## \*\*\* 1AC

### 1AC—Warming

#### Contention One – Warming

#### Warming is real, anthropogenic, and reversible.

Prothero 12 [Donald R., Professor of Geology at Occidental College and Lecturer in Geobiology at the California Institute of Technology, 3-1-2012, “How We Know Global Warming is Real and Human Caused,” Skeptic, 17.2, EBSCO]

**How do we know that global warming is real and primarily human caused? There are numerous lines of evidence that converge toward this conclusion. 1. Carbon Dioxide Increase Carbon dioxide in our atmosphere has increased at an unprecedented rate in the past 200 years. Not one data set collected over a long enough span of time shows otherwise. Mann et al. (1999) compiled the past 900 years' worth of temperature data from tree rings, ice cores, corals, and direct measurements in the past few centuries, and the sudden increase of temperature of the past century stands out like a sore thumb. This famous graph is now known as the "hockey stick" because it is long and straight through most of its length, then bends sharply upward at the end like the blade of a hockey stick. Other graphs show that climate was very stable within a narrow range of variation through the past 1000, 2000, or even 10,000 years since the end of the last Ice Age. There were minor warming events during the Climatic Optimum about 7000 years ago, the Medieval Warm Period, and the slight cooling of the Litde Ice Age in the 1700s and 1800s. But the magnitude and rapidity of the warming represented by the last 200 years is simply unmatched in all of human history. More revealing, the timing of this warming coincides with the Industrial Revolution, when humans first began massive deforestation and released carbon dioxide into the atmosphere by burning an unprecedented amount of coal, gas, and oil. 2. Melting Polar Ice Caps The polar icecaps are thinning and breaking up at an alarming rate. In 2000, my former graduate advisor Malcolm McKenna was one of the first humans to fly over the North Pole in summer time and see no ice, just open water. The Arctic ice cap has been frozen solid for at least the past 3 million years (and maybe longer),[ 4] but now the entire ice sheet is breaking up so fast that by 2030 (and possibly sooner) less than half of the Arctic will be ice covered in the summer.[ 5] As one can see from watching the news, this is an ecological disaster for everything that lives up there, from the polar bears to the seals and walruses to the animals they feed upon, to the 4 million people whose world is melting beneath their feet. The Antarctic is thawing even faster. In February-March 2002, the Larsen B ice shelf -- over 3000 square km (the size of Rhode Island) and 220 m (700 feet) thick -- broke up in just a few months, a story -typical of nearly all the ice shelves in Antarctica. The Larsen B shelf had survived all the previous ice ages and interglacial warming episodes over the past 3 million years, and even the warmest periods of the last 10,000 years -- yet it and nearly all the other thick ice sheets on the Arctic, Greenland, and Antarctic are vanishing at a rate never before seen in geologic history. 3. Melting Glaciers Glaciers are all retreating at the highest rates ever documented. Many of those glaciers, along with snow melt, especially in the Himalayas, Andes, Alps, and Sierras, provide most of the freshwater that the populations below the mountains depend upon -- yet this fresh water supply is vanishing. Just think about the percentage of world's population in southern Asia (especially India) that depend on Himalayan snowmelt for their fresh water. The implications are staggering. The permafrost that once remained solidly frozen even in the summer has now thawed, damaging the Inuit villages on the Arctic coast and threatening all our pipelines to the North Slope of Alaska. This is catastrophic not only for life on the permafrost, but as it thaws, the permafrost releases huge amounts of greenhouse gases which are one of the major contributors to global warming. Not only is the ice vanishing, but we have seen record heat waves over and over again, killing thousands of people, as each year joins the list of the hottest years on record. (2010 just topped that list as the hottest year, surpassing the previous record in 2009, and we shall know about 2011 soon enough). Natural animal and plant populations are being devastated all over the globe as their environments change.[ 6] Many animals respond by moving their ranges to formerly cold climates, so now places that once did not have to worry about disease-bearing mosquitoes are infested as the climate warms and allows them to breed further north. 4. Sea Level Rise All that melted ice eventually ends up in the ocean, causing sea levels to rise, as it has many times in the geologic past. At present, the sea level is rising about 3-4 mm per year, more than ten times the rate of 0.1-0.2 mm/year that has occurred over the past 3000 years. Geological data show that the sea level was virtually unchanged over the past 10,000 years since the present interglacial began. A few mm here or there doesn't impress people, until you consider that the rate is accelerating and that most scientists predict sea levels will rise 80-130 cm in just the next century. A sea level rise of 1.3 m (almost 4 feet) would drown many of the world's low-elevation cities, such as Venice and New Orleans, and low-lying countries such as the Netherlands or Bangladesh. A number of tiny island nations such as Vanuatu and the Maldives, which barely poke out above the ocean now, are already vanishing beneath the waves. Eventually their entire population will have to move someplace else.[ 7] Even a small sea level rise might not drown all these areas, but they are much more vulnerable to the large waves of a storm surge (as happened with Hurricane Katrina), which could do much more damage than sea level rise alone. If sea level rose by 6 m (20 feet), most of the world's coastal plains and low-lying areas (such as the Louisiana bayous, Florida, and most of the world's river deltas) would be drowned. Most of the world's population lives in low-elevation coastal cities such as New York, Boston, Philadelphia, Baltimore, Washington, D.C., Miami, and Shanghai. All of those cities would be partially or completely under water with such a sea level rise. If all the glacial ice caps melted completely (as they have several times before during past greenhouse episodes in the geologic past), sea level would rise by 65 m (215 feet)! The entire Mississippi Valley would flood, so you could dock an ocean liner in Cairo, Illinois. Such a sea level rise would drown nearly every coastal region under hundreds of feet of water, and inundate New York City, London and Paris. All that would remain would be the tall landmarks such as the Empire State Building, Big Ben, and the Eiffel Tower. You could tie your boats to these pinnacles, but the rest of these drowned cities would lie deep underwater. Climate Change Critic's Arguments and Scientists' Rebuttals Despite the overwhelming evidence there are many people who remain skeptical. One reason is that they have been fed distortions and misstatements by the global warming denialists who cloud or confuse the issue. Let's examine some of these claims in detail: \* "It's just natural climatic variability." No, it is not. As I detailed in my 2009 book, Greenhouse of the Dinosaurs, geologists and paleoclimatologists know a lot about past greenhouse worlds, and the icehouse planet that has existed for the past 33 million years. We have a good understanding of how and why the Antarctic ice sheet first appeared at that time, and how the Arctic froze over about 3.5 million years ago, beginning the 24 glacial and interglacial episodes of the "Ice Ages" that have occurred since then. We know how variations in the earth's orbit (the Milankovitch cycles) controls the amount of solar radiation the earth receives, triggering the shifts between glacial and interglacial periods. Our current warm interglacial has already lasted 10,000 years, the duration of most previous interglacials, so if it were not for global warming, we would be headed into the next glacial in the next 1000 years or so. Instead, our pumping greenhouse gases into our atmosphere after they were long trapped in the earth's crust has pushed the planet into a "super-interglacial," already warmer than any previous warming period. We can see the "big picture" of climate variability most clearly in ice cores from the EPICA (European Project for Ice Coring in Antarctica), which show the details of the last 650,000 years of glacial-inters glacial cycles (Fig. 2). At no time during any previous interglacial did the carbon dioxide levels exceed 300 ppm, even at their very warmest. Our atmospheric carbon dioxide levels are already close to 400 ppm today. The atmosphere is headed to 600 ppm within a few decades, even if we stopped releasing greenhouse gases immediately. This is decidedly not within the normal range of "climatic variability," but clearly unprecedented in human history. Anyone who says this is "normal variability" has never seen the huge amount of paleoclimatic data that show otherwise. \* "It's just another warming episode, like the Medieval Warm Period, or the Holocene Climatic Optimum or the end of the Little Ice Age." Untrue. There were numerous small fluctuations of warming and cooling over the last 10,000 years of the Holocene. But in the case of the Medieval Warm Period (about 950-1250 A.D.), the temperatures increased only 1°C, much less than we have seen in the current episode of global warming (Fig. 1). This episode was also only a local warming in the North Atlantic and northern Europe. Global temperatures over this interval did not warm at all, and actually cooled by more than 1°C. Likewise, the warmest period of the last 10,000 years was the Holocene Climatic Optimum ( 5,000-9,000 B.C.E.) when warmer and wetter conditions in Eurasia contributed to the rise of the first great civilizations in Egypt, Mesopotamia, the Indus Valley, and China. This was largely a Northern Hemisphere-Eurasian phenomenon, with 2-3°C warming in the Arctic and northern Europe. But there was almost no warming in the tropics, and cooling or no change in the Southern Hemisphere.[ 8] From a Eurocentric viewpoint, these warming events seemed important, but on a global scale the effect was negligible. In addition, neither of these warming episodes is related to increasing greenhouse gases. The Holocene Climatic Optimum, in fact, is predicted by the Milankovitch cycles, since at that time the axial tilt of the earth was 24°, its steepest value, meaning the Northern Hemisphere got more solar radiation than normal -- but the Southern Hemisphere less, so the two balanced. By contrast, not only is the warming observed in the last 200 years much greater than during these previous episodes, but it is also global and bipolar, so it is not a purely local effect. The warming that ended the Little Ice Age (from the mid-1700s to the late 1800s) was due to increased solar radiation prior to 1940. Since 1940, however, the amount of solar radiation has been dropping, so the only candidate remaining for the post-1940 warming is carbon dioxide.[ 9] "It's just the sun, or cosmic rays, or volcanic activity or methane." Nope, sorry. The amount of heat that the sun provides has been decreasing since 1940,[ 10] just the opposite of the critics' claims (Fig. 3). There is no evidence of an increase in cosmic ray particles during the past century.[ 11] Nor is there any clear evidence that large-scale volcanic events (such as the 1815 eruption of Tambora in Indonesia, which changed global climate for about a year) have any long-term effects that would explain 200 years of warming and carbon dioxide increase. Volcanoes erupt only 0.3 billion tonnes of carbon dioxide each year, but humans emit over 29 billion tonnes a year,[ 12] roughly 100 times as much. Clearly, we have a bigger effect. Methane is a more powerful greenhouse gas, but there is 200 times more carbon dioxide than methane, so carbon dioxide is still the most important agent.[ 13] Every other alternative has been looked at and can be ruled out. The only clear-cut relationship is between human-caused carbon dioxide increase and global warming. \* "The climate records since 1995 (or 1998) show cooling." That's simply untrue. The only way to support this argument is to cherry-pick the data.[ 14] Over the short term, there was a slight cooling trend from 1998-2000, but only because 1998 was a record-breaking El Nino year, so the next few years look cooler by comparison (Fig. 4). But since 2002, the overall long-term trend of warming is unequivocal. All of the 16 hottest years ever recorded on a global scale have occurred in the last 20 years. They are (in order of hottest first): 2010, 2009, 1998, 2005, 2003, 2002, 2004, 2006, 2007, 2001, 1997, 2008, 1995, 1999, 1990, and 2000.[ 15] In other words, every year since 2000 has been on the Top Ten hottest years list. The rest of the top 16 include 1995, 1997, 1998, 1999, and 2000. Only 1996 failed to make the list (because of the short-term cooling mentioned already). \* "We had record snows in the winter of 2009-2010, and also in 2010-2011." So what? This is nothing more than the difference between weather (short-term seasonal changes) and climate (the long-term average of weather over decades and centuries and longer). Our local weather tells us nothing about another continent, or the global average; it is only a local effect, determined by short-term atmospheric and oceano-graphic conditions.[ 16] In fact, warmer global temperatures mean more moisture in the atmosphere, which increases the intensity of normal winter snowstorms. In this particular case, the climate change critics forget that the early winter of November-December 2009 was actually very mild and warm, and then only later in January and February did it get cold and snow heavily. That warm spell in early winter helped bring more moisture into the system, so that when cold weather occurred, the snows were worse. In addition, the snows were unusually heavy only in North America; the rest of the world had different weather, and the global climate was warmer than average. Also, the summer of 2010 was the hottest on record, breaking the previous record set in 2009. \* "Carbon dioxide is good for plants, so the world will be better off." Who do they think they're kidding? The Competitive Enterprise Institute (funded by oil and coal companies and conservative foundations[ 17]) has run a series of shockingly stupid ads concluding with the tag line "Carbon dioxide: they call it pollution, we call it life." Anyone who knows the basic science of earth's atmosphere can spot the gross inaccuracies in this ad.[ 18] True, plants take in carbon dioxide that animals exhale, as they have for millions of years. But the whole point of the global warming evidence (as shown from ice cores) is that the delicate natural balance of carbon dioxide has been thrown off balance by our production of too much of it, way in excess of what plants or the oceans can handle. As a consequence, the oceans are warming[ 19, 20] and absorbing excess carbon dioxide making them more acidic. Already we are seeing a shocking decline in coral reefs ("bleaching") and extinctions in many marine ecosystems that can't handle too much of a good thing. Meanwhile, humans are busy cutting down huge areas of temperate and tropical forests, which not only means there are fewer plants to absorb the gas, but the slash and burn practices are releasing more carbon dioxide than plants can keep up with. There is much debate as to whether increased carbon dioxide might help agriculture in some parts of the world, but that has to be measured against the fact that other traditional "breadbasket" regions (such as the American Great Plains) are expected to get too hot to be as productive as they are today. The latest research[ 21] actually shows that increased carbon dioxide inhibits the absorption of nitrogen into plants, so plants (at least those that we depend upon today) are not going to flourish in a greenhouse world. It is difficult to know if those who tell the public otherwise are ignorant of basic atmospheric science and global geochemistry, or if they are being cynically disingenuous. \* "I agree that climate is changing, but I'm skeptical that humans are the main cause, so we shouldn't do anything." This is just fence sitting. A lot of reasonable skeptics deplore the right wing's rejection of the reality of climate change, but still want to be skeptical about the cause. If they want proof, they can examine the huge array of data that points directly to human caused global warming.[ 22] We can directly measure the amount of carbon dioxide humans are producing, and it tracks exactly with the amount of increase in atmospheric carbon dioxide. Through carbon isotope analysis, we can show that this carbon dioxide in the atmosphere is coming directly from our burning of fossil fuels, not from natural sources. We can also measure the drop in oxygen as it combines with the increased carbon levels to produce carbon dioxide. We have satellites in space that are measuring the heat released from the planet and can actually see the atmosphere getting warmer. The most crucial evidence emerged only within the past few years: climate models of the greenhouse effect predict that there should be cooling in the stratosphere (the upper layer of the atmosphere above 10 km or 6 miles in elevation), but warming in the troposphere (the bottom layer below 10 km or 6 miles), and that's exactly what our space probes have measured. Finally, we can rule out any other suspects (see above): solar heat is decreasing since 1940, not increasing, and there are no measurable increases in cosmic rays, methane, volcanic gases, or any other potential cause. Face it -- it's our problem. Why Do People Continue to Question the Reality of Climate Change? Thanks to all the noise and confusion over climate change, the general public has only a vague idea of what the debate is really about, and only about half of Americans think global warming is real or that we are to blame.[ 23] As in the evolution/creationism debate, the scientific community is virtually unanimous on what the data demonstrate about anthropogenic global warming. This has been true for over a decade. When science historian Naomi Oreskes[ 24] surveyed all peer-reviewed papers on climate change published between 1993 and 2003 in the world's leading scientific journal, Science, she found that there were 980 supporting the idea of human-induced global warming and none opposing it. In 2009, Doran and Kendall Zimmerman[ 25] surveyed all the climate scientists who were familiar with the data. They found that 95-99% agreed that global warming is real and human caused. In 2010, the prestigious Proceedings of the National Academy of Sciences published a study that showed that 98% of the scientists who actually do research in climate change are in agreement over anthropogenic global warming.[ 26] Every major scientific organization in the world has endorsed the conclusion of anthropogenic climate change as well. This is a rare degree of agreement within such an independent and cantankerous group as the world's top scientists. This is the same degree of scientific consensus that scientists have achieved over most major ideas, including gravity, evolution, and relativity. These and only a few other topics in science can claim this degree of agreement among nearly all the world's leading scientists, especially among everyone who is close to the scientific data and knows the problem intimately. If it were not such a controversial topic politically, there would be almost no interest in debating it since the evidence is so clear-cut. If the climate science community speaks with one voice (as in the 2007 IPCC report, and every report since then), why is there still any debate at all? The answer has been revealed by a number of investigations by diligent reporters who got past the PR machinery denying global warming, and uncovered the money trail. Originally, there were no real "dissenters" to the idea of global warming by scientists who are actually involved with climate research. Instead, the forces with vested interests in denying global climate change (the energy companies, and the "free-market" advocates) followed the strategy of tobacco companies: create a smokescreen of confusion and prevent the American public from recognizing scientific consensus. As the famous memo[ 27] from the tobacco lobbyists said "Doubt is our product." The denialists generated an anti-science movement entirely out of thin air and PR. The evidence for this PR conspiracy has been well documented in numerous sources. For example, Oreskes and Conway revealed from memos leaked to the press that in April 1998 the right-wing Marshall Institute, SEPP (Fred Seitz's lobby that aids tobacco companies and polluters), and ExxonMobil, met in secret at the American Petroleum Institute's headquarters in Washington, D.C. There they planned a $20 million campaign to get "respected scientists" to cast doubt on climate change, get major PR efforts going, and lobby Congress that global warming isn't real and is not a threat. The right-wing institutes and the energy lobby beat the bushes to find scientists -- any scientists -- who might disagree with the scientific consensus. As investigative journalists and scientists have documented over and over again,[ 28] the denialist conspiracy essentially paid for the testimony of anyone who could be useful to them. The day that the 2007 IPCC report was released (Feb. 2, 2007), the British newspaper The Guardian reported that the conservative American Enterprise Institute (funded largely by oil companies and conservative think tanks) had offered $10,000 plus travel expenses to scientists who would write negatively about the IPCC report.[ 29] In February 2012, leaks of documents from the denialist Heartland Institute revealed that they were trying to influence science education, suppress the work of scientists, and had paid off many prominent climate deniers, such as Anthony Watts, all in an effort to circumvent the scientific consensus by doing an "end run" of PR and political pressure. Other leaks have shown 9 out of 10 major climate deniers are paid by ExxonMobil.[ 30] We are accustomed to hired-gun "experts" paid by lawyers to muddy up the evidence in the case they are fighting, but this is extraordinary -- buying scientists outright to act as shills for organizations trying to deny scientific reality. With this kind of money, however, you can always find a fringe scientist or crank or someone with no relevant credentials who will do what they're paid to do. Fishing around to find anyone with some science background who will agree with you and dispute a scientific consensus is a tactic employed by the creationists to sound "scientific". The NCSE created a satirical "Project Steve,"[ 31] which demonstrated that there were more scientists who accept evolution named "Steve" than the total number of "scientists who dispute evolution". It may generate lots of PR and a smokescreen to confuse the public, but it doesn't change the fact that scientists who actually do research in climate change are unanimous in their insistence that anthropogenic global warming is a real threat. Most scientists I know and respect work very hard for little pay, yet they still cannot be paid to endorse some scientific idea they know to be false. The climate deniers have a lot of other things in common with creationists and other anti-science movements. They too like to quote someone out of context ("quote mining"), finding a short phrase in the work of legitimate scientists that seems to support their position. But when you read the full quote in context, it is obvious that they have used the quote inappropriately. The original author meant something that does not support their goals. The "Climategate scandal" is a classic case of this. It started with a few stolen emails from the Climate Research Unit of the University of East Anglia. If you read the complete text of the actual emails[ 32] and comprehend the scientific shorthand of climate scientists who are talking casually to each other, it is clear that there was no great "conspiracy" or that they were faking data. All six subsequent investigations have cleared Philip Jones and the other scientists of the University of East Anglia of any wrongdoing or conspiracy.[ 33] Even if there had been some conspiracy on the part of these few scientists, there is no reason to believe that the entire climate science community is secretly working together to generate false information and mislead the public. If there's one thing that is clear about science, it's about competition and criticism, not conspiracy and collusion. Most labs are competing with each other, not conspiring together. If one lab publishes a result that is not clearly defensible, other labs will quickly correct it. As James Lawrence Powell wrote: Scientists…show no evidence of being more interested in politics or ideology than the average American. Does it make sense to believe that tens of thousands of scientists would be so deeply and secretly committed to bringing down capitalism and the American way of life that they would spend years beyond their undergraduate degrees working to receive master's and Ph.D. degrees, then go to work in a government laboratory or university, plying the deep oceans, forbidding deserts, icy poles, and torrid jungles, all for far less money than they could have made in industry, all the while biding their time like a Russian sleeper agent in an old spy novel? Scientists tend to be independent and resist authority. That is why you are apt to find them in the laboratory or in the field, as far as possible from the prying eyes of a supervisor. Anyone who believes he could organize thousands of scientists into a conspiracy has never attended a single faculty meeting.[ 34] There are many more traits that the climate deniers share with the creationists and Holocaust deniers and others who distort the truth. They pick on small disagreements between different labs as if scientists can't get their story straight, when in reality there is always a fair amount of give and take between competing labs as they try to get the answer right before the other lab can do so. The key point here is that when all these competing labs around the world have reached a consensus and get the same answer, there is no longer any reason to doubt their common conclusion. The anti-scientists of climate denialism will also point to small errors by individuals in an effort to argue that the entire enterprise cannot be trusted. It is true that scientists are human, and do make mistakes, but the great power of the scientific method is that peer review weeds these out, so that when scientists speak with consensus, there is no doubt that their data are checked carefully Finally, a powerful line of evidence that this is a purely political controversy, rather than a scientific debate, is that the membership lists of the creationists and the climate deniers are highly overlapping. Both anti-scientific dogmas are fed to their overlapping audiences through right-wing media such as Fox News, Glenn Beck, and Rush Limbaugh. Just take a look at the "intelligent-design" cre-ationism website for the Discovery Institute. Most of the daily news items lately have nothing to do with creationism at all, but are focused on climate denial and other right-wing causes.[ 35] If the data about global climate change are indeed valid and robust, any qualified scientist should be able to look at them and see if the prevailing scientific interpretation holds up. Indeed, such a test took place. Starting in 2010, a group led by U.C. Berkeley physicist Richard Muller re-examined all the temperature data from the NOAA, East Anglia Hadley Climate Research Unit, and the Goddard Institute of Space Science sources. Even though Muller started out as a skeptic of the temperature data, and was funded by the Koch brothers and other oil company sources, he carefully checked and re-checked the research himself. When the GOP leaders called him to testify before the House Science and Technology Committee in spring 2011, they were expecting him to discredit the temperature data. Instead, Muller shocked his GOP sponsors by demonstrating his scientific integrity and telling the truth: the temperature increase is real, and the scientists who have demonstrated that the climate is changing are right (Fig. 5). In the fall of 2011, his study was published, and the conclusions were clear: global warming is real, even to a right-wing skeptical scientist. Unlike the hired-gun scientists who play political games, Muller did what a true scientist should do: if the data go against your biases and preconceptions, then do the right thing and admit it -- even if you've been paid by sponsors who want to discredit global warming. Muller is a shining example of a scientist whose integrity and honesty came first, and did not sell out to the highest bidder.[ 36] \* Science and Anti-Science The conclusion is clear: there's science, and then there's the anti-science of global warming denial. As we have seen, there is a nearly unanimous consensus among climate scientists that anthropogenic global warming is real and that we must do something about it. Yet the smokescreen, bluster and lies of the deniers has created enough doubt so that only half of the American public is convinced the problem requires action. Ironically, the U.S. is almost alone in questioning its scientific reality. International polls taken of 33,000 people in 33 nations in 2006 and 2007 show that 90% of their citizens regard climate change as a serious problem[ 37] and 80% realize that humans are the cause of it.[ 38] Just as in the case of creationism, the U.S. is out of step with much of the rest of the world in accepting scientific reality. It is not just the liberals and environmentalists who are taking climate change seriously. Historically conservative institutions (big corporations such as General Electric and many others such as insurance companies and the military) are already planning on how to deal with global warming. Many of my friends high in the oil companies tell me of the efforts by those companies to get into other forms of energy, because they know that cheap oil will be running out soon and that the effects of burning oil will make their business less popular. BP officially stands for "British Petroleum," but in one of their ad campaigns about 5 years ago, it stood for "Beyond Petroleum."[ 39] Although they still spend relatively little of their total budgets on alternative forms of energy, the oil companies still see the handwriting on the wall about the eventual exhaustion of oil -- and they are acting like any company that wants to survive by getting into a new business when the old one is dying. The Pentagon (normally not a left-wing institution) is also making contingency plans for how to fight wars in an era of global climate change, and analyzing what kinds of strategic threats might occur when climate change alters the kinds of enemies we might be fighting, and water becomes a scarce commodity. The New York Times reported[ 40] that in December 2008, the National Defense University outlined plans for military strategy in a greenhouse world. To the Pentagon, the big issue is global chaos and the potential of even nuclear conflict. The world must "prepare for the inevitable effects of abrupt climate change -- which will likely come [the only question is when] regardless of human activity." Insurance companies have no political axe to grind. If anything, they tend to be on the conservative side. They are simply in the business of assessing risk in a realistic fashion so they can accurately gauge their future insurance policies and what to charge for them. Yet they are all investing heavily in research on the disasters and risks posed by climatic change. In 2005, a study commissioned by the re-insurer Swiss Re said, "Climate change will significantly affect the health of humans and ecosystems and these impacts will have economic consequences."[ 41] Some people may still try to deny scientific reality, but big businesses like oil and insurance and conservative institutions like the military cannot afford to be blinded or deluded by ideology. They must plan for the real world that we will be seeing in the next few decades. They do not want to be caught unprepared and harmed by global climatic change when it threatens their survival. Neither can we as a society.**

