

Paving the way  
to a high-potential  
new industry  
for Greater Cleveland

# The Story of the BP Fellowship



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In late 2005, with the last remaining funds from a gift BP made several years before, the Cleveland Foundation created a three-year fellowship – the BP Fellow for Energy and Environmental Advancement – to lead an economic development initiative to increase advanced-energy business activity in the Cleveland area.

In March 2006, the foundation hired Richard Stuebi to serve as the BP Fellow. An executive, consultant, and entrepreneur with 20 years of experience in the energy industry, Stuebi had spent most of the prior decade focused on advanced-energy technologies.

This report summarizes some of the more notable highlights of the work of the BP Fellow and the Cleveland Foundation in providing civic leadership and funding to accelerate advanced-energy commerce in Greater Cleveland.

### **Increasing Public Support**

Many parties in Cleveland and across Ohio have historically been skeptical of advanced energy as an economic development opportunity. These parties viewed advanced energy as a passing fad, or even as harmful to the future health of Ohio's economy, rather than as a possible source of vitality.

Although it would be nice to report that no one in our area thinks that way today, it is safe to claim that fewer of our citizens, companies, and organizations are taking that stance – and the foundation (through the work of the BP Fellow) has been a prominent voice in public venues and private conversations to encourage this shift.

As examples, the Greater Cleveland Partnership – representing the region's corporate sector – has come to identify advanced energy as one of its strategic priorities. Major local corporations such as KeyBank, Parker Hannifin, and Lincoln Electric have significantly stepped up their business activities in advanced energy.

In August 2009, Mayor Frank Jackson convened Sustainable Cleveland 2019, gathering 700 citizens from all sectors of the region – including such prominent Cleveland institutions as the Cleveland Clinic, Case Western Reserve University, and Forest City Enterprises – to begin developing an inspiring vision for the city's economy of the future. Through its utility, Cleveland Public Power, the City of Cleveland is also pursuing a significant waste-to-energy project with promising technological and economic development potential.

The shift in support of advanced energy has been most pronounced in Columbus, as the state has elevated it to be one of the priority sectors for economic development. The Ohio Third Frontier program now invests heavily in research into new technologies with high commercialization potential. The 2008 job stimulus bill included \$150 million in grants and low-interest loans for new advanced-energy projects.

The most important element of Ohio's embrace of advanced energy was the May 2008 adoption of a new energy bill – SB 221. Although SB 221 covered many aspects of energy policy, it crucially included provisions requiring Ohio utilities to obtain 25 percent of their electricity supplies from advanced-energy sources – half of which must be renewable – by 2025, while also requiring significant efficiency investments that will reduce energy consumption by customers.

Before this bill was passed, Ohio was largely an afterthought in the global advanced-energy sector. Advanced-energy businesses focused their activities in other states with policies to spur the emergence of a new market. However, with the new requirements of SB 221, Ohio will host a vibrant market in advanced-energy technologies, providing a catalyst for new economic activity to occur here. Global leaders in the advanced-energy industry have taken note.

The passage of SB 221 was a transformational achievement for Ohio, requiring extensive education and compromise across many parties: legislators, administration staff, and lobbyists. The foundation was a major educator in the debates, providing funding to a variety of parties active in Columbus, sponsoring a study to assess the potential impact of a policy requiring renewable energy adoption on electricity prices, and participating directly via frequent testimony by the BP Fellow.

Surely, forces far larger, broader, and stronger than the foundation or the BP Fellow contributed to these shifts in attitude and action. The confluence of increasing energy prices, heightening concerns about climate change, major economic crises, and new political leadership all have been instrumental in the changes in Ohio's advanced-energy policies and regulations. However, the foundation and the BP Fellow have been widely seen as important forces in the shifts in Ohio's advanced-energy prospects and interests, and they remain committed to publicly advocating continued movement in the direction of more advanced-energy activity.

## **Promoting Technology and Business Innovation**

If the Cleveland area is to return to economic vitality, it must recapture the entrepreneurial spirit it had in the early 20th century, when many of the technologies and businesses that produced the great economic expansion of the last 100 years were created here. And it will have to do so amid rapidly increasing globalization. Immense and fast-growing markets like China represent an opportunity as well as a potential threat for businesses in Greater Cleveland.

