply shocks which could have devastating effects on the economy. Furthermore, the case argues that because the world is near its peak oil production capacity — after which there is a decreasing supply of oil to meet increasing demand — the United States would be wise to begin now to prepare an alternative to oil. The case argues that since most imported oil in the United States is used for transportation, hydrogen could be easily substituted for oil. Hydrogen has been used as a fuel for transportation. Oil companies and automakers resist efforts to move to hydrogen. Thus, the plan provides strong incentives. The plan mandates that automakers make automobiles that can use hydrogen fuel, and that energy companies incorporate hydrogen fuel in their service stations. The plan also guarantees the market for hydrogen powered automobiles and fuel by requiring the government's vehicle fleet be hydrogen powered.

Plan: 1. The United States federal government will mandate that the auto industry ensure the production of hydrogen vehicles. 2. The United States federal government will mandate that the energy industry will develop an infrastructure to support hydrogen vehicles. 3. The United States federal government will convert its entire fleet of motor vehicles to hydrogen.

**CONTENTIONS:****I. DEPENDENCE ON OIL RISKS THE COLLAPSE OF THE AMERICAN ECONOMY.****A. THE UNITED STATES ECONOMY IS DEPENDENT ON IMPORTED OIL.**

James Howard Kunstler. (Journalist). *THE LONG EMERGENCY: SURVIVING THE END OF OIL, CLIMATE CHANGE, AND OTHER CONVERGING CATASTROPHES OF THE TWENTY-FIRST CENTURY*, 06, 61-62.

At the heart of this is the United States' sick dependency relationship with the Islamic world. Islamic nations possess most of the remaining oil in the world. We're addicted to that oil. Due to our inattention, narcissism, and almost unbelievably foolish complacency, we have allowed ourselves to become hostages to that addiction.

Daniel Lashof. (Dir., Climate Science Program, Natural Resources Defense Council). *ENHANCED ENERGY SECURITY ACT OF 2006*, Hrg., Senate Energy & Natural Resources Comm., June 22, 06, 33.

According to recent estimates by the National Defense Council Foundation, the hidden military and economic cost of oil dependence is in the range of \$800 billion annually and oil supply disruptions like those we experienced in the 1970's could cost the economy as much as \$8 trillion.

Jav Inslee & Bracken Hendricks. (U.S. Rep., Washington & Sr. Fellow, Center for American Progress), *APOLLO'S FIRE: IGNITING AMERICA'S CLEAN-ENERGY ECONOMY*, 08, 16.

The problems of oil are not just questions of climate and security. They go to the heart of our economic welfare as well. In 2005 the United States spent the staggering sum of over \$200,000 a minute on foreign oil. That represents real resources flowing out of the economy. Think what could be done with \$200,000 a minute in domestic investment in American communities. In fact, oil imports represent the largest single contributor to our spiraling national trade deficit, which set a record in 2005 of over \$791 billion and was expected to climb to well over \$850 billion in 2006. Over the two-year period from August 2004 to July 2006, the petroleum-related trade deficit accounted for 80 percent of the deepening overall deficit as oil prices climbed.

Joan Claybrook, (President, Public Citizen), *OIL: OPPOSING VIEWPOINTS*, 06, 125.

Our economy, as it is currently structured, requires the importation of over \$100 billion of crude oil and petroleum products each year, which accounts for 29 percent of our trade deficit and totals \$378 for every man, woman, and child in the U.S. American spending on gasoline consumption—\$186 billion in 2000—renders consumers vulnerable to sudden price spikes over which they have no control. The economic cost of U.S. oil dependence over the past 30 years has been estimated at \$7 trillion dollars of present value—an amount approximately equal to the combined 2000 Gross Domestic Product (GDP) of France, the United Kingdom, Germany and India. If we were to reduce our use of oil substantially, this wealth would remain within the United States and we would have greater control over economic growth.

**B. INSTABILITY IN OIL PRODUCING NATIONS RISKS ECONOMIC DEVASTATION FROM SUPPLY SHOCKS.**

Norm Coleman. (U.S. Sen., Minnesota), *ENERGY INDEPENDENCE*, S. Hrg. 109-412, Sen. Comm. on Energy & Natural Resources, Mar. 7, 06, 4-5.

Our nation's energy dependence is undeniably one of the greatest threats to our national security and our freedom. By 2025 it is estimated that nearly 75 percent of America's oil supply will be imported. Also consider that two-thirds of the world's proven oil reserves are in the Middle East and that terrorists have identified oil as a strategic vulnerability—increasing attacks against oil infrastructure worldwide. One can just imagine what would happen if OPEC, which currently accounts for well over 50 percent of our oil supplies, shut off the oil spigot.

Bill Richardson. (Governor, New Mexico & Former Secretary of Energy). *LEADING BY EXAMPLE: HOW WE CAN INSPIRE AN ENERGY AND SECURITY REVOLUTION*, 08, 55.

It's ridiculous to pin this nation's, or the world's, future on a collaborative relationship among oil-producing and oil-consuming nations. Among the world's top ten oil-producing nations, there are few that we could call stable, and several that are overtly hostile to the United States. Most of these are not nations we can count on. Yet we are addicted to what they produce, and the multinational oil companies are not in the market to help us develop alternatives that will support market competition and energy diversity.

Barack Obama. (U.S. Senator, Illinois), TAKING SIDES: CLASHING VIEWS IN AMERICAN FOREIGN POLICY, 08, 298-299.

Oil single-handedly fuels 96% of our transportation needs, and it's also critical to the manufacture of millions of goods and products in this country. As we saw during Hurricane Katrina, this kind of dependency means that the loss of even a small amount of oil and refining capacity for just a few days can cause economic panic and soaring prices. A serious embargo or permanent loss could cause untold disaster.

Robert Hirsch, (Dir., Management Information Services), ENERGY POLICY, Feb. 08, 881.

It only requires a relatively small amount of oil to be taken out of the system to have huge economic and security implications.

S. David Freeman, (Dir., Ford Foundation Study on Energy Policy), WINNING OUR ENERGY INDEPENDENCE, 07, 32.

The petroleum supply is barely meeting demand today. The market is currently so tight that any oil-producing nation or group of nations can use oil as an economic and political weapon by taking their oil off the market, causing shortages that will drive the price up. This action can literally bring this country and others around the world to a screeching halt. This is not an idle threat. The Arab oil-producing nations in OPEC actually shut off their oil exports to the U.S. in 1973, and cars and trucks had to wait in long lines to get gas. And there was a similar event in 1979.

### C. THE WORLDWIDE SUPPLY OF OIL IS INADEQUATE TO MEET FUTURE DEMAND.

Stephen Leeb, (Economist), THE COMING ECONOMIC COLLAPSE, 06, 19.

Some petroleum geologists, who subscribe to Hubbert's law, now believe that worldwide oil production may be close to its permanent long-term peak and will soon start to decline. Even if the peak is farther away than they think, demand for oil, especially from large developing nations such as India and China, is rising faster than production. If this trend continues—and we fully expect it will—the result will be an inevitable dash between supply and demand that will send oil prices soaring to unprecedented levels.

Daniel Weiss. (Staff, Center for American Progress), TIME TO DIVERSIFY ENERGY RESOURCES AS OIL HITS \$100 A BARRELL, Jan. 3, 08, 1.

Most importantly, the U.S. oil supply-demand balance is insurmountable. We have less than 2 percent of the world's known reserves, yet use 25 percent of its oil. Even if we drilled off of every beach, and inside every national park, refuge, and forest, the United States does not possess enough oil to significantly offset our growing demand.

Stephen Leeb, (Economist), THE COMING ECONOMIC COLLAPSE, 06, 1.

An economic crisis is near at hand in America today, the kind of dramatic, earth-shattering crisis that periodically threatens the very survival of civilization. More specifically, it is an energy crisis brought about by the conflict between rising global demand for energy and our growing inability to increase energy production.

Stephen Leeb, (Economist), THE COMING ECONOMIC COLLAPSE, 06, 64.

We know that civilizations collapse regularly. And with only 229 years under its belt, we also know our American civilization is too young to have demonstrated any special advantage that will guarantee its long-term survival. It may last another nine thousand years, or perhaps only another six. The coming oil crisis could well be the biggest challenge our nation has ever faced. The question we must ask, therefore, is whether our civilization has developed the wisdom and skills needed to overcome it. What have we learned from our most recent brushes with disaster?

Richard Heinberg. (Journalist). THE CITIZEN-POWERED ENERGY HANDBOOK: COMMUNITY SOLUTIONS TO A GLOBAL CRISIS, 07, xvi.

Oil and gas depletion threaten both our economy and our way of life. It is not mere scare mongering to draw parallels between the vulnerabilities of modern oil-dependent societies to petroleum depletion, and the circumstances that led to the collapse of ancient civilizations.

Southern States Energy Board. AMERICAN ENERGY SECURITY: BUILDING A BRIDGE TO ENERGY INDEPENDENCE, July 06, xv-xvi.

The American Energy Security Study estimates that if oil peaks in 2010, and aggressive domestic alternative fuels production programs are not implemented, over the period 2010-2020 the U.S. economy will lose about: \$4.6 trillion in GDP; 40 million job years of employment; \$1.3 billion in federal, state, and local government tax revenues; We estimate that if oil peaks in 2020 and no crash programs are implemented, over the period 2020-2030 the U.S. economy will lose about: \$13 trillion in GDP; 100 million job years of employment; \$4 trillion in federal, state, and local government tax revenues.

## II. THE PRESENT SYSTEM IS INCAPABLE OF MOVING FROM OIL TO HYDROGEN.

## A. THE ENERGY INDUSTRY WILL NOT VOLUNTARILY MOVE TO THE PRODUCTION OF HYDROGEN VEHICLES.

Joseph Romm, (Acting Assistant Secretary of Energy for Energy Efficiency and Renewable Energy During the Clinton Administration), *ENERGY ALTERNATIVES*, 06, 101.

Alternative fuel vehicles (AFVs) are a greater challenge, because they must overcome a trillion-dollar investment in the gasoline fueling infrastructure. Two major efforts to commercialize AFVs in the past two decades—electric vehicles and natural gas vehicles—both failed, even though electricity and natural gas are widely available and inexpensive.

Edwin Black, (Journalist), *INTERNAL COMBUSTION: HOW CORPORATIONS AND GOVERNMENTS ADDICTED THE WORLD TO OIL AND DERAILED THE ALTERNATIVES*, 06, 304-305.

The hydrogen movement calls this the "chicken-egg" debate, meaning which comes first, the stations with hydrogen to dispense or the cars to use them? No cars can be built without stations, no stations without cars. Many oil companies are preparing to jump into the hydrogen distribution business—but not until future decades and even then only incrementally as oil runs critically short. Until then, the oil companies assert, progress on energy independence can only inch along.

## B. THE AUTOMOBILE INDUSTRY WILL NOT VOLUNTARILY MOVE TO THE PRODUCTION OF HYDROGEN VEHICLES.

Edwin Black, (Journalist), *INTERNAL COMBUSTION: HOW CORPORATIONS AND GOVERNMENTS ADDICTED THE WORLD TO OIL AND DERAILED THE ALTERNATIVES*, 06, 307-308.

A telling exchange on the so-called absence of an infrastructure occurred with a Ford spokesman. Asked why the company was not proceeding on hydrogen cars, the spokesman repeated the well-worn explanation: "Because there is no hydrogen out there for anyone to refuel their car," adding, "Where are the stations?" Asked whether Ford was not establishing from scratch a farm-belt-based ethanol infrastructure, helping to create stations or a pump network, this in timed tandem with ever-mounting flex-fuel car production, the spokesman answered, "Yes." The spokesman was asked if it could be done for ethanol given the fuel's adverse ecological effects, why could it not be done for climate-friendly hydrogen, especially in regions such as the Gulf Coast where hydrogen is voluminously distributed by pipeline. Ford's spokesman paused, then replied, "That is a very good question. To be honest, there is no answer."

Terry Tamminen, (Dir., Environment Now Foundation), *LIVES PER GALLON: THE TRUE COST OF OUR OIL ADDICTION*, 06, 194.

The general definition of fraud is an intentional misrepresentation that seeks to make someone rely on false or misleading statements. The victim of fraud must in fact be harmed by relying on the false or misleading statements. The evidence presented thus far shows that oil and auto companies have known for a very long time that their products and processes are harmful to human health and the environment. It shows that safer, effective, affordable alternatives—or less harmful versions of their current products—exist. Despite this knowledge, these industries have represented to governments, to the public, and to consumers that their products are safe to human and environmental health and that no better alternatives or less harmful versions of their current products exist or could be affordably manufactured. Many of these practices were discussed earlier, but two examples stand out that seem ripe for litigation and compensation: the sale of high-octane gasolines and the sale of "defective" vehicles.

Michael Behar, (Journalist), *CLASHING VIEWS IN SCIENCE, TECHNOLOGY, AND SOCIETY*, 08, 130.

Nor will automakers foot the bill and churn out thousands of hydrogen cars if drivers have nowhere to fill them up. Peter Devlin, head of the Department of Energy's hydrogen-production research group, says, "Our industry partners have told us that unless a fourth to a third of all refueling stations in the U.S. offer hydrogen, they won't be willing to take a chance on fuel cells."

Timothy Leuliette, (President, Metaldyne Corporation), *IMPLEMENTATION OF THE PROVISIONS OF THE ENERGY POLICY ACT OF 2005*, June 27, 06, 143-144.

There are 2.9 jobs in the auto supply chain for every 1 assembly (automaker) job and supplier products account for more than two-thirds of the content on each new vehicle. This is a large, nationally and globally influential group that must play a leading role in this initiative: Yet, despite their weight in terms of employment, facilities and capital investment, suppliers have no formal or direct ability to participate in the federal government's hydrogen program (FreedomCAR). They can only bid for grants and projects under the EERE Vehicle Technologies Program, which focuses more on hybrid components and short term gains in fuel efficiency. They also don't have a seat at the table in the Congressional and national debate on hydrogen policy. This is not only an oversight; it is a huge mistake that will extend the timeline to achieving the Hydrogen Economy by decades. There is a misconception that suppliers simply build systems, components and parts to automaker specifications. In reality suppliers play a key role in automotive R&D and innovation. According to a recent NSF report, the auto industry spent \$16.9 billion on R&D in the U.S. in 2003. Of that, supplier R&D accounted for \$6.9 billion, or 40%.

## C. INVESTORS WILL NOT MOVE TO HYDROGEN IN THE ABSENCE OF A VIABLE MARKET.

Edwin Black, (Journalist), INTERNAL COMBUSTION: HOW CORPORATIONS AND GOVERNMENTS ADDICTED THE WORLD TO OIL AND DERAILED THE ALTERNATIVES, 06, 317-318.

In the absence of a government-launched Manhattan Project to ignite the alternative fuel revolution, the public must turn not just to the White House or the state house but also to the largest fleet owners in the country. Carmakers such as Honda, BMW, and Toyota are waiting for only one thing before they commit their considerable resources away from gasoline cars and toward hydrogen, electric, natural gas (CNG), or other alternatively fueled vehicles. Those companies want tangible demand. Fleets — governmental, commercial, and private—have a compelling volume purchasing power no automaker can ignore.

## III. A SYSTEM OF GOVERNMENT INCENTIVES WILL ENSURE A TRANSITION FROM OIL TO HYDROGEN IN THE TRANSPORTATION SECTOR OF THE ECONOMY.

## A. HYDROGEN IS CAPABLE OF ENDING AMERICA'S DEPENDENCE ON OIL.

1. Most oil is used in the transportation sector of the economy.

Joseph Lieberman. (U.S. Sen., Connecticut), ENERGY INDEPENDENCE, S. Hrg. 109-412, Sen. Comm. on Energy & Natural Resources, Mar. 7, 06, 8.

Barely 2 percent of our electricity comes from oil. Ninety six percent of the energy used to power our cars comes from oil—literally millions of barrels of oil per day. This is unsustainable and dangerous.

2. Hydrogen is well suited to meet the demands of the transportation sector.

Neil Schlager, (Journalist), ALTERNATIVE ENERGY, 06, 168.

Perhaps more than any other alternative technology that currently exists, hydrogen has the potential to replace our dependence on fossil fuels with a clean source of energy that will never run out.

Kenneth S. Deffeyes, (Prof. Emeritus, Geology, Princeton U.), BEYOND OIL: THE VIEW FROM HUBBERT'S PEAK, 06, 153-154.

The big attraction of hydrogen is the promise of mobility. Roughly 75 percent of our existing oil consumption is for transportation: planes, trains, cars, and boats. Transport of all kinds is an endangered species in an oil shortage. There are numerous uses for hydrogen and major environmental rewards. However, the real reason for considering hydrogen as a fuel is to renew our aging love affair with the automobile. Currently, no companies are selling hydrogen-powered automobiles. For the Shell hydrogen filling station in Iceland, the initial customers are three prototype city buses. Estimates for initial sales of hydrogen cars range from three to twenty years.

Maver Hillman. (Former Dir., Environment and Quality of Life Program, Policy Studies Institute), THE SUICIDAL PLANET: HOW TO PREVENT GLOBAL CLIMATE CATASTROPHE, 07, 153-154.

In many respects, hydrogen is the ideal fuel. The energy released per ton in combustion is more than twice that of any hydrocarbon, and there are no carbon dioxide emissions as no carbon is involved. It can be stored fairly simply, holding the energy until it is needed, and used as a portable fuel for internal combustion engines.

Robert Olson. (Research Dir., Alternative Futures), IS THE WORLD HEADING TOWARD AN ENERGY CRISIS, 06, 64.

Two-thirds of the 20 million barrels of oil consumed per day in the United States is used for transportation. Hydrogen is the best alternative for replacing that oil, which could be of critical importance sooner than later if gloomy forecasts of oil availability turn out to be right.

## B. WITH ADEQUATE GOVERNMENT INCENTIVES, HYDROGEN POWER WILL REACH ITS FULL POTENTIAL.

1. A government mandate will ensure the production of hydrogen vehicles.

Stephen Blanchette, (Staff, Association for Computing Machinery), ENERGY POLICY, Feb. 08, 528.

Only government action can accelerate the development and deployment of greenhouse-gas-free power sources, which are key prerequisites for a hydrogen economy. Hydrogen-friendly policies go beyond encouraging development of clean power sources, however. Ending protection of incumbent utility monopolies and removing regulations that favor existing infrastructure almost certainly will be necessary for hydrogen to gain a foothold. Further, policy options are wide open.

2. A government mandate will ensure the development of an infrastructure to support hydrogen vehicles.

Terry Tamminen, (Dir., Environment Now Foundation), LIVES PER GALLON: THE TRUE COST OF OUR OIL ADDICTION, 06, 174-175.

No car company will mass produce cars without fuel infrastructure, and no energy company will install significant numbers of hydrogen fueling stations until there are vehicles to use the fuel on a regular basis. Chicken or egg? There is a great deal of agreement among automakers, energy companies, academics, government officials, and independent experts that H<sub>2</sub> is coming to a fueling station near you in the not-too-distant future, but everyone wants someone else to go first. There's the rub. If you want to commercialize something, you put it in the easy grasp of as many people as possible as soon as you can. The U.S. interstate highway system was designed to be within easy reach of most Americans, and, in California, these highways are within a few miles of the vast majority of Californians. So, wouldn't it make sense to spread out a network of H<sub>2</sub> fueling stations along this already ubiquitous transportation system? Let's say that a consumer should not have to travel more than 10 miles to the nearest station. That would mean putting one H<sub>2</sub> station about every 20 miles along each of the interstate highways.

3. Replacing the government's fleet of vehicles with hydrogen vehicles will attract investors by guaranteeing a market.

Edwin Black, (Journalist), INTERNAL COMBUSTION: HOW CORPORATIONS AND GOVERNMENTS ADDICTED THE WORLD TO OIL AND DERAILED THE ALTERNATIVES, 06, 318.

Government purchases alone could spur the rapid adoption of any category of alternative fuel vehicle—hydrogen or otherwise.

## CASE ANALYSIS

This is a needs case. It is a needs case because it is divided into contentions, and each contention defends a different stock issue.

Contention “I” defends the significance of the case because it discusses the problems (or “harms”) created by present policies.

Contention “II” defends the inherency of the case because it discusses the defects in present policies that cause the problems (or “harms”).

Contention “III” defends the solvency of the case because it shows how the plan will overcome the defects in the present system and reduce the problems identified in Contention “I.”

**ENERGY RESEARCH AND DEVELOPMENT: GUARANTEEING AMERICA'S PROSPERITY**

The thesis of this case is that the United States energy research and development policy undermines the development of viable alternative energy technologies which are destined to be the major sources of world energy in the future. The United States spends too little on alternative energy research, while spending more than is necessary on fossil fuels and nuclear energy. In addition, alternative energy development is often channeled through large companies and utilities which oppose breakthroughs in alternative energy technologies. This is a dangerous path because other nations are seriously pursuing alternative energy research making them energy leaders in the future. Control of superior energy technologies will provide enormous economic benefits on those nations. The United States currently has the greatest scientific base for innovation, but it has not used it in the alternative energy field. The plan mandates that the United States change its energy research and development priorities with a focus on alternative energy.

Plan: 1. The United States federal government will redirect the Department of Energy (DOE) research and development efforts toward an emphasis on alternative energy technologies which are derived from renewable resources. 2. For 10 years DOE funding for alternative energy technologies will be guaranteed not to fall below the percentage of the federal budget allocated to them during the Carter administration. 3. A minimum of two-thirds of DOE research and development funding will be directed toward alternative energy technologies which use renewable energy resources.

**CONTENTIONS:**

- I. UNITED STATES ENERGY RESEARCH AND DEVELOPMENT POLICY THREATENS AMERICA'S FUTURE.
  - A. ENERGY TECHNOLOGY IS CENTRAL TO NATIONAL PROSPERITY AND SURVIVAL.
  - B. UNITED STATES ENERGY RESEARCH AND DEVELOPMENT POLICY IGNORES AMERICA'S FUTURE ENERGY NEEDS.
    1. United States energy research and development has been massively cut.
    2. Renewable energy technology will dominate the world's energy future.
  - C. THE UNITED STATES LAGS BEHIND OTHER NATIONS IN RESEARCH AND DEVELOPMENT OF ALTERNATIVE ENERGY TECHNOLOGIES.
    1. The United States lags behind Europe and Japan in research and development of renewable energy technology.
    2. The United States lags behind the European Union in the development of wind power.
    3. The United States lags behind Germany and Japan in the development of solar power.
    4. The United States lags behind China in the development of hydrogen fuel cell automobiles.
  - D. LACK OF TECHNOLOGICAL INNOVATION IN ALTERNATIVE ENERGY TECHNOLOGIES UNDERMINES UNITED STATES FUTURE PROSPERITY.
- II. PRESENT UNITED STATES RESEARCH AND DEVELOPMENT POLICY PRECLUDES ITS LEADERSHIP IN RESEARCHING AND DEVELOPING THE FUELS OF THE FUTURE.
  - A. THE DEPARTMENT OF ENERGY VIRTUALLY IGNORES RESEARCH AND DEVELOPMENT OF ALTERNATIVE ENERGY TECHNOLOGIES.
  - B. UNITED STATES PRIVATE ENERGY COMPANIES BLOCK EFFORTS SEEKING TECHNOLOGICAL BREAKTHROUGHS IN ALTERNATIVE ENERGY TECHNOLOGY.
- III. SIGNIFICANTLY INCREASING GOVERNMENT SUPPORT FOR RESEARCH AND DEVELOPMENT OF ALTERNATIVE ENERGY RESOURCES WILL GUARANTEE UNITED STATES LEADERSHIP IN ALTERNATIVE ENERGY TECHNOLOGIES.
  - A. UNITED STATES SCIENTIFIC RESOURCES FOR TECHNOLOGICAL INNOVATION ARE UNSURPASSED IN THE WORLD.
  - B. DIRECTING INCREASED RESOURCES TO RESEARCH AND DEVELOPMENT OF ALTERNATIVE ENERGY TECHNOLOGY WILL SPUR THE INNOVATIONS NECESSARY TO GUARANTEE AMERICAN LEADERSHIP IN ENERGY.

**SUPERIOR PLAN****1. THE PLAN'S MANDATES OVERCOME THE DEFECTS IN THE PRESENT SYSTEM.**

The affirmative plan should always strive to correct whatever is wrong with the status quo. In this case, the inherency contention (Contention II) shows that current energy research and development projects de-emphasize renewable energy projects because of the influence of coal and oil lobbies. The plan overcomes this defect by requiring that 2/3 of the U.S. budget for energy research and development be spent on renewable energy projects.

**2. THE PLAN'S MANDATES ACCOMPLISH WHAT THE SOLVENCY EVIDENCE RECOMMENDS.**

The superior plan not only mandates what is necessary to correct present system defects cited in the case, but also implements whatever the affirmative solvency evidence says is necessary to solve the problem. Here, the evidence in the solvency contention (Contention 3) says that the expansion of research spending for renewable energy projects is essential to restoring U.S. leadership in the development of alternative energy projects.

**3. THE PLAN LACKS TOPICALITY PROBLEMS.**

The plan, on its face, appears to satisfy every requirement of the resolution, thereby making negative topicality arguments less likely and successful. The plan squarely accepts the responsibility to substantially increase United States alternative energy in the United States.