**Continued warming will cause extinction from hydrogen sulfide poisoning.**

**Ward 10** (Peter, Professor of Biology and Earth and Space Sciences at the University of Washington, Paleontologist and NASA Astrobiologist, Fellow at the California Academy of Sciences, The Flooded Earth: Our Future in a World Without Ice Caps, June 29, 2010)

In the rest of this chapter I will support a contention that within several millennia (or less) the planet will see a changeover of the oceans from their current “mixed” states to something much different and dire. Oceans will become stratified by their oxygen content and temperature, with warm, oxygen-free water lining the ocean basins. Stratified oceans like this in the past (and they were present for most of Earth’s history) have always been preludes to biotic catastrophe. Because the continents were in such different positions at that time, models we use today to understand ocean current systems are still crude when it comes to analyzing the ancient oceans, such as those of the **Devonian** or **Permian** Periods. Both times witnessed major mass extinctions, and these extinctions were somehow tied to events in the sea. Yet catastrophic as it was, the event that turned the Canning Coral Reef of Devonian age into the Canning Microbial Reef featured at the start of this chapter was tame compared to that ending the 300 million- to 251 million-year-old Permian Period, and for this reason alone the Permian ocean and its fate have been far more studied than the Devonian. But there is another reason to concentrate on the Permian mass extinction: it took place on a world with a climate more similar to that of today than anytime in the Devonian. Even more important, it was a world with ice sheets at the poles, something the more tropical Devonian Period may never have witnessed. For much of the Permian Period, the Earth, as it does today, had abundant ice caps at both poles, and there were large-scale continental glaciations up until at least 270 million years ago, and perhaps even later.4 But from then until the end of the Permian, the planet rapidly warmed, the ice caps disappeared, and the deep ocean bottoms filled with great volumes of warm, virtually oxygen-free seawater. The trigger for disaster was a short-term but massive infusion of carbon dioxide and other greenhouse gases into the atmosphere at the end of the Permian from the spectacular lava outpourings over an appreciable portion of what would become northern Asia. The lava, now ancient but still in place, is called the “Siberian Traps,” the latter term coming from the Scandinavian for lava flows. The great volcanic event was but the start of things, and led to changes in oceanography. The ultimate kill mechanism seems to have been a lethal combination of rising temperature, diminishing oxygen, and influx into water and air of the highly poisonous compound hydrogen sulfide. The cruel irony is that this latter poison was itself produced by life, not by the volcanoes. The bottom line is that life produced the ultimate killer in this and surely other ancient mass extinctions. This finding was one that spurred me to propose the Medea Hypothesis, and a book of the same name.5 Hydrogen sulfide poisoning might indeed be the worst biological effect of global warming. There is no reason that such an event cannot happen again, given short-term global warming. And because of the way the sun ages, it may be that such events will be ever easier to start than during the deep past. How does the sun get involved in such nasty business as mass extinction? Unlike a campfire that burns down to embers, any star gets ever hotter when it is on the “main sequence,” which is simply a term used to described the normal aging of a star—something like the progression we all go through as we age. But new work by Jeff Kiehl of the University of Colorado shows that because the sun keeps getting brighter, amounts of CO2 that in the past would not have triggered the process result in stagnant oceans filled with H2S-producing microbes. His novel approach was to estimate the global temperature rise to be expected from carbon dioxide levels added to the energy hitting the earth from the sun. Too often we refer to the greenhouse effect as simply a product of the gases. But it is sunlight that actually produces the heat, and that amount of energy hitting the earth keeps increasing. He then compared those to past times of mass extinctions. The surprise is that a CO2 level of 1,000 ppm would—with our current solar radiation—make our world the second hottest in Earth history—when the five hottest were each associated with mass extinction. In the deep history of our planet, there have been at least five short intervals in which the majority of living species suddenly went extinct. Biologists are used to thinking about how environmental pressures slowly choose the organisms most fit for survival through natural selection, shaping life on Earth like an artist sculpting clay. However, mass extinctions are drastic examples of natural selection at its most ruthless, killing vast numbers of species at one time in a way hardly typical of evolution. In the 1980s, Nobel Prize-winning physicist Luis Alvarez, and his son Walter Alvarez, first hypothesized that the impact of comets or asteroids caused the mass extinctions of the past.6 Most scientists slowly come to accept this theory of extinction, further supported by the discovery of a great scar in the earth—an impact crater—off the coast of Mexico that dates to around the time the dinosaurs went extinct. An asteroid probably did kill off the dinosaurs, but the causes of the remaining four mass extinctions are still obscured beneath the accumulated effects of hundreds of millions of years, and no one has found any credible evidence of impact craters. Rather than comets and asteroids, it now appears that short-term global warming was the culprit for the **four** other mass extinctions. I detailed the workings of these extinctions first in a 1996 Discover magazine article,7 then in an October 2006 Scientific American article, and finally in my 2007 book, Under a Green Sky.8 In each I considered whether such events could happen again. In my mind, such extinctions constitute the worst that could happen to life and the earth as a result of short-term global warming. But before we get to that, let us look at the workings of these past events. The evidence at hand links the mass extinctions with a changeover in the ocean from oxygenated to anoxic bottom waters. The source of this was a change in where bottom waters are formed. It appears that in such events, the source of our earth’s deep water shifted from the high latitudes to lower latitudes, and the kind of water making it to the ocean bottoms was different as well: it changed from cold, oxygenated water to warm water containing less oxygen. The result was the extinction of deep-water organisms. Thus a greenhouse extinction is a product of a changeover of the conveyor-belt current systems found on Earth any time there is a marked difference in temperatures between the tropics and the polar regions. Let us summarize the steps that make greenhouse extinction happen. First, the world warms over short intervals due to a sudden increase in carbon dioxide and methane, caused initially by the formation of vast volcanic provinces called flood basalts. The warmer world affects the ocean circulation systems and disrupts the position of the conveyor currents. Bottom waters begin to have warm, low-oxygen water dumped into them. The warming continues, and the decrease of equator-to-pole temperature differences brings ocean winds and surface currents to a near standstill. The mixing of oxygenated surface waters with the deeper and volumetrically increasing low-oxygen bottom waters lessens, causing ever-shallower water to change from oxygenated to anoxic. Finally, the bottom water exists in depths where light can penetrate, and the combination of low oxygen and light allows green sulfur bacteria to expand in numbers, filling the low-oxygen shallows. The bacteria produce toxic amounts of H2S, with the flux of this gas into the atmosphere occurring at as much as 2,000 times today’s rates. The gas rises into the high atmosphere, where it breaks down the ozone layer. The subsequent increase in ultraviolet radiation from the sun kills much of the photosynthetic green plant phytoplankton. On its way up into the sky, the hydrogen sulfide also kills some plant and animal life, and the combination of high heat and hydrogen sulfide creates a **mass extinction** on land.9 Could this happen again? No, says one of the experts who write the RealClimate.org Web site, Gavin Schmidt, who, it turns out, works under Jim Hansen at the NASA Goddard Space Flight Center near Washington, DC. I disagreed and challenged him to an online debate. He refused, saying that the environmental situation is going to be bad enough without resorting to creating a scenario for mass extinction. But special pleading has no place in science. Could it be that global warming could lead to the extinction of humanity? That prospect cannot be discounted. To pursue this question, let us look at what might be the most crucial of all systems maintaining habitability on Planet Earth: the thermohaline current systems, sometimes called the conveyor currents.

**The environmental costs of centralized energy are massive and unaccounted for and renewables cant be able to compete against cheaper, dirty sources of energy**

Sovacool 9 [Benjamin, Energy Governance Program, Centre on Asia and Globalisation, Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore. Also, knocked Herndon out of the NDT his junior year. On vagueness. Siiiiiiiick. “Rejecting renewables: The socio-technical impediments to renewable electricity in the United States” Energy Policy 37 (2009) 4500–4513]

3. Economic impediments

While renewable power sources have social benefits, they are not without costs, and the existing system prices electricity in a manner that tends to favor conventional options. For most of its history, **the American electric utility sector has focused on making electricity abundant and cheap** with the assistance of regulators and politicians, who subsidize all forms of energy to shield consumers from the true costs of extraction, generation, distribution, and use. **The environmental and social costs inherent with the existing system**, therefore, **have** also **become less and less noticeable**. Many **utilities endorse fossil and nuclear plants because they are able to pass most of the costs from these polluting power systems directly onto consumers and society at large**. **Renewable power sources**, in contrast, **provide** public benefits **that are** not yet valued **in the electricity market.**

**Because of this non-alignment between electricity's cost and price**, **utilities reject renewables and** continue to **rely on** less efficient and **more damaging generators** **that guarantee** them future **profits**. When the principles of neoclassical economics were being formulated by Marshall (1890) and Pigou (1920), one of their central arguments was that all costs from a transaction had to be internalized (or taxed, to use Pigou's language). Otherwise, firms would always exploit the system to shift as many costs as they could to the public. About five decades later, Garrett **Hardin developed the term “tragedy of the commons” to refer to how** **people** (and firms) **rationally externalize as many of the costs associated with their activities that they can**. Examples of “the commons” for Hardin included agricultural grazing lands, the National Parks, free parking meters, and a thief robbing a bank. The commons in each instance – grass, land, parking spaces, other people's money – had a tendency to be exploited because the benefits of abusing them accrued to a small group of individuals, whereas the costs were distributed to everyone. Or, as Hardin (1968, p. 1245) noted, “we are locked into a system of fouling our own nest, so long as we behave only as independent, rational, free-enterprisers.”

**This situation has** very real implications **for the American electric utility sector**. **Fossil fuel and nuclear power plants are the nation's second largest users of** water**, produce millions of tons of solid** waste**, emit** mercury**,** particulate matter**, and other** noxious pollutants **into the atmosphere, and cause** social inequity **by** exacerbating poverty. **Yet** in the current system, they do not have to pay for most of this damage. **If they did have to fully internalize the costs of transportation, air pollution, water contamination, and land use** (and, when applicable, damages such as injury and death), coal generation would cost 19.14 cents per kilowatt-hour (¢/kWh) more; oil and natural gas generation 12 ¢/kWh more; nuclear power 11.1 ¢/kWh more ( [Sovacool, 2008a] and [Sovacool, 2008b]) (see Fig. 3). Given that the average residential price of electricity in the United States for 2007 was about 10 ¢/kWh, **the damages from these energy systems currently outweigh the amount that customers pay for them.**

**Put another way**, in 2007 **fossil fueled and nuclear power generators exacted about $420 billion in damages –** excludingpossibledamages from climate change – **that were not reflected in electricity prices, an amount $143 billion more than the $277 billion in revenues the American electricity industry reported for the same year**. **Consequently, forcing renewable power technologies to compete against conventional generators when the prices are so skewed in their favor is** much like racing a tricycle against a Ferrari.

**Solar solves warming.**

Ekinss 9 [June, Ned, Solar energy for heat and electricity: the potential for mitigating climate change Imperial College London Grantham Institute for Climate Change Briefing paper No 1, physics lecturer at the University of Sydney, Australia. Awarded his PhD from Imperial College London in 2000, https://workspace.imperial.ac.uk/climatechange/public/pdfs/GranthamJune.pdf]

**The sun supplies the majority of the energy available on the Earth; wind power, hydropower, biomass and all fossil fuels can trace their energy source back to the sun. These indirect routes for deriving solar energy have certain advantages: storage of energy in the case of fossil fuels and hydropower, and transportation of energy in the case of wind. However, the challenges involved in harnessing solar energy directly and on a large scale are such that it remains an elusive but still fundamentally attractive way of mitigating climate change. This paper describes the present status of solar energy worldwide, and outlines the competing technologies, the magnitude of energy they could produce, and the extent to which they could be used. Human use of solar energy spans natural lighting and agriculture, from simple technologies such as the outdoor clothesline through to centralised electrical power plants equipped with storage. It is almost impossible to quantify this habitual use, as most uses of solar energy, such as passive heating, are classed as energy efficiency measures. While these simple solar approaches are important, this paper is primarily concerned with active solar power conversion that can displace conventional power generation and contribute towards a truly sustainable energy supply. The solar radiation continuously available to the Earth [162,000 terawatts (TW, 10 12 W)] greatly exceeds the average worldwide primary power consumption in 2004 (16TW), 86.5% of which came from fossil fuels 1 . The combined output of active solar energy systems currently meets only 0.1% of the world’s primary energy consumption.**

**The efficiency of solar energy systems is rated according to their performance under a standard test irradiance of 1000 W/m2 , which corresponds to the maximum irradiance expected on a clear day in summer at moderate latitudes. The actual level of solar irradiance will depend on the latitude and local climatic conditions, but the annual average solar energy density lies in a range from 100-250 W/m2 for most locations, as shown in Figure 1. The capacity factor for solar collectors (actual output power / rated output power) therefore lies at 10-25% depending on location. This fluctuation is significant in determining the broad economic suitability of solar energy technologies 2 . However, the extent to which solar energy can help mitigate climate change depends on the carbon intensity of the local energy supply being displaced and the matching between supply and demand.**

**Were climate change of no concern, a natural, gradual shift to solar energy technologies might be envisaged as conventional energy sources become depleted and housing stock over the next century is replaced and upgraded. However, to make a significant contribution to the problem of climate change, an accelerated adoption of solar energy technologies is required. Appropriately designed feed-in-tariffs have proven to be effective in achieving this with photovoltaics, driving both technological development and market expansion and providing the motivation to overcome non-technical barriers such as limited training and local installation expertise. Solar electricity technologies require roughly another decade of government support to achieve sufficient cost reduction with present technologies to enable them to become self-sustaining**

**The International Energy Agency (IEA) predicts that approximately one quarter of renewable power, or 11% of worldwide electricity, could be supplied from solar energy in 2050 4 (Figure 2). The IEA projections indicate that it is both technically and economically feasible to be generating terawatts of solar energy within the timescales required to limit global temperature rise to around 2 °C. The speed of transition from fossil fuel combustion to a portfolio of low carbon technologies is constrained by manufacturing capacity and ultimately cost. Figure 2 shows the annual costs of maintaining compound 33% per annum growth and those incurred in the IEA scenario. For technologies such as solar energy, early and sustained investment is required to reduce costs and ensure that the necessary manufacturing and installation infrastructure is built.**

#### Micro-generation is key to preventing widespread environmental catastrophe

Rifkin 12 [Jeremy Rifkin is president of the Foundation on Economic Trends and the bestselling author of nineteen books on the impact of scientific and technological changes on the economy, the workforce, society, and the environment. His books have been translated into more than thirty five languages and are used in hundreds of universities, corporations and government agencies around the world. His most recent books includeThe Third Industrial Revolution, The Empathic Civilization, The Hydrogen Economy, The European Dream, The End of Work, The Age of Access, and The Biotech Century. Jeremy Rifkin has been an adviser to the European Union for the past decade and is the principle architect of the European Union’s Third Industrial Revolution long-term economic sustainability plan.. “The third Industrial Revolution”. Feb 14th. <http://www.makingitmagazine.net/?p=4514>]

Our industrial civilization is at a crossroads. Oil and the other fossil fuel energies that make up the industrial way of life are dwindling, and the technologies made from and propelled by these energies are antiquated. The entire industrial infrastructure built on fossil fuels is aging and in disrepair. The result is that unemployment is rising to dangerous levels all over the world. Governments, businesses and consumers are awash in debt, and living standards are plummeting everywhere. A record one billion human beings – nearly one seventh of the human race – face hunger and starvation.

