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More on Green Jobs …

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The great green hope

Green jobs offer new opportunities, but don't believe everything in the sales pitch

By RONALD A. WIRTZ
Editor

Go to certain blustery parts of North Dakota—which is to say much of it—and wind turbines stretch as far as the eye can see. Or at least might someday.

At summer's close, the state had about 840 wind turbines, capable of producing almost 1,300 megawatts of electricity, enough to power close to 400,000 homes all year, according to the state Public Utilities Commission.

But that's just a start. By some estimates, North Dakota has the largest wind-power potential of any state in the United States. Another 6,000 megawatts have been formally proposed to the PUC, but there is wind-blowing capacity for upward of 20 times that figure, according to the American Wind Energy Association.

Many see such expansion as an example of big job possibilities in a green economy, as crews install turbines and maintenance workers keep them spinning, pumping dollars into the local economy. A report last year by Minnesota 2020, an environmental advocacy

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group, claimed that if done right, the wind industry "can create thousands of jobs, [and] revive the economic base of many Minnesota communities hit hard by the recession."

There's just one little annoyance: As a job creator, wind power doesn't pack much punch. For example, the new Prairie Wind development near Minot, N.D., has 77 turbines with a capacity of 115 megawatts. It has eight operations and maintenance employees—about one for every 14 megawatts of capacity, according to figures from Mike Eggl, a senior vice president with Basin Electric Power Cooperative, which operates the facility.

Coincidentally, Basin is building a 300-megawatt natural gas power plant near Elkton, S.D., which expects to employ 31 full-time employees—roughly one worker for every 10 megawatts. It's also building a new 385-megawatt coal-fired power plant in Wyoming, which will employ 80 to 85 when finally operating, or about one worker per 5 megawatts. The coal project will also employ 1,200 during peak construction, compared with about 230 for Prairie Wind, where the peak construction period was also shorter, said Eggl.

"We like wind, coal and natural gas. We don't have a stake in which one has [advantages] over the other," said Eggl. But he acknowledged that there are "significantly more" jobs attached to coal plants on a proportional basis.

Xcel Energy has the most wind-generated power of any utility in the country, yet "it's really hard to quantify" the effect of the green movement specifically on company employment, said Beth Chacone, environmental policy manager for Xcel. "I know [the green economy] gets a lot of press, but we're not sure there is job creation."

If that surprises you, you're not alone. The push for a cleaner, less carbon-intensive economy has brought with it a widespread, parallel argument that it will usher in a wave of so-called green jobs—a catch-all phrase that encompasses a variety of jobs related in some way to the environment. During a visit to southeastern Wisconsin in mid-August, President Barack Obama promoted renewable energy and other "cleantech" opportunities that would "lead to more than 800,000 jobs by 2012."

Without doubt, a shift toward alternative energy sources, greater energy efficiency and environmental awareness offers the economy new opportunities to sprout and take root. Given the current economic malaise, many believe the green stars are aligned to deal with carbon emissions and climate change while also kick-starting job creation, which has lagged as the nation climbs out of recession.

In Michigan, a state ravaged by the recession and its dependence on a declining auto industry, a May 2009 report on the future green economy said it provides "a dynamic opportunity to rebuild the state's job base, attract new investment, and diversify the state's economy. We may be at a tipping point of awareness, understanding, and opportunities that a green economy can provide for Michigan's workforce, businesses, and communities."

It seems that almost everyone wants to be connected to green jobs. State and local governments are competing with each other over who is the greenest and how to best promote green jobs. Even the American Petroleum Institute claims that the oil and gas industry has created 1.2 million green jobs during the past decade.

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One of the Minneapolis Fed's congressionally mandated responsibilities is to gather information on the Ninth District economy. The *fedgazette* is published quarterly to share that information with the district, which includes Montana, North and South Dakota, Minnesota, northwestern Wisconsin and the Upper Peninsula of Michigan.

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But the perceived promise and the resulting push for green jobs often lean on figures and other analysis that one might say are color blind. The very definition of a green job is squishy, which makes green-job estimates and projections equally soft and hard to trust. More careful analysis suggests that the net job impact of the green movement will likely be smaller—possibly much smaller—than advocates might have you believe.

