#### Topicality

**Interpretation: The plan should have to specify their financial incentive, including who gives the incentive and what type**

**Financial incentives require the disbursement of public funds**

Webb, 93 – lecturer in the Faculty of Law at the University of Ottawa (Kernaghan, “Thumbs, Fingers, and Pushing on String: Legal Accountability in the Use of Federal Financial Incentives”, 31 Alta. L. Rev. 501 (1993) Hein Online) – **italics in the original; this is from a Canadian law journal and it is written by a Canadian.** In this paper, "financial incentives" are taken to mean disbursements 18 of public funds or contingent commitments to individuals and organizations, intended to encourage, support or induce certain behaviours in accordance with express public policy objectives. They take the form of grants, contributions, repayable contributions, loans, loan guarantees and insurance, subsidies, procurement contracts and tax expenditures.19 Needless to say, the ability of government to achieve desired behaviour may vary with the type of incentive in use: up-front disbursements of funds (such as with contributions and procurement contracts) may put government in a better position to dictate the terms upon which assistance is provided than contingent disbursements such as loan guarantees and insurance. In some cases, the incentive aspects of the funding come from the conditions attached to use of the monies.20 In others, the mere existence of a program providing financial assistance for a particular activity (eg. low interest loans for a nuclear power plant, or a pulp mill) may be taken as government approval of that activity, and in that sense, an incentive to encourage that type of activity has been created.21 Given the wide variety of incentive types, it will not be possible in a paper of this length to provide anything more than a cursory discussion of some of the main incentives used.22 And, needless to say, the comments made herein concerning accountability apply to differing degrees depending upon the type of incentive under consideration.

By limiting the definition of financial incentives to initiatives where public funds are *either* disbursed or *contingently* committed, a large number of regulatory programs with incentive effectswhich exist, but in which no money is forthcoming,23 are excluded from direct examination in this paper.

**Violation: The plan only says “compensation” without reference to who compensates, or what method of compensation can be used – their evidence seems to indicate that companies pay for the energy, NOT the public**

#### Reasons to Prefer:

1. The plan is the focus of the debate, the Aff is a Moving Target: causeing time and strategy skew - Compensation is vague – it could mean literally any sort of return above, or below a solar panel producers initial investment

1. Ground – we lose specific links to disads and counterplans to types of incentives
2. Stable link ground outweighs their offense – incentives can conflict with one another full grants would make repayable loans irrelevant and unecessary

#### Specific link: “Compensation” could mean net-metering

**Jay Morrison**, Senior Regulatory Consultant at NRECA NO **DATE**

<http://www.nreca.coop/issues/FuelsOtherResources/DistributedGeneration/Documents/Net%20Metering%20-%20An%20issue%20paper%20of%20the%20National%20Rural%20Electric%20Cooperative%20Association.pdf>

**Other** states adopted net metering because it provides a simple, easily administered way of compensating customers for their generation**,** particularly where the customer is unsophisticated**, the unit is small, and the output of the unit cannot closely track the customer’s demand,** as with **wind and** solar energy.

#### Key to solvency arguments Incentive level matters, it determines success or failure of the plan

Karlynn Cory et al., Senior Energy Analyst, 2009 Toby Couture, and Claire Kreycik, “Fee-in Tariff Policy: Design, Implementation, and RPS Policy Interactions,” Technical Report of the National Renewable Energy Laboratory, US Department March 2009

As with most policies, the FIT policy has some notable challenges. The first is the up-front administrative requirement: Detailed analysis is required to properly set the payment level at the outset. The payment level must ensure revenues will be adequate to cover project costs. If the FIT payments are set too low, then little new RE development will result. And if set too high, the FIT may provide unwarranted profits to developers. To achieve the right balance across a wide range of technologies and project sizes, many levels of differentiation are used. However, if the FIT policy is too complex with too many bonuses, exemptions, and qualifications, it may hinder program implementation. And as costs change and markets shift due to technological innovation and increasing market maturity, the FIT policy needs periodic revision to reflect evolving costs and market conditions.

Unlike production incentives or FITs, grants and rebates do not require a long-term policy and financial commitment to a specific project, allowing for flexible support based on changes in the market (Wiser and Pickle 1997). However, these mechanisms may not be effective at spurring broad market adoption, and they have often failed to provide stable conditions for market growth (Lantz and Doris 2009). Another concern is the total cost of the program if it is designed to include tariffs for costlier emerging technologies. While FITs can be efficient at promoting these technologies, a decision must be made regarding the total acceptable cost burden, and how that impact is weighed related to the job creation and economic benefits that result. For instance, locking in large amounts of solar PV in long-term contracts could be considered cost-inefficient, and could put unwarranted upward pressure on rates in the near term. However, a capacity cap (either program-wise or annually) can limit this exposure. Finally, frequent updates to the FIT program structure can lead to policy uncertainty. The more uncertain the policy structure – even a few years out – the riskier the RE investment is to the project financier. The result may be that either an additional risk premium is added to investor returns, or the investor may leave the RE market and choose to invest in something else with less exposure to policy risk (Chadbourne & Parke 2009).

Topicality and vagueness are a voting issue for FAIRNESS

**Heidegger**

**Energy policy only concerns itself with the systematic ordering of nature upon a standing reserve for future exploitation**

**Schalow 2006** (Frank Schalow, Associate Professor of Philosophy at the University of New Orleans. *The Incarnality of Being: The Earth, Animals, and the Body in Heidegger’s Thought*, pg. 96-97)

Can we classify Heidegger as an ecologist, or even as a protoecologist? This query should give us occasion to pause--as Zimmerman has recently emphasized-if only for the fact that most of his thinking predated the environmental movement, as least it was pioneered in the United States.10 It might be more accurate to say that Heidegger's thinking begins the enactment of Western thought, and Western civilization, coming into its own, the adherence of thought to the guidance of enowning as such. This "turning in enowning" opens the way to articulate a "paradigm shift" whose development corresponds to what we today call the "ecological movement."ll We can thereby call into question (1) our relation to the earth rather than assume it as the totality of nature at our disposal, and (2) the human capacity for dwelling rather than accept the fact that nature must conform to the ends-means continuum of instrumentality by which we fulfill our needs and desires. But what makes Heidegger's thought stand out is its ability to distinguish the historical changes that allow the ecological movement to emerge as a movement, namely, the detection of a crisis emerging on a global scale. Through the historical dislocation of the turning in enowning, the question of being reverts into the question of technology. The question of technology considers not just the specific development of machinery but addresses machination as such, and, indeed, the scope of its unfolding, the globalization of a corresponding threat to the environment. In "Seminar in Le Thor 1969," Heidegger aptly describes this dynamic of enframing: Now the further that modern technology unfolds, the more does objectivity transform into standing reservedness (into a holding-atone's- disposal). . . . Hence the **energy politics** and the politics of agriculture, which indeed no longer have anything to do with things, but rather with **the systematic order of a space within a general planning, directed towards future exploitations. Everything (beings as a whole) from the outset arranges itself in the horizon of utility, the dominance, or better yet, the orderability of what is to be seized**.

In constructing nature as a resource to be harnessed and utilized as a tool, the affirmative enframes the debate within the bounds of a technological ontology that reduces both human beings and nature to a raw material to be used. This thought process results in a re-entrenching of affirmative harms as all solvency is co-opted by the drive to dominate nature intrinsic to western metaphysics.

Ross, Professor at Queen’s University, 2007 (Andrew Peter, “Rethinking Environmental Responsibility: Heidegger, Profound Boredom and the Alterity of Nature”, September) SVK

