

How Va. pipeline ruling may reshape environmental justice



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A warning sign for the Mountain Valley pipeline is pictured near Elliston, Va., on Sept. 29, 2019. A key facility proposed as part of a 75-mile expansion of the interstate natural gas project has sparked a fight over environmental justice. Charles Mostoller/Reuters/Newscom

ENERGYWIRE | George Thurston wants to change the way the U.S. measures how soot and other air pollutants affect disadvantaged communities.

A leading expert on human health effects of air pollution at New York University, Thurston says low-income areas and people of color are fighting fossil fuel projects like pipelines on an unequal playing field against well-paid, full-time industry consultants.

"I believe that everybody deserves representation," said Thurston, director of NYU School of Medicine's program on exposure assessment and human health effects. "I'm just trying to give them the same level of scientific representation that the vested interests have."

Thurston is known for publishing the first study in the U.S. linking fine particulate matter or PM_{2.5} to mortality in 1987.

More recently, he has weighed in on emissions from the Lambert compressor station, a natural gas facility in rural Virginia that would help extend the 303-mile Mountain Valley pipeline project an extra 75 miles into North Carolina. Opponents say developers of the MVP Southgate expansion project have not done enough to analyze the facility's health impacts on the low-income and majority Black Banister District in Pittsylvania County, Va.

The outcome of the Mountain Valley battle could influence how pipeline emissions are measured in Virginia, which observers say could shift the environmental justice debate in other states. It also underscores the political, legal and market pressures facing pipeline projects after a string of cancellations ranging from the mammoth Keystone XL oil conduit to the Atlantic Coast natural gas pipeline in the Virginias. Earlier this month, for example, developers of the Byhalia Connection crude oil pipeline in Memphis pulled the plug on the project, which had sparked uproar over its proposed route through predominantly Black neighborhoods in the city ([Energywire](#), July 6). Meanwhile, President Biden has pledged to make environmental justice a pillar of his clean energy agenda.

Critics of the push to revamp pollution analysis say it could stymie needed infrastructure projects where developers have already implemented the latest technology to limit environmental footprints.

But public health experts say there is a broader need to reframe project development to emphasize the health concerns of low-income and minority residents.

"Environmental justice and environmental racism have not been a concern uniformly in considering siting and permitting out of potentially polluting activities. It's been the exact opposite historically," said Joel Kaufman, the director of the University of Washington's Center for Exposures, Diseases, Genomics and Environment.

"We should actually be more concerned about siting in areas where these disenfranchised populations tend to live," he added.

'Rigorous analysis'

Activists say they hope Thurston's expertise — and testimony from affected residents — will help sway the Virginia Air Pollution Control Board to deny a key approval for the compressor station, which has already been given the green light by the state's Department of Environmental Quality.

They are making their case to the agency in September in a public meeting to board members seeking to block the facility's permit for PM2.5 and formaldehyde emissions.

Opponents are looking to precedent as a sign they may be successful.

Last year, residents of Buckingham County in central Virginia won a landmark ruling in the 4th U.S. Circuit Court of Appeals challenging a compressor station for the now-canceled Atlantic Coast pipeline. In that case, the court had found that the state Air Pollution Control Board — the same regulatory body now studying the Lambert compressor station — had failed to carefully account for the disproportionate harm of the project to surrounding residents.

The court sent the analysis back to the board for revisions, but developers axed the Atlantic Coast project before it could be completed. The decision puts pressure not just on Virginia regulators, but also on other states subject to the 4th Circuit precedent: Maryland, West Virginia and the Carolinas, activists said.

The Buckingham and Pittsylvania counties' compressor stations are "very similar," said Thurston, who also helped analyze the emissions risks from the Atlantic Coast pipeline facility. If activists can also convince regulators or a federal court to toss out the Lambert project, it could boost efforts in Virginia to reform how the state approves new infrastructure in the first place, according to observers.

The project's developers defended their process for assessing the environmental risks.