**4. THE PLAN ANTICIPATES POSSIBLE NEGATIVE ATTACKS.**

One argument a negative debater could make is that requiring 2/3 of the U.S. energy research and development projects be spent for renewable energy projects might be circumvented by reducing the overall energy research budget. The plan protects against such an attempt at circumvention by establishing a benchmark to the Carter administration spending level.

**SOLAR SATELLITES: ENERGY FROM THE FINAL FRONTIER**

The thesis of this case is that solar satellites will eliminate the world's environmental problems and guarantee resources for sustainable and prosperous development. Federal action is required because the government has no solar satellite research and development program. Solar satellites provide a continuous flow of energy. Unlike solar collectors on earth, they receive continual sunlight unencumbered by clouds or nightfall. The potential of solar collectors in space is sufficient to provide all of the world's energy needs in an efficient and inexpensive way. Energy is beamed down to Earth by microwaves to power stations which use electricity to create hydrogen by running an electrical current through water. Such a power source is the world's only answer for the future because the demand for energy is increasing while the ability to use traditional energy sources are limited both in amount and by the undesirable environmental effects they produce.

Plan: The United States federal government will stop issuing licenses for new nuclear power plants and make the development of solar satellites a national priority.

**CONTENTIONS:**

- I. ADEQUATE ENERGY SUPPLY IS ESSENTIAL FOR INTERNATIONAL PEACE AND PROSPERITY.
  - A. PLENTIFUL, CHEAP ENERGY IS ESSENTIAL FOR WORLD PROSPERITY.
  - B. COMPETITION FOR SCARCE ENERGY SUPPLIES THREATENS INTERNATIONAL PEACE AND STABILITY.
- II. SOLAR SATELLITES OVERCOME THE ENVIRONMENTAL BARRIERS TO PRODUCING AN ADEQUATE ENERGY SUPPLY.
  - A. THE THREAT OF ENVIRONMENTAL CATASTROPHE BLOCKS THE MASSIVE EXPANSION OF ENERGY SUPPLY FROM CONVENTIONAL ENERGY SOURCES.
    1. Massive increases in fossil fuels threaten environmental catastrophe from global warming.
    2. Massive increases in nuclear power threaten environmental catastrophe from nuclear waste.
  - B. INCREASING GOVERNMENT INCENTIVES TO BUILD SOLAR SATELLITES PROVIDES THE WORLD WITH A LIMITLESS SUPPLY OF CHEAP ENERGY.
    1. A government program to develop solar satellites will be successful.
    2. Solar satellites will provide limitless supplies of cheap electricity.
    3. Access to limitless supplies of cheap electricity will provide a limitless supply of hydrogen fuel for transportation.
- C. DERIVING ENERGY FROM SOLAR SATELLITES POSES NO THREAT TO THE WORLD'S ENVIRONMENT.

## INFERIOR PLAN

### 1. THE PLAN IS NOT WELL-CONCEIVED, FAILING TO OVERCOME DEFECTS IN THE PRESENT SYSTEM.

The case claims that the expansion of fossil fuel use and nuclear power threaten the environment. The plan blocks the expansion of nuclear power but has no similar provision for fossil fuel use. Furthermore, the space-based solar satellite system offers a potential long-term solution to an immediate problem.

### 2. THE PLAN WORDING IS VAGUE.

The plan text says that the U.S. will make space solar power a “national priority.” This could mean something as trivial as a presidential pronouncement or a commitment to more research spending. The plan fails to specify any levels of spending or any actual construction of solar panels for deployment into space.

### 3. THE PLAN HAS TOPICALITY PROBLEMS.

The plan contains a provision banning the expansion of nuclear power. The resolution does not authorize a prohibition on existing energy sources; it simply calls for incentives for the development of alternatives.

**METHANOL: USING CO2 WISELY**

The thesis of this case is that methanol is the most desirable alternative to oil as a transportation fuel. The federal government is currently committed to developing corn-based ethanol as a near-term alternative to oil and hydrogen as a long-term alternative. The case argues that methanol is a better choice for both the short and long term. Ethanol is derived from corn, which puts a strain on food prices. Hydrogen is inherently difficult to store, transport, and use, and there is little likelihood that it is going to change even in the long term. Methanol production provides the additional advantage of offering a superior way of removing CO<sub>2</sub> from the atmosphere. One innovative way to produce methanol uses carbon dioxide as a feedstock. Currently the federal government is committed to a strategy of capturing and sequestering carbon dioxide. The case argues that that captured CO<sub>2</sub> is better used as a feedstock for methanol than being sequestered underground. Sequestration is both dangerous and counterproductive. This is true because there is no way to prevent leaks of carbon dioxide from the underground storage areas in which they are sequestered. The leaks can be large and immediate, or small and gradual. The large, immediate leaks are deadly to the population exposed to them. With the thousands of sequestration sites required, millions of Americans would be threatened with exposure to deadly releases of carbon dioxide. Gradually leaks of sequestered carbon dioxide into the atmosphere make sequestration counterproductive to its goal of controlling global warming.

Plan: 1. The United States federal government will shift all financial incentives for fossil fuel intensive corn-based ethanol to methanol production and distribution. 2. The United States federal government will implement the central feature of *The Methanol Economy* as proposed by Nobel prize-winning chemist George Olah: Rather than sequestering captured CO<sub>2</sub>, this CO<sub>2</sub> will be used as a feedstock for producing methanol. 3. The plan will be funded by shifting federal government financial incentives for fossil fuel intensive corn-based ethanol to methanol production and distribution.

**CONTENTIONS:**

- I. USING CO<sub>2</sub> AS A FEEDSTOCK FOR METHANOL PRODUCTION IS A SUPERIOR WAY TO COMBAT GLOBAL WARMING.
  - A. THE PRESENT SYSTEM IS COMMITTED TO THE CAPTURE AND SEQUESTRATION OF CO<sub>2</sub> TO COMBAT GLOBAL WARMING.
  - B. SEQUESTRATION OF CO<sub>2</sub> IS BOTH DANGEROUS AND COUNTERPRODUCTIVE
    1. There is no way to ensure the permanent sequestration of CO<sub>2</sub>.
    2. Release of sequestered CO<sub>2</sub> endangers millions of people.
    3. Release of sequestered CO<sub>2</sub> is counterproductive to combating global warming.
  - C. USING CO<sub>2</sub> AS A FEEDSTOCK FOR METHANOL PRODUCTION IS A SUPERIOR WAY TO COMBAT GLOBAL WARMING.
- II. METHANOL IS A SUPERIOR SHORT-TERM ALTERNATIVE TO REDUCE RELIANCE ON OIL AS A FUEL FOR TRANSPORTATION.
  - A. THE PRESENT SYSTEM IS COMMITTED TO ETHANOL AS THE SHORT-TERM ALTERNATIVE TO OIL AS A FUEL FOR TRANSPORTATION.
  - B. ETHANOL IS AN INHERENTLY INFERIOR ALTERNATIVE TO OIL AS A FUEL FOR TRANSPORTATION.
    1. Production of ethanol results in dramatic food price increases.
    2. Increasing the price of food risks hunger and starvation among the world's poor.
  - C. METHANOL IS A SUPERIOR SHORT-TERM ALTERNATIVE TO THE USE OF OIL AS A FUEL FOR TRANSPORTATION.
- III. METHANOL IS A SUPERIOR LONG-TERM ALTERNATIVE TO HYDROGEN AS A TRANSPORTATION FUEL.
  - A. THE PRESENT SYSTEM IS COMMITTED TO HYDROGEN AS A LONG-TERM SUBSTITUTE FOR OIL.
  - B. HYDROGEN HAS INHERENT DISADVANTAGES AS A LONG-TERM ALTERNATIVE TO OIL AS A TRANSPORTATION FUEL.
  - C. METHANOL IS A SUPERIOR LONG-TERM ALTERNATIVE TO OIL AS A TRANSPORTATION FUEL.

## SUPERIOR PLAN

### 1. THE PLAN DOES PRECISELY WHAT IS CALLED FOR BY THE AFFIRMATIVE EVIDENCE.

Like the first plan discussed, this plan mandates precisely what the affirmative evidence suggests is necessary to overcome defects in the present system and solve the problems outlined in the affirmative case. This case is based on the recommendations of Nobel Prize winning chemist, George Olah. In Olah's book, *The Methanol Economy*, he proposes exactly what the plan does: (1) Using captured carbon dioxide to produce methanol rather than sequestering it in the ground, and (2) Using methanol rather than ethanol or hydrogen as America's future transportation fuel.

### 2. THE PLAN IS SIMPLE AND CONCISE.

Too often, affirmative debaters make the mistake of drafting complicated plans with numerous provisions to try to overcome multiple negative arguments. In the process, they often become vulnerable to disadvantages to unnecessary plan provisions they did not anticipate. The best plans are usually the most simple, doing only what is necessary to solve the problem described by the case.

**HYDROGEN: WITHDRAWAL FROM AMERICA'S OIL ADDICTION**

The thesis of this case is that United States dependence on foreign oil threatens the American economy. Much of our imported oil comes from parts of the world which are unstable. Because there is little excess capacity in the oil production industry, shutdowns and production may result in supply shocks which could have devastating effects on the economy. Furthermore, the case argues that because the world is near its peak oil production capacity — after which there is a decreasing supply of oil to meet increasing demand — the United States would be wise to begin now to prepare an alternative to oil. The case argues that since most imported oil in the United States is used for transportation, hydrogen could be easily substituted for oil. Hydrogen has been used as a fuel for transportation. Oil companies and automakers resist efforts to move to hydrogen. Thus, the plan provides strong incentives. The plan produces an abundant supply of hydrogen.

Plan: The United States federal government will construct solar power plants designed to produce hydrogen using the process of electrolysis.

**CONTENTIONS:****I. DEPENDENCE ON OIL RISKS THE COLLAPSE OF THE AMERICAN ECONOMY.**

A. THE UNITED STATES ECONOMY IS DEPENDENT ON IMPORTED OIL.

B. INSTABILITY IN OIL PRODUCING NATIONS RISKS ECONOMIC DEVASTATION FROM SUPPLY SHOCKS.

C. THE WORLDWIDE SUPPLY OF OIL IS INADEQUATE TO MEET FUTURE DEMAND.

**II. HYDROGEN IS CAPABLE OF ENDING AMERICA'S DEPENDENCE ON OIL.**

A. MOST OIL IS USED IN THE TRANSPORTATION SECTOR OF THE ECONOMY.

B. HYDROGEN IS WELL SUITED TO MEET THE DEMANDS OF THE TRANSPORTATION SECTOR.

**III. A SYSTEM OF GOVERNMENT INCENTIVES WILL ELIMINATE THE ECONOMIC DEPENDENCE ON OIL.**

A. THE PRESENT SYSTEM IS INCAPABLE OF MOVING FROM OIL TO HYDROGEN.

1. The energy industry will not voluntarily move to the production of hydrogen vehicles.

2. The automobile industry will not voluntarily move to the production of hydrogen vehicles.

3. Investors will not move to hydrogen in the absence of a viable market.

B. A SYSTEM OF GOVERNMENT INCENTIVES WILL ENSURE A TRANSITION FROM OIL TO HYDROGEN IN THE TRANSPORTATION SECTOR OF THE ECONOMY.

1. A government mandate will ensure the production of hydrogen vehicles.

2. A government mandate will ensure the development of an infrastructure to support hydrogen vehicles.

3. Replacing the government's fleet of vehicles with hydrogen vehicles will attract investors by guaranteeing a market.

## INFERIOR PLAN

### 1. THE PLAN FAILS TO DO WHAT THE SOLVENCY EVIDENCE CALLS FOR.

The solvency evidence says that moving to a hydrogen economy will be facilitated by three steps: (1) producing vehicles capable of burning hydrogen fuel; (2) building an infrastructure of hydrogen refueling stations; and (3) having the federal government kick-start the hydrogen economy by purchasing hydrogen cars in its fleet. The plan fails to do any of these three things. The plan mandate results only in the production of hydrogen fuel.

### 2. THE PLAN IS EASILY CIRCUMVENTED.

The negative team will likely point out that the same inherency mechanisms cited in the case will prevent the solvency of the affirmative plan. The case says that the auto and energy industries resist efforts to switch to hydrogen fuels. This resistance could continue to prevent the use of hydrogen as a transportation fuel even after the plan is adopted.

### 3. THE PLAN HAS TOPICALITY PROBLEMS.

Note that the plan has the federal government actually producing hydrogen fuel. The resolution calls for “incentives” for the development of alternative energy, implying that the energy will be produced by businesses and/or private individuals.

## NUCLEAR POWER

**This case argues for the United States to promote renewable energy sources as an alternative to the current commitment to the expansion of nuclear power.**

1. Jan Beranek, (Researcher, Greenpeace International), NUCLEAR POWER IS NOT THE ANSWER TO CLIMATE CHANGE, 06, 3. The list of non-nuclear countries that have announced plans to gain access to nuclear technology and build nuclear reactors is long and disturbing. In spite of extensive efforts, treaties and political mechanisms to try and safeguard nuclear materials and technology, it is an impossible task. Mohamed El Baradei, head of the International Atomic Energy Agency, responsible for the safeguards and security regime said in 2005: "Export controls have failed, allowing a black market for nuclear material to develop, a market that is also available to terrorist groups". Civilian reactors and nuclear waste transports are also potential targets for terrorist groups.
2. James Taylor, (Managing Editor, Environment & Climate News), CONSERVING THE ENVIRONMENT, 06, 193. After cutting through the hidden taxpayer subsidies and market constraints that frequently mask the true costs of electrical power generation, the Academy concluded, "Our cheapest electricity will come from gas turbines and nuclear stations, costing just 2.3 p/kWh (British pence per kilowatt hour), compared with 3.7 p/kWh for onshore wind and 5.5 p/kWh for offshore wind farms." "This may sound surprising, especially as we have included the cost of decommissioning in our assessment of the nuclear generation costs," said Academy Vice President Philip Ruffles, who served as chairperson for the study. "But modern nuclear stations are far simpler and more streamlined than the old generation and far cheaper to build and run."
3. Robert Wiliscroft, (Former Staff, National Oceanic & Atmospheric Administration), THE CHICKEN LITTLE AGENDA: DEBUNKING "EXPERTS" LIES, 06, 65-66. Small amounts of radiation damage are easily repaired by the body. Even small dosages over an extended period have no long-term effect. Similarly, a larger dose taken all at once may cause temporary sickness, although its long-term effect is negligible.
4. William Sweet, (Sr. News Editor, IEEE Spectrum, The Flagship Publication of the Institute of Electrical and Electronic Engineers), KICKING THE CARBON HABIT: GLOBAL WARMING AND THE CASE FOR RENEWABLE AND NUCLEAR ENERGY, 06, 191. But recycling does not really solve the disposal problem: it merely reduces the volume of waste that has to be permanently stored (and that volume is relatively small to begin with), while in some ways complicating the whole situation by creating more streams of different radioactive materials that all have to be specially handled. As for the stretching of nuclear fuels, that benefit comes at the cost of having to widely transport fuels consisting of pure fissile material that could be ripe targets for terrorists seeking to build bombs.
5. William Sweet, (Sr. News Editor, IEEE Spectrum, The Flagship Publication of the Institute of Electrical and Electronic Engineers), KICKING THE CARBON HABIT: GLOBAL WARMING AND THE CASE FOR RENEWABLE AND NUCLEAR ENERGY, 06, 187. Studies, carefully done, generally show that nuclear energy is markedly more expensive than the major alternatives at prevailing prices and reasonably anticipated interest rates." The most recent, issued toward the end of 2004 by economists associated with the University of Chicago, found that the "levelized" cost of new nuclear power—that is, all capital and operating costs, discounted to present value at a range of interest rates—is between \$47 and \$71 per megawatt-hour, which is equivalent to 4.7 to 7.1 cents per kilowatt-hour. Electricity from coal-fired plants, by comparison, would cost \$33 to \$41; for natural gas, the range would be \$35 to \$45.
6. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 129-130. All the scientists I talked to, whatever they thought about the concept of the threshold dose versus LNT, were in general agreement that humans are less susceptible to radiation effects than had been previously assumed, that radiation is a weak carcinogen, and that once radiation hazards have been understood and safety procedures instituted, workers do not die or fall ill. I found the scientists who spend their days considering the best way to understand excess radiation exposure and to protect people from it to be careful, compassionate, and dedicated; they have been relieved to discover that the outcomes of radiological catastrophes have demonstrated much better survival rates than early calculations had predicted.
7. Helen Caldicott, (Founder, Physicians for Social Responsibility), NUCLEAR POWER IS NOT THE ANSWER, 06, 128-129. The nuclear industry in its zeal to develop these exciting concepts has been arguing that Generation IV reactors will be so safe that emergency sirens and public protection measures will be unnecessary and should be eliminated because the emergency planning zone will shrink from 10 miles to a 1/4 mile, thus eliminating the need for sirens. At the same time, the industry has sought and gained federal liability protection under the amended Price Anderson Act to cover these ostensibly fool-proof new reactors.
8. Paul Brown, (Environment Correspondent, The Guardian), GLOBAL WARNING: THE LAST CHANCE FOR CHANGE, 07, 280. But let us compare building nuclear power plants with renewables. For \$4 billion hundreds of small-scale renewable alternatives could be up and running, some of them within months. Solar panels, small-scale hydropower, and wind turbines on homes, offices, and factories would give an instant return in terms of electricity and capital employed to the places where it was invested. The renewable options also avoid the problem of having nuclear plants located far from population centers because of safety reasons, which results in about 10% of the nuclear power generated is to be lost in long transmission lines before it reaches the customer. This is another cost the nuclear industry fails to take into account or at least to admit to the public. The industry, faced with those arguments, says that countries can build both renewables and nuclear, which ignores the point that even in the richest countries there is not enough capital available for everything.
9. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 218-219. The nuclear industry has fewer worker accidents than other utilities. According to statistics from the U.S. Bureau of Labor, it's safer to work at a nuclear power plant than in the manufacturing sector—or even in a real estate office or a bank. Employees of nuclear plants are healthier and less likely to die prematurely of cancer and other diseases than the rest of the general population. In 2004, the Mailman School of Public Health at Columbia University issued the results of a study it had conducted on fifty-three thousand workers from fifteen American nuclear utilities for periods of up to eighteen years between 1979 and 1997. "Mortality rates of these workers showed that they were 60 percent lower than cause-specific U.S. mortality rates for a population similar in terms of gender, age and calendar year," the study concluded, supplying the reason for this rosy outcome—the healthy-worker effect: "In order to work in the nuclear industry, workers have to be healthy and are usually required to have annual medical check-ups."
10. John Ritch, (Dir., World Nuclear Association), CONSERVING THE ENVIRONMENT, 06, 96. In truth, waste is nuclear power's greatest comparative asset. Unlike carbon emissions, the volume is minimal and can be reliably contained and managed. For a half-century, the civil nuclear industry has safely stored and transported all end products from electricity generation. For long-term storage, a scientific consensus favors deep geological repositories. Governments worldwide must follow the lead of Finland, Sweden, the United States and France by moving to construct such sites.
11. Phillip Schewe, (Chief Science Writer, American Institute of Physics), THE GRID: A JOURNEY THROUGH THE HEART OF OUR ELECTRIFIED WORLD, 07, 203-204. One of the fastest-growing renewable resources is wind power. In the United States acceptance of wind power has been slower than in Europe but is now catching on quickly.
12. Judy Pasternak, (Staff), LOS ANGELES TIMES, Dec. 30, 07, A20. This fiscal year alone, more than \$1 billion in federal research and development spending was devoted to nuclear-power research, far more than any other source of electricity. The new approach has borne fruit: This year, three applications for nuclear power plants landed at the federal Nuclear Regulatory Commission, and Keeley said his group expected at least 15 more proposals to be launched by the end of 2009.

13. Karen Povey, (Journalist), ENERGY ALTERNATIVES, 07, 83. Commercial nuclear power plants produce 3,000 tons (2.72 million kg) of high-level waste each year, most of which is maintained in temporary storage facilities at nuclear power plants across the country. As the waste piles up, the U.S. government continues to work on a solution for its permanent disposal. Since 1982 the Department of Energy has been developing a plan to bury the waste deep underground at the Yucca Mountain Repository in Nevada. Originally scheduled to open in 1998, the Yucca Mountain site has been plagued with problems, including resistance from Nevada officials and concerns about the possibility that waste will eventually leak from storage containers. Construction of the site has already cost \$9 billion. Robin Becker, executive director of the Alliance for Nuclear Responsibility, believes the investment in nuclear waste storage could be better spent on developing other energy sources. "

14. Harvey Blatt, (Geologist), ENERGY ALTERNATIVES, 06, 96. No one can guarantee that accidents caused by human error will not end in an American nuclear disaster. There have been a large number of serious nuclear calamities in recent years, the most newsworthy being the 1999 event at Tokiamura, Japan. Workers improperly handled uranium-235 and triggered a runaway chain reaction that burned uncontrolled for 20 hours. The International Atomic Energy Agency branded it the world's third worst nuclear accident behind the 1986 Chernobyl disaster and the 1979 event at Three Mile Island in Pennsylvania.

15. Helen Caldicott, (Founder, Physicians for Social Responsibility), NUCLEAR POWER IS NOT THE ANSWER, 06, 142. Many countries are angry about the paternalism and arrogance displayed over the years by the nuclear-haves. As the new president Mahmoud Ahmadinejad of Iran, which is now actively developing uranium enrichment facilities, said recently when referring to the United States, "Who do you think you are in the world to say you are suspicious of our nuclear activities? . . . What kind of right do you think you have to say Iran cannot have nuclear technology? It is you who must be held accountable." Hugo Chavez of Venezuela displayed similar feelings when he said recently, "It cannot be that some countries that have developed nuclear energy prohibit those of the third world from developing it. We are not the ones developing atomic bombs, it's others who do that."

16. Travis Bradford, (President, Prometheus Institute for Sustainable Development), SOLAR REVOLUTION: THE ECONOMIC TRANSFORMATION OF THE GLOBAL ENERGY INDUSTRY, 06, 18-19. Under current reasonable scenarios, the solar industry is expected to grow by 20 to 30 percent each year for the next forty years, which alone should be incentive to attract the world's best and brightest to the challenge.

17. Jim Wells, (Dir., Natural Resources & Environment, Government Accountability Office), DEPARTMENT OF ENERGY: KEY CHALLENGES REMAIN FOR DEVELOPING AND DEPLOYING ADVANCED ENERGY TECHNOLOGIES, Dec. 06, 17. DOE's solar R&D program is working to make solar energy technologies a more cost-competitive source of electricity. Specifically, DOE's extensive work has advanced solar technologies, improved efficiency and reliability, lowered costs, and resulted in more than 235 patents. While solar energy technologies have evolved and costs have decreased, DOE is focused on further reducing solar energy costs to compete in the residential, commercial, and industrial energy markets and for solar technology to penetrate the market sufficiently to create a sustainable solar industry. Currently, DOE's solar R&D program focuses on developing advanced photovoltaics, also called solar cells, that produce electricity directly from absorbed photons from sunlight; solar heating and lighting systems; and utility-size, solar-power plants.

18. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 122. The panel concluded that the greatest source of man-made exposure today still comes from medical radiation and it stressed that there's no clear evidence of radiological harm to people from higher-dose procedures such as CT scans.

19. William Sweet, (Sr. News Editor, IEEE Spectrum, The Flagship Publication of the Institute of Electrical and Electronic Engineers), KICKING THE CARBON HABIT: GLOBAL WARMING AND THE CASE FOR RENEWABLE AND NUCLEAR ENERGY, 06, 191. A 2005 report by the American Physical Society's public affairs panel concluded that "no foreseeable expansion of nuclear power in the United States" would require the country to drastically revise its plans for nuclear waste disposal. "Even though Yucca Mountain may be delayed considerably, interim storage of spent fuel in dry casks, either at current reactor sites, or at a few regional facilities, or at a single national facility, is safe and affordable for a period of at least 50 years.

20. Sven Teske, (Analyst, Greenpeace International), ENERGY [R]EVOLUTION, Jan. 07, 14. Uranium nuclei are split in a nuclear reactor, releasing energy which heats up water. The compressed steam is converted in a turbine generator into electricity. This process creates a radioactive 'cocktail' which involves more than 100 products. One of these is the highly toxic and long-lasting plutonium. Radioactive material can enter the environment through accidents at nuclear power plants. The worst accident to date happened at Chernobyl in the then Soviet Union in 1986. A nuclear reactor generates enough plutonium every year for the production of as many as 39 nuclear weapons.

21. David Applegate, (Sr. Adviser, U.S. Geological Survey), UNCERTAINTY UNDERGROUND: YUCCA MOUNTAIN AND THE NATION'S HIGH LEVEL NUCLEAR WASTE, 06, 108. For much of the Yucca Mountain Project's history, the DOE assumed that water percolates down slowly through interconnected pore space between mineral grains in the tuffs. Such flow would take thousands to tens of thousands of years to reach the repository. That assumption was challenged, however, after water samples from the newly constructed Exploratory Studies Facility in 1996 contained traces of radionuclides produced by atmospheric nuclear tests in the 1950s. This bomb-pulse signature indicated that at least some water was flowing through fractures and faults to reach the repository level from the surface in less than fifty years.

