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THE FAILURES OF FRACKING

A new report raises questions about assurances that natural gas from shale fracking would result in multitudes of jobs and economic prosperity for Pennsylvania, Ohio and West Virginia—revealing how the promises appear to be more of a bust than a boom. By Mark Kramer

Mark Kramer is a Pittsburgh-based freelance writer. His last story for h was published in Issue 1, 2020, and examined how the PAServes initiative to connect veterans to local services navigated the COVID-19 crisis as it coordinated support for military members.

WHEN SEAN O'LEARY REFLECTS UPON THE EFFECTS OF THE FRACKING NATURAL GAS BOOM ON THE REGION WHERE HE GREW UP—IN WEST VIRGINIA'S NORTHERN PANHANDLE, NEAR WHEELING—HE FEELS COMPASSION.

As a senior researcher for the Ohio River Valley Institute (ORVI), a regional economic think tank launched by the Johnstown, Pa.–based Community Foundation for the Alleghenies, Mr. O'Leary said he can understand why county commissioners, residents and others responded so enthusiastically some 10 or 15 years ago to industry assurances. Their white papers were full of data and charts promising 44,000 new jobs in his home state alone—on top of 212,000 jobs promised in Pennsylvania and another 200,000 in Ohio, collectively the states covering most of the Marcellus and Utica shale gas fields.

That's not to mention the prospects of royalty checks for the gas extracted from shale rock through the process known as hydraulic fracturing, or "fracking," or the expectation of payment for giving Texas- and Oklahoma-based energy companies rights to lay pipe through residents' land. After witnessing decades of population loss and economic decline in these regions, Mr. O'Leary said he can empathize with people's decisions to open their doors and offer their fields to fracking drillers.

But after analyzing data revealing that the increased use of fracking led to minimum job and income gains in the 22 counties comprising the core of the tri-state region's fracking industry and that residents have continued to move away—results occurring before the pandemic hit last year—Mr. O'Leary is alarmed that many elected officials and residents continue to promote the industry.

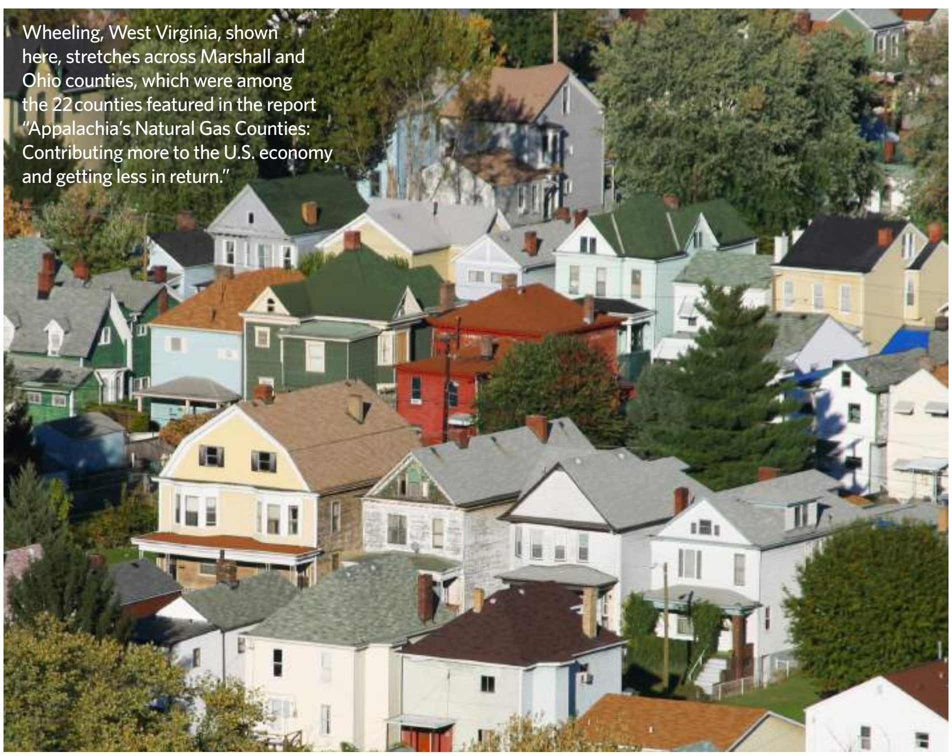
From 2008 to 2019, these counties saw just 5,660 net new jobs in the natural gas industry, a combined job growth of only 1.6 percent, he found. Personal income levels grew more slowly than state and national averages. Population decreased by 3.8 percent.

"While people can support the industry, they shouldn't want to support a bad deal. And that's what they're getting right now," Mr. O'Leary said.

Additionally, several other studies have shown a probable link between fracking and pollution and health problems.

ORVI published Mr. O'Leary's findings in a report released in February titled "Appalachia's Natural Gas Counties: Contributing more to the U.S. economy and getting less in return." The research focused on 22 industrial and rural counties in southwest Ohio, northern West Virginia, and southwest and northeast Pennsylvania. Mr. O'Leary chose these counties because they each accounted for at least 2 percent of their state's natural gas production and derived at least 6 percent of their gross domestic product (GDP) from gas and other extraction industries such as oil and mining. This area, according to the report, "is responsible for over 90 percent of all the gas produced in Appalachia" and accounts for nearly 1 million residents.

