

THE POWER OF THE SUN

The search for renewable-energy sources is making clean-tech jobs hot.

BY DANIEL MCGINN

BRAD MOHRING HAD reached a crossroads. Until recently the 31-year-old design engineer had worked for a Toledo, Ohio-based company that builds manufacturing equipment for automobile plants. With the auto industry struggling, he figured it was only a matter of time before he'd be laid off. So this spring he began looking for a new job. In a few weeks he had four offers. Today he could have been working for a giant defense contractor or an established agricultural company. Instead, he chose the lowest-paying job—and became the 20th employee at Xunlight, a Toledo-based solar-energy firm. "I left a job I'd worked at for

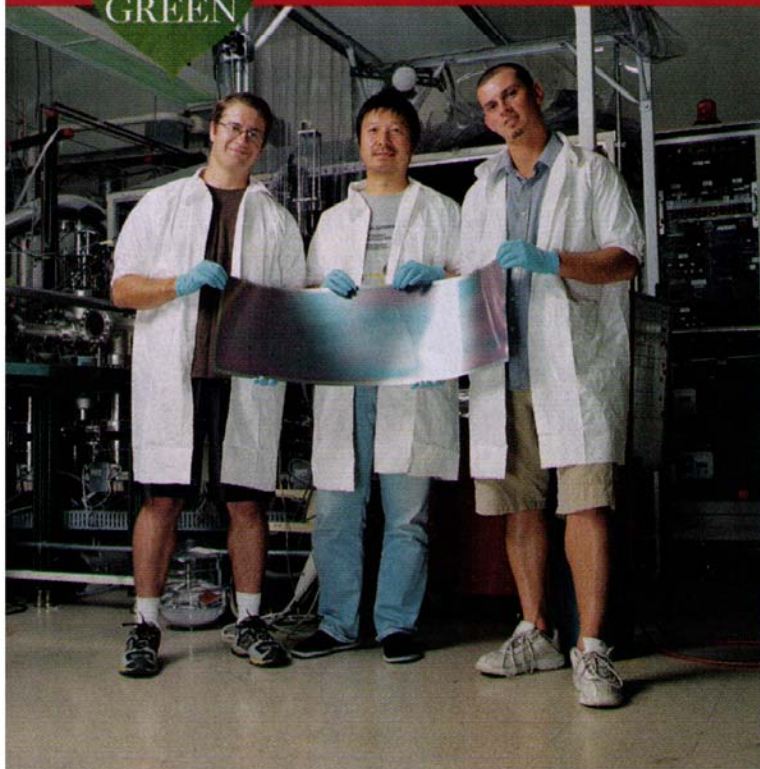
12 years to join a start-up," says Mohring, who has a 1-year-old child and another due in February. "It's something of a gamble, but if it pays off, it pays off big."

It's becoming a common bet. With oil prices near record highs and more companies concerned about their carbon footprints, workers are finding job opportunities in the emerging green economy. Companies are hiring scientists to work on renewable-energy technology and business people to market earth-friendly products. Even if some of these nascent companies falter, there's widespread conviction that this sector will become one of the country's hottest employers. "This is the challenge of the 21st century ... and it's not going away," says Kevin Doyle, founder of the consulting firm Green Economy.

It's impossible to say precisely how many people work in green jobs—partly because there's no formal definition of the term. Does a clerk stocking organic produce at Whole Foods Market qualify? How about an engineer working to make a coal-fired power plant run more efficient-

ly? Meanwhile, in sectors like solar energy and biofuels, payrolls are growing so rapidly it's hard for researchers to keep an accurate count. Despite the lack of precise numbers, all observers agree the ranks are growing quickly. Based on the flow of venture capital, K. R. Sridhar, CEO of the fuel-cell start-up Bloom Energy, believes the clean-tech sector could produce 50,000 new jobs by 2010. (By way of comparison, General Motors' hourly work force, which briefly went on strike last week, currently numbers 73,000.) Peter Beadle, president of Greenjobs.com, cites estimates that the solar sector alone could employ 2 million people by 2020—more Americans than currently work as elementary-school teachers.

