### Version 3

#### First the status quo- utility-scale wind exists in large quantities and is growing in the US-

Carey 1/30

(Ellen, American Wind Energy Association, “Wind energy top source for new generation in 2012; American wind power installed new record of 13,124 MW,” January 30, 2013, http://www.awea.org/newsroom/pressreleases/officialyearendnumbersreleased.cfm//wyo-mm)

WASHINGTON, D.C., January 30, 2013 – The U.S. wind energy industry had its strongest year ever in 2012, the American Wind Energy Association announced today, installing a record 13,124 megawatts (MW) of electric generating capacity, leveraging $25 billion in private investment,and achieving over 60,000 MW of cumulative wind capacity. The milestone of 60,000 MW (60 gigawatts) was reached just five months after AWEA announced last August that the U.S. industry had 50,000 MW installed. Today’s 60,007 MW is enough clean, affordable, American wind power to power the equivalent of almost 15 million homes, or the number in Colorado, Iowa, Maryland, Michigan, Nevada, and Ohio combined. In this historic year of achievement, wind energy for the first time became the number one source of new U.S. electric generating capacity, providing some 42 percent of all new generating capacity; the final tally will be released in April in AWEA’s annual report. In fact, 2012 was a strong year for all renewables, as together they accounted for over 55 percent of all new U.S. generating capacity. Resulting from 190 projects across 32 states plus Puerto Rico, this new record for annual installations of over 13,000 MW by the U.S. industry far surpasses the previous record of 10,000 MW installed in 2010. AWEA Interim CEO Rob Gramlich said, “It is a real testament to American innovation and hard work that for the first time ever a renewable energy source was number one in new capacity. We are thrilled to mark this major milestone in the nation's progress toward a cleaner energy system.” Currently installed wind power will avoid 95.9 million metric tons a year of carbon dioxide emissions, equal to 1.8% of the entire country’s carbon emissions. In last year’s fourth quarter alone, 8,380 MW were installed, making it the strongest quarter in U.S. wind power history. This was due in large part to impending expiration of the successful federal Production Tax Credit (PTC). It was slated to end on December 31, 2012, but was extended by Congress on January 1, 2013, as part of the “fiscal cliff package,” the American Taxpayer Relief Act of 2012. Gramlich added, “What is just as striking as the new records is the expansion of new customers. A total of 66 utilities bought or owned wind power in 2012, up from 42 in 2011. We are also seeing growth in new customers in the industrial and commercial sectors purchasing or owning wind energy directly.”

#### Utility wind inevitable globally- record 2012 growth and 2030 emission targets

Saari 2/11

(Emily, SMCM graduate and web producer, tck tck tck The Global Campaign for Climate Action, “2012 was a banner year for wind: Competitive pricing, record growth,” February 11, 2013, http://tcktcktck.org/2013/02/wind-is-cheaper-than-coal-for-the-first-time/48235//wyo-mm)

Posting a year of record success in several nations, the wind industry once again demonstrated the ability of the renewable energy sector to grow amidst negative economic trends. In Australia, wind is now a cheaper source of electricity than both natural gas and coal. Overall, the industry increased its total capacity by 19% worldwide, and it could meet up to a fifth of global electricity demand by 2030. In Spain, wind is the primary source of energy in the nation. Since November, Spain’s wind farms have produced six terawatt-hours of electricity per month, exceeding the production capacity of both nuclear and coal-fired power plants. The nation is on track to produce 40% of its energy from renewable sources by 2020. The U.S. and China both installed more than 13 gigawatts of new wind capacity each. Europe introduced a record 12.4 gigawatts, with Germany leading the way in growth and the emergence of new markets in Sweden, Romania, and Poland. “While China paused for breath, both the U.S. and European markets had exceptionally strong years,” said Steve Sawyer, Secretary General of the Global Wind Energy Council. “Asia still led global markets, but with North America a close second, and Europe not far behind.” The solid growth of the wind energy industry in 2012 will come as good news to businesses, trade unions, and health experts. Sustained progress on renewable energy capacity, however, is still at risk of being undermined by a lack of reliable support from policy makers. To meet domestic emissions reductions goals, countries around the world need to support the growth of the renewable industry and end active support of the fossil fuel industry.

#### However, this utility-scale wind is dominated by absentee corporations. Creating local ownership stakes in wind power is essential to counter the old paradigm and foster a transition towards embracing small-scale, renewable electricity production\*\*

Farrell 11

[John, directs the Energy Self-Reliant States and Communities program at the Institute for Local Self-Reliance, “Democratizing the Electricity System: A Vision for the 21st Century Grid”, June, p. <http://atcscam.homestead.com/democratizing-electricity-system.pdf> //wyo-tjc]

While technology has helped change the economics of electricity production (in favor of renewables and distributed generation), this new dynamic can as easily be controlled by the incumbent utilities as the old paradigm of centralized fossil fuel power generation. The cornerstone of the distributed generation revolution is its potential democratizing influence on the electric grid, the opportunity unlocked for local ownership and the coincident political support for more renewable energy. In no place is that clearer than in the public support for renewable energy. An increasing number of renewable energy projects (primarily wind, but also large-scale solar) have met with resistance from local residents or environmentalists. Centralized, remote generation might seem to avoid NIMBY issues by placing wind turbines or solar power plants far from population centers; but in practice, there have been opponents to these projects as well. Large power plants raise questions about environmental impact from creature habitat to water consumption. Power from distant plants must be transmitted over high-voltage transmission lines to get to load centers without significant losses, and such lines are built only at great ratepayer expense, over many years, and with the taking of land with eminent domain. Some folks just hate the look of power plants, regardless of their sustainable nature. Resistance has been organized enough to win restrictive state siting policies (e.g. wind policy in Wisconsin) or to coordinate environmental advocacy organizations to oppose solar power plants on undeveloped desert lands. In some cases, resistance takes on the strange aspect of “wind turbine syndrome,” or other mysterious illnesses. At the heart of the matter, citizens rightly see renewable energy as different, and find it frustrating to see new, widely available resources like sun and wind developed under the old, centralized paradigm and owned by the usual suspects. In a recent study by the ever-methodical Europeans, they found that opponents to new wind and solar power have two key desires: “people want to avoid environmental and personal harm” and they also want to “share in the economic benefits of their local renewable energy resources.”32 It’s not that people are made physically ill by new renewable energy projects. Rather, they are sick and tired of seeing the economic benefits of their local wind and sun leaving their community. Such opposition is perfectly rational, since investments in renewable energy can be quite lucrative (private developers and their equity partners routinely seek 10% return on investment or higher). And the economic benefits of local ownership far outweigh the economic colonialism of absentee owners profiting from local renewable energy resources. Additionally, when projects are absentee owned, local residents see little to no economic advantage to offset their concerns about health or the environment. It’s not just centralized renewable energy projects facing opposition; distributed generation (DG) can also face resistance. While DG projects are of a more modest scale than centralized power generation, they also reside closer to actual electricity demand; thus, they are closer to population centers. For solar, this is largely a non-issue, because it can be easily installed on rooftops or other existing structures. Similarly, other technologies like geothermal or even natural gas generate little hostility from locals. On the other hand, for wind power there’s little distinction between a 30 MW and 300 MW project, because all the turbines are the same size. A distributed wind project will place very large turbines close to population centers and wind projects of all sizes have met with stiffer resistance. For both centralized and distributed generation, local ownership becomes the key to unlocking local support. For example, the following chart illustrates the local support for wind power in two German towns, Nossen and Zschadraß. With local ownership of the wind project, 45% of residents had a positive view toward more wind energy (Zschadraß). In the town with an absentee-owned project (Nossen), only 16% of residents had a positive view of expanding wind power; a majority had a negative view. By unlocking economic opportunity, distributed generation and local ownership of renewable energy create a positive feedback loop for more investment in renewable energy.

#### Passive income rules and tax-based incentives strangle community wind by precluding them from the largest source of capital AND gives investment banks and corporations massive leverage over energy costs, bleeding public offers dry.