Worse, climate change from fossil fuel-based industrial activity looms on the horizon. Our scientists warn that we face a potentially cataclysmic change in the temperature and chemistry of the planet, which threatens to destabilize ecosystems around the world. We may be on the brink of a mass extinction of plant and animal life by the end of the century, imperilling our own species’ ability to survive. It is becoming increasingly clear that we need a new economic narrative that can take us into a more equitable and sustainable future.

A new convergence of communication and energy

By the 1980s, the evidence was mounting that the fossil fuel-driven industrial revolution was peaking and that human-induced climate change was forcing a planetary crisis of untold proportions. For the past 30 years, I have been searching for a new paradigm that could usher in a post-carbon era. I came to realize that the great economic revolutions in history occur when new communication technologies converge with new energy systems. New energy regimes make possible the creation of more interdependent economic activity and expanded commercial exchange, as well as facilitating more dense and inclusive social relationships. The accompanying communication revolutions become the means to organize and manage the new temporal and spatial dynamics that arise from new energy systems.

In the 19th century, steam-powered print technology became the communication medium to manage the coal-fired rail infrastructure and the incipient national markets of the First Industrial Revolution.  In the 20th century, electronic communications – the telephone and later, radio and television – became the communication medium to manage and market the oil-powered auto age and the mass consumer culture of the Second Industrial Revolution.

An “energy Internet”

In the mid-1990s, it dawned on me that a new convergence of communication and energy was in the offing. Internet technology and renewable energies were about to merge to create a powerful new infrastructure for a Third Industrial Revolution that would change the world. In the coming era, hundreds of millions of people will produce their own green energy in their homes, offices, and factories, and share it with each other in an “energy Internet,” just like we now create and share information online. The democratization of energy will bring with it a fundamental reordering of human relationships, impacting the very way we conduct business, govern society, educate our children, and engage in civic life.

### 1AC—Plan

**Plan:**

**The United States federal government should issue a revenue ruling establishing that locally planned solar power production is a real estate investment trust qualified asset class.**

### 1AC—Solvency

**Contention Two – Solvency**

**There is an oversupply of solar panels – lack of financing equity will ensure a market crash.**

**Hinckley 10/18** (Elias. Leads the clean energy practice at Kilpatrick Townsend, Perfect Storm Brewing for Troubled U.S. Solar Manufacturers, <http://www.consumerenergyreport.com/2012/10/18/perfect-storm-brewing-for-troubled-u-s-solar-manufacturers/>)

Three Thoughts on the State of the Solar Market

There has been some upheaval upstream in the solar industry. If you follow the solar business for any reason you know that solar manufacturers are challenged by excess supply and dropping panel prices, just this week rumors that industry stalwart JA Solar was facing possible delisting by NASDAQ surfaced. There have obviously been some high-profile failures of solar manufacturing companies. None of this should have come as a surprise – industry consolidation was expected (or should have been). Consolidation occurs naturally when an industry or technology moves up the adoption curve – new participants, new approaches to technology, new manufacturing techniques, increased scale and competition all accelerate price declines, which inevitably leaves some early industry participants vulnerable because sunk investment forces higher per unit production costs. In the case of solar, a surprisingly rapid drop in prices for photovoltaic panels was further accelerated by significant Chinese government investment in panel manufacturing capacity. The pace of the price drop surprised much of the industry and overleveraged solar manufacturers were caught trying to meet price points that were economically unsustainable. (See more: Wind Tax Credits and the State of Solar: A Discussion With Admiral Dennis McGinn)

So is the industry ready to stabilize? Not quite yet. While longer term the industry looks extremely well positioned for very significant growth, here are three observations about the near-term state of the industry that would keep me awake at night if I were in the business of selling solar panels for the next 12 months.

1) Panel Oversupply is Worse Than You Think

Stories about oversupply and warehouses full of panels are well documented –– but this is not the whole story. At the end of December a number of companies (mostly, but not exclusively, developers) took large positions in panels in an effort to qualify the panels and associated projects under the safe harbor for the expiring 1603 Treasury Grant (allowed project owners to take a direct cash grant from the Treasury in lieu of applying tax credits to a renewable energy project). More than a few companies are still looking to place a lot of these panels (rumors are that more than 1GW — enough to put panels on roughly 200,000 houses — of ‘pre-qualified’ panels are sitting in warehouses), creating a disruptive secondary market and undercutting direct demand for new panels from manufacturers.

The disruption of these ‘pre-qualified’ panels may get worse. As more time lapses, the risk associated with the safe harbor qualification is quite likely to increase. Separation from purchase time to deployment makes the critical project narrative of a purchase attached to a specific project harder to hold together during the 1603 review process. Additionally, there is a real possibility that the scale of the claims made under the safe harbor may force the Treasury to increase scrutiny over safe harbor qualification. (NOTE: if you are considering buying safe harbored panels, do some serious diligence before committing). Also looming is a potential automatic haircut to the value of the 1603 grant in the event no resolution on sequestration is reached by Congress. In any event, as qualification risk increases discounting will become increasingly necessary to find buyers for these panels, creating further pricing disruption. (See more: First Solar May Supply World’s Largest Solar Farm)

2) The Industry is Short on Tax Equity

There is not nearly enough tax equity in the market to support the projected growth in solar deployment in the U.S. market. Tax equity represents an investment in the tax benefits – the Investment Tax Credit and accelerated tax depreciation – applied to a solar installation (tax equity is also used by other renewable energy projects, as well as low income housing and historic rehabilitation developments). These tax benefits are the primary vehicles for federal government subsidy of solar. Tax equity investors generally have low risk tolerance, and expect returns only slightly better than what would be paid for secured debt (really from the investor’s standpoint tax equity is quite similar in character to debt). During 2006 and 2007 there was abundant tax equity available for renewable energy projects, offered primarily by financial institutions. During the financial crisis in 2008 tax equity for energy projects disappeared, slowly returning in 2009, led by JPMorgan, and has grown steadily, albeit slowly through this year. From late 2008 through the end of 2011 the need for tax equity was limited, as the 1603 program was in place to bridge the shortfall in tax equity with respect to the tax credit portion of project finance. Despite some recovery, the return of several tax investors and the emergence of a handful of important new investors, the amount of tax equity available in the market remains far less than necessary to support renewable project development now that the 1603 program has expired.

Without tax equity, there is inadequate project financing capital available in the market and many projects won’t be able to obtain adequate financing and so will not get built (tax equity can provide 50% or more of necessary project finance capital). As of this writing and at least for the near future, the shortage of tax equity represents the most significant bottleneck in the U.S. solar market. The market will naturally expand to accommodate demand over time (and there are several in the industry, including this author, actively educating potential new investors in an effort to accelerate this expansion). However, tax equity investments are complex transactions and as a result the learning curve is steep and adding new investors to the market takes time. This complexity and learning process, combined with the lack of currently active participants is virtually guaranteed to act as a throttle on the pace of deployment over the next 12 to 18 months. Once this imbalance corrects itself, and as the importance of tax incentives diminishes, the extraordinary projections for solar deployment in the U.S. market through the next decade will accelerate.

3) We’re Starting to See Some State Regulatory Targets Met

An example is the market of California investor owned utilities (IOUs) as buyers of renewable energy (last year’s disruption in the New Jersey SREC market would be another). Until recently the California IOUs were an assumed off-taker for the electricity and, specifically the RECs, from a solar project – if a solar developer could get power into Cal ISO the IOUs would offer a PPA with some premium for the power being from a renewable source. Today, none of the three large California IOUs are actively engaging in negotiations for output from new projects generating renewable power outside of the state. There are limits on the amount of renewable power that counts against the state renewable portfolio target that can be procured from outside the state, and between active and committed projects, the IOUs have hit their limits for out of state RECs. The decline in certain state regulatory markets may not represent significant impact for solar growth in the U.S. – there is still market interest for California-based renewable generation by the IOUs and other California buyers are still sourcing outside of the state, while entirely new markets like Georgia are emerging – but it does create near-term challenges and uncertainty for developers, slowing project development and with it the immediate need for new panels.

What Does it Mean?

The secondary market created by 1603 safe harbored panels, the tax equity bottleneck and some potential near-term decline (or uncertainty) in the appetite for new RPS driven utility scale solar are combining to create something like a perfect storm for distressed panel manufacturers despite unprecedented growth in solar deployment. Distressed manufacturers are facing several more months of challenges in the important U.S. market. Regardless of the outcome of the election, the pace of consolidation will stay high and the downgrades, closures and struggles of solar manufacturers will be a regular part of the energy news cycle.

**Solar REITs resolve oversupply via the creation of locally produced energy.**

**Aanesen 12** [Krister Aanesen is an associate principal in McKinsey’s Oslo office, Stefan Heck is a director in the Stamford office, and Dickon Pinner is a principal in the San Francisco office, Solar power: Darkest before dawn, p. pdf/google, nrbontha]

Secure low-cost financing. Many companies are partnering with other organizations to gain access to low-cost financing. MEMC’s SunEdison joined with First Reserve, a financial provider, to secure a large pool of project equity. SolarCity secured funding from Google to finance residential solar projects, enabling Google to receive tax benefits in exchange for owning electricity-producing solar assets. Other potential innovative approaches include solar real-estate investment trusts,7 which allow retail investors to provide funding for solar projects or offer options that let distributed-generation customers pay for their solar investments via their monthly utility bill. The cost of capital is often the most crucial factor determining returns on solar projects. To succeed in down-stream markets, companies need strong capabilities in project finance—indeed, the entities that structure solar investments often achieve better returns than the companies that manufacture or install modules. Companies are increasingly likely to turn to institutional investors, asset-management firms, private-equity firms, and even the retail capital markets to raise the sums required to finance expected demand for solar, which could add up to more than $1 trillion over the next decade. As the solar investment pool swells, financial institutions, professional investors, and asset managers are likely to be drawn to the sector, since solar projects that are capital-heavy up front but rely on stable contracts will become attractive in comparison with tradi-tional financial products. New types of down-stream developers and investment products will emerge to aggregate low-cost equity and debt and to structure financial products with risk-return profiles aligned with the specific needs of institutional investors.

#### IRS REIT expansion guarantees massive investment.

Sturtevant 10 – George Washington University Solar Institute (Josh, J.D. from George Washington University Law School, Legal Associate at Distributed Sun LLC, in-house legal fellow at a renewable energy financing and development firm, "The Solar REIT: A Vision for the Future of German Solar Development," BlawgConomics, 11-10-2010, blawgconomics.blogspot.com/2010/11/solar-reit-vision-for-future-of-german.html, accessed 10-12-12)

Frequent visitors to the site may be familiar with our proposal to allow solar developers to take advantage of the real estate investment trust (REIT) tax structure to stimulate development in the US (an unabridged copy can be found here). It is our belief that providing the tax benefits of the REIT regime and the broader investor base that would come with it would help to **conquer** certain existing **up-front hurdles** **and allow** the **solar** sector **to grow** even in a world **of rapidly changing political and economic realities**. For example, it is not always clear that government created rebates and incentive schemes will be available indefinitely, **adding** certain **risk factors** to the calculations of potential investors. Additionally, it has been noted that during economic downturns, and particularly in the US, investor appetite for funding solar development declines substantially. In light of such factors, our proposal was an attempt to facilitate market-based incentives for solar development simply by affording solar developers the opportunity to use the same tax structures as commercial real estate developers. Though it is unclear whether this is currently possible under US tax law, **clarification from the** Internal Revenue Service (**IRS) would** help overcome any doubt. As part of that proposal, we suggested that developers in other countries might eventually take advantage of such schemes as well, and since the initial posting we even posted a small blurb about the potential for a solar real estate investment trust (S-REIT) regime in Italy (albeit with little to no analysis on how such a change would be facilitated). Today our attention shifts slightly north of the Italian peninsula to Germany, another very logical candidate for S-REIT adoption. Germany currently has a comparatively robust renewables sector, greatly aided by current government regulatory schemes, most notably feed-in tariffs. However, feed-in tariffs are not permanent, and may outlive their useful lives. In this light, and based on the desire of Germany to continue to increase its percentage of energy mix from renewables, developing a more permanent means for facilitating solar development might be an attractive solution. Though this article will not address the exact changes to the German code that would be required to facilitate such a development, it is possible that, similar to the US, all that would be required is clarification from tax authorities. Indeed, as is noted below, the German and US REIT systems are quite similar, as many of the German REIT regulations are borrowed directly from the US model. Of course the political realities of the two nations are vastly different, and it is always tricky business to make broad generalizations (particularly as your author admittedly has limited experience with the German system). However, it is at least possible that any changes adopted in the US would be considered favorably by German officials, particularly with the existence of a poweful green lobby in the latter nation. In any case, with an established and growing REIT structure combined with a clear appetite for solar development, the pieces are already firmly in place if the political will for such a change were to develop. Future development may require further innovative thinking First, a brief description of Germany’s REIT system. German REITs, or G-REITs have only recently come into being. The establishment of the structure was meant to facilitate more tax-effective property ownership. According to the Deutsche Börse Group (the group that runs the main stock exchange for Germany, the Frankfurt Stock Exchange, which is the equivalent to the New York Stock Exchange in America) 73% of German companies own property while only 25% of companies own property in the US. Also according to Deutsche Börse, the largest 65 listed companies in Germany have property reserves of over €80 billion. REITs may allow some of this locked-up value to be realized, a potential boon for German companies and their shareholders. Following are some basics on G-REITs: • Companies pay no corporate income or trade tax. Earnings of G-REITs are paid to share holders and taxed individually. In other words, dividends paid are taxed as investment income for the shareholder. • At least 75 percent of the capital of G-REITs must be invested in property. • 90 percent of earnings must be paid out to share holders • 75 percent of revenue must be from fixed assets. • G-REITs must be listed in an organized market such as the General or Prime Standard. • G-REITs must have their headquarters in Germany. • Finally, G-REITs must have an initial capital of at least 15 million Euro. Those familiar with the REIT structure in the US will undoubtedly recognize that many of the general rules governing G-REITs mirror their American counterparts. While German REITs were only introduced in 2007, foreign REITs have been listed in the country for some time, and over 150 currently trade on the Frankfurt Stock Exchange. There now currently appear to be three German property companies trading as REITs on the Frankfurt including an office REIT, a diversified REIT and a retail REIT. It is clear that the trade of foreign REITs on the Frankfurt has created a familiarity with the structure in Germany. Meanwhile, the recent laws have facilitated the creation of Germany's own REIT structure. This familiarity as well as the proper legal framework indicate that the nation is fully comfortable with the idea of publicly listed firms owning income-producing property, opening the door for broader use of the REIT structure in the future. We now turn to the appetite for solar development in Germany. Incidentally, it is enormous, and it is claimed that Germany is one of the top nations, if not the top nation, for solar development. It is generally accepted that the reason for Germany’s rise as a solar power is a result of its government subsidization scheme, heavily reliant on feed-in tariffs, which has stimulated developers to provide an ever-increasing proportion of the state’s energy mix. The most simple explanation of a feed-in tariff (FiT) is that it is a policy providing for grid access, long-term contracts and methodological pricing via government set compensation rates ( under contracts which usually last from 15-25 years). The goal of such policies is to stimulate development of solar and other renewables in the short-term, and push pricing of these sources toward levels comparable to fossil fuels (a concept referred to as grid parity) in the long-term. This long-term goal is facilitated by technological improvements made by the industry during the subsidy stage. There are several features which make FiTs possible. First, the set prices are usually maintained by passing costs through to consumers, whether directly or through taxes. Though it often takes some political capital to establish this initially, these costs are not typically prohibitive for reasons including the natural decrease in the FiT over time (a concept referred to as tariff digression), technological improvements, and the caps that many jurisdictions place on how much energy can be priced at the set compensation rate. There are also typically government mandates for utilities to provide a certain percentage of their energy supply from renewable sources, similar to renewable portfolio standards. Finally, it is important to note that feed-in tariffs are typically phased out over time as technology is presumed to improve over the life of the scheme, and as grid parity hopefully comes closer to being a reality. In Germany, FiT law underwent a restructuring in 2000 under the Act on Granting Priority to Renewable Energy Sources ('Erneuerbare Energien Gesetz'). Some have claimed that this revamped structure has created the world's most effective policy framework at accelerating the deployment of renewable energy technologies. The major features include: • purchase prices which are methodologically based on the cost of generation from the various renewable energy sources, leading to different prices for different sources and sizes to account for economies of scale; • purchase guarantees which last for a period of 20 years; • the ability for utilities to participate, and; • tariff degression In Germany and elsewhere, such mechanisms have proven necessary in the past as a lack of grid parity has made it difficult for solar developers to achieve solid returns otherwise. Indeed, according to a European Commission report, ‘well-adapted feed-in tariff regimes are generally the most efficient and effective support schemes for promoting renewable electricity.’ According to at least one source, feed-in tariffs are used in one form or another in nearly 60 jurisdictions worldwide, indicating their popularity and possibly proving their worth. FiTs have shown the tremendous appetite many nations, including Germany, have for solar development. However, despite long-term contracts, feed-in tariffs don’t last forever. In addition, political winds change direction often enough that developers, particularly in emerging fields like solar, should rightfully be weary of government-run schemes. Finally, economic developments can often impact the decisions of investors even if tax incentive schemes prove popular and effective. This has been seen in, for example, the US as tax equity investors lost appetite for solar development during the economic downturn. How then, can Germany, and other countries with a desire to continue growth in the renewable sector, ensure that development continues? As noted in the admittedly conclusory introduction above, such nations could use existing REIT laws to help stimulate solar development. Quoting our earlier post on such a proposal in the US: One potential solution would be to use tax structures which already exist and benefit the commercial real estate market to stimulate large-scale solar development. Similar to the benefits that real estate investment trusts (REITs) have brought to both commercial real estate owners and investors, solar real estate investment trusts (S-REITs) could bring solar development to the masses, increase capital flows to the space and incentivize lawmakers give the solar industry the same treatment as fossil fuel counterparts. The S-REIT structure should not be viewed as the exclusive domain of solar developers either. Indeed, Germany's wind sector is, perhaps, even more robust than its solar counterpart, and developers have managed to make wind more cost effective than in the US. Therefore, and particularly in nations with well-developed wind sectors such as Germany, it is possible that other renewable sources could benefit from gaining access to the REIT structure as well. This broader vision would lead to the potential formation of Renewable Energy REITs, providing diversification for investors based on the various geographic, technological, pricing and reliability differences between the various production methods. In the US, the creation of an S-REIT structure unencumbered by tax risk requires clarification on a particular section of the tax code dealing with REITs, §856 of the US Code. Once the IRS moves to clarify this section, and if it grants the proceeds of electric sales contracts the same status as rents under the REIT laws, solar developers will be entitled to benefit from the same tax status as commercial real estate developers. This **will** **ensure start-up capital and a wide investor base** of individuals seeking steady returns, **allowing** the **solar** sector **to** survive any storm,whether politically or economically generated.

#### Start your evaluation of the debate from an integrated, socio-technical perspective---Politics, technology, economics, and society form a co-productive, interactive web---Their arguments about “impossibility” or “technical failure” take minor contingent facts and treat them as immutable---the plan is a change at every level that can radically alter our relationship to technology and the world

Sovacool 9 [Benjamin, Energy Governance Program, Centre on Asia and Globalisation, Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore. Also, knocked Herndon out of the NDT his junior year. On vagueness. Siiiiiiiick. “Rejecting renewables: The socio-technical impediments to renewable electricity in the United States” Energy Policy 37 (2009) 4500–4513]

By laying out these impediments as “economic,” “political,” and “behavioral,” the author did not intend to suppose that demarcations between the three sets of obstacles really exist in separate classes. For instance, the repeal of the Public Utility Holding Company Act of 1935 (PUHCA) in 2005 removed incentives for utilities to engage in collaborative research and development (R&D) and oriented them to focus more on short-term goals and rapid profits. Whether this is an example of an economic or political barrier is unclear. The Reagan Administration's reduction of federal subsidies for renewable power in the 1980s caused a large number of firms to go bankrupt, creating a social stigma against renewable technologies such as wind and solar. Is this obstacle behavioral, economic, or political? Dividing the “social” from the “technical,” or even the “economic” from the “political” is counterproductive, since it misses the point that such impediments exist in an integrated nexus, and it is done here only to make such obstacles easier to identify.

In viewing the electric utility system in this manner – as a set of social, cultural, economic, and political interests fused together with technology, rather than a “black box” of generators – this article differs from most scholarship on electricity and energy in four crucial ways.

