

SUPERCRITICAL CARBON DIOXIDE (sCO₂) POWER CYCLES FOR LOW-COST ENERGY

New sCO₂ power cycle pilot plant will prove critical capabilities of a novel technology for more efficient power generation at lower cost, making the United States a leader in domestic and global power generation

IMPROVING DOMESTIC AND GLOBAL POWER GENERATION

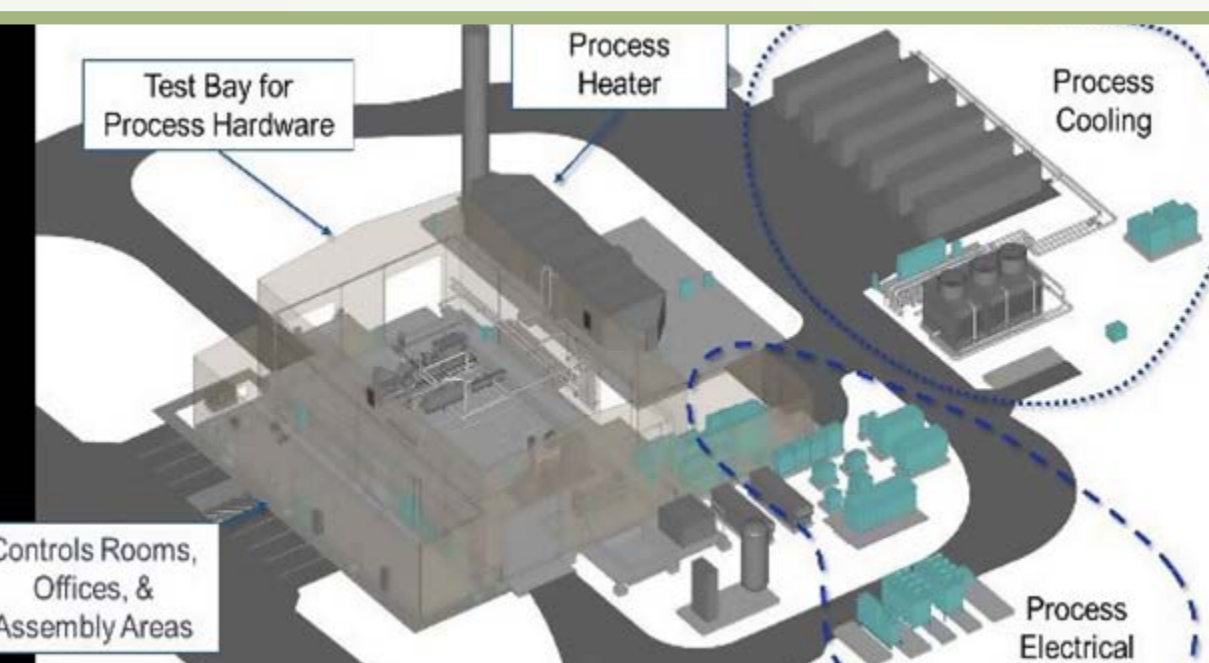
Supercritical CO₂ (sCO₂) power cycles offer potential for power generation with increased efficiency, lower cost of electricity, reduced customer costs, and reduced water consumption.



RECONFIGURABLE FLEXIBLE PILOT TEST FACILITY

DOE's investment in sCO₂ power cycle technology through the **10-MWe sCO₂ power cycle pilot plant** enables the United States to lead in developing and commercializing sCO₂ power cycle deployment for both domestic and global power generation.

