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#### The current mode of renewables production simply tries to create a greened version of economic colonialism by large, absentee corporations. Creating local ownership stakes in wind power is essential to destroy 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.

#### This allows corporate heads, mainstream scientists and media to wield power over all energy solutions, suppressing sustainable solutions. Interrogating these power structures is key to avert numerous scenarios for global catastrophe.

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.

#### Not only does this preclude new and sustainable solutions, but neoliberalism in the technological sector normalizes the elitist structure that 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.

#### And, without sustained citizen involvement, it’s impossible to deal with a host of problems that threaten survival.

Carl Boggs, Professor of Social Sciences and Film Studies at National University, Los Angeles, 2000, The End of Politics, p. 244-245

The disintegration of political life in late-twentieth-century America poses a series of novel dilemmas and challenges that I have tried to illumi­nate in this volume. Many of the social phenomena explored here—meta­physics, the therapeutic culture, localism, deep ecology, urban revolt, and postmodernism, among them—intersect with and reinforce one another. While those intellectual and psychological responses to an increasingly harsh, atomized social order have deep origins in the popular movements of the 1960s and 1970s, the momentum of such responses has not noticably waned throughout the 1990s. Despite their often radically differ­ent constituencies, outlooks, and espoused goals, these modalities all share a profoundly depoliticized modus operandi. As the quagmire of political decay widens, urgent social problems go unsolved. Such problems, from urban decline to technological displace­ment of labor to global ecological crisis, cannot be grasped, much less acted on, without looking at the national and international context of markets, finance, and communications. Yet, paradoxically, the widespread retreat from politics, so often inspired by localist impulses, comes at a time when social agendas that ignore global factors will be, more than ever, reduced to impotence. Localist withdrawal is in fact powerfully rein­forced by the growing remoteness and devaluation of politics (especially state and federal politics) as increasing numbers of people turn away from difficult, frustrating public concerns toward more comfortable, manage­able private ones. Of course, the private realm holds significance as a source of self-fulfillment and as a bulwark against an assortment of out­side encroachments. Yet, by diminishing the life of common involve­ments, we negate the very idea of politics as a source of public good and social transformation.3 In the meantime, it may not be too hyperbolic to say that the fate of the world hangs in the balance. The unyielding truth is that, even as the mood of antipolitics encapsulates more and more of American culture, it is still the vagaries of political power that will deci­sively shape the future of human societies.

#### 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.

#### The current production tax credit 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.

#### Community-owned wind is not possible without the plan—it is key to open 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.

#### 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.

#### 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. But ONLY institutional action can hold the door open. Otherwise, corporate hegemony continues unchecked and will crush local and grassroots efforts

Hess 11

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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.

#### We should not understand this problem as purely requiring a technical solution. Technical solutions alone fail to accommodate the complexity involved in energy problems. Decision making plays a central role in attaining sustainable energy solutions- plan is key to reframing status quo involvement in policies.

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.

#### The complexity of economic and environmental issues like energy make it inevitable that there is a certain nonlinearity in dealing with these solutions- thus, our plan is a significant step in fracturing the hegemonic structures that view energy as a single, unchanged commodity.

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.

#### Transitioning to public deliberation model solves democratization of energy by scaling back profit-mongering companies.

Adams 02

(Jason, B.A. The Evergreen State College, “Popular Defense in the Empire of Speed: Paul Virilo and the Phenomenology of the Political Body,” 2002, <http://heavysideindustries.com/wp-content/uploads/2010/10/JasonAdams_MA_2003.pdf//wyo-mm>)