First, viewing renewable energy generators as part of a socio-technical system rejects the distinction between the technical and the social. Technologists and policymakers have often attempted to describe technological development by sharply demarcating “technical” concerns from “social” ones. Yet sociologist Latour (1986, p. 22) suggests that “technology and society are two artifacts created by the analyst's duplicity.” Sociologist Law (1992, p. 38) concurs, and argues that such descriptions frequently supplement technical discussions with a list of the “social” factors that influenced development, as if “one is presented with a balance sheet with society (or the economy, or science, or politics) on the one hand and technology on the other. Analysis becomes the study of transfers between columns.”

Energy reports from the US Energy Information Administration (EIA) and International Energy Agency (IEA), however, tend to sharply demarcate “technical” and “social” factors in their analysis. Their reports, for instance, focus primarily on estimating generation capacities, projecting fuel costs, and predicting the environmental impacts of particular energy technologies, but rarely include social-scientific approaches and remain wedded to narrow disciplinary boundaries. The exemplar among these types of reports for the United States, the EIA's Annual Energy Outlook, projects current trends of energy consumption to provide perspective about future incomes and prices, but it does not anticipate future policy changes, discuss consumer attitudes and values, or provide policy recommendations. The report assumes the existing configuration of the industry, and thus restricts consideration to a very limited range of alternatives.

Second, revealing the socio-technical impediments to renewable power makes visible patterns of electricity production and use, patterns that have become all but invisible to American consumers in the past century. Historian and philosopher Edwards (2003) has remarked that one of the most salient characteristics of modern industrial systems such as telephones and power networks is the degree to which they are not salient for most people, most of the time. These systems reside in a naturalized background, as ordinary to most of us as “trees, daylight, and dirt.” Historian Williams (2001) argues that once some technological landscapes are in place, people fold them so completely into their psyches that those very landscapes become removed from consciousness. Americans are therefore generally unaware about electricity, with the Department of Energy (DOE) reporting that only about 12 percent of people can pass a “basic” electricity-literacy test (US Department of Energy, 2008, p. 8). Most people have become so enfolded into the vast technological network of the electric utility system that they do not even realize such a system exists. Identifying the socio-technical barriers to renewable energy is a way to make the system visible again, an instrumental exercise if more sustainable forms of electricity supply are to be understood and implemented.

Admittedly, this article is not the first to emphasize the socio-technical dimensions of electricity. Yet those studies that do attempt to provide a rich, contextualized approach tracing social, historical, and institutional factors in the acceptance of energy technologies have not tended to focus on renewable power technologies in the United States. Hughes (1983) and Nye (1990) limit their analysis from the 1880s to the 1940s. Nye's (1999) other influential book dedicates only a chapter to electricity and only a few paragraphs to renewable energy generators. The work of [Hirsh, 1989] and [Hirsh, 1999] on the managerial practices and technological choices facing the American electric utility industry provides excellent insight into how large scale and centralized fossil fuel generators lost both technical and social momentum throughout from the 1960s to the 1980s, but does not emphasize the importance of social factors and their relationship to the electricity industry much after that period. Melosi (1985) and Smil (1994) provide well written and thorough cultural histories of energy systems in the US and the world, but conclude their investigation with the oil crises of the 1970s. In other words, none of these excellent works focus on changes affecting renewables in the electric utility sector in the past 10 to 20 years.

Third, exploring the underlying socio-technical dimensions of electricity technologies recognizes the contingency of technological development. Socio-technical systems are constructed out of chaos, conflict, diversity, and negotiation. System builders, it follows, must overcome a complex milieu of socio-technical obstacles. As sociologist MacKenzie (1987, p. 197) put it, “systems or networks should not be taken simply as given, as unproblematic features of the world; nor should the use of the term ‘system’ be taken to imply stability or lack of conflict. Systems are constructs and hold together only so long as the correct conditions prevail.” Emphasizing the contingency of technical development reminds us that the current electric utility system, with its 17,000 conventional generators, 250,000 miles of high voltage transmission lines, thousands of substations, expansive natural gas pipelines, hundreds of coal mines, and dozens of spent nuclear fuel storage facilities—was and is by no means inevitable. Instead, each system component was the product of social negotiation and compromise. Since the current system was chosen and elaborated upon by actors, it can also be changed by human participants as well. Making apparent the contingency of the electric power grid allows us to study and analyze the factors that make current technologies socially acceptable. In other words, it helps show us what social conditions are necessary for a given technology (or set of technologies) to succeed, at the same time such conditions may make other technologies unacceptable.

Fourth and finally, this article challenges notions of technological failure and failed technology. Many assessments of technology continue to understand technological failure as a purely technical phenomenon. The work of Perrow (1984) provides excellent case studies into how the “interactive complexity” and “tight coupling” of socio-technical systems like those used at chemical plants, nuclear weapons laboratories, and air traffic control, will inevitably produce accidents. Woodhouse (1990) comments that since technological endeavors are incredibly complex, new technology can be expected to respond to their environment in unforeseeable ways, a problem further compounded by significant lag time between the introduction of new technologies and discovering their inherent risks. Lipartito (2003) notes that technical explanations of failure are often deployed to clarify the non-acceptance of the electric vehicle, the Beta videotape system, and early metal airplanes. The case of renewable energy technologies, in contrast, highlights how any such notion of “technological failure” must include both the technical and social dimensions of a given technology. The question of whether a technology works – whether it remains “lost” and “marginalized” – cannot be answered prior to its adoption.

**Momentum exists for change in our energy system. Our policies need to stop supporting centralized elite, technocratic, corporate solutions and empower local community movements by encouraging smaller-scale generation and distribution of energy. Energy and electricity are *intangible* and *taken for granted*--We are distanced, geographically and emotionally, from the sources of electricity --- this is a result of the centralized energy system.**

Pierce 10 [James Pierce, Eric Paulos, researcher and Cooper-Siegel Endowed Chair at the Human-Computer Interaction Institute, Carnegie Mellon University “Materializing energy”, <http://www.paulos.net/papers/2010/MaterializingEnergy_DIS2010.pdf>]

THE INTANGIBILITY OF ENERGY A common observation among designers and researchers interested in sustainability and energy is that energy is “invisible”. A number of research, design, and art projects have attempted to render “invisible” energy “visible” with a goal of promoting “energy awareness” and motivating energy conservation behavior (see, e.g., [22]). It has been argued that energy invisibility and energy unawareness are in fact two major consequences of material progress within the last century [28]. However, the energy we use daily to power our devices, homes, and cities is not simply perceptually invisible but also intangible. We are unaware of energy largely because it does not have (and is not designed to have) a strong tangible presence in our lives. The various material technologies that provide us with energy effectively distance us from the material production of energy and even the consumption of energy in many ways. Our relationship to electricity, for example, is limited primarily to plugging a cord into an outlet. Our relationship with energy as well as most infrastructural technologies supporting it may said to be constituted in what philosopher of technology Don Ihde describes as a background relation[10]. Through background relations, technologies are present to us only to the extent that they help shape the context of our experience; we do not directly and consciously experience them. In the remainder of this section we develop this notion of energy as intangible by investigating diverse conceptualizations of energy. Emerging through these investigations we propose the notion of *energy-as-materiality* and further outline a simple framework for designing interactions with energy-asmateriality involving *collecting*, *keeping*, *sharing*, and *activating* energy.

**An *overt political challenge* is a necessary component of this strategy. The plan’s confrontation with status quo energy galvanizes and lends legitimacy to environmental movements.**

Scrase 9 [Ivan SCRASE Science and Technology Policy Research @ Sussex AND Adrian SMITH Science and Technology Policy Research @ Sussex ‘9 “The (non-)politics of managing low carbon socio-technical

Transitions” Environmental Politics 18 (5) p. 722-724]

Political strategies for transitions In the reflexive spirit TM calls for, it is worthwhile questioning the assumption in TM [transition management] (and this volume) that analysts should guide governments towards policies that avoid political fallout. Deciding between options remains, after all, a political calculation. Moreover, insights from the socio-technical transitions literature could equally be directed at entrepreneurs, consumers, communities, pressure groups and/or investors interested in low carbon transitions – governments will make few emissions cuts themselves: it is how they seek cuts by others that matters. Indeed, ‘government’ needs to be unpacked. One needs to consider, for example, whether a political strategy for transitions is to be developed by a political party while in office or opposition. Winning office on a platform that included low carbon transitions as a central political project would lend significant legitimacy to subsequent efforts. Approaching low carbon transitions as a political project suggests familiar strategies and tactics, such as creating large, powerful and well-funded institutions with a remit to pursue the project’s aims. Other institutions’ power might have to be curtailed, for example the power of government departments that have a close client relationship with powerful regime incumbents such as fossil energy companies. Steps could be taken to tie future governments into continuing the political project (Pierson 2000). The Climate Change Act in the UK, for example, commits UK governments to legally binding cuts in greenhouse gas emissions over the period up to 2050. This all implies a certain drive and readiness for conflict that bears little relation to TM’s implicit model of politics. The electricity regime in typical affluent democracies since the 1980s has had regulated competition as its main driver and organising principle. This is now perceived as problematic, and alternative agendas are being seriously considered (Scrase and MacKerron 2009). If the market model is rejected, governments face two options. They can either take a top-down policy approach that forces a transition to a low carbon society, or they can facilitate bottom-up momentum for change by empowering people to make their homes, communities and lifestyles sustainable. The former might take the form of a corporatist strategy in which governments accept that energy services will be supplied by a small number of large firms and try to enrol these firms to support and implement low carbon policies. Under such arrangements, however, governments would be under pressure to defend the interests of large energy companies, which implies that low carbon transition pathways are more likely to proceed by subsidising nuclear power and CCS than by supporting renewables. In contrast, the alternative pathway, which would make much greater use of distributed and micro-generation, implies breaking up the large energy companies and reducing dependence on the national grid for electricity supplies. This route would presuppose a groundswell of popular concern about climate change and a readiness to use new technologies to cut emissions, combined with policy frameworks that enable this rather than making local pioneers continually face impossible odds. The corporatist strategy would derive its power base from industry and experts, while the decentralising strategy would be based on popular engagement and democratic support. Despite TM’s emphasis on ‘niches’, in terms of political strategy it appears more closely aligned with corporatism than with radical decentralisation. The decentralisation pathway might make use of transitions analysis, but quite differently from the ways sketched above. Transition analysis would be directed at making it as easy as possible for individuals, families and communities to invest, organise, link into low carbon networks of one kind and another, and so on. It is difficult to square that with policy generated in technocratic arenas through appraisal and foresight exercises. Moreover, it implies high levels of political commitment to pressure energy regimes accordingly. This kind of political project, underpinned by choices between contending green pathways, lies beyond TM. Conclusion One can argue that TM is a procedural tool that can be put to use by many different players. Yet no tool is neutral, and we have to consider whether the nature of TM renders it susceptible to capture. Does emphasis on consensus amongst an elite vanguard, a niche-based momentum for change, and reliance on integration with more powerful policy domains, really challenge the structures that TM hopes to transform? Even though TM proclaims participatory and reflexive processes, the narrow power base of its transition arenas, coupled with a limited and largely implicit political strategy, forces it towards technocratic strategies. In principle, the open nature of TM and flexibility in purpose means that it might be possible to use it in ways that help empower people and facilitate a groundswell of bottom-up sustainability initiative (Seyfang and Smith 2007). There is certainly much to commend a multi-level, socio-technical analysis of how our needs are realised and how sustainable pathways might be realised in more democratic ways. But this would require a concomitant redistribution of resources to support the numerous, distributed and context-sensitive niches that would explore those visions and pathways. TM has been a remarkable success in casting existing policy measures in an informative new light. However, in the context of the typical affluent democracy it is difficult to avoid the conclusion that the political strategies and tactics it advocates are inadequate for the task it has set itself. Yet the history of environmentalism reminds us that groups in society are perpetually trying to develop niche alternatives and pressure incumbent regimes in many different ways and with differing levels of agency and influence. A messy, informal transition politics already exists. In our view, this suggests possibilities for mobilisation in a political programme for low carbon transitions.

#### Developing an emotional relationship with energy through micro generation is key to sustainability---criticisms of this connection ignore the fact that the current system is unsustainable

Pierce 10 [James Pierce, Eric Paulos, researcher and Cooper-Siegel Endowed Chair at the Human-Computer Interaction Institute, Carnegie Mellon University “Materializing energy”, <http://www.paulos.net/papers/2010/MaterializingEnergy_DIS2010.pdf>]

Designing for energy as material and symbolicProposing a more explicit treatment of the design of energy as both material and symbolic is certainly not without problems. On a very pragmatic note, the fact that energy is “consumed”—its materiality-at-hand degrading and eventually dissolving entirely—may suggest longevity and endurance as inappropriate notions to apply to the design of everyday interactions with energy. How and why should the symbolic value of energy endure if its materiality does not? In terms of sustainably re-designing our ßeveryday interactions with energy and energy consuming products, the notion of care of energy may be more appropriate than that of attachment to energy. We might design for caring for our energy in the same ways that one cares for the materiality of food when gardening or preparing an elaborate meal. As a more concrete example, it may be worthwhile to design microgeneration technologies in ways that promote a form of emotional attachment to or care for energy. Indeed evidence from interviews with residents using domestic microgeneration technologies points toward forms of attachment to energy based on the introduction of these technologies, even among those that did not commission their installation. For example: “The advantage with [solar power technologies installed in his home] is that it makes you think about your energy use more. You value it more…” and “I want to feel that as much electricity as I can use is my own electricity.” [7, p. 51-53].

Perhaps **more problematic is that** designing energy to more explicitly enter into the symbolic realm of consumption may lead to the increased material consumption of energy by way of its being increasingly sought after as an unsustainable object of desire.**6** Criticism of such a “reification of energy” must be taken seriously, yet we must also acknowledge that all material and immaterial technologies are already symbolically consumed, including energy technologies such as solar panels. The material symbolic value of energy and energy technologies can be considered or ignored by designers as well as manipulated in ways working for or against goals of sustainability. Whatever the case, the symbolic value of energy and energy technologies is always to some extent present. As such, we argue it is imperative that designers aim to sustainably redefine (or “recode” [12]) our understandings of and interactions with energy through careful attention to the material-symbolic value of emerging as well as commonplace energy related technologies and the energy they materialize. The Energy Memento may be viewed as a way of materializing the concept of the material-symbolic value of energy. Bequeathing an heirloom Energy Memento, for example, seems quite unlikely to ever become a common practice but nonetheless serves as useful counterpoint to the current undifferentiatedness of energy and offers an alternative to our currently unsustainable situation in which energy is merely “something to”— something undemanding and undeserving of our sustained care and attention.

#### Community-based solutions are essential for both broader adoption of technology and functional distributed generation schemes---decentralization solves dangerous consumption patterns by creating a shared sense of ownership

Wolsink 11 [Maarten, Maarten Wolsink∗Department of Geography, Planning and International Development Studies, University of Amsterdam,” The research agenda on social acceptance of distributed generation in smart

grids: Renewable as common pool resources” Elsevier Journal Renewable and Sustainable Energy Reviews]

4. Community perspective

4.1. Trust

In addition to being physically close, DG increasingly is also at closer ‘social distance’ when users become the owners/managers of the production units and the microgrid. The actors who decide to integrate their DG units in a cooperative microgrid constitute a community. Correspondingly, community acceptance of infrastructure remains crucial, and whereas community involvement in investment in renewables is favouring community and market acceptance, the inclusion of it in a co-operative microgrid is likely to increase acceptability as well. “Because customer characteristics, particularly the flexibility to cost-effective shift power use, are so varied from one place to the next, we can expect the implementation of smart grid capabilities to be geographically uneven” [65, p. 70]. Any effort to construct infrastructure that is uniform and standardised will face huge acceptance problems.

The literature on the deployment of renewables shows the importance of securing a good fit between the energy schemes and the host communities [66]:

(a) Collaborative decision-making on wind power schemes, which employs effective forms of community involvement, has proven to be crucial for successful deployment. (b) Successful projects are usually those the community can strongly identify with, as a result of effective involvement and participation in the siting process or due to high community involvement in the management and/or ownership.

Investments and schemes initiated by community outsiders (e.g., energy companies) are much more likely to face resistance by the community. As wind power shows, how decision-making is organised and how social networks at this level are involved in projects strongly shape the possibilities for all community actors to identify with the project (not primarily restricted to residents). The existing body of knowledge on renewable energy innovation shows that for community acceptance essential factors are how well the new system ‘fits’ into the identity of the community, the perceived fairness of the decision-making process, and the level of mutual ‘trust’ (see Fig. 2) between community members and the investors and owners of the infrastructure [66,67]. To have solid commitment in implementation of renewable energies, it is essential to create trust to foster the involvement of public and private actors. Planning and decision-making overly focused on formal decisional competencies, and therefore without opportunities for meaningful deliberation, generally fuels conflict [68,69]. Community members must have strong conviction that the new energy system will serve their benefit as well as that the organisation facilitating the process will act in their best interest [70]. “Trusting social relationships support and enable cooperation, communication and commitment such that projects can be developed and technologies installed in ways which are locally appropriate, consensual rather than divisive, and with collective benefits to the fore” [71, p. 2657]. Trust and goodwill must be built intentionally through collaborative processes in planning and energy policymaking consistent with theories on building ‘social capital’ [72,73]. The institutional framework – e.g., the planning system – should further such collaborative planning and community involvement in the energy system. Adding the microgrid perspective to these observations on implementation of renewables, the socio-political acceptance of adaptation of planning systems to establish planning practices that include early involvement from within the community at the very first stages of development, becomes an urgent issue.

4.2. Identity factors Implementing a particular energy project is thus, among other things, an ownership and community involvement issue. Community based or community outsider‘s investments and ownership of the assets of the new development (generating units, smart meters, etc.) is a determinant of acceptance. Acceptance of several DisGenMidGrid characteristics is highly dependent upon the composition of the community and its ambiance. Furthermore, acceptance depends upon how the institutional framework allows communities to shape their own DisGenMiGrid in a way that it optimally corresponds with these identity factors (see Fig. 2, left).

4.2.1. Perceived identity of the location Attachment to a particular location and the symbolic values of the site to both residents and non-residents play a significant role in shaping people’s responses to any proposed changes to their surroundings [74]. A major factor in the emergence of co-operation to manage the common resources in a community is the dominant heritage narrative [75]. For wind and other renewable DG alike, the most important factor for acceptability is related to the perceived qualities of the location, regardless whether these are described in terms of qualities of the ‘site’, the ‘landscape’, the ‘environment’ or other place-related terminology.

‘Place attachment’ focuses on individual feelings and experiences; therefore, the creation of community benefits by a renewables’ developer does not simply increase community acceptability and ease planning consent. The significance of benefits – as interpreted by the community – is correlation to the influence the community has over decision-making about the project [76]. The community planning literature emphasises participation and empowerment, but additional studies on community acceptability have revealed that emotional and cultural connections to place is a very important factor [77,78]. Absence of opportunities for meaningful deliberation in decision-making and neglect of the equity and fairness in the distribution of costs and benefits from locally hosted energy developments usually undermines trust. The culturally and emotionally loaded local identity values cannot easily be compensated by benefits to the community, unless these benefits are also connected to local identity variables. The latter is usually not guaranteed if there is no ‘sense of ownership’ or a high level of trust in the project developers.

 The value of a particular location – primarily landscape characteristics of high value to ‘the eye of the local beholder’ [79] – may be threatened by the construction of infrastructures, such as wind turbines, PV units on farmland or rooftops or CHP installations. Landscape is a strong determinant of subjective identities, and renewable energy infrastructure such as wind farms [80] or solar plants [81] affects identities. For example, already in the 1980s wind turbines were generally being labelled in terms of ‘industrialised landscapes’ [82]. This ‘industrialisation’ is being perceived by the community as a major change in the identity of landscape (as seen in recent cases of near-shore wind power siting) [83–85]. M. Wolsink / Renewable and Sustainable Energy Reviews 16 (2012) 822– 835 829

4.2.2. Identity of community members For all types of DG and smart grid developments it will be important how the geographical identity is interpreted and valued by members of the community. Identity is also a key factor for the determination of the kind of actors that will be granted the opportunity to participate in the investments and the establishment of the DisGenMiGrid. Within a community this obviously concerns the option for households to participate, but equally important are other actors that are important for community identity. For example, schools have fairly large rooftop surfaces available and they could be involved in ownership of wind turbines [86]. Another example is hospitals. They usually have existing operating systems that combine distributed generation options such as PV and cogeneration, and they may look at attuning their supply and demand with other community member’s demand patterns [87]. Furthermore, identity concerns enterprises like local retail, small industry, offices built for private and public administration, and – especially in rural areas – farming. A special interaction between the perceived identity of the location and social identity factors is found in communities where a substantial number of members derive their income from tourism [88,89].

