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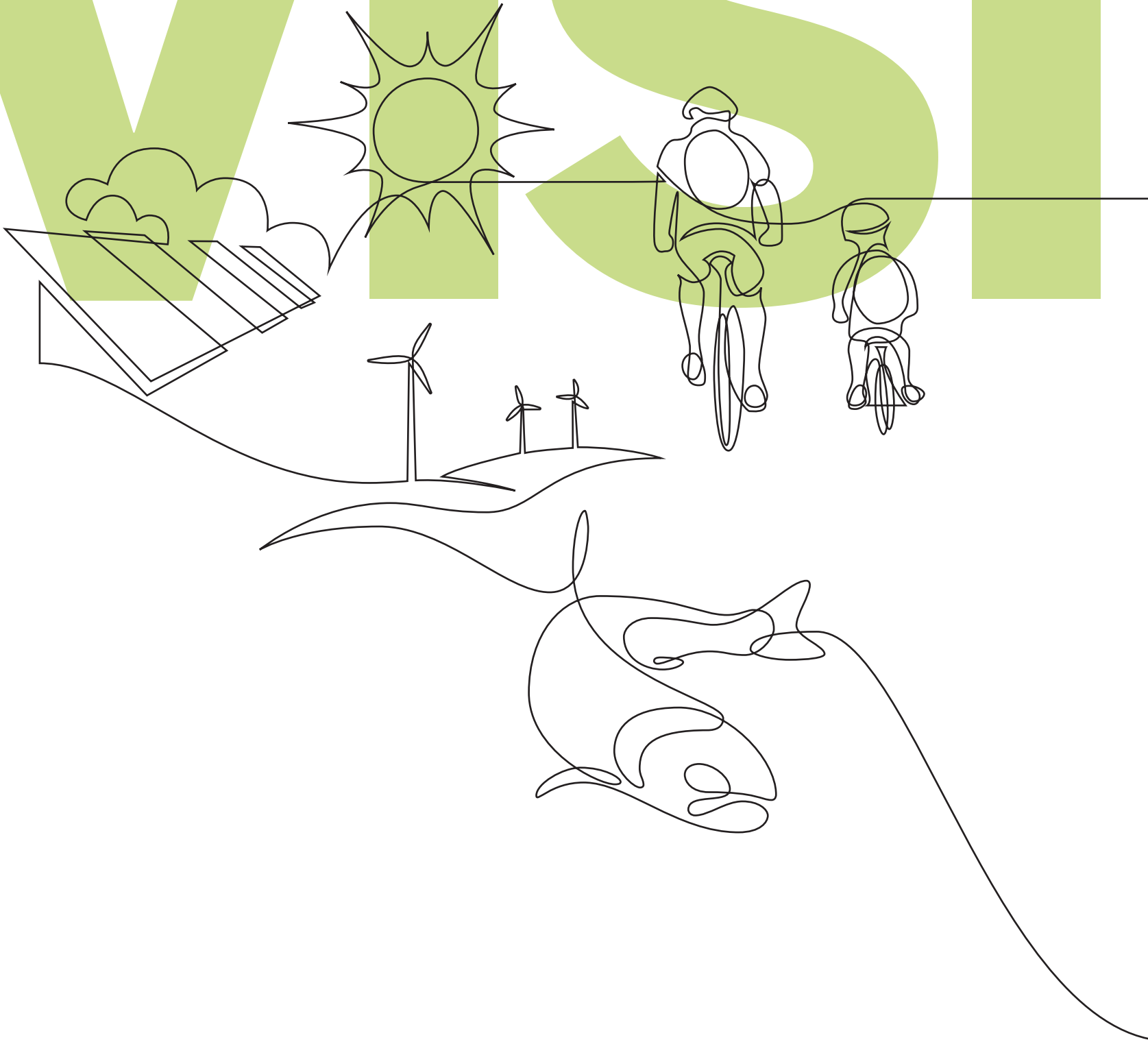

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While advocates for a cleaner environment still struggle to advance a more climate-friendly economy in this country, there are glimmers of change in the Pittsburgh region despite its industrial past and present. By Craig Pittman

Next to the Texas oil patch and the coal mines of Kentucky, the Pittsburgh region may be the hardest place in America to sell the idea of converting from fossil fuels to clean energy.