Farrell 11

[John, directs the Energy Self-Reliant States and Communities program at the Institute for Local Self-Reliance, “Democratizing the Electricity System: A Vision for the 21st Century Grid”, June, p. <http://atcscam.homestead.com/democratizing-electricity-system.pdf> //wyo-tjc]

There are many ways federal incentives for renewable energy have been biased toward large, absentee owned centralized power generation. One of the most pervasive is evident in the two major incentives for renewable energy production: the Production Tax Credit (PTC) and Investment Tax Credit (ITC). The PTC provides a 2.1 cent per kWh incentive for several renewable technologies over 10 years. The ITC provides an up-front 30% tax credit to defray project capital costs. Both federal tax incentives require the renewable energy producer to have sufficient tax liability to absorb the credit. The use of tax credits for incentives eliminates any non-taxable entity from access to the incentive, including municipal or county governments, tribal entities, non-profit organizations, and cooperatives. In the case of wind power, the limitations on access are particularly profound because each investor in a wind project must either have “passive income” to apply the credit against or be materially involved in the day-to-day operation of the project. This limitation is particularly onerous for wind projects with many owners, such as cooperatively- or community-owned projects.85 For solar, the use of tax credits is particularly onerous for homeowners. As many as half of American households do not have sufficient tax liability to absorb the federal solar tax credit before it expires.86 These households could go solar, but only at a higher price than those who can use the credit. In other words, those with money and income can go solar, while the rest of us stay in the “dark” ages. In addition to limiting participation in renewable energy development, the federal tax incentives also make renewable energy more expensive than alternative incentive strategies.87 Providing incentives through the tax code forces project developers to partner with “tax equity investors” such as large investment banks. These banks want a return on their investment, so they add cost to the project, costs that are passed on to ratepayers (and also come out of the pockets of taxpayers). Additionally, the number of such tax equity investors is limited, both constricting the total market and allowing them to set their own price. A recent study found that a cash grant (as was enacted as part of the federal economic stimulus package) could provide the same impact on project finances at half the cost to the government and taxpayers.88 Tax credits have also provided an opportunity for financing hijinks. Banks who finance leased residential solar PV projects have taken advantage of rules allowing them to substitute the “fair market value” of the installation rather than the actual project cost. The cost inflation is as high as $4.00 per Watt and can cause million of dollars in overpayments of federal tax credits to bankers.89

#### Because energy conglomerates and big corporations control the energy sector, they ensure the occlusion of innovative, decentralized energy because it threatens its power structure.

O'Leary 08

(Brian, former astronaut, Cornell professor, physics faculty member at Princeton University and visiting faculty member in technology assessment at the University of California Berkeley School of Law, Mo Udall's energy advisor and speechwriter during his 1975 Presidential campaign, author, AAAS Fellow, World Innovation Foundation Fellow, NASA group achievement award recipient, and founder of the New Energy Movement, The Energy Solution Revolution, Chapter 2. “Who’s Doing the Suppressing?” October 1, 2008, Pgs 28-29//wyo-mm)

The ecologists are right: how could anyone trust the energy establishment to manage new energy? How could we simply stand by while corporate profit-centers decide for us whether to go with coal, oil, gas, tar sands, oil shale, nuclear power, solar, wind, biofuels, hydrogen, fuel cells, etc. The bottom line is that breakthrough energy does not appeal to big business because of its simplicity, cheapness, renewability, and decentralized nature. I wholeheartedly agree with the progressive greens’ critique, and support strong action against our current practices, for example Monbiot’s brilliant suggestion to leave the oil, coal, etc. in the ground. Yes! But he only solves half the problem—letting go of what we don’t want. But what do we want in its place? What’s next? Overcoming the lack of awareness of the possibility of clean and abundant solutions, especially among those who correctly see a crisis in search of answers, is a thread that will run throughout this book. Common sense dictates a strong disgust with the American government’s mandate not to reduce its emissions just to feed the appetite of the energy and war industry’s thirst for ever-more business, power and influence. Most environmentalists and I can also demonstrate that many government-and-industry-imposed “cleaner” alternatives such as carbon sequestration at coal plants, spewing particles into the atmosphere, and burning biofuels just to marginally mitigate emissions so we can keep gassing up the billion private vehicles, are very bad ideas. Eating and injecting bad stuff into the biosphere and burning our food, are the crazy notions worthy of a society-gone-mad searching for band-aids. So, too, is a hydrogen fuel cell economy, which can only serve an elite few because of its great expense and its own energy requirements to produce the hydrogen in the first place. Most of the educated world understands that these excesses can only exacerbate rather than reduce global pollution. But is the misappropriation of effort skewed towards the needs of the corporate culture any reason to block promising new possibilities for the rest of us? Why must we accept conventional wisdoms about our energy future, based on the self-interest of industry and government, and at great cost to the rest of us? The news coming from the December 2007 UN Climate Change Conference in Bali is not good. The U.S. and China lead the way away from agreeing to the modest Kyoto emissions reductions, while promoting carbon trading as the only solution to our dilemma. As we shall see, these kinds of neoliberal gimmicks give the biggest polluters the right to burn more, not less, in this world of flush windfall profiteering. We have three communities objecting to breakthrough energy: (1) the powers-that-be, the current energy industry and its cronies in government, combined with a secrecy apparatus that covers up the truth of new energy, while the Pentagon spends bigger budgets and produces more weapons than ever; (2) mainstream scientists and their students, whose interests are best served by defending the familiar old turfs of thermodynamics, nuclear physics, and the denial of the existence of energy from the vacuum of space or from novel catalytic reactions with hydrogen; and (3) most environmentalists who are scared of the potential misuse of new energy and are steeped in the zero-sum game of scarcity, and so deny it on bogus scientific grounds, or they hope the problem will go away. Most of the rest of us remain in ignorance. As one green economist put it, in a new energy future, we would have our skies swarming with personal helicopters like locusts, bigger bulldozers, weed-whackers and power saws...and even more awesome weapons of mass destruction. We don't want that! So this begs the question, how can free energy be regulated? Which applications are benign and which have the potential to do great harm to nature or be abused as weapons or overused by over-consumption? No matter which choices we make for the future, we need to be selective about which ones make the most environmental sense rather than be victims of the winds of corporate and governmental power. We need to consider a wide range of renewable options, ones we will look at in Part III. Where I differ from some of these environmentalists is that we can proceed towards a solution energy age by: (1) carefully selecting those sources which can deliver energy on small scales with no weapons potential, and (2) reasserting public control of our energy choices. Like ordering from a menu at a restaurant, we can select whatever energy system we'd like--in principle.

#### When democracy becomes subsumed by corporations, it causes governmental corruption.

Danaher 03

(Kevin, Insurrection: Citizen Challenges to Corporate Power, INTRODUCTION The Insurrection Against Corporate Power, Pgs 3-4//wyo-mm)

This concentration of economic power means that just a small number of giant businesses possess enormous influence over the everyday aspects of people’s lives. A few oil companies put the gas in our cars, while a clique of auto companies builds the cars that we drive. Our entertainment—films, movies, books, music—is delivered by a handful of conglomerates such as Disney, Sony, Bertelsmann, and AOL/ TimeWarner. The morning newspaper is often produced by a corporation—Gannett, Knight Ridder, or the Washington Post Company—as is the nightly news, which in the case of NBC is courtesy of industrial giant General Electric. A tiny collection of huge food corporations—Nestle, Kraft (owned by tobacco giant Philip Morris), and Archer Daniels Midland—sells us the food that we eat. Companies like Wal-Mart and Gap Inc. provide the clothes we wear. Corporations touch each minute of our waking lives. To be sure, consumer choice and a measure of competition give people some say in the cars available or the clothing styles on hand. But the $450 billion advertising industry ensures that the choices are kept within a permissible range and that success is defined by how much you own. As unsettling as corporate control of our daily routines may be, it is still less pernicious than corporations’ massive influence over our political system. Corporate control over the auto industry may be tolerable; corporate control over democracy is not. The weight of corporate wealth has corrupted our democracy, and it is this corruption that is the most obvious sign of corporate rule. Corporations and government have become so intertwined that it is often difficult to see where one begins and the other ends. At times it seems as if our government is a wholly owned subsidiary of Corporate America.

#### Governmental corruption saps citizen agency, kills value to life and makes social inequality inevitable.

Ionescu et al 12

(Luminiţa, George Lăzăroiu, and Gheorghe Iosif, Ionescu at Academia Romana, Scoala Postodoctorala SPODE, Spiru Haret University, Bucharest, Romania, Lăzăroiu is at Institute of Interdisciplinary Studies in Humanities and Social Studies, New York/ Spiru Haret University, Bucharest, Romania, Iosif is at the Media and Publishing Group "Economic Tribune", Contribution of Services to Economic Development, “Corruption and Bureaucracy in Public Services,” 2012,

http://www.amfiteatrueconomic.ro/temp/Article\_1158.pdf//wyo-mm)

