

In separate video testimonials, Peter Bartholomew and Julia Harris describe how air pollution has affected their health. For Peter, diesel emissions from school buses aggravated his asthma, while Julia and her family believe that industrial pollution contributed to her developing childhood leukemia.



# AIR TIME

FROM FACEBOOK ENTRIES AND TWITTER FEEDS TO TEEN ENDORSEMENTS AND MOVIE-STAR VOICE-OVERS FOR TV ADS, THE BREATHE PROJECT CAMPAIGN IS PULLING OUT ALL THE STOPS TO MAKE SURE CLEANING UP THE PITTSBURGH REGION'S AIR IS A UNIVERSAL MESSAGE. BY JEFFERY FRASER

**P**eter Bartholomew knows air pollution, particularly the effects of diesel exhaust. “I’d get lots of headaches on the way home—only when I took the school bus,” says the senior at the Pittsburgh School for the Creative and Performing Arts.

“And my breathing is bad,” he adds as he sits on his front porch steps. “I have asthma and pretty much half of my friends have asthma.”

Julia Harris also is intimately aware of pollution’s impact, though it has been industrial emissions that have caused the most problems for her. “Soot is always all over my pool and all over the porch and everything,” says the 16-year-old, who lives in tiny Lincoln Borough, which, along with another Pittsburgh suburb, Avalon, is among the communities that have the worst air quality in the country.

A filthy residue blackens her fingertips as she runs her hand along an outside windowsill of her brick house. “My doctors and my family and everybody think the reason why I got cancer is because of the pollutants in the air.”

Some 40 years after the Clean Air Act was signed into law, Pittsburgh’s air still fails to meet several health-based air quality standards that the landmark legislation set in motion. The

teenagers’ stories, which are posted online, convey a critically important message that southwestern Pennsylvania residents have not been receiving, according to surveys commissioned by The Heinz Endowments over the past two years. Video testimonials from Harris, Bartholomew and 14 others are vital components of a new multimedia campaign called the Breathe Project, which is designed to raise awareness of the region’s air pollution issues. The initiative also engages the community in finding ways to significantly reduce pollution from the dangerous levels that have lingered for decades.

“We found in our initial polling that cleaning up the air hadn’t made its way into the public’s consciousness, yet their health was being compromised,” says Robert Vagt, president of the Endowments, which launched the Breathe Project last fall.

The first survey, conducted in September 2010, revealed that most residents didn’t believe the quality of the air they breathe required much improvement. They also didn’t know much about the region’s complex pollution problem, which increases the risk of disease and death, threatens economic development, and stains southwestern Pennsylvania’s proud image as one of the nation’s most livable places.



That early poll made clear that educating the public about the scope of the problem and the risks it poses needed to be the first order of business. Funding independent research that separated up-to-date facts from long-held opinions was a crucial step. But it also became apparent that the Breathe Project had the potential to do much more. Briefed on the Endowments' intentions, leaders of disparate organizations throughout the region expressed interest in coming on board as partners, opening the door for the initiative to serve as a convener of groups and individuals ready to take concrete actions to clean up the air.

Some efforts were already under way, such as the beginning of more than \$1 billion in improvements at U.S. Steel Corp.'s Clairton Plant, the coke-making arm of its Mon Valley Works. And since the Breathe Project started, a more recent survey has revealed that public attitudes about the region's air pollution problem are changing—more residents realize significant effort is required to solve it. Leaders in business and industry, labor, government, health care, philanthropy, environment and education have formed a broad coalition to find the solutions.

"We know there is an important interstate component to the pollution in Pittsburgh. And it makes sense for the community to band together and stand up against pollution blowing across the border," says Conrad Schneider, advocacy director for the Boston-based Clean Air Task Force, a Breathe Project Coalition member. "We also know there is a local component to the problem. Dealing with local issues and holding upwind polluters accountable is a win-win situation. But I don't think you can get there just by having environmental groups and citizen activists clamoring about it. It takes everyone to be on the same page, which is the opportunity a coalition like that provides."

