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Project Selections for FOA 2735: Regional Direct Air Capture Hubs – Topic Area 1 (Feasibility) and Topic Area 2 (Design)

**PROJECT SELECTIONS FOR FOA 2735:
REGIONAL DIRECT AIR CAPTURE HUBS – TOPIC
AREA 1 (FEASIBILITY) AND TOPIC AREA 2
(DESIGN)**

TOPIC AREA 1 – FEASIBILITY

*Aera Direct Air Capture Hub — Kern — **Aera Federal, LLC*** (Bakersfield, California) plans to execute a feasibility study for a regional direct air capture (DAC) hub at Aera Energy's Belridge oil field in Kern County, California. The DAC Hub — Kern would capture carbon emissions from the atmosphere and safely transport and store them in Aera's Carbon Frontier sequestration site. The hub would integrate capture, low-carbon energy sources, transportation, and sequestration infrastructure to build an innovative low-carbon supply chain.

DOE Funding: \$2,785,578

Non-DOE Funding: \$1,777,761

Total Value: \$4,563,339

*An Arctic Direct Air Capture Hub Testing Ground — **ASRC Energy Services, LLC*** (Anchorage, Alaska) intends to evaluate DAC locations that include: the North Slope, the Interior (Fairbanks), and/or South Central (Anchorage, Kenai Peninsula, Mat-Su). As part of the pre-feasibility study, the consortium will conduct a technical review of multiple existing technologies to review the operating range of technologies and identify modifications required to operate in the Arctic.

DOE Funding: \$3,000,000

Non-DOE Funding: \$1,908,106

Total Value: \$4,908,106

*Illinois Basin Regional DAC Hub — **Board of Trustees of the University of Illinois*** (Urbana, Illinois) will lead an effort to promote promising technologies that can capture carbon dioxide (CO₂) from the atmosphere and store it in the Illinois Basin, proven geological storage strata stretching under Illinois, Indiana and Kentucky. The Illinois Basin Regional DAC Hub intends to develop cooperative relationships between DAC technology providers, green energy providers, CO₂ transportation networks, and companies seeking to pump CO₂ underground or use it in industrial processes.

DOE Funding: \$2,938,528

Non-DOE Funding: \$808,057

Total Value: \$3,746,585

Colorado (Pueblo) Regional DAC Hub — **Board of Trustees of the University of Illinois** (Urbana, Illinois) will lead an effort to promote promising technologies that can capture CO₂ from the atmosphere and store it underground and develop a DAC hub that will build upon previous geological studies conducted on the Denver-Julesburg Basin. The Colorado Regional DAC Hub intends to develop cooperative relationships between DAC technology providers, green energy providers, CO₂ transportation networks, and companies seeking to pump CO₂ underground or use it in industrial processes.

DOE Funding: \$2,999,992

Non-DOE Funding: \$751,646

Total Value: \$3,751,638

Florida Regional DAC Hub — **Board of Trustees of the University of Illinois** (Urbana, Illinois) will lead an effort to promote promising technologies that can capture CO₂ from the atmosphere and store it underground in the Tuscaloosa Group (thick, permeable saline aquifers 4,920 to 7,050 feet deep). The Florida Regional DAC Hub intends to develop cooperative relationships between DAC technology providers, green energy providers, CO₂ transportation networks, and companies seeking to pump CO₂ underground or use it in industrial processes.

DOE Funding: \$2,778,670

Non-DOE Funding: \$791,394

Total Value: \$3,570,064

Western Regional Direct Air Capture Hub — **Chevron New Energies, a division of Chevron U.S.A. Inc.** (San Ramon, California) intends to explore the feasibility of a potential DAC hub initially focused on Kern County, California and adjacent counties. The proposed hub would build upon existing low-carbon technology pilots and other proposed projects planned to occur at Chevron's San Joaquin Valley assets.

DOE Funding: \$3,000,000

Non-DOE Funding: \$1,995,904

Total Value: \$4,995,904

Red Rocks DAC Hub: A Geothermal Energy-Driven Direct Air Carbon Capture and Sequestration Hub in Southwest Utah — **Fervo Energy Company**

(Houston, Texas) intends to establish the Red Rocks DAC Hub in southwest Utah. Fervo's geothermal and carbon sequestration exploration and resource characterization activities suggest that there is more than 10 gigawatts of high-quality, economically exploitable geothermal resources available in southwest Utah, which could translate into a storage potential of up to 100 million tons of CO₂ annually.