To be clear, though this type of experience might be described positively as an “emergence from anonymity”, it should be noted that there is still a sense in which this transformation continues to happen within the boundaries of technology. In particular, it should be noted as a point of clarification that the transformation of natural beings from ready-to-hand into present-at-hand does not draw them outside of the Gestell: the technological enframing of nature does not simply disclose beings as ready-to-hand. More specifically—and more problematically—the lens of technology discloses nature (and all beings) as pure resource—a stock or supply of energy, whether or not such beings are disclosed as tools within particular projects. In this sense the difference between the disclosure of beings as ready-to-hand and present-at-hand should not be thought of as the difference between a technological and non-technological encounter with nature. While the breakdown of the worldhood may transform the disclosure of those natural beings that are encountered as ready-to-hand tools into present-at-hand objects, this only occurs to the extent that they can no longer be viewed as an appropriately functioning resource—nature appears, even in the disclosure of itself as present-at-hand, as a resource. Thus, it should be kept in mind that whatever significance the experience of equipmental breakdown holds for this project, it does not simply consist in the transformation from the ready-to-hand into the present-at-hand. Rather than analyze the significance of experiencing nature as present-at-hand, I wish to emphasize the significance of nature appearing in its ownness or whatness—the being they possess independently from us and our practises. The significance of nature appearing in its ownness is two-fold. First, by disclosing natural beings in their ownness, the equipmental breakdown offers what we might think of as a “glimpse” of primordial nature. More specifically, the equipmental breakdown may not reveal natural beings to be self-blossoming or self-emergent; there is a certain sense in which their withdrawal from the world of work offers Dasein a glimpse of their self-withdrawing, self-concealing nature. Bruce Foltz, for example, uses this point to argue that even within the experience of nature as ready-to-hand, the notion of nature as self- withholding and self-withdrawing is present—even if tacitly and unthematically (43). More specifically, Foltz argues that because beings must “withdraw” and become “unobtrusive” in order to be encountered as tools, the experience of natural beings as self-withholding, self- withdrawing entities underlies our most pragmatic encounters with nature (43). Following Foltz’s line of reasoning, it can be noted that the equipmental breakdown not only brings to light the ownness of whatever natural being is at hand, it simultaneously brings to light its ability for self- concealment and self-withdrawal. By bringing these latter qualities to light, the equipmental breakdown highlights the features that constitute natural beings’ more primordial essence. In other words, by drawing attention to the way in which nature is capable of self-withdrawal and self-concealing, the experience of equipmental breakdown offers a glimmer of primordial nature. The second point of significance can be explained by noting what the occlusion of nature’s sense of ownness entails. By occluding the whatness of nature, its ability for self-withdraw and self-concealment, the Gestell essentially deprives us of the ability to encounter nature in anything other than a violent manner. If we cannot see the forest as anything more than a supply of cellulose, the river as anything more than a power source, or the animal as anything other than a flesh machine, then such beings can only show up as being available for manipulation and exploitation. When nature appears solely as a collection of resourceful beings, there are no inherent limitations that might curb their manipulation and exploitation as resources.

Loss of human self assertion would be worse than nuclear omnicide

Zimmerman, Professor of Philosophy @ Tulane, 1994 (Michael, Contesting Earth’s Future, p 119-120) SVK

Heidegger asserted that human self-assertion, combined with the eclipse of being, threatens the relation between being and human Dasein. Loss of this relation would be even more dangerous than a nuclear war that might "bring about the complete annihilation of humanity and the destruction of the earth." This controversial claim is comparable to the Christian teaching that it is better to forfeit the world than to lose one's soul by losing one's relation to God. Heidegger apparently thought along these lines: it is possible that after a nuclear war, life might once again emerge, but it is far less likely that there will ever again occur an ontological clearing through which such life could manifest itself. Further, since modernity's one-dimensional disclosure of entities virtually denies them any "being" at all, the loss of humanity's openness for being is already occurring. Modernity's background mood is horror in the face of nihilism, which is consistent with the aim of providing material "happiness" for everyone by reducing nature to pure energy. The unleashing of vast quantities of energy in nuclear war would be equivalent to modernity's slow-motion destruction of nature: unbounded destruction would equal limitless consumption. If humanity avoided nuclear war only to survive as contented clever animals, Heidegger believed we would exist in a state of ontological damnation: hell on earth, masquerading as material paradise. Deep ecologists might agree that a world of material human comfort purchased at the price of everything wild would not be a world worth living in, for in killing wild nature, people would be as good as dead. But most of them could not agree that the loss of humanity's relation to being would be worse than nuclear omnicide, for it is wrong to suppose that the lives of millions of extinct and unknown species are somehow lessened because they were never "disclosed" by humanity.

**The alternative breaks from calculative thought through meditation**

Best and Nocella, Associate professor of philosophy at the University of Texas at El Paso, 2006 (Steven and Anthony, Igniting a Revolution: Voices in Defense of the Earth, p. 82-84, Google Books) SVK

Yet, for both Heidegger and revolutionary environmentalists, there exist possibilities for transformation despite the destructiveness of Enframing. In the midst of technological peril – indeed, precisely because the peril strikes at and thus awakens us to the bond between human and nonhuman life – there emerges a sense of solidarity of human with nonhuman beings. Looking at the well-heeled, bureaucratic discourse of “human resource management” and “personnel resources,” the challenging forth of human beings into standing reserve is fairly evident. Factory-farmed cows, pigs, and chickens obviously have it far worse than people, but in both cases the purpose is to harness resources for maximum efficiency and profit. Ultimately human and nonhuman beings are similarly enframed within one giant “gasoline station.” It is precisely the experience of this solidarity which must be constantly rearticulated – in arts, poetry, ceremony, music, and especially in socioeconomic and political action – in order to provide a historically and ontologically authentic break with the metaphysics of technical control and capitalist exploitation. Action will only be truly revolutionary if it revolves around engagement in solidarity with nature, where liberation is always seen both as human liberation from the confines of Enframing and simultaneously as liberation of animal nations and eco-regions from human technics. Anything less will always lapse back into the false and oppressive hierarchy of “man” over “nature” and “man” over animals with attendant effects of technological, disciplinary control over humans, nonhumans, and the Earth. Using a familiar title from the anarchist Crimethinc collective, revolutionary environmentalism is truly an instance of “fighting for our lives” where the pronoun refers to all life not just human life. Heidegger describes the possibility of transformation through a return of Being as a re-figured humanism. It is the possibility of suspending the will and attaining a lucid sense of the free play of Being within which all of life emerges and is sustained. A human being, like any entity, *is* – s/he stands forth as present. But “his distinctive feature lies in [the fact] that he, as the being who thinks, is open to Being….Man is essentially this relationship of responding to Being. Such experience is the clearing of a space (symbolically represented, for example, in the building of an arbor for a ceremony or in the awesome silence created by the space within a cathedral or a grove of old-growth Redwoods), and the patient readiness for Being to be brought to language. Given the appropriate bearing and evocation through language, human beings can become aware of dwelling, along with all other existent beings, within Being – the open realm within which entities are “released” into presence (Gelassenhait – or “releasement”). What comes to the fore in suspension of willed manipulation is an embrace of other beings and the enduring process of evolution within which all beings emerge and develop. By reflecting on or experiencing oneself within the dimension of freedom that is the domain through which all beings pass, human beings can repair the willed manipulation inherent in calculative thinking and realize a patient equanimity toward Life. It is only in the context of this reawakened sense of the unity of life that revolutionary action gains an authentic basis. It is the engagement with “the Other” that shows the ELF actions are truly about defense of plant and animal life, and they demonstrate genuine liberation concerns that typically are trapped within Enframing. That is to say, ELF (and similar) actions, show themselves as part of a dynamic and necessary historical evolution and transformation process, not merely a gesture of opposition and negation, because of their profound solidarity with animals and the Earth. Such guidance solidarity thus serves as a general basis for a post-Enframing, post-capitalist order, an ecological, not a capitalist society. What will change is, first, the preeminence of Enframing as that which animates the epoch and, correspondingly, our relationship to technology. No longer will technical solutions be sought after in realms of activity where technique is not applicable. No longer will everyday activities be pervaded by the standardization and frenzied pace of technology. No longer will nature be looked upon as a homogenous field of resources to be extracted and exploited. No longer will resource-intensive and polluting technologies be utilized simply because they serve the blind interests of corporations over the needs of the Earth. No longer will human beings take from the Earth without thought of the far-reaching consequences of such actions on all present and future forms of life. Critics would wrongly denounce this position as atavistic, primitivist, or anti-science/technology. But as the turning toward the re-emergence of Being unfolds, both through revolutionary action rooted in solidarity with nature and through new, non-exploitative modes of acting in the world, technics will not disappear; instead, the limits of technology as a mode of revealing will begin to be discerned so that new forms and uses of technology can emerge. Questions about technology will center on whether a given technology can be developed and used so that plant and animal life can appear as it is and not be reduced to standing reserve. The question, for Heidegger, is not whether technology, in the sense of a set of tools, is done away with, but whether Enframing is surmounted. It is in this sense of releasement Heidegger writes, “Mortals dwell in that they save the earth….Saving does not only snatch something from a danger. To save really means to set something free intro its own presencing. I take this as the literal equivalent of the masked ALF activist reclaiming a puppy from a research lab so that it can become a dog rather than a unit of research, or an ELF activist who stops the destruction of an aquifer or forest so that it can remain an aquifer or forest rather than become a water or wood resource. It is just this new ethos which must guide a revolutionary reconstruction of society on grounds that preserve the openness to Being and the ability of each kind of being to become what it is in its essence. For those who charge Heidegger with merely recycling, and not transcending, Western anthropocentrism, it is important to note that there are possibilities here for an emerging post-humanism – a new orientation to nature beyond egocentric forms of human agency and towards interrelation with other beings and Being itself. Heidegger’s philosophy allows for multiple modes of engagement with others and nature as equals, all of them rooted in a relationship of solidarity, respect, and concern. I call this kind of pluralistic, egalitarian, and ecological outlook ontological anarchism. It begins with the rejection of illegitimate “rule” of metaphysical constructs that have served to justify unlimited technological appropriation of the world. In place of Enframing with its subjectivist metaphysical underpinnings, ontological anarchism proclaims a multiplicity of forms of experience in which a sense of revealing comes to the fore – such as in art, music, religion, and philosophy. One such experience, a pre-dominant theme of spiritual re-awakening in the ELF communiques, is found in Native American philosophy and practice.