For sure, the industry did produce a lot of gas and significantly boosted the area's contributions to the nation's GDP. These counties increased their contribution to GDP by more than one-third, initially increasing production from what ORVI's report describes as "a negligible portion of the nation's natural gas" to nearly 40 percent of it. By 2019, gas wells in Pennsylvania and West Virginia alone pumped out a full 35 percent more gas than even the most optimistic



Wheeling, West Virginia, shown here, stretches across Marshall and Ohio counties, which were among the 22 counties featured in the report "Appalachia's Natural Gas Counties: Contributing more to the U.S. economy and getting less in return."

Steve Stolee

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Ohio River Valley Institute

projections of a 2010 American Petroleum Institute economic impact study, according to the ORVI report.

"It's not that fracking didn't create economic activity," said Andrew McElwaine, The Heinz Endowments' vice president for Sustainability. "The evidence is that it certainly did. The question is, 'Who benefited from the activity?' "

While analyses of the natural gas industry vary in approach, angle and perspective, focusing narrowly on job creation in the tri-state region around Pittsburgh reveals that a high proportion of the fracking jobs nationally were located in other parts of the country.

Research by the late Susan Christopherson, who was a Cornell University professor of city and regional planning, found that during fracking's initial boom, from 2007 to 2012, Pennsylvania did gain 15,114 jobs in drilling, extraction and support industries. Dr. Christopherson, whose work received funding support from the Endowments, determined that during the same period, though, Texas gained 64,515 jobs—more than four times as many as Pennsylvania.

"Texas not only has much of the skilled drilling workforce but the majority of the industry's managers, scientists and experts, who staff the global firms headquartered in Houston," according to Dr. Christopherson's 2015 report.

Also, many of the fracking jobs that were located within Pennsylvania, Ohio and West Virginia were short-lived or went to workers whose permanent residences were out of state.

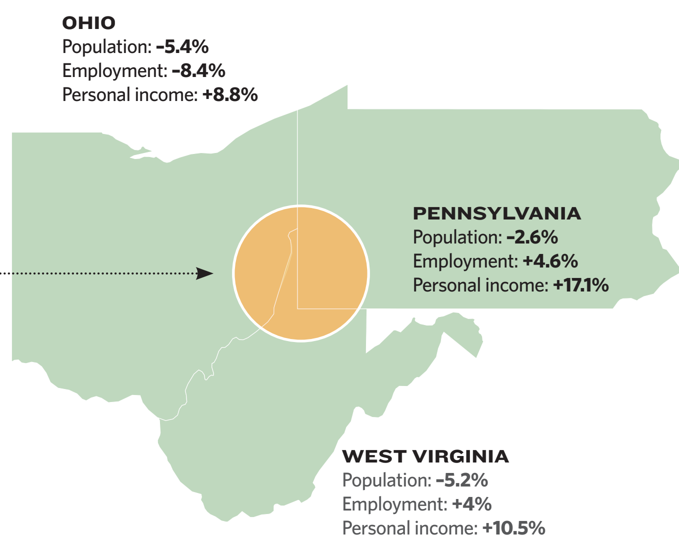
A 2019 report from the Institute for Energy Economics and Financial Analysis, a nonprofit based in Lakewood, Ohio, found that in West Virginia, growth in employment from 2008 to 2017 resulted from the construction of natural gas pipeline but that, over time, "jobs in drilling and related activities have actually declined [and] about 40 percent of pipeline construction jobs are held by out-of-state workers." A series of investigative reports during the early boom years by The Columbus Dispatch examined the large number of transient drilling workers in Ohio and, while noting that the exact number was difficult to calculate, newspaper staff interviewed economists who believed that at least a third of the workforce in Ohio's drilling areas were transient workers.

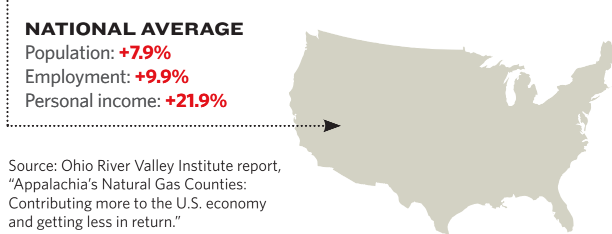
Annie Regan is senior program manager at PennFuture, a Harrisburg-based environmental advocacy group, and campaign coordinator for ReImagine Appalachia, a coalition of individuals and organizations re-envisioning the region's economy. She reflected upon the many conversations she has had with residents in southwestern Pennsylvania about the effects of fracking in their communities.

"I've met a lot of Uber drivers that had worked in the fracking industry," she explained, "and they said that the jobs weren't there anymore, so they had to find work elsewhere."

