



ENERGY + ENVIRONMENT

## After Siemens turbine plant cancellation, can Hampton Roads still be a hub for offshore wind?

BY: CHARLIE PAULLIN - NOVEMBER 20, 2023 12:04 AM



📷 The Portsmouth Marine Terminal in Portsmouth, Va., where Siemens Gamesa had planned to build an offshore wind turbine blade facility. (Sarah Vogelsong/Virginia Mercury)

Detroit is known for automobile manufacturing. San Francisco is known for technology. Hampton Roads hopes to be known for offshore wind development.

In 2020, the Virginia Clean Economy Act, an ambitious roadmap to decarbonize the state's electric grid by midcentury, was signed into law with provisions encouraging the development of thousands of megawatts of offshore wind. The landmark legislation paved the way for the approval of Dominion Energy's 176-turbine Coastal Virginia Offshore Wind farm off Virginia Beach earlier this year.

That project in turn raised hopes that the industry would bring [economic stimulation to the region](#). In October 2021, the announcement that the Spanish-German engineering company [Siemens Gamesa had chosen Portsmouth](#) for the site of the East Coast's first turbine manufacturing facility seemed to bear out those hopes.



## Siemens Gamesa chooses Virginia for offshore wind turbine blade factory

PORTSMOUTH — Siemens Gamesa announced Monday that it plans to build the United States' first offshore wind turbine blade facility at the Portsmouth Marine Terminal, notching a major win for Virginia as it strives to become a hub for the nation's fledgling offshore wind energy industry. "Today's announcement will help position Hampton Roads as the ...  
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"Today's announcement will help position Hampton Roads as the offshore wind development hub for the nation," said Dominion CEO, President and Chair Bob Blue at the time.

However, on Nov. 10, Siemens Gamesa [announced it was canceling those plans](#), saying that "development milestones to establish the facility could not be met."

The loss of the turbine manufacturing facility, with its associated jobs and tax revenue, is a blow to Hampton Roads, one that has raised questions about whether the region's dreams of becoming an offshore wind hub can be realized. But Dominion, local officials and

environmental and economic development groups aren't giving up hope: They say the ongoing work on CVOW, the region's maritime infrastructure and workforce and burgeoning nationwide calls for a more renewables-focused grid keep them optimistic that Hampton Roads can still be an East Coast [hub of the industry](#).

"We have a lot of the assets that the industry needs to develop in the U.S.," said Matt Smith, director of energy and water technology at the Hampton Roads Alliance, an economic development organization in the region. "We still feel like those assets position us well to be a hub. It hasn't really changed in light of the decision of one company."

Hampton Roads isn't alone in weathering industry setbacks as the U.S. offshore wind [industry faces rising costs and scheduling delays](#). Most significantly, on Oct. 31, Danish wind giant Ørsted announced it was canceling two offshore wind projects off the coast of New Jersey because of rising financing and capital costs.

Still, Hampton Roads sees the advancement of Dominion's project as an example that while the industry may be struggling, its hopes are still afloat.

"It's a normal course of business at times for a project to start and then go, 'Well, you know, the time is not right,' and then someone else steps in," said Joe Harris, a spokesman for the Virginia Port Authority.

## **A proving ground**

Dominion says CVOW, which is "on time and on budget," with a completion date of the end of 2026, will continue to be an anchor for industry growth. Utility spokesman Jeremy Slayton said the cancellation of the Siemens plant won't impact the project's timeline, because the utility will get its blades from the company's European plant.

"We were disappointed to hear that the blade factory has been canceled," said Jeremy Slayton, a spokesperson for Dominion. "But we also believe that the expertise gained by supporting our project will establish Hampton Roads as a center for offshore wind development."

The same day that Ørsted canceled its New Jersey project, CVOW received a critical final approval from federal regulators. That project's advancement will continue to drive economic activity, said

Slayton, pointing to the development of Fairwinds Landing at Lambert's Point Docks in Norfolk as an [operations and maintenance center](#).

Joel Rubin, director of the offshore wind advocacy group WINDSdays, said the two turbines Dominion already has out at sea and the advancement of CVOW are signs that Hampton Roads is still "in a great position in this industry."

"I think we just need the economy to be in better shape for these companies," Rubin said.

## **Infrastructure and workforce**

Local, port and economic officials in the region say their investments in the Port of Virginia and Hampton Roads will continue to make the region attractive for offshore wind.