**Rare Earth DA**

#### Rare earth demand is rising slowly now.

Seeking Alpha 8/29 [Qineqt, Team of investment professionals including former hedge fund manager, trader and analyst at top tier $10 billion hedge fund. Members include investment professionals who oversaw research and trading organization of 50+. Avoid Molycorp Until Its Liquidity Position Improves August 29, 2012 http://seekingalpha.com/article/834711-avoid-molycorp-until-its-liquidity-position-improves]

According to a recent MIT study, the demand for two of these REMs, neodymium and dysprosium, is expected to increase significantly in future, as the world transitions to renewable energy sources. This is because neodymium is an essential ingredient of magnets used in wind turbines, while dysprosium is used in some electric vehicles' motors. The research predicted that the demand for neodymium and dysprosium is expected to increase by as much as 700% and 2,600% over the next 25 years. While these raw materials are abundantly available in the ground, their supply needs to be paced up so as to match the rate of increase in expected demand. However, the development of a mine takes a decade or more, and unless noteworthy steps are taken in the short-term, such as new mines' development and recycling, a bottleneck will very likely lead to severe price hikes in future.

#### Sudden energy investment skyrockets rare earth prices – devastates manufacturers and deters innovation across all industries.

Epstein 12 [Nicholas Epstein, Chicago Policy Review, Medium Rare: What’s Cooking in the Rare Earth Element Market? Evaluating Rare Earth Element Availability: A case with Revolutionary Demand From Clean Technologies Elisa Alonso, Andrew M. Sherman, Timothy J. Wallington, Mark P. Everson, Frank R. Field, Richard Roth, and Randolph E. Kirchain Environmental Science & Technology. 2012.Jul 12th, 2012 http://chicagopolicyreview.org/2012/07/12/medium-rare-whats-cooking-in-the-rare-earth-element-market/]

REE supplies are vulnerable for several reasons. Most importantly, one nation, China, controls 98 percent of the world’s REE production. Further, REEs are found together in geological formations. As a result, REEs are co-mined, so production is highly concentrated geographically. Lastly, Rare Earth extraction has negative environmental impacts and China’s poor labor standards add social concerns to the supply market. The authors identify circumstances under which REEs may experience revolutionary demand, that is, when new sudden technological innovations sharply increase the demand for REEs. They explain that revolutionary demand changes can lead to supply and price instability in the materials market. This effect is harmful to manufacturers, who depend on a consistent supply-chain, and deters additional innovation.

#### China will respond by cutting off rare earth supply – culminates in a dangerous U.S.-China conflict.

Cohen 7 [David Cohen, New Scientist, 5-23-7 “Earth's natural wealth: an audit” http://environment.newscientist.com/channel/earth/mg19426051.200-earths-natural-wealth-an-audit.html]

These may sound like drastic solutions, but as Graedel points out in a paper published last year (Proceedings of the National Academy of Sciences, vol 103, p 1209), "Virgin stocks of several metals appear inadequate to sustain the modern 'developed world' quality of life for all of Earth's people under contemporary technology." And when resources run short, conflict is often not far behind. It is widely acknowledged that one of the key motives for civil war in the Democratic Republic of the Congo between 1998 and 2002 was the riches to be had from the country's mineral resources, including tantalum mines - the biggest in Africa. The war coincided with a surge in the price of the metal caused by the increasing popularity of mobile phones (New Scientist, 7 April 2001, p 46). Similar tensions over supplies of other rare metals are not hard to imagine. The Chinese government is supplementing its natural deposits of rare metals by investing in mineral mines in Africa and buying up high-tech scrap to extract metals that are key to its developing industries. The US now imports over 90 per cent of its so-called "rare earth" metals from China, according to the US Geological Survey. If China decided to cut off the supply, that would create a big risk of conflict, says Reller.

#### Extinction.

White 11 [Mr. Hugh White is professor of strategic studies at the Australian National University in Canberra and a visiting fellow at the Lowy Institute in Sydney. The Obama Doctrine WSJ, 11/25/11 http://online.wsj.com/article/SB10001424052970204452104577057660524758198.html]

One risk is that escalating strategic competition will disrupt the vital economic relationship between the U.S. and China. Many hope that the two countries' deep interdependence will prevent their rivalry getting out of hand. But that will only happen if both sides are willing to forgo strategic objectives to protect their economic cooperation. With the Obama Doctrine, the President has declared that he has no intention of doing that. Why should we expect the Chinese to act any different? So it is more likely that escalating rivalry will soon start to erode economic interdependence between the two nations, at great cost to both. The other risk is the growing chance of conflict. A war with China over Taiwan or the Spratly Islands is simple to start but hard to end, and could very easily escalate. China is a nuclear-armed power capable of destroying American cities, and the threshold for nuclear exchanges in a U.S.-China clash might be dangerously unclear and disastrously low.

#### GAS

#### Economic collapse inevitable --- now’s better than later

MacKenzie 8 [Debora, Are We Doomed, New Scientist, Vol. 197 Issue 2650, p32-35, 4p, 4 May 2005, EBSCO)

