ARCH2’s hydrogen production will rely on largely unproven carbon capture and storage technology to reduce its emissions. This will involve acres of undisclosed underground pore space that will be used to store large quantities of highly pressurized carbon dioxide. To put this amount of space into perspective, the Tenaska Tri-State carbon capture and storage hub plans to utilize 80,000 acres of pore space in Ohio, Pennsylvania, and West Virginia. The risk of subsurface carbon dioxide migration poses serious safety threats to nearby communities, including human exposure to hazardous and highly concentrated carbon dioxide, drinking water contamination, earthquakes, and explosions.

Sequestered carbon tends to migrate upward. Fissures or fractures in rock formations, as well as abandoned oil and gas wells that are abundantly present in the region, could allow carbon to escape from storage facilities. ARCH2 will utilize blue hydrogen sourced from fracked gas, which will continue our region’s reliance on fracking. Continued fracking in our region will likely increase migration risks. Carbon is also corrosive. Over time, condensed carbon dioxide can wear down pipelines and injection well casings and escape containment. At high concentrations, carbon dioxide is a toxic asphyxiant, and a high-volume carbon dioxide exposure can sicken entire communities. In 2020, a carbon dioxide pipeline rupture in Mississippi led to the hospitalization of nearly 50 people and forced hundreds to evacuate their homes.

Furthermore, long-term carbon storage is unpredictable and requires constant surveillance. Two of the world’s most advanced carbon storage projects in Norway have shown that stored carbon shifts and migrates over time through underground pockets in ways that scientists are unable to predict. The Ohio River Valley region is already overwhelmed by legacy issues from the oil and gas industry. The additional responsibility of permitting, maintaining, and monitoring ARCH2 projects will further burden state regulatory agencies that are already underfunded and who have no practical experience with long-term geologic sequestration of carbon dioxide.

Developers are being allowed to move forward with hydrogen and carbon capture and sequestration proposals before gaining the necessary experience and understanding of the technology and its infrastructure. Efforts should instead be focused on energy alternatives including electrification that would be cheaper, cleaner, and better for the economy.

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