22. James Lake, (President, American Nuclear Society), OIL AND THE FUTURE OF ENERGY, 07, 84. A nuclear power plant is not an easy target for an airliner flying at high speed, because an off-center hit on a domed, cylindrical containment building would not substantially affect the building structure. Located at or below grade, the reactor core itself is typically less than 10 feet in diameter and 12 feet high. It is enclosed in a heavy steel vessel surrounded by a concrete citadel. Reactor containment designs differ in their details, but in all cases they are meant to survive the worst of nature's forces (including earthquakes, tornadoes and hurricanes). Despite not being designed to resist acts of war, containment enclosures can withstand crashes of small aircraft.

23. George Olah, (Prof., Hydrocarbon Institute at the University of Southern California & Nobel Prize Winner in Chemistry), BEYOND OIL AND GAS: THE METHANOL ECONOMY, 06, 122. Even including construction capital as well as the decommission cost of old power plants and the treatment and storage of nuclear waste, the cost of electricity from nuclear origin is estimated in France to be less than €0.03 kWh. This low generation cost, due in large part to the homogeneous and standardized nature of the French reactors, with all 59 reactors based on a PWR design, allows the country to be the largest electricity exporter in the World. Often-cited arguments against nuclear energy based on high costs have thus become baseless.

24. Nuclear Policy Research Institute, GLOBAL WARMING: OPPOSING VIEWPOINTS, 06, 150. The economics of nuclear power remain so unattractive that without additional federal subsidies, no new plants will be built. Despite 50 years and more than \$150 billion in federal support, the nuclear power industry is still seemingly incapable of building a new plant on its own. In fact, the U.S. DOE's [Department of Energy's] Energy Information Administration stated in its 2005 Annual Energy Outlook that "new [nuclear] plants are not expected to be economical."

25. Helen Caldicott, (Founder, Physicians for Social Responsibility), NUCLEAR POWER IS NOT THE ANSWER, 06, 161. The good news is that there is no need to build new nuclear power plants to provide for the projected energy needs of the future. Indeed, it would be possible, using other forms of electricity generation, to close down most of the existing nuclear reactors within a decade. There is enough wind between the Rocky Mountains and the Mississippi River alone to supply three times the amount of electricity that America needs.

26. John McCain, (U.S. Senator, Arizona), SENATORS' PERSPECTIVES ON GLOBAL WARMING, Senate Hearing, Jan. 30, 07, 85. Finally, I, too recognize and share the concerns of what to do with nuclear waste. I am confident that given political will and time for technology development and deployment, we can solve that problem. It is important to recognize the responsible waste management that occurs in the nuclear industry today. Yet, while there is a great concern over comparatively small quantities of responsibly managed nuclear waste, there is an even more dangerous event occurring under our noses. And that is 900 tons of carbon dioxide per second being dumped in the atmosphere from fossil fuel use. Now that is an urgent waste problem that should be concerning us most.

27. Scott Heaberlin, (Nuclear Engineer), WORLD ENERGY CRISIS, 07, 61. The amount of waste produced in nuclear-generated electricity is vastly less than in fossil fuels.

28. Allison MacFarlane, (Research Associate, MIT Program in Science, Technology & Society), UNCERTAINTY UNDERGROUND: YUCCA MOUNTAIN AND THE NATION'S HIGH LEVEL NUCLEAR WASTE, 06, 2. In 2000, there were approximately 228,300 metric tons of spent fuel in the world, projected to increase to 280,000 metric tons by 2005. Most of this fuel is still at the 236 nuclear power stations (which together have 433 reactors) where it was originally generated in thirty-six different countries.

29. Helen Caldicott, (Founder, Physicians for Social Responsibility), NUCLEAR POWER IS NOT THE ANSWER, 06, 60. Quite apart from these routine radioactive releases is the almighty problem of radioactive waste. Each regular 1,000 megawatt nuclear power plant generates 30 tons of extremely potent radioactive waste annually. And even though nuclear power has been operational for nearly fifty years, the nuclear industry has yet to determine how safely to dispose of this deadly material, which remains radioactive for tens of thousands of years. Most nuclear waste is confined in huge cooling pools, euphemistically called "swimming pools" at reactor sites, or in dry storage casks beside the reactor. But there are many other locations in the United States and other countries where huge quantities of reprocessed toxic material and other radioactive waste from nuclear power plants are left unconfined, leaching, leaking, and seeping through soils into aquifers, rivers, lakes, and seas, where it enters and concentrates in the food chains of plants, fish, animals, and humans.

30. Greg Pahl, (Founder, Vermont Biofuels Association), THE CITIZEN-POWERED ENERGY HANDBOOK: COMMUNITY SOLUTIONS TO A GLOBAL CRISIS, 07, 17. The nuclear industry has finally gotten what it has been waiting for all these years. This should come as no great surprise, since the industry helped to write the energy bill. But relying on nuclear energy to save us from the impending energy crunch is a devil's bargain if there ever was one. While we may keep the lights on for a while, we risk polluting the planet with life-threatening toxic wastes that may eventually escape into the surrounding environment and could haunt our descendants for centuries. And the specter of nuclear materials "escaping" into the hands of rogue nations or organizations is even worse.

31. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 227. The containment structures for power reactors, which are subject to both federal and international regulation, are among the most durable and impenetrable structures on the planet: they're constructed to withstand 200-mile-per-hour hurricanes, tornadoes, earthquakes, and floods, all of which can provide a more energetic impact than anything terrorists would have at their disposal apart from a hydrogen bomb. The NRC requires all plants to demonstrate that they can withstand flooding. When Hurricane Katrina devastated the Gulf Coast in 2005, in the nation's worst natural disaster, petrochemical facilities and chemical plants were breached, releasing toxic substances. Three nuclear plants in Mississippi and Louisiana—one near New Orleans—lay directly in the storm's path but remained intact and unharmed.

32. Jeff Eerkens, (Prof., Nuclear Engineering, U. Missouri), THE NUCLEAR IMPERATIVE: A CRITICAL LOOK AT THE APPROACHING ENERGY CRISIS, 06, 50. Anti-nuclear critics state that because of the 24,000 year half-life of plutonium present in trace amounts in the radiowaste, a 500,000 year biological hazard is created. This statement sounds ominous but lacks any real substance, when one considers the fact thousands of tons of biologically hazardous materials like cyanides, nitrosamines, mercury, arsenic trioxide, etc., etc. have been and will be on earth for ever since their lifetimes are infinite. Yet we manage to handle and live with such materials even without having them locked away in deep underground vaults.

33. Skip Bowman, (President, Nuclear Energy Institute), ENERGY ALTERNATIVES, 06, 46. U.S. nuclear plants—indeed, nuclear plants around the world—have an obvious value in meeting clean-air requirements and reducing emissions of greenhouse gases. To the extent we build emission-free generating capacity like new nuclear power plants to meet growing electricity demand, we reduce the clean-air compliance burden and costs that would otherwise fall on other types of generating capacity that do produce emissions. We create room underneath emissions caps for the industrial sector and for transportation, and to allow continued economic growth.

34. Helen Caldicott, (Founder, Physicians for Social Responsibility), NUCLEAR POWER IS NOT THE ANSWER, 06, 46-47. Some of the new isotopes emit alpha radiation, which is a particle composed of two protons and two neutrons shot out from an unstable atomic nucleus. The nuclear industry has said that alpha radiation is not dangerous because it doesn't travel very far and can be stopped by a piece of paper. Likewise it does not penetrate the layers of dead cells in the human skin or epidermis to damage living cells. However, if it enters the body through the gastrointestinal tract or is inhaled into the lung, it comes into direct contact with living cells and, as such, is extremely mutagenic. Other isotopes emit beta radiation, which is composed of an electron shot out from an unstable nucleus. Beta radiation travels farther than alpha because it is lighter. It too is very mutagenic and carcinogenic.

35. Jeff Eerkens, (Prof., Nuclear Engineering, U. Missouri), THE NUCLEAR IMPERATIVE: A CRITICAL LOOK AT THE APPROACHING ENERGY CRISIS, 06, 125. In a suicide mission, terrorists would probably detonate a bomb in the reactor control room, once inside. This would destroy all reactor controls, but as stated, the reactor shuts down automatically. It is almost impossible for bomb fragments to penetrate the 2-inch (5 cm) thick steel shell of a containment vessel. Even armor-piercing mortar shells would have difficulty puncturing it. Should it be breached, the negative pressure maintained in most containment vessels would inhibit outflow of radioactive core gases, and only permit inflow of air (or pure nitrogen). Unlike the Chernobyl reactor whose core was made of ignitable graphite and which had no containment vessel, core-burning fires cannot break out in a water-moderated reactor. The radioactive cloud produced at Chernobyl could never occur. In conclusion, a successful terrorist infiltration of a civilian nuclear power plant would at worst result in a TMI-like core melt-down, with reactor operations personnel most likely killed.

36. Jeff Eerkens, (Prof., Nuclear Engineering, U. Missouri), THE NUCLEAR IMPERATIVE: A CRITICAL LOOK AT THE APPROACHING ENERGY CRISIS, 06, 124. Military and professional nuclear engineers around the world have worked with nuclear materials for over sixty years and have long learned how best to safeguard these materials against unfriendly intervenors, including terrorists. Besides some of the precautions already discussed, many additional safeguards exist (some kept secret) which so far have successfully prevented any terrorist from capturing a nuclear device. Unless a rogue sovereign nation cooperates, clandestine capture of a functional nuclear weapon by terrorists is about as impossible as breaking into Fort Knox to steal gold. A much simpler (and more frightening) way for extremists to terrorize a civilian population is their use of chemical or biochemical agents. After the September 11, 2001 attacks on the New York World Trade Center, security has been considerably increased at power plants, water treatment facilities, chemical plants, oil refineries, and other vulnerable factories. Armed guards, monitors, and concrete barriers have been placed around most of them to protect against terrorist attacks.

37. Jonathan M. Harris, (Prof., Global Development And Environment Institute, Tufts U.), ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS: A CONTEMPORARY APPROACH, 06, 296. Recent analysis by the International Energy Agency (IEA, 2001) estimates the capital costs of a modern nuclear power plant at \$2,000 per kw, compared to \$1,200 per kw for coal and \$500 per kw for a combined-cycle gas plant. The IEA notes that "high capital cost is the single most important economic factor weakening the prospects for new nuclear power plants."

38. Travis Bradford, (President, Prometheus Institute for Sustainable Development), SOLAR REVOLUTION: THE ECONOMIC TRANSFORMATION OF THE GLOBAL ENERGY INDUSTRY, 06, 73-74. Currently, the fact that nuclear energy generates electricity without releasing meaningful quantities of greenhouse gases is being cited to justify further plant construction. Nuclear power also has certain long-term economic advantages over fossil fuels—its stable fuel costs and immunity from the supply disruptions that plague imported fossil fuels. The type of electricity that nuclear plants provide is known as base-load power—that is, the minimum amount of electricity that must be constantly fed into the grid to ensure uninterrupted electricity operation. The nature of the reactor process, which is expensive to start and stop, both allows and mandates that nuclear-power plants be kept in operation 90 percent or more of the time, thus reducing the cost of nuclear-generated electricity as fixed costs (primarily the cost of building the reactor and facilities) are spread over a larger volume of electricity produced. Nuclear-power plants provide some 24.2 percent of the electricity in OECD nations, despite comprising only 15.1 percent of the installed generation capacity, because they run such a large percentage of the time." Even with this capacity-utilization advantage, however, high construction costs and safety-procedure costs translate into an electricity cost of between six and seven cents per kWh under optimal conditions, which is consistently more expensive than the other fossil-fuel options for base-load power.' Other estimates range as high as ten to fourteen cents based on the technology most widely deployed since 1980.

39. Guy Dauncey, (Journalist), CONSERVING THE ENVIRONMENT, 06, 75. Nuclear power should also be avoided because of the risk of catastrophic accidents. The idea of a bunch of terrorists flying a jet into a nuclear power plant is not comforting; and no one knows how to deal with the radioactive wastes.
40. Dilip Hiro, (Journalist), BLOOD OF THE EARTH, 07, 262. The United States, with a much larger nuclear industry, faces a more intractable waste-disposal challenge. The problem of thirty-six thousand tonnes of radioactive waste, stored at the plants that produced it, remains unsolved.
41. James Lake, (President, American Nuclear Society), OIL AND THE FUTURE OF ENERGY, 07, 84. Nuclear power stations, however, are outfitted with multiple emergency cooling systems, as well as with emergency power supplies, should power be disabled. In the improbable event that all of these backup precautions were destroyed, the reactor core could overheat and melt. But even in this extreme case, which is similar to what occurred at Three Mile Island, the radioactive core materials would still be contained within the pressure vessel.
42. Paul Brown, (Environment Correspondent, The Guardian), GLOBAL WARNING: THE LAST CHANCE FOR CHANGE, 07, 276-277. But the argument that will, or should, kill the large-scale nuclear plan is that it is not economic. There are lots of other better and cheaper solutions. That does not mean that the economic argument is an easy one to make. The nuclear industry still suffers from what its detractors call "voodoo economics." The sums put forward by the industry certainly do not tell the whole story, and they do not add up. What is astonishing is that spurious figures are frequently believed by governments and journalists alike.
43. S. David Freeman, (Dir., Ford Foundation Study on Energy Policy), WINNING OUR ENERGY INDEPENDENCE, 07, 28. Subsidizing the risk inherent in nuclear power is only the first basic assist that the federal government gives the nuclear industry. Between 1948 and 1998, Congress approved \$66 billion on nuclear power research and development. The Energy Policy Act of 2005 approved over \$4 billion in tax breaks. These amounts dwarf the puny incentives for solar energy.
44. James Lovelock, (Visiting Fellow, Oxford University), REVENGE OF GAIA: EARTH'S CLIMATE CRISIS AND THE FATE OF HUMANITY, 06, 92. I have offered in public to accept all of the high-level waste produced in a year from a nuclear power station for deposit on my small plot of land; it would occupy a space about a cubic metre in size and fit safely in a concrete pit, and I would use the heat from its decaying radioactive elements to heat my home. It would be a waste not to use it. More important, it would be no danger to me, my family or the wildlife.
45. Paul Brown, (Environment Correspondent, The Guardian), GLOBAL WARNING: THE LAST CHANCE FOR CHANGE, 07, 276. Building large numbers of new nuclear power plants is seen by many as the solution to global warming. Indeed, the industry has long pushed the argument itself. It is, they say, the only large-scale power-producing technology that does not emit carbon dioxide.
46. Helen Caldicott, (Founder, Physicians for Social Responsibility), NUCLEAR POWER IS NOT THE ANSWER, 06, 64-65. Abnormal releases of small or large quantities of radiation at nuclear power plants occur not infrequently and are referred to by the nuclear industry as "incidents." These "incidents" occur because of human or mechanical error or because the operator at the reactor has purposefully decided to vent radioactive gases to get rid of them. Several incidents have had catastrophic ramifications. A meltdown occurred at the Three Mile Island reactor in the United States and a massive power excursion erupted at the Chernobyl nuclear power plant in Russia. These were both induced by human error and fallibility.
47. Travis Bradford, (President, Prometheus Institute for Sustainable Development), SOLAR REVOLUTION: THE ECONOMIC TRANSFORMATION OF THE GLOBAL ENERGY INDUSTRY, 06, 101. While total solar applications have collectively grown 29 percent per annum over the decade through 2005, the grid-connected segment has experienced a growth rate of over 50 percent per annum over that same period.
48. Madeleine Bordallo, (U.S. Rep., Guam), GONE WITH THE WIND: IMPACTS OF WIND TURBINES ON BIRDS AND BATS, House Hrg. Serial No. 110-22, House Comm. on Natural Resources, May 1, 07, 1-2. Congress has acted over the past 20 years to provide financial incentives to encourage the private sector development of wind energy, and the industry has responded. In 2002, wind power generating capacity jumped by 27 percent, and comparable growth is projected for 2007 and beyond.
49. Luther Carter, (Journalist), UNCERTAINTY UNDERGROUND: YUCCA MOUNTAIN AND THE NATION'S HIGH LEVEL NUCLEAR WASTE, 06, 386. Yucca Mountain offers major advantages over sites beneath the water table in that the repository, accessible by ramps from outside the mountain, would be relatively dry and amenable to monitoring and inspection for centuries. But oxygen is present and the mountain breathes. Hence, the unsaturated zone is an oxidizing environment where canisters and spent fuel may undergo rapid corrosion if they become wet or damp, as from high humidity or water dripping from the ceiling.
50. Paul Brown, (Environment Correspondent, The Guardian), GLOBAL WARNING: THE LAST CHANCE FOR CHANGE, 07, 280. One other point that has been largely ignored is that building new nuclear plants takes many years, usually more than a decade, from planning to producing the first electricity. In that time billions of dollars in capital are tied up as thousands of tons of concrete are poured and steel manufactured. This produces large quantities of carbon dioxide.
51. Robert Wiliscroft, (Former Staff, National Oceanic & Atmospheric Administration), THE CHICKEN LITTLE AGENDA: DEBUNKING "EXPERTS" LIES, 06, 65. We continuously experience a relatively constant level of background radiation. In the United States, radiation dosage is measured in rems, or more typically in millirems (one thousandth of a rem). A rem is a unit of ionizing radiation that produces the same damage to humans as one roentgen of high-voltage X-rays—the amount of X-rays that will produce one electrostatic charge of ionization. The typical annual background radiation dose for a human is 360 millirems, or about a third of a rem.
52. Commission on Sustainable Development, NUCLEAR POWER: UNSUSTAINABLE, UNECONOMIC, DIRTY AND DANGEROUS, May 4, 06, 10. Nuclear reactors in India, Pakistan, Israel, and DPRK have produced nuclear materials, which were used to make nuclear weapons. Countries pursuing research, production and the use of nuclear energy for 'peaceful purposes' are contributing to the proliferation of nuclear materials and technology, which can all too easily lead to the development of nuclear weapons. Declarations by the G-8 and others to restrict the spread of nuclear material were shown to be as meaningless as the United States granted nuclear technology to India just this year.
53. Joseph Romm, (Former U.S. Assistant Secretary of Energy), HELL AND HIGH WATER: GLOBAL WARMING: THE SOLUTION AND THE POLITICS, 07, 175. But nuclear power is hardly a fledgling technology that needs even more targeted support from the U.S. government. Nuclear already gets countless subsidies. For instance, the Price-Anderson Act limits liability in the event of a nuclear disaster. And the Energy Policy Act of 2005 gives the industry billions of dollars more in subsidies—even authorizing more than \$1 billion to build a nuclear plant solely for the purpose of making hydrogen, an especially pointless subsidy.
54. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 121-122. Activist groups declared that since any exposure to radiation was potentially damaging, nuclear power ought to be abolished. One spokesman for this faction is Arjun Makhijani, president of the Institute for Energy and Environmental Research and consultant to antinuclear-power organizations. He announced that the new BEIR report indicated that the risks of radiation exposure called for stricter regulations. On the other side, Paul Genoa of the Nuclear Energy Institute asserted that the report only confirmed that, as the industry has long known, the risks were very small and that current regulations were quite protective of public health and safety.
55. Robert Wiliscroft, (Former Staff, National Oceanic & Atmospheric Administration), THE CHICKEN LITTLE AGENDA: DEBUNKING "EXPERTS" LIES, 06, 63-64. The Chicken Littles have so dominated today's media that the very word "radiation" strikes fear into the heart of the ordinary person. Yet, as related earlier, we are inundated by radiation every moment of our existence. Have you ever heard that you can get cancer from using a cell phone? Have you heard that living near power transmission lines will make you sick? Relax on both counts. Cell phone radiation is in the 100-micron region, which is too long to affect your brain, and it has such a low energy level that, even if it could affect your brain cells, there isn't sufficient power to damage them. High-power transmission lines produce much larger energy levels, but their wavelength is about 2,500 miles in air, so you and your house are entirely invisible to the resulting radiation. Consequently, there is no possible danger from either source.

56. Stephen Leeb, (Economist), THE COMING ECONOMIC COLLAPSE, 06, 119. No matter how much money we put into solving the problem of nuclear waste, the laws of physics are inviolable. Nuclear waste gives off radiation as the nuclei of atoms break apart. The nucleus of an atom is held together by the strong nuclear force, so the radiation released when it breaks is more than a match for the electromagnetic force, which is a hundred times weaker. Since any container we can build is held together by the electromagnetic force, it is only a matter of time before the nuclear waste inside destroys the container and escapes.

57. Karen Charman, (Journalist), CLASHING VIEWS IN SCIENCE, TECHNOLOGY, AND SOCIETY, 08, 106. Nuclear power plants are incredibly complex systems that perform a relatively simple task: heating water to create steam that spins a turbine and generates electricity. Lochbaum explains that nuclear plant safety problems tend to follow a bathtub curve; the greatest number come at the beginning of a reactor's life, then after a few years when the plant is "broken in" and staff are familiar with its specific needs, problems drop and level off until the plant begins to age. Most of the current U.S. fleet is either in or entering its twilight years, and since the late 1990s the NRC has allowed reactors to increase the amount of electricity they generate by up to 20 percent, which exceeds what the plants were designed to handle. Such "power uprates" push greater volumes of cooling water through the plant, causing more wear and tear on pipes and other equipment. The agency has also granted 20-year license extensions to 39 reactors, and most of the rest are expected to apply before their initial 40-year licenses expire. At the same time, Lochbaum says, the NRC is cutting back on the amount and frequency of safety tests and inspections. Tests that were carried out quarterly are now performed annually, and once-annual tests are now done when reactors are shut down for refueling, about every two years.

58. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 196-197. A 1,000-megawatt coal plant also freely disperses about twenty-seven metric tons of radiological material a year, exposing people to much more low-level radiation than a nuclear plant would. But it is the nuclear industry that by regulation must track and isolate the smallest actual or estimated quantities of radioactive substances and foot the gigantic bill for doing so. Like mercury, radon rises invisibly from coal-fired plant smokestacks—scrubbers and precipitators can't catch these vapors—and eventually decays into daughters that can damage the pulmonary lining, especially in people who are also inhaling tobacco smoke and fine particulates. On average, every year fossil fuels expose the American population to about a hundred times more low-level radiation than nuclear plants do. If you live within fifty miles of a coal-fired plant, you're exposed to 0.03 millirem a year.

59. William Sweet, (Sr. News Editor, IEEE Spectrum, The Flagship Publication of the Institute of Electrical and Electronic Engineers), KICKING THE CARBON HABIT: GLOBAL WARMING AND THE CASE FOR RENEWABLE AND NUCLEAR ENERGY, 06, 190. A more worrisome possibility is an attack on the ponds adjacent to most U.S. plants, where spent nuclear fuel is stored pending agreement on a method and site for final, permanent disposal. "That waste is highly radioactive—much too toxic, in fact, to be stolen and used as a source for the explosive material in a true atomic bomb—so if a spent fuel pond were bombed with conventional explosives, the result could be a dirty bomb of the worst kind.

60. Nils Diaz, (Chair, Nuclear Regulatory Commission), WORLD ENERGY CRISIS, 07, 58. Nuclear power plants have been and are even more so now among the most well-protected elements of our national civilian infrastructure.

61. Travis Bradford, (President, Prometheus Institute for Sustainable Development), SOLAR REVOLUTION: THE ECONOMIC TRANSFORMATION OF THE GLOBAL ENERGY INDUSTRY, 06, 196. First, the ongoing shift toward solar energy will have much greater impact than its present market penetration indicates. Even if the solar industry experiences somewhat lower growth rates over the next decade than it has over the last decade, solar energy could still be accounting for half or more of all electric-generation capacity installed annually fifteen to twenty years from now—at dramatically lower cost to customers than they will be able to get from their local utility providers.

62. Sven Teske, (Analyst, Greenpeace International), ENERGY [R]EVOLUTION, Jan. 07, 15. Manufacturing a nuclear bomb requires fissile material -- either uranium-235 or plutonium-239. Most nuclear reactors use uranium as a fuel and produce plutonium during their operation. It is impossible to adequately protect a large reprocessing plant to prevent the diversion of plutonium to nuclear weapons. A small-scale plutonium separation plant can be built in four to six months, so any country with an ordinary reactor can produce nuclear weapons relatively quickly.

63. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 174. "It took me three years of tours and talks here before I realized I had to explain to visitors that power plants could not be exploded atomically," Pugmire, who was formerly a congressional aide, said. "This is very obvious to people in the nuclear field and almost unknown outside it.

64. Robert Wiliscroft, (Former Staff, National Oceanic & Atmospheric Administration), THE CHICKEN LITTLE AGENDA: DEBUNKING "EXPERTS" LIES, 06, 66-67. The bottom line is that "radiation" is not a bad word, and it certainly is not something we should fear. Gasoline is very "dangerous" when improperly used. It can explode; it can burn rapidly; it can cause horrific damage under certain conditions. Despite these negative potential problems, we use gasoline every day. All of us, including the Chicken Littles, ride around on a tank of this explosive substance and think nothing of it. We routinely refill our rolling containers without serious thought to the potential danger. We pipe natural gas to millions of homes across the country without serious thought to the fires and explosions that could result from improper usage of this substance. We routinely handle propane and butane, which have similar potential hazards. We store strong acids and alkalis in our homes without a second thought. We are willing to accept slight risk in exchange for great benefit. This should also be true for radiation. Most radiation is benign as we normally experience it. Of the radiation that is potentially dangerous, only a small fraction is associated with the generation of atomic power. The risk from this radiation is negligibly small. This remains true whether or not Greenpeace or Chicken Little agree, or even understand the problem.