DOOMSDAY. The end of civilisation. Literature and film abound with tales of plague, famine and wars which ravage the planet, leaving a few survivors scratching out a primitive existence amid the ruins. Every civilisation in history has collapsed, after all. Why should ours be any different? Doomsday scenarios typically feature a knockout blow: a massive asteroid, all-out nuclear war or a catastrophic pandemic. Yet there is another chilling possibility: what if the very nature of civilisation means that ours, like all the others, is destined to collapse sooner or later? A few researchers have been making such claims for years. Disturbingly, recent insights from fields such as complexity theory suggest that they are right. It appears that once a society develops beyond a certain level of complexity it becomes increasingly fragile. Eventually, it reaches a point at which even a relatively minor disturbance can bring everything crashing down. Some say we have already reached this point, and that it is time to start thinking about how we might manage collapse. Others insist it is not yet too late, and that we can---we must---act now to keep disaster at bay. History is not on our side. Think of Sumeria, of ancient Egypt and of the Maya. In his 2005 best-seller, Jared Diamond of the University of California, Los Angeles, blamed environmental mismanagement for the fall of the Mayan civilisation and others, and warned that we might be heading the same way unless we choose to stop destroying our environmental support systems. Lester Brown of the Earth Policy Institute in Washington DC agrees. He has that governments must pay more attention to vital environmental resources. "It's not about saving the planet. It's about saving civilisation," he says. Others think our problems run deeper. From the moment our ancestors started to settle down and build cities, we have had to find solutions to the problems that success brings. "For the past 10,000 years, problem solving has produced increasing complexity in human societies," says Joseph Tainter, an archaeologist at the University of Utah, Salt Lake City, and author of the 1988 book The Collapse of Complex Societies. If crops fail because rain is patchy, build irrigation canals. When they silt up, organise dredging crews. When the bigger crop yields lead to a bigger population, build more canals. When there are too many for ad hoc repairs, install a management bureaucracy, and tax people to pay for it. When they complain, invent tax inspectors and a system to record the sums paid. That much the Sumerians knew. Diminishing returns There is, however, a price to be paid. Every extra layer of organisation imposes a cost in terms of energy, the common currency of all human efforts, from building canals to educating scribes. And increasing complexity, Tainter realised, produces diminishing returns. The extra food produced by each extra hour of labour---or joule of energy invested per farmed hectare---diminishes as that investment mounts. We see the same thing today in a declining number of patents per dollar invested in research as that research investment mounts. This law of diminishing returns appears everywhere, Tainter says. To keep growing, societies must keep solving problems as they arise. Yet each problem solved means more complexity. Success generates a larger population, more kinds of specialists, more resources to manage, more information to juggle---and, ultimately, less bang for your buck. Eventually, says Tainter, the point is reached when all the energy and resources available to a society are required just to maintain its existing level of complexity. Then when the climate changes or barbarians invade, overstretched institutions break down and civil order collapses. What emerges is a less complex society, which is organised on a smaller scale or has been taken over by another group. Tainter sees diminishing returns as the underlying reason for the collapse of all ancient civilisations, from the early Chinese dynasties to the Greek city state of Mycenae. These civilisations relied on the solar energy that could be harvested from food, fodder and wood, and from wind. When this had been stretched to its limit, things fell apart. Western industrial civilisation has become bigger and more complex than any before it by exploiting new sources of energy, notably coal and oil, but these are limited. There are increasing signs of diminishing returns: the energy required to get is mounting and although global is still increasing, constant innovation is needed to cope with environmental degradation and evolving---the yield boosts per unit of investment in innovation are shrinking. "Since problems are inevitable," Tainter warns, "this process is in part ineluctable." Is Tainter right? An analysis of complex systems has led Yaneer Bar-Yam, head of the New England Complex Systems Institute in Cambridge, Massachusetts, to the same conclusion that Tainter reached from studying history. Social organisations become steadily more complex as they are required to deal both with environmental problems and with challenges from neighbouring societies that are also becoming more complex, Bar-Yam says. This eventually leads to a fundamental shift in the way the society is organised. "To run a hierarchy, managers cannot be less complex than the system they are managing," Bar-Yam says. As complexity increases, societies add ever more layers of management but, ultimately in a hierarchy, one individual has to try and get their head around the whole thing, and this starts to become impossible. At that point, hierarchies give way to networks in which decision-making is distributed. We are at this point. This shift to decentralised networks has led to a widespread belief that modern society is more resilient than the old hierarchical systems. "I don't foresee a collapse in society because of increased complexity," says futurologist and industry consultant Ray Hammond. "Our strength is in our highly distributed decision making." This, he says, makes modern western societies more resilient than those like the old Soviet Union, in which decision making was centralised. Things are not that simple, says Thomas Homer-Dixon, a political scientist at the University of Toronto, Canada, and author of the 2006 book The Upside of Down. "Initially, increasing connectedness and diversity helps: if one village has a crop failure, it can get food from another village that didn't." As connections increase, though, networked systems become increasingly tightly coupled. This means the impacts of failures can propagate: the more closely those two villages come to depend on each other, the more both will suffer if either has a problem. "Complexity leads to higher vulnerability in some ways," says Bar-Yam. "This is not widely understood." The reason is that as networks become ever tighter, they start to transmit shocks rather than absorb them. "The intricate networks that tightly connect us together---and move people, materials, information, money and energy---amplify and transmit any shock," says Homer-Dixon. "A financial crisis, a terrorist attack or a disease outbreak has almost instant destabilising effects, from one side of the world to the other." For instance, in 2003 large areas of North America and Europe suffered when apparently insignificant nodes of their respective electricity grids failed. And this year China suffered a similar blackout after heavy snow hit power lines. Tightly coupled networks like these create the potential for propagating failure across many critical industries, says Charles Perrow of Yale University, a leading authority on industrial accidents and disasters. Credit crunch Perrow says interconnectedness in the global production system has now reached the point where "a breakdown anywhere increasingly means a breakdown everywhere". This is especially true of the world's financial systems, where the coupling is very tight. "Now we have a debt crisis with the biggest player, the US. The consequences could be enormous." "A networked society behaves like a multicellular organism," says Bar-Yam, "random damage is like lopping a chunk off a sheep." Whether or not the sheep survives depends on which chunk is lost. And while we are pretty sure which chunks a sheep needs, it isn't clear---it may not even be predictable---which chunks of our densely networked civilisation are critical, until it's too late. "When we do the analysis, almost any part is critical if you lose enough of it," says Bar-Yam. "Now that we can ask questions of such systems in more sophisticated ways, we are discovering that they can be very vulnerable. That means civilisation is very vulnerable." So what can we do? "The key issue is really whether we respond successfully in the face of the new vulnerabilities we have," Bar-Yam says. That means making sure our "global sheep" does not get injured in the first place---something that may be hard to guarantee as the climate shifts and the world's fuel and mineral resources dwindle. Scientists in other fields are also warning that complex systems are prone to collapse. Similar ideas have emerged from the study of natural cycles in ecosystems, based on the work of ecologist Buzz Holling, now at the University of Florida, Gainesville. Some ecosystems become steadily more complex over time: as a patch of new forest grows and matures, specialist species may replace more generalist species, biomass builds up and the trees, beetles and bacteria form an increasingly rigid and ever more tightly coupled system. "It becomes an extremely efficient system for remaining constant in the face of the normal range of conditions," says Homer-Dixon. But unusual conditions---an insect outbreak, fire or drought---can trigger dramatic changes as the impact cascades through the system. The end result may be the collapse of the old ecosystem and its replacement by a newer, simpler one. Globalisation is resulting in the same tight coupling and fine-tuning of our systems to a narrow range of conditions, he says. Redundancy is being systematically eliminated as companies maximise profits. Some products are produced by only one factory worldwide. Financially, it makes sense, as mass production maximises efficiency. Unfortunately, it also minimises resilience. "We need to be more selective about increasing the connectivity and speed of our critical systems," says Homer-Dixon. "Sometimes the costs outweigh the benefits." Is there an alternative? Could we heed these warnings and start carefully climbing back down the complexity ladder? Tainter knows of only one civilisation that managed to decline but not fall. "After the Byzantine empire lost most of its territory to the Arabs, they simplified their entire society. Cities mostly disappeared, literacy and numeracy declined, their economy became less monetised, and they switched from professional army to peasant militia." Pulling off the same trick will be harder for our more advanced society. Nevertheless, Homer-Dixon thinks we should be taking action now. "First, we need to encourage distributed and decentralised production of vital goods like energy and food," he says. "Second, we need to remember that slack isn't always waste. A manufacturing company with a large inventory may lose some money on warehousing, but it can keep running even if its suppliers are temporarily out of action." The electricity industry in the US has already started identifying hubs in the grid with no redundancy available and is putting some back in, Homer-Dixon points out. Governments could encourage other sectors to follow suit. The trouble is that in a world of fierce competition, private companies will always increase efficiency unless governments subsidise inefficiency in the public interest. Homer-Dixon doubts we can stave off collapse completely. He points to what he calls "tectonic" stresses that will shove our rigid, tightly coupled system outside the range of conditions it is becoming ever more finely tuned to. These include population growth, the growing divide between the world's rich and poor, financial instability, weapons proliferation, disappearing forests and fisheries, and climate change. In imposing new complex solutions we will run into the problem of diminishing returns---just as we are running out of cheap and plentiful energy. "This is the fundamental challenge humankind faces. We need to allow for the healthy breakdown in natural function in our societies in a way that doesn't produce catastrophic collapse, but instead leads to healthy renewal," Homer-Dixon says. This is what happens in forests, which are a patchy mix of old growth and newer areas created by disease or fire. If the ecosystem in one patch collapses, it is recolonised and renewed by younger forest elsewhere. We must allow partial breakdown here and there, followed by renewal, he says, rather than trying so hard to avert breakdown by increasing complexity that any resulting crisis is actually worse. Lester Brown thinks we are fast running out of time. "The world can no longer afford to waste a day. We need a Great Mobilisation, as we had in wartime," he says. "There has been tremendous progress in just the past few years. For the first time, I am starting to see how an alternative economy might emerge. But it's now a race between tipping points---which will come first, a switch to sustainable technology, or collapse?" Tainter is not convinced that even new technology will save civilisation in the long run. "I sometimes think of this as a 'faith-based' approach to the future," he says. Even a society reinvigorated by cheap new energy sources will eventually face the problem of diminishing returns once more. Innovation itself might be subject to diminishing returns, or perhaps absolute limits. Studies of the way by Luis Bettencourt of the Los Alamos National Laboratory, New Mexico, support this idea. His team's work suggests that an ever-faster rate of innovation is required to keep cities growing and prevent stagnation or collapse, and in the long run this cannot be sustainable.

#### Economic decline doesn’t cause war.

Jervis 11 [Robert, Adlai E. Stevenson Professor of International Politics in the Department of Political Science, and a Member of the Arnold A. Saltzman Institute of War and Peace Studies at Columbia University. Force in Our Times Saltzman Working Paper No. 15 July 2011 http://www.siwps.com/news.attachment/saltzmanworkingpaper15-842/SaltzmanWorkingPaper15.PDF]

Even if war is still seen as evil, the security community could be dissolved if severe conflicts of interest were to arise. Could the more peaceful world generate new interests that would bring the members of the community into sharp disputes? 45 A zero-sum sense of status would be one example, perhaps linked to a steep rise in nationalism. More likely would be a worsening of the current economic difficulties, which could itself produce greater nationalism, undermine democracy, and bring back old-fashioned beggar-thy-neighbor economic policies. While these dangers are real, it is hard to believe that the conflicts could be great enough to lead the members of the community to contemplate fighting each other. It is not so much that economic interdependence has proceeded to the point where it could not be reversed – states that were more internally interdependent than anything seen internationally have fought bloody civil wars. Rather it is that even if the more extreme versions of free trade and economic liberalism become discredited, it is hard to see how without building on a pre-existing high level of political conflict leaders and mass opinion would come to believe that their countries could prosper by impoverishing or even attacking others. Is it possible that problems will not only become severe, but that people will entertain the thought that they have to be solved by war? While a pessimist could note that this argument does not appear as outlandish as it did before the financial crisis, an optimist could reply (correctly, in my view) that the very fact that we have seen such a sharp economic down-turn without anyone suggesting that force of arms is the solution shows that even if bad times bring about greater economic conflict, it will not make war thinkable.

