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The Case for 'Gray Power'

by LISA MARGONELLI

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The Midwest and South have become the Colossus of Carbon: coal-dependent, with resistance to climate change legislation from the left and the right. Progressives from the region are caught in a dilemma: despite wanting to fight global warming and usher in a green economy, they know that these initiatives act against their region's economic interests. Placing a price on carbon in a state like Ohio, which gets 86 percent of its electricity from coal, hurts its citizens more than those of, say, California, which gets only 1 percent of its electricity from coal.

Then too, the region wonders how "green," as it's currently defined, will mix with its notorious rust. Every dollar of GDP created in Ohio requires the emission of 37 percent more greenhouse gases than the US average, which will make it hard to compete in a green system. Wind and solar, which make sense in the West and on the coasts, are a tough sell in the Midwest, with its relatively placid, gray skies. Even green jobs, which have made a splash elsewhere, cannot keep up with the state's hemorrhaging employment rates. When the Obama administration doled out tax credits for jobs in "advanced energy manufacturing" in early January, Ohio got seven projects--more than most other states. But these are minuscule compared with the nearly 1,200 work sites and almost 107,000 manufacturing jobs the state has lost in the past two years.

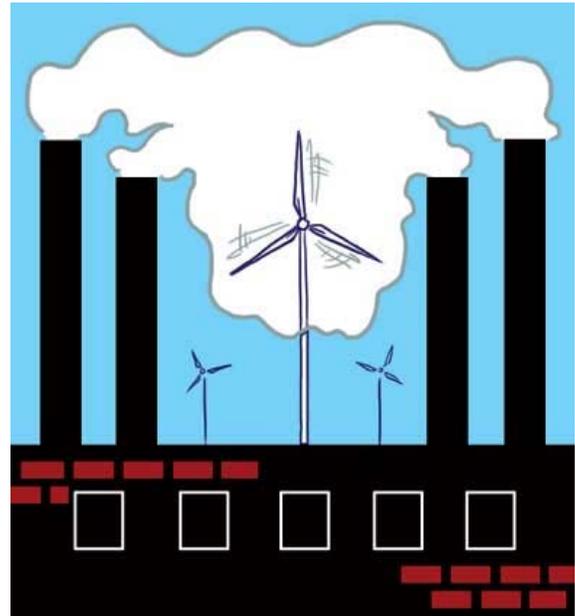
The Midwest and the South do have an abundant supply of untapped, low-cost, low-carbon power--it just hasn't been defined as green yet. The solution to some of the woes of nineteen of these states can be found right in their high-carbon infrastructures: old manufacturing plants, municipalities and agricultural produce waste energy that can be profitably "recycled" onto the grid to create power as clean as that from solar and wind but far cheaper. In fact, energy now lost as steam and gases by the region's manufacturing plants, as well as municipal and agricultural waste, could create as much energy as sixty-nine nuclear power plants, according to figures commissioned by the Environmental Protection Agency. This power could strengthen the region's electrical grid and preserve jobs by making local manufacturing plants more economically stable, while making the region a leader in greener technology. But in order to accomplish this, and steer that potential through the maze of financial and regulatory barriers that currently encourage waste, we'll need to create a federal regional stimulus program, a Clean Power Authority somewhat analogous to the Tennessee Valley Authority.

Smokestacks are the Pyramids of the Rust Belt, both product and symbol of how we built our modern economy on cheap energy. "Fly" over the state of Ohio on Google Earth and you'll find smokestacks ringing its old industrial cities and towns. They stretch high above the 1,600-degree furnaces at Toledo's Libbey Glass. Not far from downtown Cleveland, the massive ArcelorMittal steel mill injects steam and excess heat into the sky in long plumes. In Cincinnati, puffs of vapor hover above the chemical manufacturer Cognis Corporation.

Ohio's ubiquitous smokestacks are a reminder that the state was the Silicon Valley of its time: a fountain of innovation that created the rubber tire industry, the process for making aluminum, even the world's first industrial park and led the way in aviation and oil refining. "This region gave birth to the whole twentieth century," observes Richard Stuebi, a fellow at the Cleveland Foundation, "and now it's being discarded."

Despite having a highly trained workforce, the state has a hard time attracting venture capital for new industry. Ohio rustles up only \$3 in venture funding for every \$1,000 of gross state product it produces, while the US average is \$12. (Innovation leaders like Massachusetts and California get more than \$70.)

All those smokestacks, though, hold the potential for a lower-carbon renaissance. Outfit them to use wasted steam, heat, gases or even pressure to generate power, and the three plants mentioned above could produce between 145 and 285 megawatts of additional generation--roughly as much as a coal-fired power plant--but without adding any new carbon to the air, according to analysis by Recycled Energy Development, an Illinois company. In fact, Ohio has a massive bank account of steam and energy that could be used to generate as much electricity as eight nuclear power plants, according to figures commissioned by the EPA. Ohio industry has



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installed so little cogeneration equipment to put its wasted energy to use that it recovers less than 1 percent of its potential. Locals joke that the state's unused reserves make it the "Saudi Arabia of cogen."

Adding this potential energy to the grid is much cheaper than building conventional power plants. According to estimates by Oak Ridge National Laboratory, recycled generation can be built for about \$1,500 per kilowatt--less than half the cost of central generators that run on coal.

Even though it doesn't add new carbon to the atmosphere, recycling steam from smokestacks feels more "gray" than "green" to most people. Gray electricity would make a powerful booster for a green grid, however, because it can add large amounts of new, low-carbon power to the mix more quickly and cheaply than, say, investing in solar roofs. In East Chicago, Indiana, for example, two steel mills recycled 190 megawatts of waste energy in 2005. That same year their electrical output was roughly equal to that of all the solar photovoltaic power produced in the United States--and that was only for these two plants. According to Recycled Energy Development, recycling waste from just fifty-nine of Ohio's larger manufacturers could yield 3.3 gigawatts of generation--equivalent to more than three nuclear plants.

Installing gray power also reduces costs for manufacturers. An article in *The Atlantic* reported that energy recycling saves \$100 million a year in energy costs at one of these plants. In addition, the plants are able to continue working during summer electricity shortages and brownouts that shut down competitors. These savings enhance the company's bottom line and suggest that state policy-makers could adopt gray power as an aggressive strategy to retain local jobs. Traditionally, state officials have reduced taxes to keep employers, but that is nearly at an end: in Ohio, manufacturers spend seven times more on energy than they do on taxes. Sam Randazzo of Industrial Energy Users-Ohio points out that few Ohio companies are really "competing" against Chinese companies on the price of, say, widgets. Instead, they're competing for investment capital and operating expenses within their multinational corporate family. Local officials have to help local plants make the case that they need money to make improvements and continue to operate. Enabling plants to produce and sell gray power is one way to bolster their performance.

Gray power delivers benefits outside factory gates that could dramatically improve Ohio's economy and environment. A recent report from Policy Matters Ohio estimates that recycling 7.7 gigawatts of generation would require a \$10.5 billion investment in the state. This would pay for itself within three years in energy savings of \$2.9 billion a year. Crucially, it would create 40,000 green jobs. The environmental benefits would be significant: replacing coal-fired power with recycled power would reduce carbon dioxide emissions by 36 million metric tons (equivalent to taking 6.6 million cars off the road).

About Lisa Margonelli

Lisa Margonelli, who directs the New America Foundation's energy initiative, is the author of *Oil on the Brain: Petroleum's Long, Strange Trip to Your Tank* (Broadway). [more...](#)