This might not be a big deal were it not for the green zeal of public policy, with efforts at all government levels to accelerate the development of green jobs at the local, regional and state levels. Despite the best of intentions to help a dreary employment market, policymakers likely have an outsized view of government's ability to grow—indeed, will into existence—more jobs, particularly green ones.

That doesn't necessarily mean that policymakers should take their green ball and go home. Though some criticize any government role in promoting—some might say forcing—a shift to a greener economy, economic theory offers solid rationale for government involvement when markets fail to properly incorporate all costs—in this case, the societal costs of greenhouse gas (GHG) emissions and other pollution from the burning of fossil fuels.

Effective government policy along these lines—carbon taxes, cap-and-trade permits—might be decidedly less sexy, less "do something" for policymakers and more politically difficult. But such policy focuses on the market failure in question (pollution and GHG emissions) rather than promoting the vague notion of green jobs and lets the market figure out where economic opportunities—and by extension, jobs—lie in the new, greener economy.

(*Editor's note:* This analysis accepts, as a practical matter, the prevailing view among scientists that emissions of carbon dioxide and other greenhouse gases are harmful to the global climate. It does so to analyze the economic and policy responses that have evolved in response to environmental concerns over GHG emissions and other pollution. The Federal Reserve Bank of Minneapolis has no official stance on the continuing debate over climate change.)

Feeling a little green

First, a quick word about green jobs. Their definition is wide-ranging, even unwieldy. Green jobs generally refer to those whose work is focused on using energy more efficiently, reducing waste and pollution, and creating products and services that are environmentally beneficial, or at least more benign than their predecessors. There is some controversy surrounding what green jobs are and, importantly, are not (see article on page 6). But for the moment, set this definitional matter aside.

You don't have to look too far or wide for reports trumpeting the job virtues of green. A June 2009 report from the Center for American Progress and the Political Economy Research Institute calculated that an annual, decade-long investment of $150 billion in clean energy would generate 1.7 million net new jobs. A report by the Conference of U.S. Mayors identified 750,000 green jobs as of 2006 and projected job growth of 2.5 million by 2013 (and 4.2 million by 2038) if the nation adopted a 40 percent renewable energy standard.

More recently, a July 2010 report by the Center for Climate Strategies and Johns Hopkins University projected that 2.5 million net new jobs, $160 billion in added output, and cheaper energy prices could be achieved by 2020 if policies and other measures found in state climate plans were implemented nationwide.

Some reports have also found that green jobs and firms are growing at a faster rate than the overall economy—no small matter at a time of high unemployment and frustratingly slow job creation. Last year, Pew Center on the States found that total job growth in the clean energy sector was much stronger (9.1 percent) from 1998 to 2007 than in the overall economy (3.7 percent).

A green jobs report in Michigan, based on a survey sample of about 360 green-shaded firms, found that 70 firms had been formed since 2005—"a much higher rate of startups than is seen in the overall Michigan economy." Firms in the sample also added more than 2,500 jobs—an employment increase of 7.7 percent—a stark contrast to the average decrease of 5.4 percent in all industries statewide.

Green = envy

That economic promise, mixed with some desperation from the recent recession, has pushed many governments to aggressively promote, nurture or lure more green jobs.

As the U.S. Conference of Mayors report noted—and others affirm—"The vast majority of green jobs are not location dependent, so future green jobs will be located in cities and metropolitan areas that are currently the most attractive for investment, or in areas

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that actively increase their attractiveness relative to competing areas."

Loosely translated: If we don't do something, green jobs will go elsewhere, and our state (or region or city) will miss out on green economic growth. So policymakers at all levels have been busy pushing for subsidies or other support for green sectors and individual firms in hopes of gaining a foothold in this brave new area of the economy.

A thicket of green policy already exists at the federal level. According to a report last year to the president and Congress by the Committee on Climate Change Science and Technology Integration, more than 300 federal programs and policies were designed to accelerate commercialization and deployment of technologies and practices that reduce greenhouse gases. That doesn't include the federal economic stimulus bill, which has funneled tens of billions of dollars into existing and new programs with green objectives. Nor does it include on-again, off-again proposals in Congress for cap-and-trade limits on GHG emissions.

