

THE ROANOKE TIMES

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## More than 1,800 tons of glass creates problems for Roanoke recycling facility

By Laurence Hammack

Behind a warehouse, in a strip of industrial properties along the Roanoke River, sits a huge pile of crushed glass.

It is about 12 feet high, 100 feet long, and estimated to weigh 1,810 tons. Mixed in with the pieces of glass are dirt, bottle caps and scraps of paper and metal. On a chilly and overcast morning in late March, its color matched the gray sky.

To most people, this is trash.

Not to Joe Benedetto, president of Recycling and Disposal Solutions of Roanoke, where the pile has been growing for two years. "It's a recyclable resource," Benedetto said, surveying the scene as a light rain began to fall.

"It's a product that is not going to the landfill."

Benedetto is working to develop a process to grind the crushed glass into a sand-like material and remove the contaminants, making it suitable for the production of concrete, asphalt and a variety of other uses.

But time caught up with him recently, when the Virginia Department of Environmental Quality cited RDS for a number of violations, including exceeding a storage limit of 150 tons for recyclable waste.

As part of a consent order, RDS — which takes recyclables collected by most local governments in the Roanoke and New River valleys, sorts them and finds a buyer — agreed to pay a fine of \$21,263.

Benedetto gritted his teeth slightly when talking about the case, which came during a national downturn in the recycling industry, a global pandemic and financial issues that followed both.

"If you could create a perfect storm of problems for us, we probably had it," he said.

"It has been quite a challenging adventure, I don't know how else to describe it. But its root cause came from our desire to keep glass out of the landfill, because that is something we felt we shouldn't be doing, as a recycling company."

**'The Amazon effect'**

The past few years have not been good ones for the recycling industry.

Problems started in 2018, when China — which for years had accepted thousands of shiploads a day of plastic and other recyclables from the United States — cut off the imports, citing concerns with dirt and other contamination.

Gradually, other markets overseas and at home began to open up. Then a global pandemic hit, and business dropped again.

Virginia's recycling rate was 43.2% in 2019, down about three percentage points from the year before, according to an annual report released in January by the Department of Environmental Quality. Figures for 2020 were not available.

Although the coronavirus did not spread to the United States until early last year, it impacted Virginia's 2019 recycling rate by making it harder for localities to collect information from businesses, many of which were closed. Declines in the market caused by China's shutdown also contributed to the decrease, the DEQ report concluded.

To calculate the state's recycling rate, DEQ compares the number of tons recycled against the tons hauled to landfills, then assigns credits for things such as reuse of materials not considered municipal waste, like construction debris.

The 2019 rate is based on figures from 17 planning units with populations of more than 100,000. The Montgomery Regional Solid Waste Authority, the only unit from the Roanoke or New River valleys required to report, had a rate of 40%. The authority includes the county and the towns of Blacksburg and Christiansburg.

Some of the smaller units reported their numbers to DEQ, even though it was not required and not counted in the statewide rate. Vinton, which offers curbside pickup, had a rate of 59% in 2019. Salem reported a 34% rate.

Roanoke and Roanoke County did not submit reports for 2019. Roanoke County, which says it cannot afford to offer curbside pickup because of its 250-square-mile size, had a 42% recycling rate in 2016, according to Nancy Duval, the county's solid waste manager.

Officials in Roanoke, who have said earlier that the rate was 29% in 2017, did not respond to requests for comment last week.

Preliminary numbers for 2020 suggest that recycling may be on the verge of a comeback, according to Teresa Sweeney, president of the Virginia Recycling Association.

Decreased volumes from businesses were offset, to some degree, by people who were staying home. Those people began to shop more online, which led to a large increase in merchandise that was delivered to homes in cardboard boxes, which then wound up in recycling bins.

"We call it the Amazon effect," Sweeney said.

RDS has seen an increase in cardboard that has helped some. “The market has still not recovered to where it really needs to be to become sustainable, but it is better than it was before,” Benedetto said.