DOE Funding: \$2,866,270

Non-DOE Funding: \$719,383

Total Value: \$3,585,653

Houston Area DAC Hub — **General Electric, GE Research** (Niskayuna, New York) plans to conduct a pre-feasibility study for a DAC hub in the greater Houston area in the state of Texas using a clean power source (renewable or nuclear energy). This hub would be located where Tenaska has acquired pore volume for the sequestration of CO₂. The goal of this program is to establish a regional DAC hub that can remove one million metric tonnes of CO₂ per year from the air and either permanently store the CO₂ or utilize it in a value-added product (or a combination of the two).

DOE Funding: \$2,554,247

Non-DOE Funding: \$762,827

Total Value: \$3,317,074

Pelican-Gulf Coast Carbon Removal — **Louisiana State University** (Baton Rouge, Louisiana) intends to evaluate the feasibility of building a DAC hub in Louisiana that would remove CO₂ already in the atmosphere and permanently store it. The Pelican consortium, including the University of Houston and Shell, proposes developing technologies that can enable accelerated and replicable carbon removal and permanent storage in ways that protect and generate workforce opportunities.

DOE Funding: \$2,999,960

Non-DOE Funding: \$1,874,095

Total Value: \$4,874,055

Midwest Nuclear DAC Hub (MINDAC) — **Northwestern University** (Evanston, Illinois) plans to test the feasibility of deploying at-scale novel DAC solutions by developing a DAC hub powered by nuclear energy for the Midwest. The Midwest is the second largest regional emitter of carbon dioxide in the United States and is home to both heavy-emitting industries and a rich ecosystem of innovation and research. Centering the study around nuclear power ensures that a reliable low-carbon energy source (and the opportunity for heat integration) will be used for technology development.

DOE Funding: \$3,000,000

Non-DOE Funding: \$927,910

Total Value: \$3,927,910

Community Alliance for Direct Air Capture — **The Regents of the University of California** (Oakland, California) intends to undertake a comprehensive assessment of the technical, social, and governance feasibility of establishing a Community Alliance for Direct Air Capture in the Southern San Joaquin Valley in California. The project includes a diverse group of technology companies, research organizations, and community partners that will collaboratively develop a DAC hub that achieves technology goals and delivers meaningful community benefits.

DOE Funding: \$2,999,999

Non-DOE Funding: \$1,472,941

Total Value: \$4,472,940

Ankeron Carbon Management Hub — **Rocky Mountain Institute (RMI)** (Basalt, Colorado) plans to bring together DAC and CO₂ mineral storage technology developers for a regional DAC hub development in the Pacific Northwest. The Ankeron Hub intends to unite DAC technologies developed by Heirloom, Removr, and Sustaera validated at a technology readiness level between 4–6 at lab and/or pilot scale and powered by electricity only. The project will deliver a feasibility study, which builds on the combined experience of Carbfix and Pacific Northwest National Laboratory, as well as Carbfix's experience with DAC and storage integration and commercial operation in Iceland.

DOE Funding: \$2,999,754

Non-DOE Funding: \$1,134,999

Total Value: \$4,134,753

Texas Direct Air Capture (aka "Monster" DAC) — **Siemens Energy, Inc.**

(Orlando, Florida) and partners Constellation Energy, the University of California–Berkeley, and Battelle intend to explore the feasibility of a multi-technology DAC hub anchored around Siemens Energy’s solid sorbent capture technology, with smaller deployments of next-generation capture technologies planned. The Texas DAC (or “Monster” DAC) project is aligned with the targets of the U.S. Department of Energy’s Carbon Negative Shot initiative, and is intended to create a credible path to enable the eventual construction of the proposed DAC hub. The DAC hub setup would include a primary hub located in the Midwest and a satellite research hub located at the Richmond Field Station in Berkeley, California.