States also have followed in tow, aggressively writing green policy. In a report last year, the Pew Center on the States found that 46 states offer tax incentives to encourage renewable energy use or greater energy efficiency among corporations and residents; 33 states offer loan financing for energy efficiency; 22 states offer rebate programs for solar energy; 29 states have renewable energy mandates (a.k.a. minimum production thresholds); and 14 states plus the District of Columbia have adopted tougher vehicle emissions standards, following California's high-profile lead.

In the district, Minnesota has been out front in terms of policy efforts to promote green jobs. Two years ago, Gov. Tim Pawlenty unveiled a green jobs investment initiative that included new tax incentives and investment credits worth tens of millions. Said Pawlenty at a news conference, "The development of green jobs will be one of the biggest changes in our economy since the industrial revolution."

State policymakers have fallen in line with that thinking. A January 2009 review by the Minnesota Office of Energy Security found 10 agencies with 74 grant and loan programs designed to advance the growth of the green economy (though to varying degrees among individual programs).

Local governments add a final layer of green policy. For example, in June of this year, the cities of Minneapolis and St. Paul launched Thinc.GreenMSP, a joint economic-development partnership "to retain, grow and attract green-manufacturing businesses and jobs" in the region, according to the program.

The effort combines various policy strategies, including efforts to recruit green businesses and a new financing program to help green firms grow. It also encourages local green purchasing by the two city governments and seeks greener building standards that "create demand for manufacturers, vendors and suppliers of green products and services."

Greenhorn policy

The assumption is that all such policy efforts are useful, even critical, for economies at every level to grab a share of the green-jobs pie, and they'll benefit by doing so. That's questionable, if for no other reason than they might be battling over a smaller green pie than is commonly perceived.

For starters, the common definition of a green job makes for a big tent. Most studies apply some mixture of categories that includes renewable energy, energy efficiency, pollution prevention and clean-up, and natural resources conservation. That sounds reasonable, but the transition from definition to occupation to job counting is more difficult than it might seem and makes counting green jobs more of an art than a science. Indeed, state and federal labor market agencies are spending millions trying to get their hands around this issue (see article on page 6).

Most people would agree that renewable energy production qualifies as a green job. But things can quickly get subjective. For example, does corn-based ethanol qualify as green given research showing that it has emission and efficiency issues of its own? Manufacturers and installers of geothermal heat pumps would certainly seem to be green. But what if that same plant also produces plain old water pumps—gasoline-powered ones at that? What if a geothermal installer works for a traditional heating and air conditioning company, and geothermal is just a small part of the business?

Or what about mainstream businesses that now are seeing new opportunities just by doing the same thing they've always done? A study by the American

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Bus Association Foundation showed that motor coach travel was the most fuel-efficient mode of transport. Does this fact make a motor coach company—like 80-year-old Jefferson Lines of Minneapolis—a green firm? What about a bus manufacturing plant like the Motor Coach Industries facility in Pembina, N.D.? What if that plant also now makes hybrid buses?

The answers to such questions heavily influence any census of green jobs; the broader the definition, the larger (and softer) the estimate. The Montana Department of Labor and Industry released a July 2009 report on green employment in the state that encapsulates much of the methodological difficulties of green counting. It applied seven definitions of green, including methodologies used by the U.S. Bureau of Labor Statistics, as well as those in studies by peer agencies in Washington state and Oregon. Estimates of Montana green jobs ranged from 4,000 to 22,000, or between 1 percent and 5 percent of total nonfarm employment. "Estimating the number of green jobs in Montana is a process fraught with complications," the report said.

Heavy green thumbs

These measurement idiosyncrasies suggest that bold estimates for new green jobs have a methodological thumb on the scale. Most labor economists—and a few methodologically careful studies—are more conservative in their estimates.

The Minnesota Labor Market Information Office has been formally studying the green jobs issue. "One of the things we're finding is that the [green] share of employment is not a major factor" in the economy, said Steve Hine, LMI director. The agency's research to date has allowed it to start applying the green model to its job vacancy survey. In the most recent survey, less than 2 percent of vacancies "were deemed to be green," said Hine.