The impact of the pandemic, and the decreased demand for recyclables before then, has forced some governments to make cuts in their collection efforts, which were already operating on a break-even basis, Sweeney said.

“They’re trying to bring in enough money to support their programs, and they’re quite expensive,” she said.

### **Few customers for glass**

Of all the materials — old newspapers, plastic bottles, cardboard boxes, aluminum and tin cans, emptied beer bottles — delivered by truck to RDS’s warehouse on Korte Street Southwest, glass containers are the hardest to find a new life for.

Some governments, such as Roanoke County, don’t accept glass at their recycling drop-off locations. “We stopped taking it at our sites many years ago, both for safety and market reasons,” Duval said.

Most of the bottles that are placed on a conveyor belt for sorting at RDS have already been broken up by compressors in collection trucks, which empty recycling bins from residential curbside bins and businesses.

As the belt moves through the building, the most valuable recyclables are pulled aside for storage by humans, robots and other mechanical devices. At the end of the line, crushed glass often winds up as one of the misfit toys in the recycling game.

For a while, RDS sold it for use as fill material for the construction of a road in the Rockbridge County landfill. Then it was shipped to a plant in North Carolina, which melted the glass and made new bottles from it, until that market dried up.

More often than not, the glass, or cullet, was dumped in a pile behind the warehouse.

There, it waited for RDS officials to complete a complicated process in which DEQ would declare the cullet beneficial for use as a fill material. That required the glass to be further crushed and ground with new equipment, which cost tens of thousands of dollars at a time when money was tight.

In March 2018, DEQ arrived at the site for the first of several inspections.

A consent order, recently posted to the agency’s website, lists a number of violations: exceeding a 150-ton storage limit, failing to reduce contamination in the pile, and not complying with a plan to purchase equipment needed to refine the glass.

RDS agreed to pay a \$21,263 fine, broken down into eight installments through February 2023. The enforcement order will be finalized following a public comment period that lasts through April 16.

There has been no documented harm to the environment or public safety from the glass pile, according

to Jerry Ford Jr., an enforcement specialist with DEQ. But the agency takes the position that the harm was to the regulatory system, and that any permit-holder found to break the rules will be held accountable.

Benedetto has no argument with that.

But, he said, "It would have been a lot cheaper to just take it to the landfill. It would have avoided all of the problems with DEQ." He didn't want to do that, though, because "it's not recycling to me if this stuff goes to the landfill."

More than \$100,000 has been spent on new equipment that will grind the glass and remove its contamination, essentially converting it to sand that can be used as fill material or an ingredient for concrete and asphalt.

Benedetto expects the pile will be gone by July 1, 2022, as required by the consent order.

"Sometimes taking the high road is the hard road to take," he said. "But we think it will be beneficial for everyone involved."

THE ROANOKE TIMES

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## **Appalachian offers all-renewable energy to its customers -- for a price**

By Laurence Hammack

Two years ago, Appalachian Power Co. offered a deal to its customers: For an extra \$4.25 a month, all of their electricity would come from wind, water and sunlight.

The idea, the company said, was to promote more buy-in to renewable energy, whether it comes from wind turbines atop mountain ridges, water flowing from reservoirs or arrays of solar panels in fields and pastures.

So far, about 200 customers have signed up for the voluntary program. Appalachian says it is pleased with that number, although interest slowed in the second year, likely because of the coronavirus pandemic.

"The program is an excellent option for customers seeking a 100 percent renewable option for energy, and it's our hope customer interest in WWS [wind, water, sunlight] will grow as we emerge from the events of the past year," Teresa Hall, a spokeswoman for the utility, wrote in an email.

But what does \$4.25 a month really buy from Appalachian, which currently gets about 80% of its electricity from power plants that burn coal and natural gas? And does the company have an ulterior

motive for its renewable energy program?

### **'It's about blocking competition'**

It took three tries before the State Corporation Commission approved what came to be known as Rider WWS.