During the last decade's dotcom employment boom, much of the job creation was concentrated in Silicon Valley. In contrast, green jobs are popping up all over—some of them in very unexpected places. A good example is Toledo, a rust-belt manufacturing center with no shortage of vacant downtown buildings. Historically, Toledo's big employers have



BRIGHT LIGHTS: Ph.D. students at the Univ. of Toledo holding a solar module (left), First Solar's Todd Spangler (above left) with new hires

been auto factories or auto suppliers—particularly glass manufacturers that make car windshields. But lately Toledo has established a growing national reputation as a hot spot for firms developing solar panels. Why Toledo? Glass is a key component in solar technology, and the University of Toledo has been doing hard-core solar-cell research for two decades. Local economic-development officials recently launched a \$22 million venture fund to help launch more start-ups. The payoff from this combination of forces: according to the local Regional Growth Partnership, the Toledo area already has nearly 6,000 people employed in the solar industry. “We’re seeing this transition of people moving from automotive to alternative energy,” says Steven Weathers, CEO of the Regional Growth Partnership.

Walk the hallways of these energy firms and you’ll meet a fair number of physicists and chemists. But as these technologies mature, they need traditional business people, too. First Solar, a solar-panel manufacturer outside Toledo that employs more than 550 workers, currently has 38 job openings. Some of

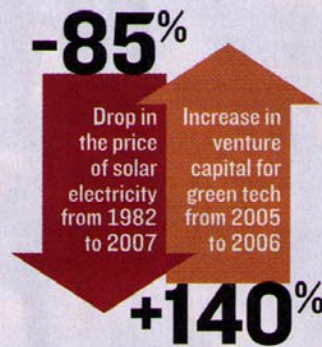
those spots require a Ph.D., but the firm has also been hiring in human resources, accounting and information technology. “Just about every discipline has an opening or two,” says Carol Campbell, First Solar’s HR chief.

On college campuses, students are increasingly aware of these new opportunities. Some schools are adding programs to capitalize on student interest. Last month Duquesne University in Pittsburgh enrolled the first students in its Sustainable Enterprise M.B.A. program. New student Chris Togni, 29, is part of a team consulting with a local retailer on how to reduce the waste created by its reliance on plastic bags—and after graduation he hopes to find similar work at a consulting firm. Togni, the son of a steelworker, believes this focus will make him attractive to employers. “It’s my differential advantage over other M.B.A.s,” he says.

The focus on all things green may be getting a little ahead of itself. Between 2005 and 2006, venture-capital investments in the clean-tech sector jumped from \$623 million to \$1.5 billion, with solar and biofuel garnering the biggest infusions, according to analysts at Lux Research. That’s led to talk of an alt-energy bubble. “From the perspective of investors and entrepreneurs, this is the new Internet,” says Lux Research president Matthew Nordan. Even employees at alt-

energy firms acknowledge that renewable energy has suffered false starts in the past. Still, even skeptics suggest that for young workers charting a career path, the industry’s allure is hard to beat. “It’s virtually impossible to beat the long-term trends in clean tech,” says Nordan.

Inside Xunlight, that optimism is pervasive. The firm, founded by University of Toledo physics professor Xunming Deng, moved into new offices just a few weeks ago. Last week the cubicles still had a pristine, unsullied look to them, and some employees didn’t yet have working phones. The firm hasn’t even made its first sale, but employees say its product—a superthin, flexible solar cell created using sheets of stainless steel—should be in high demand. Within two years, Deng expects to employ hundreds. Many will be twenty-somethings, but there are veterans, too. “The excitement of being in a start-up is the same whether you’re 32 or 52,” says facilities VP Stan Rubini, as he surveys the mammoth empty warehouse in which Xunlight hopes to manufacture more than \$200 million worth of solar cells each year. As fuel costs rise and concern about climate change spreads, investors and employees aren’t the only ones hoping firms like this one find a viable solution. Almost everyone is. ■



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—PETER BEADLE, GREENJOBS.COM

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