Research and Development Activities

As a global leader in the advancement of carbon management technologies that are essential for decarbonizing the economy and removing carbon dioxide (CO_2) from the atmosphere, the U.S. Department of Energy's Office of Fossil Energy and Carbon Management (FECM) is researching and investing in direct air capture (DAC) technologies to help scale them to the commercial market.

WHAT IS DIRECT AIR CAPTURE?

DAC is a process that separates CO_2 AME from ambient air. The separated CO_2 can then be safely and permanently stored deep underground or converted into products.

AMBIENT AIR

WHY DO WE NEED IT?

Advancing the deployment of DAC and other carbon dioxide removal approaches will be critical to meeting our net-zero emissions targets and addressing the global climate crisis.

AIR

More than \$1 billion has been invested by government agencies and private investors in research and development (R&D) on technologies for point-source carbon capture, a method that captures CO_2 directly from power plants and industrial facilities to lower plant emissions. Around \$620 million in federal funding has also been spent on three demonstration projects that have successfully captured and injected over 13.6 million metric tons of CO_2 domestically as of September 30, 2021.

FECM is leveraging that research to accelerate the development of DAC processes.

Over \$350 million has also been invested in the National Carbon Capture Center, located in Wilsonville, AL, a user facility that hosts developers of point-source carbon capture and DAC. At this center, approximately 80 engineers and scientists support the R&D of these systems.

DIRECT AIR CAPTURE RESEARCH

CURRENT

RESEARCH

ACTIVITIES

Research, development, demonstration and deployment of decarbonization technologies, including DAC, will be a critical component to achieving net-zero emissions by 2050—one of the climate goals established by the Biden-Harris Administration.

DOE is also investing in approaches that develop and scale DAC technologies to make the most efficient use of existing carbon capture and storage program activities and infrastructure, while supporting first generation DAC companies.

RESEARCH ACTIVITIES



<u>DOE Invests</u> <u>\$72 Million in</u> <u>Carbon Capture</u> <u>Technologies</u>

2020-Present -Laboratory Material and Process Development) 2022 🔵

<u>\$6 Million in Funding</u> for Four DAC Projects

2021 DAC Investment DOE FOA for \$14.5 Million Supporting DAC and Storage Feasibility Study

These advances are a part of a diverse portfolio of industry cost-shared technology development projects, university research grants and collaborative work with other National Laboratories. FECM will continue to build on that work to make great strides in DAC efficiency improvements.



Fossil Energy and Carbon Management

For more information about CDR, visit the <u>FECM website</u> and sign up for <u>official news announcements</u>.

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