Also called a rate adjustment clause, Appalachian's request to charge a voluntary premium for renewable energy was rejected in 2017 and 2018 after the commission was unable to determine that the proposed fee was reasonable.

When the case came up again in 2019, a number of organizations opposed it on multiple grounds.

Under state law, customers are allowed to purchase all-renewable energy from a third-party provider — but only if their incumbent utility does not offer them a program like Appalachian's.

If the rider was approved, Appalachian would become "the exclusive supplier of renewable energy and the loss of a competitive market ... would eliminate low-cost options and result in higher rates," a steering committee for the Virginia Municipal League and the Virginia Association of Counties stated in a SCC brief opposing the rider.

Both Appalachian and Dominion Energy sought green-energy programs when in fact their main goal was to keep another provider from invading their territory, according to Will Cleveland, a senior attorney with the Southern Environmental Law Center.

"It's about blocking competition," said Cleveland.

Sen. David Suetterlein, R-Roanoke County, has repeatedly sponsored legislation that would remove the prohibition on customers shopping for renewable energy when it's already offered by their current utility.

"I think the best thing we could do to increase the availability of renewable energy in the commonwealth would be to allow competitors, other than the monopolies, to provide clean energy to customers," Suetterlein said.

But he said his efforts to loosen the grip that the two state-regulated monopolies have on the market were defeated by legislators loyal to the utilities.

"It's very frustrating when companies are trying to sell a product that people want to buy, but when another company with significant political influence is prohibiting it," Suetterlein said.

Yet after a law was passed in 2007 that allowed customers to purchase all carbon-free electricity from any utility, "years went by without anyone coming forward to offer a program for residential customers," Hall said.

When the SCC finally approved Appalachian's request, it came with three conditions: that the utility hold non-participating customers harmless, ensure that paying customers received totally carbon-free

electricity, and demonstrate its premium was reasonable.

“To say the company is somehow thwarting the competition is simply not true,” Hall wrote in her email.

### **What does the premium buy?**

Once electricity enters the power grid, there’s no way to tell where it came from. But when an Appalachian customer flips on a light switch, most of the electricity that flows to the light bulb comes from burning fossil fuels.

About 60% of Appalachian’s electricity is produced by coal-burning power plants. Another 19% is from natural gas. Both fuels generate greenhouse gases that Virginia is now trying to check.

In what is essentially a bookkeeping exercise, Appalachian must demonstrate that it has enough capacity from renewable sources to serve the customers who pay for it.

Currently, that capacity consists of nine hydroelectric facilities — dams such as the one near Smith Mountain Lake — and five wind farms, none of them in Virginia. When the company begins its first venture into solar energy later this year, purchasing power from an industrial-scale facility in Campbell County, that electricity will be added to the mix.

Those sources provide power to all customers, regardless of whether they’re enrolled in the renewable energy program.

With the \$4.25 premium, “you’re not getting anything you haven’t gotten before,” Cleveland said. “You’re just paying more for it.”

In a brief filed with the SCC, Appalachian acknowledged that “participating customers will still consume the same electrons as they did before they signed up, but will be able to make the legal claim that they are consuming 100% renewable energy just by paying a small premium.”

And as more customers come to expect renewable energy, utilities say, their willingness to pay a little extra for it will push the industry to find even more clean-energy sources.

“This program is all about bringing more clean, renewable energy to our customers,” Audrey Cannon, a spokeswoman for Dominion Energy, wrote in an email. “That’s a good thing for the climate, the economy and our customers, no matter what the critics say.”

Since Dominion started offering all-renewable energy for a premium last year, 1,650 customers had signed up through May 1. That includes 1,615 homes, 34 businesses and one industry.

Although that’s significantly more than Appalachian, Dominion has a much larger service area in the eastern part of the state.

In an annual update filed in April with the SCC, Appalachian reported that 183 residential customers had enrolled through the end of last year. Another 18 participants were businesses or industries. While the number fluctuates, Hall said the current enrollment is about the same as the 201 tally from last year that

was listed in the annual report.