Much of the industrial soot and smoke from coal-burning home furnaces that a century earlier had earned Pittsburgh the dubious title of the "Smoky City" are long gone, and the remaining plants in the area have made efforts to reduce some emissions. But unhealthy fine particle pollution and gases that are not as easily detected by the naked eye or appear deceptively unthreatening remain stubbornly high, creating a widespread problem.

Fine particle pollution, or  $PM_{2.5}$ , consists of various chemical compounds such as sulfates and nitrates, and is created by combustion sources that include coal-fired power plants, coke-making factories, cars, diesel trucks, buses and wood-burning activities. Studies show  $PM_{2.5}$  to be a dangerous and deadly health risk, linking it to developmental problems,

aggravation of respiratory and cardiac diseases, stroke, cancer and premature death.

Another pollutant that bedevils the region is ozone, or smog, which forms when sunlight reacts with gaseous emissions from cars and other fossil fuel-burning sources. Short-term exposure can trigger asthma attacks, and scientific evidence suggests that long-term exposure can lead to reduced lung function, pulmonary congestion and heart disease.

"Both laboratory and clinical research studies reveal that  $PM_{2.5}$  and ozone contribute to the incidence, morbidity and mortality of these disorders. Recent studies have shown that a decrease in exposure to  $PM_{2.5}$  and ozone improves these conditions," says Dr. Deborah Gentile, director of research for the allergy, asthma and immunology division at Allegheny General Hospital in Pittsburgh.

"In my practice, I have had several patients with severe asthma who have seen significant improvement in their symptoms when they have moved from the city to outlying rural areas where the air is cleaner. Also, almost all of my asthmatic patients who exercise outdoors in the city have exacerbations of their asthma symptoms when there are high-ozone days. Several of them have such severe symptoms that they stay in their homes on those days and do not even travel to work or run errands."

Allegheny County exceeds the U.S. Environmental Protection Agency's limits for ozone, and six surrounding counties contribute to the problem, placing all seven on the federal agency's "nonattainment" list. The Pittsburgh region also includes two areas that are designated as not meeting air quality standards for  $PM_{2.5}$ . The larger includes all or part of eight counties. The other, the "Liberty-Clairton" area, consists of five small Allegheny County municipalities near several industrial plants and the Allegheny County Sanitary Authority. The Allegheny County Health Department recently reported that this smaller area has met the annual federal air quality standard for fine particulate matter for the first time. Its average soot level for the three-year period 2009–2011 was 15 micrograms per cubic meter, the maximum permitted to meet the federal standard—set in 1997.

Not only do health scientists consider the requirement more than 15 years out of date, but the EPA's advisory science committee on standard-setting also has recommended a new annual standard set as low as 11 micrograms per cubic meter, a tougher requirement to meet. And the Liberty-Clairton section of the region still exceeds the daily standard for  $PM_{2.5}$ . The daily

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**Joe Osborne** legal director, Group Against Smog and Pollution (GASP)

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**Caren Glotfelty** director, Environment Program, The Heinz Endowments

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**Dr. Deborah Gentile** physician, Allegheny General Hospital

**WE CAN'T FIX  
THIS PROBLEM  
WITH KUMBAYAS.**

**Robert Vagt** president, The Heinz Endowments

If we can't offer [clean air and clean water] to employees we need to recruit to fill the jobs of the future, then we will lose them to those cities that do.

**Andrew Moore** vice president of engineering, Google Pittsburgh

We know that there is an important interstate component to the pollution in Pittsburgh. And it makes sense for the community to band together and stand up against pollution blowing across the border.