#### Collapse of the economy now is key to prevent extinction through warming---causes a stable transition to peaceful society

**Barry 8** – President and Founder of Ecological Internet, Ph.D. in Land Resources from U-Wisconsin-Madison

(Glen, “Economic Collapse And Global Ecology”, http://www.countercurrents.org/barry140108.htm)

Humanity and the Earth are faced with an enormous conundrum -- sufficient climate policies enjoy political support only in times of rapid economic growth. Yet this growth is the primary factor driving greenhouse gas emissions and other environmental ills. The growth machine has pushed the planet well beyond its ecological carrying capacity, and unless constrained, can only lead to human extinction and an end to complex life. With every economic downturn, like the one now looming in the United States, it becomes more difficult and less likely that policy sufficient to ensure global ecological sustainability will be embraced. This essay explores the possibility that from a biocentric viewpoint of needs for long-term global ecological, economic and social sustainability; it would be better for the economic collapse to come now rather than later. Economic growth is a deadly disease upon the Earth, with capitalism as its most virulent strain. Throw-away consumption and explosive population growth are made possible by using up fossil fuels and destroying ecosystems. Holiday shopping numbers are covered by media in the same breath as Arctic ice melt, ignoring their deep connection. Exponential economic growth destroys ecosystems and pushes the biosphere closer to failure. Humanity has proven itself unwilling and unable to address climate change and other environmental threats with necessary haste and ambition. Action on coal, forests, population, renewable energy and emission reductions could be taken now at net benefit to the economy. Yet, the losers -- primarily fossil fuel industries and their bought oligarchy -- successfully resist futures not dependent upon their deadly products. Perpetual economic growth, and necessary climate and other ecological policies, are fundamentally incompatible. Global ecological sustainability depends critically upon establishing a steady state economy, whereby production is right-sized to not diminish natural capital. Whole industries like coal and natural forest logging will be eliminated even as new opportunities emerge in solar energy and environmental restoration. This critical transition to both economic and ecological sustainability is simply not happening on any scale. The challenge is how to carry out necessary environmental policies even as economic growth ends and consumption plunges. The natural response is going to be liquidation of even more life-giving ecosystems, and jettisoning of climate policies, to vainly try to maintain high growth and personal consumption. We know that humanity must reduce greenhouse gas emissions by at least 80% over coming decades. How will this and other necessary climate mitigation strategies be maintained during years of economic downturns, resource wars, reasonable demands for equitable consumption, and frankly, the weather being more pleasant in some places? If efforts to reduce emissions and move to a steady state economy fail; the collapse of ecological, economic and social systems is assured. Bright greens take the continued existence of a habitable Earth with viable, sustainable populations of all species including humans as the ultimate truth and the meaning of life. Whether this is possible in a time of economic collapse is crucially dependent upon whether enough ecosystems and resources remain post collapse to allow humanity to recover and reconstitute sustainable, relocalized societies. It may be better for the Earth and humanity's future that economic collapse comes sooner rather than later, while more ecosystems and opportunities to return to nature's fold exist. Economic collapse will be deeply wrenching -- part Great Depression, part African famine. There will be starvation and civil strife, and a long period of suffering and turmoil. Many will be killed as balance returns to the Earth. Most people have forgotten how to grow food and that their identity is more than what they own. Yet there is some justice, in that those who have lived most lightly upon the land will have an easier time of it, even as those super-consumers living in massive cities finally learn where their food comes from and that ecology is the meaning of life. Economic collapse now means humanity and the Earth ultimately survive to prosper again. Human suffering -- already the norm for many, but hitting the currently materially affluent -- is inevitable given the degree to which the planet's carrying capacity has been exceeded. We are a couple decades at most away from societal strife of a much greater magnitude as the Earth's biosphere fails. Humanity can take the bitter medicine now, and recover while emerging better for it; or our total collapse can be a final, fatal death swoon. A successful revolutionary response to imminent global ecosystem collapse would focus upon bringing down the Earth's industrial economy now. As society continues to fail miserably to implement necessary changes to allow creation to continue, maybe the best strategy to achieve global ecological sustainability is economic sabotage to hasten the day. It is more fragile than it looks.

#### Growth causes war

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If this limits-to-growth analysis is at all valid, the implications for the problem of global peace and conflict and security are clear and savage. If we all remain determined to increase our living standards, our level of production and consumption, in a world where resources are already scarce, where only a few have affluent living standards but another 8 billion will be wanting them too, and which we, the rich, are determined to get richer without any limit, then nothing is more guaranteed than that there will be increasing levels of conflict and violence. To put it another way, if we insist on remaining affluent we will need to remain heavily armed. Increased conflict in at least the following categories can be expected. First, the present conflict over resources between the rich elites and the poor majority in the Third World must increase, for example, as ‘development’ under globalisation takes more land, water and forests into export markets. Second, there are conflicts between the Third World and the rich world, the major recent examples being the war between the US and Iraq over control of oil. Iraq invaded Kuwait and the US intervened, accompanied by much high-sounding rhetoric (having found nothing unacceptable about Israel’s invasions of Lebanon or the Indonesian invasion of East Timor). As has often been noted, had Kuwait been one of the world’s leading exporters of broccoli, rather than oil, it is doubtful whether the US would have been so eager to come to its defence. At the time of writing, the US is at war in Central Asia over ‘terrorism’. Few would doubt that a ‘collateral’ outcome will be the establishment of regimes that will give the West access to the oil wealth of Central Asia. Following are some references to the connection many have recognised between rich world affluence and conflict. General M.D. Taylor, US Army retired argued ‘... US military priorities just be shifted towards insuring a steady flow of resources from the Third World’. Taylor referred to ‘… fierce competition among industrial powers for the same raw materials markets sought by the United States’ and ‘… growing hostility displayed by have-not nations towards their affluent counterparts’.62 ‘Struggles are taking place, or are in the offing, between rich and poor nations over their share of the world product; within the industrial world over their share of industrial resources and markets’.63 ‘That more than half of the people on this planet are poorly nourished while a small percentage live in historically unparalleled luxury is a sure recipe for continued and even escalating international conflict.’64 The oil embargo placed on the US by OPEC in the early 1970s prompted the US to make it clear that it was prepared to go to war in order to secure supplies. ‘President Carter last week issued a clear warning that any attempt to gain control of the Persian Gulf would lead to war.’ It would ‘… be regarded as an assault on the vital interests of the United States’.65 ‘The US is ready to take military action if Russia threatens vital American interests in the Persian Gulf, the US Secretary of Defence, Mr Brown, said yesterday.’66 Klare’s recent book Resource Wars discusses this theme in detail, stressing the coming significance of water as a source of international conflict. ‘Global demand for many key materials is growing at an unsustainable rate. … the incidence of conflict over vital materials is sure to grow. … The wars of the future will largely be fought over the possession and control of vital economic goods. … resource wars will become, in the years ahead, the most distinctive feature of the global security environment.’67 Much of the rich world’s participation in the conflicts taking place throughout the world is driven by the determination to back a faction that will then look favourably on Western interests. In a report entitled, ‘The rich prize that is Shaba’, Breeze begins, ‘Increasing rivalry over a share-out between France and Belgium of the mineral riches of Shaba Province lies behind the joint Franco– Belgian paratroop airlift to Zaire. … These mineral riches make the province a valuable prize and help explain the West’s extended diplomatic courtship …’68 Then there is potential conflict between the rich nations who are after all the ones most dependent on securing large quantities of resources. ‘The resource and energy intensive modes of production employed in nearly all industries necessitate continuing armed coercion and competition to secure raw materials.’69 ‘Struggles are taking place, or are in the offing, between rich and poor nations over their share of the world product, within the industrial world over their share of industrial resources and markets …’70 Growth, competition, expansion … and war Finally, at the most abstract level, the struggle for greater wealth and power is central in the literature on the causes of war. ‘… warfare appears as a normal and periodic form of competition within the capitalist world economy. … world wars regularly occur during a period of economic expansion. ’71 ‘War is an inevitable result of the struggle between economies for expansion.’72 Choucri and North say their most important finding is that domestic growth is a strong determinant of national expansion and that this results in competition between nations and war.73 The First and Second World Wars can be seen as being largely about imperial grabbing. Germany, Italy and Japan sought to expand their territory and resource access. Britain already held much of the world within its empire … which it had previously fought 72 wars to take! ‘Finite resources in a world of expanding populations and increasing per capita demands create a situation ripe for international violence.’74 Ashley focuses on the significance of the quest for economic growth. ‘War is mainly explicable in terms of differential growth in a world of scarce and unevenly distributed resources … expansion is a prime source of conflict. So long as the dynamics of differential growth remain unmanaged, it is probable that these long term processes will sooner or later carry major powers into war.’75 Security The point being made can be put in terms of security. One way to seek security is to develop greater capacity to repel attack. In the case of nations this means large expenditure of money, resources and effort on military preparedness. However there is a much better strategy; i.e. to live in ways that do not oblige you to take more than your fair share and therefore that do not give anyone any motive to attack you. Tut! This is not possible unless there is global economic justice. If a few insist on levels of affluence, industrialisation and economic growth that are totally impossible for all to achieve, and which could not be possible if they were taking only their fair share of global resources, then they must remain heavily armed and their security will require readiness to use their arms to defend their unjust privileges. In other words, if we want affluence we must prepare for war. If we insist on continuing to take most of the oil and other resources while many suffer intense deprivation because they cannot get access to them then we must be prepared to maintain the aircraft carriers and rapid deployment forces, and the despotic regimes, without which we cannot secure the oil fields and plantations. Global peace is not possible without global justice, and that is not possible unless rich countries move to ‘The Simpler Way’.