Shawn Day, a spokesperson for the MVP Southgate expansion, said the team responsible for studying the impacts of the facility "used standard, widely-accepted scientific tools and methodologies to develop a rigorous analysis and profile of potential impacts."

The proposed facility will include advanced technologies aimed at limiting its effect on air quality, Day said in an email. Many of these measures, like reclaiming natural gas before a shutdown with vent gas recovery technologies, "far exceed legal requirements for compressor station design," he said.

The Federal Energy Regulatory Commission similarly found that the emissions impact of the facility would be minimal ([Energywire](#), June 14).

The EPA tool

At the center of many pipeline disputes is disagreement about the best scientific approach for predicting harms to the surrounding community.

Thurston said he thinks pipeline developers should use an EPA tool called BenMAP to better assess health risks of ozone and particulate matter.

The open-source computer program is also aimed at measuring the concrete benefits of reducing pollution by a certain amount, according to EPA.

"With that you can put in the emissions of the facility and get real time data about hospital visits, the potential impacts and information like that," said Taylor Lilley, an attorney for the Chesapeake Bay Foundation, which is fighting the Lambert compressor station. "As with any tool, it would have its caveats as to the veracity and the actual implications, but it is a much more in-depth tool."

Thurston noted some limitations of BenMAP: For one, estimates are based on health risks in the general population, which tend to be lower than those experienced by environmental justice communities.

Last month, he got on the phone with EPA officials to suggest changes like presenting results at the more granular census tract level instead of by county.

John Bachmann, a former official in EPA's air office who spent three decades working on federal air quality standards, expressed some doubt about using BenMAP to pinpoint risk from an individual facility.

The tool may be less helpful in a more sparsely populated county like Pittsylvania County, where the risk of increased mortality may be very small, said Bachmann.

"I just don't think calculating what may turn out to be 2/10th of a life saved, and I have no idea what it would be," said Bachmann. "The Virginia agency that is approving or not approving the permit isn't going to listen.

"I don't think it is going to move the envelope very much," he said.

EPA spokesperson Dominique Joseph said in an email the agency is working on "assessing methods that provide a more comprehensive account of community impacts that can better inform permitting decisions."

The agency also recommends a suite of "well-established and standardized" means for studying how new facilities can increase exposure risk such as EJSCREEN, NEPAassist, and its Toxics Release Inventory, among other tools to model environmental, health and social impacts.

Public health experts have also suggested that local air sampling and in-person surveys can help demonstrate which communities are most vulnerable to new infrastructure.

In the case of the Buckingham County compressor station, a door-to-door survey by project opponents proved key to demonstrating to the 4th Circuit that the development was in a more than 80% Black area and required more study.

"We know that a door-to-door study can't be replicated in every scenario, but we would be remiss if we didn't push for as much detail and as thorough a process as possible," said Lilley.

"People's health falls under the radar when we try to extrapolate out data" from computer models alone, she said.

The responsibility for doing the analysis should fall on project developers, said Thurston.

"They shouldn't just dismiss it," Thurston said of MVP. "If you are making these decisions about where to locate a facility, you could look at the facility and say, 'Here are the impacts.'"

Bachmann said another reason Thurston may want to see MVP use tools like BenMAP: They could hold up projects. It's a tactic he had also employed opposing polluting facilities elsewhere in the country.

"If I were him, I might recommend it because it takes time, which is good, make it a hassle," he said.

MVP's Day said the project developer had engaged in "extensive public outreach" during the pandemic and Virginia's state of emergency through direct mailings to every residence within 1.5 miles of the proposed facility. He did not specify any activity to identify environmental justice communities.

However, Day said the company had also advertised on local media, sponsored local events, and had discussions with "local officials, residents, church leaders and non-governmental organizations."

"We continue to work diligently with community members to keep them informed and remain committed to the safe and environmentally responsible development of this important project," Day wrote.

Lenient limits?