**Conrad Schneider** advocacy director, Clean Air Task Force, Boston

**S**urveys of Pittsburgh residents in 2010 revealed that many did not realize the seriousness of the region's air pollution problem. The Breathe Project's media outreach not only raised awareness but also helped to change attitudes by providing documented information about local air quality. The impact was apparent in follow-up surveys last year, which showed more people from different segments of the community believing that cleaner air should be a priority.

**MAKING  
CHANGE  
HAPPEN**

**BEFORE FIRST WAVE  
MEDIA CAMPAIGN**

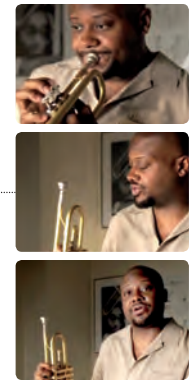
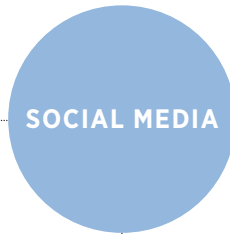
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**PERCENTAGE OF COMMUNITY LEADERS POLLED WHO RECOGNIZE THAT SIGNIFICANT EFFORT  
IS NEEDED TO CLEAN UP THE AIR IN THE REGION**

**AFTER**

**45**

**Social Media** Because air pollution in the Pittsburgh region is a 21st-century problem, educating the public requires 21st-century communication tools. Social media is a vital part of the Breathe Project's public awareness campaign and includes a Facebook page, Twitter feeds and YouTube video testimonials by residents such as jazz musician Sean Jones, who has asthma.



**Engagement and Action** To spread the message that air pollution is everyone's issue, so everyone should get involved, Breathe Project supporters are going to where the people — and the problems — are. On Breathe Day at a Pittsburgh Pirates baseball game in May, Pam Goldsmith, right, collects signatures from Pirates fans interested in joining the Breathe Project Coalition.

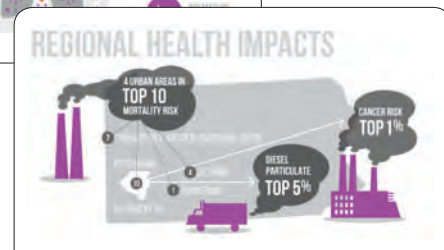
Center, Braddock Youth Project participant Robert Grey, 17, uses a handheld monitor to measure air quality in the Mon Valley area. The Rachel Carson Institute at Chatham University honors the 50th anniversary of Carson's book "Silent Spring," which chronicles the dangers of pesticides, by sponsoring an Earth Day Bike Parade for Clean Air, far right.



Elizabeth Vincent Photography / Jennifer Bales / Joshua Franzos



**Getting the Message Out** Along with social media, the Breathe Project's public awareness campaign includes more traditional media such as print advertising on buses and transit shelters as well as in newspapers and magazines. Also used are broadcast ads on radio and television, such as a commercial highlighting the advantages of raking leaves rather than using a leaf blower. Both social and traditional media direct viewers and listeners to the Breathe Project website, where more detailed information is provided about the air pollution problem, the initiative and opportunities to get involved.



Improving the Pittsburgh region's air quality will depend on collaborations among organizations and institutions as well as individuals. Allegheny General Hospital partnered with the Breathe Project in presenting a summit on asthma and the environment in recognition of May as World Asthma Month. The event was designed to raise awareness of how air pollution, along with other environmental triggers, affects asthma. Local, national and international medical experts joined educators and media representatives to discuss problems and solutions.

standard is important because it helps to limit high day-to-day soot concentrations, which, in turn, reduces peak days. This means that fewer people would be affected by health problems such as asthma and pollution-triggered heart attacks.

The Endowments had already made a significant investment in combating air pollution, having awarded some \$32 million since 1995 to nonprofits who work to improve air quality. By the beginning of this year, another \$8 million in grants had been awarded to fund programs, activities and public messaging through the Breathe Project.