4.2.3. Identity of load patterns The essential identity characteristics of communities also concern the specific electricity consumption patterns. Besides the individual member’s interest and possibilities to invest in renewables and to use their space to implement DG, the shape of the member’s load patterns determines the options for DG. The specifics of their individual patterns are significant identity factors in relation to the patterns of the other participants in the DisGen- MiGrid and the supply patterns of the DG units. Furthermore, the identity of the participants determines the flexibility of their consumption patterns. To what extent can these patterns be affected by smart-meter adaptation? The flexibility of households to adapt their energy usage to the variability of wind power is fairly limited [29]. However, the introduction of new types of equipment in combination with smart-meter control devices may generate more flexibility depending on the type of consumer. An important geographic characteristic of a community is local employment rate, responsible for a large part of car use (also including commuting). The impact of electric vehicles on the distribution network will largely be determined by behavioural factors, such as driving patterns, charge timing and vehicle penetration [31].

**Use of solar to manage and adapt to climate change is necessary to prevent catastrophe.**

**Maldonado 12** (Manuel Arias, Poli Sci @ Malaga, Real Green: Sustainability After the End of Nature p. 116-120)

In principle, public opinion should just rely on science- hence the activity of the Intergovernmental Panel on Climate Change as a bridge between science and the public. But then again, we have read Kuhn and Fereyabend: the sociology of scientific knowledge has convinced us that society is inside the laboratory and science can only reflect social priorities and political interests. How can we just rely on science? To some, actually, climatology is not saying the truth about global warming (Leroux 2005). Yet science must still be **our** standpoint, for there is no better alternative, even though it is a "post-normal science" whereby "facts are uncertain, values in dispute, stakes high and decision urgent" (Funtowicz and Ravetz 1993: 742). However, a misunderstanding should be avoided. It is in this context that Sheila Jasanoff (2007) has advocated the need to produce a more humble science, one that leaves room for ethics and renounces the modem dream of a complete control over nature. That is just about right. But the reflective re-shaping of socionatural relations, up to a point where we try to regulate the oscillations of the climate with our actions, is not precisely a humble goal, nor an absurd one, especially since there is no direct relation between the current scientific consensus and the green radical vision of a de-industrialized society. Although action must be taken, it should be a proportionate one. Devising public policies and fostering private behaviour as part of a climate change policy should not be used as a pretext for advancing a closed conception of sustainability. Sustainability must encompass climate change, instead of climate change simply closing up sustainability. I would like to suggest that climate change's social dilemma resembles the one described by Blaise Pascal regarding God's existence. He famously reduced faith to a wager after considering the probabilities at stake. Pascal suggested that, although we cannot prove through reason that God exists, a person should bet on His existence, since living life accordingly one has everything to gain and nothing to lose, whereas, even more crucially, acting otherwise could mean losing everything and gaining eternal damnation (Pascal1995: 123-5). Likewise, we do know that temperatures are rising, although we do not know how will they evolve in the future, while there exists the possibility that humans are an active agent in that process and they can still influence on it. Thus two related possibilities become meaningless: that humans have nothing to do with the climate's evolution or that they cannot influence the current process anymore. They become meaningless because we must maximise our chances, that is, we must act as if advancing towards sustainability could mitigate global warming or at least facilitating the least damaging adaptation to its effects. No other wager makes sense. However, the need to act does not automatically indicate how to do so. Hence the public debate. We know that **social engineering** on a huge scale can **fail miserably** - as the twentieth century comes to show. Still, in the manner of a global insurance policy, a strategy for mitigation and adaptation is necessary. This strategy should be orientated to make possible the continuity, not the dismantling, of our current society. Neither a programme for **ruralisation** nor the low energy proposals aimed to scale back society into a network of self-sufficient communities are realistic (see Trainer 2010). They represent the comeback of green utopianism, although their usefulness in the debate of ideas should not be neglected: their defence of a radical transformation is necessary for achieving a moderate change. As Dyer writes: I like living in a high-energy civilisation, and I don't want to give it up. If it can be managed without causing a climate disaster, I would like everybody on the planet to live in wealthy societies that have the resources and the leisure to start looking after all citizens and not just the top dogs (Dyer 2008: 128). That is why climate change should "work for us", as Hulme and Neufeldt (2010) put it. It should be used for improving our societies through **reform**, not to pursue an **unfeasible rupture** based on a miraculous radical change in people's values (see Hourdequin 2010). It is more probable that people will follow a given virtuous inertia than to expect a sudden moral epiphany that **clashes brutally** with contemporary lifestyles - lifestyles that, despite the contempt that social science tends to show, people may well **like**. Therefore, in a nutshell, it is unlikely that citizens abandon their smartphones in order to embrace the charms of a more embedded rural life. It will simply not happen, cynical as it may sound. It also may sound Panglossian, since many today do not have enough money to acquire a telephone and the sources of dissatisfaction remain plentiful. It is in this connection that radical perspectives, namely, those wishing for some radical changes in the current sociopolitical organisation, are to be seen as the legitimate expression of unmet needs and desires deserving attention. This is true for global warming as it is true for other social problems. Yet we should not make mistakes when considering the sources of change. It is unlikely that the latter can be provoked by a sudden moral realisation on the part of relatively affluent citizens - it is more probable that a gradual evolution will take place, influenced by a multiplicity of factors, moral as well as economic and technological. On the other hand, a reformist and gradual approach to social change does not preclude the possibility that radical changes are the final outcome of an emergentist rather than a revolutionary process. Thus we should do the possible within the reasonable. But what does that mean? To begin with, it does not mean that the notion of sustainability presented so far has become invalidated. Unsurprisingly, classical environmentalists present climate change as the sudden and decisive proof that many old green positions happen to be right: nature is not abolished, human dominion of nature is not feasible, risks are everywhere. Therefore, we have been wrong and our worldview, together with our social organisation, must change. We cannot apply our old human solutions anymore: I am terrified by the hubris, the conceit, the arrogance implied by the words like "managing the planet' and 'stabilising the climate". ( ... ) Why are we, with our magnificent brains, so easily seduced by technocratic totalitarianism? (Tennekes in Hulme 2009: 312). However, we do not have any option other than trying to exert some degree of control over climate. After all, we find out what is going on with the climate because we try to exert such control (see Edwards 2010). Again, the latter should not be understood as a complete dominion, but rather as a sufficient, self-aware one. Mitigation policies are an attempt to influence climate - but I cannot see any arrogance in them. Furthermore, that we are able to discuss and devise strategies in the face of an abstract scientifically predicted threat should not be seen as a failure, but rather as a triumph of human reason. Similarly, the idea of an anthropogenic climate change does not demonstrate that nature has not ended, but rather comes to confirm in an unprecedented scale the merging of nature and society into the environment. As Leigh Glover puts it, "there is nothing natural left in the global atmosphere; humanity lives in and breathes an atmosphere that's an artifice of industrial activity and, consequently, the global climate is also now beyond nature" (Glover 2006: 254). If anything, climate change reinforces the case for a realistic sustainability. However, crucially, an advantage of climate change in this regard is that the kind of measures it demands - mitigation and adaptation in a wide scale should help to push the sustainability debate in the right direction. The reason is threefold. Firstly, climate change stresses by its very nature the issue of wellbeing and quality of life as much as that of pure survival. As the Hartwell Group (20 l 0) has underlined, climate change is not so much a problem to be solved, as a condition to live and cope with. Thus we should take advantage of the changes it demands in order to live better. That is, in healthier urban environments, in knowledge-based economies, with the best public education and health care for all (see Baker 2006: 3). Thus sustainability and well-being become linked. However, secondly, an adaptation based on the idea of well-being cannot succeed without economic growth. It is dubious that we can "manage without growth" (Victor 2008; see Jackson 2009), because tackling climate change and adapting to it is costly. Rich societies are better equipped to assimilate its impact than poor ones. As Nordhaus and Shellenberg note, environmentalism has always seen the economy as the cause rather than as the solution to ecological problems (Nordhaus and Shellenberg 2006). But, as a **historic perspective** shows, we can only be green while being rich. Neither the current understanding of economic growth nor the measurement of GDP for that reason should be exempt of criticism or amendment - changes can and ought to be made in order to reflect the environmental cost of economic activities. Yet the temptation to design people's well being in a particular or detailed way should be avoided. It is rather a set of objective conditions of living under which subjective life-plans can be individually pursued that should be linked to climate change adaptation and hence to sustainability. For those conditions, which can be generally equated with the standards of current advanced societies, to be met, economic growth will remain necessary and desirable. Also because, thirdly, the idea that some sort of steady-state economy can be achieved and maintained is just **a delusion**. Sustainability must mirror the human condition: a dynamic type of development that by its very nature is open to further transformation (see Becker eta!. 1999: 6; Gallopin and Raskin 2002: 6). Although technological change and economic development can be orientated towards sustainability, it is wishful thinking to believe that they can just be stopped by decree. Governments must design markets and create the **institutional conditions** that eventually lead to a reasonable mitigation and to a successful adaptation, but they should do so without pre-determining a particular direction, although at the same time they must make sure that certain minimum targets are met (see Patt et a!. 20 10). It is all a matter of creating an institutional and economic inertia that pushes business and citizens in the direction of sustainability. To some extent, we live now in a transitional time. In fact, notwithstanding the key importance the institutional and economic drivers, it is probably the gradual cultural change induced by the current global debate on global warming that will accelerate the transition to a greener, yet liberal and open, society. In sum, the kind of approach that climate change demands coincides with the foundations of an open view of sustainability. That is why reframing environmentalism entails reframing climate change: freeing it from the rhetoric of doom and incorporating it into a narrative of social refinement. Certainly, saying that climate change should be seen as an opportunity instead of a threat sounds like a cliche. But it happens to be true - or, to be more accurate, it can be made true.

#### Prioritize environmental existence over framing and ontology.

Paul **WAPNER** Prf. And Director of the Global Environmental Policy Program @ American ‘**3** “Leftist Criticism of ‘Nature’” *Dissent* Winter p. 74-75

The third response to eco-criticism would require critics to acknowledge the ways in which they themselves silence nature and then to respect the sheer otherness of the nonhuman world. Postmodernism prides itself on criticizing the urge toward mastery that characterizes modernity. But isn’t mastery exactly what postmodernism is exerting as it captures the nonhuman world within its own conceptual domain? Doesn’t postmodern cultural criticism deepen the modernist urge toward mastery by eliminating the ontological weight of the nonhuman world? What else could it mean to assert that there is no such thing as nature? I have already suggested the postmodernist response: yes, recognizing the social construction of “nature” *does* deny the self-expression of the nonhuman world, but how would we know what such self-expression means? Indeed, nature doesn’t speak; rather, some person always speaks on nature’s behalf, and whatever that person says is, as we all know, a social construction. All attempts to listen to nature are social constructions—except one. Even the most radical postmodernist must acknowledge the distinction between physical existence and nonexistence. As I have said, postmodernists accept that there is a physical substratum to the phenomenal world even if they argue about the different meanings we ascribe to it. This acknowledgment of physical existence is crucial. We can’t ascribe meaning to that which doesn’t appear. What doesn’t exist can manifest no character. Put differently, yes, the postmodernist should rightly worry about interpreting nature’s expressions. And all of us should be wary of those who claim to speak on nature’s behalf (including environmentalists who do that). But we need not doubt the simple idea that a prerequisite of expression is existence. This in turn suggests that preserving the nonhuman world—in all its diverse embodiments—must be seen by eco-critics///

 as a fundamental good. Eco-critics must be supporters, in some fashion, of environmental preservation. Postmodernists reject the idea of a universal good. They rightly acknowledge the difficulty of identifying a common value given the multiple contexts of our value-producing activity. In fact, if there is one thing they vehemently scorn, it is the idea that there can be a value that stands above the individual contexts of human experience. Such a value would present itself as a metanarrative and, as Jean- François Lyotard has explained, postmodernism is characterized fundamentally by its “incredulity toward meta-narratives.” Nonetheless, I can’t see how postmodern critics can do otherwise than accept the value of preserving the nonhuman world. The nonhuman is the extreme “other”; it stands in contradistinction to humans as a species. In understanding the constructed quality of human experience and the dangers of reification, postmodernism inherently advances an ethic of respecting the “other.” At the very least, respect must involve ensuring that the “other” actually continues to exist. In our day and age, this requires us to take responsibility for protecting the actuality of the nonhuman. Instead, however, we are running roughshod over the earth’s diversity of plants, animals, and ecosystems. Postmodern critics should find this particularly disturbing. If they don’t, they deny their own intellectual insights and compromise their fundamental moral commitment. Now, what does this mean for politics and policy, and the future of the environmental movement? Society is constantly being asked to address questions of environmental quality for which there are no easy answers. As we wrestle with challenges of global climate change, ozone depletion, loss of biological diversity, and so forth, we need to consider the economic, political, cultural, and aesthetic values at stake. These considerations have traditionally marked the politics of environmental protection. A sensitivity to eco-criticism requires that we go further and include an ethic of otherness in our deliberations. That is, we need to be moved by our concern to make room for the “other” and hence fold a commitment to the nonhuman world into our policy discussions. I don’t mean that this argument should drive all our actions or that respect for the “other” should always carry the day. But it must be a central part of our reflections and calculations. For example, as we estimate the number of people that a certain area can sustain, consider what to do about climate change, debate restrictions on ocean fishing, or otherwise assess the effects of a particular course of action, we must think about the lives of other creatures on the earth—and also the continued existence of the nonliving physical world. We must do so not because we wish to maintain what is “natural” but because we wish to act in a morally respectable manner. I have been using postmodern cultural criticism against itself. Yes, the postmodernists are right: we can do what we want with the nonhuman world. There is nothing essential about the realm of rocks, trees, fish, and climate that calls for a certain type of action. But postmodernists are also right that the only ethical way to act in a world that is socially constructed is to respect the voices of the others— of those with whom we share the planet but with whom we may not share a common language or outlook. There is, in other words, a limit or guiding principle to our actions. As political theorist Leslie Thiele puts it, “One can’t argue for the diversity of views of ‘nature’ without taking a stand for the diversity of nature.”

## \*\*\* 2AC

### 2AC—Warming

**Plus overshooting is possible.**

**Washington 11** (Haydn and John, An environmental scientist of 35 years’ experience. His PhD ‘The Wilderness Knot’ was in social ecology \*\* the Climate Communication Fellow for the Global Change Institute at the University of Queensland. He studied physics at the University of Queensland, Australia. After the graduating, he majored in solar physics in his post-grad honors year and created the website skepticalscience.com, Climate Change Denial: Heads in the Sand, Published in 2011 by Earthscan, Page 30-31)

It has been suggested that warming the world by more than two degrees could push us into the area where we may cause runaway climate change. It may then take thousands of years to get back to current world temperatures. The world has already warmed by .7 degrees Celsius (Houghton, 2008; Pittock, 2009) and another .6 degrees is in the pipeline (Hansen, 2009). Runaway climate change means that human actions would then be unlikely to stop the temperature increase (short of massive government engineering). Hansen et al. (2008) define the ‘tipping point’ as the climate forcing threat that, if maintained for a long time, gives rise to a specific consequence. They define the ‘point of no return’ as a climate state beyond which the consequence is inevitable, even if climate forcings are reduced. A point of no return **can be avoided**, even if the tipping level is **temporarily exceeded**. This has been called an ‘overshoot’ scenario, where one exceeds the ‘safe’ CO2 level but then removes CO2 to return to that level (Pittock, 2009). Ocean and ice sheet inertia permit overshoot ‘provided the climate forcing is returned below the tipping level **before initiating** irreversible dynamic change’ (Hansen et al, 2008). Points of no return are difficult to define. We may be at a tipping level already at 387 ppm CO2, and it will require strong action to reduce CO2 levels so that we don’t pass the point of no return and can return CO2 levels below 350 ppm. Hansen et al (2008) note we may been to drop CO2 below 325 ppm to restore sea ice to the area it had 25 years ago (and so remove this positive feedback).

**2AC—Reps Not 1st**

**Representations aren’t a prior question.**

**Light 5** (Andrew, Environmental Philosophy @ NYU, “What is Pragmatic Philosophy”, http://faculty.washington.edu/alight/papers/Light.What%20Pragmatic.pdf. P. 349-351)

I have no easy answer to this question of how practical or “do-able” reform proposals made by philosophers should be. As suggested above, it is a question that has obvious important implications for the application of philosophical principles to environmental policy. My intuition though is that the pragmatist ought to have a long-term end in view while at the same time she must have at the ready **viable alternatives** which **assume** current **political** or **economic** systems and structures whenever possible. This is not to say that the pragmatic philosopher gives up on the tasks of defending alternatives to current structures, and the pursuit of those alternatives in democratic debates on the reallocation of resources. It only means that our position may require, for consistency sake to our pragmatic intentions at least, that we not rely exclusively on such changes in articulating our preferred ends for better public policies. In this context, there are at least two senses in which one could understand the meaning of “pragmatic” philosophy as discussed so far. (1) Philosophy that has practical intent, anchored to practical problems, and (2) Philosophy which aids in the development of policy solutions that can actually achieve support and consensus. While Young’s approach certainly encompasses (1) the question is whether she also does (2). My own pragmatist approach assumes that there is a connection between (1) and (2) (indeed, that (1) implies (2)). Assuming a successful argument that (1) and (2) are related in this way (for some this may take some argument, for others it will be obvious) then a question remains concerning how to go about achieving (2). Let me make just one suggestion for how the pragmatist could go about reconciling her desire to change systems with the need to make achievable policy recommendations. As is suggested by my approach, my view is that if a pragmatic philosophy in the end is in the service of an argument to create **better polices**, then in our democratic society it must be prepared to argue its case before the public, and perhaps sometimes only before policy makers. As Said puts it, the public intellectual not only wants to express her beliefs but also wants to persuade others—meaning the public at large—of her views (1994, p. 12). This raises the critical issue of how such appeals to the public are to be made. It raises the issue of how important persuasion is to the creation of pragmatic arguments. All philosophy is in some sense about persuasion, though to differentiate ourselves from rhetoricians (if we are interested in making such distinctions, which I still am) we must restrict ourselves to persuasion through some form of argument given more or less agreed upon (and revisable) standards for what counts as a good argument. But the pragmatic philosopher is not simply concerned with per- suading other philosophers. She is also interested in persuading the public either directly (in hopes that they will in turn influence policy makers) or indirectly, by appealling to policy makers who in turn help to shape public opinion. The work of a public philosophy is not solely for intramural philosophical discussion; it is aimed at larger forums. But as I suggested before, such a task requires some attention to the question of what motivates either the public, policy makers, or both to act. Our bar is set higher than traditional philosophical standards of validity and abstractly conceived soundness. For if we are to direct our philosophy at policies in a context other than a hypothetical philosophical framework, we must also make arguments which will motivate our audiences to act. Since we are dealing in ethi- cal and political matters, the question for pragmatic philosophers like Young and myself is how much we must attend to the issue of moral motivation in forming our pragmatic arguments. If we agree that the issue of moral motivation is always crucial for a pragmatic philosophy then at least two issues arise. First, as I suggested before, we must be prepared to embrace a theoretical or conceptual pluralism which allows us to **pick and choose** from a **range of conceptual frameworks** in making our arguments **without committing** to the **theoretical monism** which may be assumed in some versions of these frameworks. The reason is that we need to be able to make arguments that will appeal to the conceptual frameworks of our audiences while recognizing that these frameworks can change from **audience to audience**. So, if we think a utilitarian argument will be useful for talking to economists in decision making positions, then we should be allowed to engage such a framework without completely committing ourselves to utilitarianism.