65. Greg Pahl, (Founder, Vermont Biofuels Association), THE CITIZEN-POWERED ENERGY HANDBOOK: COMMUNITY SOLUTIONS TO A GLOBAL CRISIS, 07, 233. A March 2006 survey confirmed that there is a major surge in developing geothermal electrical power projects in the United States. Some forty-five projects are underway that could nearly double U.S. geothermal electrical-power output, according to the Geothermal Energy Association (GEA), a national industry trade group. The nation had a total of 2,828 megawatts of geothermal power capacity online in 2005.

66. Amory Lovins, (Journalist), WORLD ENERGY CRISIS, 07, 58. Each nuclear plant, through accident or malice, could release enough radioactivity to hazard a continent.

67. Jeff Eerkens, (Prof., Nuclear Engineering, U. Missouri), THE NUCLEAR IMPERATIVE: A CRITICAL LOOK AT THE APPROACHING ENERGY CRISIS, 06, 52. Concern has also been expressed about the possibility that terrorists might try to acquire radioactive material for use in a so-called 'dirty' but non-nuclear bomb. Any terrorist gang who would want to break into a radiowaste repository to steal canisters of radioactive waste for some evil purpose would have to bring a truck, winch, and special engagement equipment to retrieve any. Even if a gang was able to subdue the repository guards by guns or in a gunfight, they would mostly expose themselves to radiation and could do little harm to anyone else, should they succeed with such a heist. Damage from the explosion of a 'dirty' bomb comprises mostly mechanical blast effects. Radioactive materials are easily detected and a dirty bomb blast area is readily decontaminated with so-called 'rad-waste' solvents. Anyone not killed by the bomb's concussion but covered with radiodust can and should take a quick bath, shower, or swim to wash off radioactive particles. Any gamma radiation exposure from radioactive dust is evanescent and does not stick. If the terrorist's goals are to poison people, there are many poisonous chemicals available that would be more effective than radiowaste. In short, stealing radiowaste canisters is as pointless as recovering an old WW-II army tank from the bottom of the ocean for use in an armed robbery.

68. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 130. Rosalyn Yalow, a nuclear physicist who won a Nobel Prize for co-inventing the radioimmunoassay technique for analyzing blood and tissue chemistry, has said that there have been studies of populations living in areas with higher natural radiation, of radiation-exposed workers, of patients medically exposed, and of people accidentally exposed, and yet, "No reproducible evidence exists of harmful effects from increases in background radiation three to ten times the usual levels. There is no increase in leukemia or other cancers among American participants in nuclear testing, no increase in leukemia or thyroid cancer among medical patients receiving Iodine-131 for diagnosis or treatment of hyperthyroidism, and no increase in lung cancer among non-smokers exposed to increased radon in the home.

69. Helen Caldicott, (Founder, Physicians for Social Responsibility), NUCLEAR POWER IS NOT THE ANSWER, 06, 45-46. When the nuclear industry calculates "acceptable" radiation exposure for the public, they use a model of a standard, healthy 70 kilogram man. But the population is far from homogeneous. Old people, immuno-depressed patients, normal children, and some with specific, inherited diseases are many times more susceptible to the deleterious effects of radiation than normal adults. Overall, about forty-two people out of a hundred are expected to develop cancer in their lifetimes from all causes. Children born to parents who have been exposed to radiation have a higher-than-normal risk of developing cancer or leukemia.

70. Paul Brown, (Environment Correspondent, The Guardian), GLOBAL WARNING: THE LAST CHANCE FOR CHANGE, 07, 280. But let us examine the funding alternatives for nuclear power. Take the capital cost for one nuclear plant, say conservatively \$3.7 billion over 10 years, before one watt of electricity is produced. Experts have estimated that if the same sum were invested in energy-efficiency measures, particularly in the United States where so much energy is wasted, there would be no need for nuclear plants to be built at all.

KEY — NUCLEAR POWER

1. TERRORISTS TARGET NUCLEAR REACTORS

This is a affirmative card showing the significance of harm because terrorist access to nuclear reactors is an important risk factor involved in the use of nuclear power.

2. WIND POWER IS MORE EXPENSIVE THAN NUCLEAR POWER.

This is a negative card questioning the solvency of an affirmative plan seeking to replace nuclear power with renewable energy.

3. RADIATION FROM NUCLEAR POWER IS NOT HARMFUL.

This is a negative card questioning the significance of harm because low level radiation has negligible effects on human health.

4. RECYCLING DOES NOT SOLVE THE HARM FROM NUCLEAR WASTE.

This is an affirmative card establishing the significance of harm from reliance on nuclear power.

5. NUCLEAR POWER IS MORE EXPENSIVE THAN ALTERNATIVE ENERGY SOURCES.

This is an affirmative card establishing the significance of harm because nuclear power is more expensive than alternatives.

6. LOW-LEVEL RADIATION IS NOT HARMFUL TO HUMAN HEALTH.

This is a negative card questioning the significance of harm from exposure to low-level nuclear radiation.

7. THE FEDERAL GOVERNMENT FACILITATES NUCLEAR POWER BY PROVIDING LIABILITY INSURANCE.

This is an affirmative card establishing the inherency of the case by showing that the federal government assists the expansion of nuclear power.

8. RENEWABLE ENERGY SOURCES ARE SUPERIOR TO NUCLEAR POWER.

This is an affirmative card establishing the solvency of the case by showing that renewable energy sources are superior to nuclear power.

9. NUCLEAR POWER IS SAFE.

This is a negative card questioning the significance of harm because nuclear reactors have a good safety record.

10. SOLUTIONS ARE AVAILABLE FOR STORAGE OF NUCLEAR WASTE.

This is a negative card questioning the significance of harm because other countries have succeeded in solving the problem of nuclear waste disposal.

11. WIND POWER IS EXPANDING RAPIDLY IN THE UNITED STATES.

This is a negative card questioning the inherency of the case since renewable energy resources are already expanding in the present system.

12. NUCLEAR POWER RECEIVES THE GREATEST SHARE OF ENERGY RESEARCH SUPPORT DOLLARS.

This is an affirmative card establishing the inherency of the case since the federal government commits a disproportionate share of energy research dollars to nuclear power.

13. LONG TERM NUCLEAR WASTE DISPOSAL IS UNAVAILABLE.

This is an affirmative card establishing the significance of harm since there presently is no solution for the disposal of nuclear waste.

14. THE RISK OF A NUCLEAR ACCIDENT IS HIGH.

This is an affirmative card establishing the significance of harm since the possibility of human error makes a nuclear accident likely.

15. NUCLEAR REACTOR DEVELOPMENT MAKES NUCLEAR PROLIFERATION MORE LIKELY.

This is an affirmative card establishing the significance of harm since the U.S. pursuit of nuclear power makes Iranian nuclear development more likely.

16. SOLAR POWER IS EXPANDING RAPIDLY IN THE PRESENT SYSTEM.

This is a negative card questioning inherency since the present system is already seeing the rapid expansion of solar power.

17. THE FEDERAL GOVERNMENT CURRENTLY SUPPORTS THE DEVELOPMENT OF RENEWABLE ENERGY SOURCES.

This is a negative card questioning inherency since the present system already adequately supports research and development of renewable energy sources.

18. MOST LOW-LEVEL RADIATION COMES FROM SOURCES OTHER THAN NUCLEAR REACTORS.

This is a negative card questioning significance of harm since most low-level radiation comes from sources other than nuclear reactors.

19. NUCLEAR WASTE STORAGE IS NOT A SIGNIFICANT PROBLEM.

This is a negative card questioning significance of harm since short-term storage options for nuclear waste are available.

20. NUCLEAR REACTOR DEVELOPMENT THREATENS THE ENVIRONMENT.

This is an affirmative card establishing the significance of harm since nuclear reactors produce dangerous radioactive materials, including the materials necessary for nuclear weapons.

21. THE LONG-TERM WASTE STORAGE PLAN AT YUCCA MOUNTAIN IS FLAWED.

This is an affirmative card establishing the significance of harm since the federal government has selected a poor site for long term nuclear waste storage at Yucca Mountain, Nevada.

22. NUCLEAR REACTORS ARE NOT A PRIME TARGET FOR INTERNATIONAL TERRORISTS.

This is a negative card questioning the significance of harm since nuclear reactors are a difficult target for nuclear terrorists.

23. NUCLEAR POWER IS AN INEXPENSIVE SOURCE OF ELECTRICITY.

This is a negative card questioning the significance of harm since nuclear reactors provide an economical source of electricity.

24. WITHOUT FEDERAL INCENTIVES, NO NEW NUCLEAR FACILITIES WOULD BE BUILT.

This is an affirmative card establishing solvency since the termination of federal incentives for nuclear power would mean the end of new nuclear power plants.

25. DEVELOPMENT OF WIND POWER WOULD MORE THAN SUBSTITUTE FOR NUCLEAR POWER.

This is an affirmative card establishing solvency since wind power could more than make up for the electrical energy that would be lost without new nuclear power development.

26. SOLUTIONS ARE AVAILABLE FOR THE PROBLEM OF NUCLEAR WASTE.

This is a negative card questioning significance of harm since solutions are available to the problem of nuclear waste.

27. THE AMOUNT OF WASTE GENERATED FROM NUCLEAR POWER PLANTS IS EXAGGERATED.

This is a negative card questioning the significance of harm since other forms of energy produce more hazardous waste than does nuclear power.

28. NUCLEAR REACTORS GENERATE A LARGE AMOUNT OF HAZARDOUS NUCLEAR WASTE.

This is an affirmative card establishing the significance of harm since nuclear reactors produce large amounts of hazardous waste.

29. NUCLEAR REACTORS GENERATE A LARGE AMOUNT OF HAZARDOUS NUCLEAR WASTE.

This is an affirmative card establishing the significance of harm since nuclear reactors produce large amounts of hazardous waste.

30. NUCLEAR REACTOR DEVELOPMENT INCREASES THE RISK OF NUCLEAR PROLIFERATION.

This is an affirmative card establishing the significance of harm since promotion of nuclear power makes it more likely that nuclear materials will fall into the wrong hands.

31. NUCLEAR REACTORS ARE CONSTRUCTED SO AS TO BE SAFE IN THE EVENT OF AN ACCIDENT.

This is a negative card questioning the significance of harm since nuclear reactors have containment vessels designed to prevent harm from a nuclear accident.

32. THE RISK FROM NUCLEAR WASTE IS EXAGGERATED.

This is a negative card questioning the significance of harm since radioactive waste is no more hazardous than many other materials in industrial settings.

33. NUCLEAR POWER PROTECTS THE ENVIRONMENT.

This is a negative card questioning the significance of harm since nuclear power development prevents greenhouse gas emissions and avoids traditional air pollutants.

34. LOW-LEVEL RADIATION IS HARMFUL TO HUMAN HEALTH.

This is an affirmative card establishing the significance of harm since radiation from nuclear plants is mutagenic and carcinogenic.

35. EVEN IF TERRORISTS GOT INTO A NUCLEAR REACTOR, THERE WOULD NOT BE A SIGNIFICANT HARM.

This is a negative card questioning the significance of harm since even if terrorists entered a nuclear reactor, they could not cause a serious accident.

36. SAFEGUARDS PREVENT NUCLEAR TERRORISM.

This is a negative card questioning the significance of harm since many precautions are designed to prevent terrorist exploitation of nuclear reactor materials.

37. NUCLEAR REACTORS DO NOT PROVIDE AN ECONOMICAL SOURCE OF ELECTRICITY.

This is an affirmative card establishing the significance of harm since nuclear reactors do not provide an economically beneficial source of electricity.

38. NUCLEAR POWER OFFERS A COST-EFFECTIVE MEANS OF PRODUCING ELECTRICITY.

This is a negative card questioning the significance of harm since nuclear reactors provide a cost-effective means of electrical generation.

39. NUCLEAR POWER RISKS A CATASTROPHIC ACCIDENT.

This is an affirmative card establishing the significance of harm since nuclear power risks a major accident.

40. THERE IS NO SOLUTION TO THE PROBLEM OF NUCLEAR WASTE.

This is an affirmative card establishing the significance of harm since large amounts of nuclear waste are generated for which there is no permanent storage.

41. NUCLEAR REACTORS ARE SAFE.

This is a negative card questioning the significance of harm since nuclear reactors have multiple safety mechanisms.

42. NUCLEAR POWER IS NOT COST EFFECTIVE.

This is an affirmative card establishing the significance of harm since nuclear power is more expensive than alternative sources of energy.

43. THE FEDERAL GOVERNMENT HEAVILY SUBSIDIZES NUCLEAR POWER.

This is an affirmative card establishing inherency since the federal government provides much more funding for the development of nuclear power than for solar power.

44. THE RISKS INVOLVED IN NUCLEAR WASTE DISPOSAL ARE EXAGGERATED.

This is a negative card questioning the significance of harm since the amount and toxicity of nuclear waste is exaggerated.

45. NUCLEAR POWER OFFERS A SOLUTION TO GLOBAL WARMING.

This is a negative card questioning the significance of harm since nuclear power offers a solution to global warming.

46. THE RISK OF NUCLEAR ACCIDENTS IS HIGH.

This is an affirmative card establishing the significance of harm since nuclear reactors are accident prone.

47. SOLAR POWER IS EXPANDING RAPIDLY IN THE PRESENT SYSTEM.

This is a negative card questioning inherency since solar power is already expanding rapidly in the present system.

48. THE FEDERAL GOVERNMENT ALREADY PROVIDES ADEQUATE SUPPORT FOR THE DEVELOPMENT OF SOLAR POWER.

This is a negative card questioning inherency since solar power is already adequately supported by the federal government in the present system.

49. YUCCA MOUNTAIN IS NOT A SAFE SITE FOR THE PERMANENT DISPOSAL OF NUCLEAR WASTE.

This is an affirmative card establishing the significance of harm since the Yucca Mountain disposal site is an unsafe disposal site for nuclear waste.

50. NUCLEAR POWER WORSENS GREENHOUSE WARMING.

This is an affirmative card establishing the significance of harm since the energy required to construct nuclear plants worsens global warming.

51. MOST LOW-LEVEL RADIATION COMES FROM BACKGROUND SOURCES RATHER THAN NUCLEAR POWER.

This is a negative card questioning the significance of harm since most low-level radiation is naturally occurring.

52. NUCLEAR REACTORS PROVIDE A MAJOR ROUTE TOWARD NUCLEAR PROLIFERATION.

This is an affirmative card establishing the significance of harm since countries acquiring nuclear weapons usually have started with a civilian reactor program.

53. THE FEDERAL GOVERNMENT HEAVILY SUPPORTS NUCLEAR POWER.

This is an affirmative card establishing inherency since the federal government heavily supports the expansion of nuclear power.

54. THE RISK FROM LOW-LEVEL RADIATION EXPOSURE IS SMALL.

This is a negative card questioning the significance of harm since the risk from low-level radiation is small.

55. THE RISK FROM LOW-LEVEL RADIATION EXPOSURE IS SMALL.

This is a negative card questioning the significance of harm since the risk from low-level radiation is small.

56. NUCLEAR WASTE THREATENS THE ENVIRONMENT.

This is an affirmative card establishing the significance of harm since the risk from nuclear waste is worrisome.

57. MONITORING OF THE SAFETY OF NUCLEAR POWER PLANTS IS INADEQUATE.

This is an affirmative card establishing the significance of harm since the risk of accidents at nuclear reactors cannot be prevented by the current level of oversight.

58. NUCLEAR POWER PLANTS EMIT LESS LOW-LEVEL RADIATION THAN COAL-FIRED POWER PLANTS.

This is a negative card questioning the significance of harm since the risk of low-level radiation from a nuclear plant is less than that from a coal-fired plant.

59. TERRORISTS MIGHT CONSTRUCT A DIRTY BOMB FROM THE RADIOACTIVE WASTE STORED ON-SITE AT NUCLEAR REACTORS.

This is an affirmative card establishing the significance of harm since terrorists might use the nuclear waste stored on-site to construct a dirty bomb.

60. NUCLEAR POWER PLANTS ARE WELL PROTECTED FROM TERRORISTS.

This is a negative card questioning the significance of harm since nuclear power plants are protected from terrorists.

61. SOLAR ENERGY IS EXPANDING RAPIDLY IN THE PRESENT SYSTEM.

This is a negative card questioning inherency since solar power is expanding rapidly in the present system.

62. NUCLEAR REACTORS PROVIDE THE FUEL FOR THE CONSTRUCTION OF NUCLEAR WEAPONS.

This is an affirmative card establishing the significance of harm since reactors produce the material necessary for the construction of nuclear weapons.

63. NUCLEAR POWER PLANTS CANNOT EXPLODE.

This is a negative card questioning the significance of harm since nuclear power plants cannot explode as some critics suppose.

64. THE RISK FROM LOW LEVEL RADIATION IS NEGLIGIBLE.

This is a negative card questioning the significance of harm since low-level radiation represents almost no risk to human health.

65. GEOTHERMAL ENERGY IS EXPANDING RAPIDLY IN THE PRESENT SYSTEM.

This is a negative card questioning the inherency of the case since geothermal energy is expanding rapidly in the present system.

66. THE RISK OF A NUCLEAR ACCIDENT IS LARGE.

This is an affirmative card establishing significance since a nuclear accident could threaten an entire continent.

67. THE RISK OF TERRORIST USE OF NUCLEAR REACTOR MATERIALS FOR A DIRTY BOMB IS SMALL.

This is a negative card questioning the significance of harm since the risk of a terrorist use of nuclear materials to build a dirty bomb is small.

68. THE RISK OF LOW-LEVEL RADIATION HARM IS SMALL.

This is a negative card questioning the significance of harm since low-level radiation from nuclear power plants is not harmful to humans.

69. LOW-LEVEL RADIATION FROM NUCLEAR POWER CAUSES CANCER.

This is an affirmative card establishing significance since a low-level radiation from nuclear power plants causes cancer.

70. IF INCENTIVES WERE PROVIDED FOR ALTERNATIVE ENERGY SOURCES, NUCLEAR POWER WOULD NOT BE NEEDED.

This is an affirmative card establishing solvency since alternative energy sources could replace the need for new nuclear power development.

## CAP-AND-TRADE SOLUTION TO GLOBAL WARMING

**This case argues for the adoption of a cap-and-trade system of carbon dioxide emissions trading in order to reduce the threat from global warming.**

1. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), *HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION*, 07, 4. Most scientists who have delved into the subject agree that global warming is a reality caused primarily by human activities, and that it is a serious problem that must be dealt with now. The vast majority of science organizations around the world endorse the findings of the scientific community that studies climate change and global warming. They have advocated that governments take an active role in curbing human-produced greenhouse gas emissions that are causing the problem. These organizations include the following groups: Intergovernmental Panel on Climate Change (IPCC), a United Nations agency made up of over 2,000 scientists from a variety of countries and scientific disciplines. US National Academy of Sciences, the most prestigious scientific body in the United States. American Geophysical Union, the largest geoscience society in the world. Britain's Royal Society. American Association for the Advancement of Science. American Meteorological Society. Over 20 other scientific societies scattered around the globe.
2. R.M. Carter, (Ph.D., Analyst, Science & Public Policy Institute), *THE MYTH OF DANGEROUS HUMAN-CAUSED CLIMATE CHANGE*, July 07, 14-15. Accurate direct measurements of tropospheric global average temperature have only been available since 1979, and they show no evidence for greenhouse warming. Surface thermometer data, though flawed, also show temperature stasis since 1998.
3. Howard Herzog, (Engineer, Laboratory for Energy & the Environment, MIT), *THE FUTURE OF FOSSIL FUELS: GEOLOGICAL AND TERRESTRIAL SEQUESTRATION OF CARBON DIOXIDE*, Hrg., House Natural Resources Comm., May 1, 07, 45-46. Our overall judgment is that the prospect for geological CO<sub>2</sub> sequestration is excellent. We base this judgment on 30 years of injection experience and the ability of the earth's crust to trap CO<sub>2</sub>.
4. Larry Kreiser, (Prof., Accounting, Cleveland State U.), *CRITICAL ISSUES IN ENVIRONMENTAL TAXATION*, VOL. III, 06, 462. Encouraging the development of renewable energy sources like solar power can have a positive impact on the environment by lessening reliance on the burning of fossil fuels to generate energy and, thereby, reducing harmful pollutants released into the air from the use of fossil fuels. Lessening reliance on the burning of fossil fuels can also have a positive impact on global warming.
5. Robert Stavins, (Prof., Government, JFK School of Government, Harvard U.), *A U.S. CAP-AND-TRADE SYSTEM TO ADDRESS GLOBAL CLIMATE CHANGE*, Oct. 07, 9. Even a credible long-run cap-and-trade system may provide insufficient incentives for investment in technology development if it does not address certain well-known market failures, in particular those associated with investments that create knowledge with a public good nature. A cap-and-trade system alone will not encourage the socially desirable level of investment in research, development, and deployment of new technologies that could reduce future emissions reduction costs.
6. Charles Harper, (Prof., Sociology, Creighton U.), *ENVIRONMENT AND SOCIETY*, 4th Ed., 07, 95. A 2003 Defense Department analysis projected widespread rioting and regional conflict in some countries faced with dwindling food, water, and energy supplies, and argued that global warming must "be viewed as a serious threat to global stability and should be elevated beyond a scientific debate to a national security concern."
7. Charles Harper, (Prof., Sociology, Creighton U.), *ENVIRONMENT AND SOCIETY*, 4th Ed., 07, 95. Global warming could involve increased human health risks as a result of heat stress and more vigorous transmission of tropical diseases over larger areas. Warming could lead to increasing energy consumption for air-conditioning, losses in hydropower availability, and losses in revenue from tourism and fisheries. If ecosystems collapse suddenly, low-lying cities are flooded, forests are consumed in vast fires, grasslands die out and turn into dust bowls, and tropical waterborne and insect-transmitted diseases spread rapidly beyond their current ranges, this would represent a truly a catastrophic "worst-case-scenario."
8. Nils-Axel Morner, (Dir., Paleogeophysics Dept., Stockholm U.), *21ST CENTURY SCIENCE & TECHNOLOGY*, Fall 07, 26-27. So all this talk that sea level is rising, this stems from the computer modeling, not from observations. The observations don't find it!
9. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), *HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION*, 07, 123. Using known changes in the temperatures during the 20th century, another study finds that computer models have probably underestimated the amount of future warming from a doubling of CO<sub>2</sub> over the preindustrial level. Based on a statistical procedure called "relative entropy," which determines the difference between two probabilities, they find that the upper temperature limit of the computer models is more likely. If these studies are correct, the temperature increase by the end of this century may be nearer 4.5 to 6°C rather than 3°C for a doubling of CO<sub>2</sub> above the pre-industrial level.
10. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), *HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION*, 07, 116-117. There have been a large number of other recent studies on the causes of global warming based on observed and proxy atmospheric temperature changes. All of these studies conclude that the emission of greenhouse gases by human activity is the primary cause of the present global warming.
11. Elizabeth Kolbert, (Staff Writer, New Yorker), *FIELD NOTES FROM A CATASTROPHE: MAN, NATURE, AND CLIMATE CHANGE*, 06, 160-162. The administration's plan, which relies almost entirely on voluntary measures, has been characterized by critics as nothing more than a subterfuge—"a total charade" is how Philip Clapp, president of the Washington-based National Environmental Trust, once put it. And certainly, if the goal is to prevent "dangerous anthropogenic interference," then greenhouse gas intensity is the wrong measure to use.
12. Paul Brown, (Environment Correspondent, The Guardian), *GLOBAL WARNING: THE LAST CHANCE FOR CHANGE*, 07, 30. The Europe-wide carbon-trading scheme, where every large company has a cap, should make a large impact on emissions. The first round failed to do so because governments, fearing competition, set their national caps on emissions too high, so industries could carry on polluting as before. This meant that the price of carbon slumped because hardly anyone needed to buy it. Lessons have been learned, however, and the price of carbon futures has risen to more realistic levels as caps have been tightened and companies find it more of a struggle to meet them and are forced to become more efficient or face a financial penalty in the form of having to buy carbon on the exchanges.
13. R.M. Carter, (Ph.D., Analyst, Science & Public Policy Institute), *THE MYTH OF DANGEROUS HUMAN-CAUSED CLIMATE CHANGE*, July 07, 13. Accepting the 1860-2006 temperature record used by the IPCC as a best measure, we find that there has been no significant increase in surface global temperature since the peak El Nino year of 1998. This result is confirmed by the two most reliable records of average tropospheric temperature, drawn from weather balloon radiosondes (since 1958) and satellite-mounted microwave sounding units. Of all these datasets, the MSU record is accepted to be the most accurate and globally representative. Once the effects of El Nino warmings and volcanic coolings are allowed for, this record shows no significant warming since its inception in 1979. This conclusion is robust.
14. Pamela Chase, (Prof., Political Science, Manhattan College), *GLOBAL ENVIRONMENTAL POLITICS*, 4th Ed., 06, 87. Three major energy companies (Shell, Sunoco, and BP Amoco) have decided to seek a seat at the table rather than remain in opposition to the Kyoto Protocol, joining the Pew Center on Global Climate Change. BP Amoco and Royal Dutch Shell have already voluntarily reduced their greenhouse gas emissions by 10 percent from 1990 levels.