Blame history and geography. In 1853, Samuel Kier established the nation's first petroleum refinery in Pittsburgh, and six years later Edwin Drake drilled the nation's first oil well in Titusville, about two hours north of the city. Then Pittsburgh's famous steel mills ran for decades on coal from the Connellsville field an hour south.

But Pennsylvania's oil boom ended by the early 1900s. The steel mills mostly closed in the 1980s. In the early 2000s, Pennsylvania became "the Saudi Arabia of natural gas" thanks to the fracking boom — but that boom quickly deflated, and the thousands of jobs promised by pro-fracking politicians failed to materialize or went to out-of-state companies.

The region is still home to the largest coke-producing plant in the country, U. S. Steel Corp.'s Clairton Coke Works, which supports two active mills. The stubborn desire for domestic oil and gas production from shale also has persisted despite disappointing job numbers, well closures and financial losses. However, the volatility of the shale market, especially during the COVID-19 pandemic, has planted seeds of a sustainable energy revolution that are starting to sprout in the rocky soil of the Keystone State.

"It's amazing," said Amanda Woodrum, co-director of ReImagine Appalachia, a coalition of environmental, economic and community leaders and groups. "Clearly there's a hunger for an alternative vision of the future."

Ms. Woodrum speaks enthusiastically of switching shuttered steel mills into manufacturing plants for electric vehicles, mining rare minerals from coal slurry ponds, and rebranding Pennsylvania's and Ohio's Mahoning Valley — long known as "Steel Valley" — as "Voltage Valley."

To make a lot of that happen, though, will require "a significant federal investment," she said, tying the effort to President Joe Biden's infrastructure bill, which passed in November after months of wrangling in Congress. Even before new federal measures are implemented, notable changes have been taking place on the state and local level.

The entire roof of Mill 19 at the Hazelwood Green development in Pittsburgh is covered with 110,000 square feet of high-powered solar panels. The rooftop solar array on the former steel mill site is one of the largest in the country and will produce over 2 million kilowatt hours per year, enough to power the entire existing facility.

Changes in perspective

Three years ago, the Pittsburgh City Council voted 8–0 for a plan to reduce the city's greenhouse gas emissions by 50 percent by 2030. The plan calls for the city to switch to 100 percent renewable energy, convert its vehicle fleet to one that's powered by something other than gas or diesel, and divest from fossil fuel companies.

The eagerness for pivoting away from fossil fuels comes from a recognition that "if we keep to the status quo, we're going to lose 100,000 jobs," explained Grant Ervin, who serves as Pittsburgh's chief resilience officer. "But if we make this switch, we can create 400,000 jobs over a 10-year period across four states."

The job-creation aspect of the switch has attracted a partnership with unions, which have always brought their own political clout to the equation. Although the unions tend to be strong supporters of gas pipelines, "we have not received any pushback… even though we are situated in the middle of oil and gas country," Mr. Ervin said.

What reluctance he's seen, he said, comes from people who fear making a transition to something different from the way things were in the past — even though the practices of the past clearly won't work anymore.

Similar sentiments are coming from smaller communities in the region that need new industry to replace what's disappeared.

In years past, big fossil fuel interests would dictate to those communities what they could have, explained Kelly Yagatich, Pittsburgh regional organizer for the Climate Reality Project, an international advocacy organization.

"Now we're seeing a shift toward communities saying, 'This is what we don't want,' " Ms. Yagatich said. "And in the last couple of years, it's evolved into asking, 'What do we want in our communities?' It's a way of thinking about economic development in a different way."