“Air quality resonated [with us],” says Caren Glotfelty, senior director of the Endowments’ Environment Program. “We don’t just see it as an environmental issue. It’s also a quality-of-life issue that affects health, children and the economy. It cuts across all of the things that we care about. We evaluated our air quality grant making and concluded that, while we have had several great nonprofit organizations doing very effective work within their missions and focus, we have not had the degree of immediate impact we need to have.”

In fact, Pennsylvania pollution sources, including emissions from industries, vehicles and residential wood burning, may account for one-half to two-thirds of the  $PM_{2.5}$  monitored in the Pittsburgh region on average. That was among the findings from “Fine Particulate Matter and Ozone Air Quality in Western Pennsylvania in the 2000s,” the Endowments-commissioned study prepared by the Boston-based Clean Air Task Force. EPA estimates suggest sulfur dioxide emissions from Pennsylvania sources—primarily power plants—account for up to 30 percent of the sulfate fine particle pollution in Allegheny County. The Clean Air Task Force’s analysis also reveals that Pennsylvania has lagged behind most other states—including some upwind ones blamed for contributing to the county’s poor air quality—in reducing sulfur dioxide and nitrogen oxide emissions from its power plants over the last decade. As a result, the EPA is calling for Pennsylvania facilities to make substantial improvements, representing nearly one-eighth of the reductions required nationally.

The Pittsburgh region’s chronic air pollution problem has been the topic of hundreds of news stories, scientific studies and high-profile rankings. The American Lung Association’s “State of the Air” annual report has consistently placed the region at or near the bottom nationally in air quality comparisons.

This magazine devoted an entire issue to examining the region’s air quality in 2007. Pittsburgh Quarterly magazine published a series of articles on the topic two years later. And in 2010, the Pittsburgh Post-Gazette published “Mapping Mortality,” an extensive investigation of air quality and health in the region, which found abnormally high death rates for diseases that are associated with air pollutants.

Yet, early Endowments-commissioned surveys showed that air quality ranked low among quality-of-life issues that residents and community leaders felt needed to be improved. Creating jobs, improving transportation and improving schools were seen as greater priorities. Many were not aware that Pittsburgh’s air quality is among the worst in the nation.

There are many possible reasons why the public largely failed to grasp the depth of the pollution problem that air quality monitors across the region accurately and regularly record. One is the lack of visible evidence. Ozone is most apparent when it is a haze similar to a blanket of humidity on a sticky summer day. Fine particle pollution often is not noticeable if people haven’t been educated to look carefully at their environment. Also, the fact that the sky is no longer filled with soot invites the misconception that today’s clearer air is healthful air.

Another explanation is likely rooted in the region’s industrial past when belching smokestacks were associated with mills and factories in full production, ample jobs and a robust economy.

“There is a misperception that we either have jobs or we have clean air,” says Joe Osborne, legal director of Pittsburgh-based Group Against Smog and Pollution, or GASP. “The misinformed notion is that any improvement in the environment leads to lost jobs or harms the economy. It may be natural for a longtime Pittsburgh resident to have that attitude, but it presents a barrier to improving air quality.”

Failure to appreciate the region’s air pollution problem makes building support for solutions more of a challenge. Too often the public has stood on the sidelines as air quality policy became mired in lawsuits and contentious political debate, delaying action to address the nation’s pollution issues.

Pennsylvania, in fact, bears responsibility for poor air quality across the eastern United States, says John Graham, the Clean Air Task Force senior scientist who wrote the Endowments-commissioned report. Emissions data used by the EPA indicate that Pennsylvania power plants contribute 10 percent of the sulfur dioxide emissions nationally, second only to Ohio.



Courtesy of West Penn Allegheny Health System

The six-month, independent research that Graham conducted found that, despite significant improvement in recent decades, western Pennsylvania still has some of the most polluted air in the country, and its residents are at much higher risk for a range of serious health problems. The study also confirmed that much of the region's poor air quality is due to in-state sources, which means that local communities have the power to help reduce pollution.