REALITY CHECK

Despite the promise of hundreds of thousands of jobs from the shale gas industry, the 22 counties comprising the core of the industry in Pennsylvania, Ohio and West Virginia saw a net increase of just 5,660 new jobs from this sector from 2008 to 2019. Outcomes within each state varied, but together the 22 counties experienced a combined job growth of only 1.6 percent and a population decrease of 3.8 percent, while personal income level growth was slower than averages for the tri-state and the nation.





Source: Ohio River Valley Institute report, "Appalachia's Natural Gas Counties: Contributing more to the U.S. economy and getting less in return."

Some industry groups have criticized the ORVI report, suggesting, for example, that the think tank should have used employment numbers from the U.S. Bureau of Economic Analysis, rather than U.S. Bureau of Labor Statistics figures. According to Pittsburgh Works Together, a coalition of union leaders and officials from the manufacturing, steel and energy sector, the total number of new jobs created in the 22 counties is actually 15,641.

Mr. O'Leary countered that federal and state governments use Bureau of Labor Statistics in their job counts and that Bureau of Economic Analysis figures include gig or temporary positions that don't carry benefits or unemployment insurance.

"Those are worthy undertakings; however, they are not jobs in the sense that, if the person doing them chooses to stop, there is no remaining position for someone else to fill," Mr. O'Leary wrote in a blog post responding to critics. He also pointed out that even when including those secondary jobs, the fracking industry generated employment figures far below initial promises of hundreds of thousands of new positions.

And the ORVI report acknowledged that in some counties where the natural gas industry expanded, the employment and income numbers were better than in other areas.

Washington County in southwest Pennsylvania, for example, saw personal income growth slightly exceed the national average and match the nation's job growth. But Washington County was one of only two of the 22 counties in the study to outperform the national average on two of the three measures informing the report: income, jobs and population growth. Mr. O'Leary attributed Washington County's outlier status to its proximity to Pittsburgh, its larger relative size, and larger and more diverse economy, factors that strengthened the county's economic output overall.

As for royalty payments, Mr. O'Leary acknowledged that some households have benefited from fracking, but global oversupply has caused the price for natural gas to drop from a peak of more than $13 per million Btu (a measurement of heat generated by an energy source) in 2005 to hovering around and below $3 per million Btu for the last several years, leading to smaller payouts than anticipated. In fact, in Pennsylvania, for example, depressed natural gas prices resulted in an estimated 40 percent to 50 percent reduction in royalty payments from 2018 to 2020, according to the state's Independent Fiscal Office. Meanwhile, many landowners receiving royalty payments don't live in the region, according to Mr. O'Leary.

The ORVI report also suggested that negative "externalities"—side effects of economic activity—have contributed to a lower quality of life, leading residents to move away. These effects have included air, water and noise pollution, as well as impacts on health and local infrastructure, such as roads damaged by heavy trucks. Mr. O'Leary and others have suggested that the ill effects of fracking may have even deterred investment from other sectors.

Of course, negative health effects are felt most by local residents, while fracking's financial windfalls, as represented in GDP, seem to have been enjoyed foremost by companies and workers outside of the region, according to ORVI's findings.

Dr. Nicholas Muller, professor of economics, engineering and public policy at Carnegie Mellon University in Pittsburgh, and his co-researchers have been working to account for pollution damage and related health care expenses when calculating GDP so as to show the real costs of energy production and consumption. For example, their research has linked air pollution from the fracking industry to 1,200 to 4,600 premature deaths across the northeastern United States between 2004 and 2016, at a cost to society of about $23 billion.

Such measurements reveal the effects of both environmental degradation and pollution mitigation efforts on economic output. When producers install coal scrubbing technology or carbon capture measures, when companies divest from fossil fuels, and when regions decrease their pollution, Dr. Muller's approach to GDP would make it possible to measure those actions as positive contributions to economic growth. In this sense, a more robust GDP measurement could reward industry activity that lessens environmental and health impacts.

"We need to do the best we can to embed those costs in our societal assessment of questions like, 'Is it worth it to pursue these activities?' " he said, "but also when we think about corrective measures like severance taxes on the fuel being produced or downstream taxes when the fuels are consumed."

Looking ahead, the ORVI report claimed that the 22 counties and the region can still get a better deal from fracking. For example, the study said that local leaders can mitigate or at least offset deleterious effects of extraction through more robust taxation, impact fees or other tools that help municipalities keep revenues local. Mr. O'Leary added that policymakers can mitigate damage to the environment by changing zoning setbacks and emissions requirements, thereby more aggressively protecting people's health and the region's quality of life.

"Those are the kinds of measures that I hope people will start looking at and considering," Mr. O'Leary said.

He also championed greater support for energy-efficiency efforts, such as retrofitting buildings to reduce energy waste and installing solar panels on different structures, which he described as projects that tend to create predominantly local jobs and do so at a higher rate per dollar invested than natural gas production does. Additionally, energy efficiency saves households money that can then be spent in their hometown economies.

These and other more sustainable economic opportunities would yield a greater return on investment, unlike the natural gas boom, which "did not have long coattails," he concluded. h