Hine said such a conclusion shouldn't be that surprising because "[green] growth areas are not particularly labor-intensive." Wind farms, for example, "are not a good place for labor [creation]," he said. If you don't believe it, go visit one. "You may be the only person around."

And as the (adapted) saying goes, the more jobs change, the more they stay the same. "As a job-creating engine, many of the [green] jobs that will exist in 2020 are already here," said Hine, adding that even some hot new green jobs are not wildly unique. "There's nothing particularly new or different about windmill maintenance. You need to be able to handle tools, climb great heights, work in cold conditions and live in remote parts of the state."

This past June, GSP Consulting released a report on the renewable energy sector in Minnesota on behalf of the Minnesota Renewable Energy Marketplace. It estimated that the state will see jobs in this sector grow from an estimated 59,600 in 2009 to about 64,000 by 2016—nothing to sneeze at given the current job market. But at an annual compound growth rate of 1 percent, that's equal to average job growth in the state from December 1997 to December 2007, when more than 250,000 jobs were added.

Two years earlier, GSP also prepared a green jobs estimate for a Minnesota green task force report and offered a similarly modest estimate: about 53,000 jobs (about 2 percent of private nonfarm employment) in 2006, which the report expected to grow to somewhere between 55,000 and 73,000 by 2020, depending on a variety of policy and market factors. When GSP Consulting released those figures to the committee, "some of the task force members said, 'Is that it?'" said Richard Overmoyer, principal at GSP.

Overmoyer said that the firm takes a "very conservative approach" when it comes to counting green jobs. It involves not only identifying a green type of job, but also looking at market size and share. He believes that there is a lot of overreporting of green jobs because analysis often does not accurately reflect the proportional size of a particular green market. Instead, all jobs in a category are counted as green even if only some are involved in such work. In some analyses, Overmoyer said, "every electrician is green because one installed a solar panel."

Overmoyer said only a small fraction of green jobs are truly new, in the sense that these jobs didn't exist in any capacity in the past. Instead, most green jobs are those that have evolved with some green component or focus. It's difficult to pinpoint exactly when that transition occurs, and even firms don't always recognize that they have green jobs. When researchers ask a roofing products company about the number of green jobs, "they'll be like, 'none,'" said Overmoyer. "But when you ask them how many are involved in manufacturing green products, they'll say, 'Oh, 50.'"

That identity problem is ubiquitous, because green principles apply across industry sectors. Consider the housing market. Dustin Stewart, head of the Montana Building Industry Association, said green building was an emerging market in the state's housing industry, but the recession and the subsequent housing slump stunted that growth.

Yet even when the housing market was healthy, the green building movement didn't really change the nature of the construction business, according to Stewart. The organization continues to run a popular certification program for green building, which has been completed by at least one worker from 60 percent of member firms.

"There hasn't been a whole lot of new jobs created. What I see are existing businesses shifting to include some green aspects," like a builder who can incorporate advanced framing techniques that make homes more energy efficient, Stewart said. "I think that has somewhat been glossed over."

Corner-of-the-eye analysis

Though green might be the way forward, when it comes to employment promises, analysis also has to have the peripheral vision to see economic tradeoffs and their net effect on employment. For example, environmental regulations tend to impose higher costs on consumers and businesses; despite steady cost improvements, renewable energy is still more expensive than conventional power. That doesn't negate the local impact of a wind installation, nor its environmental benefits. But higher energy costs have a dampening effect on jobs overall, a fact that tends to be underplayed.

Certain green sectors might also be producing jobs, but the net gain might not be very large. As the Prairie Wind example shows, wind farms do create jobs, but proportionally fewer than similar power plants using fossil fuels. Part of the reason, according to Eggl from Basin Electric, is that "the wind is free," and most of the investment is in upfront capital—the manufacturing of the wind turbine itself.

And, in fact, component manufacturing for wind towers has been growing strongly over the past half-decade. The National Renewable Energy Laboratory has identified 15 plants in the district that manufacture components for the wind industry, most of them opening in the past five years.

That's had a notable effect on employment. In North Dakota, jobs in wind manufacturing doubled to 1,300 from 2006 to 2008, according to data from Job Service North Dakota. The sector lost about 225 jobs last year, but that's expected to rebound this year with a proposed wind tower plant in Bismarck by Schuff Steel, a move that is expected to employ up to 300 workers.

