

Pennsylvania House Environmental Resources and Energy Committee

Shawn Bennett, Battelle

Chairman Vitali and members of the House Environmental Resources and Energy Committee, thank you for the opportunity to speak with you this morning. I am Shawn Bennett, Energy and Resilience Division Manager at Battelle, where I oversee all of our government-funded energy projects regarding carbon sequestration, hydrogen, direct air capture, and rare earth extraction. In fact, we have over two decades of experience in carbon sequestration in my division, and we also have Battelle Carbon Services, our commercial carbon sequestration group that has projects across the United States.

Battelle is the largest independent nonprofit applied science and technology organization in the world. We support a diverse spectrum of clients, from small start-up companies to multinational corporations and government agencies.

Battelle operates in a fast-paced environment to figure out the world's most difficult scientific challenges. Our partners trust us to provide independent and advanced solutions that transform our world for the better. With 90 years of innovations and counting, we're committed to problem-solving for the future.

Battelle is the prime applicant for the Appalachian Regional Clean Hydrogen Hub (ARCH2), a primarily blue hydrogen hub comprising 14 projects in Ohio, Pennsylvania, and West Virginia. ARCH2 is a \$6 billion investment in Appalachia, which will create 10,000 jobs in the early stages of siting and construction and reach almost 3,200 jobs towards the project's end. These jobs will not only provide a significant boost to the local economy but also contribute to the long-term economic sustainability of the region. In addition, ARCH2 will attract further investments and stimulate economic growth in the hydrogen sector, creating a ripple effect of job creation and economic prosperity for local businesses and communities.

The Appalachian Regional Clean Hydrogen Hub (ARCH2) is not just a project, but a vision of a future where clean hydrogen powers our industries and communities. It is a transformative partnership between the United States Department of Energy (DOE), industry leaders, governmental entities, academic and technology institutions, non-profit organizations, and community groups. Together, we are committed to establishing a thriving, sustainable clean hydrogen ecosystem in Appalachia. Spanning across West Virginia, Ohio, and Pennsylvania, ARCH2 will harness the region's abundant resources to facilitate diverse hydrogen production, storage, delivery, and end-use applications.

With partners such as Air Liquide, The Chemours Company, CNX Resources Corp, Enbridge Gas Ohio, Empire Diversified Energy, EQT Corporation, Fidelis New Energy, Hog Lick Aggregates, Hope Gas Inc., Independence Hydrogen Inc., KeyState Energy, Marathon Petroleum, Plug Power, and TC Energy, ARCH2 is poised to jumpstart the hydrogen sector in Appalachia. Guided by the expertise of Battelle Memorial Institute, GTI Energy, Allegheny Science and Technology, and TRC, with support from the National Energy Technology Laboratory (NETL), ARCH2 is at the forefront of driving innovation and sustainability in the Appalachian region. We are not just building a hydrogen hub, but a platform for continuous innovation and sustainable development, ensuring that the ARCH2 project remains relevant and impactful in the long run.

ARCH2 will involve producing 2,000 metric tons per day (MTPD) of hydrogen (H₂) with balanced distribution for various uses. This includes building the necessary infrastructure to connect hydrogen and carbon dioxide (CO₂) using existing rights-of-way, such as pipelines and caverns for transport and storage. Approximately 60% of the produced hydrogen will be used for chemical manufacturing in ARCH2 and nearby areas, while the rest will be utilized for transportation, distributed power, and industrial purposes. Each ARCH2 off-taker plays a unique role in developing projects that can be replicated anywhere in the United States, facilitating rapid market entry and adaptation to different regions.

This investment wouldn't be possible without both low-cost natural gas and carbon sequestration, as blue hydrogen uses natural gas as a feedstock coupled with carbon sequestration to create a low-carbon hydrogen that can transition our energy economy.

Appalachia constitutes an ideal region to accelerate the adoption of clean hydrogen across multiple sectors within the regional market and eventually throughout the United States economy as a Department of Energy (DOE) Regional Clean Hydrogen Hub. The region offers an abundance of low-cost natural gas to produce economically viable clean H₂ and H₂-derived products at scale. The region's vast industrial base provides a substantial opportunity to leverage existing infrastructure to decarbonize hard-to-abate sectors. This transition to clean hydrogen will significantly reduce greenhouse gas emissions, contributing to global efforts to mitigate climate change and improve air quality.

The ARCH2 region comprises the fastest growing and most significant natural gas producing region in the U.S. With the availability of abundant amounts of natural gas feedstock for the foreseeable future and the fact that natural gas produced in the region sells at a significant discount compared to other areas of the country, ARCH2 is a naturally competitive location to jumpstart the H₂ economy with a lower cost base and more rapid deployment.

While some heard the announcement of the Hub selections back in November, we have been in negotiations with the Department of Energy since that time. Many in the region as well as our partners are excited to be awarded so we can start work on this amazing opportunity, there is still a lot of work to be done until we get to award. This includes thorough risk assessments and mitigation plans to ensure the safety and feasibility of the project. I ask everyone, to please be patient. In the meantime, no projects have moved forward and many of the work, especially in the community will not be able to happen until award as those functions are a significant part of phase 1 of this potentially 4 phase project.

Community benefits commitments are not just a part of ARCH2, they are at the heart of it. These commitments, developed in consultation with local communities, regional entities, labor representatives, academic institutions, and other stakeholders, are designed to not only mitigate potential impacts of this project but also to maximize local community benefits. We are committed to making a positive difference in the communities we operate in.

I want to thank you for the opportunity to speak before the committee today, and I am happy to answer any questions you may have.