Brian Donahue, director of economic development for Portsmouth, acknowledged the loss of the Siemens facility was a "setback."



## With offshore wind, Virginia hopes a 21st-century manufacturing boom will offset a hefty price tag

Maybe, if you squint really hard and the skies are clear, you might be able to convince yourself that you see them, out on the horizon: two turbines spinning far offshore of Virginia Beach. You can't, of course — the distance to the Dominion Energy-owned offshore wind outpost is too great. Bill Murray, a senior ... [Continue reading](#)



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“There was an opportunity for a significant capital investment and job creator that would have come along from it,” Donahue said.

But the loss of the facility doesn't necessarily mean other businesses won't come into the region, he said.

“There are other groups in the offshore wind industry that are looking for locations to host projects,” Donahue said, although he declined to provide specific names. “There are other opportunities that exist, and we're currently investigating this.”

Locals say that Hampton Roads still offers the robust infrastructure needed for wind industry growth, as well as a skilled workforce familiar with maritime fields. Slayton pointed out that the deep channel access and lack of overhead restrictions in the area make it uniquely suited for the large vessels needed to carry components out to sea. Onshore, the Virginia Port Authority has put more than [\\$220 million toward the Portsmouth Marine Terminal](#) to develop

areas where large wind components like turbines and monopile foundations can be stored.

“This terminal that we’re talking about has already received its first load of monopiles for the CVOW project,” Harris said. “We’re taking shipments as we speak.”

Furthermore, Smith noted, Hampton Roads has long seen “maritime adjacent” businesses flourish due to the presence of the U.S. Navy.

“I think our overall plans around supply chain development, and then also around kind of site readiness and workforce development are still in place, and we’re working with our partners to move that forward,” Smith said.

Jobs for the CVOW operations and maintenance center will still be in place once the project is fully operational, Slayton added.

“If you’re in the offshore wind industry, and you’re looking somewhere to stage components,” Hampton Roads is “a very attractive spot,” Slayton said.

## **A national push for renewables**

The continued establishment of state and national targets for offshore wind, projects that will require extensive manufacturing, also gives environmental groups reason to hope that a Virginia hub may still be possible.

Nationally, President Joe Biden has set a target of developing 30 gigawatts of wind by 2030. While the two projects in New Jersey have been canceled, others are still underway, including one by [Avangrid in Kitty Hawk, North Carolina](#), said Eileen Woll, offshore energy program director with the Sierra Club’s Virginia chapter.

Despite recent struggles, “the train is out of the station on offshore wind,” she said.

That means all of the thousands of components needed for a turbine to be functional, from blades to internal gears, will have to be constructed. Woll said that could lead to different regions along the East Coast specializing in the manufacture of different parts.

“Everybody’s kind of got their thing. I do believe we will still be the blades,” said Woll. “I think everybody’s recognizing that, being a frontier industry, there’s a piece for everybody.”



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## Four takeaways from Southwest Virginia's critical mineral investigation

U.S. Department of Energy-funded initiative presents update on research in Central Appalachia

BY: **CHARLIE PAULLIN** - AUGUST 8, 2023 12:02 AM



📷 Big Stone Gap, Va., a historically coal-dependent town in Wise County. (Sarah Vogelsong / Virginia Mercury)

Nearly a dozen researchers struck an optimistic tone in West Virginia last week when presenting the results of almost two years of study on whether Central Appalachia could develop industries around the extraction and processing of critical minerals and rare earth elements.

Critical minerals and rare earth elements are substances like lithium, nickel and cobalt that are tapped for a wide array of military and economic uses, including a growing number of renewable energy technologies such as batteries.

Today, however, China controls roughly one-third of the global market for critical minerals and rare earth elements, said Matt Scheffel, an economist with Chmura Economics. One company, China Northern Rare Earth Group, generated about \$30 billion in revenue in 2021, he said.



## Researchers eye coal ash as a possible source of critical minerals — and Southwest Virginia jobs

Coal as a source of power generation may be headed toward the dust heap of history, but its ashes are destined to be considerably longer-lived — and, some hope, could become a building block of tomorrow's electricity and many other crucial products. The byproducts of burning coal for electricity are a widely recognized environmental liability. ...

