

International CCUS Test Center Network

Prepared for
UKCCSRC Virtual Conference – Global Overview

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National Carbon Capture Center

- **Sponsors:** U.S. Department of Energy and its National Energy Technology Laboratory
 - DOE's primary carbon capture research facility since 2009
- **Partners:** Electric Power Research Institute, power/energy industry leaders
- **Managed/operated by:** Southern Company
- **Location:** Wilsonville, Alabama
- **Infrastructure:** Real-world power plant operating conditions – coal and natural gas
- **Expertise:** Technical staff for design, installation, testing support and analysis
- **International collaboration:** Co-founder of International Test Center Network
- **Funding:** \$348M (DOE \$253.4M / Non-DOE \$94.6M)



Major Accomplishments and Future Scope



- 117,000+ hours of testing over last decade
- 68+ technologies tested / 40+ developers from 7 countries
- Post-combustion accomplishments:
 - ✓ Continuous expansion – alternative regeneration, gas injection, analytical support
 - ✓ Advanced solvents, membranes, solid sorbents
 - 18 technologies in queue to test / 8 technologies scaled up (or ready) to 10+ MW
- Natural gas expansion – first run completed Q1 2021

Contributed to cost reduction of CO₂ capture from fossil generation by 40%

Oct. 1, 2020 – 5-Year Agreement Renewal / \$140 Million
Expanding scope to CO₂ capture for **natural gas power, CO₂ utilization, direct air capture**

International Test Center Network



Purpose

- ITCN shares knowledge on operating test facilities
- Facilitate collaboration on technology development and proposal response
- One technical focus are per year
 - Analytical techniques
 - Amine carry-over
 - Support of CCSI
 - Open access technology
 - Alternative baselines to MEA

International Collaboration



ITCN Mtg Beijing



CERI - Beijing



CO2CRC - Melbourne



CSIRO - Brisbane



CCUSRP - Guangdong



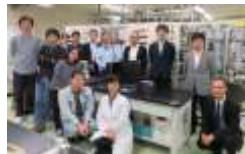
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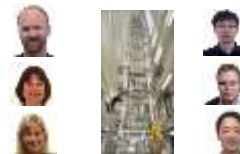
Knowledge Ctr - Regina



Nice - Beijing



RITE - Kyoto



Sintef - Trondheim



TCM - Mongstad



Univ Kentucky - Lexington



UKCCSRC - Sheffield



ITC Test Ctr - Gillette