Those findings, released last spring, led the Endowments to launch the Breathe Project. A website, [www.breatheproject.org](http://www.breatheproject.org), was created as the hub of the initiative's communications network with the public and initiative partners. But to promote a broad-based understanding of the region's air quality issues, an extensive community education campaign was initiated that relies on print and television advertisements to get the Breathe Project's message out to a wide audience.

"What our nonprofits have been mainly doing is pushing the county health department and the Pennsylvania Department of Environmental Protection to do more," says Glotfelty. "None of those groups have focused on how you change the political will or create within the culture of the community the demand that politicians do better with respect to clean air goals. That's a hard thing to do, and it's outside the expertise and comfort zone of most environmental nonprofits."

The first television message was broadcast throughout southwestern Pennsylvania last year. It opened with a panning shot of the Downtown Pittsburgh skyline on a clear blue day and a woman jogging the water's edge in North Shore Riverfront Park as the voice of actress Blythe Danner intoned: "Pittsburgh is a great place to live. But if we could see the invisible pollution in our air, we'd realize the air quality in our region is among the worst in the nation."

Focus groups helped shape the message. They suggested that themes such as regional pride, working together and the region's past success in tackling big problems carried greater appeal than focusing only on the pollution problem or pointing a finger at

the culprits. The initial messages, in addition to stating the severity of the region's air quality issues, made the link between pollution and health, offered that the problems can be solved, and invited people to help solve them. In May, for example, which was World Asthma Month, Allegheny General Hospital and the Endowments co-sponsored a conference about the environment and asthma to raise awareness of this health problem in the Pittsburgh region and discuss ways to address it. Dr. Gentile was among the medical experts—national and international as well as local—who spoke at the event.

The next wave of promotions, which are under way and running through Labor Day week, include a series of catchy, 15-second messages that focus on how individuals and industries can take action that leads to solutions.

In organizing the Breathe Project, the Endowments stepped beyond its traditional grant-making role to directly engage the public and community leaders and recruit them to the cause. The pitch to businesses and organizations was simple: Solving a problem as complex as air pollution requires that all community stakeholders become involved, from leaders of industry to environmental advocates.

"We committed up front to doing good science and good measuring and to not pointing a finger to blame," Vagt says. "The priority was to pull people together and ask them how we are going to make things better."

**R**esponse was swift and positive. Some several dozen organizations had signed on as partners by the time the Breathe Project launched last fall, and the number of coalition partners continues to grow, currently reaching nearly 1,000 individuals and 85 organizations. The initiative also has more than 2,300 friends on Facebook and 600 followers on Twitter.

Joining various environmental nonprofits as coalition members have been the University of Pittsburgh Medical Center, one of the region's largest employers; the Allegheny Conference



on Community Development, a regional leadership organization; PNC Financial Services Group; Duquesne Light; universities; foundations; the Allegheny County Health Department; and U.S. Steel Corp.

“The power of Pittsburgh in general—the way we’ve behaved as a community for decades—is this ability to come together to work on solutions,” says Bill Flanagan, the Allegheny Conference’s executive vice president for corporate relations. “It’s part of the culture, and it was smart to tap into it. That, and the fact the Breathe Project took a constructive approach, encouraged people to become partners, make it happen and try to make things better.”

And having both industry and environmental advocates at the table is seen by some as a major step toward erasing the line in the sand drawn by a traditional rivalry on issues such as air quality regulation.

“It’s huge that U.S. Steel is on the Breathe Project,” says Tom Hoffman, western Pennsylvania director of Clean Water Action. “Maybe we can finally cut through this notion that you can either have clean air or jobs.”

