

March 26, 2008

## Millions of Jobs of a Different Collar

By [STEVEN GREENHOUSE](#)

EVERYONE knows what blue-collar and white-collar jobs are, but now a job of another hue — green — has entered the lexicon.

Presidential candidates talk about the promise of “green collar” jobs — an economy with millions of workers installing solar panels, weatherizing homes, brewing biofuels, building hybrid cars and erecting giant wind turbines. Labor unions view these new jobs as replacements for positions lost to overseas manufacturing and outsourcing. Urban groups view training in green jobs as a route out of poverty. And environmentalists say they are crucial to combating [climate change](#).

No doubt that the number of green-collar jobs is growing, as homeowners, business and industry shift toward conservation and renewable energy. And the numbers are expected to increase greatly in the next few decades, because state governments have mandated that even more energy come from alternative sources.

But some skeptics argue that the phrase “green jobs” is little more than a trendy term for politicians and others to bandy about. Some say they are not sure that these jobs will have the staying power to help solve the problems of the nation’s job market, and others note that green jobs often pay less than the old manufacturing jobs they are replacing.

Indeed, such is the novelty of the green-job concept that no one is certain how many such jobs there are, and even advocates don’t always agree on what makes a job green.

“A green-collar job is in essence a blue-collar job that has been upgraded to address the environmental challenges of our country,” said Lucy Blake, chief executive of the Apollo Alliance, a coalition of environmental groups, labor unions and politicians seeking to transform the economy into one based on renewable energy.

Carl Pope, executive director of the [Sierra Club](#), said: “A green job has to do something useful for people, and it has to be helpful to, or at least not damaging to, the environment.”

It can be difficult to parse the difference between green- and blue-collar jobs. Dave Foster, executive director of the Blue Green Alliance, a partnership between the United Steelworkers and the Sierra Club, pointed to workers who mine iron ore in Minnesota and ship it to steel mills in Indiana. “Ten years ago, that steel was used for making low-efficiency automobiles, so those jobs were part of the dirty economy,” he said. “But now that steel is being used to build wind turbines. So now you can call them green jobs.”

But to Andrew W. Hannah, chief executive of Plextronics, a start-up in Pittsburgh, green-collar jobs often have little relation to their blue-collar counterparts. His company produces high-tech polymer inks that are used to make electronic circuitry for solar panels. Of the company’s 51 employees, 20 have Ph.D.’s in fields

like physics, chemistry and material science.

It is hard to gauge the number of green-collar jobs nationwide. Welders at a wind-turbine factory are viewed as having green jobs, but what about the factory's accountant or its janitors? Workers with Sustainable South Bronx, a nonprofit group that plants vegetation to keep the area cooler and reduce air-conditioning demands, would seem to fit the bill. But so would the employees of Tesla Motors, south of San Francisco, who are producing an all-electric Roadster that sells for \$98,000.

In the most-often-cited estimate, a report commissioned by the American [Solar Energy](#) Society said that the nation had 8.5 million jobs in renewable energy or energy efficient industries. And Jerome Ringo, president of the Apollo Alliance, predicted that the nation could generate three million to five million more green jobs over the next 10 years.

Green jobs are especially good "because they cannot be easily outsourced, say, to Asia," said Van Jones, president of Green for All, an organization based in Oakland, Calif., whose goal is promoting renewable energy and lifting workers out of poverty. "If we are going to weatherize buildings, they have to be weatherized here," he said. "If you put up solar panels, you can't ship a building to Asia and have them put the solar panels on and ship it back. These jobs have to be done in the United States."

Many advocates of green employment say the jobs should be good for the workers as well as the environment. Two weeks ago in Pittsburgh, more than 800 people attended a national green-jobs conference, where much of the talk was about ensuring that green jobs provided living wages. Many speakers anticipated that the jobs would do so, because they often required special skills, like the technical ability to maintain a giant wind turbine (and the physical ability to climb a 20-story ladder to work on it).

"These jobs will be better for the workers' future, for their job security," said Ms. Blake of the Apollo Alliance. "These green technologies are making products that the world wants, like energy-efficient buildings and light fixtures."