**Causes extinction by 2025**

**Chase-Dunn**, Director of the Institute for Research on World-Systems, and Podobnik, Assistant Professor in the Department of Sociology and Anthropology at Lewis and Clark College, **99**

(Christopher and Bruce, *The Future of Global Conflict*, ed. Bornschier and Chase-Dunn, pg 43)

While the onset of a period of hegemonic rivalry is in itself disturbing, the picture becomes even grimmer when the influence of long-term economic cycles is taken into account. As an **extensive body of research** documents (see especially Van Duijn, 1983), the 50 to 60 year business cycle known as the Kondratieff wave (K-wave) has been in synchronous operation on an international scale for at least the last two centuries. Utilizing data gathering by Levy (1983) on war severity, Goldstein (1988) demonstrates that there is a corresponding 50 to 60 year cycle in the number of battle deaths per year for the period 1495-1975. Beyond merely showing that the K-wave and the war cycle are linked in a systematic fashion, Goldstein’s research suggests that severe core wars are **much more likely to occur** late **in the upswing** phase of the K-wave. This finding is interpreted as showing that, while states always desire to go to war, they can afford to do so only when **economic growth** is providing them with sufficient resources. Modelski and Thompson (1996) present a more complex interpretation of the systemic relationship between economic and war cycles, but it closely resembles Goldstein’s hypothesis. In their analysis, a first economic upswing generates the economic resources required by an ascending core state to make a bid for hegemony; a second period of economic growth follows a period of global war and the establishment of a new period of hegemony. Here, again, specific economic upswings are associated with an increased likelihood of the outbreak of core war. It is **widely accepted** that the current K-wave, which entered a downturn around 1967-73, is probably now in the process of beginning a new upturn which will reach its apex around 2025. It is also widely accepted that by this period US hegemony, already unraveling, will have been definitively eroded. This convergence of a plateauing economic cycle with a period of political multicentricity within the core should, if history truly does repeat itself, result in the outbreak of full-scale warfare between the declining hegemon and the ascending core powers. Although both Goldstein (1991) and Modelski and Thompson (1996) assert that such a global war can (somehow) be avoided, other theorists consider that the possibility of such a core war is sufficiently high that **serious steps should be taken to ensure that** such **collective suicide does not occur** .

#### Development makes global pandemics inevitable---causes extinction

Krepinevich 9 (Andrew, President of the Center for Strategic and Budgetary Assessments and Distinguished Visiting Professor @ George Mason's School of Public Policy, Congressional Consultant on Military Affairs, PhD Harvard, "7 Deadly Scenarios," February)

Over the past several decades the world has experience a wave of globalization, far surpassing the great surge that swept over the globe in the years leading up to World War I. The growth of the world economy---facilitated by lower trade barriers, global supply chains, international financial networks, and global communication---has yielded many benefits, including increased wealth and great economic efficiencies. It has also yielded an unprecedented level of mobility---in the movement of capital, goods, and services, in people (including migration) , and last but not least, in disease. For nearly a century the world has been spared the specter of mass deaths induced by a killer disease. The last great global pandemic occurred at the end of World War I, when the misnamed Spanish influenza killed an estimated 20 million people---including nearly 700,000 Americans---before it ran its course. To a significant degree, the spread of influenza was aided and abetted by the world war, which saw the armed forces of many nations on the move from their home countries to other parts of the world. Even then, however, human mobility and trade were far more constrained than they are today, when every year millions of passengers pass through U.S. airports alone. There have been several canaries in humanity's mine shaft, warning of impending disaster. According to the scientific community, the world has been overdue for some form of pandemic. On occasions too numerous to count, members of the medical profession have stated that "it is not a matter of if such an event will occur, but when." As the World Health Organization met in Geneva in the summer of 2009, health officials were citing the "near-misses" the world had recently experienced with the AIDS virus, tuberculosis, and avian flu (commonly referred to as bird flu), and warned that, absent a major effort to improve the globe's public health system, humanity's good fortune could not---and would not---last. But the issue has to struggle to get on the global agenda. Here in America the 2008 presidential campaign (which began in early 2007) was dominated by the wars in Afghanistan and Iraq, the broader problem of militant Islam, rising energy prices, a falling economy, and growing concerns about global warming. Neither public health concerns over a pandemic nor the country's illegal alien problem appeared prominently on the political radar screen. Call them the "stealth" issues---the ones that we failed to detect.

#### Renewables increase demand for natural gas

Richard Schmalensee, is the Howard W. Johnson Professor of Economics and Management, Emeritus at the Massachusetts Institute of Technology, “Evaluating Policies to Increase the Generation of Electricity from Renewable Energy” May 2011, MIT CEEPR, Center for Energy and Environmental Research, http://dspace.mit.edu/bitstream/handle/1721.1/66279/2011-008.pdf?sequence=1

Subsidizing renewables does nothing for energy security in the U.S., since North America is essentially self-sufficient in coal and natural gas, and only about two percent of U.S. petroleum consumption is used to generate electricity. The issue is more complex in Europe, which depends heavily on imported natural gas. But the output from wind and solar generation is both variable over time and imperfectly predictable, so that generators of both sorts are referred to as variable energy resources or VERs. The greater the fraction of generation coming from VERs as opposed to conventional baseload coal or nuclear plants, the greater the need for gas-fired reserve capacity. Thus subsidizing renewables may not be a sound response to energy security concerns (Moselle 2010). (Accommodating high levels of VER generation also requires significant changes in system planning and operations (NERC 2009).)

#### Manufacturing strong now

Economy, http://www.nytimes.com/2012/01/06/business/us-manufacturing-is-a-bright-spot-for-the-economy.html