While the breadth and diversity of the Breathe Project coalition is uncommon, business and industry have been willing to work toward improving air quality in other parts of the country. In Texas, the Partnership for Greater Houston managed to rally corporations and utilities around easing the city’s chronic pollution problems, which are not unlike those found in southwestern Pennsylvania. This led to a special task force, which urged among other things support for an air quality improvement plan and new state regulations. Airlines, power companies, railroads and other businesses also took voluntary measures to reduce air pollutants, including investing in gas-fired turbine power plant technologies and fitting diesel equipment with pollution filters.

A similar approach also took place some six decades ago in Pittsburgh. Corporate executives and public officials of that era pushed through the first smoke control laws in the city and Allegheny County to address concern that the dense smoke from mills and coal-burning home furnaces that choked the region were discouraging investment and making it difficult to recruit skilled labor.

Such concerns were recently echoed by Andrew Moore, vice president of engineering of Google Pittsburgh, when he told the Wall Street Journal that the region’s poor air quality poses a “big problem” when recruiting top-notch talent. “If we can’t

offer [clean air and clean water] to employees we need to recruit to fill the jobs of the future, then we will lose them to those cities that do.”

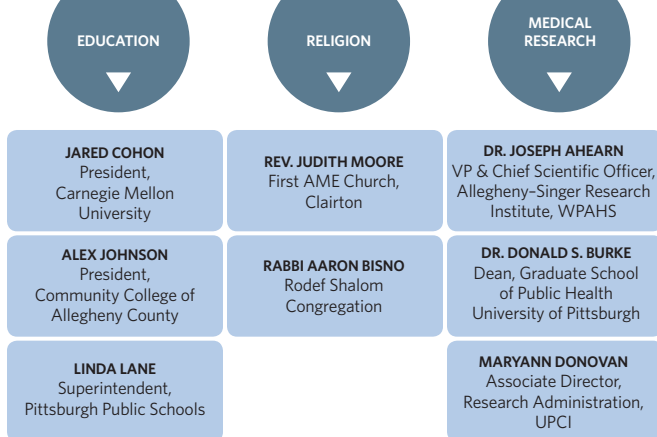
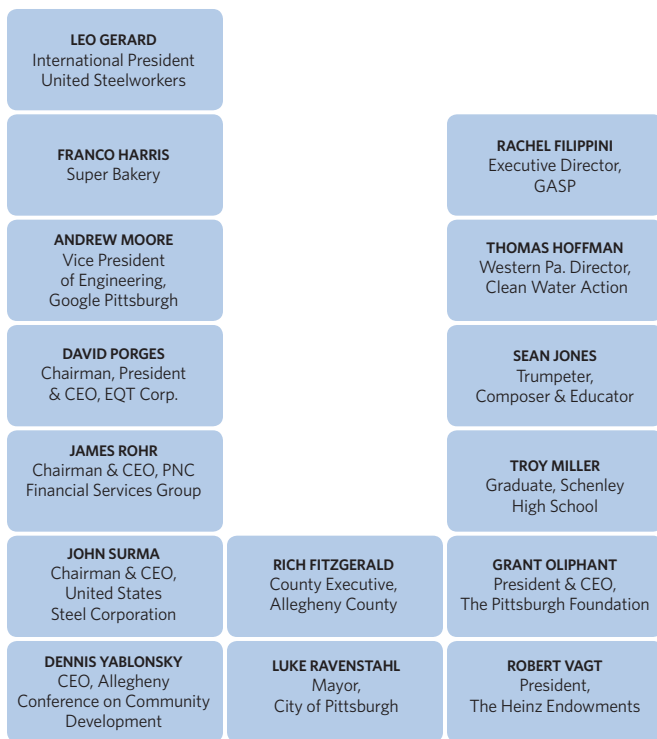
**B**ecause the region’s air quality problem is the result of a complex mix of pollution sources, solving it means addressing them all. Curbing diesel emissions from buses and trucks, construction vehicles, tugs and barges, and other mobile sources is one example. Diesel exhaust contains potent levels of nitrogen oxides and other harmful components of ozone and PM<sub>2.5</sub>, and Allegheny County has some of the highest levels of diesel PM<sub>2.5</sub> in the country, says Graham.