CRITICAL CONSTRUCTION AND MAJOR EQUIPMENT FABRICATION UNDERWAY

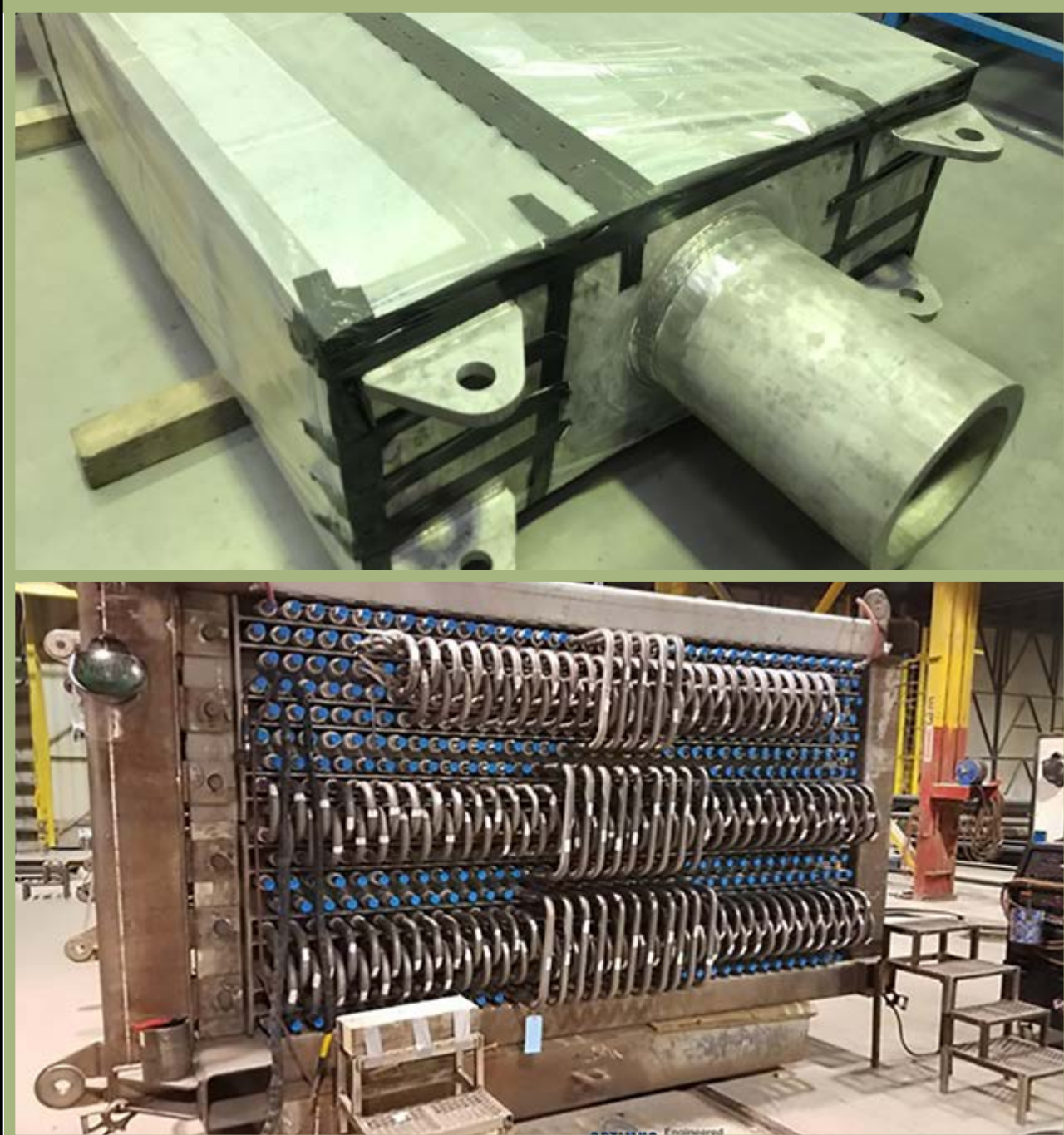


KEY PROGRESS towards completing the **LARGEST INDIRECT-FIRED sCO₂ POWER CYCLE TEST FACILITY IN THE WORLD**

- Site grading, foundations, underground raceways and plumbing
- Major equipment being manufactured in parallel, including low-temperature recuperator, process coolers, compressor, cooling tower, turbine stop valves