Uslaner states that corruption leads to less trust in other people and to more inequality. Societies are trapped in a cycle of high inequality, low out-group trust, and high corruption. An unfair legal system is one of the key determinants of corruption. The conception of corruption that Uslaner finds most compelling is malfeasance as the absence of transparency. There are plenty of exceptions to treating corruption as violations of transparency. Petty corruption helps a large number of people cope with broken public and private sectors, and does not engender jealousy and mistrust. People make a clear connection between inequity and grand corruption (grand corruption troubles people far more than petty misdeeds). Petty corruption drags ordinary people into the web of dishonesty. High inequality leads to low out-group trust and then to high corruption. The fairness, not the effectiveness, of the legal system shapes corruption. The links from inequality to trust and from trust to corruption are strong. Uslaner shows that corruption leads to public policies that produce better quality of life, stronger market performance, and less inequality. Uslaner presents aggregate portraits of trends in inequality and corruption. Grand corruption leads to social strains and to perceptions of rising inequality. Working from the ground up will not alleviate people’s concerns about corruption. Corruption is part of an inequality trap that saps people of the belief that it is safe to trust others, transfers resources from the mass public to the elites, and is not easy to eradicate if it is largely based upon the distribution of resources and a society’s culture. An unfair legal system is a key determinant of corruption (strong institutions, most notably equal justice for all, play a key role in combating corruption). Uslaner contends that authoritarian governance generally leads to high levels of corruption. Inequality, low trust, and corruption form a vicious cycle. Reducing inequality frees people from being dependent upon corrupt patrons. Corruption rests upon a foundation of strong in-group trust and low out-group trust. Uneven economic development is strongly related to all of the other determinants of corruption. Perceptions of corruption are higher in countries that have higher levels of economic inequality. People perceive a link between corruption and inequality (Uslaner, 2008, pp.5-29). Uslaner says that regulation is a policy choice that affects corruption. Corruption leads to less effective government. Democracy is not the cure-all for corruption. Corruption rests upon a foundation of an unfair legal system. Inequality leads to resentment of out-groups and enhanced in-group identity. An unfair legal system will lead to more corruption. Less bureaucratic red tape is one way to reduce corruption. Corruption rests upon a foundation of inequality. The overall conclusion to be drawn from these and similar observations is that a strong economy is a stimulant to the reduction of corruption. The inequality trap reflects how people think about corruption. The transparency of government decision-making is important for corruption. Uslaner posits that corruption should depend upon trust and policy choices. The effectiveness of government mostly reflects corruption and societal forces. Trust works as the most significant predictor of corruption. The fairness of the legal system shapes corruption through the regulatory regime. Corruption leads to poorer policies and worse social outcomes. People think about corruption as stemming from inequality. Uslaner notes that there are powerful effects for perceptions of corruption in business and in the legal system. People see higher levels of corruption where there is considerable inequality and corruption. Inequality and an unfair legal system are key determinants of corruption. Both corruption and inequality lead to weak states. Corruption leads to state failure and to inadequate public services. Corruption has great effects on government performance on the quality of life and on increasing inequality. Perceptions of corruption may persist even as elites see the world differently. Control over corruption is a sine qua non for rapid and sustained economic growth. Uslaner claims that the most important factors shaping perceptions of corruption are levels of confidence in institutions. States with a weak rule of law are more corrupt. Corruption in the American states reflects longstanding social and economic patterns. Uslaner remarks that the decline of corruption in the Nordic countries has its roots in a more equitable distribution of wealth over a long period of time. Corruption remains high in states with low trust and high levels of inequality. The gains from grand corruption persists even where petty corruption has been greatly reduced. Bad policy can lead to higher levels of corruption. Strong institutions do not emerge from constitutional conventions and often not from anti-corruption commissions (Uslaner, 2008, p.30–249).

#### And, failure to challenge these power structures makes numerous scenarios for global catastrophe inevitable.

O'Leary 08

(Brian, former astronaut, Cornell professor, physics faculty member at Princeton University and visiting faculty member in technology assessment at the University of California Berkeley School of Law, Mo Udall's energy advisor and speechwriter during his 1975 Presidential campaign, author, AAAS Fellow, World Innovation Foundation Fellow, NASA group achievement award recipient, and founder of the New Energy Movement, The Energy Solution Revolution, Chapter 1. “Pigs Can Fly!” October 1, 2008, Pg 18//wyo-mm)

My pessimism is well-founded, because the prospect for an energy solution revolution has been suppressed at every turn by powerful vested interests. The media again passes while mainstream scientists wallow in denial for fear of ridicule ("if it isn't reported or properly vetted by vested money and intellectual interests, it isn't real"). The result is an unwitting alliance between establishment scientists and the corrupting energy barons and their governmental and media mouthpieces. Meanwhile, we continue to be addicted to oil, so much so we don't seem to know a good thing when it comes along. Yet, most of us know, at least at some level, that we need to transform this addiction to chain-smoking our oil and coal and move on to alternatives before it's too late. We must lift the contradictory veil of credibility. From ten years' direct experience at witnessing new energy breakthroughs in laboratories around the world, I can personally vouch for the successes in solution energy research, whether it be cold fusion, advanced hydrogen chemistry or vacuum energy. But, like during the Wrights' first flights, we are not delivering the product yet. We are in the research phase of a research and development cycle. The research, if properly supported, will inevitably lead to the deployment of energy systems that will profoundly change the world. Why can't we perceive the truth hidden beneath the conundrum of credibility? It seems that credibility is simply a fantasy created by media, academe, politicians and corporate interests. In this game of smoke and mirrors, style has usurped substance, moreso than ever in these trying times. Hidden under the radar of the mass culture, we are missing out on concrete solutions, with the truth lying not so far below, but actively suppressed by current powers, who see such developments either as impossible or as a threat to an economy based mostly on polluting, destabilizing and unsustainable energy resources. Politicians rarely see beyond the next elections and corporations rarely see beyond their next earnings report. I am convinced we could have a comprehensive energy policy leading to near-zero emissions by 2020. The research is mature enough to set this goal, just as JFK had done for the Apollo lunar missions. I am also convinced that a publicly funded R&D effort of some hundreds of millions of dollars will catapult us into a sustainable future with many energy choices. On the other hand, we can maintain our cultural "credibility" by doing nothing. Meanwhile the research goes on in scattered locations by inventors in government labs, universities or on their own, with little or no support or acknowledgement from the government or the scientific mainstream. In my opinion, the development phase needs to become transparent and public. It is too important to be left to existing powers whose economic self-interest is suppressing solution energy at every turn. Yet we may need it to avert global disaster from pollution, climate change, prolonged blackouts, and wars over oil.

#### Additionally, centralized decision-making of neoliberalists on energy policies result in self-fulfilling prophecies and subsumes deliberation from the public.

Devine-Wright et al 07

(Patrick, edited by Joseph Murphy, Governing Technology for Sustainability, “Chapter 4 Energy Citizenship: Psychological Aspects of Evolution in Sustainable Energy Technologies,” 2007, pg 69//wyo-mm)

In sum, it is suggested that the centralized energy system is embedded within, and has helped produce, a social representation of the ‘energy public’ that is overwhelmingly characterized by deficits: f interest, knowledge, rationality and environmental and social responsibility. Moreover, it is argued that this is a self-fulfilling prophesy – the more the representation is assumed to be common sense by decision makers, the more it is likely to lead to ‘out of sight, out of mind’ energy policies, and to institutions and technologies that foster its continuity, creating a context with limited scope for public engagement with the energy system. Imagining the likely implications of the centralized system and its related social representations of energy and energy users for future energy system evolution, one might speculate as follows: In terms of governance: holding the view of the public as consumer/deficit suggests that decision making about system evolution is best left to the experts (that is to a bounded array of ‘technocrats’ already involved in managing the centralized system at the national level, including working groups involving government departments, regulatory bodies, industry and some academics) rather than being opened out to encompass more collective, deliberative processes directly with the public. Scepticism about the value of deliberative processes in energy system evolution would be consonant with this position. In terms of technological change: designers, developers and installers of new energy technologies would aim to minimize public engagement since this would be assumed to increase the risk of resistance, delay, planning refusal and inefficient or incorrect use of technologies. Large-scale energy generation would be preferred and sited at a maximal distance from centres of population; for example, off-shore or in remote areas. New energy- demand technologies, including ‘smartmeters’, would be designed on a ‘plug and forget’ basis, aiming to minimize disruption to existing lifestyles; load-management devices would be embedded within existing appliances to work as independently as possible of the consumer so as to minimize inconvenience. In terms of public acceptance: it would be assumed that the best way to ensure acceptance of new-energy technologies would be to get sufficient incentives (or benefits) in place and market them effectively to ensure consumer adoption deal with NIMBY resistance to change by siting technologies away from centres of population and by obliging developers to compensate local residents, under the guise of local community economic benefits (e.g. DTI, 2005b); and prioritize policies to maintain low energy prices, consumer choice and reliable supply.

#### Decision-making left to corporate elites results in failed one-stop solutions that fetishize science and certainty- allows them to strip value from everything that isn’t calculable- including human life

Kincheloe 08

(Joe, was a professor and Canada Research Chair at the Faculty of Education, McGill University in Montreal, Quebec, Canada, received three graduate degrees from the University of Tennessee, Knowledge and Critical Pedagogy, Chapter 6: “Down and Dirty: Outlining FIDUROD,” 2008, Pgs. 120-122, SpringerLink//wyo-mm)