**Multiple environmental representations avert the collective action dilemma.**

**Brulle 2k** (Robert, Environmental Science @ Drexel, Agency, Democracy, and Nature p. 277-279)

An example of a partial metanarrative of nature is represented by the term biodiversity. This discursive invention unified disparate discourses and groups that were concerned about destruction of the natural environment due to deforestation, overfishing, introduction of exotic species, hunting, habitat destruction, and extinction of species. It did not absorb or destroy the other discourses. Rather, it **expanded** the **concerns** of the various groups to see their **common purposes**. By so doing, it lead to an increase in **collective action**. A similar environmental metanarrative would allow for "the construction of a **new common sense** which changes the identity of the different groups so that their **differing practices** are able to **complement one another** (Torgerson 1999: 47). There is no one particular environmental discourse that could function as a metanarrative. The development of the various environmental frames has resulted in a number of particular discourses which are unique cultural responses to specific conditions of ecological degradation (Eder 1996b: 163). Instead, an environmental metanarrative will consist of **multiple forms of arguments** to **motivate action** in **different social orders**. There is no requirement that joint action be based on one set of cultural beliefs; the only requirement is that there exist good reasons to act in a particular manner. "Political **unity**," Schlosberg (1998: 87-101) notes, "does not require that a political **agreement** be reached based on identical reasons. Rather, unity can be achieved through recognition and inclusion of multiplicity and particularity. 7i The theory of communicative action can inform the creation of a meta- narrative by describing both the types of arguments the metanarrative would have to make and the social conditions under which it would be cre- ated. First, the metanarrative must provide aesthetic, moral, and cognitive reasons for collective action. In order to create a rational agreement about what joint action should be followed, a discourse must establish that it accurately represents the objective world, that the acceptance of a proposed action is in accordance with other existing cultural norms and beliefs, and that the statement is an authentic representation of the speaker's inner se lf.4 Hence, the development of collective action depends on a discourse's sus- taining the validity claims of truth, normative rightness, and authenticity. This means that the multiple and partial discourses on the natural environment must be integrated to form a coherent discourse that can provide cognitive scientific, normative, and aesthetic rationales for the preservation of nature (Eder l996a: 215). Thus, contributions are needed from all the environmental discourses. The existing environmental discourses form the **starting point** for such an effort. According to Killingsworth and Palmer (1992: 266), an ecological metanarrative "will ... draw energy and direc- tion from them and in turn will influence their sense of purpose and their understanding of their relationships to other discourses. The continuous narrative of an environmentalist culture will, above all, be the medium through which communicative action is realized and perpetuated." Thus, to be successful, an environmental metanarrative must recognize the valid- ity of the great variety of viewpoints and rationales with regard to protect- ing the natural environment, and this knowledge must inform collective action (Schlosberg 1998: 21). Thus, we will need to "enlarge the range of voices in our conversation and with them the means of considering our rela- tionship with the natural world" (Killingsworth and Palmer 1992: 79). An ecological metanarrative would draw on the special management, scientific and legal capacities of the Conservation, Wildlife Management, and Reform Environmentalist discourses to ensure scientific competence and adequately address scientific questions. To develop new normative criteria, it would need to encompass the moral fervor and commitment of the ecotheologists and the deep concerns over equity and justice of both the Ecofeminist discourse and the Environmental justice discourse. To address our images of what constitutes the good life, it would need to incorporate the aesthetic insights provided by the discourses of Preservation and Deep Ecology. The theory of communicative action also defines the process through which this metanarrative would be created. Here Habermas's communica- tive ethics specifies that the process of validating a discourse requires an open speech community in which the unforced force of the better argument prevails. This ethical relationship, a presupposition of mutual communica- tions, requires basic recognition and acceptance of others and respect for the autonomy and integrity of the others' identity and selfhood (Schlosberg 1998: 68). Thus, the theory of communicative action specifies that the cre- ation of an ecological metanarrative must occur through open communi- cation based on solidarity and mutual respect. An open dialogue among all environmental organizations would create a democratic community, which could then **debate** and **develop** **coordinated actions** to deal with ecological degradation. Torgerson (1999: 160) has labeled the arena in which this dialogue would take place the "green" polit- ical sphere. It is not a specific institution or think tank. Rather, it defines a change in the relationship of the various environmental communities that would enable them to engage one another in a community of dialogue (ibid.: 161). The "green" public sphere would define a space in which "industrialist presuppositions do not prevail" (ibid.: 162). This public space would be the arena in which environmental politics would take place and meaningful disagreements and debates about our society and the actions necessary to create an ecologically sustainable society would be carried out. Creating an environmental metanarrative through this dialogue would enable the creation of an environmental community capable of democrat- ically discussing proposed actions and then acting together (ibid.: 107).

**2AC—Reps Good**

**Crisis framing of warming overcomes disbelief and mobilizes public responses.**

**Romm 12** (Joe Romm is a Fellow at American Progress and is the editor of Climate Progress, which New York Times columnist Tom Friedman called "the indispensable blog" and Time magazine named one of the 25 “Best Blogs of 2010.″ In 2009, Rolling Stone put Romm #88 on its list of 100 “people who are reinventing America.” Time named him a “Hero of the Environment″ and “The Web’s most influential climate-change blogger.” Romm was acting assistant secretary of energy for energy efficiency and renewable energy in 1997, where he oversaw $1 billion in R&D, demonstration, and deployment of low-carbon technology. He is a Senior Fellow at American Progress and holds a Ph.D. in physics from MIT., 2/26/2012, “Apocalypse Not: The Oscars, The Media And The Myth of ‘Constant Repetition of Doomsday Messages’ on Climate”, http://thinkprogress.org/romm/2012/02/26/432546/apocalypse-not-oscars-media-myth-of-repetition-of-doomsday-messages-on-climate/#more-432546)

The two greatest myths about global warming communications are 1) constant repetition of doomsday messages has been a major, ongoing strategy and 2) that strategy doesn’t work and indeed is actually counterproductive! These myths are so deeply ingrained in the environmental and progressive political community that when we finally had a serious shot at a climate bill, the powers that be decided not to focus on the threat posed by climate change in any serious fashion in their $200 million communications effort (see my 6/10 post “Can you solve global warming without talking about global warming?“). These myths are so deeply ingrained in the mainstream media that such messaging, when it is tried, is routinely attacked and denounced — and the **flimsiest studies** are interpreted exactly backwards to drive the **erroneous message** home (see “Dire straits: Media blows the story of UC Berkeley study on climate messaging“) The only time anything approximating this kind of messaging — not “doomsday” but what I’d call blunt, science-based messaging that also makes clear the problem is solvable — was in 2006 and 2007 with the release of An Inconvenient Truth (and the 4 assessment reports of the Intergovernmental Panel on Climate Change and media coverage like the April 2006 cover of Time). The **data suggest** that strategy **measurably moved** the public to become more concerned about the threat posed by global warming (see recent study here). You’d think it would be pretty obvious that the public is not going to be concerned about an issue unless one explains why they should be concerned about an issue. And the **social science literature**, including the vast literature on advertising and marketing, could not be clearer that **only repeated messages** have any chance of sinking in and moving the needle. Because I doubt any serious movement of public opinion or mobilization of political action could possibly occur until these **myths are shattered**, I’ll do a multipart series on this subject, featuring public opinion analysis, quotes by leading experts, and the latest social science research. Since this is Oscar night, though, it seems appropriate to start by looking at what messages the public are exposed to in popular culture and the media. It ain’t doomsday. Quite the reverse, climate change has been mostly an **invisible** issue for several years and the message of conspicuous consumption and business-as-usual reigns supreme. The motivation for this post actually came up because I received an e-mail from a journalist commenting that the “constant repetition of doomsday messages” doesn’t work as a messaging strategy. I had to demur, for the reasons noted above. But it did get me thinking about what messages the public are exposed to, especially as I’ve been rushing to see the movies nominated for Best Picture this year. I am a huge movie buff, but as parents of 5-year-olds know, it isn’t easy to stay up with the latest movies. That said, good luck finding a popular movie in recent years that even touches on climate change, let alone one a popular one that would pass for doomsday messaging. Best Picture nominee The Tree of Life has been billed as an environmental movie — and even shown at environmental film festivals — but while it is certainly depressing, climate-related it ain’t. In fact, if that is truly someone’s idea of environmental movie, count me out. The closest to a genuine popular climate movie was the dreadfully unscientific The Day After Tomorrow, which is from 2004 (and arguably set back the messaging effort by putting the absurd “global cooling” notion in people’s heads! Even Avatar, the most successful movie of all time and “the most epic piece of environmental advocacy ever captured on celluloid,” as one producer put it, omits the climate doomsday message. One of my favorite eco-movies, “Wall-E, is an eco-dystopian gem and an anti-consumption movie,” but it isn’t a climate movie. I will be interested to see The Hunger Games, but I’ve read all 3 of the bestselling post-apocalyptic young adult novels — hey, that’s my job! — and they don’t qualify as climate change doomsday messaging (more on that later). So, no, the movies certainly don’t expose the public to constant doomsday messages on climate. Here are the key points about what repeated messages the American public is exposed to: The broad American public is exposed to virtually **no doomsday messages**, let alone constant ones, on climate change in popular culture (TV and the movies and even online). There is not one single TV show on any network devoted to this subject, which is, arguably, more consequential than any other preventable issue we face. The same goes for the news media, whose coverage of climate change has collapsed (see “Network News Coverage of Climate Change Collapsed in 2011“). When the media do cover climate change in recent years, the overwhelming majority of coverage is devoid of any doomsday messages — and many outlets still feature hard-core deniers. Just imagine what the public’s view of climate would be if it got the same coverage as, say, unemployment, the housing crisis or even the deficit? When was the last time you saw an “employment denier” quoted on TV or in a newspaper? The public is exposed to constant messages promoting business as usual and indeed idolizing conspicuous consumption. See, for instance, “Breaking: The earth is breaking … but how about that Royal Wedding? Our political elite and intelligentsia, including MSM pundits and the supposedly “liberal media” like, say, MSNBC, **hardly even talk about** climate change and when they do, it isn’t doomsday. Indeed, there isn’t even a single national columnist for a major media outlet who writes primarily on climate. Most “liberal” columnists rarely mention it. At least a quarter of the public chooses media that devote a vast amount of time to the notion that global warming is a hoax and that environmentalists are extremists and that clean energy is a joke. In the MSM, conservative pundits routinely trash climate science and mock clean energy. Just listen to, say, Joe Scarborough on MSNBC’s Morning Joe mock clean energy sometime. The major energy companies bombard the airwaves with millions and millions of dollars of repetitious pro-fossil-fuel ads. The environmentalists spend far, far less money. As noted above, the one time they did run a major campaign to push a climate bill, they and their political allies including the president explicitly did NOT talk much about climate change, particularly doomsday messaging Environmentalists when they do appear in popular culture, especially TV, are routinely mocked. There is very little mass communication of doomsday messages online. Check out the most popular websites. General silence on the subject, and again, what coverage there is ain’t doomsday messaging. Go to the front page of the (moderately trafficked) environmental websites. Where is the doomsday? If you want to find anything approximating even modest, blunt, science-based messaging built around the scientific literature, interviews with actual climate scientists and a clear statement that we can solve this problem — well, you’ve all found it, of course, but the only people who see it are those who go looking for it. Of course, this blog is not even aimed at the general public. Probably 99% of Americans haven’t even seen one of my headlines and 99.7% haven’t read one of my climate science posts. And Climate Progress is probably the most widely read, quoted, and reposted climate science blog in the world. Anyone dropping into America from another country or another planet who started following popular culture and the news the way the overwhelming majority of Americans do would get the distinct impression that **nobody who matters** is terribly worried about climate change. And, of course, they’d be right — see “The failed presidency of Barack Obama, Part 2.” It is **total BS** that somehow the American public has been scared and overwhelmed by repeated doomsday messaging into some sort of climate fatigue. If the public’s concern has dropped — and public opinion analysis suggests it has dropped several percent (though is bouncing back a tad) — that is primarily due to the conservative media’s **disinformation campaign** impact on Tea Party conservatives and to the treatment of this as a **nonissue** by most of the rest of the media, intelligentsia and popular culture.

**We are a challenge message** – increases salience, collective action, and creative problem-solving.

Robert **BRULLE** Sociology & Envt’l Science @ Drexel **’10** “From Environmental Campaigns to Advancing the Public Dialog: Environmental Communication for Civic Engagement” *Environmental Communication* 4 (1) p. 92

From Identity to Challenge Campaigns One of the most common assumptions in designing identity-based environmental communication campaigns is that fear appeals are counterproductive. As Swim et al. (2009, p. 80) note: ‘‘well meaning attempts to create urgency about climate change by appealing to fear of disasters or health risks frequently lead to the exact opposite of the desired response: denial, paralysis, apathy, or actions that can create greater risks than the one being mitigated.’’ While the author goes on to qualify and expand this line of argument, this has been taken as an absolute in the popular press and much of the grey literature produced by nonprofit organizations and foundations. However, the academic literature portrays a much more complex picture: whereas apocalyptic rhetoric has been shown to be able to evoke powerful feelings of issue salience (O’Neill & Nicholson-Cole, 2009, p. 373), reassuring messages, such as those advocated by ecoAmerica, have the least ability to increase issue salience (de Hoog, Stroebe, & de Wit, 2007; Lowe et al., 2006; Meijinders, Cees, Midden, & Wilke, 2001; Witte & Allen, 2000). Additionally, apocalyptic messages do not necessarily result in denial. A number of empirical studies show that individuals respond to threat appeals with an increased focus on collective action (Eagly & Kulesa, 1997; Langford, 2002; Leiserowitz, Kates, & Parris, 2006, p. 437; Maiteny, 2002; Shaiko, 1999; Swim et al., 2009, p. 94). Tomaka, Blascovich, Kelsey, and Leitten (1993, p. 248) distinguish between threat and challenge messaging: threat messages ‘‘are those in which the perception of danger exceeds the perception of abilities or resources to cope with the stressor. Challenge appraisals, in contrast, are those in which the perception of danger does not exceed the perception of resources or abilities to cope.’’ If a meaningful response to a threat can be taken that is within the resources of the individual, this results in a challenge, which ‘‘may galvanize creative ideas and actions in ways that transform and strengthen the resilience and creativity of individuals and communities’’ (Fritze, Blashki, Burke, & Wieseman, 2008, p. 12). While fear appeals can lead to maladaptive behaviors, fear combined with information about effective actions can also be strongly motivating (O’Neill & Nicholson-Cole, 2009, p. 376; Witte & Allen, 2000).

**Climate crisis rhetoric isn’t alarmist – current data are without precedent.**

Thomas **PRINCEN** School of Natural Resources and Environment @ Michigan **’10** *Treading Softly* p. 6-7

To my mind, these changes are quite unlike those of the past. And what they portend for the future is quite unimaginable. My thirty-plus years of observation and study, of teaching and tinkering have led me to conclude, only in the last few years, that fundamental shifts are now occurring, and more are on the way. It is not just that things are changing; indeed, they always have. It is that they are changing in ways previously unimaginable to scientists, business leaders, policy makers, and citizens alike. In the scientific community, terms like surprise (which now has a technical definition), threshold (as in, "cross that threshold and your environment is completely different"), irreversibility (there is no going back, no recovery), nonsubstitutability (things like an atmosphere and water cannot be replaced), unprecedented rates of change (trends of the past are poor indicators of the present, let alone the future), and that allpurpose, ever-popular crisis (both fast and slow): these terms are now commonplace. This is not alarmism; it is a reflection of many people's struggle to fathom fundamental shifts, changes for which there are few if any precedents, and thus unimaginable, and for which appropriate social responses are equally unprecedented and unimaginable. So, for example, bark beetles, once restricted to two-year cycles by winter cold, are now reproducing annually. It is not just that they are devastating broad swaths of Rocky Mountain forests but that those forests may never recover. Frogs are disappearing worldwide. It is not just that it is a shame to lose species; species have always gone extinct, after all. It is that the mysteries of their disappearance, combined with their status as amphibian "canaries in the mineshaft," due to their thin porous skin, render conventional conservation irrelevant for frogs and perhaps also for a good many other terrestrial vertebrates. We cannot save one species at a time or even one habitat at a time when systemic instability is the issue. Sea levels are rising, already prompting island nations and other communities in low-lying areas to prepare to migrate. It is not that migrations have not occurred before, but that, with 6 billion people on earth, all the good places are taken. In these cases, and in so many more in the physical and biological realms, no one knows what to do, except proclaim more-of-the-same, only new and improved, greener and cleaner. Turning to the social realm, the shifts are murkier, more contested, and yet no less fundamental. A ISO-year "law" of oil supply says that when oil supplies are tight, prices go up, which stimulates investment, exploration, and technological innovation, bringing on more supply, all of which pushes prices back down. The cycle may take months or a few years, but it is a cycle, as inevitable as the business cycle itself, or the life cycle. Now, according to the International Energy Agency, the investments are not being made.2 And even a few mainstream commentators are violating a taboo: they are saying that world oil supply has peaked, or is about to, which is to say that all the cheap oil is gone. Whatever the case, hardly anyone predicts a return to cheap, abundant oil.

**2AC—Impact D**

**Alternative alone more vulnerable to cooptation—radical alternatives pave the way for authoritarian environmentalism.**

Simon **HAILWOOD** Philosophy @ Liverpool ‘**4** *How to be a Green Liberal* p. 155-156

For me, the main worry emerging from such considerations is not that liberal societies are incapable of embracing meaningful change towards "eco-sanity", such that anarchism is the only hope. That hope seems more unrealistic - more utopian in that sense - than that of liberal reform. The main worry is that those from the authoritarian end of the spectrum will convince people that the liberal mainstream is inherently incapable of reform, and so must be replaced by more coercive forms of green politics, and people from the radical left will help with the critique, provide no realistic, non-utopian alternative themselves, thus leaving the door open for the "Leviathan or oblivion" school: nakedly authoritarian, radically hierarchical programmes regarding substantive political equality as an obstacle to progress. 10) Sometimes the point about the practical need to oppose the state is made with impatience about philosophy and abstract theorizing. This does not apply to Carter. But it does to Sale, for example, who denounces abstract philosophical discussion of ethical responses to the "environmental crisis", mainly because dithering over abstruse conceptual matters is to ignore the simple practical issue of scale. '°4 It would be better if those with such powerful rhetorical skills used them to further the green cause as continuous with furthering the liberal cause against more reactionary elements. Perhaps this is particularly true in the USA, clearly the main player in the scientific-industrial-capitalist global order and, in terms of environmental policy agenda, in various ways a beacon of unreconstructed unreason. That would probably be of greater practical benefit than giving fellow citizens of the modern world a collection of quasi-religiose blueprinting ideas coloured with the dismal tinge of an anxious instrumentalism. That is, it seems more practically feasible to seek to work with the flow of modernity in order to help channel it on to a course more respectful of nature. That it is, in principle, possible to do this within the terms of what is often taken to be the main political philosophy of modernity, has been the point of this book.

**2AC—Solvency**

**The alternative is certainly not sufficient to prevent warming.**

**Alcott 8** (Blake, Ecological Economist Masters from Cambridge in Land Economy, The sufficiency strategy: Would rich-world frugality lower environmental impact? Ecological Economics 64 (4) p. Science Direct)

The environmental sufficiency strategy of greater consumer frugality has become popular in ecological economics, its attractiveness increasing along with awareness that not much can be done to stem population growth and that energy-efficiency measures are either not enough or, due to backfire, part of the problem. Concerning the strategy's feasibility, effectiveness, and common rationale, several conclusions can be drawn. • The consequences of the strategy's frugality demand shift – price reduction and the ensuing consumption rebound – are not yet part of mainstream discussion. • Contrary to what is implied by the strategy's advocates, the frugality shift cannot achieve a **one-to-one reduction** in world aggregate consumption or impact: Poorer **marginal consumers** increase their consumption. • The size of the sufficiency rebound is an open question. • The concepts of ‘North’ and ‘South’ are not relevant to the consumption discussion. • Even if the voluntary material consumption cuts by the rich would effect some lowering of total world consumption, changing human behaviour through argument and exhortation is **exceedingly difficult**. • While our moral concern for present others is stronger than that for future others, this intragenerational equity is in no way incompatible with non-sustainable impact. • Since savings effected by any one country or individual can be (more than) compensated by other countries and individuals, the **relevant scale** of any strategy is **the world**. • No **single strategy** to change any given right-side factor in I = f(P,A,T) guarantees **any effect** on impact whatsoever. • Right-side strategies in combination are conceptually **complicated** and perhaps **more costly** than explicitly political left-side strategies directly lowering impact. • Research emphasis should be shifted towards measures to directly lower impact both in terms of depletion and emissions. Lower consumption may have advantages on the individual, community, or regional level. There is for instance some truth in the view of Diogenes that happiness and quantity of consumption do not necessarily rise proportionally. Living lightly can offer not only less stress and more free time but also the personal boon of a better sense of integrity, fulfilling the Kantian criterion that one’s acts should be possible universally (worldwide). Locally it could mean cleaner air, less acid rain, less noise, less garbage, and more free space. And in the form of explicit, guaranteed shifts of purchasing power to poorer people it would enable others to eat better or to buy goods such as petrol and cars. However, given global markets and marginal consumers, one person’s doing without enables another to ‘do with’: In the near run the former consumption of a newly sufficient person can get fully replaced. And given the **extent of poverty** and the **temptations of luxury** and **prestige consumption**, this **near run** is likely to be **longer than** the time horizon required for a relevant strategy to stem climate change and the loss of vital species and natural resources.

