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Environment

Toward Energy Democracy

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Energy systems across the planet are in accelerating transition towards sun and wind sourced production, driven by recognition of the catastrophic threat of climate change (caused by burning fossil fuels) and by the increasing cost advantages of renewable technologies.

As with many other emerging technologies with vast implications for profits and power, a great battle has erupted as to their integration into the productive system â€" under whose control, in whose interests? Indeed the "great game" of the 21st century, this time not between nations but within nations, will not be over control of Middle Eastern crude or any other deposit of plentiful but increasingly costly to exploit fossil fuel.

The battle this time will be rather over sun and wind production â€" centralized or decentralized, corporate top down or democratic.

In the United States, on the one side of the struggle are the corporate energy apparatuses including the Investor Owned Utilities (IOUs), the fossil fuel industry, their financiers, and various state actors (legislatures, regulators, planners that the IOUs have colonized though do not completely control).

Their aim is to maintain a highly profitable centralized system featuring big finance and big IOUs, managing huge production facilities feeding electricity into a new multi-trillion dollar grid, this system slowly replacing fossil fuels with large remote solar and wind farms.

On the other side stand the populist broadly democratic forces of "distributed energy" (DE), often called community energy, i.e. networks of small dispersed sun and wind electricity production units, employing mass-produced off-the-shelf devices — solar panels and wind microturbines, their prices rapidly declining — that can be quickly and cheaply installed by small construction firms.

California already has over 100,000 rooftop solar units. In the DE movement's vision, eventually multiple millions of relatively small local production units will feed into existing grids, hardened and smartened at modest expense and also fortified by adding storage capacity. In that vision the local system will be managed and maintained by local organization; the whole system is to be managed by regional and national confederations of the locals.

DE systems are at the heart of a radical transformation to stop climate change: the promise of a new world from, literally, the ashes of the old.

At first glance, DE forces are no match for the IOUs who generate over 90% of U.S. power to ever growing markets and are gaining responsibility for powering most of the transport industry, thus greatly increasing demand and their capitalization and returns. They're solidly connected in corporate America and entrenched as regulated utilities, big players in nearly every community with friends at every level of government including the regulatory agencies.

Selling a necessary commodity with little demand elasticity, the IOUs are the safest of loans and investments, part of every diversified portfolio. Of all industries they borrow at the lowest rates of interest. In contrast to this Goliath, DE now produces a fraction of one percent of U.S. electric energy, not much of a David.

But appearances can be deceiving. An investor advisory "Rising Sun: The Implications for U.S. Utilities" by Citi

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Research (an "independent" unit of way-too-big-to-fail Citi Bank) contended that (1) solar electricity is growing extremely fast in the United States, driven more by economic advantage than environmental concerns; and (2) investors should be careful about putting money into companies whose technologies might well become obsolete, comparing traditional electricity production to the now dying landline phone business, fast marginalized to near death by emerging technologies. ("Rising Sun" by Citi Research, March 2013, can be accessed at http://www.wecc.biz/committees/BOD/TEPPC/SPSG/Lists/Events/DispForm.aspx?ID=706.)

That same year, 2013, the Edison Electric Institute (the influential association and national lobbyist for the IOUs) distributed a report, "Disruptive Challenges: Financial Implications and Strategic Responses to a Changing Retail Electric Business." (It's free on the Internet and easily readable if you are amused by academic business and policy language.)

This report warned the big private utilities that they were in great danger of entering a vicious cycle to bankruptcy. It begins with erosion of the customer base as homeowers, businesses, churches and community organizations come to realize that they can produce clean environmentally benign energy at less cost per month than their IOU electric bill.

As a result interest rates for the IOUs could quickly rise as lenders came to see the utilities losing customers to the new technologies chiefly solar. Having huge fixed costs, losing customers and paying higher interest on their debt, the utilities would be forced to seek higher prices from generally compliant Public Utility Commissions (PUCs). And the new technologies would gain even greater price advantage, thus accelerating the hemorrhage of customers.

The report concludes by advising the utilities that they must take action to protect themselves.

Battle Lines Redrawn

The DE challenge was not new to the IOUs. For some time they have engaged in defensive skirmishes in state legislatures and PUCs, attempting to defeat or denature and weaken proposals from DE advocates for programs and rules that would encourage development of sun and wind energy.