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As the U.S. ramps up its investment in renewables, policymakers have increasingly become concerned about reliance on China and have looked to develop domestic extraction and processing industries. Recent legislation like the Inflation Reduction Act requires that companies obtain critical minerals used in electric vehicle batteries from U.S. sources in order to take advantage of federal EV tax credits. And a recent executive order by President Joe Biden aims to [create a domestic supply chain](#) for critical minerals.

Companies are responding to the demand. U.S. Mountain Pass Mine, owned by MP Materials, has announced plans to build a [rare earth element processing facility](#) in the U.S. and explore a rare earth mine in Texas.



“We can see that a lot of these existing conditions in the global market and the region support both the establishment and growth of the rare earth metal industry, as well as the industries supporting it,” Scheffel said. “If we are able to target and provide economic support for a number of these industries it will allow for side-by-side growth for these industries and the rare earth metal industry to help keep job opportunities within the region.”

In Central Appalachia, a region that includes parts of Virginia, West Virginia, Tennessee and Kentucky, researchers have been working through the Evolve Central Appalachia project since 2021 to determine what potential the industries have for the historically coal-dependent area.

The initiative, known as [Evolve CAPP, began in October 2021](#) with an initial \$1.5 million in funding from the U.S. Department of Energy. It has since received an additional \$500,000 to continue its work.

On Friday, Evolve CAPP researchers presented what they have found out so far. Here’s four takeaways from their presentation.

### **The minerals are there, if you can find them**

In Central Appalachia, critical minerals and rare earth elements can be found in both mined coal as well as rock.

Researchers reviewed state and federal mining permits, information from the National Energy Technical Lab and U.S. Geological Survey, and utility records on coal ash – a type of waste produced when coal is burned to generate electricity – to identify where and in what concentrations critical minerals and rare earth elements exist.

They ultimately found 10 seams in Southwest Virginia with significant amounts of critical minerals, with concentrations ranging from 8.41 to 165.73 parts per million. Comparatively, the highest concentrations of critical minerals in seams in Kentucky, Tennessee and West Virginia were 189.56, 164.10 and 247.86 parts per million, respectively.

Sampling found the highest concentrations in non-coal sources, said Scott Peterson, senior principal geologist at engineering firm Marshall, Miller & Associates.

“It really shows that the higher values are within a rock, versus the coal,” Peterson said.

Potential also lies within coal ash, said Danny Gray of Gray Energy Technologies.

Because pollution control technologies capture coal ash in a granular, crushed state, they can provide simpler access to the critical minerals and rare earth elements found within it, Gray said. His company found that coal ash in the region had an average concentration of critical minerals and rare earth elements that was 500 parts per million.

“We know that you got to handle more than 2,000 tons in order to get more than 1 ton,” Gray said. “That presents material handling challenges.”

## **Technology to extract resources already exists**

The technology needed to extract critical minerals and rare earth elements from coal seams and rock already exists within mines, but it will require operators to shift how they work.

Researchers outlined several approaches to extraction: drilling, chemical processes and physical processes.

Steve Schafrik, director of graduate studies in mining engineering at the University of Kentucky, said critical minerals and rare earth elements can be extracted by blasting and drilling, although workers will need to know how to access them without damaging them.

Some drills can sense when materials other than coal are being cut, so that “we can be hitting areas that are of the highest value for us, so you’re taking less material but you’re taking more valuable less material,” Schafrik said.

For workers accustomed to extraction from coal mines, Schafrik said the challenge will be learning how to “handle two different materials.”

Chemical approaches, such as the use of sulfuric acid, can also be used to separate elements and minerals from coal or coal byproducts, according to research from West Virginia University.

Magnetic separation of material is yet another way to access resources, one that may have low costs but also yield small results, said Wencai Zhang, assistant professor of the Department of

Mining and Minerals Engineering at Virginia Tech. Often, physically separated mineral concentrations must be further dissolved in chemicals to access the critical minerals and rare earth elements, he said.

“If you want to achieve individually separated rare earths, you must combine technologies,” Zhang said.

## **Transportation and other infrastructure needed for processing is already in place**

Due to its coal mining history, Central Appalachia already has much of the transportation infrastructure needed for larger-scale processing of critical minerals and rare earths.

The best method is “source and sink” matching, an approach that keeps piles of minerals as close to processing sites as possible to decrease logistic concerns, said Brian Hill of Crescent Resource Innovation, a financial consultant for the U.S. Department of Energy.

