

Carbon Dioxide Capture and Geological Storage: *An Industry Perspective*

Based on the International Petroleum Industry Environmental Conservation Association (IPIECA) summary “*Carbon Dioxide Capture and Geological Storage: Contributing to Climate Change Solutions*” and IPIECA CCS Task Force experts.

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Carbon Dioxide Capture and Geological Storage: An Industry Perspective



- **Significant long-term promise of CO2 Capture and Geological Storage**
 - Global distribution of geological formations -- potentially applicable worldwide
 - Addressing large CO2 source: primarily in the power sector
 - Allowing coal to continue to contribute to energy in a GHG constrained world
- **Extends from existing experience, know-how and technology in the oil & gas industry and professions**
 - Gas separation, transport and injection
 - Characterization and management of geological formations
- **CCS adds costs and consumes energy**
 - Importance of R&D to reduce costs and improve efficiency
 - Commercially viable in O&G activities of limited scope: important for early experience
- **For CCS to be commercially widespread requires:**
 - Policy to address added cost to make CCS economically viable
 - Enabling regulatory and legal framework
- **CCS is a public good and governments should work with industry experts to advance the option**
 - IPIECA is interested in facilitating such interaction

Basis for Risk Management for an Expanded Role of Geological Storage of CO₂



- **Science builds on over 30 years of industry experience**

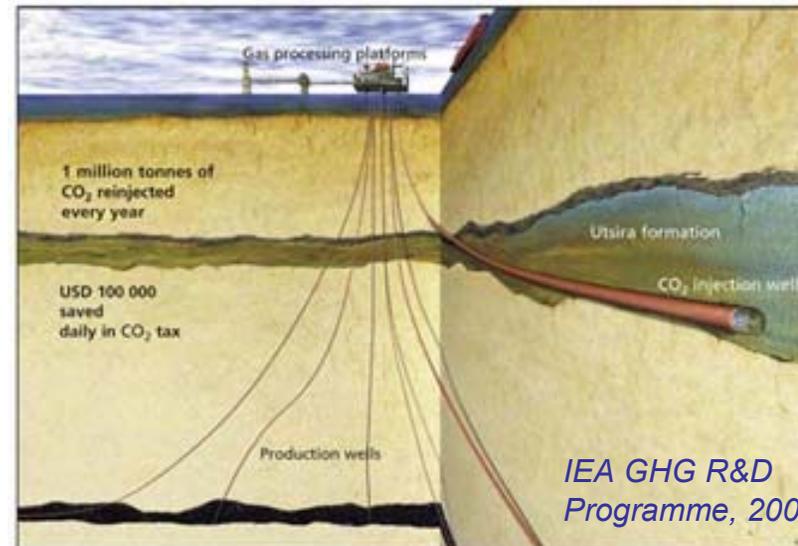
- Enhanced oil recovery (EOR)
- Acid gas injection
- CCS projects

- **Safety achieved by site selection and risk management systems that make use of information from:**

- Site characterisation;
- Operational monitoring;
- Scientific understanding;
- Engineering experience

- **Experience provides valuable information for the management of geological storage**

- **Industry is confident that CCS can be practiced safely and effectively, and we are prepared to work with others**



CO₂ Capture and Geological Storage – The Road Ahead



- **In scenarios where atmospheric concentration stabilizes over the next century CCS can play a primary role:**
 - Assumes public acceptance
 - Assumes advances in technology
 - Assumes drivers from policy measures
 - Entails massive infrastructure addition rivalling that of current global energy system
- **Because of the large scale and cost, deployment of CCS, on a scale that affects global emissions would require many decades**
- **How technology will improve over the long-term cannot be predicted**
- **How CCS will stack up against other options in the future is an open question**
- ***A portfolio of technology initiatives advancing not only CCS, but also other technology options is appropriate in this situation***

CO₂ Capture and Geological Storage – Actions Today



- **A diverse set of initiatives by academia, governments and industry -- the petroleum industry in particular -- are improving the performance and prospects of CCS by:**
 - Accumulating commercial experience with gas injection
 - Research initiatives to find lower-cost CCS technologies and improve understanding of risks
 - An increasing number of CCS projects worldwide to improve understanding through field experience
 - Assessment of the merits of CCS as well as other technology options provides valuable information for decisions and a basis for public acceptance
- **These actions will improve and better define the prospects of CCS, contributing to potential solutions to global climate change**

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A copy of the IPIECA summary on CCS is
freely available publicly online through IPIECA
website www.ipieca.org