Obstacles along the path

Pennsylvania used to be at the forefront of the drive toward renewable energy. But then it stumbled.

A decade ago, it was among the top six states in the nation for solar power capacity. In the intervening years, though, other states have caught up with and surpassed it. These days it has fallen to just 22nd out of the 50 states, according to the nonprofit Pennsylvania Solar Center, even though the cost of solar has fallen by more than one-third.

Efforts to boost solar have run into some obstacles. For instance, by a 2–2 vote in June, township supervisors near Gettysburg killed (at least temporarily) a plan by Florida-based NextEra Energy Resources to build 330,000 12-foot-high swiveling solar panels on 1,000 acres of 18 different farms. Neighbors of those farms opposed the project.

Other promising efforts that lost their luster include a state law passed in 2004 that set up percentages for various types of energy that utilities were expected to meet, including alternative energy, said John Walliser, senior vice president for legal

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FUELING A CLIMATE-FRIENDLY economy

Clean energy sources are being used increasingly in Pennsylvania despite its heavy industry legacy. Some business and government leaders at the local and state levels have adopted more climate-friendly practices as part of their operations.


Aerial Aptitude

The South Chestnut Wind Power Project in Farmington, Pennsylvania, nearly 70 miles south of Pittsburgh, has the capacity to generate 46 megawatts of energy with 23 wind turbines. Wind energy generated at South Chestnut is sold to Just Energy and Hudson Energy, leading competitive retail suppliers in Pennsylvania.

Three years ago, Pittsburgh City Council voted 8–0 for an updated climate action plan that included a call to reduce the city's greenhouse gas emissions by 50 percent by 2030. Part of that effort involved beginning a process to switch the city's vehicle fleet to one free of fossil fuel, which resulted in the installation of solar charging stations for the growing number of electrical vehicles.

and governmental affairs at the Pennsylvania Environmental Council, an advocacy and education group.

"That law, at the time, was pretty progressive," Mr. Walliser said. "But that was almost 20 years ago."

Looking back at it from a current perspective, the law wasn't as helpful as it could have been, said Sharon Pillar, founder and executive director of the Pennsylvania Solar Center.

The percentage it set for alternative energy was only 8 percent by 2021, and it includes some things not normally classified as renewable, such as waste coal, Mr. Walliser explained. The percentage allotted for solar was a mere one-half of 1 percent. The state hit those modest goals this year, he said, "so now there's an effort to get the law renewed and extended."

However, the Pennsylvania Legislature is dominated by politicians who are more comfortable with fossil fuel producers than with the cleaner alternatives and have proposed a number of bills reflecting their preferences.

Yet, Ms. Pillar is still hopeful that the Pennsylvania Legislature will act soon to update the requirement so the state can be competitive again because even legislators with fossil fuel ties can see the economic impact of boosting the percentages for alternative energy sources. She said that adjoining states have set far higher goals for alternative energy use. New York, for instance, is going for 75 percent.

"Investors in solar want to come to Pennsylvania," she said, "but those old goals are holding them back. There's an enormous amount of job-growth potential here."

Updating the law would help expand the state's wind power too, she said.

Much of the wind-power industry, which has put most of its power-generating windmills along high ridge lines, has also taken up doing solar, she explained. Both stand to create lots of new jobs in the fields of installation, construction, engineering, sales and financing, she said.

Changing the law would also help meet the goals set by Gov. Tom Wolf in an executive order he signed two years ago: a 26 percent reduction from 2005 levels of greenhouse gas emissions statewide by 2025 and an 80 percent reduction by 2050.

In March, Gov. Wolf unveiled a new clean energy initiative that will set up seven new solar energy arrays totaling 191 megawatts to be built around the state. Together, they will generate nearly half of the electricity needed by state government buildings and facilities — the largest solar commitment by any government in the U.S. announced to date.

