SPE Virtual Workshop:
Sustainability Stewardship—CCUS Opportunities in Global Energy Transition

Host Organisation

ADNOC

24–25 February 2021 | Virtual [GST, UTC+4] | go.spe.org/ccustech

Who We Are

SPE is the largest individual member organisation serving managers, engineers, scientists and other professionals worldwide in the upstream segment of the oil and gas industry.

Who Should Attend?

- Reservoir Engineers
- Production Engineers
- Drilling and Completion Engineers
- Facilities Engineers
- Geologists
- Geophysicists
- Project Managers
- Research and Development Professionals
- Geoscientists
- Technical Managers

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Images courtesy of ADNOC.

Carbon Capture, Utilisation and Storage (CCUS) plays a critical role in the oil and gas industry as companies work towards reducing carbon dioxide emissions while meeting global energy demands.

CCUS technologies involve the capturing of carbon dioxide (CO_2) from fuel combustion or industrial processes, transportation from capturing to injection sites, and injection into suitable underground geological formation. CCUS aims to support the environmental sustainability strategy.

It has a positive impact on managing climate changes as part of clean energy initiatives by embracing technology throughout the whole business value chain, whether upstream, midstream, or downstream.

Within upstream, CO_2 for Enhanced Oil Recovery (EOR) is a proven recovery mechanism and has seen worldwide applications with more than 100 projects in the last few decades. Continued CO_2 EOR deployment can help to maximise oil recovery and reduce carbon emissions.

Workshop Objectives

This workshop will bring together leading global CCUS and CO_2 EOR players, including oil and gas companies, government/regulatory authorities, R&D institutes, and service providers. Renowned keynote speakers will share their views on technology and project development.

The key themes for the two-day workshop are:

- CO_2 capturing technology advancement and innovations
- CCUS and CO_2 EOR: project planning, key drivers, and enablers
- CO_2 EOR, development in new materials selection, wells and facilities
- CO_2 storage: reservoir selection and monitoring
- CO_2 EOR, development in subsurface studies, wells and completion design
- CCUS and CO_2 EOR: existing project experience and new frontiers

Updated as of 13 January 2021

"The workshop provides an excellent platform to share and discuss key emerging trends, opportunities, and technology advancements in global CCUS initiatives, with worldwide stakeholders and industry professionals from government authorities; regulators; academic institutions; oil and gas upstream and downstream sectors; leading engineering, consulting, and service providers."
Aaesha Al Keebali, Workshop Chairperson, CCUS Champion, ADNOC Upstream, Specialist, Reservoir Engineering (EOR), ADNOC

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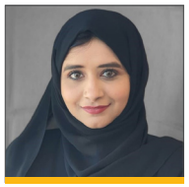

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Workshop Chairperson
ADNOC

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BP

Abdulaziz Al-Qasim
Saudi Aramco

Tim Barckholtz
ExxonMobil

Omer Gurpinar
Schlumberger

Beth Hardy
International CCS Knowledge Centre

Kirby C. Lindsey
Oxy

Philp Llewellyn
Total

Maurizio Rampoldi
Eni

Rick Musleh
Government of Saskatchewan-Ministry of Trade and Export Development

Carolyn Seto
IHS Markit

Lourdes Vega
Khalifa University

Wednesday, 24 February 2021

0900–0910

Welcome Address by Chairperson and Day 1 Introduction

0910–0930

Keynote Address

0930–1030

Panel Session 1: CCUS: Outlook for Projects and Future Developments

Moderartors: Aaesha Al Keebali, ADNOC; Carolyn Seto, IHS Markit

As the global economy seeks solutions for decarbonisation, CCUS will be a critical tool in meeting this goal. This technology is receiving renewed focus by the oil and gas industry owing to its longstanding capability in safely sourcing, transporting and injecting CO_2 at scale through operating CO_2-EOR projects. This session will explore the outlook of future CCUS projects, expanding CO_2 value chains and emerging commercial models to accelerate deployment.