15. Elizabeth Kolbert, (Staff Writer, New Yorker), FIELD NOTES FROM A CATASTROPHE: MAN, NATURE, AND CLIMATE CHANGE, 06, 87-88. A few years ago, nineteen biologists from around the world set out to give, in their words, a "first pass" estimate of the extinction risk posed by global warming. They assembled data on eleven hundred species of plants and animals from sample regions covering roughly a fifth of the earth's surface. Then they established the species' current ranges, based on climate variables such as temperature and rainfall. Finally, they calculated how much of the species' "climate envelope" would be left under different warming scenarios. The results of this effort were published in Nature in 2004. Using a midrange projection of temperature rise, the biologists concluded that, if the species in the sample regions could be assumed to be highly mobile, then fully 5 percent of them would be "committed to extinction" by the middle of this century, and, if they proved to be basically stationary, an extraordinary 37 percent of them would be.

16. Bjorn Lomborg, (Prof., Economics, Copenhagen Business School), COOL IT: THE SKEPTICAL ENVIRONMENTALIST'S GUIDE TO GLOBAL WARMING, 07, 20. The doomsday predictions are not objective when they fail to account for the adaptation that will possibly strongly mitigate the temperature effects. Since our forebears were able to do so, it seems reasonable to assume that, being much richer and having vastly more technical prowess, we will be able to repeat their feat.

17. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM, 07, 261. When European Union officials created a market for trading pollution credits, they boasted that it was a 'cost-conscious way' to save the planet from global warming. Five years later, the 25-country EU is failing to meet the Kyoto Protocol's carbon dioxide emission standards. Rather than help protect the environment, the trading system has led to increases in electricity prices of more than 50 percent and record profits for RWE and other utilities.

18. Falk Antony, (Scientist, Solarpraxis AG), PHOTOVOLTAICS FOR PROFESSIONALS: SOLAR ELECTRIC SYSTEMS--MARKETING DESIGN AND INSTALLATION, 07, 11. The shifting of climate zones and the increasing frequency of extreme weather events such as floods, storms and droughts associated with climate change will severely damage the natural environments on which millions of people are dependant.

19. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION, 07, 129-130. The United States has the third largest population and the world's largest economy. Because of the large economy its population is mostly affluent and an enormous consumer of goods and energy. It is not surprising that the United States is, by far, the greatest emitter of greenhouse gases (appx. 25% of the world's emissions).

20. S. Fred Singer & Dennis T. Avery, (Research Prof., George Mason U. & Sr. Fellow, Hudson Institute), UNSTOPPABLE GLOBAL WARMING: EVERY 1,500 YEARS, 08, 192. Another reason food production has tended to increase during the past 150 years is that CO<sub>2</sub> levels in the atmosphere have increased. The oceans give up CO<sub>2</sub> when they warm. The increased CO<sub>2</sub> not only fertilizes plants but also enables them to use water more efficiently.

21. Tony Jupiter, (Dir., Friends of the Earth), SAVING PLANET EARTH, 07, 138. There is grave cause for concern in the Polar regions, partly because of the melting permafrost. Across swathes of Siberia and North America, in particular, there is a vast territory of frozen land in which bubbles of methane have been locked tight for many centuries. As the global thermostat has been edged upward, the line of melting has traveled progressively farther north. Russian researchers have already detected an increase in methane emissions from the land and lakes in Siberia and expect that far more will follow if temperatures continue to rise inexorably. The sub-Arctic region of western Siberia has begun to melt especially quickly and the rapid thaw of bog lands that have been frozen for thousands of years could lead to billions of tons of methane being released, itself causing more warming.

22. James Inhofe, (U.S. Senator, Oklahoma), CONSERVING THE ENVIRONMENT, 06, 100. Dr. S. Fred Singer, an atmospheric scientist at the University of Virginia, who served as the first Director of the U.S. Weather Satellite Service (which is now in the Department of Commerce) and more recently as a member and vice chairman of the National Advisory Committee on Oceans and Atmosphere (NACOA), said that "No one knows what constitutes a 'dangerous' concentration. There exists, as yet, no scientific basis for defining such a concentration, or even of knowing whether it is more or less than current levels of carbon dioxide."

23. Judy Fairburn, (Vice President, Encana Corporation), THE FUTURE OF FOSSIL FUELS: GEOLOGICAL AND TERRESTRIAL SEQUESTRATION OF CARBON DIOXIDE, Hrg., House Natural Resources Comm., May 1, 07, 35-36. The geological storage of CO<sub>2</sub> in oil zones represents in our mind a great win-win between being able to recover additional oil from mature oil fields and successfully store carbon dioxide.

24. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM, 07, 258-259. Europe has tried "cap-and-trade" schemes on greenhouse gases, allocating quotas to certain industries. The result is massive energy cost increases, and industry (jobs) fleeing, with even the alarmists seeking to find a way to stop the capital flight. Europe is harming itself so much that it has decided it needs to harm the U.S., too.

25. Patrick Michaels, (Prof., Natural Resources, Virginia Polytechnic Institute), IS THE SKY REALLY FALLING? A REVIEW OF GLOBAL WARMING SCARE STORIES, Aug. 23, 06, 1. Reports of rapid disintegration of Greenland's ice ignore the fact that the region was warmer than it is now for several decades in the early 20th century, before humans could have had much influence on climate.

26. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION, 07, 96. We know that the irradiance of the Sun over an 11-year sunspot cycle is only about 0.08%. This is almost certainly too little to influence climate in any meaningful way.

27. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION, 07, 159. In Alaska and western Canada, average winter temperatures increased by as much as 3 to 4°C over the past 60 years. This is a highly significant increase because the average increase in the Northern Hemisphere over the past 100 years has been only about 0.6 ± 0.2°C. Furthermore, computer projections indicate that the Arctic will continue to experience more and accelerated warming than the rest of the world for at least the next 100 years).

28. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION, 07, xiv. Scientists often criticize the political leadership for a failure to understand the climate situation and its links to combustion; we point out that to wait another generation for corrective action could be too late.

29. S. Fred Singer & Dennis T. Avery, (Research Prof., George Mason U. & Sr. Fellow, Hudson Institute), UNSTOPPABLE GLOBAL WARMING: EVERY 1,500 YEARS, 08, 182-183. The claim that higher temperatures will kill off the world's corals is irresistible to global warming activists. They understand the emotional appeal of the reefs and their bright-colored fishes. Greenpeace, perhaps predictably, has been quick to play this card: The Philippine coral reefs, among the most diverse and largest in the world, may not be around for long. ... On the last day of the symposium [at Bali] the environmental group Greenpeace released a new coral reef study showing that, because of global warming, the Pacific Ocean could lose most of its coral reefs by the end of the current century. The only problem with the "disappearing coral" theory is that it is false. Corals date back 450 million years, and most of today's coral species date back at least 200 million years.

30. Peter Glick, (President, Pacific Institute), ENERGY AS A WEAPON: IMPLICATIONS FOR U.S. POLICY, Hrg., House Comm. on Government Reform, May 16, 06, 133. One of the most certain effects will be rising sea levels as the oceans warm and land ice melts. Hundreds of millions of people live in coastal regions within a few feet of sea level and they are already vulnerable to severe storms and high tides.

31. R.M. Carter, (Ph.D., Analyst, Science & Public Policy Institute), THE MYTH OF DANGEROUS HUMAN-CAUSED CLIMATE CHANGE, July 07, 17-18. The evidence for dangerous human-caused global warming forced by human carbon dioxide emissions is extremely weak. That the satellite temperature record shows no substantial warming since 1978, and that even the ground-based thermometer statistic records no warming since 1998, indicates that a key line of circumstantial evidence for human-caused change (the parallel rise in the late 20th century of both atmospheric carbon dioxide and surface temperature) is now negated.

32. Pamela Chase, (Prof., Political Science, Manhattan College), GLOBAL ENVIRONMENTAL POLITICS, 4th Ed., 06, 87. U.S. automobile manufacturers, who were once central players in the anti-protocol Global Climate Coalition, have also noted opportunities for future markets under the Kyoto Protocol. For example, major automakers signed an agreement in April 2005 with the government of Canada to reduce greenhouse gas emissions from new cars and trucks.

33. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), *THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM*, 07, 66. Yes, carbon dioxide acts as a greenhouse gas, absorbing radiation and retaining heat, thus making the planet habitable. Yes, burning coal, oil, and natural gas gives off CO<sub>2</sub>. But to what extent is human activity responsible for the current warming? Probably very little. Many factors, especially the volatile sun, can contribute to temperature change. Even more factors contribute to greenhouse gas concentrations. Greenhouse gases have always been in our atmosphere, sometimes in far greater quantities than today, and are in fact a condition for human life—without any greenhouse effect, our surface climate would be comparable to Mars's.

34. Falk Antony, (Scientist, Solarpraxis AG), *PHOTOVOLTAICS FOR PROFESSIONALS: SOLAR ELECTRIC SYSTEMS—MARKETING DESIGN AND INSTALLATION*, 07, 10. In the USA, about 6% of total energy is produced from renewable sources, mainly hydro-electric and geothermal. There is over 7.2 GW of wind energy installed, 86 MW of PV and 52,000 m<sup>2</sup> of solar thermal collectors (2004). The USA is the world's third largest PV market. Japan is the second largest — 280 MWp was installed there in 2004. In the same year China installed 14,000,000 m<sup>2</sup> of solar thermal collectors.

35. Loren Cass, (Prof., Political Science, College of Holy Cross), *THE FAILURES OF AMERICAN AND EUROPEAN CLIMATE POLICY: INTERNATIONAL NORMS, DOMESTIC POLITICS AND UNACHIEVABLE COMMITMENTS*, 06, 13-14. Carbon dioxide is responsible for roughly 60 percent of the "enhanced greenhouse effect," or the additional warming above preindustrial levels. The burning of fossil fuels is the primary source of carbon dioxide emissions.

36. Robert Nadeau, (Prof., Environmental Science, George Mason U.), *THE ENVIRONMENTAL ENDGAME*, 07, 28. Some recent studies on global warming also suggest that Earth's surface temperature is increasing more rapidly than previous studies indicated. The IPCC projected in 2001 that global warming could increase Earth's temperature by as much as 6 degrees Centigrade. However, many of the leading atmospheric scientists who attended an international conference in Berlin in July of 2003 were convinced that the increase, if present trends continue, will be from 7 to 10 degrees Centigrade.

37. Pamela Chase, (Prof., Political Science, Manhattan College), *GLOBAL ENVIRONMENTAL POLITICS*, 4th Ed., 06, 6. If present trends in energy and fossil fuel consumption continue, energy-related emissions of carbon dioxide will be more than 60 percent higher by 2030 than they are today.

38. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), *THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM*, 07, 67-68. The climate is always changing. Different parts of the planet are always getting colder or warmer, wetter or drier. Many things can cause this climate change. The sun has cycles, sometimes producing more energy, and sometimes producing less. The Earth's wobble and eccentric orbit mean that different parts of the planet will be exposed to varying amounts of heat over different periods.

39. Ryan Wiser, (Analyst, Lawrence Berkeley National Laboratory), *RENEWABLES PORTFOLIO STANDARDS*, Apr. 07, 1-2. Today, 21 states and the District of Columbia have mandatory RPS obligations. These policies cover roughly 40% of total U.S. electrical load, and have been implemented in both restructured electricity markets and in cost-of-service-regulated markets. In addition to these mandatory policies, voluntary renewable energy standards exist in Iowa, Illinois, Vermont, and Maine.

40. Paul Brown, (Environment Correspondent, The Guardian), *GLOBAL WARNING: THE LAST CHANCE FOR CHANGE*, 07, 18. There are new fears that the ocean currents that transport heat around the globe are changing—and that the Gulf Stream might slow down or shut off altogether, plunging parts of Europe into a much colder climate.

41. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), *HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION*, 07, 131-132. By far the largest CO<sub>2</sub> emissions come from generating electricity. In the United States coal is the most common fuel used in power plants. Transportation is the second largest producer of CO<sub>2</sub>. The current (2006) consumption of oil is about 20 million barrels per day, but is estimated to increase to about 27 million barrels per day by 2025. In 2004 greenhouse gas emissions rose to an all time high of 2% over the previous year. This represented 7.1 billion metric tons of CO<sub>2</sub> equivalent, up from 6.98 billion metric tons in 2003. It is projected that the emissions of CO<sub>2</sub> from all sectors will steadily grow during the next 25 years by about 29%, or to 9.16 billion metric tons per year by 2025.

42. Robert Stavins, (Prof., Government, JFK School of Government, Harvard U.), *A U.S. CAP-AND-TRADE SYSTEM TO ADDRESS GLOBAL CLIMATE CHANGE*, Oct. 07, 14. The United States can launch a scientifically sound, economically rational, and politically feasible approach to reducing its greenhouse gas emissions by adopting an upstream, economy-wide CO<sub>2</sub> cap-and-trade system that implements a gradual trajectory of emissions reductions over time.

43. Robert Stavins, (Prof., Government, JFK School of Government, Harvard U.), *A U.S. CAP-AND-TRADE SYSTEM TO ADDRESS GLOBAL CLIMATE CHANGE*, Oct. 07, 35-36. One of the ways in which the cap-and-trade system cost-effectively de-carbonizes the economy is through its impacts on the production of electricity from various sources. Because sources of electricity differ greatly in their carbon intensity, the gradually increasing CO<sub>2</sub> allowance prices that characterize both cap trajectories lead not only to (relatively small) reductions in electricity production, but also to dramatic changes in the mix of fuels used to generate electricity.

44. Gary Novak, (Journalist), *GLOBAL WARMING: OPPOSING VIEWPOINTS*, 06, 84. There is a major factor being overlooked in the claim that carbon dioxide is the cause of global warming. Everything in the atmosphere is a greenhouse gas, while only a minuscule part is being referred to as greenhouse gasses. Carbon dioxide is only 0.04% of the atmosphere. The real greenhouse gasses include nitrogen 78%, oxygen 20% and water vapor 0-3%. They absorb and reemit infrared radiation just like CO<sub>2</sub> does, and they conduct and convect heat which the sun produces. Nitrogen and oxygen do not absorb radiation as effectively as CO<sub>2</sub>, but they make up 2,500 times as much of the atmosphere. Water vapor absorbs in a comparable way to CO<sub>2</sub>, and there is up to 100 times as much of it in the atmosphere. Water vapor varies greatly, while CO<sub>2</sub> changes slightly.

45. Jay Inslee & Bracken Hendricks, (U.S. Rep., Washington & Sr. Fellow, Center for American Progress), *APOLLO'S FIRE: IGNITING AMERICA'S CLEAN-ENERGY ECONOMY*, 08, 265. The leadership we have seen across the economy and across levels of government—from the over 500 mayors who joined the U.S. Mayors Climate Protection Agreement to regional coalitions of governors joining in compacts to create carbon markets—is exciting. But there is no substitute for federal policy. Both the size of the challenge and the need for consistent policies across the nation cry out for federal investment and sound regulation in the public interest. Time is running out.

46. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), *THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM*, 07, 158-159. There is no overall global trend of hurricane-force storms getting stronger. Throughout most of the planet, storms have not shown any noticeable change. In two areas of the planet storm strength has shown a statistically significant change: in the North Atlantic, hurricanes are getting stronger, and in the North Pacific cyclones are getting weaker.

47. Robert Stavins, (Prof., Government, JFK School of Government, Harvard U.), *A U.S. CAP-AND-TRADE SYSTEM TO ADDRESS GLOBAL CLIMATE CHANGE*, Oct. 07, 45. One study found that an economy-wide cap imposing an allowance price of \$10 per ton of CO<sub>2</sub> would increase average annual household energy expenditure by a range of about \$100 to \$240 across different counties.

48. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), *HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION*, 07, 222-223. Global warming at its extremes could result in worldwide crop failures, mass starvation, political chaos, and economic collapse. The regions most susceptible to collapse are developing countries in Africa, South and Central America, and Asia that are already in precarious economic and political situations. Africa will be particularly vulnerable because 70% of the least-developed countries occur there. The people best suited to weather a collapse of civilization are those that do not depend upon it for their survival. They include primitive tribes in places like the Amazon jungle, the Arakan Yoma of Burma and India, and New Guinea, for example.

49. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), *HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION*, 07, 185. In 1965 it was first discovered that the oceans were warming. Since then the oceans have warmed at an alarming rate. Even the deep frigid bottom waters have warmed; for example, in the North Atlantic Ocean temperatures reached an all-time high in 2004. The ocean surface about 7 km off St Johns, Newfoundland, averaged 1.1°C above normal, the highest ever recorded. Also the bottom temperature at a depth of 176 meters was 0.9°C above normal.

50. Nils-Axel Morner, (Dir., Paleogeophysics Dept., Stockholm U.), 21ST CENTURY SCIENCE & TECHNOLOGY, Fall 07, 26-27. Now back to satellite altimetry, which shows the water, not just the coasts, but in the whole of the ocean, as measured by satellite. From 1992 to 2002, [the graph of the sea level] was a straight line, variability along a straight line, but absolutely no trend whatsoever. We could see spikes: a very rapid rise, but then in half a year, they fall back again. But absolutely no trend, and to have a sea-level rise, you need a trend.

51. Robert Stavins, (Prof., Government, JFK School of Government, Harvard U.), A U.S. CAP-AND-TRADE SYSTEM TO ADDRESS GLOBAL CLIMATE CHANGE, Oct. 07, 11-12. A cap-and-trade system can achieve emissions targets with high certainty because guaranteed emissions levels are built into the policy. With a carbon tax or technology standards, on the other hand, actual emissions are difficult to predict because of current and future uncertainty about future energy prices or how quickly new technologies will be adopted. Such policies may aim to achieve particular emissions targets, but actual emissions may either exceed or fall below those targets, depending on factors beyond policy-makers' control. Moreover, the tendency for exemptions to be granted from taxes and standards so as to address distributional issues weakens the environmental effectiveness of these instruments. By contrast, distributional battles over the allowance allocation in a cap-and-trade system neither raise the total cost of the program nor affect its climate impacts.

52. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION, 07, 216-217. The World Health Organization estimates that currently 150,000 people die annually from the climate changes that have taken place in the past 30 years, and projects that millions of people will die from climate-rated diseases in the coming decades. In fact, the spread of disease has already begun. Malaria has quadrupled between 1995 and 2000 due, at least in part, to warmer climates. Malaria is reappearing both north and south of the tropics.

53. Tony Jupiter, (Dir., Friends of the Earth), SAVING PLANET EARTH, 07, 140-141. Globally there has been roughly a 10 percent reduction in ice and snow cover since the 1960s and this tendency toward a higher proportion of dark surfaces will amplify the impact of the greenhouse gases that have already accumulated and which continue to build up in the atmosphere.

54. Robert Nadeau, (Prof., Environmental Science, George Mason U.), THE ENVIRONMENTAL ENDGAME, 07, 27. A number of recent studies have also demonstrated that global warming is affecting large numbers of species and their environments and that this process could be moving the entire biosphere toward conditions of extreme disequilibrium. For example, a group of scientists recently conducted a systematic review of 143 studies on 1,473 species of plants and animals and concluded that a rapid rise in Earth temperature could easily result in massive changes in the entire biosphere.

55. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM, 07, 111. Before going any further down this road, it is important to consider two caveats: (1) "Global temperature" is a made-up concept. All we have are averages of all our different thermometers; (2) If you set your baseline somewhere else—say 1998 or 1934—the planet appears to be in a cooling trend.

56. Peter Glick, (President, Pacific Institute), ENERGY AS A WEAPON: IMPLICATIONS FOR U.S. POLICY, Hrg., House Comm. on Government Reform, May 16, 06, 133. Large numbers of refugees may be created in regions like Bangladesh, India, and many island nations. Among the greatest concern of experts is that massive dislocations of populations can lead to regional political instability that spills over into the international arena.

57. Tony Jupiter, (Dir., Friends of the Earth), SAVING PLANET EARTH, 07, 123. The extreme hot summer temperatures that occurred across central Europe during 2003 were, in a statistical sense, unlikely to have occurred because of purely natural variation and were consistent with the type of summer temperatures that are expected to accompany climate change. This hot spell caused some 35,000 premature deaths—from heat stroke and heart attacks among other things—and led to a severe economic impact on agriculture as crops failed from heat and drought.

58. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM, 07, 66-67. We cannot even be sure the Earth's warming is a bad thing. Plants appreciate warmer temperature (as well as higher CO<sub>2</sub> concentrations). North Dakotans and Russians do, too, and most of the warming is happening in colder climes. We know the residents of Greenland prospered during the Medieval Warm Period. Then, many left. But doesn't Arctic warming mean glaciers melting, polar bears drowning, and Manhattan going underwater? That's a lot of hyperbole, too. For every shrinking glacier there is a growing one—but the growing ones get much less attention.

59. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION, 07, 98-99. Of all the greenhouse gases, CO<sub>2</sub> is by far the greatest contributor to global warming. Its use is increasing very rapidly, and to date little is being done to reduce human-caused emissions.

60. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION, 07, 216-217. The rapid spread of the bark beetle is the result of warmer winters. This disease has killed millions of square kilometers of forests and made the western forests a tinderbox. The massive forest fires in Arizona and southern California during the summer of 2003 were in large part due to dry, dead trees caused by bark beetle infestation.

61. Robert Stavins, (Prof., Government, JFK School of Government, Harvard U.), A U.S. CAP-AND-TRADE SYSTEM TO ADDRESS GLOBAL CLIMATE CHANGE, Oct. 07, 31-32. The cap-and-trade system adjusts automatically as control costs change over time. As emphasized earlier, the cap-and-trade system also minimizes costs through "when" flexibility. Because climate change results from the accumulation of emissions over decades to centuries, allowing for flexibility in the timing of emissions reductions is cost-effective. The cap-and-trade system can provide this temporal flexibility through the design elements proposed above: allowing the banking of allowances for use in future years; permitting allowances to be borrowed from future allocations for use today; and setting multiyear compliance periods, to give firms flexibility in how they distribute their emissions within the compliance period.

62. Charles Harper, (Prof., Sociology, Creighton U.), ENVIRONMENT AND SOCIETY, 4th Ed., 07, 94-95. A one meter rise would flood most of New York City, including the entire subway system and all three major airports. A five degree Fahrenheit rise in average temperature would melt the Greenland ice cap, the world's largest mass of frozen water. That would raise the sea level enough that most of South Florida (including Miami) would simply disappear into the Atlantic.

63. Marc Morano, (Minority Staff, Senate Environment & Public Works Committee), CONGRESSIONAL DOCUMENTS AND PUBLICATIONS, Dec. 20, 07. Retrieved Jan. 18, 08 from Lexis/Nexis Academic Universe. Over 400 prominent scientists from more than two dozen countries recently voiced significant objections to major aspects of the so-called "consensus" on man-made global warming. These scientists, many of whom are current and former participants in the UN IPCC (Intergovernmental Panel on Climate Change), criticized the climate claims made by the UN IPCC and former Vice President Al Gore. The new report issued by the Senate Environment and Public Works Committee's office of the GOP Ranking Member details the views of the scientists, the overwhelming majority of whom spoke out in 2007.

64. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM, 07, 65-66. Yes, on average, the planet is getting warmer. This warming seems to be mostly at night, in the winter, and at the North Pole. In fact, the Southern Hemisphere as a whole seems not to be experiencing any statistically significant warming. The current warming is not unprecedented. Climate always fluctuates. We have just emerged from something called the Little Ice Age, and so it's no wonder things are relatively warm. Evidence suggests it is currently colder than it was during the well-established Medieval Warm Period.

65. Tony Jupiter, (Dir., Friends of the Earth), SAVING PLANET EARTH, 07, 168. The means to tackle climate change already exist and, if we initiate action right away, it is entirely possible for us to transform the impact we are having on the atmosphere. Certainly technological improvements and breakthroughs that will come in the future will help us do more. We should not wait for any other inventions, however, but should make a good start on emissions reductions right away. Given what we now know about the Earth's climate and how it is changing because of our actions, there is no excuse for delay.

66. Christopher Horner, (Sr. Fellow, Competitive Enterprise Institute), *THE POLITICALLY INCORRECT GUIDE TO GLOBAL WARMING AND ENVIRONMENTALISM*, 07, 136. Although scientists and computer modelers are loath to admit it, given the enormous sums of taxpayer money given them to produce "projections"—which without protest they allow the media to portray as predictions—nobody really knows enough about long-term climate to make a model that can provide credible projections even at the continental level (in short, climate reality is too complex for any climate model to replicate). Predicting future climate on the scale of a city or state would be far more difficult, but still alarmists and their policymaker allies bandy about very detailed, city-specific horror stories in order to advance an agenda. Again and as betrayed by the Hadley example, modelers admit this weakness. One article in *Nature* ran under the headline, "Climate Models Have No Answer to Burning Questions" lamenting the unreliability of models and relaying scientists' calls for more taxpayer money so that they could improve their models.

67. Patrick Michaels, (Prof., Natural Resources, Virginia Polytechnic Institute), *IS THE SKY REALLY FALLING? A REVIEW OF GLOBAL WARMING SCARE STORIES*, Aug. 23, 06, 16. Pielke Jr. et al. have written extensively of the relationship between global warming and hurricanes. Writing in the *Bulletin of the American Meteorological Society*, they stated: To summarize, claims of linkages between global warming and hurricane impacts are premature for three reasons. First, no connection has been established between greenhouse gas emissions and the observed behavior of hurricanes.