These battles generally led to compromises that the IOUs found harmless. DE electricity production grew but remained very small; the IOUs remained complacent. But the Edison report, based on research in the expected cost curve of DE and its growth around the world, concentrated IOU attention. Across the country they have gone on the offensive, taking a new tack.

No longer opposed to sun and wind investment, the IOUs have come to describe themselves as fully committed to reducing greenhouse gas emissions by utilizing renewable non-carbon energy sources, and do that in efficient and economically sound ways.

Their plans envision a gradual replacement of plants that could not be converted to clean and green (by, for example, carbon capture and sequestration equipment for coal plants).

In these plans the replacements would be big plants, using diversified energy sources including geothermal, wave, hydro, sun, wind, nuclear and "clean coal and gas" to be chosen for their economy and durability.

This offensive has done fairly well. In some states the IOUs have won legislation and regulation that (a) strangles DE development in a web of bureaucratic requirements and makes it much more costly, and (b) gives the IOUs unchallengeable discretion over entrance to the grid and payment for the electrons offered.

At the federal level the IOUs have won big research grants for carbon capture, nuclear plant design for safety, and planning for an expanded grid.

But for all the power, connections, money and support they are receiving from conservative organizations $\hat{a} \in$ " the infamous Koch machine has prioritized stopping DE, succeeding in Ohio, losing in Arizona $\hat{a} \in$ " the IOU offensive has not landed a knock-out blow. In fact, in many states the IOUs have been unable to stop the DE advance.

Why then is DE continuing to advance? It's because DE-produced electricity is in many areas considerably cheaper than IOU electrons, and people hire firms to help them get through the regulatory barriers that the IOUs have imposed. It's because California's 100,000 rooftops with solar keep pumping out electrons and lowering electricity bills, and the schools, churches, businesses, coops, and individual owners become dedicated supporters, and tell their neighbors who notice the installations.

It's because DE producers and forces are further inspired by the great success in Germany (where renewable energy is now 27% of production, having risen from just 5% ten years ago) and in transition cities across the globe, with some U.S. cities like Boulder, Colorado seeking to emulate that success. It's because DE is researched and championed by multiple research labs and programs, like Stanford's Civil and Environmental Engineering School's Atmosphere/Energy Program.

It's because DE is strongly supported by much of the environmental movement â€" not just those opposing cancer, mercury poisoning and other public health concerns; those seeking to increase mass transit and design walkable livable cities; those working on energy conservation; those promoting sustainable organic agriculture, those with a taste for local healthy food, and more.

It's because DE has manufacturing firms and thousands of small installation firms ready to fight for their livelihoods.

It's because the promise of clean, green and affordable energy is very popular across the United States, particularly for those who see corporate power suffocating democracy, and are excited by DE's potential for local ownership and control. And finally it's because many labor unions and coalitions $\hat{a} \in$ " such as the Blue-Green Alliance and Labor Network for Sustainability $\hat{a} \in$ " understand that DE will ameliorate the climate cisis, create millions of good jobs, greatly reduce corporate power and improve potentials for struggle from below.

The Hope and the Challenge

For the same reasons that DE is a nightmare for the utilities and corporate America, DE represents a great hope for the left. In fact in Boulder, DE forces became the core that organized coalitions, including importantly environmental justice, low-paid workers, labor and poor people's movements, to reconstruct the city toward healthier, democratic and more egalitarian living.

This is no struggle for the impatient. To be sure, as climate science demonstrates climate change could spiral past the point of no return. But international elites, led by the United States and the fossil fuel industries, as well as parts of finance, will not accept a mobilization that would require regulation/control, taxes, public direction, and increased

democratic local organization.

So the responsibility for the left now is to build forces that could contend for political power when the crisis worsens, when the corporate apparatus proves itself unable to effectively respond to global warming and its growing threat to the planet and human life, and when the working class realizes that great change is necessary.

Building that contending force would of course now require much "reform and revolution" political work and action: To support and build local DE installations and forces that demonstrate DE's promise of sustainable production and democratic management. To work in all the movements — environment, labor, social justice — to build consciousness of the common enemy, the threat of climate change, and the DE democratic alternative.

The challenge is to stop the enormous waste of resources and valuable time should the IOUs and fossil fuel interests gain state support for their plans. To build public appreciation of DE, in fact recruiting converts to the movement, at least ready to join the crusade when the crisis comes to a head and corporate and DE forces go into pitched battle. And thus to build a force capable of building the new world in the ashes of the old.

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