For the first time in many years, manufacturing stands out as an area of strength in the American economy. When the Labor Department reports December employment numbers on Friday, it is expected that manufacturing companies will have added jobs in two consecutive years. Until last year, there had not been a single year when manufacturing employment rose since 1997. And this week the Institute for Supply Management, which has been surveying American manufacturers since 1948, reported that its employment index for December was 55.1, the highest reading since June. Any number above 50 indicates that more companies say they are hiring than say they are reducing employment. There were new signs Thursday that the overall jobs climate was improving, as the Labor Department reported that new claims for unemployment benefits fell last week and a payroll company’s report showed strong growth in private-sector jobs in December. As stores have filled with inexpensive imports from China and other Asian countries, the perception has risen that the United States no longer makes much of anything. Certainly there has been a long decline in manufacturing employment, which peaked in 1979 at 19.6 million workers. Now even with hiring over the last two years, the figure is 11.8 million, a decline of 40 percent from the high. But those numbers obscure the fact that the United States remains a manufacturing power, albeit one that has been forced to specialize in higher-value items because its labor costs are far above those in Asia. The value of American manufactured exports over a 12-month period peaked at $1.095 trillion in the summer of 2008, just before the credit crisis caused world trade volumes to plunge. At the low, the 12-month figure fell below $800 billion, but it has since climbed back to $1.074 trillion. Those figures are not adjusted for inflation. In total exports, including manufactured goods as well as other commodities like agricultural products, the United States ranked second in the world in 2010, behind China but just ahead of Germany. For the first 10 months of 2011, Germany is slightly ahead of the United States. The United States is particularly strong in machinery, chemicals and transportation equipment, which together make up nearly half of the exports. Exports of computers and electronic products are growing, but are well below their precrisis levels. Production of cheaper computers and parts shifted to Asia long ago. Just how long the rise in manufactured exports can last depends, in part, on the health of other economies. The euro zone no longer takes as large a share of American exports as it once did, but it is still a major customer. A recession there this year, as has been widely forecast, would hurt all major exporters, including the United States. Similarly, the strong exports provide a stark reminder of how vulnerable this country could be to protectionist trade wars. The Doha round of world trade talks, which was supposed to result in the lowering of more trade barriers, has stalled. And last month China imposed punitive duties on imports of American large cars and sport utility vehicles, which total about $4 billion a year. That move was seen as retaliation for United States requests that the World Trade Organization rule that Chinese subsidies for its solar and poultry industries violated international law. The Chinese denounced those requests as protectionist. The American government denies that, of course. “Part of a foundation of a rules-based system is dispute settlement," said Ron Kirk, the United States trade representative, in an interview with Reuters after the Chinese announced the new tariffs. "That’s what we think is so important about the W.T.O. How China reacts to that is up to China. But I just cannot buy into the argument that our standing and protecting the rights of our exporters and workers is somehow igniting a trade war or being protectionist.” Since employment in the United States hit its recent low, in February 2010, the economy has added 2.4 million jobs through November, of which 302,000 were in manufacturing. With government payrolls shrinking, and financial services jobs also fewer, manufacturing employment has played an important role in keeping the economy growing. It also is helping that construction employment appears to have hit bottom. In the first 11 months of 2011, it is up a small amount. To be sure, the gains in manufacturing employment and exports have come after sharp declines during the recession and credit crisis. There are still 6 percent fewer manufacturing jobs than there were when President Obama took office at the beginning of 2009, and it seems very unlikely that he will be the first president since Bill Clinton, in his first term, to preside over growing manufacturing employment during a four-year term. During George W. Bush’s two terms, the number of manufacturing jobs fell by 17 percent in the first four years and by 12 percent in the following four years. The number declined by 1 percent in Mr. Clinton’s second term. The Institute for Supply Management survey of manufacturers has shown more companies planning to hire than to fire in every month since October 2009. That string of 27 months is the longest such string since 1972, but remains well behind the longest one, 36 months, which ended in December 1966. Over all, that survey has indicated that a plurality of companies has believed business is getting better for 29 consecutive months, and December’s reading of 53.9 was the strongest since June. This summer, one widely watched part of the Institute for Supply Management survey showed that a small plurality of companies reported new orders were falling, a fact that helped to stimulate talk of a double-dip recession. But the latest reading, of 57.6, indicates widespread strength in new orders. In an economy where there is widespread concern over consumer spending, and in which government spending and payrolls are under heavy pressure, manufacturing has become a bright spot. It is not enough to produce a strong rebound, and it remains vulnerable to weakness overseas. But it has helped to keep a weak economic recovery from turning into a new recession.

#### Manufacturing decline inevitable and it’s not key

MGI 12, Mckinsey Global Institute – research branch of the Mckinsey management consulting company, “Trading myths: Addressing misconceptions about trade, jobs, and competitiveness”, May, http://www.mckinsey.com/insights/mgi/research/productivity\_competitiveness\_and\_growth/six\_myths\_about\_trade

Myth: Mature economies are losing out to emerging markets in trade and thus face increasing trade deficits. Reality: The trade balance of mature economies has remained largely stable in the aggregate and even begun to improve. There are wide variations between individual countries, but no evidence supports claims of a wholesale deterioration of the trade balance between the mature and emerging economies over the past decade. Myth: Manufactured goods drive deteriorating trade deficits. Reality: Imports of primary resources, whose prices have been rising sharply, are the largest negative contributor to the trade balance of mature economies. In 2008, mature economies ran a 3.3 percent of GDP trade deficit in primary resources but a 0.5 percent of GDP surplus in manufactured goods and specifically a 1.6 percent surplus in knowledge-intensive manufacturing. Some individual mature countries run trade deficits in knowledge-intensive manufacturing. Myth: Trade is at the heart of the loss of manufacturing jobs. Reality: Changes in the composition of demand and ongoing productivity increases are the main reasons for the decline in the number of such jobs in mature economies. The share of manufacturing in these countries’ total employment is bound to decline further, from 12 percent today to less than 10 percent in 2030, according to our analysis. MGI finds that trade or offshoring are responsible for the loss of around 20 percent of the 5.8 million US manufacturing jobs eliminated between 2000 and 2010.

**Grid**

Renewables are too volatile and the entire grid needs to be revamped – requires trillions

MICHAEL BRUCH Head of R&D Risk Consulting and LARRY HUNTER Risk Engineer Allianz Risk Consulting Worldwide risk consulting, risk management and loss investigation services for corporate, industrial and specialty risks. Energy risks: Power trip http://www.agcs.allianz.com/assets/PDFs/GRD/GRD%20individual%20articles/Power\_blackout\_risks\_article.pdf

Drawbacks of renewable energy

While renewable energy is on the rise in many countries, a major drawback is the “volatility” of supply. This leads to several challenges. The unsteady production of energy, especially from wind or solar power, strains the stability of the network. Further, if wind turbines need to be stopped for safety reasons in extreme weather conditions, this can cause power gaps equal to the loss of two nuclear power plants within just one hour. In such cases, conventional reserve power plants would need to step in instantly. Last but not least, renewable energy has to be transmitted from sparsely populated areas to the metropolitan centers of demand. To handle these enormous technical challenges, grids need to become much smarter. “Governments should develop new grids with metering, control and commu nication functions to handle the future growth of re - new able energies,” says Larry Hunter. They should also promote storage facilities for excess energy such as pumped storage hydropower plants or underground vaults for compressed air. Overhauling national grids comes at a considerable cost. Estimates suggest that European Union (EU) member states need to invest between €23 and €28 billion over the next five years in their national grid networks, particularly as the demand for power supply is now cross-border. However, the fact that the European electricity grid consists of multiple regulatory bodies, owners and operators makes it difficult to form a consensus on prioritizing areas for investment – and responsibility. More widely, the International Energy Agency (IEA) says that the world will need to invest US$13.6 trillion between now and 2030 to boost power supply to meet increasing demand. The IEA says that 50 percent of this amount needs to be invested in transmission and distribution and another 50 percent in the generation of electricity distribution.

#### - decentralization can’t solve war- we will retaliate either way

#### Huge blackouts in the past decade didn’t collapse the economy

IEEE is the Institute of Electrical and Electronics Engineers, Inc, 8-15-2003, [“IEEE-USA’s Call for Reliability Legislation Underscored by Largest U.S. Power Outage” <http://www.ieeeusa.org/communications/releases/2003/081503pr.html>] vpotluri

Electric power reliability problems have led to more blackouts in recent years than historically experienced in North America. Customers in 14 western states underwent scattered outages twice in the summer of 1996. Major outages occurred during the summer of 1999 in different regions of North America, including Chicago and New York. More recently, California experienced rotating blackouts, price spikes and near bankruptcy of several utilities starting in mid-2000 and continuing into 2001.

**1. Blackouts happen monthly – Proves their impact is empirically denied**.

Apt and Lave 8/10/04 - former NASA astronaut, executive director Carnegie Mellon Electricity Industry Center; co-director of the center [Jay Apt and Lester B. Lave, “Blackouts Are Inevitable,” Washington Post, 8/10/04, p. A19, http://www.washingtonpost.com/wp-dyn/articles/A52952-2004Aug9.html]

As we approach the first anniversary of the Blackout of '03, we're reminded of the many times that officials, from New York Gov. Nelson Rockefeller in 1977 to Gov. George Pataki now -- along with a host of senators and representatives -- have assured us that they will take steps to prevent future blackouts. Yet roughly every four months, the United States experiences a blackout large enough to darken a half-million homes. Now the pressure is on Congress to enact an energy bill that will protect us from the lights going out. There's just one problem: It can't be done. In a large, complicated arrangement such as our system for generating, transmitting and distributing electricity, blackouts simply cannot be prevented. Data for the past four decades show that blackouts occur more frequently than theory predicts, and they suggest that it will become increasingly expensive to prevent these low-probability, high-consequence events. The various proposed "fixes" are expensive and could even be counterproductive, causing future failures because of some unanticipated interaction.> The state of current engineering is such that we cannot verify that any particular change won't impose problems larger than those it is designed to remedy. Nor can we eliminate all problems. Further, with a bit of "luck" and sufficient resources, an informed, intelligent terrorist organization could get around any protective structures and software to bring down the system.

#### Meltdown impacts won’t happen – empirics

WNA ’11

[World Nuclear Association, “Safety of Nuclear Power Reactors”, (updated December 2011), <http://www.world-nuclear.org/info/inf06.html>]

From the outset, there has been a strong awareness of the potential hazard of both nuclear criticality and release of radioactive materials from generating electricity with nuclear power. As in other industries, the design and operation of nuclear power plants aims to minimise the likelihood of accidents, and avoid major human consequences when they occur. There have been three major reactor accidents in the history of civil nuclear power - Three Mile Island, Chernobyl and Fukushima. One was contained without harm to anyone, the next involved an intense fire without provision for containment, and the third severely tested the containment, allowing some release of radioactivity. These are the only major accidents to have occurred in over 14,500 cumulative reactor-years of commercial nuclear power operation in 32 countries. The risks from western nuclear power plants, in terms of the consequences of an accident or terrorist attack, are minimal compared with other commonly accepted risks. Nuclear power plants are very robust.