68. Tony Jupiter, (Dir., Friends of the Earth), *SAVING PLANET EARTH*, 07, 131-132. Modest increases in sea level have already been recorded, in part because of the melting of glaciers. Right across the world the retreat of mountain glaciers has been dramatic: from Scandinavia to Central Europe, from Africa to the Himalayas and from Australia to South America, glaciers are moving up the mountains.

69. Robert Strom, (Professor Emeritus, Planetary Sciences, U. Arizona), *HOT HOUSE: GLOBAL CLIMATE CHANGE AND THE HUMAN CONDITION*, 07, 222. The worst possible scenario would occur if we crossed a threshold that radically changes the world climate in a short period of time (a decade to a century). The chances of this happening are unknown, because we do not clearly understand the tripping mechanisms. However, if it did happen then civilization would be in jeopardy of collapse. An abrupt change could propel us into a Hot House by a possible catastrophic release of greenhouse gases. A catastrophic release of methane is not out of the question if the bottom waters in the northern oceans reach temperatures high enough to release the enormous quantities of methane locked up as methane hydrate in the bottom sediments. This would lead to rapid melting, destabilization, and the possible collapse of large portions of the ice sheets raising the sea level by several meters.

70. Pamela Chase, (Prof., Political Science, Manhattan College), *GLOBAL ENVIRONMENTAL POLITICS*, 4th Ed., 06, 92-93. Although corporations usually resist strong international environmental agreements when they are not in their interest, in recent years certain corporations have been positioning themselves as advocates of global sustainable development, including DuPont, BP Amoco, General Electric, and Royal Dutch Shell. Under greater public scrutiny of their environmental behavior and pressure from consumers for environmentally friendly products, these corporations have discovered that preventing pollution is good for profitability. The result is the emergence of a group of corporate leaders who support some of the main aspects of the new paradigm of sustainable development as well as the development of certain environmental regimes.

KEY — CAP-AND-TRADE SOLUTION TO GLOBAL WARMING

1. GLOBAL WARMING IS A REALITY.

This is an affirmative card establishing the significance of harm since global warming is a serious problem.

2. TEMPERATURE MEASUREMENTS DO NOT SUPPORT GLOBAL WARMING.

This is a negative card questioning the significance of harm since both satellite and surface temperature measurements fail to detect global warming.

3. CARBON CAPTURE AND SEQUESTRATION TECHNOLOGY OFFERS A SOLUTION TO FOSSIL FUEL CARBON DIOXIDE EMISSIONS.

This is a negative card questioning the inherency of the case since carbon dioxide capture and sequestration technology is available.

4. PROMOTION OF RENEWABLE ENERGY SOURCES WILL LESSEN GLOBAL WARMING.

This is an affirmative card establishing solveny since the promotion of renewable energy resources will lessen global warming.

5. CAP-AND-TRADE SYSTEMS WILL NOT PROMOTE INVESTMENT IN RENEWABLE ENERGY SOURCES.

This is a negative card questioning solveny since a cap-and-trade system provides inadequate incentives for the development of renewable energy sources.

6. GLOBAL WARMING IS A THREAT TO NATIONAL SECURITY.

This is an affirmative card establishing the significance of harm since global warming will cause resource conflicts.

7. GLOBAL WARMING WILL THREATEN HUMAN HEALTH.

This is an affirmative card establishing the significance of harm since global warming will cause heat stress and transmission of tropical diseases.

8. SEA LEVELS ARE NOT RISING.

This is a negative card questioning the significance of harm since measurements of sea levels fail to confirm any sea rise.

9. CLIMATE MODELS ACTUALLY UNDERESTIMATE THE DEGREE OF CLIMATE CHANGE.

This is an affirmative card establishing the significance of harm since models underestimate the extent of climate change.

10. HUMAN EMISSIONS OF GREENHOUSE GASES ARE A PRIMARY CAUSE OF GLOBAL WARMING.

This is an affirmative card establishing the significance of harm since human emissions of carbon dioxide are a primary cause of global warming.

11. BUSH ADMINISTRATION RELIANCE ON VOLUNTARY MEASURES WILL NOT SLOW GLOBAL WARMING.

This is an affirmative card establishing inherency since the Bush administration relies upon an inadequate voluntary scheme for slowing global warming.

12. THE CLAIM THAT A CAP-AND-TRADE SYSTEM IN EUROPE FAILED IS INCORRECT; THE SYSTEM IS NOW WORKING AFTER ADJUSTMENTS.

This is an affirmative card establishing solveny since a cap-and-trade system has proven capable of working in Europe.

13. THERE HAS BEEN NO GLOBAL WARMING SINCE 1998.

This is a negative card questioning significance of harm since there has been no surface temperature increase since 1998.

14. ENERGY CORPORATIONS ARE TAKING ACTION TO DEAL WITH GLOBAL WARMING.

This is a negative card questioning inherency since energy companies are taking action against global warming.

15. GLOBAL WARMING CAUSES SPECIES EXTINCTION.

This is an affirmative card establishing significance of harm since global warming will cause significant extinction of species.

16. ADAPTATION TO GLOBAL WARMING IS POSSIBLE.

This is a negative card questioning the significance of harm since it is possible to adjust to the impacts of global warming.

17. EMISSIONS TRADING HAS NOT WORKED IN EUROPE.

This is a negative card questioning solveny since emission trading has not worked in Europe where it has been tried.

18. GLOBAL WARMING IS CAUSING EXTREME WEATHER.

This is an affirmative card establishing significance of harm since global warming will cause extreme weather events.

19. THE UNITED STATES IS THE WORLD'S LEADING EMITTER OF GREENHOUSE GASES.

This is an affirmative card establishing significance of harm since the United States is the world's leading emitter of greenhouse gases.

20. INCREASING LEVELS OF CARBON DIOXIDE FERTILIZE PLANTS AND INCREASE AGRICULTURAL PRODUCTION.

This is a negative card questioning the significance of harm since increased carbon dioxide is good for plant growth.

21. MELTING PERMAFROST IN THE POLAR REGIONS THREATENS TO SPEED GLOBAL WARMING.

This is an affirmative card establishing the significance of harm since the melting of the permafrost in polar regions threatens to accelerate global warming.

22. IT IS IMPOSSIBLE TO KNOW WHETHER INCREASING LEVELS OF CARBON DIOXIDE IS CAUSING HARM.

This is a negative card questioning the significance of harm since it is impossible to know whether increasing levels of carbon dioxide are harmful.

23. CARBON CAPTURE AND SEQUESTRATION CAN PREVENT CARBON DIOXIDE FROM ENTERING THE ATMOSPHERE.

This is a negative card questioning the inherency of the case since it is possible for carbon capture and sequestration to prevent carbon dioxide from entering the atmosphere.

24. CAP-AND-TRADE SYSTEMS WILL RESULT IN MASSIVE ENERGY COST INCREASES.

This is a negative card attacking the desirability of the plan since a cap-and-trade system will dramatically increase energy costs.

25. CARBON DIOXIDE EMISSIONS ARE NOT CAUSING THE DISINTEGRATION OF THE GREENLAND ICE SHEETS.

This is a negative card questioning the significance of harm since there is no apparent relationship between Greenland warming and levels of carbon dioxide.

26. SOLAR ACTIVITY DOES NOT EXPLAIN GLOBAL WARMING.

This is an affirmative card establishing the significance of harm since it disputes the negative claim that the sun has caused global warming.

27. GLOBAL TEMPERATURES ARE INCREASING.

This is an affirmative card establishing the significance of harm since Earth's temperature is increasing.

28. DELAY IN ACTING TO SLOW GLOBAL WARMING IS IRRESPONSIBLE.

This is an affirmative card establishing significance of harm since delay in acting against global change is dangerous.

29. GLOBAL WARMING IS NOT HARMING CORAL REEFS.

This is a negative card questioning significance of harm since there is no evidence that global warming harms coral reefs.

30. GLOBAL WARMING IS CAUSING RISING SEA LEVELS.

This is an affirmative card establishing significance of harm since global warming causes rising sea levels.

31. EARTH'S TEMPERATURE HAS NOT BEEN INCREASING AS PREDICTED BY GLOBAL WARMING THEORISTS.

This is a negative card questioning significance of harm since the predictions of global warming have not been supported by temperature readings.

32. U.S. CORPORATIONS ARE NOW TAKING ACTION AGAINST GLOBAL WARMING.

This is a negative card questioning inherency since U.S. corporations are voluntarily taking action against climate change.

33. THE SUN IS THE CAUSE OF GLOBAL WARMING.

This is a negative card questioning significance of harm since the sun, rather than carbon dioxide levels, are primarily responsible for climate change.

34. RENEWABLE ENERGY SOURCES ARE INCREASING IN THE PRESENT SYSTEM.

This is a negative card questioning inherency since renewable energy sources are increasing in the present system.

35. CARBON DIOXIDE IS THE PRIMARY CAUSE OF GLOBAL WARMING.

This is an affirmative card establishing significance of harm since carbon dioxide resulting from fossil fuel emissions is primarily responsible for global warming.

36. EARTH'S SURFACE TEMPERATURE IS RAPIDLY INCREASING.

This is an affirmative card establishing significance of harm since surface temperature measurements are increasing rapidly.

37. CARBON DIOXIDE EMISSIONS ARE CONTINUING TO INCREASE.

This is an affirmative card establishing significance of harm since carbon dioxide emissions will continue to increase.

38. EARTH'S WOBBLE ON ITS AXIS ACCOUNTS FOR CHANGES IN CLIMATE.

This is a negative card questioning significance of harm since changes in the Earth's relationship to the sun accounts for changes in climate.

39. STATE GOVERNMENTS ARE ACTING TO PROMOTE RENEWABLE ENERGY SOURCES.

This is a negative card questioning inherency since state action adequately promotes renewable energy sources.

40. GLOBAL WARMING CAN CAUSE GLOBAL COOLING BY TURNING OFF THE GULF STREAM.

This is an affirmative card establishing significance of harm since global warming risks turning off the Gulf Stream, thus causing Europe to dramatically cool.

41. ELECTRICAL POWER GENERATION IS THE MAJOR SOURCE OF CARBON DIOXIDE EMISSIONS.

This is an affirmative card establishing significance of harm since electrical power generation is a primary cause of global warming.

42. A CAP-AND-TRADE SYSTEM WILL SLOW GLOBAL WARMING.

This is an affirmative card establishing solvency since a cap-and-trade system will reduce carbon dioxide emissions.

43. A CAP-AND-TRADE SYSTEM WILL SLOW GLOBAL WARMING.

This is an affirmative card establishing solvency since a cap-and-trade system will reduce carbon dioxide emissions.

44. CARBON DIOXIDE IS NOT A MAJOR CAUSE OF GLOBAL WARMING.

This is a negative card questioning significance of harm since carbon dioxide is a minor player among greenhouse gases.

45. STATE GOVERNMENT ACTION DOES NOT EXCUSE FEDERAL INACTION.

This is an affirmative card establishing inherency since state government action is not an excuse for federal inaction.

46. STORMS HAVE NOT STRENGTHENED AS A RESULT OF GLOBAL WARMING.

This is a negative card questioning significance of harm since there is no evidence that storms have strengthened as a result of global warming.

47. A CAP-AND-TRADE SYSTEM WILL BE EXPENSIVE FOR CONSUMERS.

This is a negative card attacking the desirability of a cap-and-trade system because of the cost to consumers.

48. GLOBAL WARMING WILL CAUSE STARVATION.

This is an affirmative card establishing the significance of harm since global warming will cause crop failures and starvation.

49. THE OCEANS ARE WARMING AT AN ALARMING RATE.

This is an affirmative card establishing the significance of harm since the oceans are rapidly warming.

50. THERE HAS BEEN NO SIGNIFICANT CHANGE IN SEA LEVELS.

This is a negative card questioning the significance of harm since there is no noticeable change in sea levels.

51. A CAP-AND-TRADE SYSTEM CAN WITH CERTAINTY ACHIEVE EMISSION REDUCTIONS.

This is an affirmative card establishing solvency since a cap-and-trade system can certainly reduce carbon dioxide emissions.

52. GLOBAL WARMING WILL CAUSE MILLIONS TO DIE FROM THE EXPANSION OF TROPICAL DISEASES.

This is an affirmative card establishing significance of harm since global warming will kill millions as a result of the spread of tropical diseases.

53. THE REDUCTION IN ICE COVER IS ACCELERATING GLOBAL WARMING.

This is an affirmative card establishing significance of harm since a decrease in ice cover is causing the acceleration of global warming.

54. GLOBAL WARMING THREATENS SPECIES EXTINCTION.

This is an affirmative card establishing significance of harm since global warming threatens extinction of species.

55. THE THREAT OF GLOBAL WARMING IS EXAGGERATED.

This is a negative card questioning significance of harm since global warming not an actual threat.

56. GLOBAL WARMING WILL CAUSE REGIONAL CONFLICTS.

This is an affirmative card establishing significance of harm since global warming will cause instability and conflict.

57. GLOBAL WARMING IS CAUSING PROBLEMS FOR HUMAN HEALTH IN EUROPE.

This is an affirmative card establishing significance of harm since global warming has caused human health problems in Europe.

58. GLOBAL WARMING COULD AS EASILY BE GOOD AS BAD.

This is a negative card questioning significance of harm since global warming has as many good as bad characteristics.

59. CARBON DIOXIDE IS THE PRIMARY CAUSE OF CLIMATE CHANGE.

This is an affirmative card establishing significance of harm since carbon dioxide emissions are the primary cause of global warming.

60. GLOBAL WARMING IS CAUSING DEFORESTATION BECAUSE OF THE SPREAD OF BARK BEETLES.

This is an affirmative card establishing the significance of harm since global warming causes deforestation.

61. CAP-AND-TRADE MECHANISMS ARE FLEXIBLE AND EFFECTIVE.

This is an affirmative card establishing solvency since cap-and-trade mechanisms are effective.

62. THE SEA RISE RESULTING FROM GLOBAL WARMING WILL BE DEVASTATING.

This is an affirmative card establishing significance of harm since global warming results in devastating sea rise.

63. THERE IS NO CONSENSUS ON GLOBAL WARMING.

This is a negative card questioning the significance of harm since there is no scientific consensus on global warming.

64. THERE IS ONLY A MODERATE AMOUNT OF GLOBAL WARMING.

This is a negative card questioning the significance of harm since the amount of global warming will be modest.

65. ACTION AGAINST GLOBAL WARMING CAN BE SUCCESSFUL IF WE ACT SOON.

This is an affirmative card establishing solvency since immediately action can slow global warming.

**66. CLIMATE MODELS ARE INACCURATE.**

This is a negative card questioning the significance of harm since the models predicting global warming are inadequate.

**67. THERE IS NO RELATIONSHIP BETWEEN HURRICANE SEVERITY AND GLOBAL WARMING.**

This is a negative card questioning the significance of harm since there is no relationship between global warming and hurricane activity.

**68. SIGNIFICANT MELTING OF GLACIERS IS OCCURRING THROUGHOUT THE WORLD.**

This is an affirmative card establishing the significance of harm since glaciers are melting around the globe.

**69. WE ARE AT RISK OF CROSSING A DANGEROUS THRESHOLD UNLESS WE TAKE ACTION SOON ON GLOBAL WARMING.**

This is an affirmative card establishing the significance of harm since global warming may soon cross a critical point of no return.

**70. CORPORATIONS ARE TAKING ACTION TO DEAL WITH CLIMATE CHANGE.**

This is a negative card questioning inherency since private corporations are taking voluntary action to address global warming.

## HYDROGEN SOLUTION FOR PEAK OIL

**This case argues for the development of hydrogen fuel as a replacement for the declining reserves of oil.**

1. R. James Woolsey, (Former Dir., CIA), ENERGY INDEPENDENCE, S. Hrg. 109-412, Sen. Comm. on Energy & Natural Resources, Mar. 7, 06, 15. Petroleum infrastructure is very vulnerable to terrorist attacks and other types of potential cut-offs. Ten days ago, we had the attack at Abqaiq. We have hurricane damage possible in the gulf coast. We have the possibility of regime change in the Middle East. There was almost a coup in Saudi Arabia in 1979. This reliance on this part of the world is going to be a problem for us for a long time. The possibility exists not only of a regime change and terrorist attacks, but also of financial disruption as a result of how much we are borrowing to finance our oil habits. We borrow approximately a billion dollars every working day, \$250 billion a year, about a third of our overall trade deficit, in order to import oil. And over the last 30 years, some \$70 to \$100 billion of that has been provided by Saudi Arabia as a government and certainly more by individuals to causes such as the Wahhabi schools in Madras and Pakistan, and elsewhere in the Middle East.
2. John S. Duffield, (Prof., Political Science, Georgia State U.), OVER A BARREL: THE COSTS OF U.S. FOREIGN OIL DEPENDENCE, 08, 211. In Klare's provocative words, the U.S. military is becoming a "global oil-protection service." Yet U.S. support for unpopular authoritarian regimes and, in some places, an American military presence will continue to engender hostility toward the United States and, especially in the Persian Gulf, to inspire terrorist attacks against American targets.
3. Patrick Moore, (Chief Scientist, GreenSpirit & Co-Founder of GreenPeace), ALTERNATIVE ENERGY SOURCES, 06, 80. A hydrogen fuel cell-powered transport fleet would not only virtually eliminate CO2 emissions, but would eliminate the energy security problem posed by reliance on oil from overseas.
4. Karen Harbert, (Assistant Secretary for Policy & International Affairs, U.S. Dept. of Energy), ENERGY AS A WEAPON: IMPLICATIONS FOR U.S. POLICY, Hrg., House Comm. on Government Reform, May 16, 06, 19. We must not forget that our most important energy partner in the world is Canada. It is our number one supplier of oil. The Canadian provinces of Alberta, British Columbia and Saskatchewan provide the vast majority of our natural gas imports, and Canada provides more than 80 percent of all natural gas entering the United States. There are a number of new oil and gas projects on the horizon in Canada. We have a strong, stable relationship with this strategically.
5. John S. Duffield, (Prof., Political Science, Georgia State U.), OVER A BARREL: THE COSTS OF U.S. FOREIGN OIL DEPENDENCE, 08, 46-47. In sum, a number of studies have shown that any future oil shock would have a significant negative impact on the U.S. economy. Just how big this impact could be has been a matter of disagreement, but estimates of the economic losses have consistently run in the hundreds of billions of dollars and reached as high as \$1 trillion when inflation is taken into account.
6. Terry Tamminen, (Dir., Environment Now Foundation), LIVES PER GALLON: THE TRUE COST OF OUR OIL ADDICTION, 06, 81. "War is hell," I suspect most would agree, but wars fought over oil must be a special kind of hell. After all, who wants to lose their life for a commodity? Yet since the beginning of the twentieth century, much of international power and politics has centered on oil. During the 1930s, for example, Japan's various disagreements with the United States and Great Britain led to an oil boycott. The resulting fuel shortage made Japan conclude that it must fuel its future with further conquest because it had no oil wealth of its own to exploit, leading to the invasion of the oil-rich Dutch East Indies (Indonesia) and the start of war in the Pacific.
7. Neil Schlager, (Journalist), ALTERNATIVE ENERGY, 06, 25. Since the 1960s, investors and developers have been working to extract crude oil stored in the oil sands of Alberta, Canada. Some experts put the amount of proven oil reserves in the western Canadian oil sands at roughly 175 billion barrels. This would put it second only to Saudi Arabia (with 260 billion) in terms of proven oil reserves. Others believe that the amount of reserve oil in Alberta is much higher, possibly at 300 billion barrels, with more potentially buried deep underground.
8. Gwyneth Cravens, (Journalist), POWER TO SAVE THE WORLD: THE TRUTH ABOUT NUCLEAR ENERGY, 07, 242. "What folks don't understand is that you only get out of hydrogen a portion of the energy you put into it, because at each step of the process you have inefficiencies and energy is lost," Rip said. Hydrogen is invariably bonded with other elements—locked up in H2O molecules, for example, to break the bonds between the hydrogen and the oxygen requires energy that today comes from burning fossil fuels. "You always have to invest more energy in making hydrogen than you're going to get from it," Rip said to me later. "Nothing can change that physical law. But the waste from burning hydrogen is pure water—so the energy investment might be worth it. Nuclear power is the only clean, large-scale, relatively cheap way to make hydrogen."
9. John S. Duffield, (Prof., Political Science, Georgia State U.), OVER A BARREL: THE COSTS OF U.S. FOREIGN OIL DEPENDENCE, 08, 81-82. The SPR can lessen the impact of an oil shock in two ways. First, it can be used to replace any loss of supplies. As a result, its very presence can deter shortfalls created for political purposes, as during the 1973 Arab oil embargo. As an early study noted, the likelihood that a producer state would use its ability to manipulate oil supplies in an attempt to influence U.S. policy is directly related to its chances of success. With a large enough petroleum stockpile, the United States could compensate for virtually any intentional disruption.
10. Laura Egendorf, (Journalist), ENERGY ALTERNATIVES, 06, 107. According to the U.S. National Intelligence Council, 80 percent of the world's oil has yet to be extracted from the planet.
11. David Goldwyn, (Pres., Goldwyn International Strategies), ENERGY AS A WEAPON: IMPLICATIONS FOR U.S. POLICY, Hrg., House Comm. on Government Reform, May 16, 06, 97. The United States is more energy insecure today than it has been in nearly thirty years. We are insecure because the global oil market is more fragile, more competitive and more volatile than it has been in decades. Global demand for oil is strong, powered by global economic growth, especially in China and developing Asia. Global supply has been constrained, first by underinvestment by international oil companies, then by production restraints by OPEC following the crash of oil prices in 1998, and now due to restrictive economic frameworks in many producing nations and internal instability in others. The consequence of this market is that nominal oil prices are high, oil producers are earning enormous economic rents from these prices, spare capacity of oil is barely 2 million barrels per day (bbl/d) in an 85 million barrel per day market and every marginal producer of oil can command global headlines by threatening actions that can impact global oil prices. Oil remains a strategic commodity primarily for transportation and we have failed to develop substitutes we can shift to. The future looks grimmer than the past. Absent a major change in transportation technology or policy, global oil consumption will nearly double by 2030 and dependence on OPEC supply will grow. The outlook for prices is bullish: so far we are consuming oil faster than we are discovering new supplies.
12. Linda McQuaig, (Journalist), IT'S THE CRUDE, DUDE: GREED, GAS, WAR, AND THE AMERICAN WAY, 06, 12. While Americans consume roughly 25 percent of all the oil produced in the world each year, the U.S. has only 3 percent of the world's oil reserves. There's an enormous gap, then, between what Americans use (and what their government intends for them to keep on using), and what they need (or are determined to have). This leaves the U.S. highly dependent on foreign oil imports—a dependency which grows with each passing year. The U.S. now imports more than half its oil; by 2020, it is expected to import more than 65 percent. This makes America vulnerable, in danger of running short of the commodity it most needs to remain the world's dominant superpower. And vulnerability is not something Washington accepts lightly.

13. John S. Duffield, (Prof., Political Science, Georgia State U.), *OVER A BARREL: THE COSTS OF U.S. FOREIGN OIL DEPENDENCE*, 08, 208. U.S. military policies undertaken in response to foreign oil dependence have made an even larger dent in the federal budget. The United States has spent on the order of several billions of dollars per year on additional military capabilities and routine peacetime operations that have been directly, and often exclusively, associated with the defense of American oil interests in the Persian Gulf. To these marginal costs must be added a share of the costs of the U.S.-based general purpose forces and strategic lift, the maintenance and augmentation of which has been increasingly justified in terms of Persian Gulf contingencies. These additional costs amounted to roughly \$28-36 billion per year in the 1980s and \$30-51 billion per year in the 1990s and early 2000s (in 2006 dollars). Not to be overlooked are the escalating costs of major U.S. combat operations in the region since the 1980s, which have culminated in the ongoing war in Iraq.

14. Jonathan M. Harris, (Prof., Global Development And Environment Institute, Tufts U.), *ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS: A CONTEMPORARY APPROACH*, 06, 289-291. According to Campbell and Laherrere, optimistic official estimates suffer from three major errors. One is accepting inflated estimates of "proved" reserves provided by governments of former Soviet countries and others who may have political reasons to exaggerate their holdings. A second error is ignoring probable growth in demand. The third is omitting the well-established economic principle of diminishing returns, which tells us that as oil fields are exploited, the per-unit costs of obtaining the remaining oil will rise. Campbell and Laherrere update Hubbert's analysis to project a peak in world oil production by 2010.

15. Fredrik Robelius, (Ph.D. Dissertation, Dept. of Physics, Uppsala U.), *GIANT OIL FIELDS – THE HIGHWAY TO OIL*, 07, 128-129. Despite optimistic production forecasts of the undoubtedly large resources of Orinoco and Alberta, their contribution is not enough to offset peak oil. Notably, in all scenarios, future oil production is governed by the the giant fields and when they starts to decline the rest of the liquids follows at the same time or a few years later. The main difference in the different scenarios is the peak production level, where the worst case scenario peaks at just above 83 Mbpd in 2008 while the best case scenario reaches a peak level of 94 Mbpd in 2013.

16. Sally Morgan, (Journalist), *FROM WINDMILLS TO HYDROGEN FUEL CELLS: DISCOVERING ALTERNATIVE ENERGY*, 07, 4. Experts estimate that the world's known oil and gas reserves will last between 30 and 60 years, while coal might last about 200 years.