This characteristic is very direct and simple: FIDUROD proclaims that only the information produced by a rigorous adherence to the scientific method merits the label of “knowledge.” This is justified by the “fact” that the scientific method is superior to all other methods of research. Using the scientific method correctly, knowledge producers can explain, predict, and control what goes on in the world. The critical complex notion of interpreting and acting to change the world to make it more just has little status among many of those who uphold and employ the principles of FIDUROD. Western science, advocates of FIDUROD argue, has been successful because it is the one correct way to study the world. The knowledge that science produces can be verified and proven. The term, positivism, was used to describe the epistemology that grounded such knowledge because the scientific method produced knowledge about which we could be positive that it was true. In this construction the more scientific research we conduct, the better we become at the task of producing universal truth. According to FIDUROD there is one correct view of nature—the one produced by science. This one-truth epistemology and its universal knowledge squelch a key dimension of science that advocates of FIDUROD claim to support—rigorous criticism. With only a small group of elite experts having been traditionally admitted to the community of scientists, those individuals who have fallen outside this domain have typically been ignored. Not surprisingly, these are the people who have some of the most revealing critiques of traditional science: women, indigenous peoples, non-Europeans, individuals from the lower socio-economic classes have been the ones who have least profited from the changes fashioned by science. Hermeneutic interpretation, for example, is simply not relevant in the epistemology of FIDUROD. Such ways of producing knowledge and understanding move beyond simple cause and effect scientific explanation, labeling them as too reductionistic an approach to understand the complex movement of events in the world. FIDUROD-based science has not taken such criticism well. The reaction of many scientists—especially many scientists within the domain of the social— has been to over-compensate for the fact they are not physical scientists and become more faithful to the methodologies and prejudices of physical sciences than physical scientists themselves. Employing such an epistemological stance, such social, psychological, and educational scientists are adamant in their efforts to eliminate any analysis of the influence of culture and context on their work: their work is rigorous science and thus culture free. In the spirit of FIDUROD, every other form of knowledge production is mere opinion. Because of this one truth epistemology with its one correct mode of research, FIDUROD-based inquiry has been decidedly insensitive to many human dimensions of social, psychological, and educational affairs. Critical theorists and critical pedagogues argue that such reductionistic forms of knowledge production produce data but not wisdom. In such a situation it is easy to see how the natural world and many of its low status people come to be viewed as resources to be used by the privileged in their quest for the accumulation of short term monetary wealth. When ethicists, political critics, environmentalists, advocates of social justice, novelists, or poets critique such insensitivity, the advocates of FIDUROD scoff at their naïve reflections. They are, after all, not real scientists and the critiques they issue are not authentic forms of knowledge. There is no reason for actual scientists to place any credence in the hermeneutic, the moral, or the literary imagination (Peat, 1989; Saul, 1995; Bruner, 1996; Giroux, 1997; Harding, 1998; Pickering, 1999). In an objectivist science FIDUROD-grounded knowledge producers are distanced from the subject of their inquiry in the effort to rid themselves of any contamination of human produced value or subjectivity. This objectivist mindset believes that it is simply absurd to address human dynamics such as caring, compassion, and love. Such abstract dimensions of humanness have nothing to do with rigorous scientific knowledge. In this epistemological cosmos social, psychological, or educational researchers who express anxiety about the depersonalized and often unforgiving world of FIDUROD-based science are manifesting a lack of intellectual maturity. The notion that such researchers are seeking a better world is equally inappropriate. Such perspectives reflect the patriarchal dimension of FIDUROD, as objective distance involves not only a separation from but also a domination of the feminine-inscribed emotional and embodied aspects of humanness. This separation and domination element of epistemology is a manifestation of an authoritarian patriarchy that suppresses feeling while seeking to control both women and nature (McClure, 2000). It is this same objectivist epistemological emotional distancing that shapes dominant Western culture’s mechanistic view of life and death. From this perspective life is little more than a functioning materialist body with a consciousness shaped by nothing more than neurophysiological and biochemical activities in the brain. When there is no knowledge other than scientific knowledge, humans find themselves at an existential dead end in the effort to understand the complex nature of who and what we are. If we operate on the basis of the epistemology of FIDUROD, we gain no insight into the deeper meanings of life. In this context the universe is viewed as mechanistic, vacant, pointless, and desolate.

#### Desire for certainty has spilled into our policy decisions- the squo is trying to ascribe linearity into complex domains

Jørgensen 05

(Ulrik, Department of Manufacturing Engineering and Management, Technical University of Denmark, Technological Forecasting and Social Change, “Energy sector in transition—technologies and regulatory policies in flux,” July 2005, Science Direct//wyo-mm)

Policy measures are often discussed in idealised form without any specific institutional reference of use and without too much reference to the limitations coming with implementation. The idealisation is legitimised through the need for reduced complexity of the policy context and limitations in the access to factual data. The disciplinary, theoretically motivated knowledge used to construct stylised models for policy measures and institutional frameworks for policy implementation are important elements in shaping regulatory measures. The impact of disciplinary knowledge goes beyond academic exercise and becomes an integral part of the policy programme itself, delivering not only the technicalities but also a complete contextual framework for understanding the role and impacts of policy [5]. This includes the training of staff in institutions in charge of regulation, which motivates the use of the term regime for this interlinked set of models, meanings, measures and mediations of regulation.

#### Energy issues are too complex for linear models- quick tech fixes and centralized decision making creates terrible prediction models and leads to worse impacts.

O’Neill-Carrillo et al 08

(Dr. Efraín, Dr. Agustín A. Irizarry-Rivera, Dr. José A. Colucci-Ríos, Dra. Marla Pérez-Lugo and Dr. Cecilio Ortiz-García, Conference Proceedings of Energy 2030: IEEE Conference on Global Sustainable Energy Infrastructure, “Sustainable Energy: Balancing the Economic, Environmental and Social Dimensions of Energy,” November 2008, <http://www.uprm.edu/aceer/pdfs/antologia_ITEAS_2008.pdf#page=105//wyo-mm>)

It is important to emphasize that the transition from the dominant energy model to a more decentralized model should not be viewed as a mostly technological matter. Focusing only on technological fixes for our energy problems has historically proved to be a wrong strategy. The authors firmly believe that the world’s complex problems require a more holistic approach that integrates the expertise and will of many diverse fields and individuals. In fact, history provides numerous examples in which the technological approach has yielded grave unintended consequences. Sustainability presents a holistic approach to integrate not only the technological dimension, usually tied up with economic considerations, but also the environmental as well as the social dimensions of development, energy in our present discussion. The sustainability concept evolved from ideas on human impact on the environment and the welfare of people, one of the first international forums on the subject was the Stockholm Conference on Human Environment in 1972 [3]. There are many definitions of sustainability or sustainable development. In fact, there is literature comparing the various stances on sustainability, classifying definitions in terms of weak, strong or normative sustainability (for an example comparing Solow, Holling, Leopold, Pearce and Barbier see Chapter 8 of Norton’s Sustainability [4]). There are also various indicators of sustainability such as the ones from the World Bank, the European Union, and UN [5]. Perhaps one the best -known definitions of sustainable development is from Our Common Future and deals with how we use resources today in a way that does not compromise the ability of future generations to meet their needs [6]. Wider exposure was given to sustainable development in the 1992 UN Earth Summit in Rio de Janeiro. Besides conflicting definitions, there are opposing views to sustainability, for example how can we determine the most important interests that future generations will have [7]. Regardless of particular positions on what is sustainability, a sustainable future will require sustainable energy sources and practices. A reference point that will be used in this work is that sustainable energy integrates the economic, social and environmental dimensions of energy issues in decision making. Furthermore, an energy ethics, a moral obligation to deal with the energy problems, should be at the center of that decision making process. Figure 1 illustrates this idea that has also been proposed by others [3]. Two common approaches used to integrate economic, environmental and social aspects in decision making are Life Cycle Analysis (LCA) and the Internalization of Externalities. LCA is a process to evaluate the environmental burdens associated with an activity by identifying and quantifying energy and material usage and environmental releases, to assess the impact of those energy and material uses and releases on the environment, and to evaluate and implement opportunities to effect environmental improvements [8]. On the other hand external costs are defined as those actually incurred in relation to health and the environment and quantifiable but not built into the cost of a product or service to the consumer, but borne by society at large [9-11]. Example results of these methodologies are provided in the tables 1-2. Notice that both LCA and external costs provide a better estimate of the impact of these technologies to society. These methods strive to correct market failures that ignore these environmental and social costs in traditional economic analysis. This is not a trivial process, but it is necessary to get a more leveled playing field when comparing alternatives on current energy practices and technologies.

#### Specifically, wind energy is embedded requires a complex approach

Ronit 12

(Karsten, University of Copenhagen, Derived from J.M. Bauer et al. (eds.), Innovation Policy and Governance in High-Tech Industries, Chapter 9: “Global Strategies and Policy Arrangements: Institutional Drivers for Innovation in the Wind Turbine Industry,” 2012, SpringerLink//wyo-mm)

From the outset, it must be emphasised that wind energy policy, as a small and emergent policy ﬁeld, is located within the more encompassing and complex realms of energy and climate policy that create various institutional underpinnings for wind energy. The conditions of the wind turbine industry cannot be understood without this context. Political strategies have come a long way since the 1970s, when the wind turbine industry started to experience a renaissance after centuries of virtual non-existence. In the past, the wind turbine industry was primarily an affair for pioneers, some driven by a combination of commercial interests and idealistic motives. The energy crises, however, produced a political and public awareness of using traditional energy sparingly, allowing wind energy to become a relevant alternative, although in the past, wind turbine industry was primarily an affair for pioneers, some driven by a combination of commercial interests and idealistic motives.

#### Linearity fails to establish accurate predictive models, leaves out too many variables and leads us to worse conclusions.