Closed a key technology gap to enable use of a critical material of construction



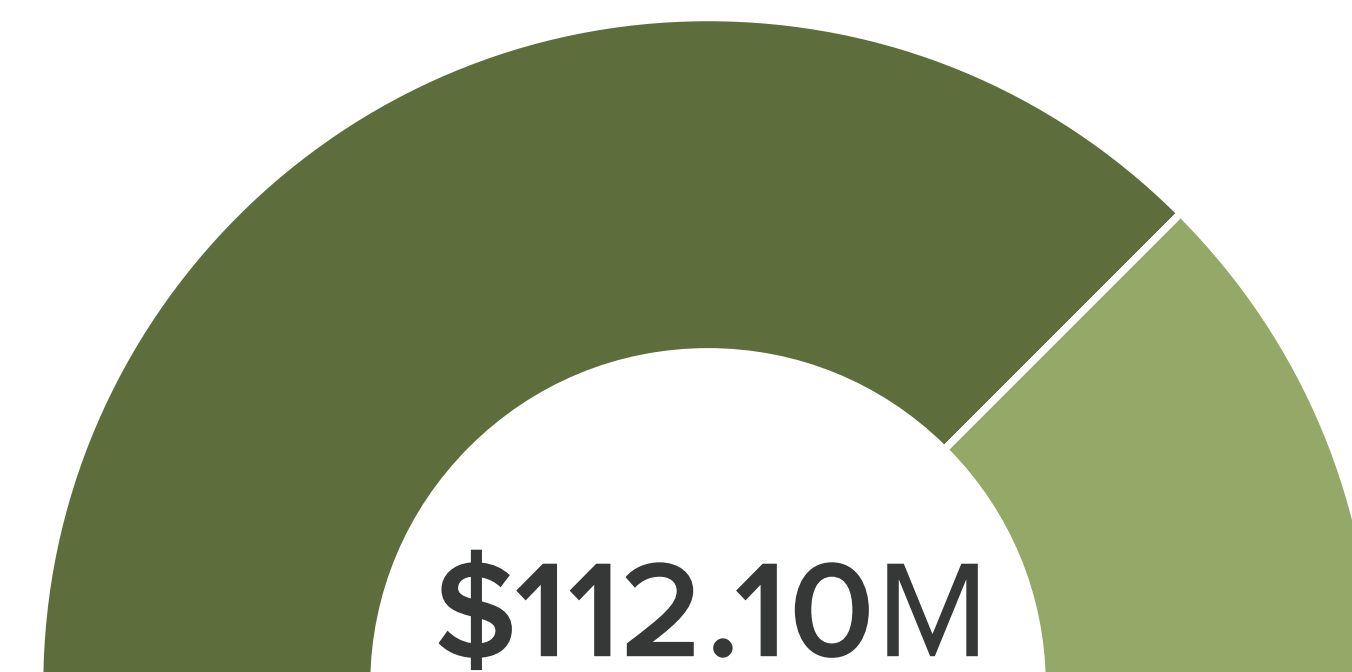
- Primary heater - modules fabricated using specialty welding procedures for finned Inconel 740H tubing
- A significant accomplishment for large-scale manufacture of components utilizing Inconel 740H materials
- Weld procedures were developed under the DOE/FE Advanced Ultra-Supercritical Materials Program

REDUCING BARRIERS AND RISKS TO COMMERCIALIZATION

AWARD NUMBER
DE-FE0028979

PROJECT BUDGET

FY19 FUNDING



- DOE \$84,330,971
- PERFORMER \$27,772,137

CONTACTS

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CORE COMPETENCIES



FE ROADMAP OBJECTIVE: **1.1**

2019
Science & Technology
ACCOMPLISHMENTS
SESSION



Advancing the next generation of modular, highly efficient, and flexible coal-fired power plants



U.S. DEPARTMENT OF
ENERGY

