

# TWO LARGE-SCALE CAPTURE PILOTS PROCEED TO DETAILED DESIGN AND CONSTRUCTION

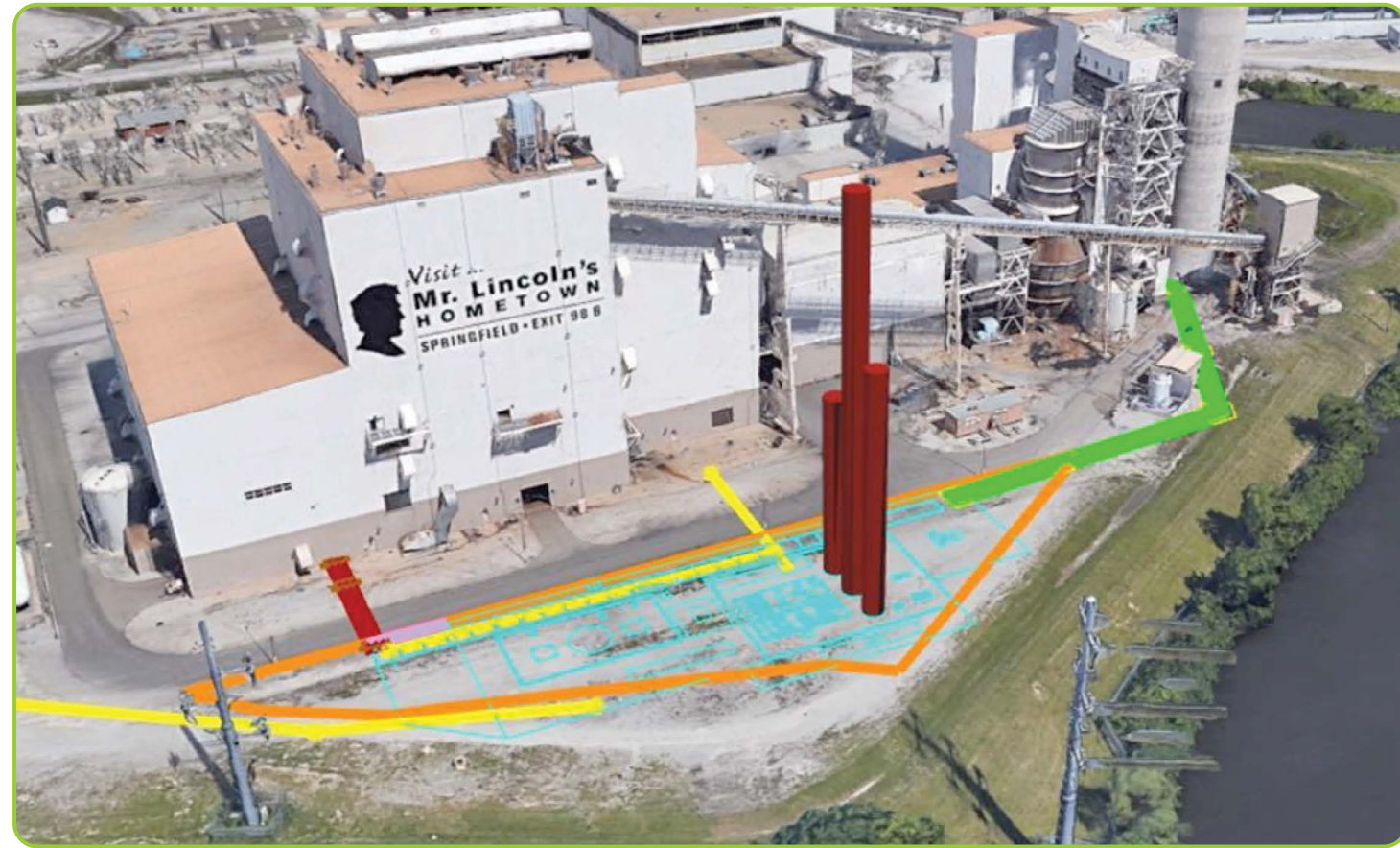
Large pilot testing of advanced carbon capture systems at actual sites will provide a detailed understanding of carbon capture costs in a commercial application.

Two advanced carbon dioxide (CO<sub>2</sub>) capture technologies will be tested at large-scale pilot facilities using nominal 10-MWe exhaust slipstreams from existing power plants.