Not everyone, however, is enamored with green jobs. Take the Competitive Enterprise Institute, a Washington group that opposes state mandates requiring that a certain percentage of power come from renewable sources. Myron Ebell, the institute's director of energy and global warming policy, argues that creating green jobs often does not create jobs on a net basis.

"If you create jobs in wind power or ethanol," he said, "that will take away jobs in other industries," like building and operating conventional gas turbine power plants.

Mr. Ebell suggested that green jobs might not prove to be so great. "There will undoubtedly be a lot of jobs created in industries that are considered green or fashionable," he said. "Some will last a long time, and some will go like the dot-coms."

Twenty-eight states have mandates generally requiring that 10 to 25 percent of their energy be obtained through renewable sources in a decade or two. In response, many companies have rushed to build wind- and solar-power systems, and some are researching how to transform prairie grass into biofuel.

Joy Clark-Holmes, director of public sector markets for [Johnson Controls](#), which manages heating and

cooling systems in buildings nationwide, sees strong job growth in the green economy. Her company's building efficiency business, she said, expects to hire 60,000 workers worldwide over the next decade.

"We see the market for greening our customers as growing," Ms. Clark-Holmes said. She talked of demand for technicians who install and maintain heating and cooling systems, managers who oversee those functions and engineers who develop and design such systems.

With scientists voicing increased concern about climate change, some highly talented people have left other fields to help build the green economy. For instance, Lois Quam, who helped create and run a \$30 billion division of [UnitedHealth Group](#), a health insurer, has joined the renewable energy cause, becoming managing director for alternative investments at Piper Jaffray, an investment bank based in Minneapolis. She is setting up investment funds that focus on renewable energy and clean energy.

"The development of a green economy creates a broad new set of opportunities," Ms. Quam said. "When I first started looking at this area, many people commented on how this will be as big as the Internet. But this is so much bigger than the Internet. The only comparable example we can find is the Industrial Revolution. It will affect every business and every industry."

Mr. Jones, the head of Green for All, joined the green economy after graduating from Yale Law School. He became executive director of the Ella Baker Center for Human Rights in Oakland, using that position to start a program that trains low-income workers in how to weatherize homes and install solar panels.

Mr. Jones calls such jobs green pathways out of poverty. "The green economy needs Ph.D.'s and Ph.-do's," he said. "We need people who are highly educated at the theoretical level, and we need people who are highly educated at the level of skilled labor."

He sees green jobs as providing a career ladder. Some workers might start at \$10 an hour inspecting homes for energy-efficient light bulbs. Then they might become \$18-an-hour workers installing solar panels and eventually \$25-an-hour solar-team managers. Eventually they might become \$40-an-hour electricians or carpenters who do energy-minded renovations.

"Right now we don't have the infrastructure to train a sufficient number of green-collar workers," Mr. Jones said.

As the green economy grows, states are vying for green investments — and green jobs. Pennsylvania has been especially successful, attracting German and Taiwanese companies that are building solar equipment factories, as well as attracting Gamesa, a Spanish wind turbine company. Gamesa has two factories in the state, employing 1,300 workers. Facing pressure from the United Steelworkers, which views the greening of the economy as a way to increase union membership, Gamesa agreed not to fight an organizing drive, and now many workers are unionized.

Pennsylvania's efforts have been helped by the presence of many skilled manufacturing workers in the state and its commitment to having 18.5 percent of its power come from renewable sources by 2020.

"We have gone after this sector first and foremost because the green of the sector is important, because it is the green that goes into the pocketbooks and wallets of workers," said Kathleen McGinty, the state's

environmental secretary. “They are good-paying jobs, jobs that often require advanced skills.”

Jim Bauer, 55, is delighted to work for Gamesa. There he leads a team that assembles parts for wind turbines, earning slightly less than he did at [United States Steel](#), which laid him off from his crane operator’s job after 25 years. Now he earns \$17 an hour in his job, while many assembly workers earn \$13.50 an hour.

“It feels good working for a company that is bringing jobs into the country instead of taking jobs out of the country,” Mr. Bauer said.

He admits to feeling noble doing a green job. “We have to get away from fossil fuels and oil so we can tell the Saudis to take a hike,” he said.

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