1030–1100

Break

1100–1220

Session 1: Existing CCUS Operation (Case Studies)

Session Chairs: Beth Hardy, International CCS Knowledge Centre; Rampoldi Maurizio, Eni

CCUS has seen an increase in project activities in the oil and gas sector. It is easy to predict its rapid evolution in all the aspects, however, CCUS project sustainability will likely become more demanding. In this session, a select number of significant successful and less-successful stories from projects in the operation phase will be presented and discussed with the aim to share and provide as many key lessons learnt as possible for improving the current industrial best practices and make future applications more efficient and economically attractive.

1220–1300

Lunch Break

1300–1420

Session 2: Economical Aspects and Project Planning

Session Chairs: Tamadher Al Bashr, ADNOC; Tim Barckholtz, ExxonMobil

This session is dedicated to various aspects of large-scale demonstration projects for CO_2 capture, including basic economics, financing, and project planning. The history of CCUS projects has seen various challenges and many projects have been proposed, but precious few have made it to the operating stage. The scope of this session covers the entire value chain, from CO_2 capture to transportation to sequestration. The basic economics of projects will be covered, highlighting the current gaps between CCUS project economics and regulatory frameworks around the world. Different financial mechanisms will be reviewed and compared with consideration of each approach's strengths and weaknesses. Finally, project planning processes will be discussed, with emphasis on key barriers and long lead time items that need to be considered early in the planning process.

1420–1430

Break

1430–1550

Session 3: CO_2 Capture and Surface Facilities

Session Chairs: Farhang Abdollahi, Shell; Philip Llewellyn, Total

CO_2 capture is becoming more important and will go beyond the certain traditional applications such as power plant post-combustion. The industries will be looking into reducing the cost of capturing while integrating with cost-effective low emission energy supply chains. This session will highlight and discuss different aspects of CO_2 capture which impact the techno-economy features of the project. Factors which need to be considered and evaluated for a successful deployment, would include (but are not limited to):

- The objective of CO_2 capture:
  - Is it due to environmental regulations only or monetisation by CO_2 utilisation?
- Source of CO_2:
  - Which sources within the plants would have the lowest cost of capture ($/tone of CO_2).
  - Pre-combustion and post-combustion differences.
- Selection criteria of commercially-available technologies for large-scale projects.

1550–1600

Open Q&A Session and Day 1 Wrap Up

Thursday, 25 February 2021

0900–0910

Welcome Address by Chairperson and Day 2 Introduction

0910–0930

Keynote Address

0930–1030

Panel Session 2: Role of Circular Carbon Economy on Sustainability

Moderartors: Mathna Al Maskari, BP; Abdulaziz Al-Qasim, Saudi Aramco

Recently, energy ministers from the G20 group of leading economies have endorsed the circular carbon economy (CCE), which is a holistic, integrated, inclusive, and pragmatic approach to manage global greenhouse gas (GHG) emissions through a closed loop system, involving the 4Rs, which are reduce, reuse, recycle, and remove. CCUS is a suite of key technologies within the CCE framework, contributing to reducing, reusing, recycling, and removing emissions across many sectors. CCUS can help decarbonising power generation and many hard-to-abate sectors such as cement, iron and steel, and chemicals. According to the Intergovernmental Panel on Climate Change (IPCC), achieving ambitious climate goals will be unobtainable without CCUS—therefore CCUS is critical, and breakthrough innovations remain a key driver to overcome the barriers for CCUS deployment at a scale consistent with ambitious climate goals. This panel session will discuss ways to unlock the potential of CCUS to achieve deep emissions reduction across the oil and gas sector.

1030–1100

Break

1100–1220

Session 4: CO_2 Storage—Surveillance and Monitoring

Session Chairs: Kirby C. Lindsey, Oxy; Rick Musleh, Government of Saskatchewan-Ministry of Trade and Export Development

Carbon capturing, utilisation and storage requires well-characterised reservoirs to ensure long-term storage of CO_2. Comprehensive surveillance and measurement, monitoring and verification (MMV) programmes play a critical role in both EOR and non-EOR applications. In Saskatchewan, Canada, two main projects, Weyburn and Aquistore have seen the injection of 40 million tonnes of CO_2 over the past 20 years. As part of these projects, much work has been carried out in different MMV systems. It can be concluded that CO_2 has remained within the reservoirs, and the ability to track it via these methods has been proven.