Ramalingam et al 08

(Ben, Harry Jones, Toussaint Reba and John Young, Foreword by Robert Chambers, Results of ODI research presented in preliminary form for discussion and critical comment, “Exploring the science of complexity Ideas and implications for development and humanitarian efforts,” 2008, <http://www.odi.org.uk/resources/docs/833.pdf//wyo-mm>)

Linearity describes the proportionality assumed in idealised situations where responses are proportional to forces and causes are proportional to effects (Strogatz, 2003). Linear problems can be broken down into pieces, with each piece analysed separately; finally, all the separate answers can be recombined to give the right answer to the original problem. In a linear system, the whole is exactly equivalent to the sum of the parts. However, linearity is often an approximation of a more complicated reality – most systems only behave linearly if they are close to equilibrium and are not pushed too hard. When a system starts to behave in a nonlinear fashion, ‘all bets are off’ (Strogatz, 2003). This is not to suggest that nonlinearity is necessarily a dangerous or unwanted aspect of systems. The biology of life itself is dependent on nonlinearity, as are the laws of ecology. Combination therapy for HIV/AIDS using a cocktail of three drugs works precisely because the immune response and viral dynamics are nonlinear – the three drugs taken in combination are much more effective than the sum of the three taken separately. The nonlinearity concept means that linear assumptions of how social phenomena play out should be questioned. It is important to note that such thinking has only relatively recently been incorporated into the ‘hard’ science paradigms and, moreover, is still only starting to shape thinking in the social, economic and political realms. Nonlinearity poses challenges to analysis precisely because such relationships cannot be taken apart – they have to be examined all at once, as a coherent entity. However, the need to develop such ways of thinking cannot be overstated – as one thinker puts it: ‘... every major unresolved problem in science – from consciousness to cancer to the collective craziness of the economy, is nonlinear’ (Capra, 1996). Although nonlinearity is a mathematical formulation, it is useful to take the suggestion that what is required is a ‘qualitative understanding of [the] quantitative’ when attempting to investigate them systematically (Byrne, 1998). Such a qualitative understanding has been furthered by the work of Robert Jervis (1997) on the role of complexity in international relations. Starting with the notion that understanding of social systems has tacitly incorporated linear approaches from Newtonian sciences, Jervis goes on to highlight three common assumptions that need to be challenged in order to take better account of nonlinearity. These assumptions provide a solid basis for investigating nonlinearity. First, it is very common to test ideas and propositions by making comparisons between two situations which are identical except for one variable – referred to as the independent variable. This kind of analysis is usually prefaced with the statement ‘holding all other things constant’. However, in a system of interconnected and interrelated parts, with feedback loops, adaptive agents and emergent properties, this is almost impossible, as everything else cannot be held constant and there is no independent variable. Jervis argues that, in such systems, it is impossible to look at ‘just one thing’, or to make only one change, hence to look at a situation involving just one change is unrealistic. Secondly, it is often assumed that changes in system output are proportional to changes in input. For example, if it has been assumed that a little foreign aid slightly increases economic growth, then more aid should produce more growth. However, as recent work by ODI and others argues, absorption capacity needs to be taken account – more aid does not necessarily equate to better aid. In complex systems, then, the output is not proportional to the input. Feedback loops and adaptive behaviours and emergent dynamics within the system may mean that the relationship between input and output is a nonlinear one: ‘Sometimes even a small amount of the variable can do a great deal of work and then the law of diminishing returns sets in [a negative feedback process] … in other cases very little impact is felt until a critical mass is assembled’ (Jervis, 1997). The third and final commonly made assumption of linearity is that the system output that follows from the sum of two different inputs is equal to the sum of the outputs arising from the individual inputs. In other words, the assumption is that if Action A leads to Consequence X and Action B has Consequence Y then Action A plus Action B will have Consequences X plus Y. This frequently does not hold, because the consequences of Action A may depend on the presence or absence of many other factors which may well be affected by B or B’s Consequence (Y). In addition, the sequence in which actions are undertaken may affect the outcome. Example: The growth dynamics model as an alternative to linear regression models Studies of economic growth face methodological problems, the foremost of which is dealing with real world complexity. The standard way of understanding growth assumes, implicitly, that the same model of growth is true for all countries, and that linear relationships of growth are true for all countries. However, linear relationships might not apply in many cases. An example would be a country where moderate trade protection would increase economic growth but closing off the economy completely to international trade would spell economic disaster. Linear growth models imply that the effect of increasing the value of the independent variable would be the same for all countries, regardless of the initial value of that variable or other variables. Therefore, an increase of the tariff rate from 0% to 10% is presumed to generate the same change in the growth rate as a change from 90% to 100%. Furthermore, the change from 0% to 10% is assumed to have the same effect in a poor country as in a rich country, in a primary resource exporter as in a manufacturing exporter, and in a country with well developed institutions as in a country with underdeveloped institutions. Despite some efforts to address these issues by relaxing the linear framework and introducing mechanisms to capture nonlinearities and interactions among some variables, this is still a poor way of addressing real world nonlinearity. Econometric research has identified that linear models cannot generally be expected to provide a good approximation of an unknown nonlinear function, and in some cases can lead to serious misestimates (Rodríguez, 2007). Research at Harvard University has focused on the problem of designing a growth strategy in a context of ‘radical uncertainty’ about any generalised growth models. They call their method ‘growth diagnostics’, in part because it is very similar to the approach taken by medical specialists in identifying the causes of ailments. In such a context, assuming that every country has the same problem is unlikely to be very helpful. The principal idea is to look for clues in the country’s concrete environment about the specific binding constraints on growth. The growth diagnostics exercise asks a set of basic questions that can sequentially rule out possible explanations of the problem. The answers are inherently country-specific and time-specific. The essential method is to identify the key problem to be addressed as the signals that the economy would provide if a particular constraint were the cause of that problem. Implication: Challenge linearity in underlying assumptions Within complex systems, the degree of nonlinearity and relationships between various factors, and the lack of proportionality between inputs and outputs, means that the dynamics of change are highly context-specific. Therefore, if there are assumptions, aggregations and theories about the relations among different aspects of a specific situation, and these are not entirely appropriate when applied to the dynamics of a new local situation, then this perspective is unlikely to lead to a deep understanding of what should be done, and is furthermore unlikely to lead to the hoped-for changes. Nonlinearity implies that, as well as understanding the limitations of a particular model or perspective, it is important to build and improve new models that can provide the sort of information required for the particular task at hand. ‘No kind of explanatory representation can suit all kinds of phenomena ... any one diagnosis of [a] problem and its solution is necessarily partial’ (Holland, 2000). From this perspective, it is important to tailor to the particular situation one’s perspective on the dynamics of some phenomena. In a complex system, one must examine the complex web of interrelationships and interdependencies among its parts or elements (Flynn Research, 2003). It is important from the outset to understand the association and interaction among variables, rather than assuming that one causes another to change, and to look at how variables interact and feed back into each other over time (Haynes, 2003). Homer-Dixon, cited above, suggests that political scientists use methods that are modelled on the physical sciences, developing broad theories of political behaviour to generate hypotheses about causal relations between variables of interest.

#### Failure to establish a knowledge production that grapples with complexity undermines survival- understanding policies through a critical, complex lens is the best way to avert human catastrophe-

Kincheloe 08

(Joe, was a professor and Canada Research Chair at the Faculty of Education, McGill University in Montreal, Quebec, Canada, received three graduate degrees from the University of Tennessee, Knowledge and Critical Pedagogy, Chapter 10: “The Conclusion Is Just the Beginning: Continuing the Conceptualization of a Critical Complex Epistemology,” 2008, SpringerLink//wyo-mm)

This process-grounded orientation of a critical complex epistemology helps educators and researchers move into a multidimensional mind space that operates with an understanding of the inviolable connection between knowledge and context, mind and body, consciousness and the social-political milieu, facts and values, and the physical and the social. A critical complex epistemology’s concern with difference, with multiple perspectives can be viewed very clearly in this context. The Buddhist concept of impermanence and a constant state of change confronts Westerners with their comfortable notion that the permanent, abstracted self is a social construction. The self—like all other phenomena in the cosmos—is always in process. The Western effort to remove the self from these processes, to essentialize it, is to ensure great pain and suffering. To live, to move to a new, more comfortable domain the self must always be changing. If it doesn’t, boredom and psychological distress develop. Thus, FIDUROD not only provides a misleading view of the world, it is in part responsible for the unhappiness and world-weariness that afflict contemporary Westerners. In this context the critical concept of articulation becomes profoundly relevant to our discussion of epistemological process. The Italian critical theorist, Antonio Gramsci (1988) maintained that the transformational concept of articulation referred to the notion that any socio-political construct involves a lengthy historical process of connections and disconnections. Simply put, it can only be understood in the process(es) that shaped it. The effort to understand social, cultural, political, psychological, and pedagogical phenomena cannot be removed from the complex historical processes that have brought them into existence. Informed by Gramsci’s concept of articulation, criticalists understand that process is a fundamental dimension of the multiple dimensions of the world in which we operate. Processes as part of the ontological status of the cosmos, inform all epistemological activities. Knowledge of these processes subverts the reductionism of FIDUROD’s fragmented conception of the phenomena in the world. A critical complex epistemology cannot conceptualize knowledge without considering its past and future. Such an epistemological stance understands that any phenomenon we encounter is viewed at a specific point in its longitudinal being-inthe-world. Criticalists go as far as to argue that when information is abstracted from the process(es) of which it is a part, it is no longer able to be understood. When the epistemology of FIDUROD engages in this abstraction, what it claims to know is often a chimera—a figment of a socially constructed fantasy, a way of operating that leads us down a path to disaster. The human catastrophe that awaits us is fed by a form of knowing that strips away the complications, the complexities that provide insight and meaning (Hall, 1986; Capra, 1996; Marshalidis, 1997; Pickering, 1999; Varela, 1999; Clifford & Sanches, 2000). We don’t have to wait for the educational calamity— it is here, staring us in the face. As we observe the test-driven, hyper-reductionistic policies that destroy the concept of a rigorous, pragmatic education, we are watching a FIDUROD-incited rampage of rational irrationality. A critical complex epistemology with its understanding of process gives us a way to address such social insanity and possibly save the planet.