Still, those figures pale next to employment trends in the oil and gas industry in North Dakota. Employment there roughly doubled from 2006 through the end of 2009, despite a significant but temporary drop when oil prices plunged in 2008. At about 5,800 jobs last December, the state's oil and gas industry employed more than five times that of wind manufacturing, and at nearly twice the wage—$80,000 versus $43,400—according to Job Service figures.

In Dickinson, N.D., located in the southern portion of the Bakken Formation, ground zero for oil deposits in the district, "you won't find a lot of people that are down on fossil fuels," said Vicky Steiner, executive director of separate associations for coal-producing and oil- and natural-gas-producing counties. "We're booming while the rest of the country is in recession."

Steiner said oil counties in North Dakota are not necessarily fighting the economic transition, but major economic shifts occur very slowly. "The public thinks the green economy is right around the corner. But it's not as close as people think or want it to be," said Steiner. "The public talks a lot about green energy. … The myth is that the transition is simple. It's not. You need infrastructure in place, and the public is not demonstrating it wants it" at any cost.

"People like low-cost energy, and if [green energy] lowers their standard of living, people won't go for it," Steiner said. "I don't see the sacrifices coming from the public, and politicians don't like making the public unhappy."

Happy green ending?

Add it all up, and those hoping for a green makeover might be disappointed if they are expecting a sea change in how the broader economy looks and acts.

Hine, from LMI, noted that green jobs appear to be the latest in a long line of economic silver bullets—new sectors with clear promise that got exaggerated beyond their real potential. "Ten years ago, high-tech was the ticket to never-ending economic growth," said Hine. Health care, biotech and telecom have also had a turn. These have been important economic developments, but they also have limits. The enthusiasm for green "is not a new thing," he said. "It's a grasp for the next new thing."

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Other sources pointed out that while the green movement will be a contributor to any job recovery, it doesn't yet have the scale to pull the economy out of its job slumber.

Sarah White is a senior associate with the Center on Wisconsin Strategy and formerly of the Wisconsin Department of Workforce Development. White said that green jobs have "tremendous opportunity, and not just for environmental, moralistic reasons." But she added that somewhere along the way, the message of potential job creation, which could be driven by massive public and private investment in clean energy, was mistaken for a promise of actual job creation. "The environmental movement tied the green movement to the jobs agenda without talking to people who understand labor markets," she said.

As a result, "I think in many ways green jobs have been oversold. If people are looking for [a lot of] new green jobs around the corner, they aren't there," said White. "All jobs can and should be greener. But green jobs are not going to solve the structural problem in the job market."

That's because there is an ongoing mismatch between labor skills and demand, but the mismatch is not unique to green jobs, White said. It applies across the economy, and, according to White, the mismatch is particularly relevant among low- and middle-skilled workers. "We don't have people ready for the workplace. … There's not a lack of green skills. Many workers don't have basic skills."

Fix that problem, and you've gone a long way toward fixing the mismatch problem while preparing workers for a rainbow of jobs, not just green ones. It's a myth, White said, that "green jobs are new and different. … There isn't an identifiable suite of new green skills. Most green jobs will involve traditional skills in traditional occupations."

That notion shouldn't necessarily disappoint or deter advocates either. Rather than something completely new and different in the economy, green jobs in many ways have always existed; innovation has regularly delivered new products and processes that are less energy-intensive because it helps firms be more productive and thus profitable.

"Green jobs [are] not necessarily a new phenomenon," said Barbara Wagner, a senior economist with the Montana Department of Labor and Industry and head of a multistate consortium looking at green jobs. "The challenge is to ask how the green movement impacts the long-term functioning of our economy."

For example, Wagner said, "The movement to be more environmentally friendly is changing consumers' preferences and is changing what types of goods are produced in our economy." That's likely to continue, even accelerate, given greater recognition of environmental costs of burning fossil fuels, which Wagner believes is a "long-term trend in our economy."

"Whether or not the trend continues to be labeled 'green' or some other label remains to be seen," said Wagner. "Green jobs have made a number of headlines in the last few years, and some of that attention may fade over time." f