**2. Prevention measures are taken to prevent massive blackouts & escalation.**

DoE 9/10/04 – U.S. Department of Energy [Energy Efficiency and Renewable Energy, “Is Our Power Grid More Reliable One Year After the Blackout?”, State Energy Program, Sept.-Oct./04, http://www.eere.energy.gov/state\_energy\_program/feature\_detail\_info.cfm/fid=32?print]

The U.S.-Canada Power System Outage Task Force publication, The August 14, 2003 Blackout One Year Later: Actions Taken in the United States and Canada to Reduce Blackout Risk (PDF 236 KB) Download Acrobat Reader, details the actions taken to improve grid reliability. For example, shortly after the Task Force identified direct causes of the August 14 blackout, the Federal Energy Regulatory Commission (FERC) and NERC set to correct them. The U.S. Canada Power System Outage Task Force conducted a massive investigation into the causes of the blackout and made 42 recommendations to improve power system operations. In December 2003, FERC ordered FirstEnergy to study the adequacy of transmission and generation facilities in northeastern Ohio. The results were submitted in April 2004 and recommendations are now being incorporated into FirstEnergy's operations and strategic plan. In February 2004, NERC directed FirstEnergy, the MISO, PJM Interconnection, and the East Central Area Reliability Coordination Agreement on actions each organization needed by June 30, 2004, to reduce the potential of future blackouts. NERC then approved and verified their compliance plans. In response to the April 2004 Final Report, FERC took the following actions to clarify and develop reliability standards: \* Commissioned a firm to analyze transmission line outages related to inadequate tree trimming — a major contributor to the August 14 blackout — and determine best practices for preventing this problem. See the "Utility Vegetation Management and Bulk Electric Reliability Report from the Federal Energy Regulatory Commission" (PDF 92 KB). \* Began to require transmission owners to file reports on their tree trimming practices. \* Affirmed the need to strengthen and clarify NERC's operating reliability standards. Meanwhile, NERC strengthened its policies on emergency operations, operations planning, and reliability coordinator procedures and will include compliance metrics in its operating policies and planning standards by February 2005. New standards for managing vegetation and calculating transmission line ratings are also being developed; procedures for training and certifying operators are being revised.

**3. Blackouts are inevitable. Coping, not prevention, should be the primary goal.**

Apt and Lave 8/10/04 - former NASA astronaut, executive director Carnegie Mellon Electricity Industry Center; co-director of the center [Jay Apt and Lester B. Lave, “Blackouts Are Inevitable,” Washington Post, 8/10/04, p. A19, http://www.washingtonpost.com/wp-dyn/articles/A52952-2004Aug9.html]

This approach is very different from the debate with which congressional conferees are dealing. They should know that, despite the rhetoric, we will not be able to prevent all future power failures. While some investments to decrease the frequency of future outages are worthwhile, the Energy Department, the Federal Energy Regulatory Commission and state regulators need to focus on lowering the cost and disruptive effect of future blackouts. We need to be able to accomplish the essential missions of the electricity system despite a blackout -- and to do so at the lowest possible cost.

**Solvency**

#### The plan provides an out – companies will just refuse to connect solar panels

Bronin 10 Sara C. Bronin Associate Professor of Law, University of Connecticut “Curbing Energy Sprawl with Microgrids” December, 2010 Connecticut Law Review 43 Conn. L. Rev. 547 lexis

Beyond lawmaking, utilities have a profound impact on the financial feasibility of distributed generation. This impact arises from utilities’ ability to set tariffs and policies on end users within their jurisdiction. The Department of Energy has documented numerous examples of utilities charging unfair and outsized backup tariffs—supplemental, backup, and standby tariffs that distributed generators are required to pay to ensure access to the grid.114 Sometimes, the proposed tariffs have even exceeded the equivalent cost of the energy produced by the distributed generator.115 In addition, utilities, which enjoy monopolies over buying back excess energy, have tended to offer very low buyback rates.116 Low buyback rates mean that power produced during off-peak periods which is not used by the microgrid cannot necessarily be fed back into the central grid, and sold back to the utility, at rates that would help offset the costs of investing in distributed generation. Finally, utilities sometimes refuse to serve users of distributed generation, by refusing to connect them to the grid. Backup generators that would alleviate worries of being without power—that is, protect microgrid users in a worst-case scenario—tend to add so many costs that entire projects are abandoned. The negative impact of these practices on the financial feasibility of distributed generation, and by extension microgrids, is clear. If past behavior is any indication, utility companies will continue to obstruct any reform that would facilitate microgrids.

#### Entrepreneurs won’t deploy - barriers outweigh incentives – Europe’s failures undermines confidence

**Mormann ’11** (Felix, prof at Steyer-Taylor Center for Energy Policy and Finance, Stanford Law School, “Requirements for a Renewables Revolution,” 38 Ecology L.Q. 903)

Any attempt to promote renewable sources of energy or evaluate such promotional efforts requires a deep understanding of the obstacles that stand in the way of a timely transition to renewables. Only once these obstacles are properly identified can an adequate promotional policy be designed and implemented to overcome them. Cost competitiveness of renewables in comparison to fossil fuels may be the most obvious and certainly represents one key factor for their large-scale deployment. But it is by no means the only determinative variable in the renewables equation. The comparison of France and Germany demonstrates that rate structures and financial subsidies alone do not guarantee the successful promotion of renewable sources of energy. Even though both countries' promotional policies offer similarly high subsidized rates for electricity from renewables, deployment in Germany has been several times greater than in France, pointing to other forces at play than pricing alone. n19 While it may be possible to attach a price tag to such forces or obstacles, it is doubtful whether convincing renewables entrepreneurs to go forward with their projects solely through price incentives is efficient or even politically viable in the long run. Already, some of the pioneering nations in renewables have been forced to cut support programs so as not to let the cost of their promotional efforts get out of hand. n20 The current U.S. budget crisis [\*909] requires cost-efficient policy support for renewables. It is therefore crucial that, to the extent possible, we eliminate obstacles to the large-scale deployment of renewables rather than compensate for them. Elimination, however, requires prior identification and evaluation.

#### No Solar Transition

1. They don’t mandate grid connection
2. Permits regulations prevent transition

Virginie Schwarz, For The United Nations Development Program, 2008 Bureau For Development Policy, Energy And Environment Group Under The Supervision Of Marcel Alers. Promotion Of Wind Energy : Lessons Learned From International Experience And Undp-Gef Projects, 2008

http://www.undp.org/content/dam/aplaws/publication/en/publications/environment-energy/www-ee-library/sustainable-energy/promotion-of-wind-energy-lessons-learned-from-undp-gef-projects/Promotion%20of%20Wind%20Energy\_2008.pdf

Hoping to combine the advantages of regulatory and market-based systems, some countries, such as Spain and Denmark, have chosen to design Feed-In tariffs at a premium over electricity market prices. This can prove expensive when market prices rise, as they did in 2006 in Spain. This induced the Spanish government to interrupt the system because of unjustified profits for developers and soaring costs of the wind energy support scheme. A new system was implemented in May 2007 with maximum and minimum limits set on the price a producer can receive. It must be emphasized that Feed-In tariffs in themselves are not sufficient to ensure strong development of wind energy, if the system is poorly designed, or is not part of a comprehensive energy policy and other barriers are not removed. For instance, in 2001 France introduced a system of Feed-In tariffs for wind farms under 12MW that did not lead to the expected wind energy development, even though prices were generally deemed sufficient. Authorization procedures, especially land authorizations and building permits, were inadequate and burdensome for developers. Grid connection conditions and ancillary services requirements were variable and expensive, while strong local opposition to projects led to long development times and uncertainty. Wind energy capacity only picked up when these issues had been dealt with.

**Building Financing is the reason Homeowners won’t build – compensation happens after building**

**Cox ’11** (Prentiss, “Keeping PACE? The Case Against Property Assessed Clean Energy Financing,” 83 U. Colo. L. Rev. 83).

The substantial investment required for many energy improvements, especially alternative energy production systems, means that homeowners unable or unwilling to pay up-front for these improvements must obtain financing. Some homeowners are unable to obtain financing on any terms, and other homeowners cannot obtain financing at a cost that makes the investment affordable relative to the energy cost savings. n35 Even when financing is available, homeowners resist making investments out of concern that they will have to pay the remaining balance on the financing when the home is sold or refinanced. n36