Clearly, not all new businesses in advanced energy need to be based on technical innovation and global reach. For instance, the foundation is helping to launch Ohio Cooperative Solar (OCS) in Cleveland's Greater University Circle area. OCS will

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implement energy-efficiency measures and install solar energy systems for large institutional customers to reduce their energy bills and emissions profiles. It will also help Ohio utilities satisfy the renewable energy requirements of SB 221. By deploying advanced-energy products made by others, OCS will create new jobs, especially for underprivileged residents of Greater University Circle.

Still, many of the best opportunities for wealth and job creation in advanced energy in our region will stem from the development and manufacturing of new energy technologies for global markets. Northeast Ohio must generate and seize these types of opportunities for a robust economic rebound to occur.

In turn, making new energy technologies commercially viable requires a combination of research and funding, and both have been insufficient. The foundation has worked to change that.

The foundation has provided \$2 million to JumpStart to make “seed” investments in companies and entrepreneurs developing new energy technologies in the region. The foundation also has vigorously encouraged federal and state government to allocate more money to researching and developing advanced-energy technologies – and in encouraging local, academic, government, and private-sector stakeholders to pursue these dollars more aggressively.

On the research front, the foundation has sponsored several specific initiatives. One example is the development of a solar/wind-powered electrolyzer to extract hydrogen from Lake Erie’s water at the Great Lakes Science Center. Someday, that hydrogen may supply a fuel cell-powered bus to run along the Euclid Corridor.

The foundation also believes Northeast Ohio needs a world-class university to be an engine of innovation, inventing new technologies and spinning them out into the private sector for development into clusters of new job-creating industries. That’s why the foundation has enthusiastically supported the emergence of the Great Lakes Energy Institute (GLEI) at Case Western Reserve University.

University President Barbara Snyder and Case School of Engineering Dean Norman Tien have committed to having CWRU claim a place in the top tier of engineering universities. The strategy is keenly focused on advanced-energy research, particularly in the fields of renewable energy, energy storage, and energy efficiency. The creation of GLEI in late 2007, in part through the foundation’s \$3.6 million founding-grant investment, is a major step in that commitment. The support is already paying off: It helped GLEI win a \$3 million grant from the Ohio Third Frontier program, the state’s innovation and development fund.

## Building a Wind-Industry Cluster

Of all the forms of advanced energy, wind power has emerged as one of the highest priorities for the Cleveland region, in part because it is already a multibillion-dollar global market and is growing rapidly.

The Cleveland area is a natural for the booming wind-energy sector. Our heritage in fabricating, machining, and assembling heavy industrial equipment positions us well to make wind turbines and their components. Our central location – on the banks of windy Lake Erie, and near a vast network of waterways, railroad lines, and interstate roads – gives us logistical advantages. Indeed, the world's first wind turbine to generate electricity was invented in 1888 by Charles Brush and installed on Euclid Avenue. And in the 1970s, most American research on wind-energy technologies was conducted by the NASA Lewis (now Glenn) Research Center based here in Cleveland.

But during the 1980s, the United States turned its eye away from wind energy, leaving it to Europe to advance the technologies and build the markets. As the wind industry began to blossom worldwide in the new millennium, other parts of the nation seized wind opportunities, leaving Cleveland behind.

But Cleveland is catching up. Along with our civic partners, the Cleveland Foundation has a three-pronged agenda to make our region a center of the North American wind industry:

- Attracting wind-turbine manufacturers
- Preparing the region's manufacturing base to supply the wind industry
- Charting a course toward offshore wind farms in the Great Lakes

Because of these three initiatives, the global wind industry is taking much greater notice of the Cleveland area.

The foundation has led or supported several efforts to attract wind-turbine manufacturers to locate their next facility in Northeast Ohio. The BP Fellow has traveled to Germany, Spain, and China to pitch Cleveland as a foothold in the North American market. With the passage of SB 221, wind-turbine manufacturers are giving our region increasing consideration. The Ohio Department of Development, Team NEO, the Cuyahoga County Department of Development, the City of Cleveland, and the foundation continue to court multiple manufacturers.

