

Active Initiatives

Carbon Sequestration as a Service (SaaS)

Carbon Capture Utilization and Storage (CCUS) refers to a set of technologies that prevent carbon dioxide (CO₂) from being emitted into the atmosphere. A variation on this approach, carbon removal extracts CO₂ directly from the air. Both methods require disposing of the captured CO₂, either by converting it to a useful product (utilization) or securing it to prevent it from ever reaching the atmosphere (storage or sequestration).

The potential to capture and store CO₂ provides an opportunity for Wyoming to develop a sequestration service. Currently CO₂ from the energy sector gets released directly into the atmosphere and oceans, but it could be trapped deep underground for permanent containment. A service industry of CO₂ sequestration would help Wyoming meet its net-zero goal.

The WEA has an initiative to establish Sequestration as a Service within Wyoming. This would involve building commercial sequestration sites with wells for injecting CO₂ deep beneath the earth's surface. These sites would be operated by entities with vast knowledge in the practice of injecting CO₂, which would then offer this as a service to any CO₂ emitter. Wyoming has a competitive advantage for this service. It already has extensive CO₂ infrastructure, it leads the nation in CO₂ centric policy, it has an experienced workforce in CO₂ operations, and it has a favorable business environment. Successful establishment of a SaaS industry would benefit all CO₂ emitters in the state and facilitate establishment of other forward-looking "all of the above" energy prospects such as hydrogen and direct air capture (DAC) industries.

Near-term initiatives include mitigating liability of the Class VI wells used for transmission to underground storage,

manufacturing CO2 into cement and steel, and mitigating fossil fuel emissions. The workforce requirements to support this service sector encompass every skill set – from trades to legal and financial, from executives to scientists, engineers, and laborers. SaaS supports our heritage industries and also provides a bridge for Wyoming to become economically sustainable and a critical leader in the net-zero energy economy, making it an important initiative in our state energy strategy.

Hydrogen Economy

Production, consumption, and exportation of hydrogen carries the potential to fill the downstream demands of transportation, including heavy-duty vehicles, rail, air, and shipping; meet residential and industrial power generation and heating requirements; and produce feedstock (steel and chemical) supplies. Wyoming's vast experience in energy production coupled with a strong infrastructure backbone capable of supporting a hydrogen industry positions the state at the forefront of this expanding opportunity.

Through public and private partnerships in research, development, demonstration, and deployment activities, Wyoming is investigating the potential for upgrading our rich hydrocarbon resources to decarbonized hydrogen and leveraging our world-class renewable resources for production of zero-carbon hydrogen. Hydrogen manufacturing could be centralized or dispatched in modular form, making it suitable for a wide range of siting locations and thus encouraging statewide economic inclusion. The state's natural gas pipeline infrastructure could be repurposed to transport hydrogen while the existing power grid could support additional electric generation. Wyoming has a unique opportunity given its overlapping abundance of natural resources (both hydrocarbon and renewable) and existing infrastructure to support hydrogen production and become an export powerhouse in the future.

In April 2021 the WEA issued a call for proposals to scope out the viability for a pilot project to demonstrate the potential for hydrogen production, export, and use in the state. The robust response indicates an encouraging level of interest and potential for investment in these projects.