**2AC—Consumption**

**Growth is a prerequisite to changing patterns of consumption.**

**Karlsson 9** (Rasmus, Political Science at Lund, “A global Fordian compromise?—And what it would mean for the transition to sustainability” Envt’l Science and Policy 12 p. 190-191)

Though these caricatures may still hold true to a certain extent, I would argue that the last years have challenged this impasse. On one hand, the general public has grown increasingly aware of how serious our current predicament has become. On the other hand, a string of promising academic work, both in the sciences (Hoffert et al., 2002) and in green political theory (Nordhaus and Shellenberger, 2007), has finally taken up what otherwise has been a dormant position ever since the 1970s. I am referring to those who accept the gravity of the present environmental crisis yet believe that the solution can never be found in the traditional green mantra of reduction, conservation and self-denial. Instead these authors have attempted to reconcile the politics of scarcity with technological optimism, to tap into the spirit that once made grand projects like the Apollo program possible and, on this basis, move towards a politics of radical engagement. Nowhere does the need for such new politics appear more urgent than on the global level. With parts of the world (mostly in Asia) rapidly industrializing while others remaining trapped in the direst poverty, the planetary perspective goes to the heart of the sustainable transition. Not only does it show the terrible human cost of the present status-quo but also the irreversibility in the move towards modernization. Billions are now impatiently aspiring for the material living standard of the West, and given the limited ecological space of the planet (Andreasson, 2005; Rist, 1997, pp. 44–45), it is hard to see how these needs can be met without radical technological innovation. However, there are reasons to doubt the feasibility of any advanced technological paths to sustainability. Only in a climate of high and **sustained economic growth** would it be possible for states to set aside the vast resources necessary to bring success to long-term projects on nuclear fusion, nanotechnology and other converging technologies (Malsch, 2008). Such **benign economic conditions** are, just as the prospects of sustainable development more generally (Blinc et al., 2007), unlikely to come about in times of international tension, unplanned mass-migration and growing resource scarcity. This should warrant a new kind of sobering realism, an acceptance that the future of modernity is now a planetary enterprise and that we are all into this as one common human civilization.

**2AC—Ruling Solves**

**Their evidence is speculative at best and comes from industry insiders with an incentive to generate hype. None of their evidence actually cites a source from inside the IRS.**

**IRS will only issue a private letter ruling that applies to one company, and is coming too soon for you to win a politics net benefit.**

**Bloomberg**, 1/21/**2013**. “Solar Costs to Fall as REITs Emerge as Source of Funding,” http://www.bloomberg.com/news/2013-01-21/solar-costs-to-fall-as-reits-emerge-as-source-of-funding.html.

Renewable Energy Trust asked the IRS at least four months ago for a private letter ruling that would grant it permission to become a REIT. It typically takes the IRS about four months to six months to respond to such requests, Fong said.

Ruling Imminent

The IRS may issue its first decision on solar REITs this month, according to Kogan, the Chadbourne & Parke attorney based in [Washington](http://topics.bloomberg.com/washington/). That’s the only regulatory hurdle Renewable Energy Trust will need to clear and a favorable ruling **will apply only to Fong’s company**.

**IRS ruling will only define PV as property --- won’t address PPA’s as rental income --- key to REIT value.**

[Jason **Deign**](http://news.pv-insider.com/users/jason-deign), 10/23/**2012**. “PV Finance: Is a REIT the right fit?” PV Insider, http://news.pv-insider.com/photovoltaics/pv-finance-reit-right-fit.

So far, so good. But what does the IRS think? Nobody knows. Which is why Renewable Energy Trust Capital’s query is so important. Following the query, the IRS has a duty to state its position on REITs and PV, and a response is expected imminently.

That response could come in the form of a public revenue ruling or a private letter ruling. If it is the latter, **as is likely to be the case** with Renewable Energy Trust Capital, neither party is obliged to make the ruling public and it is **not necessarily binding with respect to other situations**.

Nevertheless, the fact that Renewable Energy Trust Capital has gone on the record about its activities is a sure sign that the industry is eager for clarity of the issue of REITs, so a disclosure of the IRS position is probable soon.

That may not be the end of the story, however. **Even if the IRS accepts PV as ‘real property’, for solar investors to get the maximum benefit out of REITs the revenue from PPAs wil effectively have to be treated as ‘rental income’**, and it is not certain when or how this will be clarified.

**Ruling that PPA revenues are rents is the only way to make S-REITs effective.**

Josh **Sturtevant**, **2011**. George Washington University Solar Institute, J.D. from George Washington University Law School, Legal Associate at Distributed Sun LLC, in-house legal fellow at a renewable energy financing and development firm. “THE S-REIT: An Investment-Driven Solution to Solar Development Problems,” http://solar.gwu.edu/Research/Sturtevant\_S-REIT.pdf.

Although the REIT structure, with its ability to attract a broad base of investors, could be a very attractive tool for solar development, it is not clear that solar developments could, at this point, qualify for REIT status. There are some aspects of the REIT tax structure which would present little to no barrier for a solar developer. For example, the organizational and distributive requirements of REITs could effectively be satisfied with very little planning. Indeed, many solar developers likely satisfy many of the requirements already, such as having directors and transferable shares, inter alia. Additionally, it is not difficult to envision a solar developer satisfying the asset test as property is typically a significant category on many developers’ balance sheets. However, because of the novel approach of a solar development utilizing a REIT tax structure, whether or not an S-REIT could satisfy the income test as it is currently configured is less clear, **and could be the largest hurdle to the S-REIT structure**. As noted in discussion of the REIT structure, an entity must earn 75% of its income from rents. There is also a provision that part of this, 15% of total income, may come from personal 15 property related to the real property. Since the income gained by solar developments is in the form of payments based on a power purchase agreement linked to energy produced by solar panels, which could possibly be considered personal property, it is unclear whether all the income from a PPA could qualify as rents from real property. 57 58 I.R.C. 856 is silent in regard to solar development. Additionally, the IRS has not made any published rulings on whether income from a PPA would qualify as rent. 59 However, it is possible to find some support for the proposition that PPA income could qualify as rent from real property. As noted above, it might appear that solar panels are personal property. This would be problematic as rents gained from personal income can only contribute 15% to gross income. However, this personal property rule typically pertains to moveable property used in connection with broader business activities. For example, one retail mall was able to claim rents from baby strollers under this clause. 60 Immoveable solar panels, which serve the purpose of income generation, and not just add-ons to broader corporate activities, would not seem to fit into this category. A more appropriate comparison might be to the assets that railroads use to generate income, such as tracks and bridges. Therefore, a broad reading of ‘interests in real property’ that includes income gained from solar panels would likely be appropriate.

**2AC—TF O/w**

**Discourse of the 1AC is key to solving quick enough.**

**Parker 3** (Jenneth, Co-Director of the MSc in Environmental and Developmental Education @ South Bank Univ., in Realism Discourse and Deconstruction eds. Jonathan Joseph and John Michael Roberts p. 82)

In this way the social action represented by 'Green Romanticism' is of a more semiotic nature than is the social action represented by 'Administrative rationalism which has more **immediate concrete outcomes** in terms of policies and material practices. 'these discourses may actually be **complementary** when seen from the perspective of a diverse and wide- ranging movement, which seeks to raise issues and effect social change in a variety of different ways, One key consideration is the **time-frame** in which discourses seek to operate. If you seek to gain **short-term results**, you will need a discourse that is clearly related to dominant discourses; less so for medium-term results; and long-term results may require the subversion of the dominant discourse itself in conjunction with changing certain key social structures and material practices. I would argue that effective movements typically work with all these **time-scales** in addition to working at different scales from micro to macro politics.

**2AC—Turns K**

**The global south will suffer the most devastating consequences of climate change.**

**Goodman 9** (James, University of Technology (Sydney) ‘9 “From Global Justice to Climate Justice? Justice Ecologism in an Era of Global Warming” New Political Science 31 (4) p. 501)

The impact of climate change has been likened to that of a **third world war**—at least as devastating as its predecessors. In this war it is the Global South that is in the immediate firing line: the impacts of climate change for low-income peoples are now predicted to be disproportionate and catastrophic. In April 2007 a report issued by the Intergovernmental Panel on Climate Change (IPCC) on impacts and vulnerability stated that it is in the South, where **urbanization** and **industrialization** are already putting pressure on resources and where **adaptation capacity** is relatively weak, that climate change will have its most immediate negative impact.10 The report predicted major water shortages due to climate change, with a potential halving in agricultural production in some regions of Africa by 2020, and a one-third reduction in yields in Central and South Asia by 2050, as well as inundation of the densely populatedmega-deltas of South and South-EastAsia due to rising sea levels. Those amongst Northern and Southern elites who continue to benefit from continued accumulation do so at an immediate and measurable cost to Southern peoples. But there is a sting in the tail: as nature wreaks its revenge, a climate breakdown from which even the richest cannot insulate themselves is now only a generation away. The UN Human Development Report for 2007, “Fighting Climate Change,” underlines the point: Climate change is the defining human development challenge of the 21st century. Failure to respond to that challenge will stall and then reverse international efforts to **reduce poverty**. The poorest countries and most vulnerable citizens will suffer the earliest and most damaging setbacks, even though they have contributed least to the problem. Looking to the future, no country—however wealthy or powerful— will be immune to the impact of global warming.11

**2AC—Growth L**

**Framing the environment through the lens of growth is good.**

**Wapner 10** (Paul, Global Environmental Politics @ American, *Living Through the End of Nature* p. 191-194)

Recently a spate of research is demonstrating that climate change options, far from being expensive, socially dislocating, or more dangerous than contemporary practices, actually offer many benefits. Transitioning to a clean energy economy promises to jump-start or revitalize weak economies, and set even sound ones on firmer ground. Shifting to renewable energy sources will create **green-collar jobs**, reinvigorate former **manufacturing** sectors, drive significant **capital investment**, stabilize **energy prices**, and open up whole new professional enterprises associated with **carbon accounting**, policy analysis, and **energy engineering**. According to a joint study by Worldwatch Institute and the Center for American Progress, renewable energy creates more jobs per unit of energy produced and per dollar spent than fossil fuel technologies do, and such job creation will have a great impact on both the u.S. and world economies.21 We 'already see some of this promise in the growth of various renewable energy industries. Global wind energy generation, for instance, has **more than tripled** since 2000; the production of photovoltaics has more than sextupled since 2000; and although controversial, the production of fuel ethanol from crops has more than doubled since 2000 and is slated to grow dramatically over the next few years. Add to this the amount of investment being channeled into renewable energy more generally, and it appears that addressing climate change is not some dour prospect marked by certain economic decline but rather an opportunity to fashion a more productive and ecologically sound economy. As Congressperson Jay Inslee and political analyst Bracken Hendricks put it, "This is not about sacrifice; it is about economic growth, productivity, and investment.,,22 A similar point has been made with regard to climate change strategies and national security as they relate to oil supplies. Much of the world's oil comes from a handful of producers, and many of these are military flash points. Of the ten countries with the largest proven oil reserves, only one is genuinely democraticnamely, Canada-and most of the others are security tinderboxes. Today, conflicts abound in Iraq, Columbia, Angola, Nigeria, and the Republic of Georgia, and are just under the surface in places like Saudi Arabia and Iran. The security dimension is further implicated in that the vulnerability of supply creates the need to protect pipelines, refineries, and tanker sea-lanes around the world. Finally, it should not be lost on us, especially in the midst of trying to extract ourselves from a second Gulf War, that throughout the last century, oil has been a contributing cause of **military conflict**. A clean-energy economy would break the world's dependence on a small set of security-fragile **regimes**, stop funding **nondemocratic states**, free up resources for other forms of protection, and allow us to deploy money and human energy toward **safer** and more **productive** uses. By pointing out the benefits of responding to climate change, I do not wish to minimize the genuine dangers or be Pollyanna about the challenges of transitioning to a post-fossil fuel world. Rather, I want to emphasize the silver lining in our predicament and feature it. Ironically, we can see this in the end of nature arguments. By turning attention away from biophysical constraints and reminding us of how much our choices are about the world we want to create rather than the one we feel we need somehow to align ourselves with, we are given greater freedom to explore the social advantages of one set of affairs over another. **Biophysical thresholds** call out calamity; social benefits promise well-being. Environmentalists would do well to **emphasize the latter**. A second step involves establishing a new relationship to energy. When we see ourselves as the main culprits of environmental degradation and work to protect the natural world from our forays, we tend to envision energy sourcing as a matter of crossing a boundary, securing energy resources, and coming back to burn or otherwise utilize them. We see our job, in other words, as a matter of robbing nature to power our lives, rather than seeing ourselves as part and parcel of our energy sources. To those enticed by the mastery narrative, the earth's crust is basically a large rock, and its atmosphere is an inert container positioned to receive our waste. Coal, natural gas, and petroleum are thus dead substances that are useless aside from our employment. In fact, we don't even see them if we don't extract them from under the earth's surface. The air is likewise an invisible realm that stretches around the earth with no special status aside from its ability to provide oxygen and absorb carbon dioxide and other pollutants. Seen as such, there is nothing wrong with an energy system premised on extraction and emissions. The dynamics involved take place external to our lives. In the case of energy, a postnature orientation calls on us **not to steal energy** from the earth and emit waste into the air, water, and soil as if these were receptacles separate from human life but instead to find ways of harnessing the earth's energies so that our lives and the dynamics of the nonhuman world intertwine. When we mine and burn fossil fuels we use up nature's capital. In contrast, when we harness the wind, sun, ocean waves, rivers, and geothermal activity, we tap into inexhaustible forces. The difference is profound. Drawing attention to using renewable energy sources is, of course, nothing new, and focusing on them is certainly not unique to a postnature orientation. But such an orientation draws our attention more tightly to them. A postnature sensibility does not scribe a line between us and the nonhuman world, and call on us simply to stay on our side of the divide, nor does it necessarily counsel excessive restraint when it comes to interacting with the nonhuman world. The nonhuman world is not off-limits. Rather, it has, like humans, inexhaustible energy resources. The key is an orientation to work with, rather than against, these-to partner our lives with, rather than lord over, them. Moreover, a postnature sensibility reminds us that we are already fashioning the nonhuman world, and celebrates this. Building wind turbines, solar collectors, hydroelectric systems, and so forth requires tremendous ecological intervention on the part of humans. The intervention itself is **not a bad thing**; it only becomes that way when we hold ourselves wholly separate from the nonhuman world or when our interventions exploit the earth. Harnessing the earth's energy makes sense in a postnature world.

**2AC—Incentives L**

**Incentives for environmental reform of capitalism solve climate change – crisis or revolution fails.**

Peter **NEWELL** IR @ Sussex **AND** Matthew **PATTERSON** Political Studies @ Ottawa **’10** *Climate Capitalism* p. 8-10

But if one premise for this book is that climate change entails an enormous transformation of how capitalism operates, then our other premise is that despite resistance, in fact an embryonic form of climate capitalism is already emerging. The chapters that follow elaborate how the ways that governments, corporations and non-governmental actors have responded to climate change are best understood as an effort to decarbonise the global economy. Of course this development is patchy - some governments are more active than others, some businesses much more entrepreneurial and far-sig~ted than others - but the foundations of such an economy are nevertheless in the process of being built. These foundations can be characterised as different types of carbon markets, which put a price on carbon, and thus create incentives to reduce emissions. These sorts of response to climate change are also highly problematic of course. Many readers will already have prejudices against, or at least worries about, treating the atmosphere like a commodity to be bought and sold, or about buying carbon offsets to enable the rich to continue their high-consuming lifestyles with a clear conscience. We share these worries. But there is something about climate change that makes it **unique** amongst environmental problems. The origins of climate change are deeply rooted in the development of the global capitalist economy. The ways the world has responded to climate change have been conditioned by the sort of free-market capitalism which has prevailed since the early 1980s. To respond to climate change successfully entails decarbonising that economy, to re-structure or dismantle huge economic sectors on which the whole of global development has been based. This is in sharp contrast to efforts to deal with ozone depletion, which involved the elimination of a relatively small batch of chemicals with specific uses by a handful of leading companies. Likewise, we can deal with most forms of water pollution by banning certain applications offertilisers, dealing with human and animal wastes, and controls on what chemical industries can discharge into rivers and lakes. To ban these practices, while often inconvenient for the companies involved, is hardly a challenge to the whole edifice of global capitalism. In contrast, to propose to ban all further coal and oil use, as some have done, is both unrealistic and deeply problematic. The use of these fuels is currently so widespread that simply to ban them would cause economic growth to **collapse**. And a lack of growth is something that the capitalist system in which we live simply cannot tolerate - it would collapse as a system. So the challenge of climate change means, in effect, either abandoning capitalism, or seeking to find a way for it to grow while gradually replacing coal, oil and gas. Assuming the former is unlikely in the short term, the questions to be asked are, what can growth be based on? What are the energy sources to power a decarbonised economy? Which powerful actors might be brought on board to overcome resistance from the oil and coal companies? And for those worried (including us) about the image of unbridled free-market capitalism as managing the climate for us, then we are forced to address the questions: What type of climate capitalism do we want? Can it be made to serve desirable social, as well as environmental, ends? And what might it take to bring it about? 9In this context, a response that focuses on creating markets, where money can be made for trading carbon allowances within limits set by governments, is rather appealing. Against the backdrop of the problems of recalcitrant industries and reluctant consumers, it creates the possibility of **economic winners** from decarbonisation. What's more, those winners - financiers - are rather powerful, and can support you as you build the policies which might produce decarbonisation overall. Trading on its own clearly won't be enough, but it does provide a powerful constituency that benefits from climate-change policy, which is crucial politically. Turning this into a successful project for decarbonisation requires constructing altogether different models of growth that do not depend on abundant and cheap fossil fuels, one that may actually reward reductions in energy use and its more efficient use. This means decoupling emissions growth from economic growth. The key question is whether capitalists can find ways of doing new business in a way that helps to achieve decarbonisation. They need to be able to do this in a way which brings on board those that will be doing less business in a low-carbon economy, or at least to provide enough growth overall for policymakers to be able to override their resistance.

**2AC—Impact**

**Cap isn’t the root cause—human greed is.**

**Aberdeen, 03** (Richard, “THE WAY: A Theory of Root Cause and Solution”, http://richardaberdeen.com/essays/Etheway.html)

A view shared by many modern activists is that capitalism, free enterprise, multi-national corporations and globalization are the primary cause of the current global Human Rights problem and that by striving to change or eliminate these, the root problem of what ills the modern world is being addressed.  This is a rather unfortunate and historically myopic view, reminiscent of early “class struggle” Marxists who soon resorted to violence as a means to achieve rather questionable ends.  And like these often brutal early Marxists, modern anarchists who resort to violence to solve the problem are walking upside down and backwards, adding to rather than correcting, both the immediate and long-term Human Rights problem.  Violent revolution, including our own American revolution, becomes a breeding ground for poverty, disease, starvation and often mass oppression leading to future violence.

Large, publicly traded corporations are created by individuals or groups of individuals, operated by individuals and made up of individual and/or group investors.  These business enterprises are deliberately structured to be empowered by individual (or group) investor greed.  For example, a theorized ‘need’ for offering salaries much higher than is necessary to secure competent leadership (often resulting in corrupt and entirely incompetent leadership), lowering wages more than is fair and equitable and scaling back of often hard fought for benefits, is sold to stockholders as being in the best interest of the bottom-line market value and thus, in the best economic interests of individual investors.  Likewise, major political and corporate exploitation of third-world nations is rooted in the individual and joint greed of corporate investors and others who stand to profit from such exploitation.  More than just investor greed, corporations are driven by the greed of all those involved, including individuals outside the enterprise itself who profit indirectly from it.

If one examines “the course of human events” closely, it can correctly be surmised that the “root” cause of humanity’s problems comes from individual human greed and similar negative individual motivation.  The Marx/Engles view of history being a “class” struggle ¹  does not address the root problem and is thus fundamentally flawed from a true historical perspective (see Gallo Brothers for more details).  So-called “classes” of people, unions, corporations and political groups are made up of individuals who support the particular group or organizational position based on their own individual needs, greed and desires and thus, an apparent “class struggle” in reality, is an extension of individual motivation.  Likewise, nations engage in wars of aggression, not because capitalism or classes of society are at root cause, but because individual members of a society are individually convinced that it is in their own economic survival best interest.  War, poverty, starvation and lack of Human and Civil Rights have existed on our planet since long before the rise of modern capitalism, free enterprise and multi-national corporation avarice, thus the root problem obviously goes deeper than this.