Thanks in large part to the work of the Great Lakes Wind Network (GLWN), which the BP Fellow and the foundation helped to create, the wind industry increasingly recognizes Cleveland as “ground zero” for the North American wind

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supply chain. Every month, often hosted or helped by the GLWN, wind-turbine manufacturers from around the world are visiting Cleveland to strike deals with regional suppliers.

As a result, for wind turbines made in North America, a large share of components originates from our region. The American Wind Energy Association, the U.S. trade organization, now views the GLWN as the leading resource in the North American wind supply chain.

Regarding offshore wind opportunities, the BP Fellow was a core member of the Great Lakes Energy Development Task Force, chartered in August 2006 by Cuyahoga County to investigate the possibility of developing the world's first freshwater wind farm in Lake Erie. The work of this task force, documented in an extensive feasibility study largely funded by the foundation, should help Cleveland become the leading center for offshore wind in the Great Lakes. This work has spawned a new nonprofit organization, the Lake Erie Energy Development Corporation (LEEDCo), to coordinate a regional effort for Northern Ohio to install offshore wind generation.

LEEDCo is now in serious discussions with several private-sector parties to develop a modest-sized pilot project in Lake Erie that could lead to larger projects and, eventually, new manufacturing, installation, service, and marine opportunities for our local economy.

All of these reinforcing efforts in the wind sector – substantially propelled by the foundation – are starting to pay dividends. At the 2009 wind power conference and exhibition in Chicago, the foundation hosted an evening reception for the State of Ohio, presided over by Gov. Ted Strickland and Lt. Gov. Lee Fisher. The response from the wind industry was overwhelming. More than 500 attendees from around the world representing manufacturers, suppliers, and developers gathered to celebrate Ohio's now-pivotal position in this promising industry of the future.

## **Ensuring Further Strides**

The foundation has achieved some successes in its advanced-energy work. At the same time, we cannot be satisfied: Progress has not occurred quickly, nor has it gone far enough. Much work remains to be done for Northeast Ohio to continue to strengthen its position in advanced energy.

When launching the BP Fellowship in 2006, the foundation intended to provide a springboard, not a permanent home for the region's efforts in advanced energy. For the work to achieve the broader scale necessary to transform the region, concerted advanced-energy activity must take root in many companies and organizations, with each adding muscle and capabilities to the task.

In mid-2008, NorTech committed itself to a major role in the advanced-energy sector as part of its overall mission of technology-based economic development for the region. A highly valued partner of the foundation, NorTech worked closely with the BP Fellow to define that role. That work resulted in the September 2009 launch of NorTech Energy Enterprise, a collaborative regional effort to drive growth across all sectors in advanced energy.

NorTech Energy Enterprise offers Northeast Ohio a more organized approach with greater resources promoting regional commercial activity in advanced energy.

NorTech Energy Enterprise will be the region's "center of gravity" for advanced energy – the primary connector, convener, and communicator for the sector. It will coordinate and lead selected advanced-energy projects with potential for jobs and major economic impact in Northeast Ohio.

Even though the BP Fellowship at the Cleveland Foundation has ended, Richard Stuebi continues to support the overall goals and progress in advanced energy that the region has made during his tenure as the BP Fellow.

He continues to represent the Cleveland Foundation as a founding principal in NorTech Energy Enterprise, coordinating the region's efforts to generate advanced-energy investments. For example, at NorTech, Stuebi is heading up work to launch the new LEEDCo organization that will build the offshore-wind sector in the region.

He also has joined the Cleveland-based venture capital firm Early Stage Partners as a managing director to target the firm's investments in promising local startup companies developing new energy and environmental technologies.

Consequently, Stuebi will continue to drive the region's advanced-energy agenda in civic and private capacities.

Meanwhile, the foundation remains committed to spurring economic development, environmental improvement, entrepreneurship, global engagement, and education through advanced energy in Greater Cleveland. We look forward to continuing our important work in advanced energy, together with our friends and colleagues, in our cherished community.

***The foundation remains committed to supporting the activities of its nonprofit partners in spurring economic development, environmental improvement, entrepreneurship, global engagement, and education through the expanded pursuit of advanced energy in Greater Cleveland.***



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