Like the developers of the Buckingham County compressor station, MVP has emphasized Virginia regulators' findings that the project will not be harmful as its emissions fall within limits set under EPA's National Ambient Air Quality Standards.

But NAAQS compliance isn't necessarily a good barometer of how a facility like the Lambert compressor station may be affecting the people living around it, said Thurston.

The legal limits for air pollution are "excessively high," he argued, and emissions that fall below mandated levels still have health effects.

NAAQS measures emissions averages of criteria pollutants over days or months, which obscures the real health effects of the facilities, agreed David Carpenter, a professor of environmental health sciences at the University of Albany.

"What we see around these compressor stations is that they can all say they are within the National Ambient Air Quality Standards, but what you have are enormous releases that last for only a period of minutes," said Carpenter, whose research was also cited in public comments opposing the Lambert compressor station.

"But if you look at the people that report the illnesses, those large releases that don't last for a long period of time cause the disease," he added.

Carpenter's research has shown how on-the-ground sampling can reveal pollution problems that may not come up in modeling.

He and his colleagues have studied air pollution around fracking sites that included compressor stations, and found emissions of hydrogen sulfide, formaldehyde and benzene that exceeded federal standards set by the Agency for Toxic Substances and Disease Registry and EPA.

In particular, they found high concentrations of formaldehyde near 14 compressor stations in three states.

The organic compound is a suspected carcinogen that can cause a range of other health problems, and occurs in natural gas-fired reciprocating engines at compressors when the fuel doesn't burn off fully.

To find those impacts, Carpenter and his colleagues gave residents near the facilities a 10-liter vacuum bag and instructed trained volunteers to open the bag's valve and take an air sample for two to three minutes whenever it stank or they started to get a headache from air pollution. Then the bags were sealed and returned to a laboratory for analysis.

"We find that often these are very high levels [of pollutants], but of course they don't last for a long period of time," Carpenter said.

The 10-mile debate

While many researchers agree that the current system for evaluating risks of projects needs to be revamped, they also have mixed responses to project opponents' concerns about two aspects of MVP's analysis.

The Chesapeake Bay Foundation has singled out MVP's decision to study emissions within a 1-mile radius of the planned facility, saying the approach leaves out consideration of several environmental justice communities within 10 miles of the project.

They pointed to Carpenter's research, which had found that air pollution from a compressor station can "easily travel 10 miles or more before returning to ground level."

But Carpenter, who wasn't involved in studying the compressor station, said that in general studying emissions within a 1-mile radius was likely sufficient for assessing a facility's impact.

Kaufman agreed, but clarified that studying emissions within that range could be appropriate for establishing emissions from a facility running under its highest possible efficiency.

"In general, I don't think a mile is that unreasonable to start off with for your calculations if everything is operating as it's supposed to be," said Kaufman, who noted he had not directly studied the project.

Lilley and her colleagues also criticized MVP for developing its modeling of emissions based on a meteorological data from the Lynchburg Regional Airport rather than in the immediate area around where the facility would be built.

"The Pipeline suggests that air modeling based on data from 46 miles away should be used to ignore the potential impacts to anyone living 1-mile from the proposed compressor station," the challengers wrote in public comments to Virginia regulators.

"The Pipeline's exclusive reliance on misrepresentative data to justify a restrictive evaluation of the potential air quality impacts from the proposed Project is arbitrary," they concluded.

However, Kaufman said that gathering data about the direction of prevailing winds and other factors from nearly 50 miles away may be too far, but could still give a general sense of how weather conditions could spread pollution.

But using weather data from that distance could become less accurate if geological features like mountains or valleys divide the data collection site and the location of the planned project, he added.

For Kaufman, the dispute ultimately is about finding a standardized approach.

"I think it needs more attention," said Thurston. "Because otherwise EJ communities, they are kind of fighting this out in the dark," he said. "We need some scientific basis to make more appropriate decisions around pollution and pollution sources that are more equitable."