Junior Bush and the neo-conservative genocidal maniacs of modern-day America could not have recently effectively gone to war against Iraq without the individual support of individual troops and a certain percentage of individual citizens within the U.S. population, each lending support for their own personal motives, whatever they individually may have been.  While it is true that corrupt leaders often provoke war, using all manner of religious, social and political means to justify, often as not, entirely ludicrous ends, very rare indeed is a battle only engaged in by these same unscrupulous miscreants of power.  And though a few iniquitous elitist powerbrokers may initiate nefarious policies of global genocidal oppression, it takes a very great many individuals operating from individual personal motivations of survival, desire and greed to develop these policies into a multi-national exploitive reality.

No economic or political organization and no political or social cause exists unto itself but rather, individual members power a collective agenda.  A workers’ strike has no hope of succeeding if individual workers do not perceive a personal benefit.  And similarly, a corporation will not exploit workers if doing so is not believed to be in the economic best interest of those who run the corporation and who in turn, must answer (at least theoretically) to individuals who collectively through purchase or other allotment of shares, own the corporation.  Companies have often been known to appear benevolent, offering both higher wages and improved benefits, if doing so is perceived to be in the overall economic best interest of the immediate company and/or larger corporate entity.  Non-unionized business enterprises frequently offer ‘carrots’ of appeasement to workers in order to discourage them from organizing and historically in the United States, concessions such as the forty-hour workweek, minimum wage, workers compensation and proscribed holidays have been grudgingly capitulated to by greedy capitalist masters as necessary concessions to avoid profit-crippling strikes and outright revolution.

**2AC—Alternative**

**Ethic of care generates imperial hierarchy. The critique denies users of energy technologies autonomy. Turns the alternative.**

**Gratton 10** (Peter, Assistant Professor of Philosophy at the University of San Diego, “Taking Care of Youth and the Generations,” http://ndpr.nd.edu/news/24441-taking-care-of-youth-and-the-generations/)

But I stop short when Stiegler argues we are creating a generation of "I-don't-give-a-damners." Isn't this complaint the same as it ever was? Newspapers, mass paperbacks, radio, television, the Internet, and so on, were all going to turn us into a pack of hedonists incapable of doing anything other than making the next purchase. Stiegler repeats these **age-old attacks** almost **verbatim**, seeming to have missed an entire era of media studies since Marcuse and Adorno were last seen shaking their fists at the "culture industry." This is not to suggest that Stiegler is incorrect about the pernicious shaping of human desires -- marketers who aren't creating desires don't last long. But neither the culture industry nor its consumers are as homogeneous as Stiegler suggests. Heidegger's analysis of everydayness takes one only so far. To argue that those going online are becoming passive and pacified, all but unconscious beings, is a claim strange to be found in the work of one who writes about the pharmakon (the poison and cure) of writing and then assumes newer technologies could be doing nothing but poisoning the minds of the young. This brings me to the politics of the book. Since Stiegler is calling for a "reenchanting" of this video-televisual world, just what "enchanted" world is he referencing? On what basis could he begin to presume such masses are not caring, not "giving a damn," about their lives and the lives of others? The "battle for intelligence," which he calls "noopolitics," must be won lest, he says, there be the "liquidation of 'democratic maturity' and 'democratic responsibility,' that is, populism" (53). If the people aren't paying attention, he warns, "a few will always think for themselves," citing Kant approvingly, and these few will be responsible for "spread[ing] the spirit of a rational appreciation for both their own worth and for each person's calling to think for himself" (40). With rampant "technologies of stupidity," there is a threat that "it might become literally impossible to (re)educate those organologically conditioned brains that have become prone to incivility and delinquency" (35). Time, he literally argues, is running out (182-3). What, then, is to be done? Stiegler's answer is unapologetically a return and reinvigoration of the institutions of the third Republic: bourgeois families (one wonders, though he doesn't say, who will be caring for all those children no longer attached to their gaming devices), reading-focused schools, and a republican form of government anchored in a united Europe. The "work of forming attention undertaken by the family, the school, the totality of teaching and cultural institutions, and all the apparatuses of 'spiritual value' (beginning with academic apparatuses)" will in turn be supported by a new political economy outlined in his other works (184). Failing to demarcate republicanism and democratic theory (he claims Kant as a proponent of the latter[6]), Stiegler walks haphazardly into the whole problem of political representation. Depicting the "people" as a mass of attention-deficit addled "immature" non-citizens duped by the mass media, incapable of Kantian-style enlightenment and thus unable to govern themselves, he seems not to have considered what or who is to be given such rights of "taking care." From Plato to Heidegger and beyond, it's time to attend to another image of the people than as in thrall to Sophistic doxa and media imagery. In other words, isn't there something strange about a book that talks about "caring for the youth" that robs those very youth of any autonomy, of any thought, as Stiegler defines those terms? Taking Care is notably silent on just what they/we think of the changes being wrought during their/our lifetime; don't worry, he suggests, they'll take care of you. Finally, it is more than striking that Stiegler has not paused before arguing for a renewed European culture while generously citing Jules Ferry regarding civilizational "**maturity**" and "social primary identification." Surely this deserves attention. Ferry's legacy was not simply secular public schools, but also an impassioned imperialism guided by his claim that it was the French "duty to civilize the inferior races." This "republican" education system -- praising universal rights, as long as one was "French" -- was itself a "psychotechnology" and "programming industry" transmitting a generational "superego" described well by generations of anti-colonial writers. One can argue for a renewed republicanism set afloat from its colonial history -- arguing, say, Kant's Critique of Practical Reason is not contaminated by his Anthropology -- but privileging "systems of care," a renewed Europe, and a "battle for intelligence" as a "process" of "unification," which, he writes, "in Jules Ferry's time [was] called 'the nation,'" while discussing the masses in the same coded language of nineteenth century **racialists///**

("lazy," non-thinking, immature, etc.) is ominous (61).

## \*\*\* 1AR

### AT: No Value To Life

#### Yes value to life. Our status as beings inheres an affirmation of life in the face of extinction and nonbeing.

**Bernstein ‘2** (Richard J., Vera List Prof. Phil. – New School for Social Research, “Radical Evil: A Philosophical Interrogation”, p. 188-192)

This is precisely what Jonas does in The Phenomenon of Life, his rethinking of the meaning of organic life. He tealizes that his philosophical project goes against many of the deeply embedded prejudices and dogmas of contemporary philosophy. He challenges two well-entrenched dogmas: that there is no metaphysical truth, and that there is no path from the "is" to the "ought". To escape from ethical nihilism, we must show that there is a metaphysical ground of ethics, an objective basis for value and purpose in being itself. These are strong claims; and, needless to say, they are extremely controversial. In defense of Jonas, it should be said that he approaches this task with both boldness and intellectual modesty. He frequently acknowledges that he cannot "prove" his claims, but he certainly believes that his "premises" do "more justice to the total phenomenon of man and Being in general" than the prevailing dualist or reductionist alternatives. "But in the last analysis my argument can do no more than give a rational grounding to an option it presents as a choice for a thoughtful person — an option that of course has its own inner power of persuasion. Unfortunately I have nothing better to offer. Perhaps a future metaphysics will be able to do more." 8 To appreciate how Jonas's philosophical project unfolds, we need to examine his philosophical interpretation of life. This is the starting point of his grounding of a new imperative of responsibility. It also provides the context for his speculations concerning evil. In the foreword to The Phenomenon of Life, Jonas gives a succinct statement of his aim. Put at its briefest, this volume offers an "existential" interpretation of biological facts. Contemporary existentialism, obsessed with man alone, is in the habit of claiming as his unique privilege and predicament much of what is rooted in organic existence as such: in so doing, it withholds from the organic world the insights to be learned from the awareness of self. On its part, scientific biology, by its rules confined to the physical, outward facts, must ignore the dimension of inwardness that belongs to life: in so doing, it submerges the distinction of "animate" and "inanimate." A new reading of the biological record may recover the inner dimension — that which we know best -- for the understanding of things organic and so reclaim for psycho-physical unity of life that place in the theoretical scheme which it had lost through the divorce of the material and the mental since Descartes. p. ix) Jonas, in his existential interpretation of bios, pursues "this underlying theme of all of life in its development through the ascending order of organic powers and functions: metabolism, moving and desiring, sensing and perceiving, imagination, art, and mind — a progressive scale of freedom and peril, culminating in man, who may understand his uniqueness anew when he no longer sees himself in metaphysical isolation" (PL, p. ix). The way in which Jonas phrases this theme recalls the Aristotelian approach to bios, and it is clear that Aristotle is a major influence on Jonas. There is an even closer affinity with the philosophy of nature that Schelling sought to elaborate in the nineteenth century. Schelling (like many post- Kantian German thinkers) was troubled by the same fundamental dichotomy that underlies the problem for Jonas. The dichotomy that Kant introduced between the realm of "disenchanted" nature and the realm of freedom leads to untenable antinomies. Jonas differs from both Aristotle and Schelling in taking into account Darwin and contemporary scientific biology. A proper philosophical understanding of biology must always be compatible with the scientific facts. But at the same time, it must also root out misguided materialistic and reductionist interpretations of those biological facts. In this respect, Jonas's naturalism bears a strong affinity with the evolutionary naturalism of Peirce and Dewey. At the same time, Jonas is deeply skeptical of any theory of evolutionary biology that introduces mysterious "vital forces" or neglects the contingencies and perils of evolutionary development.' Jonas seeks to show "that it is in the dark stirrings of primeval organic substance that a principle of freedom shines forth for the first time within the vast necessity of the physical universe" (PL 3). Freedom, in this broad sense, is not identified exclusively with human freedom; it reaches down to the first glimmerings of organic life, and up to the type of freedom manifested by human beings. " 'Freedom' must denote an objectively discernible mode of being, i.e., a manner of executing existence, distinctive of the organic per se and thus shared by all members but by no nonmembers of the class: an ontologically descriptive term which can apply to mere physical evidence at first" (PL 3). This coming into being of freedom is not just a success story. "The privilege of freedom carries the burden of need and means precarious being" (PL 4). It is with biological metabolism that this principle of freedom first arises. Jonas goes "so far as to maintain that metabolism, the basic stratum of all organic existence, already displays freedom — indeed that it is the first form freedom takes." 1 ° With "metabolism — its power and its need — not-being made its appearance in the world as an alternative embodied in being itself; and thereby being itself first assumes an emphatic sense: intrinsically qualified by the threat of its negative it must affirm itself, and existence affirmed is existence as a concern" (PL 4). This broad, ontological understanding of freedom as a characteristic of all organic life serves Jonas as "an Ariadne's thread through the interpretation of Life" (PL 3). The way in which Jonas enlarges our understanding of freedom is indicative of his primary argumentative strategy. He expands and reinterprets categories that are normally applied exclusively to human beings so that we can see that they identify objectively discernible modes of being characteristic of everything animate. Even inwardness, and incipient forms of self; reach down to the simplest forms of organic life. 11 Now it may seem as if Jonas is guilty of anthropomorphism, of projecting what is distinctively human onto the entire domain of living beings. He is acutely aware of this sort of objection, but he argues that even the idea of anthropomorphism must be rethought. 12 We distort Jonas's philosophy of life if we think that he is projecting human characteristics onto the nonhuman animate world. Earlier I quoted the passage in which Jonas speaks of a "third way" — "one by which the dualistic rift can be avoided and yet enough of the dualistic insight saved to uphold the humanity of man" (GEN 234). We avoid the "dualistic rift" by showing that there is genuine continuity of organic life, and that such categories as freedom, inwardness, and selfhood apply to everything that is animate. These categories designate objective modes of being. But we preserve "enough dualistic insight" when we recognize that freedom, inwardness, and selfhood manifest themselves in human beings in a distinctive manner. I do not want to suggest that Jonas is successful in carrying out this ambitious program. He is aware of the tentativeness and fallibility of his claims, but he presents us with an understanding of animate beings such that we can discern both continuity and difference.' 3 It should now be clear that Jonas is not limiting himself to a regional philosophy of the organism or a new "existential" interpretation of biological facts. His goal is nothing less than to provide a new metaphysical understanding of being, a new ontology. And he is quite explicit about this. Our reflections [are] intended to show in what sense the problem of life, and with it that of the body, ought to stand in the center of ontology and, to some extent, also of epistemology. . . The central position of the problem of life means not only that it must be accorded a decisive voice in judging any given ontology but also that any treatment of itself must summon the whole of ontology. (PL 25) The philosophical divide between Levinas and Jonas appears to be enormous. For Levinas, as long as we restrict ourselves to the horizon of Being and to ontology (no matter how broadly these are conceived), there is no place for ethics, and no answer to ethical nihilism. For Jonas, by contrast, unless we can enlarge our understanding of ontology in such a manner as would provide an objective grounding for value and purpose within nature, there is no way to answer the challenge of ethical nihilism. But despite this initial appearance of extreme opposition, there is a way of interpreting Jonas and Levinas that lessens the gap between them. In Levinasian terminology, we can say that Jonas shows that there is a way of understanding ontology and the living body that does justice to the nonreducible alterity of the other (l'autrui). 14 Still, we might ask how Jonas's "existential" interpretation of biological facts and the new ontology he is proposing can provide a metaphysical grounding for a new ethics. Jonas criticizes the philosophical prejudice that there is no place in nature for values, purposes, and ends. Just as he maintains that freedom, inwardness, and selfhood are objective modes of being, so he argues that values and ends are objective modes of being. **There is a basic value inherent in organic being, a basic affirmation, "The Yes' of Life**" (IR 81). 15 "**The self-affirmation of being becomes emphatic in the opposition of life to death. Life is the explicit confrontation of being with not-being**. . . . The 'yes' of all striving is here sharpened by the active `no' to not-being" (IR 81-2). Furthermore — and this is the crucial point for Jonas — **this affirmation of life that is in all organic being has a binding obligatory force upon human beings**. This blindly self-enacting "yes" gains obligating force in the seeing freedom of man, who as the supreme outcome of nature's purposive labor is no longer its automatic executor but, with the power obtained from knowledge, can become its destroyer as well. He must adopt the "yes" into his will and impose the "no" to not-being on his power. But precisely this transition from willing to obligation is the critical point of moral theory at which attempts at laying a foundation for it come so easily to grief. Why does now, in man, that become a duty which hitherto "being" itself took care of through all individual willings? (IR 82). We discover here the transition from is to "ought" — from the self-affirmation of life to the binding obligation of human beings to preserve life not only for the present but also for the future. But why do we need a new ethics? The subtitle of The Imperative of Responsibility — In Search of an Ethics for the Technological Age — indicates why we need a new ethics. Modern technology has transformed the nature and consequences of human ac-tion so radically that the underlying premises of traditional ethics are no longer valid. For the first time in history human beings possess the knowledge and the power to destroy life on this planet, including human life. Not only is there the new possibility of total nuclear disaster; there are the even more invidious and threatening possibilities that result from the unconstrained use of technologies that can destroy the environment required for life. The major transformation brought about by modern technology is that the consequences of our actions frequently exceed by far anything we can envision. Jonas was one of the first philosophers to warn us about the unprecedented ethical and political problems that arise with the rapid development of biotechnology. He claimed that this was happening at a time when there was an "ethical vacuum," when there did not seem to be any effective ethical principles to limit ot guide our ethical decisions. In the name of scientific and technological "progress," there is a relentless pressure to adopt a stance where virtually anything is permissible, includ-ing transforming the genetic structure of human beings, as long as it is "freely chosen." We need, Jonas argued, a new categorical imperative that might be formulated as follows: "Act so that the effects of your action are compatible with the permanence of genuine human life"; or expressed negatively: "Act so that the effects of your action are not destructive of the future possibility of such a life"; or simply: "**Do not compromise the conditions for an indefinite continuation of humanity on earth**"; or again turned positive: "In your present choices, include the future wholeness of Man among the objects of your will." (IR 11)

### Eco-Authoritarianism

#### Criticism coopted to justify increased pollution and emissions.

Paul **WAPNER** Prf. And Director of the Global Environmental Policy Program @ American ‘**3** “Leftist Criticism of ‘Nature’” *Dissent* Winter p.

These may seem like academic questions, but they go to the heart of environmentalism and have begun to worry even the most committed environmentalists. After scholars such as William Cronon, Timothy Luke, and J. Baird Callicott introduced “ecocriticism” to the scholarly and popular publics, various environmental activists and thinkers have struggled to articulate a response. Their inability to do so in a decisive and persuasive manner has further damaged the environmentalist position. Even more troubling, now that the critique is out of the bag, it is being coopted by people on the right. Anti-environmentalists such as Charles Rubin and Alston Chase, for example, now claim that, if there is no such thing as “real” nature, we need not treat the nonhuman world with unqualified respect. If we think it is in our interest, we can freely choose to pave the rainforest, wipe out the last panda bear, or pump high levels of carbon dioxide into the atmosphere**.** What is critical to notice in both cases is that criticisms of “nature,” whether they come from the left or are co-opted by the right, are playing an increasing role in structuring the confrontation between anti- and pro-environmentalists. And they are re-setting the fault lines within the environmental movement itself.

### 1AR—Framework

#### Energy policy advocacy is a tool not a trap --- we should build momentum and support for energy changes.

**Shove & Walker 7** Elizabeth Sociology @ Lancaster Gordon Geography @ Lancaster “CAUTION! Transitions ahead: politics, practice, and sustainable transition management” *Environment and Planning C* 39 (4)

For academic readers, our commentary argues for loosening the intellectual grip of ‘innovation studies’, for backing off from the nested, hierarchical multi-level model as the only model in town, and for exploring other social scientific, but also systemic theories of change. The more we think about the politics and practicalities of reflexive transition management, the more complex the process appears: for a policy audience, our words of caution could be read as an invitation to abandon the whole endeavour. If agency, predictability and legitimacy are as limited as we’ve suggested, this might be the only sensible conclusion.However, we are with Rip (2006) in recognising the value, productivity and everyday necessity of an ‘**illusion of agency’**, and of the working expectation that a difference can be made even in the face of so much evidence to the contrary. The outcomes of actions are unknowable, the system unsteerable and the effects of deliberate intervention inherently unpredictable and, ironically, it is this that sustains concepts of agency and management. As Rip argues ‘**illusions are productive** because they **motivate action** and repair work, and thus something (whatever) is achieved’ (Rip 2006: 94). Situated inside the systems they seek to influence, governance actors – and actors of other kinds as well - are part of the **dynamics of change**: even if they cannot steer from the outside they are **necessary to processes within**. This is, of course, also true of academic life. Here we are, busy critiquing and analysing transition management in the expectation that somebody somewhere is listening and maybe even taking notice. If we removed that illusion would we bother writing anything at all? Maybe we need such fictions to keep us going, and maybe – fiction or no - somewhere along the line something really does happen, but not in ways that we can anticipate or know.

### Growth Overcomes Scarcity

#### Growth overcomes scarcity—ingenuity outweighs finitude.

Ben-Ami 11 — Daniel Ben-Ami, journalist and author, regular contributor to *spiked*, has been published in the *American*, the *Australian*, Economist.com, *Financial Times*, the *Guardian*, the *Independent*, *Novo* (Germany), *Ode* (American and Dutch editions), *Prospect*, *Shanghai Daily*, the *Sunday Telegraph*, the *Sunday Times*, and *Voltaire* (Sweden), 2011 (“Growth is good,” *Ode*, June, Available Online at http://www.odemagazine.com/doc/print/75/growth-is-good, Accessed 08-16-2011)

There are many reasons why the notion of scarce resources is mistaken. Take energy as an example. For almost a century, authorities have warned that oil is on the verge of running out. Yet the exhaustion of oil supplies is still a long way off. New sources of oil have been discovered, including under the seabed, and extraction techniques have been improved. In the future, it may also be possible to extract huge amounts of oil from tar sands or produce plentiful gasoline from coal.

Perhaps one day, oil will be close to running out or it will be considered too dirty to use. That still leaves plenty of options. As technology improves, electric cars could become much more viable. It is also already possible to generate huge amounts of energy from nuclear fission, the process that powers the sun, while in the future, nuclear fusion could provide unlimited energy.

Perhaps other technologies will turn out to be better, but the point is that apparently insurmountable resource shortages can be overcome. Human ingenuity is unlimited. It is not a question of needing, say, three planets to sustain humanity, but of making this planet more productive.