

Site visit to the Al Reyadah CCUS Project

On Wednesday morning, May 3rd, attendees of the 2017 CSLF Mid-Year Meeting will have the opportunity to visit the Al Reyadah Carbon Capture, Utilization & Storage (CCUS) Project.



Al Reyadah is a joint venture between Masdar and Abu Dhabi

National Oil Company (ADNOC) and is the Middle East's first specialized company focused on exploring and developing commercial-scale CCUS projects. It consists of three elements: industrial capture of the gas from the Emirates Steel facilities; compression, dehydration at Al Reyadah carbon capture facility (CCF); and transportation of CO₂ gas for injection into Abu Dhabi National Oil Company (ADNOC) onshore oil fields for enhanced oil recovery (EOR). The project will allow natural gas, which has traditionally been used to maintain the pressure of oil reservoirs and aid in oil recovery, to be used for power generation and water desalination.

The Al Reyadah facility, located in Mussafah, and adjacent to Emirates Steel Industries, will sequester up to 800,000 tonnes of CO₂ annually. Construction of the project is complete and was commissioned through July-August 2016.

Specific details about the site visit will be announced at the CSLF meeting. A fact sheet about the project is on the next page.



الريادة AL REYADAH

شركة أبوظبي لالتقاط الكربون
ABU DHABI CARBON CAPTURE COMPANY

Al Reyadah CCUS Project, Abu Dhabi

The Carbon Capture, Utilization & Storage (CCUS) project of Emirates Steel (ES) is the first project under Al Reyadah, a joint venture between Masdar and Abu Dhabi National Oil Company (ADNOC). Al Reyadah is the Middle East's first specialised company focused on exploring and developing commercial-scale CCUS projects. It consists of three elements: industrial capture of the gas from the ES facilities; compression, dehydration at Al Reyadah carbon capture facility (CCF); and transportation of CO₂ gas for injection into ADNOC onshore oil fields for enhanced oil recovery (EOR). The project will save precious natural gas, traditionally used to maintain the pressure of oil reservoirs and aid in oil recovery, and free the available natural gas for traditional power generation and water desalination.

The \$122 million (AED 450 million) procurement and construction contract for the CCF was awarded to Dodsal Group in 2013. The new Al Reyadah facility, located in Mussafah, and adjacent to Emirates Steel Industries, will sequester up to 800,000 tonnes of CO₂ annually. Construction of the project is complete and was commissioned through July-August 2016.

Quick Facts

- + The ES CCUS project is the Middle East's first commercial scale CCUS facility
- + Today, there are 15 operating CCS plants globally with a further 7 under construction
- + Completed and inaugurated in Nov 2016
- + One of the first pioneering projects in the region to utilize CO₂ for EOR
- + It will sequester up to 800,000 tonnes of CO₂ annually
- + It will liberate precious natural gas for power generation
- + The project includes a compression facility and a 42 km pipeline
- + EPC contract for the facility and pipeline is worth \$122 million (AED 450 Million)

Process Overview: The facility captures CO₂ from the direct reduced iron process used at Emirates Steel plants 1&2. The captured CO₂ is diverted to the CCF, where the CO₂ is compressed to a supercritical state (dense phase) and dehydrated for delivery into an 8" CO₂ pipeline, from Mussafah to the ADNOC oil fields in Rumaitha and BAB, where the CO₂ is injected for EOR.

Capacity of the CCF is 0.8 Million tonnes per annum, or 41 Million Standard Cubic Feet of dry CO₂ per day.

The CCF is comprised principally of:

- CO₂ Compression and dehydration facilities;
- CO₂ Metering & Pipeline interface;
- Necessary utilities and support services;
- Cold vent relief system;
- Control, maintenance and administration buildings.