The Endowments has contributed \$500,000 to the Healthy School Bus Fund, which helps retrofit city public school buses with filters that scrub particulate matter from exhaust. Young Bartholomew, after routinely feeling ill when riding the bus to and from school, helped promote the fund and convince Pittsburgh’s public school board to require that at least 85 percent of the school buses serving the district be equipped with diesel particulate filters by June 2014.

Last year, the foundation awarded nearly \$1 million to expand the Small Construction Contractor Retrofit Fund started by the Allegheny County Health Department to help contractors offset the cost of installing similar technologies on their diesel equipment. Also, a grant was awarded in collaboration with natural gas producer EQT to study the feasibility, cost and impact of converting Port Authority facilities to natural gas operations that can accommodate natural gas buses.

Plans call for the Endowments to continue to provide staff and funding for the Breathe Project. But the foundation has turned over broad governance to a leadership group recruited from coalition partners. The Endowments remains willing to support adequate air quality regulation and legal action against recalcitrant polluters, says Vagt. “We can’t fix this problem with kumbayas.”

And there will be no shortage of challenges. The natural gas boom in Pennsylvania, for example, raises concern about the risks to air quality that widespread drilling and processing presents. The EPA recently began investigating whether Marcellus Shale operations are harming the quality of air and water in Washington County, which has more natural gas wells than any other county in southwestern Pennsylvania. For many environmentally conscious observers, emissions from gas drilling and supporting operations are the chief suspects in rising ozone levels



**Breathe Project Leadership**  
 The Breathe Project is guided by community representatives from every sector of the Pittsburgh region. This leadership group has committed to encouraging individual and corporate actions, commissioning research and setting goals that will define future success.

recorded at the South Fayette air quality monitor in Allegheny County, near the Washington County border, at a time when levels are falling elsewhere in the area.

Further complicating the picture is Shell Oil Co.’s plan to build an ethane “cracker” facility north of Pittsburgh in Beaver County, where natural gas compounds extracted from the Marcellus Shale would be processed into plastics and other materials. The plant, which isn’t expected to be constructed for another two years, is anticipated to be a jobs boon for the region. Some have raised concerns about the facility’s possible impact on the environment, but Shell officials told the Pittsburgh Post-Gazette in May that all company facilities are operated in compliance with environmental and health regulations. A state official also told the newspaper that the plant will go through the necessary permitting procedures to ensure it complies with applicable standards.

There has been progress on other fronts, however. U.S. Steel, to upgrade the Clairton facility, is building a coke battery designed to emit far less pollution than the two aged batteries it replaces. The company also is constructing two cleaner quench towers.

The EPA’s new Mercury and Air Toxics Standards, designed to significantly limit toxic emissions from coal- and oil-fired power plants, would address pollution by Pennsylvania’s top offenders, while the Cross-State Air Pollution Rule, unless derailed by lawsuits, is projected to greatly reduce emissions from Midwest plants that blow into Pennsylvania.

As government and some businesses appear to get the message that change is needed, the latest Endowments-commissioned surveys, conducted after the Breathe Project launch, confirmed that more residents and community leaders are paying attention to air pollution issues.

Among the general public, for example, 25 percent of those surveyed from September to December 2011 felt that improving air quality needed “a lot of work” compared to 15 percent who felt the same way in September 2010. Sixty-seven percent of the public believes that air quality regulations are not stringent enough, and the number is growing. Also, 45 percent of community leaders recognize significant effort is needed to clean the air—up from 29 percent who felt that way in 2010.

“There are rational reasons to be cynical about efforts like the Breathe Project. Actions [will] speak louder than words, obviously,” says GASP’s Osborne. “But the right players are involved. They have a constructive, cooperative attitude. And the reality is that the goals of environmentalists, public health and business align in many ways. I have high hopes for it.” *h*