## 10-MWE TESTING OF LINDE-BASF OASE® BLUE SOLVENT SYSTEM AT DALLMAN POWER PLANT IN SPRINGFIELD, IL

The University of Illinois has partnered with Linde Engineering, BASF Corporation, and Affiliated Construction Services to build and operate a 10-MWe advanced amine-based post-combustion CO<sub>2</sub> capture (PCC) system at the coal-fired City Water, Light and Power (CWLP) Dallman Unit 4 in Springfield, IL.

The PCC system is **designed for >90% CO<sub>2</sub> capture [~200 tonnes of CO<sub>2</sub> per day (TPD)] with 50% turndown capacity** and includes a patented water wash process to reduce OASE® blue solvent loss and aerosol emissions, a unique two-phase, plate-and-frame reboiler design to improve load-following capabilities, stripper interstage heating, and high-pressure stripper operation (3.4 bar).

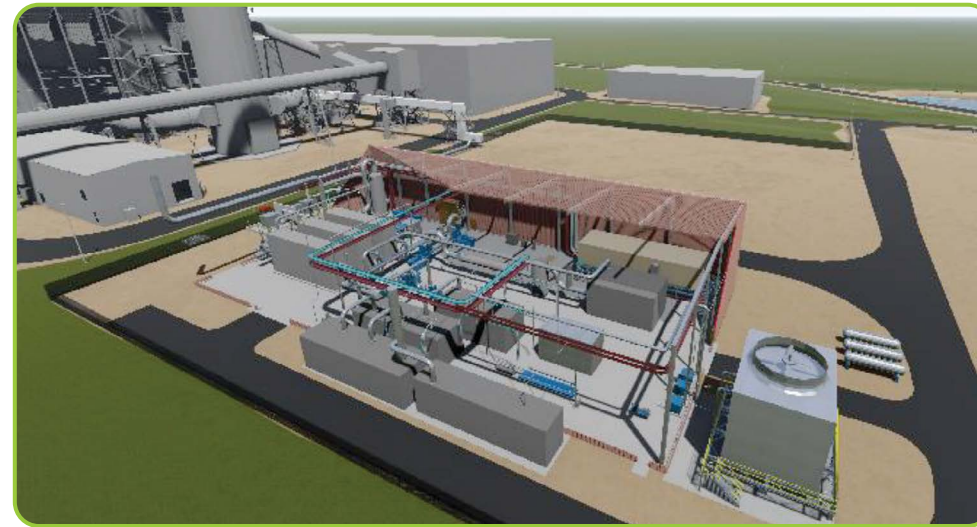


CWLP Dallman Plant with Rendering of Capture Unit

## 10-MWE TESTING OF MTR GEN-2 POLARIS MEMBRANE SYSTEM AT THE WYOMING INTEGRATED TEST CENTER IN GILLETTE

Membrane Technology and Research (MTR) has partnered with Sargent & Lundy, Trimeric, and Graycor to construct and operate a **two-stage membrane process designed for 70% CO<sub>2</sub> capture** from a 10-MWe coal-fired slipstream (~150 TPD) at the Wyoming Integrated Test Center in Gillette, WY.

The MTR process will feature high-permeance (>1,500 GPU) Gen-2 Polaris™ membranes in planar membrane modules designed for low pressure drop (4X reduction from earlier spiral-wound modules) followed by CO<sub>2</sub> liquefaction to evaluate product purification (>99%) and compression to 2,234 psia (154 bara).



## PRIMING TECHNOLOGY FOR COMMERCIAL DEPLOYMENT

The two five-year projects will complete construction in 2023 for operation in the 2024–2025 time frame and will prime the CO<sub>2</sub> capture technologies for commercial deployment while also providing critical data and knowledge collection that can be applied to other power and industrial CO<sub>2</sub> emitting facilities.

AWARD NUMBER  
**DE-FE0031581**  
(U of Illinois)

PROJECT BUDGET

**\$71.8M**

- DOE .....\$50,862,896
- PERFORMER.....\$20,942,223

AWARD NUMBER  
**DE-FE0031587**  
(MTR)

PROJECT BUDGET

**\$72.2M**

- DOE .....\$55,698,626
- PERFORMER.....\$16,470,049

### CONTACTS

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FECM RDD&D PRIORITY

 DEMONSTRATE AND DEPLOY POINT-SOURCE CARBON CAPTURE

### PARTNERS

