

Companies plan to build CCS, hydrogen hub in Appalachia

By Camille Bond

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Several major energy companies announced plans last week to develop a hydrogen and carbon capture hub in Ohio, Pennsylvania and West Virginia.

The new alliance includes EQT Corp., Equinor ASA, GE Gas Power, Marathon Petroleum Corp. and Mitsubishi Power Ltd., as well as U.S. Steel Corp. and Shell Polymers, a petrochemicals division of Royal Dutch Shell PLC. The group plans to build out infrastructure for “blue” hydrogen production, where hydrogen is isolated from natural gas, and leftover carbon dioxide from the process is stored underground.

The northern Appalachian region has historically been a center of oil and natural gas production. EQT and Equinor both have existing natural gas operations in Pennsylvania, and Marathon Power operates an oil refinery in Ohio.

The company “[sees] a significant opportunity to expand beyond our existing business by leveraging this advantage to develop low-carbon fuel production and [carbon capture, utilization and storage] opportunities,” said Rob Wingo, executive vice president of corporate ventures at EQT, in a statement.

Richard Fruehauf, U.S. Steel's chief sustainability officer, said the new group will be engaging key stakeholders in coming weeks to work on defining plans for the hub.

“Industry, labor, universities, communities, government, research institutions, nonprofit organizations and other groups will all be involved in this effort,” Fruehauf said.

Several of the energy companies in the alliance are pursuing hydrogen or CO2 capture projects in the region.

Equinor is “exploring several potential value chains in both blue hydrogen and CCUS in the Appalachian Basin,” company spokesperson Ola Morten Aanestad told E&E News in an email. Last week, the company announced a separate partnership with Battelle, an independent research and development company, to assess the region’s CO2 storage potential.

Shell Petrochemicals is currently building its first U.S. polyethylene facility in Monaca, Pa. The company plans to extract ethane from the Marcellus and Utica natural gas fields, and convert it to polyethylene for plastic production.

With steel, coal currently satisfies about 75 percent of the total energy demand for production globally, according to a report by the International Energy Agency. Producers will need to adopt hydrogen-based manufacturing to help reduce coal’s share of energy consumption and meet a goal of global net-zero emissions by 2050, according to IEA.

Blue hydrogen, however, has its critics.

Last year, researchers at Cornell and Stanford universities found that the carbon footprint of blue hydrogen production could be more than 20 percent greater than the footprint of burning natural gas or coal for heat. The large footprint was largely due to methane emissions that occurred during the process of converting natural gas into hydrogen and CO2.

Even assuming that CO2 captured during the process could be stored indefinitely, “the use of blue hydrogen appears difficult to justify on climate grounds,” the study said.

Another analysis from BloombergNEF last year found that renewable forms of hydrogen would be cheaper by the end of the decade ([Energywire](#), April 8, 2021).

In a 2019 report on the future of hydrogen, IEA said the process to produce it can be a low-carbon, as long as CO2 from all emissions streams was captured effectively.

Other regions of the country known for fossil fuels production also are being eyed as locations for hydrogen and CO2 capture hubs. A plan to develop shared CO2 capture and storage infrastructure in Houston has attracted 14 companies, including Exxon Mobil Corp. and Chevron Corp. ([Energywire](#), Jan. 21). Louisiana's first statewide climate plan, released this week, recommends supporting the development of major industrial clusters into hydrogen and CO2 capture hubs.