#### Thus the plan,

#### The United States federal government should establish a producer payment for locally-owned wind power produced for on-site demand in the United States. This payment should be higher than the current Production Tax Credit rate for wind power.

#### Our aff provides a way of reshaping our knowledge production through a complex epistemology that paves the way for praxis- anything short of this pours us into endless abstraction or linear models of thinking that fail to produce good knowledge.

Kincheloe 08

(Joe, was a professor and Canada Research Chair at the Faculty of Education, McGill University in Montreal, Quebec, Canada, received three graduate degrees from the University of Tennessee, Knowledge and Critical Pedagogy, Chapter 10: “The Conclusion Is Just the Beginning: Continuing the Conceptualization of a Critical Complex Epistemology,” 2008, SpringerLink//wyo-mm)

The knowledges that emerge from a critical complex epistemology are action-oriented modes of practical cognition. Such knowledges depend on a rigorous knowledge of a phenomenon and the contexts that shape it rather than a set of abstract rules developed to solve neatly formed and abstract problems. Thus, going back to Chapter 1, a critical complex practical knowledge is directly related to a critical complex epistemology of practice. The lived world in general and in education in particular is far too complex to simply lay out universal step-by-step solutions to particular dilemmas. If a critical complex epistemology is to be of any help to critical educators and other cultural workers, then it must understand the complexity of everyday life and the multiple realities we all must confront. Of course, a central assertion of Knowledge and Critical Pedagogy: An Introduction has involved the concept that FIDUROD’s disinterestedness and the inaction that surrounds it is viewed in the regressive epistemological context as a virtue. Acting on a radical love or a compassionate spirit is not a part of the FIDURODian ethic. Of course, what we are talking about in a critical complex epistemology is making education something that really matters in challenging knowledges that perpetuate injustice while also understanding and helping to end human suffering. These are obviously action-oriented, practical goals. Thus, criticality is not interested in producing spectators, taciturn bystanders who are afraid to act. A critical complex epistemology is devoted to praxis, to informed action that moves individuals and groups to make and remake history—and in the process shape the future. As a scholar-teacher working in this context I want to produce compelling knowledges that are strategically valuable in the struggle against racism, sexism, homophobia, class bias, religious intolerance, and colonialism and for new ways of seeing and being in the world. As a critical complex epistemology constructs new levels of awareness and reveals the defects of mechanistic views of the physical and social worlds, it realizes that these worlds are more amenable to reinvention that previously imagined. Thus, a critical complex epistemology promotes a form of practical knowing, a knowing-in-action that initiates praxis. This practical knowing is intimately connected to developing a precise sense of purpose for our knowledge work and the actions it makes possible. FIDURODian descriptions of purpose such as producing accurate knowledge of the world are not sufficient in a critical complex epistemology. We must go farther in carefully considering the use value of our knowledge in a critical theoretical context. Criticalists produce dangerous knowledge, which by nature imply knowledges that take action in the world as they challenge existing dominant power relations. This notion of the use value of knowledge takes us back to the pragmatic test often referenced by John Dewey (1916): what is the consequence of the knowledge we produce. Adding criticality to Dewey’s pragmatism, we ask what is the consequence of our knowledge in helping those in need, those who are suffering.

#### The current PTC creates a feedback loop of corporate domination as passive income and third-party restrictions allow massive investment banks to bleed communities dry, add-on costs and extract revenue from the tax-payers. The plan is key to break this cycle and enable local, direct ownership of wind production

Morris 7

[David, Institute for Self Reliance, Center for American Progress, “Energizing Rural America: Local Ownership of Renewable Energy Production is the Key”, Jan. 2007, p. <http://www.americanprogress.org/wp-content/uploads/issues/2007/01/pdf/rural_energy.pdf> //wyo-tjc]

