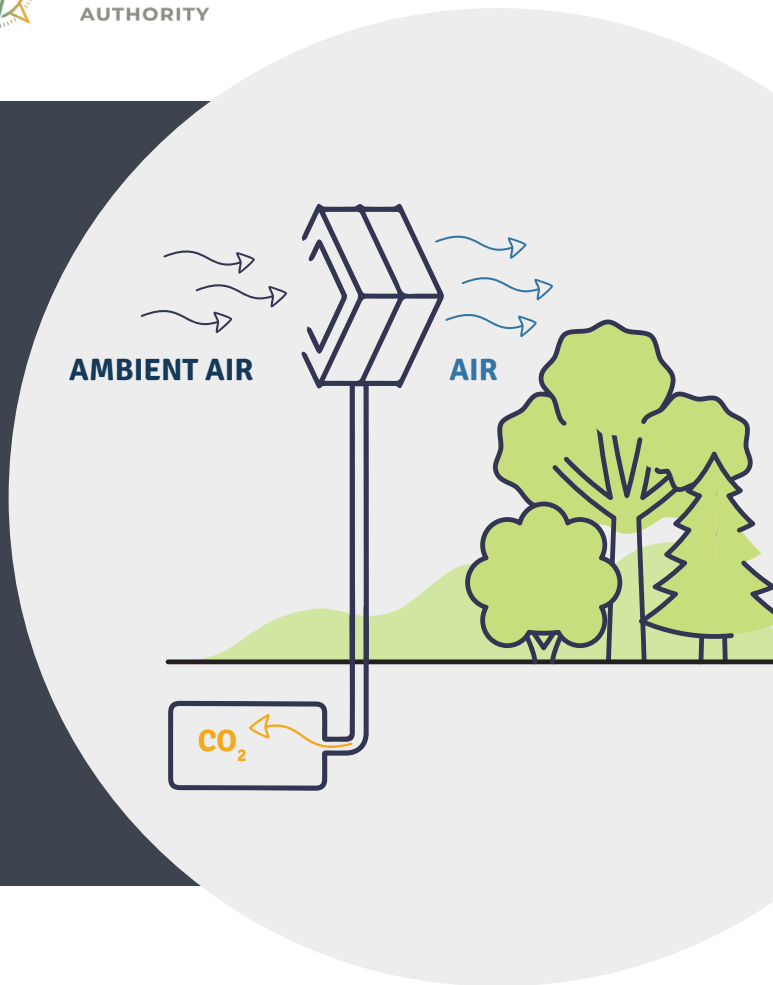
What is Direct Air Capture (DAC) Technology?

DAC is a form of Carbon Capture Utilization and Sequestration (CCUS) where air is captured and the CO_2 is separated out and then permanently stored underground or converted into products.

- It is similar to what plants and trees do every day, but DAC does it faster and on a larger scale with a smaller footprint.
- DAC is helpful in balancing carbon emissions for industries that don't have a lot of other choices like long-distance transport and heavy industry.
- In May of 2022, the Department of Energy (DOE) released a Notice of Intent to provide $3.5 billion in funding to establish Direct Air Capture Hubs for large-scale CO_2 removal.



What does a DAC facility produce?

- CO_2 for permanent storage underground
- CO_2 to be used in food processing or in products like synthetic aviation fuels or cement*.
- Carbon Offset Credits

What are the needs of a DAC company?

DAC company inputs include land and a variety of power sources. Also important to siting are sequestration wells and availability of DAC-specific manufacturing.

Energy: A variety of energy sources can be used to power a DAC facility. Scaling up today's DAC systems would use non-trivial amounts of energy†. Many DAC companies are interested in renewable energy sources in order to keep facility emissions overall net-negative based on their values.

Land: Because of a limited footprint, there is flexibility when it comes to siting DAC facilities†. Many companies are looking to locate close to suitable storage, eliminating the need for long-distance CO_2 transport*. DAC facilities also require permanent storage. Wyoming has more than 40 billion tons of CO_2 storage.

Water: Water usage will vary depending on the DAC system, local temperature and humidity.

What kind of jobs do DAC facilities need?

We anticipate many of these jobs will be similar to plant operators and maintenance as well as some construction needs. Job opportunities will fit well with Wyoming's current mining and plant workforce. The majority of engineering, technical and innovation positions will likely be held offsite.

* https://www.iea.org/reports/direct-air-capture
† https://www.wri.org/insights/direct-air-capture-resource-considerations-and-costs-carbon-removal
‡ https://www.mckinsey.com/business-functions/sustainability/our-insights/a-blueprint-for-scaling-voluntary-carbon-markets-to-meet-the-climate-challenge

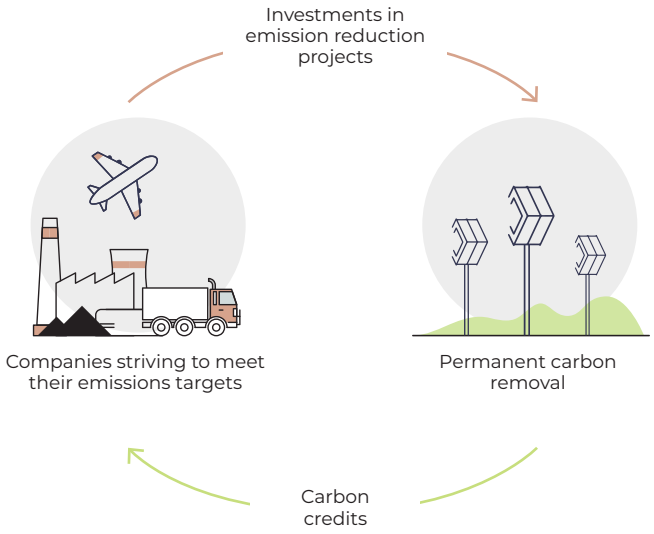
What is a Carbon Credit?

- When you purchase a carbon credit, you purchase a permit that represents one ton of CO_2 emissions that has either been removed from the atmosphere or prevented from being emitted into the atmosphere.
- Companies like United Airlines, Microsoft, Google and CocaCola buy carbon credits, in addition to taking other measures such as using renewable energy, to help offset their carbon footprint. Sometimes companies are required to offset emissions, and other times this is a voluntary process to meet their customers' needs.

How does a DAC facility produce Carbon Credits?

A DAC facility can create carbon credits by capturing CO_2 from the atmosphere, storing it permanently, and tracking and recording the process very precisely. Then, they can sell these credits. This is one way for DAC companies to make money.

Carbon credits produced from DAC are considered to be amongst the most reliable and valuable but are also currently the most expensive. The global carbon credit market is projected to grow at least 15x by 2030 to reach $50 billion.‡.



Why Wyoming?

Wyoming is the Energy State and has been a leader in carbon management for decades:

- CCUS leader
- High density of active oil/gas extraction
- Renewable energy generation
- Existing transmission infrastructure
- Capacity for geological storage
- State-owned Class VI storage wells

Wyoming has energy industry-friendly policy and policymakers.

Wyoming has a veteran energy workforce.

Wyoming's existing industry, workforce and infrastructure may make it a strong candidate for DOE funding for DAC Hubs.

To Learn More About DAC, visit: https://www.iea.org/reports/direct-air-capture-2022

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