Although Gov. Wolf is a proponent of fracking, which has cast a shadow on his climate credentials, he also has been pushing for the state to join the Regional Greenhouse Gas Initiative (RGGI), a market-based collaboration among nearly a dozen Northeast and Mid-Atlantic states. RGGI sets a limit on carbon emissions from power plants, then requires them to purchase a credit to offset each ton of carbon dioxide they emit.

"Climate change is one of the most critical issues we face, and I have made it a priority to address ways to reduce greenhouse gas emissions," Gov. Wolf said in a statement in September after the Pennsylvania Independent Regulatory

Review Commission approved "cap and trade" regulations to limit carbon dioxide emissions.

Legislative leaders, concerned about the impact on the dying coal industry, have resisted Gov. Wolf's call for joining the carbon-trading program. They even passed a bill that would block the state from joining, a bill that the governor vetoed.

Although some state leaders are reluctant to let go of how things ran in the past, more and more Pennsylvanians can see that that's not going to carry the state to prosperity, and cleaner skies, in the future, Ms. Yagatich said.

For example, in a Data for Progress poll released in July by the Ohio River Valley Institute, a regional think tank, a representative sample of Pennsylvania voters expressed concerns about fracking and support for more restrictions on it. Sixty-three to 82 percent supported tighter regulations on different aspects of fracking operations. Only 31 percent wanted fracking to be maintained in the state while 25 percent said it should end as soon as possible and 30 percent said it should be phased out over time. And an overwhelming number of the respondents were concerned about pollution in general, with 86 percent saying they were worried about air pollution and 90 percent indicating concern about water pollution.

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>
> **Sharon Pillar**, founder and executive director of the Pennsylvania Solar Center

"It's very much an uphill battle," Ms. Yagatich said. "A lot of this work is very difficult. But I feel like momentum is building. We're trying to upend the idea that people don't have a choice."

Sean O'Leary, a senior researcher with the Ohio River Valley Institute, agreed. "A lot of people in Pennsylvania are concerned about climate change, but people are also taking stock of what coal and natural gas mean to the state," he said. "They're becoming convinced that the state has gotten a bad deal."

Still Moving Forward

Several major companies in the region have switched their businesses to solar power, including Crayola, Ikea and Johnson & Johnson. Snack maker Snyder's-Lance has hooked up one of the largest solar installations in the state, producing 3 megawatts (MW) of power, according to the Solar Energy Industries Association.

And as of July, Pittsburgh International Airport became the first airport in the world to be completely powered by its own microgrid, which uses both natural gas and solar energy generated on the facility's own property. The airport draws power from nearly 10,000 solar panels and gas from wells drilled on its property to provide 20 MW of energy, well in excess of its current demand of 14 MW.

One of the biggest success stories for alternative energy, Ms. Pillar said, is what's happened at the Mill 19 building in Hazelwood Green. The property was purchased in 2002 by four area foundations, including The Heinz Endowments, which remains a co-owner.

Mill 19 was once home to one of the region's most productive steel mills, employing some 5,000 people. In recent years, though, all that stood there was the 180,000-square-foot frame of the old mill, rusting away.

With funding from the Richard King Mellon Foundation, the Regional Industrial Development Corporation converted the mill into a center for innovation and research with tenants such as Carnegie Mellon University, Aurora Innovation, and the autonomous vehicle company Aptiv and its joint venture with Hyundai, Motional.

Atop the building now are 110,000 square feet of high-powered solar panels that can produce over 2 million kilowatt hours (kWh) per year. It represents the largest solar array in Allegheny County and is the largest single sloped-roof array in the United States.

"What was once a rusty old steel mill is now a model for our region's innovative, cleaner future," Donald Smith, president of RIDC, said when the solar array was switched on last fall.

The places where solar shows greatest promise, though, are in the region's rural areas, according to Ms. Pillar. People are jumping on solar not because it helps battle climate change, she said, "but because it makes economic sense."

"There are hundreds of acres of farms in the region that are now under lease for solar installations," she said. "We've lost thousands of family farms over the last 10 years, but this will help to save them." h