DOE Funding: \$2,952,880

Non-DOE Funding: \$750,000

Total Value: \$3,702,880

The DAC Hub for Appalachian Prosperity — **University of Kentucky Research Foundation** (Lexington, Kentucky)—along with partners that include

technology developers and an experienced engineering, procurement, and construction firm; business development personnel; and local government and communities—intends to determine the feasibility of a distributed DAC hub with centralized injection/storage in eastern Kentucky. The hub is intended to use the University of Kentucky’s decoupled capture-regeneration direct air CO₂ removal technology, which is powered by solar and biomass energy sources, and store the CO₂ in a depleted natural gas field.

DOE Funding: \$2,999,253

Non-DOE Funding: \$754,288

Total Value: \$3,753,541

TOPIC AREA 2 – DESIGN

California Direct Air Capture Hub Front-End Engineering Design and Planning

— **Electric Power Research Institute, Inc.** (Washington, D.C.)—along with partners California Resources Corporation, Climeworks, Avnos, SoCalGas, Kern

Community College District, the National Renewable Energy Laboratory, Lawrence Livermore National Laboratory, University of Michigan, and California State University – Bakersfield—intends to design and plan the initial deployment and future development of CalHub, a regional DAC hub comprising both a planned storage site and pipeline transport of CO₂. The project will study low-to-zero carbon-emitting sources of energy.

DOE Funding: \$11,829,634

Non-DOE Funding: \$11,829,634

Total Value: \$23,659,268

Prairie Compass DAC Hub — Phase 1— **University of North Dakota Energy & Environmental Research Center (EERC)** (Grand Forks, North Dakota) plans to demonstrate lower-cost DAC technology from Climeworks and permitted CO₂ storage facilities in North Dakota at megatonne scale to catalyze and guide the socially responsible development of commercial DAC plus storage facilities on the northern Great Plains. Climeworks will deploy technology to Prairie Compass Hub, which includes a fully permitted CO₂ storage site as the hub's anchor storage option, other storage sites, and CO₂ transportation under development to support hub expansion.

DOE Funding: \$12,500,000

Non-DOE Funding: \$15,199,406

Total Value: \$27,699,406

Southwest Regional Direct Air Capture Hub — **Arizona Board of Regents on behalf of Arizona State University** (Phoenix, Arizona)—with major partners Black & Veatch, Carbon Collect, CarbonCapture, Carbon Solutions, Proton Green, University of New Mexico, University of Utah, Tallgrass, and Arizona Geological Survey—plans to develop the Southwest Regional DAC Hub to advance the design of a regional DAC hub. The hub is intended to catalyze a carbon capture industry in the region. It is also intended to support a renewable energy boom in an area that is home to aging coal plants scheduled to be retired, vast tracts of land with existing transmission capacity, and local communities capable of exploring options for an industrial base that can support workers and generate tax revenue as the area transitions away from fossil energy.

DOE Funding: \$11,586,146

Non-DOE Funding: \$11,586,591

Total Value: \$23,172,737

Southeast DAC Hub: Leveraging Legacy Work in Mobile Region — **Southern States Energy Board** (Peachtree Corners, Georgia), in coordination with site host Alabama Power Company, plans to develop the Southeast DAC (SEDAC) Hub project to support the deployment of DAC technology in Mobile County, Alabama. The project team includes personnel from various organizations, including 8 Rivers, Aircapture, Crescent Resource Innovation, ENTECH Strategies, Georgia Tech, Mitternight, RTI International, Southern Company Services, the University of Alabama, and the University of South Alabama. The anchoring technologies for the SEDAC Hub were developed or optimized by 8 Rivers and Aircapture.

DOE Funding: \$10,242,232

Non-DOE Funding: \$10,242,234

Total Value: \$20,484,466

The Wyoming Regional Direct Air Capture Hub — **Carbon Capture Inc.** (Pasadena, California) intends to develop the first phase of the Wyoming Regional Direct Air Capture Hub alongside anchor CO₂ storage partner Frontier Carbon Solutions and anchor CO₂ utilization partner Twelve. The team will also include supporting partners the University of Wyoming, Fluor, Carbon Direct, INTERA, EPRI, Carbon-Based Consulting, Icarus, and Novus Energy Advisors. The hub partners will leverage world-class geology for permanently storing CO₂, a skilled workforce, attractive sites for developing renewable energy resources, and a strong carbon management support infrastructure.

DOE Funding: \$12,500,000

Non-DOE Funding: \$15,070,138

Total Value: \$27,570,138

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