While renewable energy is growing in the area to meet the energy supply demands of processing, operators currently rely on natural gas, said Hill. Processors could draw on ponds previously designated for coal ash as water sources to avoid drawing on raw or potable resources, he added, while [recent investments from the federal government are expanding broadband access](#).

“The key takeaway here is the Central App(alachian) region has a lot of the key building blocks that are necessary for future processing facilities,” Hill said.

## **Educational training is available, but attainment is ‘low’**

The 24 community colleges in the region have already put some programs in place to support the extraction and processing industries, researchers found.

Scheffel said degrees and certifications in relevant electrical, welding, diesel, industrial and mechanical technicians are currently being offered.

A large pool of workers may also be available. Vickie Ratliff, interim vice president of Mountain Empire Community College in Big Stone Gap, said Central Appalachia’s labor market participation rate is 49%, compared to 68% for the nation. And while the coal, oil and

power sectors currently employ roughly 22,000 people, many with high salaries, Ratliff said the number of workers is projected to drop more than 3% every year for the next 10 years.

However, only about 26% of 25- to 64-year-olds in the region have attained an associate's, bachelor's or postgraduate degree, Ratliff said. About 20% have some college or no degree.

“When you compare all of these numbers to the U.S. numbers, we’re extremely low,” Ratliff said. “So we got some work to do.”



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Charles Paullin covers energy and environment for the Mercury. He previously worked for Northern Virginia Daily in the Northern Shenandoah Valley and for the New Britain Herald in central Connecticut. An Alexandria native, Charles graduated from the University of Hartford initially wanting to cover sports. He's received several Virginia Press Association awards for his coverage of crime, local government and state politics.

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GENERAL ASSEMBLY 2023

## THE BULLETIN

# Republicans say a Virginia blue catfish industry could help protect the Bay

BY: **CHARLIE PAULLIN** - JANUARY 18, 2023 3:43 PM



 Commercial waterman Wayne Fisher and his son Aaron land blue catfish caught in a pound net in the Rappahannock River near Fones Cliffs in 2015. (Bill Portlock / Chesapeake Bay Foundation)

Two Republican lawmakers are floating proposals to create a catfish industry to prevent depletion of other species in the Chesapeake Bay.

Del. Keith Hodges, R-Middlesex, is proposing the creation of a [Governor's Blue Catfish Industries Development Fund](#) to provide grants and loans to government bodies that support the creation or

expansion of businesses involved with “blue catfish processing, flash freezing, or value-added facilities using blue catfish.” Sen. Richard Stuart, R-Westmoreland, is carrying the [Senate companion](#).

A House Agriculture, Chesapeake and Natural Resources subcommittee voted unanimously Monday to advance Hodges’ bill, which will now go to the Appropriations Committee.

The intent of the bill is to address the invasive blue catfish species that was introduced into tidal and freshwater rivers in the 1970s and 1980s, Hodges said. Blue catfish eat shad, herring, rockfish, menhaden, and clams.

Blue catfish also eat crabs, Hodges said, pointing to a study by the Virginia Institute of Marine Science and the Maryland Department of Natural Resources that found the [crab](#) population in 2022 reached its lowest number since 1990. The recent biennial [State of the Bay](#) report from the Chesapeake Bay Foundation also noted catfish are depleting the shad population.

“There are 100 million of them. When you do the math ... they eat well over a million tons of food,” Hodges said during the subcommittee hearing Monday afternoon. “They will swallow 400,000 rockfish eggs in a single gulp.”

Hodges is also seeking a budget amendment for fiscal year 2024-25 to provide \$4 million in grants for processing infrastructure, equipment and marketing as well as tools to help watermen catch the fish.

Only two blue catfish processors in the state currently exist, Hodges said. Blue catfish are the only species of fish that undergo inspections similar to meat, poultry and egg products, Hodges told the Mercury after the hearing.

“Harvesting blue catfish will create much needed rural coastal jobs and help to restore better ecological balance which this invasive species has disrupted,” said Lewis Lawrence, executive director of the Middle Peninsula Planning District Commission. “We are watching out

for the baby Blue crabs and baby menhaden while simultaneously supporting the growing recreational fisheries.”

The fishery would be monitored by the state Department of Wildlife Resources and the Virginia Marine Resources Commission, which oversees fisheries in the state.

“We want to eliminate [blue catfish] but the only way we can do that, that we’ve come up with right now, is to eat our way out of it,” Hodges said. “It’s a delicious fish. I’d put it up against pretty much anything you can find out there.”



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