Monolith Materials and KeyState Made Important Announcements at Appalachian Hydrogen & Carbon Capture Conference

PENN VALLEY, PA, US, May 25, 2022 /EINPresswire.com/ -- Generally, speakers at trade shows and conferences spend their time touting an existing project/process/patent-pending piece of equipment, not wanting to give the competition in their audience a hint of what's next.

Last month's Appalachian Hydrogen & Carbon Capture Conference, held south of Pittsburgh, in the Marcellus/Utica Shale plays' bosom, shattered that concept, with two companies making major announcements.

Monolith Materials said during the April 21st event, that their first commercial scale unit, Olive Creek which has been in commercial production since 2020, proved the concept of methane pyrolysis to produce hydrogen and carbon black. Renewable electricity is the only other input. Olive Creek I produces 4,000 metric tonnes of hydrogen annually, along with 13,000 MT of carbon black with one pyrolysis reactor.

Operational success has led to Olive Creek II, at the same Nebraska location. It will have two 6-reactor trains, which will produce roughly 50,000 MT of hydrogen annually, along with 180,000 MT of carbon black with completion date of 2025.

Olive Creek II will be duplicated in the Appalachian Basin, specifically believed to be in Pennsylvania, Ohio, or West Virginia. Beyond that Monolith has locations in Florida, Texas and California in mind.

The site in the Appalachian Basin will mirror Olive Creek in more than design. It will be located in a small town where the plant can help economically rejuvenate the town. The salaries at the plant will provide a good living wage, according to Monolith.

The other announcement was KeyState LLC, already in Pennsylvania building the state's first natural-gas-to-blue-hydrogen plant, plans to construct a second facility in Pennsylvania and a third in a state to be identified.

According to Professor Eric Thompson, Director of the University of Nebraska-Lincoln Bureau of Business Research, OC I's construction cost was $100+ million and the facility generates annual economic impact of roughly $46 million.

Again, according to Professor Thompson, OC II's cost will total more than $800 million, while its annual economic impact will be well over $250 million.
According to Anna Wishart, Monolith's Director of Government & External Affairs, and a Nebraska state Senator, who presented at the Hydrogen & Carbon Capture Conference, the Monolith strategy is to build, own and operate plants.

Facilities will be co-located with hydrogen off-takers, which will allow the sharing sire infrastructure, thus reducing costs and spreading project risk, she said.

KeyState LLC currently is developing 7,000 acres of natural gas fields integrated with underground storage for carbon dioxide in West Keating Township, Clinton County, in central Pennsylvania.

The original $400 million KeyState to Zero project has more than doubled in cost and scope. N natural gas drilled on its acreage into blue hydrogen and ammonia/urea for merchant sales. Carbon emissions from the production will be captured and stored in caverns on the site in a closed-loop system.
Perry Babb, chairman and CEO of KeyState, told the H2 and CCS Conference the company is moving from a steam methane reforming (SMR) process, to Auto-Thermal Reforming (ATR). Using ATR, the Clinton County facility will produce 200 MT of hydrogen per day, including 100 MT/D for fuel cells for electric trucks, and 100 MT/D of H2 for ammonia and urea.

The site will include a hydrogen liquefaction facility. CO2 on-site storage of 300,000 to 400,000 MT/year is part of the design. The Clinton County facility is slated to go into commercial operation at the end of 2025 or early 2026, according to Babb.

The site of the second KeyState facility has not yet been announced, but the company has been working with end users for the hydrogen it will produce in what Babb told the Pittsburgh Business Times would be replicating the Pennsylvania plant with extraction of natural gas, gas synthesis to hydrogen and other products, and the carbon capture and storage deep underground.

Babb presented data at the conference showing current annual hydrogen production is 87 million MT. To decarbonize the steel industry alone will take roughly 122 million MT of hydrogen.

To reach net zero carbon by 2050 for every use would take 801 million MT of H2, which Babb maintains is not possible under current technology and economics.

The next Hydrogen & Carbon Capture Conference, produced by Shale Directories and the H2-CCS Network, is slated for Nov. 10, at the Hilton Garden Inn, south of Pittsburgh in the Southpointe Office Park.

Joe Barone
Shale Directories
+1 610-764-1232
jfbarone@comcast.net