Local ownership strengthens local and regional economies, yet an increasing proportion of the nation’s renewable energy capacity is absentee-owned. This should change. The vast majority of America’s wind turbines are absentee-owned, which has been the case since the emergence of utility-sized wind turbines in the early1980s. Until very recently, though, America’s biofuels industry was largely locally owned. In 2003, about half of all existing ethanol refineries and perhaps 80 percent of all proposed plants were majority owned by farmers. Today, more than 90 percent of new ethanol production is from absentee-owned plants. The structure of the infant biodiesel industry is also evolving rapidly in the direction of absentee ownership. An absentee ownership structure weakens the link between ethanol production and agricultural prosperity and may also cause long-term problems. Absentee owners of wind turbines, for example, invest largely to make use of the tax benefits, which end after 10 years. Chances are absentee owners will not make the necessary follow-on maintenance investments after these tax benefits expire. Farmers, though, often view the investment as a way to provide ongoing supplemental revenue to keep them, and their sons and daughters, on the land. Farmers invest in ethanol plants for two very different reasons. One is as a hedge against a possible drop in the price of corn. If the price of corn drops, the cost of production of ethanol drops and, all other things being equal, dividends should increase. For every 50 cent drop in the price of corn, on average a farmer may make back 35 cents to 50 cents as a result of increased dividends from his ownership in an ethanol plant. The other reason farmers invest is for dividend income. As indicated above, they have received, on average, 15 percent to 18 percent per year on their investment in ethanol plants. Farmer-owners have largely ignored capital appreciation because their crop ties them to the plant and because they take a long-term view of their biorefinery investments. In fact, when ethanol prices were high last year, private equity investors on Wall Street offered farmers as high as 400 percent more for their shares in ethanol plants than the farmers had paid, yet only two of the 56 farmer-owned ethanol facilities sold out. Wall Street, however, focuses almost entirely on capital appreciation, then seeking to “exit” their investments through the sale of these assets to a wider population of absentee owners. In contrast, farmer-owners of ethanol plants understand the importance of these production facilities above and beyond the opportunity to profit from quick capital appreciation. And local ownership will become even more important to farmers if, as expected, Congress takes three steps to boost renewable energy production mandates by increasing the national biofuels production mandate and enacting a a biodiesel production mandate alongside a federal Renewable Portfolio Standard for electricity. With such production mandates in place, there would be much less justification for financial incentives. Yet a justification for tax incentives for production would continue to exist, especially if they were designed to achieve qualitative objectives that help the economies of local rural communities. In designing these tax incentives, Congress could take a page from Minnesota’s playbook. In the mid1980s, Minnesota transformed its partial state gas tax credit paid to blenders of ethanol and gasoline into a direct payment of between 13 cents and 20 cents per gallon to ethanol producers. To qualify for the incentive the ethanol had to be produced inside the state. This married the public incentive to a public purpose, spurring rural development. What’s more, Minnesota decided that only the first 15 million gallons produced each year would receive a payment. This encouraged many ethanol facilities rather than a handful of very large ones, which in turn enabled local ownership. Payments to any producer ended after 10 years. This reduced the ongoing burden to the state taxpayer. The redesign of Minnesota’s incentive ushered in what came to be known as the Minnesota Model— more than a dozen largely farmer-owned, small- and medium-scale biorefineries. The benefits have been very important, especially to outlying rural areas. The Chippewa Valley Ethanol Corporation in Minnesota is a good example. CVEC is located in Benson, Minn., population 3,400. The ethanol plant employs 45 full-time workers, with a payroll of more than $2 million. Its 650 farmer-owners have earned, on average, a return of 25 percent on their investment since the plant opened in 1996, generating more than $4 million per year in local dividends. On a statewide basis, a Minnesota legislative auditor’s report found that $3 of additional economic activity was generated for every dollar of state incentives.8 A similarly structured program at the national level through a federally mandated program could well reap equally impressive returns to the nation’s rural economy. A direct payment to producers is a more effective incentive for production since part of the existing incentive is eaten up by middlemen. That’s why it is critical that the producer payment is structured to encourage local ownership. Yet it is equally important that producers qualify for the federal incentive for only 10 years, the same term used for Minnesota’s ethanol incentive, and the federal wind energy incentive. Consequently, Congress should consider the following policy recommendations: Recommendation: Establish a two-tiered, indexed production payment that favors local ownership. Congress should enact tax incentives for both absentee-owned and locally owned biorefineries, but with a higher incentive for locally owned plants. The incentive should also encourage smaller facilities. For illustrative purposes, an absentee-owned plant might be paid 15 cents per gallon for the first 30 million gallons produced each year for 10 years, but a majority local-owned plant might receive 25 cents per gallon. Congress could also insert a recapture provision to ensure that any local owners who sell to absentee investors within a certain time period would have to repay the Treasury the difference in the payment levels they had received as local owners. The plant financing would likely coincide with the term of the producer payments; when the latter ends, the debt is paid off. This would reduce production costs by about 15 cents per gallon, a benefit to the bottom line almost as large as the original tax incentive. Ethanol or biodiesel plants operational by the end of 2008 would be paid the full producer payment, dependent on their ownership status. By that time Congress should have in place a mechanism that indexes the payment to a combination of the wholesale price of gasoline (or diesel) and the wholesale price of corn (or soybeans or cellulose). Again, for illustrative purposes, a full producer payment would be distributed when wholesale gasoline prices are $1.77 a gallon and corn prices are $2.25 a bushel—up to a point where the gasoline prices are $2.36 and corn prices are $2.50 a bushel. These prices translate roughly into a compound return on equity to an absentee investor in an ethanol plant of 17 percent to 26 percent, or 20 percent to 27 percent for a local investor. When the combination of gasoline and feedstock prices vary such that the return on equity drops below 17 percent or climbs above 27 percent then producer payments would fall rapidly, perhaps reaching zero when the ROE climbed above 35 percent. Another way to do this would be to establish a set return on equity as a benchmark and then establish a formula based on oil and corn prices.9 This sliding public subsidy for ownership and return on equity is both equitable to the ethanol producer and equitable to the taxpayer. And it offers far more to rural areas than the current incentive design. This redesign could reduce federal subsidies even if ethanol production triples. The incentive itself, at 15 cents and 25 cents per gallon, is less than half the current 51 cents per gallon. Currently, about 110 ethanol plants produce about 5 billion gallons. All are eligible for the existing incentive. Under the new design, only 30 million gallons per plant, for a total of 3.3 billion gallons, would be eligible. Thus, the overall budgetary burden would drop by more than two thirds. The reduction would be even greater if oil prices remain very high and feedstock prices moderate. Moreover, the incentive’s duration per plant is only for 10 years. Recommendation: Establish a two-tiered, wind-energy producer payment that favors local ownership. Minnesota’s experience might again help inform policy makers. In the late 1990s, Minnesota created a producer payment for locally owned wind turbines similar to that offered ethanol facilities—a 10year producer payment to facilities under a certain size. Local is defined in the statute. In 2005, the state stopped paying the incentive from the general fund, thus avoiding biennial budget battles, and established a utility tariff that encourages locally owned wind enterprises. It does this by front-loading payments. Although owners receive the same amount of money over the life of the contract, they receive a higher payment in the early years, which helps cash flow.10 Currently there is about 200 MW of so-called Community Based Energy Development wind projects in Minnesota. By 2010 an anticipated 800MW will be on line. Congress should offer a higher 10-year payment to majority locally owned wind-turbine enterprises than it does to absentee-owned turbines, perhaps in the range of 2.5 cents per kWh. Local might be defined as investors living within 75 miles of the wind turbine. The tax credit should be made refundable. Recommendation: Allow on-site wind turbines that serve on-site demand to be eligible for the federal wind energy producer payment. Congress should also revise the existing production tax credit for wind by making on-site generation for on-site use eligible. Currently, the production tax credit is eligible only for wind energy sold into the commercial grid system. Wind energy consumed on-site has the same, or an even superior, impact than the same amount of wind energy exported into the grid. Congress should allow these turbines, which would usually be much smaller than existing utility sized turbines, to be eligible for incentives. Recommendation: Broaden the local capital pool available for financing wind turbines by allowing tax credit to be taken against ordinary income rather than only passive income. A proliferation of locally owned wind turbines requires tapping a vastly larger pool of local capital. Currently that pool is limited because of the design of the production tax credit. This credit can only be taken against tax liability from “passive income,” which is defined by the Treasury Department as rental income or income from businesses in which the individual participates only as an investor. Passive income does not include wage income or interest income or farm income. This restriction has forced advocates of local ownership to create complex ownership structures that enable, over the long term, local ownership while attracting large amounts of outside investors with sufficient tax liability from passive income. The arrangement is know as a “flip” structure. The outside investors use all of the tax liability and receive most of the revenue generated from the sale of the wind energy during the first 10 years, and then sell the facility to local residents for a small amount of money in the 11th year, after which all the revenue goes to the local owners. This is a cumbersome arrangement, and middlemen often absorb a significant portion of the federal incentive. Also, national investment pools prefer to invest in large wind farms, which limits the ability of locally owned wind turbines from attracting such financing. If farmers and other local residents were able to use the wind incentive to reduce their tax liability on ordinary income, then the base of potential local investors would grow dramatically.

#### Breaking corporate hegemony over electricity and political life requires the use of market mechanisms to turn the logic of the market against itself. Electricity is a unique site for resistance because it has the potential to shift control of production from corporate domination towards local and direct democracy. Institutional action is the key to hold the door open, otherwise corporate hegemony continues unchecked and crushes local, grassroots efforts

Hess 11

[David J., a professor of sociology at Vanderbilt University, associate director of the Vanderbilt Institute for Energy and Environment, director of tEnvironmental and Sustainability Studies, and director of undergraduate studies for sociology, Antipode, “Electricity Transformed: Neoliberalism and Local Energy in the United States”, p. asp//wyo-tjc]

At this point one might ask an evaluative or normative question. Has the transition to competition in electricity markets in the USA been generally beneficial? In other words, did marketplace competition lead to the promised distributional benefits of lower prices for consumers and increased opportunity for technological innovation and entrepreneurial firms in the power generation industry? Framed in this way, the question becomes a technical one that can only be addressed by economic analysis. The analysis developed here suggests a slightly different level of response: technical answers to the question need to be historically contextualized, so that a positive answer for one period might be countered by a negative answer for another. There is an ongoing dialectic between various forms of hegemonic liberalism and diverse redistributive or protective movements in Polanyi's (1994) sense. Reforms oriented toward redistributive politics (including local socialism, state-level progressive social liberalism, national-level progressive social liberalism, and even early neoliberalism, with its promises of rate reductions for small consumers) become opportunities for long-term subversion and transformation into hegemonic social liberalism or hegemonic neoliberalism (or mixes of the two). However, as the political field is redrawn based on the result of one series of conflicts, and as the hegemonic forms of liberalism reassert themselves, the protective countermovements regroup and find new opportunities for redistributive politics. As the countermovements moved up the geographical scale (from local socialism to state-level utility regulation and then New Deal federalism) only to find reform efforts partially floundering on regulatory capture and cronyism, the movements have come full circle, at this particular historical juncture, and found new political opportunities for redistributive politics opened at the local and state level. Perhaps in the wake of the Great Recession opportunities will also reopen at higher levels of scale. Furthermore, the answer to the evaluative question of whether electricity market restructuring has been generally beneficial to customers or whether it has been harmful to them is made difficult partly by the variation in the effects of restructuring at the state-government level. The case of California in 2000–2001 is probably the strongest example in support of the argument that neoliberal restructuring benefited the accumulation of wealth by some economic elites at the expense of retail consumers and taxpayers. One needs the qualifying term “some” because at the height of the crisis, the traditional elites in the industry, the IOUs [investor owned utilities], were bankrupt, due largely to market manipulation by Enron and other new players. Partly because of the public revelations that followed the California crisis, the state has also been a site for some of the most interesting innovations that seem capable of combining redistributive politics with shifts toward greener electricity. As I have suggested, although the IOUs [investor owned utilities] in California and elsewhere were able to survive and prosper after the crisis ended, the restructuring process has also opened political opportunities for redistributive politics. By creating institutions, financial products, technologies, and laws that facilitate community and local ownership, reformers have come up with ways to link marketplace restructuring to redistributive projects that favor the transfer of electricity generation ownership to local governments and small consumers. One might argue that the reformers’ vision that links distributed generation to redistributed ownership is anachronistic, because the trend is for economic organizations to get larger and larger. However, the literature in economic sociology has shown that the trend toward industrial consolidation is the product of public policies and corporate strategy, not the natural forces of markets (Fligstein 1990; Perrow 2002; Roy 1997). Furthermore, as I have suggested, the decentralist experiments have often been linked to renewable energy production and energy conservation (see also Blackford 2005; Heiman and Solomon 2004; Pickford 2001). The latter—the savings generated from not purchasing energy—is in many ways the purest form of green energy (not consuming at all) and redistributive transfer of wealth (not paying IOUs [investor owned utilities] and generation corporations for future electricity). As of 2009 such experiments in decentralized energy production have not achieved significant impact on the electricity field; they occupy subordinate positions as successors to the cooperativist and local socialist positions in the field. They can spread and become more influential, provided that the legal and financial arrangements are in place to enable the shift to occur, and the experiments discussed above suggest ways of solving some of the financing problems that plagued earlier generations of local energy production, such as in the appropriate technology and home power movements. One might predict from the history that if financing mechanisms were to become widespread, then the IOUs [investor owned utilities] and other large corporations in the electricity field would attempt to change the regulatory landscape to close down the reforms. From this perspective, a mixed regime of neoliberal market reforms and social liberal regulation provides some protection for economic elites. The avenue of state-oriented intervention is left open as a mechanism for protecting threats to profits that market restructuring can cause by inadvertently opening up political opportunities for redistributive politics.