17. Stephen Blanchette, (Staff, Association for Computing Machinery), *ENERGY POLICY*, Feb. 08, 526. Finally, even if all production and distribution problems are solved, hydrogen fuel cells still must advance to the point where they provide storage capacity and range comparable to current gasoline engines in order to be commercially viable, a point perhaps a decade or more into the future.

18. John S. Duffield, (Prof., Political Science, Georgia State U.), *OVER A BARREL: THE COSTS OF U.S. FOREIGN OIL DEPENDENCE*, 08, 81-82. Instead of price controls, the principal U.S. policy for limiting the impact of oil supply disruptions has been the maintenance of the Strategic Petroleum Reserve (SPR). The SPR was officially established in December 1975 by the Energy Policy and Conservation Act (EPCA). The EPCA mandated the creation of a strategic petroleum reserve with a capacity equivalent to ninety days of imports, then about 500 million barrels, within seven years! In 1977, the Carter administration increased the goal to one billion barrels by 1985. The reserve is stored in underground salt domes along the Gulf Coast of Texas and Louisiana.

19. John S. Duffield, (Prof., Political Science, Georgia State U.), *OVER A BARREL: THE COSTS OF U.S. FOREIGN OIL DEPENDENCE*, 08, 42-43. Second, oil shocks may reduce over the longer term a country's potential economic output, assuming that prices remain at an elevated level. In response to higher energy prices, firms may use less energy, which reduces the amount of output that can be produced with a given amount of capital and labor. As a result, the productivity of both labor and capital declines.

20. S. David Freeman, (Dir., Ford Foundation Study on Energy Policy), *WINNING OUR ENERGY INDEPENDENCE*, 07, 3. Remember that Osama bin Laden originated from Saudi Arabia, and it is Saudi Arabian oil money that has financed his terrorism. We help fund the terrorists every time we buy a gallon of gasoline. The United States' ability to make peace in the world is badly constrained by our fear of the "oil weapon" being used by nations such as Saudi Arabia and Iran. It is commonly understood that we are at war in Iraq, and fought in Kuwait, in large part to preserve our oil lifeline.

21. Travis Bradford, (President, Prometheus Institute for Sustainable Development), *SOLAR REVOLUTION: THE ECONOMIC TRANSFORMATION OF THE GLOBAL ENERGY INDUSTRY*, 06, 56. Since the dawn of the oil age at the beginning of the twentieth century, there have been repeated predictions that the world was running short of oil, which have not yet come true. In reality, the world simply will never completely run out of oil because there will always be some oil available using some recovery and processing technology at some cost.

22. Linda McQuaig, (Journalist), *IT'S THE CRUDE, DUDE: GREED, GAS, WAR, AND THE AMERICAN WAY*, 06, 3-4. The U.S. invasion of Iraq may be a precursor of what lies ahead as we enter a far more precarious energy future. The simple truth is that oil is a finite resource — a onetime inheritance that we've consumed recklessly for the past hundred years. One can debate exactly when world oil production will reach its peak and start to decline, but such a crunch is coming, and the implications will be enormous. According to a 2005 report by the U.S. Department of Energy's National Energy Laboratory: "The world has never faced a problem like this. . . . Previous transitions (wood to coal and coal to oil) were gradual and evolutionary; oil peaking will be abrupt and revolutionary." One suspects it might also be violent.

23. Edwin Black, (Journalist), *INTERNAL COMBUSTION: HOW CORPORATIONS AND GOVERNMENTS ADDICTED THE WORLD TO OIL AND DERAILED THE ALTERNATIVES*, 06, 273-274. The world is running out of oil right now. Conservation at home does nothing to reduce the wild growth in automobiles and other oil consumption in hyper-industrializing China, India, Pakistan, Russia, and elsewhere in the emerging world. The real rate of world consumption will be determined not on Main Street or Piccadilly Circus, but on the bustling new highways of New Delhi, Islamabad, Moscow, and Beijing.

24. Frank Fernandez (Pres., F.L. Fernandez, Inc.), *SHOULD CONGRESS ESTABLISH "ARPA-E," THE ADVANCED RESEARCH PROJECTS AGENCY-ENERGY?*, Hrg., House Comm. on Science, Mar. 9, 06, 96-97. My very rough estimate is that government owned and fueled vehicles (federal, state, local, military) represent about ten percent of the U.S. fuel consumed for transportation. This is a niche market that will use commercial suppliers but where the government could influence, mature and demonstrate technologies in a realistic environment and at a scale where the transition to non-government utilization could be realistically estimated.

25. Stephen Leeb, (Economist), *THE COMING ECONOMIC COLLAPSE*, 06, 136. Of course, there is a catch. The conversion to hydrogen fuel would require the government to put in place a clear, well-defined plan, and marshal a good portion of our society's resources to executing it. We would have to build not just windmills, but also the infrastructure to support a fleet of hydrogen-powered cars. This may not be as daunting as it seems. It may be possible to equip service stations with small facilities that can produce hydrogen from electricity and water, utilities to which they are already hooked up. Wind farms would then feed electricity into the grid. Nonetheless, it would be a huge project.

26. Edwin Black, (Journalist), *INTERNAL COMBUSTION: HOW CORPORATIONS AND GOVERNMENTS ADDICTED THE WORLD TO OIL AND DERAILED THE ALTERNATIVES*, 06, 274. The main sources of oil are in the Middle East, followed by unstable Nigeria and Venezuela, both of which have been struggling with shaky oil industries plagued by kidnappings, facility invasions, and politicized manipulations. Three well-placed suicide bombers at Saudi Arabia's oil choke points, a political showdown with Iran, or a Katrina-sized hurricane destroying the refinery infrastructure that hugs the Gulf of Mexico could bring the peak tumbling down. Little or no supply cushion exists to satisfy the world's daily addiction of at least 80 million barrels of petroleum, a number that is steadily climbing with every emerging consumer in India and China.

27. Benjamin Cardin, (U.S. Senator, Maryland), *SENATORS' PERSPECTIVES ON GLOBAL WARMING*, Senate Hearing, Jan. 30, 07, 59. America's current energy policy is simply unsustainable. We all know the security issues: The U.S. imports over 65 percent of our oil from foreign countries—many of them openly hostile to our country. American consumers are literally financing extreme anti-American groups that we fund through our oil dollars. Our petroleum habit creates national security risks and causes long-term energy price instability for American consumers—a price or supply change by OPEC can directly affect our economy. We are currently spending billions of dollars a year to subsidize oil companies, while their profits have increased dramatically—Exxon Mobil is on track to break its own record-breaking \$36 billion dollar profits from 2005.

28. American Petroleum Institute, ENERGY INDEPENDENCE, S. Hrg. 109-412, Sen. Comm. on Energy & Natural Resources, Mar. 7, 06, 67. Interdependence is a fundamental characteristic of the emerging market environment. The first interdependence is that of trade, stemming from the geographical dispersion of supply and demand. Consumption growth will become increasingly concentrated in the developing countries over time, primarily in Asia, while supply will become increasingly concentrated in the Middle East, West Africa and Russia.

29. Andrea Nakaya, (Staff), OIL: OPPOSING VIEWPOINTS, 06, 19-20. Critics of Hubbert's theory contend that there is no imminent oil peak. They point to the fact that the world continues to find new technology for discovering and extracting oil. Robert Bradley, president of the Institute for Energy Research in Houston, Texas, points out, "Despite a century of doom and gloom about the imminent depletion of fossil-fuel reserves, fossil-fuel availability has been increasing even in the face of record consumption." According to Professor David Deming, "We have not run out of oil because new technologies increase the amount of recoverable oil, and market prices—which signal scarcity—encourage new exploration and development. Rather than ending, the Oil Age has barely begun."

30. 847. Lutz Kleveman, (Journalist), OIL: OPPOSING VIEWPOINTS, 06, 213. Many people in Washington are particularly uncomfortable with the growing power of Saudi Arabia, whose terror ties have been exposed since the September 11 terror attacks. As the recent bombings in Riyadh have shown, there is a growing risk that radical Islamist groups will topple the corrupt Saud dynasty, only to then stop the flow of oil to "infidels." The consequences of 8 million barrels of oil-10 percent of global production—disappearing from the world markets overnight would be disastrous. Even without any such anti-Western revolution, the Saudi petrol is already, as it were, ideologically contaminated. To stave off political turmoil, the regime in Riyadh funds the radical Islamic Wahhabi sect, many of whose preachers call for terror against Americans around the world.

## KEY — HYDROGEN AND PEAK OIL

1. THERE IS A SIGNIFICANT RISK OF THE U.S. OIL SUPPLY BEING CUT OFF.

This is an affirmative card establishing the significance of harm since the U.S. is vulnerable to a cutoff of our oil supply.

2. U.S. DEPENDENCE ON IMPORTED OIL RESULTS IN MILITARY CONFLICTS.

This is an affirmative card establishing the significance of harm since the U.S. is now forced to fight wars to secure the supply of oil.

3. PRODUCTION OF HYDROGEN WOULD FREE THE U.S. FROM RELIANCE ON FOREIGN OIL.

This is an affirmative card establishing solvency since the development of hydrogen would free the U.S. from its reliance on foreign oil.

4. CANADA, A HIGHLY DEPENDABLE ALLY, IS AMERICA'S LEADING SUPPLIER OF OIL.

This is a negative card questioning significance of harm since Canada is our leading oil supplier.

5. THE ECONOMIC IMPACT OF AMERICA'S OIL DEPENDENCE IS HUGE.

This is an affirmative card establishing the significance of harm since another oil shock could have a trillion dollar impact on the economy.

6. THE U.S. IS FORCED TO FIGHT WARS BECAUSE OF OIL DEPENDENCE.

This is an affirmative card establishing the significance of harm since America has often gone to war to preserve access to oil.

7. UNCONVENTIONAL OIL RESOURCES SUCH AS TAR SANDS ARE EXTENSIVE.

This is a negative card questioning significance of harm since the amount of oil available in tar sands is massive.

8. HYDROGEN IS A NET ENERGY LOSER.

This is a negative card attacking the desirability of the affirmative plan since hydrogen requires more energy to produce than can be recovered once it is used.

9. THE STRATEGIC PETROLEUM RESERVE PROTECTS THE U.S. AGAINST AN OIL DISRUPTION.

This is a negative card questioning the inherency of the case since the Strategic Petroleum Reserve protects the U.S. against an oil disruption.

10. OIL PRODUCTION IS NOT YET CLOSE TO THE PEAK.

This is a negative card questioning the significance of harm since oil production is not close to the midway point (or peak) of available oil.

11. THE U.S. DEPENDENCE ON FOREIGN OIL IS INCREASING.

This is an affirmative card establishing the significance of harm since the U.S. dependence on oil is increasing.

12. THE U.S. IS PRIMARILY RESPONSIBLE FOR THE DEPLETION OF WORLD OIL RESOURCES.

This is an affirmative card establishing the significance of harm since the U.S. consumes a disproportionate amount of the world's oil.

13. THE U.S. IS FORCED TO MAINTAIN A HUGE MILITARY BUDGET AS A RESULT OF RELIANCE ON IMPORTED OIL.

This is an affirmative card establishing the significance of harm since U.S. military spending is excessively high due to protection of oil resources.

14. OIL RESERVES ARE EXAGGERATED.

This is an affirmative card establishing the significance of harm since oil reserves are actually smaller than the officially listed amounts.

15. UNCONVENTIONAL OIL RESOURCES ARE INADEQUATE TO COMPENSATE FOR THE COMING OIL PEAK.

This is an affirmative card establishing the significance of harm since unconventional oil resources are inadequate to compensate for peak oil.

16. WORLD OIL RESOURCES ARE EXTENSIVE.

This is a negative card questioning the significance of harm since world oil reserves are extensive.

17. HYDROGEN IS AN UNDESIRABLE TRANSPORTATION FUEL.

This is a negative card attacking the desirability of hydrogen as a transportation fuel.

18. THE STRATEGIC PETROLEUM RESERVE PROTECTS THE U.S. FROM AN OIL EMBARGO.

This is a negative card questioning inherency since the Strategic Petroleum Reserve protects the U.S. from a repeat of the oil embargo.

19. OIL SHOCKS ENDANGER THE U.S. ECONOMY.

This is an affirmative card establishing the significance of harm since oil shocks could devastate the U.S. economy.

20. U.S. DEPENDENCE ON FOREIGN OIL SUPPORTS INTERNATIONAL TERRORISM.

This is an affirmative card establishing the significance of harm since paying high oil prices supports international terrorism.

21. PAST PREDICTIONS THAT THE WORLD IS RUNNING OUT OF OIL HAVE BEEN FALSE.

This is a negative card questioning the significance of harm since past predictions by peak oil theorists have proved false.

22. WORLD OIL PRODUCTION WILL SOON REACH ITS PEAK.

This is an affirmative card establishing the significance of harm since world oil production will soon reach its peak.

23. WORLD OIL PRODUCTION WILL SOON REACH ITS PEAK.

This is an affirmative card establishing the significance of harm since world oil production will soon reach its peak.

24. THE FEDERAL GOVERNMENT COULD PROMOTE AN ENERGY TRANSITION BY USING THE POWER OF FLEET PURCHASES.

This is an affirmative card establishing solvency since the federal government could use the power of fleet purchases.

25. A STRONG FEDERAL COMMITMENT COULD PROMOTE A HYDROGEN FUEL TRANSITION.

This is an affirmative card establishing solvency since a strong federal commitment could promote a transition to hydrogen fuel.

26. THE MAJOR SOURCES OF IMPORTED OIL ARE FROM UNSTABLE PARTS OF THE WORLD.

This is an affirmative card establishing significance of harm since most sources of imported oil are from unstable regions.

27. THE U.S. IMPORTS A LARGE PERCENTAGE OF ITS OIL.

This is an affirmative card establishing significance of harm since the U.S. imports a large portion of its oil.

28. INTERDEPENDENCE IS THE BASIC STATE OF THE WORLD ECONOMY, NOT INDEPENDENCE.

This is a negative card questioning the significance of harm since economic interdependence is the normal state of the world's economy.

29. IMPROVED TECHNOLOGY WILL ALLOW INCREASED WORLD OIL PRODUCTION.

This is a negative card questioning the significance of harm since technology will enable increased oil production.

30. RELIANCE ON OIL RESOURCES FROM THE MIDDLE EAST MEANS THAT THE U.S. FUNDS INTERNATIONAL TERRORISM.

This is an affirmative card establishing the significance of harm since oil dependence funds international terrorism.

**FEDERALISM DISADVANTAGE**

The thesis of this disadvantage is that the efforts of the federal government to substantially increase alternative energy incentives will crowd out efforts by the states and hurt federalism. Federalism is important not only to liberty, but to ensure that global warming is solved, as action by the state governments is infinitely preferable to action by a centralized federal government. State based policies ensure attention to region-appropriate alternative energy and avoids rigid regulations, preferring instead market mechanisms. This disadvantage can probably be run with most any other argument, as it argues the status quo solves better than the plan. In addition, this disadvantage argues that the action of the states leads to eventual federal action, which functions as a delay counterplan, without the negative having to actually defend a delay counterplan.

**I. THE STATE GOVERNMENTS ARE ACTING TO INCREASE ALTERNATIVE ENERGY AND SOLVE GLOBAL WARMING NOW USING GEOGRAPHICALLY APPROPRIATE, MARKET ENHANCING EFFORTS.**

**A. THE STATES ARE PROVIDING INCENTIVES FOR ALTERNATIVE ENERGY NOW.**

Jim Wells. (Dir.. Natural Resources. & Environment. U.S. GAO). RENEWABLE ENERGY: INCREASED GEOTHERMAL DEVELOPMENT WILL DEPEND ON OVERCOMING MANY CHALLENGES, Jul. 11, 06, 9..

State governments are also addressing the financial uncertainty of developing renewable energy projects by creating additional markets for their electricity through Renewable Portfolio Standards (RPS). An RPS is a state policy directed at electricity retailers, including utilities, that either mandates or encourages them to provide a specific amount of electricity from renewable energy sources, which may include geothermal resources. To date, 22 states plus the District of Columbia have RPSs, and three other states have set RPS targets, although not all states have significant geothermal resources. Additional state programs also provide tax credits and other financial incentives for renewable energy development, including electricity generation from geothermal resources. These incentives include property tax incentives, sales tax incentives, and business tax credits.

**B. RECENT SUPREME COURT DECISIONS HAVE OPENED THE PATH FOR STATE REGULATION OF GREENHOUSE GASES AND ENSURED STRONG FEDERALISM.**

Jeffrey Rosen (Professor of Law. George Wash. U.) THE NEW REPUBLIC Apr. 23. 2008 Retrieved Apr. 15, 08 from <http://www.tnr.com/environmentenergy/story.html?id=81336a07-f57d-446a-9528-506adb0c1cd6>.

Last April, in the 5-4 Massachusetts v. EPA decision, the Supreme Court agreed, holding that the EPA had acted capriciously when it refused to regulate greenhouse gases without adequately justifying its decision. Justice John Paul Stevens's opinion for the Court, joined by Justice Anthony Kennedy and the three liberals, was full of rhetoric about the importance of states' rights and federalism, noting that states like Massachusetts played a crucial role in challenging the federal government's failure to follow the clear mandates of the law.

**C. STATE BY STATE SOLUTIONS ENSURE THE BEST ALTERNATIVE ENERGY POLICY**

James Connaughton (Chair.. Council on Environmental Quality) HEARING OF THE SENATE FOREIGN RELATIONS COMMITTEE: INTERNATIONAL CLIMATE CHANGE NEGOTIATION Jan 24, 08. Retrieved Apr. 19, 08 from Lexis/Nexis Academic Universe.

We opposed the RPS, the Renewable Power Standard, in the energy bill. That is an area that we did oppose, because more than half the states, covering the vast majority of our generation, had already set renewable power standards, consistent with their local circumstances. So there is an example where we did not think a federal solution was the right one, because each state has a different electricity market and a different capacity to do renewables. Maryland has its own. And certainly, Maryland's is different than California's. And so having a one-size-fits-all for that didn't make sense.

**D. STATE BY STATE APPROACHES ASSURES FLEXIBLE, MARKET-BASED SOLUTIONS, AVOIDING THE HAZARDS OF RIGID FEDERAL REGULATORY SCHEMES.**

Jonathan H. Adler (Dir. Cen. for Bus. Law & Reg.. CWRU) THE INDEPENDENT REVIEW Summer 2006 Retrieved Apr. 15, 08 from <http://www.independent.org/publications/tir/article.asp?issueID=46&articleID=592>

Where not preempted by federal law, states remain on the cutting edge of innovative environmental measures today, moving away from command-and-control regulations toward more flexible and market-oriented regimes. If, as some believe, property-based environmental protections are the most efficient and ethical means to protect the environment, such experiments are more likely to emerge from fifty competing jurisdictions than from a centralized policymaking apparatus in Washington, D.C.

**II. FEDERAL ACTION RETARDS STATE EFFORTS TO SOLVE ENVIRONMENTAL AND ENERGY CONCERNS, AND IGNORES GEOGRAPHIC CONCERNS OF ALTERNATIVE ENERGY, WHICH STATE POLICIES SOLVE.**

**A. FEDERAL ACTION STOPS GEOGRAPHICALLY APPROPRIATE STATE INNOVATION.**

Scott A. Zimmermann (JD/MA Candidate. Boalt Hall Sch. Law. University of California, Berkeley) ECOLOGY LAW QUARTERLY 2006 Retrieved Apr. 10, 08 from Lexis/Nexis Academic Universe.

For example, California has taken an active role in developing its own energy policy to encourage energy independence and through the efforts of its legislature, CPUC, and CEC, the state has achieved dramatic energy intensity improvements since the 1970 energy crisis. These state interests and strategies are explained in more detail below. Federal efforts that interfere with this local process threaten to discourage state innovations that will help the nation achieve energy security. Left free to experiment, states will be stimulated to invent and refine useful innovations to address their energy problems.

POWER MAGAZINE Jan. 08, 26. Retrieved Apr. 19, 08 from Lexis/Nexis Academic Universe.

Each state's RPS plan includes carefully considered timetables and targets based upon its own unique circumstances and available energy sources. A federal RPS that imposes different targets and timetables could undercut or preempt those efforts. This would create uncertainty and drive up the cost of meeting renewable mandates even further for electricity suppliers and consumers in those states. Even among states that have an RPS, all have chosen to add energy sources unique to their areas, such as geothermal power, which are not included in the broad-sweeping federal RPS proposals. Many state programs also include technologies such as fuel cells, as well as alternative means of compliance such as energy-efficiency programs, which are not recognized in the federal plans.

## B. FEDERAL APPROACHES IGNORE THE UNIQUENESS OF GEOGRAPHIC REGIONS, STATES DO NOT.

### 1. Alternative energy plans are best determined by geography of the states, not federal mandates.

Scott Harper (staff) VIRGINIAN-PILOT Dec. 17, 07. Retrieved April 19, 08 from Lexis/Nexis.

A national energy bill that passed the House included a mandatory 15 percent renewable requirement by 2020. But the Senate blocked the bill Thursday, then approved a different measure later that day — minus the 15 percent mandate. Dominion opposed the national standard, arguing that a state-by-state approach to renewable energy is better. "Each state is so different," said Chet Wade, a Dominion spokesman. "You could easily do wind in Texas or Kansas, but not in, say, Connecticut. Different states require different solutions."

Jonathon Johns (Partner, Renewable Energy Group, Ernst & Young) COMMITTEE ON SENATE BANKING, HOUSING AND URBAN AFFAIRS Apr. 12, 07 Retrieved Apr. 19, 08 from Lexis/Nexis Academic Universe

It is important to have due regard for the quality and availability of the indigenous resource. It is interesting to note that some countries with the greatest natural resource have not always been the most successful at harvesting it, e.g. UK and France with wind, and the U.S. with biomass where the greatest focus to date has largely been on biofuels. In the UK, a technology indifferent structure was set partly to reduce consumer costs, although there are now proposals to introduce banding to facilitate less mature technologies (such as offshore wind and biomass). If other factors such as the creation of a strong domestic industry are important then it may be necessary to set tariffs relatively high — to compensate for poor indigenous resource levels. This has arguably occurred in Germany to great effect in the solar industry. Although the U.S. is criticised by some for having different policies state by state, the inherently different geographic characteristics of individual regions provide strong arguments for a differentiated policy.

### 2. National standards are more costly than efforts by the states, owing to knowledge of local geography.

POWER MAGAZINE Jan. 08, 26. Retrieved Apr. 19, 08 from Lexis/Nexis Academic Universe.

Finally, not all regions of the country have abundant renewable energy sources that they can turn to for generating electricity. The cost for states in these regions to comply with a federal RPS could be high, because many of the retail electric suppliers in these areas will not be able to meet an RPS requirement through their own generation. They will be required to purchase higher-cost renewable energy from other suppliers or purchase renewable energy credits. Thus a nationwide RPS mandate will mean a massive wealth transfer from electric consumers in states with little or no renewable resources to the federal government or states where renewables happen to be more abundant.

### 3. Federal approaches, because they ignore localized nature of pollution, often render the environment worse.

Jonathan H. Adler (Dir. Cen. for Bus. Law & Reg., CWRU) THE INDEPENDENT REVIEW Summer 06, 141.

Rather than reduce transboundary pollution problems, EPA regulations at times have made them even worse, as they did when early air-pollution rules encouraged utility companies to erect taller smokestacks, sending emissions farther downwind. Federal regulation of local environmental matters is often justified on the grounds that states cannot be trusted to adopt environmental protections. Yet, as Schoenbrod notes, the historical data tell quite a different story. States began adopting aggressive environmental measures well before the creation of the federal EPA.

## C. CENTRALIZED ENERGY POLICY IS THE GREATEST THREAT TO ENERGY SECURITY.

Amorv Lovins. (Dir., Rocky Mountain Institute), ENERGY INDEPENDENCE, S. Hrg. 109-412, Sen. Comm. on Energy & Natural Resources, Mar. 7, 06, 80.

Federal policy strongly favors overcentralized system architecture, as seen in Katrina's damage and in bigger, more frequent regional blackouts. It creates terrorist targets, from LNG and nuclear facilities to Iraqi infrastructure. Its centerpiece, ANWR drilling, would create an all-American Strait of Hormuz in a world that already has one such chokepoint too many. It lavishly supports expansion of nuclear power and reverses the Ford-Cheney reprocessing moratorium, thus worsening proliferation. On top of that, it sacrifices what's left of the nonproliferation regime, painfully built over a half century, to support the nuclear bureaucracy that makes 3% of India's electricity, while ignoring the vastly greater and cheaper potential to improve the peaceful 97%. (India, by the way, has more windpower capacity than nuclear capacity, and in 2004 was the world's #3 installer of windpower.) These seem to me undesirable outcomes for a government committed to enhancing national security. Such policies and outcomes are also, in general, contrary to free-market principles, and often inimical to the principles of federalism, States rights, and human rights. In short, the most comprehensive threat to national energy security today is national energy policy.

## D. CURRENT STATE ACTION ENSURES APPROPRIATE FEDERAL ACTION IN THE FUTURE

J.R. DeShazo & Jody Freeman (Prof. & Dir. Lewis Center. UCLA Sch. Pub. Aff.: & Prof. & Dir. Environmental Law Program, Harvard Law School) Jun. 2007 Retrieved Apr. 15, 08 from Lexis/Nexis Academic Universe.