Regardless of the numbers, Appalachian is accelerating its transition to carbon-free energy.

The Virginia Clean Economy Act, passed last year by the General Assembly, requires Appalachian to serve its approximately 500,000 customers in western Virginia with all-renewable energy by 2050.

Last month, the utility sought bids from companies that would provide up to 100 megawatts of solar or wind energy through a power purchase agreement. A second request for proposals was for renewable energy certificates, a market-based unit issued when one megawatt of electricity is produced from a carbon-free source and delivered into the power grid.

Similar requests are expected in the future as Appalachian works toward its state-mandated goal.

To encourage participation in its Rider WWS program, Appalachian has issued a news release, provided information in customer bills, encouraged its call center representatives to promote the option and put the word out through social media, Hall said.

But according to Cleveland, the program has already accomplished what Appalachian set out to do — keeping competitors at bay.

“They don’t need customers to sign up,” he said. “Appalachian doesn’t care whether people sign up, because they’ve already got what they wanted.”

THE ROANOKE TIMES

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## Roanoke Gas goes (sort of) solar

By Laurence Hammack

To the casual passerby, the building at 519 Kimball Ave. is just what the sign out front suggests: Roanoke Gas.

But out of sight from the street, on the flat rooftop of the headquarters of a company that distributes natural gas to nearly 63,000 customers, is an array of 187 solar panels.

Installed late last year, the panels are expected to produce about 88,000 kilowatt hours of electricity per year, enough to trim nearly \$10,000 from Roanoke Gas Co.’s annual bills to Appalachian Power.

“We thought it was a prudent investment and a prudent project,” said Paul Nester, president and CEO of the company. “And of course it’s environmentally friendly.”

The idea of a fossil-fuel company embracing renewable energy might turn the heads of some of the

passing motorists on Kimball Avenue. But in joining a growing number of businesses and homeowners going solar, Roanoke Gas remains confident that there will be a public need for its product for many years to come.

In fact, Nester said, the project provides a small-scale example of the limitations of solar energy as Virginia and the United States work to create a carbon-free power grid.

“You get a feel for the peaks and valleys,” he said — the latter coming on the days when clouds, rain or snow block the sun from charging photovoltaic solar panels that convert its rays to electricity.

Despite the intermittency, 754 non-residential accounts such as businesses, schools and government entities in Virginia currently have solar operations, according to the Department of Mines, Minerals and Energy. Five years ago, that number was 265.

In Western Virginia, about 80 non-residential customers of Appalachian Power Co. use net metering, a billing mechanism in which the utility credits the customer when it produces more electricity from renewable sources than it needs.

The number of Appalachian’s commercial customers interested in solar energy has remained steady in recent years, company spokeswoman Teresa Hall said, while there has been increased interest among homeowners.

Among the reasons Hall cited for the uptick: an extension of a federal tax credit for solar installations, a push by developers of renewable energy who see a growing market, and laws like the Virginia Clean Economy Act, which pushes for a transition on multiple fronts.

### **Natural gas growth continues...**

At the same time it was installing solar panels on its roof, Roanoke Gas was seeing growth in its core mission.

In the last three months of 2020, which make up the first quarter of its current fiscal year, the company added 170 new customers. During a conference call last month to discuss the results, Nester said 1.6 miles of new main pipe were installed during the first quarter, compared to 2.3 miles in all of the preceding fiscal year.

A downturn in natural gas use by some commercial customers, caused by the COVID-19 pandemic, has been made up in other sectors. For example, a UPS facility in Roanoke converted its fleet of delivery trucks to run on compressed natural gas instead of diesel fuel.

More growth is expected, in part due to new apartment complexes and townhomes in Botetourt County that will soon be coming online. Roanoke Gas also plans to expand its service to much of Franklin County, which currently lacks access to natural gas.

While the company may not be growing by leaps and bounds, the past decade shows a steady upwards trajectory.