#### Plan is the only sufficient mechanism to overcome the complexities in complex issues like energy production- fostering increased local deliberation and decision making decenters the status quo discussion of energy that allows the public to resist domination of corporations.

Hayward 09

(Bronwyn, Senior Lecturer at the University of Canterbury, Hypatia, “Let’s Talk about the Weather: Decentering Democratic Debate about Climate Change,” 2009, Wiley Online Library//wyo-mm)

In 2006, Iris Marion Young gave a provocative address to the American Phi- losophy Association (APA) (2006a). There, Young criticized the way theories of deliberative democracy are often applied in planning and policy contexts. She expressed frustration with well-meaning deliberative experiments in which members of a local community are brought together to address envi- ronmental problems. These experiments frequently assume a “centered” view of deliberation, where a “single body” talks together in “a single encounter.” Young expressed concern that these approaches miss the point. Given that our most troubling environmental problems are global or decentered in scale, and the power to address these problems is also diffuse, our responses ought to be decentered as well. In this paper, I continue a conversation with Young and pay tribute to her significant contribution to environmental policy and planning literature. Drawing on the example of climate change, I argue that many difficult envi- ronmental issues are decentered in space and time, involving multiple actors, jurisdictions, and institutions. The complex historical origins of these problems involve past injustices and have consequences that obligate future generations. As a result, local deliberative responses are often inadequate. However, many people want to talk about complex issues at a local level. In my observation, the grounded experience of suffering, anger, or frustration often galvanizes a community into action. I discuss the example of climate change impacts on local New Zealand and Pacific atoll communities. 1 argue that the challenge for deliberative planners and environmental policy analysts is to give voice to concerns of particular communities while also addressing the centering effects of local deliberation, to ensure local talk is not simply a recipe for inaction, exclusion, or irrelevance. I share the concerns of Young and other colleagues who wish to bring dis- persed or dynamic concentrations of power under democratic control (Bohman 2004,2007; Dryzek 2006; Fung 2003; Karpowitz and Mansbridge 2005). At the risk of overstatement of difference, my point of departure with Young is that I argue local deliberation can be a decentering strategy that enables communities to “resist domination” (Bohman 2004), transform understandings, and build “resilience” in the face of climate change (Adger 2006). Young once commented that “a gift should be reciprocated with a gift,” and so this paper is my response to a conversation with her about the role of “thirds” (or others) in deliberation. I am indebted to Young’s reflections on the role of thirds in planning conversations: the people who mediate, bridge, coordinate, network, connect, translate, and work to build empathy. In my experience of local planning and policy making, the actions of others can help community discussion overcome barriers of isolation, exclusion, or irrelevance, for example, when individual actors intervene formally, or informally, to connect local talk with other communi- ties’ discussions. In her 2006 address, Young introduced a concept of ‘linkage’ as a criterion of good deliberation in a decentered democracy (2006a). Linkage describes the mediating role that third parties perform when connecting sites or occasions of discussion with each other. When the conversations of groups and organizations are linked, Young argued, communication becomes more politically efficacious and its outcomes are normatively legitimated. Without such mediated conversations, “a space of public opinion will not consolidate” (2006b, 52). In what follows, I turn first to examine the reasons why Young believed the concept of decentered democracy was so important and to pay tribute to her contribution to planning and policy practice. I then review the criteria Young proposed for good decentered democracy, particularly the concept of linkage. Finally, I consider the issue of climate change in the South Pacific. I argue that multiple linkages among sites of local and transnational discussion can strengthen decentered democracy, transforming local talk into strategies to address injustice, encourage social learning, and build the resilience of vulnerable communities.

#### Localizing ownership of electricity production is a key point of disruption for neoliberal hegemony because it offers a way of enabling a return to cooperativist and progressive economic arrangements

Hess 11

[David J., a professor of sociology at Vanderbilt University, associate director of the Vanderbilt Institute for Energy and Environment, director of tEnvironmental and Sustainability Studies, and director of undergraduate studies for sociology, Antipode, “Electricity Transformed: Neoliberalism and Local Energy in the United States”, p. asp//wyo-tjc]

The restructuring of electricity markets during the 1990s can be viewed as consistent with the neoliberal pattern of deregulation that occurred in the airline, natural gas, railroads, telecommunications, and financial industries. The restructuring was sold to the broader public as beneficial to small consumers because competition would lead to lower rates and thus offer some redistributive benefits (as a result, it is located in the lower right quadrant of Figure 2). The extent to which those benefits were realized varies considerably over time and across state governments. The broader point is that the creation of new markets took place within a broader electricity field that included the diverse ideologies and organizations described above. Thus, it would be a mistake to paint the entire field with the broad brush of a transition to a neoliberal regime; rather, it would be more accurate to say that a neoliberal strand was introduced into an organizationally, institutionally, and ideologically diverse political field. Municipal utilities, rural cooperatives, federal electricity generation facilities, state regulatory commissions, and regulated IOUs [investor owned utilities] remained in place in a field that now included competing wholesalers, retail competition in some states, and a range of other organizational innovations needed to support the new markets. For this reason, the term “restructuring” is more accurate than “deregulation” (Hirsh 1999:293). Within this heterogeneous field, the dominant players remained the IOUs [investor owned utilities], even after restructuring. Their number remained relatively small in comparison with municipal electricity organizations and electricity cooperatives (about 240 out of 3100 in the early 2000s), but the IOUs [investor owned utilities] served about three-quarters of the country's customers. Furthermore, although the restructuring of the electricity industry after 1992 separated generation from distribution and “broke up” the vertical integration of the industry, a decade later the IOUs [investor owned utilities] still generated about 40% of the electricity in the USA. Although there were temporary setbacks (such as during the California electricity crisis), in general the IOUs [investor owned utilities] were able to continue to become integrated into the new regime of mixed social liberalism and neoliberalism (represented schematically by a transition upward and leftward in Figure 2). In the remaining part of this essay, I will argue that the other players of the political field adjusted to the neoliberal change, but in complex ways that subverted, altered, and reconstituted the market-oriented reforms. Just as the transition in the field since the 1980s can only be described in the broadest brush strokes as a shift from social liberalism to neoliberalism, so the various responses, accommodations, and resistances cannot be described as either wholly captured by or wholly resisting an all-encompassing neoliberal regime. The overall political field was always a mixture of ideologies and positions, and if anything that complexity has increased and diversified. Local Subversion and Reconstitution One of the outcomes of the post-restructuring era of electricity in the USA is that the local level of scale has emerged as a site for contesting corporate ownership. This development is consistent with other shifts in scale, both upward and downward, that have occurred in the contestation of neoliberal globalization (Hess 2009; Mayer 2007). In the electricity field, there is some evidence of a reconstitution of the redistributive politics associated with the history of socialist, cooperativist, and progressive, social liberal policies. Other policy changes in the broader energy field, such as regional cap-and-trade policies and the efforts to develop national carbon legislation, are important, but the consideration of the ideological dimensions of such topics would require a separate analysis.

#### Community-owned wind is a key step of pragmatism for opening up investing options that would not be affordable otherwise

Mazza 8

[Patrick, Research Director, Climate Solutions, “Community Wind 101”, Sept, p. <http://climatesolutions.org/resources/reports/harvesting-clean-energy/CommunityWind_101.pdf> //wyo-tjc]

Federal tax incentives including the Production Tax Credit and accelerated depreciation vital to all wind development are not fully usable by many potential community wind projects – This represents a major barrier to local ownership. The key difficulty facing prospective community wind developers is lack of tax liability sufficient to take full advantage of federal tax incentives. These incentives represent a large portion of the financial return of a wind project and generally are needed to make projects of any size under any ownership model economically feasible. To fully utilize PTC incentives for a two MW project, an investor must owe $125,000 in federal taxes on income from the wind project itself or from “passive income.” This is defined as income from a rental property, limited partnership or other business in which they are not actively involved. Fixing the PTC to apply to a broader range of income types and levels could generate widespread community wind ownership – A complementary option is producer payments and other incentives targeted specifically at community wind. Proposals before Congress would allow tax credits to be deducted against income from wages or a business in which the taxpayer is actively engaged. For example, Rep. Tim Walz (D-Minnesota) proposes in H.R. 2691 to allow investors to claim up to $40,000 in tax credits against ordinary income tax liability. The Center on American Progress and the Institute for Local Self-Reliance propose to make the PTC more usable for community wind projects by: Establishing a two-tiered producer payment • that provides greater tax credit benefits to community wind owners in the range of a 2.5 cents/kilowatt hour (kWh) • Providing producer payments for on-site power generation. • Allowing tax credits to be taken against ordinary wages and business income. Congress might also consider providing a program offering financial assistance targeted specifically to community wind projects.