Thus we can see that for Virilio for as long as technology has been allowed to become ever more autonomous, the deliberative basis on which politics rests has been undermined since it has exempted what is arguably the most important element of public administration from consideration. In order for the political to prevail over the technical then, the meta design of society that results from the introduction of technique must be subjected to open and sustained debate and decision-making processes which directly involve the populations affected by them.15 If this were to take place, he argues, the likely result would be the scaling back of large-scale authoritarian technologies such as nuclear power and the emergence of small-scale democratic technologies such as wind power, which is why it should not be taken from his pessimism about the present that he wants to turn back the clock to ‘Year Zero’, but rather that he would prefer to wait and see what might appear within the context of a society in which science and technology are transformed so as to serve the interest of the public rather than that of the elites who go to such great lengths to protect their autonomy.16 It is for this reason that it is rather difficult to place him within a particular tradition of technological thought since he is both negative about the short term future of technology and positive about its long term potentiality at one and the same time. While on the one hand he agrees with Ellul that the instrumental logic of technology as we know it today has become so pervasive that ours is more appropriately described as a ‘technological society’ than as a capitalist society, since even non-capitalist societies such as the Soviet Union held that ‘communism is socialism plus electricity’ and were thus in many way of a piece with our own, on the other hand he also takes from Heidegger that “we must take hold of the riddle of technology and lay it on the table as the ancient philosophers and scientists put the riddle of Nature out in the open…we must politicize speed, whether it be the metabolic speed (the speed of the living being, of reflexes) or technological speed. We must politicize speed, because we are both: we are moved, and we move. To drive is also to be driven”.17 On order to accomplish this, his suggestion is that citizens should immediately demand meetings with the engineers and technicians in order to really discuss both the positive and the negative implications of what is being brought into existence today, just as the developers of the railway system throughout Europe got together in Brussels in 1888 and came up with the ‘block system‘ to prevent accidents as a result. What was unique in that instance, and what is unheard of today, as Virilio notes, is that “the starting point of the discussion in Brussels was on the negative, on what did not function. Contact switches and signals were devised, and these became the basis of a very sophisticated form f data management. But why are there no conferences nowadays on the damaging consequences of unemployment? On the wrong turns taken by urbanism:? On the obverse side of technical progress?”.18

#### Plan fosters better decision making by bridging the gap between top-down and bottom-up solutions- key to account for the complexity involved in participation and decision-making. Either side of the pure institutional focus and grassroots movement fails to allow for effective deliberation- and makes visible problematic power relations

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(edited by Gwen Ottinger and Benjamin Cohen, Technoscience and Environmental Justice: Expert Cultures in a Grassroots Movement, Chapter 5 “Middle-out Social Change: Expert-Led Development Interventions in Sri Lanka’s Energy Sector, pg 121//wyo-mm)

Highlighting the middle space between top-down and bottom-up approaches to environmental justice serves a variety of purposes. First, it adds nuance to what is otherwise a false duality in thinking about where social change originates: top-down and bottom-up change are, not the only options available. In fact, nearly every social change advocate is located somehow between the top and the bottom of the invoked political hierarchy, and, as Schlosberg (2999, 90) points out, effective accommodation of diverse perspectives (i.e., pluralism) happens “in the spaces between individuals and the state.” Second, the “middle-out” concept reminds us that experts occupy a variety of positions with respect to social change efforts—a central theme of this book. In the one hand, they represent a variety of interests: experts are not always in the service of the elite; many seek to represent marginalized groups. On the other hand, even those experts seeking to “represent” grassroots perspectives rarely do so without attempting to mediate, educate, or by some other fashion shift those perspectives: experts are change agents themselves. Third and most important, if addressed systematically, the middle-out concept directs attention to what I will term the relations of expertise that constrain typical grassroots empowerment initiatives by systematically excluding entire domains of knowledge. This analysis entails a critical orientation to expertise—one that recognizes the potentially productive role expert knowledge can play in serving grassroots interests without ignoring the social power embedded within expertise and, hence, its implications for democratic process. Ultimately, this chapter argues that, to be effective, expert practicing middle-out social change must accommodate the authority of expertise while simultaneously renegotiating how that authority is assigned and acted on by policymakers, other experts, and even grassroots stakeholders. In so doing, they not only operate in the (often unacknowledged) spaces between traditional, top-down expert practices and the grassroots activities commonly associated with the EJ movement; they simultaneously widen and make visible those spaces.