Whether in Canada, the Permian Basin of the United States, or anywhere else in the world, utilising CO_2 for EOR is a proven recovery mechanism in both light and heavy(ier) oil fields. CO_2 injection can provide pressure support, improve displacement efficiency, and reduce the viscosity of the oil. Continued CO_2 EOR deployment will help maximise oil recovery and satisfy global energy demands, while simultaneously reducing CO_2 levels in the atmosphere.

1220–1300
Lunch Break

1300–1420
Session 5: Emerging Technologies and Innovation for CCUS
Session Chairs: Omer Gurpinar, Schlumberger; Lourdes Vega, Khalifa University
CCUS technologies are at varying levels of maturity today—although some of them are already deployed at large scale, others, including those that hold out the promise of better performance and lower unit costs, require further development. Even CCUS technologies that are commercial and competitive can benefit from further integration efforts. As CCUS involves integrated activities for CO_2 capture and EOR, where numerous domains have direct and/or indirect influence throughout the life of a project, technological advances for surface and subsurface components of the integrated system keep improving the integrity and efficiency of the CCUS projects. While enhancements in surface components continue with solid outcomes, dealing with subsurface, especially in mature fields, is still open to further advancements. Some select examples on recent technologies and innovations for CCUS will be highlighted in this session, as well as the remaining challenges.

1420–1430
Closing Remarks and Workshop Summary by Chairperson

General Information

Format

Two days of informal discussions prompted by selected keynote presentations and discussions. Focused topics and issues critical to advancing both technology and best practices. Majority of the presentations are in the form of case studies, highlighting engineering achievements, and lessons learnt. In order to stimulate frank discussion, no proceedings are published and the press is not invited to attend.

Documentation

- Proceedings will not be published; therefore, formal papers and handouts are not expected from speakers.
- Work in progress, new ideas, and interesting projects are sought.

Attendance

Registrations will be accepted on a first-come, first-served basis. The Steering Committee encourages attendance from those who can contribute effectively either in discussions or with posters.

Workshop Deliverables

The Steering Committee will appoint a "scribe" to record the discussions and to produce the full workshop report for SPE.

Commercialism

Commercialism in presentations will not be permitted.

Attendance Certificate

All attendees will receive an attendance certificate attesting to their participation in the workshop.

Continuing Education Units

Attendees at this workshop qualify for SPE Continuing Education Units (CEU) at the rate of 0.1 CEU per hour of the workshop.

Registration Policy

- Registration fee MUST be paid in advance for attending the workshop.
- Full fixed fee is charged regardless of the length of time that the registrant attends the workshop.
- Fixed fee cannot be prorated or reduced for anyone (workshop co-chairpersons, committee members, speakers, discussion leaders, students, and registrants).
- Delegates with no proof of advance payment are required to present a copy of the wire transfer or submit a letter from their company guaranteeing payment of the workshop fees.

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IMPORTANT:

Registration Fee MUST be paid in advance for attending the workshop.

WORKSHOP FEE:

SPE Members:

❍ USD 480

Nonmembers:

❍ USD 500

Prices are subject to 5% VAT as per U.A.E. Federal Decree Law no. (8) of 2017.

3 EASY WAYS TO REGISTER:

Online: go.spe.org/ccustech

Email: registrationdubai@spe.org

Telephone: +971.4.457.5800

Questions:
Contact Alaa Aly at aaly@spe.org.

PAYMENT DETAILS:

Bank Transfers: (Please include the name of the registrant and ***21aabd*** as reference for the transfer)

Name of Bank: HSBC Bank Middle East Ltd, Jebel Ali Branch, P.O. Box 66, Dubai, UAE

Name of Account: SPE Middle East DMCC

IBAN Number: AE180200000036217131100 (USD)

Swift Code: BBMEAEAD

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- For cancellations received after the registration deadline, 24 January 2021, 25% refund will be made to the registrant.
- No refund on cancellations received within seven (7) days prior to the workshop date, i.e. on or 17 February 2021.

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