In 2010, it had 56,975 customers. Annual reports filed with the U.S. Securities and Exchange Commission show an average increase of 471 accounts a year, and at the end of January, 62,830 homes and businesses were using natural gas from the company.

“As you can see, and as we’ve discussed now for several years, the Roanoke Gas utility has just performed really well,” Nester said while reviewing the 2021 first quarter results in last month’s conference call.

To sustain future growth, the company plans to receive a new supply of natural gas from the Mountain Valley Pipeline, a controversial project that has been mired in legal and regulatory battles for the past three years.

RGC Midstream, a sister company that is also a subsidiary of Roanoke Gas’s parent company RGC Resources, is a 1% partner in the \$6 billion joint venture that includes four other energy companies.

Critics have long argued that Roanoke Gas gets enough fuel from two existing pipelines, the East Tennessee and Columbia lines, and that relying on Mountain Valley will mean higher bills for ratepayers.

### **... while solar and wind are catching up**

For many businesses, an investment in solar energy can save two things: money on electric bills in the short term, and just maybe — collectively and over time — the planet.

Decreases in the costs of installing solar panels have come as urgency grows to use more renewable energy, reducing the amount of greenhouse gases that cause climate change.

“More and more companies are saying, ‘We have a renewable goal we want to meet,’” said Patrick Feucht, the owner and general manager of Baseline Solar Solutions, a Blacksburg company that installs about 50 projects a year.

While most of his business is residential, Feucht said he expects more calls from businesses in the future.

Appalachian declined to identify any of the utility’s 80-some non-residential accounts, citing customer confidentiality. In 2013, the Veterans Affairs Medical Center in Salem installed 6,000 solar panels on an adjacent field, according to news reports at the time. Carilion Clinic has a smaller project at its New River Valley hospital.

About 1,200 of Appalachian’s 500,000-plus Virginia customers use solar energy. Dominion Energy, the state’s other large utility, has about 12,200 net-metering customers in Virginia and North Carolina. (A number for Virginia alone was not available.)

About 95% of its accounts are residential, according to Dominion spokeswoman Audrey Cannon.

In addition, Dominion owns 18 utility-scale solar projects that are in operation or under development in Virginia, Cannon said. At peak capacity, the solar farms will produce 484 megawatts of electricity, or

enough to power about 121,000 homes. Another 21 third-party sources provide 774 more megawatts through power purchase agreements with Dominion.

Appalachian currently has no utility-scale solar operations, although a 15-megawatt facility in Campbell County is scheduled to go online this year.

“They have not been as active as Dominion in pursuing solar opportunities,” said Jonathan Miles, executive director of the Center for the Advancement of Sustainable Energy at James Madison University.

Appalachian has a smaller customer base in a part of Virginia that is not growing as rapidly as the territory served by Dominion, which also has more resources to draw from, Miles said.

The Clean Economy Act requires Appalachian to invest in more solar and wind energy in the coming years, as the utility works toward a mandate of producing a totally carbon-free product for its Virginia customers by 2050.

At least for now, though, natural gas is expected to continue its key role in both heating homes and fueling industries and power plants.

“The existing energy infrastructure can’t be replaced immediately, but changes are accelerating, thanks to rapidly-changing energy markets and policies,” Miles said. “The advent of affordable, reliable and scalable energy storage is likely to be a game changer and will enable an even faster transition to renewables.”

As batteries and other energy storage technologies become more mainstream, they will enable solar and wind generators to operate more efficiently and react to power demands.

As one example, Miles cited the Beech Ridge Energy Center in West Virginia, which uses lithium-ion battery storage to regulate the rate at which power is delivered from its wind turbines to the grid.

At Roanoke Gas, the company decided to invest about \$100,000 in solar panels that cover most of its rooftop. It will take about 11 years for the project to pay for itself in lower electricity costs, Nester said.

Employees at the business are following the project closely, tracking the amount of electricity it generates on a daily basis.

“We’re kind of fascinated by it, to be honest,” Nester said.