Nevertheless, we believe that states play an important role. By prompting both industry and environmental groups to seek a federal response, states have effectively sped up and intensified the demand for federal climate regulation. The states matter here not because they shame the federal government, nor because they model possible regulatory responses — although they may do that as well. They matter because they make all the key players unhappy enough to appeal to Congress for relief.

## III. ON BALANCE, FEDERALISM PRESERVES LIBERTY AND PREVENTS HUMAN EXTINCTION.

## A. FEDERAL CONTROL HURTS THE ENVIRONMENT AND DESTROYS LIBERTY.

1. Environmental federalism ensures checks and balances necessary to preserve our liberty.

William F. Jasper (Senior Editor for The New American magazine) THE NEW AMERICAN Aug. 6 2007 Retrieved Apr. 15, 08 from <http://www.thenewamerican.com/node/4819>.

Professor Schoenbrod and many others who have been similarly involved in the regulatory process are coming to the conclusion that the central planning model of caring for human health and safety and environmental quality is not the efficient, salutary mechanism they had once thought. In fact, it has proven to be inimical to those goals. What, then, is the answer? How can we reasonably protect individuals and human society from genuine health threats and the natural environment from destructive practices? Many Americans will be relieved to discover that this is not an insoluble dilemma. In fact, the good news is we are much more likely to achieve those goals, and at a fraction of the current cost, by returning to the constitutional federalism of an earlier era. There is an additional bonus: by devolving regulatory control to constitutionally appropriate state and local levels, we will restore vital checks and balances that are essential to sustainable liberty and that have been stripped away or dangerously weakened over the past four decades.

2. The loss of liberty is worse than death.

Fran Capo and Frank Borzellieri (authors and columnists) IT HAPPENED IN NEW YORK, 06, 23.

Then Hamilton appealed to the jury's sense of freedom. "The loss of liberty to a generous mind is worse than death. . . . Men who injure and oppress the people under their administration provoke them to cry out and complain." In a final passionate burst, he then implored the jury to deliver an uncorrupt verdict by "both exposing and opposing arbitrary power (in these parts of the world, at least) by speaking and writing the truth." (ellipsis in original)

## B. FEDERALISM SOLVES GLOBAL WARMING, PREVENTING HUMAN EXTINCTION.

1. Federalism is key to solving global warming.

Michael Ennis (Director of the Center of Transportation Policy) TEXAS MONTHLY Mar. 08. Retrieved Apr. 12, 08 from Lexis/Nexis Academic Universe.

But evolving most rapidly, and most portentously, is the role megastates like ours play in this federation we call the United States. We're now seeing the fruition of the "federalism" that conservatives have touted for decades as the antidote to the smothering nanny state of the New Deal and the Great Society. The irony, however, is that the notion of states' rights has undergone a radical twenty-first-century evolution. The erstwhile battle cry of knuckle-dragging Jim Crow segregationists has become the anthem of progressives of all stripes, from alternative energy entrepreneurs to gay rights advocates. Where once the federal government took an enlightened stand against prejudice and poverty and dragged the South kicking and screaming into the civil rights era, today Washington stands in the schoolhouse door while forward-looking states invoke their right to solve problems like global warming and spiraling health-care costs.

2. Solving global warming is key to prevent human extinction.

MSNBC NEWS May 21, 07 Retrieved Apr. 15, 08 from <http://www.msnbc.msn.com/id/18782451/>

Acting much like a guide for audiences, DiCaprio poses questions everyday people might ask. Then, well-known scientists provide answers. "I wanted to give (the scientific believers) a way of not being challenged about whether the science is correct or whether their opinions were valid," DiCaprio said. "It was about them being able to express ideas and being able to give us, the public, solutions for the future." The scientists warn that the ultimate end point of extreme climate change is human extinction, but they also give examples of what can be done to stop it, from simply changing lightbulbs to electing "green" leaders or buying "green" products.

**DISADVANTAGE ANALYSIS**

Section I of the argument defends the uniqueness of the disadvantage because it shows the present system will avoid the disadvantage.

Section II of the argument establishes the link of the disadvantage because it shows why and how the affirmative plan would cause the disadvantage.

Section III of the argument is the impact of the disadvantage because it indicates how widespread and intense the harms of the disadvantage would be.

**OIL PRICE DISADVANTAGE**

The thesis of this disadvantage is that efforts to increase alternative energy would decrease the price of oil, hurting the Russian economy, and causing war. The disadvantage is heavily focused on the link and internal link level, arguing that the oil market is heavily driven by speculative futures trading. By incentivizing alternative energy, the United States government would send a signal to global futures traders that U.S. consumption of oil was going to decrease. This would cause a sell-off, dropping the price of oil by \$20-\$35 per barrel. This price drop would hurt Russia's economy and threaten political stability in Russia and throughout the world. The disadvantage is written to link to lots of different affirmatives, with a couple of generic perception-based link arguments.

**I. PRO-OIL POLICIES OF THE U.S. GOVERNMENT, COUPLED WITH FUTURES TRADING IN THE OIL MARKET, CONSPIRE TO KEEP OIL PRICES ELEVATED NOW, BUT RISK PRECIPITOUS PRICE DROPS.**

**A. CURRENT UNITED STATES ENERGY POLICY INCENTIVIZES HIGH OIL PRICES.**

1. Current U.S. policy ensures huge subsidies for oil companies.

Edward J. Markey (D-Mass.) U.S. FED NEWS Apr. 15, 08 Retrieved Apr. 16, 08 from Lexis/Nexis Academic Universe.

"Nearly 700,000 Americans will file taxes today that will go directly to high-profit oil companies that don't need the breaks. That's like the entire population of Austin, Texas dropping their checks on the doorstep of Big Oil," said Rep. Edward J. Markey (D-Mass.), Chairman of the House Select Committee on Energy Independence and Global Warming. "While Americans are filing their taxes, oil companies are filling their coffers with high prices and tax breaks paid for by American families. This administration's policy is tax breaks for oil companies, and tough breaks for American taxpayers."

2. Oil prices will continue to stay high unless technological advances reduce fossil fuel consumption.

Philip Coggan (Buttonwood columnist, The Economist) INVESTMENT ADVISOR Feb. 25, 08 Retrieved Apr. 16, 08 from Lexis/Nexis Academic Universe

None of this means that commodities cannot suffer a cyclical setback as the global economy slows this year. But absent some complete catastrophe in Asia or some major technological advance that lessens our dependency on fossil fuels, it is hard to see that the long-term price trend in commodities can be anything but up.

**B. SPECULATIVE FUTURES TRADING OF OIL MAINTAINS HIGH PRICES NOW, BUT ALLOWS FOR A RISK OF PRECIPITOUS PRICE DROPS.**

1. Oil Markets are dominated by futures trading and prices are high.

Steve Hargreaves (staff) CNNMONEY.COM Feb 12, 08 Retrieved Apr. 17, 2008 from [http://money.cnn.com/2008/02/12/news/economy/oil\\_investors/?postversion=2008021219](http://money.cnn.com/2008/02/12/news/economy/oil_investors/?postversion=2008021219)

With oil prices near \$100 a barrel and gasoline hovering around \$3 a gallon, speculative investment from banks and hedge funds has taken heat for adding as much as \$30 or \$40 to the cost of a barrel of oil. The finger-pointing became especially acute in 2007, when crude prices went from around \$50 to nearly \$100 in 12 months. "It's pure speculation," longtime Oppenheimer oil analyst Fadel Gheit said in a recent CNNMoney.com story. Nothing has changed from a year ago, he said, he said "Not a single thing." Consumer rights groups have also lambasted banks, hedge funds and other oil investors, saying the sheer increase in the number of contracts traded on futures markets is resulting in an artificial price premium.

William Maclean (staff) BOSTON.COM Mar 3, 08 Retrieved April 17, 08 from [http://www.boston.com/business/articles/2008/03/10/oil\\_spike\\_to\\_last\\_through\\_2008\\_opec\\_president/](http://www.boston.com/business/articles/2008/03/10/oil_spike_to_last_through_2008_opec_president/)

Oil prices will stay at current high levels for the rest of this year due to speculation and geopolitical tensions, Algerian state media on Monday reported OPEC President Chakib Khelil as saying.

2. Investor perception of world events means prices could drop quickly.

Andrew Leonard (senior editor at Salon.com) HOW THE WORLD WORKS Aug. 21, 06. Retrieved Feb. 16, 08 from [http://www.salon.com/tech/htww/2006/08/21/oil\\_bubble/](http://www.salon.com/tech/htww/2006/08/21/oil_bubble/)

The theory goes like this: First, there's the supposition that some portion of the spike in oil prices over the last couple of years is speculator driven. Traders are stockpiling oil for sale to buyers at some later date, hoping that in the intervening period prices will continue to rise. Such speculation naturally pushes the price of oil even higher. This is a classic pattern in markets, going back at least as far as the great tulip mania of the 17th century, and there's no reason why oil should be any different from any other traded commodity. And as with all bubbles, once traders start thinking that the price might fall, whoooosh — the air rushes out.

Fabrice Taylor (researcher for brokerage firm Pollitt & Co.) THE GLOBE AND MAIL Oct. 12, 07, B9. Apr. 16, 08 from Lexis/Nexis Academic Universe.

Oil analysts vary widely on this subject, but a sample of respected ones says the speculative premium in crude adds between \$20 and \$35 a barrel. What if these investment funds — and they're not all hedge funds — decide they want to short the market? Since they tend to move in a herd fashion, that would mean a big drop in oil prices.

## II. UNITED STATES INCENTIVES FOR ALTERNATIVE ENERGY LOWERS THE PRICE OF OIL.

## A. UNITED STATES CONSUMES 1/4 OF WORLD OIL; POLICY CHANGES WOULD HAVE HUGE EFFECTS.

Joann Jovinelly, (Journalist), OIL: THE ECONOMICS OF FUEL, 08, 32.

Today, President Bush calls America's oil use an "addiction." The United States currently uses one-quarter, or 25 percent, of the world's oil. This amounts to approximately twenty million barrels of oil every single day. More than half of it is imported from other countries. The budget for America's oil use amounts to roughly \$720 million each day.

## B. INCENTIVES FOR ALTERNATIVE FUELS LOWER OIL PRICES.

1. Incentives for alternative fuels sharply decrease oil prices.

Daniel Weiss, (Staff, Center for American Progress), TIME TO DIVERSIFY ENERGY RESOURCES AS OIL HITS \$100 A BARREL, Jan. 3, 08, 1.

As with any record, breaking the \$100-per-barrel price barrier should generate significant attention. It is a harbinger of higher gasoline and heating oil prices this year. It is also a symbol of U.S. oil dependence, and increases the urgency to reduce demand via efficiency and renewable fuels. The new energy law is the first serious effort to do this in decades. But more needs to be done. Congress must now shift tax incentives to investments in renewable fuels rather than provide tax breaks to profit swollen big oil companies. Congress should also invest in programs to increase the use of public transit and build a renewable fuels infrastructure. These steps should cut demand for gasoline and in turn oil prices so that yesterday's \$100-per-barrel record will eventually become nothing more than a historical reminder of the bygone oil age.

2. Incentives for renewable energy drops the price of oil.

Ricardo Bayon, (Dir., Ecosystem Marketplace), SOLAR POWER, 07, 69.

But if wealthier nations can help a large part of their poorer brethren turn to clean and renewable energy, the air will be a lot cleaner, there will be less pollution and poverty, and new trading markets will develop and the price of oil may even drop.

3. CAFE standards would greatly reduce U.S. oil consumption.

Dan Reicher, (Dir., Clim. Change & Energy Initiatives) ADVANCED ENERGY TECHNOLOGIES Mar. 7, 07, 8.

Raising fuel economy performance to 40 mpg over the next 10 years — through revision of the CAFE standard — could alone cut passenger vehicle oil demand by about one-third or 4 million barrels per day by 2020 — about twice current daily imports from Saudi Arabia and Kuwait.

4. Biofuel use and increased CAFE standards sharply reduce oil prices.

Mark Gaffigan, (Analyst, U.S. Government Accountability Office), ENERGY MARKETS: INCREASING GLOBALIZATION OF PETROLEUM PRODUCT MARKETS, Dec. 07, 37-38.

For example, the Administration has proposed to reduce U.S. petroleum gasoline consumption by 20 percent by 2017 through increased use of biofuels and more stringent automobile fuel economy standards. If achieved, this could turn the United States from a gasoline importer to a net exporter within 10 years; and current refining capacity could meet future demand even without expansions that are currently planned.)

5. Cellulosic ethanol would displace large amounts of oil imports.

Alan Greenspan, (Former Chair, U.S. Federal Reserve Board), OIL DEPENDENCE AND ECONOMIC RISK, June 7, 06, 9.

Corn ethanol, though valuable, can play only a limited role, because its ability to displace gasoline is modest at best. But cellulosic ethanol, should it fulfill its promise, would help to wean us of our petroleum dependence, as could clean coal and nuclear power. With those developments, oil in the years ahead will remain an important element of our energy future, but it need no longer be the dominant player.

6. Coal gasification would sharply drop oil prices.

James Bartis, (Sr. Policy Researcher, Rand Corp.), COAL GASIFICATION: OPPORTUNITIES AND CHALLENGES, May 24, 07, 24.

Producing large amounts of coal-derived liquid fuels will cause world oil prices to decrease. Our research shows that, under reasonable assumptions, this price reduction effect could be very large and would likely result in large benefits to U.S. consumers and large decreases in OPEC revenues. Savings by the average household in the United States would range from a few hundred to a few thousand dollars per year. OPEC export revenues could decrease by hundreds of billions of dollars per year.

7. Reducing oil for transportation cuts 2/3 of U.S. imports.

Robert Olson, (Research Dir., Alternative Futures), IS THE WORLD HEADING TOWARD AN ENERGY CRISIS, 06, 64.

Two-thirds of the 20 million barrels of oil consumed per day in the United States is used for transportation.

### 8. Oil security tax drops global oil prices

Roy Nersesian, (Prof., Columbia U. Center for Energy and Marine Transportation), ENERGY FOR THE 21ST CENTURY: A COMPREHENSIVE GUIDE TO CONVENTIONAL AND ALTERNATIVE SOURCES, 07, 222-223.

On the other hand, if we charge ourselves \$4\$5 per gallon by imposing an oil security tax, then we can extricate ourselves from the Middle East and save billions of dollars and many lives, increase the availability of oil for the rest of the world, and in so doing, ease the strain on global oil supplies.

## III. MAINTAINING HIGH OIL PRICES ARE KEY TO RUSSIAN ECONOMIC STABILITY, WHICH PREVENTS CONFLICT.

### A. HIGH OIL PRICES ARE KEY TO THE RUSSIA ECONOMY'S STABILITY.

#### 1. Russia is the largest non-OPEC oil exporter, high oil prices are key to the economy.

Shlomo Maital (academic director, TIM-Tel Aviv) THE JERUSALEM REPORT Jan 21, 08, 33a. Retrieved Feb 26, 08 from Lexis/Nexis Academic Universe.

Russia is the world's second largest oil producer, just behind Saudi Arabia, and the world's largest natural gas producer. Oil and gas prices have soared. Without this, there would be no Russian economy.

#### 2. High oil prices key to Russian economic stability by funding diversification

Andrew Kuchins (Sr. Fell. & Dir CSIS Russia/Eurasia Program) ALTERNATIVE FUTURES FOR RUSSIA TO 2017 Nov. 07, 6. Retrieved on Mar. 7, 08 from [http://www.csis.org/media/csis/pubs/071214-russia\\_2017-web.pdf](http://www.csis.org/media/csis/pubs/071214-russia_2017-web.pdf)

But while diversification of the Russian economy is taking place, much still depends on the trickle-down effect of petro-dollars. In recent years, an avalanche of money from oil and gas exports has hit the Russian economy, bringing about a virtual macroeconomic revolution.

Dmitry Zhdannikov (correspondent, Reuters) THE EPOCH TIMES Feb 5, 08, Retrieved Apr. 22, 08 from <http://en.epochtimes.com/news/8-2-5/65408.html>.

He adds that a sudden decline in the oil price will not only hamper development plans by Gazprom and Rosneft, which together owe more than \$70bn to credit institutions, but put at risk the Kremlin's entire social development plan.

#### 3. Even small oil price decreases could hurt the Russian economy

Andrew Kuchins (Sr. Fell. & Dir CSIS Russia/Eurasia Program) ALTERNATIVE FUTURES FOR RUSSIA TO 2017 Nov. 07, 6. Retrieved on Mar. 7, 08 from [http://www.csis.org/media/csis/pubs/071214-russia\\_2017-web.pdf](http://www.csis.org/media/csis/pubs/071214-russia_2017-web.pdf).

Calculating the effect of a rise or fall in the oil price is not straightforward, but economists estimate that the rise in oil prices has accounted for 25 to 40 percent of Russian growth in recent years. A more straightforward calculation can be made about oil export revenues and GDP. Today a \$10 drop in the world oil price would result in a loss of about \$30 billion in export revenues annually, or about 3 percent of GDP.

### B. RUSSIAN ECONOMIC INSTABILITY THREATENS GLOBAL SECURITY.

#### 1. Oil price drop collapses political stability in Russia

Andrew Kuchins (Sr. Fell. & Dir CSIS Russia/Eurasia Program) GLOBAL FORECAST: THE TOP SECURITY CHALLENGES OF 2008, 07, 43-35. Retrieved Apr. 17, 08 from [www.csis.org/media/csis/](http://www.csis.org/media/csis/).

While it is obviously difficult to predict major discontinuity in Russia or elsewhere, the next administration will need to keep in mind that Russia for much of its history has shown a remarkable proclivity toward discontinuity and unpredictability. The current economic recovery and apparent political stabilization sit on a fairly fragile foundation. A crash in the price of oil will upset the current stability just as it was a precursor to major change and then collapse in the Soviet Union 20 years ago. There is no question that Putin and his team see themselves presiding over a stable authoritarian modernization of Russia for the next two to three decades. But history is replete with nations pursuing authoritarian modernization plans that have gone awry.

#### 2. An economically stable Russia is key to stop war and protect the global economy

Roderic Lyne, Strobe Talbott, Koji Watanabe (frmr. UK Amb. to Russia; Pres. Brookings Institution; Sr. Fell. Japan Cen. I-nat Exchange) ENGAGING WITH RUSSIA: THE NEXT PHASE 06, 170 Retrieved Feb. 5, 08 from [http://www.trilateral.org/library/stacks/Engaging\\_With\\_Russia.pdf](http://www.trilateral.org/library/stacks/Engaging_With_Russia.pdf)

There is no substance to suggestions by certain Russian politicians that Western countries are trying to weaken Russia. This smacks of Cold War paranoia and is irrational to the point of absurdity. From an external perspective, the most threatening situation would be a weak and unstable Russia in which extremist elements might come to the fore, the security of stockpiles of weapons of mass destruction could be jeopardized, localized conflicts could ignite, and Russia would become a much less reliable source of energy and other raw materials. A strong Russia has the capacity to make a large contribution to global stability and the global economy. The more the Russian economy develops, the more important Russia will become as a partner in trade and investment— in both directions.

**DISADVANTAGE ANALYSIS**

Section I, subpoints “A” and “B” of the disadvantage defend uniqueness because they indicate present policies will avoid the disadvantage.

Section II, subpoints “A” and “B” of the disadvantage defend the link to the disadvantage because they show how and why the affirmative plan will cause the disadvantage.

Section III defends the impact to the disadvantage because it shows the extent and severity of the harms of the disadvantage.

**FEDERAL INACTION BEST DISADVANTAGE**

The thesis of this disadvantage is that the any action taken by the U.S. federal government to incentivize alternative energy will backfire, or make things worse. This disadvantage can be run with any of the other arguments, and generally holds that the states and/or the free market are better actors to positive change, and that federal actions will be both misguided, and perverted by lobbyists.

**I. THE MARKET IS A BETTER REGULATOR OF ALTERNATIVE ENERGY THAN THE GOVERNMENT.****A. GOVERNMENT APPROACHES ARE ALWAYS WORSE THAN THE FREE MARKET.**

Charles Opalek (author) *A CONVENIENT FABRICATION: THE NON-CRISIS OF MANMADE GLOBAL WARMING AND WHY WE ARE POWERLESS TO CHANGE THE CLIMATE* 07, 131.

The chief cause of problems are solutions. When politicians get an idea and pass a law, you can be assured the law they pass will have precisely the opposite effect. This is because the government can never out-fox the free market. You cannot legislate the Law of Supply and Demand out of existence.

Mackubin T. Owens, (Pf., Nat Sec Pol, Naval War College), *CHRISTIAN SCIENCE MONITOR*, Nov. 30, 07, 9

The best example of how the market, not government pursuit of energy independence, adds to energy security is President Reagan's decision to lift price controls on oil in 1981. The world price of oil plummeted, helping to fuel the extraordinary economic growth of the 1980s. One reason for this outcome should be clear.

**B. FEDERAL INCENTIVES FOR ALTERNATIVE ENERGY WILL BE PERVERTED BY PROFIT-MOTIVATED ENERGY LOBBYISTS, WHOSE EFFORTS ARE SCAMS AT BEST, DAMAGING TO EARTH AT WORST.**

Simon Jenkins (UK columnist) *THE GUARDIAN* Apr. 16, 08. Retrieved Apr. 18, 08 from Lexis/Nexis Academic.

While antagonism to science merely impedes progress, antagonism to economics is regressive. American subsidies to ethanol fuel are not just causing "tortilla riots" but costing American taxpayers a staggering \$5.5bn a year. Biofuel tankers are circling the globe, burning gasoline and chasing subsidies. They have joined carbon emissions certificates among the world's greatest trading scams. If I have changed my mind, I am not sure the same applies to many greens. I have rarely encountered so much fanaticism and blind faith. Did those demanding fuel subsidies not realise that palm oil would wipe out rainforests and that ethanol from corn would use as much carbon as it saved? Did those pleading for wind farms really think they could ever substitute for nuclear power; or those wanting eco-towns not realise they would just add to car emissions? Did they not understand that, once the tap of public money is turned on, lobbyists will ensure it is never turned off — however harmful? If all these fancy subsidies and market manipulations were withdrawn tomorrow and government action confined to energy-saving regulation, I am convinced the world would be a cheaper and a safer place, and the poor would not be threatened with starvation.

Jeff Goodell, (Journalist), *BIG COAL: THE DIRTY SECRET BEHIND AMERICA'S ENERGY FUTURE*, 06, 219.

Congress also passed special tax breaks to encourage the use of "alternative" fuels. Today, these tax breaks are a bonanza for companies like Progress Energy in Raleigh, North Carolina, and DTE Energy in Detroit, Michigan, which have claimed hundreds of millions of dollars in tax credit in recent years simply by spraying coal with latex or pine-tar resin, thus magically transforming it into a synfuel (critics call this practice "spray and pray"). In most cases, these synfuels don't burn any cleaner or more efficiently than untreated coal, but to qualify for the tax breaks, the law simply requires that the coal undergo a "significant chemical change." "The entire synfuels industry is basically a sham," says Congressman Lloyd Doggett, a Texas Democrat who has lobbied tirelessly to close the tax loophole. He estimates that synfuel tax breaks cost taxpayers more than a billion dollars each year.

**II. FEDERAL MANDATES DISTORT THE MARKET AND PRODUCE ONLY FAILED TECHNOLOGIES****A. FEDERAL MANDATES FAIL TO PRODUCE ENOUGH ALTERNATIVE ENERGY FOR AMERICA.**

John Denniston, (Partner, Venture Capital Firm) *ADVANCED ENERGY TECHNOLOGIES*, Mar. 7, 07, 27.

Second, federal policy should not attempt to pick winners and losers. Federal tax incentive programs today frequently deter innovation by specifying a limited set of eligible technologies. For example, the Investment Tax Credit sets a cap on fuel cells that limits the credit's value in driving fuel cell development. None of us can predict which of these various technologies will have the lowest production costs in the future.

Mackubin T. Owens, (Pf., Nat Sec Pol, Naval War College), *CHRISTIAN SCIENCE MONITOR*, Nov. 30, 07, 9.

Advocates of energy independence would repeat the mistakes of the 1970s and early '80s, when the government tried to micromanage the energy market and pick winners and losers. The results were dismal then, and the outcome would probably be no different today. Apparently, Congress has not learned a basic lesson of economics: If something needs a subsidy to compete, it's not ready.

**B. FAILURE TO DEVELOP ALTERNATIVE ENERGY QUICKLY ENOUGH ENDS CIVILIZATION.**

Bill Henderson (author) *COUNTERCURRENTS* Feb. 24. 07. Retrieved Apr. 20, 08 from <http://www.countercurrents.org/cc-henderson240207.htm>.

A steep spike in the price of oil, precipitated perhaps by an attack on Iran or Middle East instability spreading the insurgency to Saudi Arabia, could lead to an economic dislocation paralyzing the global economy. Such a shock coming at the end of cheap oil but before major development of alternative energy economies could mean the end of civilization as we know it.

**DISADVANTAGE ANALYSIS**

This is an example of a “linear” disadvantage. A linear disadvantage is not unique to the affirmative plan; it also exists in the present system. The claim of a linear disadvantage, however, is that the affirmative plan will make an already bad situation even worse.

In the case of the “federal inaction best” disadvantage, Section I shows why the free marketplace works best to speed the development of alternative energy technologies.

Section II establishes the impact of the disadvantage because it shows the extent and severity of the harms of the disadvantage.