IPIECA’s work on CCS and main findings

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12 September 2017
IPIECA – who we are and what we do

- The only global association covering both upstream and downstream oil & gas
- Focus on environmental and social issues
- Formed in 1974 as the industry’s main channel of communication with the United Nations
Our Mission – how do we get there?

• IPIECA helps the oil and gas industry improve its environmental and social performance by:
  − Developing good practices
  − Enhancing knowledge and understanding
  − Engaging members and the wider industry
  − Working with key stakeholders
IPIECA’s history on CCS

List of workshops and reports published

- IPIECA contributions to preparation of the IPCC SR CCS (-2005)
- IPIECA CCS Workshop Remaining Gaps (2011)
Carbon Dioxide Capture and Geological Storage

IPIECA CCS Workshop (2003)

Workshop Topics:

• CO₂ capture and storage technology for a greenhouse gas constrained future

  “CO₂ capture and geologic storage (CCS) technology can address a large fraction of fossil energy CO₂ emissions”

• The basis for risk management in the expanding role of geological storage of CO₂

  “Geologic storage of CO₂ builds on more than 30 years of successful industry experience in the injection of CO₂ into reservoirs for enhanced oil recovery (EOR).”

• Policy, regulation and public perception: opportunities and barriers

  “Public acceptance of CCS will be required if CCS is to gain wide application.”

• CO₂ capture and geological storage—the road ahead

  “Technology improvement is an essential component in addressing the risk of climate change while providing affordable energy.”
IPCC Special Report on CCS (2005)

IPIECA’s role in contributing to the preparation of the SRCCS:

• Promoted dialog with CCS experts
• Nominated participants in scoping of the SRCCS
• Served as an IPCC observing organization
• Nominated authors and review editors
• Contributed reviews of drafts
API/IPIECA Guidelines for CCS Emission Reduction Projects

“Key messages related to CCS for reducing GHG emissions are:

• CO₂ capture and storage (CCS) offers significant potential for reducing GHG emissions. Through new technologies for capturing CO₂ from exhaust streams, CCS could play a key role in providing affordable energy while minimizing CO₂ emissions to the atmosphere.

• The entire CCS chain – capture, transport, injection and storage – must be considered in assessing and ensuring the integrity of GHG emission reductions associated with CCS project.

• Existing oil and natural gas industry experience and expertise provide a basis for and confidence in CCS. This experience and further demonstrations of CCS projects will highlight best practices, increase alignment among experts, and assist in building broad understanding and public acceptance.

• Growing industry experience with CCS can be used to develop an overall approach to managing geological storage and reducing the risk of unintended physical leakage or other failures. Appropriate site selection, operation, and monitoring are all components of a risk management approach.

• Good practices in monitoring are especially important for CCS to be a safe and secure GHG emission reduction option. Monitoring should be based on a site-specific risk assessment, with monitoring methods appropriate to the identified potential risks.”
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“For CCS to develop as a mitigation technology, the following implementation barriers need to be overcome:

• high CCS costs and increased energy consumption;
• integration of CCS technologies;
• incorporating CCS into power distribution systems;
• CCS storage practices and standards;
• regulatory and legal frameworks, including
• treatment of long-term liability;
• permitting requirements; and
• public acceptance.”
“Even though widespread implementation of CCS is not economic today, many expect that by midcentury it will be more cost-effective than other options for deep reductions in GHG emissions, if driven by policy that creates a uniform cost for GHG emissions.”

**Figure 1** The range of natural gas and CO₂ prices over which four baseload electricity generation technologies for new generation plants result in the lowest levelized cost of electricity (LCOE)

- Green: Kheshgi et al., 2010
- Orange: Simbeck, 2011
- Blue: NETL, 2011

**Carbon capture and storage: addressing the remaining knowledge gaps**

**IPIECA CCS Workshop (2011)**
“The oil and gas industry has generated valuable understanding and experience in the capture, handling, transport and storage of CO₂... all large-scale integrated CCS projects involve either the capture of CO₂ emissions from natural gas processing, and/or the storage of CO₂ as a consequence of its use for EOR.”
The Paris Puzzle

CCS: A key technology for delivering a low-emissions world

“For large-scale cost-effective mitigation and stabilization of atmospheric CO$_2$, CCS is a critical technology. The oil and gas industry is continuing to develop CCS technologies and projects, as well as address barriers and explore opportunities to enable its uptake.”
CCS workshop – Making CCS fly

Objectives

• “To highlight with stakeholders including policy makers and wider industry, the key role, potential and benefits of CCS in achieving the Paris Agreement aims and encourage actions to further and speed up its development and deployment

• To review and identify the gaps and opportunities for developing CCS

• To understand what various groups are doing, and plan what work and role for IPIECA”
Thank you!

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