



## Report to the 5<sup>th</sup> EU-OPEC Ministerial meeting

Brussels, 24 June 2008

### EU-OPEC Workshop on Carbon Capture and Storage

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*Fossil fuels will remain the main source of supply of primary energy until at least the middle of this century. Oil in particular will continue to fuel socio-economic development of all regions of the world. The EU and OPEC consider that it is realistic and beneficial to promote cleaner fossil-fuel technologies. In particular, technologies that capture carbon dioxide and store it, especially in geologic formations, are considered a vital means to reduce or limit carbon dioxide emissions. They also provide a powerful illustration of actions that could result in some instances in dual benefits: reducing carbon dioxide emissions into the atmosphere while enhancing oil recovery. In addition, their application is compatible with current energy infrastructures and do not lead to costly and disruptive changes.*

*As part of the OPEC-EU Dialogue Work Programme 2006, it was agreed at the 2<sup>nd</sup> Ministerial Meeting in December 2005 that a Roundtable on Carbon Capture and Storage (CCS) be held. Pursuant to the kind invitation of the Kingdom of Saudi Arabia the meeting was held in Riyadh, Saudi Arabia, on 21<sup>st</sup> September 2006.*

*The Roundtable, which was attended by more than 100 representatives from OPEC Member Countries, the European Commission and other governments and international organisations, aimed to update the participants on the latest developments in technology, costs, and policies/regulations related to CCS, to identify the factors necessary to ensure a rapid and substantial expansion of CCS and to discuss the potential role for the EU-OPEC Dialogue in promoting CCS, including through large demonstration projects. The programme was structured in three sessions with a closing panel discussion (Appendix 1).*

*In the 4<sup>th</sup> EU-OPEC Ministerial Meeting, held in Vienna, Austria, on 21<sup>st</sup> June 2007, the two parties stressed, in particular, the need for the further development and deployment of CCS technology. Accordingly, they agreed to enhance discussions on CCS cooperation, leading up to organizing a joint workshop in 2008.*

*This Workshop aims to gain insights into the prospects for implementing CCS projects, in particular in the EU and OPEC Member Countries, and the level of industry engagement; to discuss and exchange views on the non-technical barriers to CCS deployment, including making CCS eligible for the Clean Development Mechanism; and to further explore the role the EU-OPEC Energy Dialogue could play in promoting CCS, including through large demonstration projects. The workshop will be followed by a site visit to some European CCS locations.*

**Tentative Date:** 31<sup>st</sup> October, 2008

**Venue:** Brussels

## *Tentative Draft Agenda*

08:30 – 09:00     Registration

### **Opening Session**

09:00 – 09:10     Welcoming Address

09:10 – 09:30     Introductory Remarks

### **Keynote speech**

09:30 – 09:50     Overview

### **Session 1            Overview of Technologies**

09:50 – 11:30

*11:30 – 11:50     Coffee break*

### **Session 2:           Prospects of CCS in OPEC Member Countries and the EU**

11:50 – 13:30     - OPEC current projects and plans on CCS, by OPEC  
- The In Salah project, by representative of Algeria  
- CCS projects under the 7th Framework Program and possible cooperation (RTD), by EU  
- Industry engagement on CCS in EU and OPEC countries, by industry representatives

13:30 – 14:00     Discussion

*14:00 – 15:00     Lunch*

### **Session 3:           Non-technical factors essential for CCS breakthrough**

15:00 – 16:20     - The EU Regulatory Framework, speaker from DG ENV  
- CCS and CDM: the EU view, speaker from DG ENV  
- CCS and CDM, the OPEC view, speaker from OPEC Secretariat  
- Overview of CCS in the EU: development, the CCS communication, demonstration projects and project network, some financing aspects, post 2012 ETS and CCS, R&D, industry announcements and MS commitments, ongoing discussions and way ahead. Presentation can be done by unit TREN C3

16:20 – 16:40     Discussion

*16:40 – 17:00     Coffee break*

16.30 – 17:30     **Panel discussion – The role of the EU-OPEC Energy Dialogue in Promoting CCS Technologies**

### **Closing session – Next steps**

17:30                Closure

### **Programme of site visits for OPEC experts to European CCS projects**

The aim of these site visits is to familiarise OPEC experts with some of the latest developments in European CCS technologies and offer them the opportunity to discuss and exchange information on respective plans and progresses.

- **Sleipner – Norway. (Confirmed)**  
Offshore gas production and CO2 capture and storage facility. Other Norwegian CCS projects will be presented in a meeting in Stavanger.
- **Visit to Schwarze-Pumpe CCS pilot - Germany (tbc)**

## **Appendix 1**

### **EU-OPEC Roundtable on Carbon Dioxide Capture and Storage**

#### **Programme**

Riyadh, Saudi Arabia

21 September 2006

#### **Opening Session**

Chair: Majid Al-Moneef, Saudi Arabian Governor to OPEC

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| 08:30 – 08:40 | Welcoming Address – Majid Al-Moneef, Advisor to the Minister, Ministry of Petroleum and Mineral Resources, Kingdom of Saudi Arabia |
| 08:40 – 08:50 | Introductory Remarks – Hasan M. Qabazard, Director, Research Division, OPEC  |
| 08:50 – 09:00 | Introductory Remarks – Derek Taylor, Energy Advisor, Directorate General for Transport and Energy, European Commission             |

#### **Keynote speech**

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| 09:00 – 09:20 | The IPCC special report on Carbon Dioxide, Capture and Storage – Leo Meyer, Head, Technical Support Unit of Working Group III, IPCC |
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#### **Session 1**

##### **Overview of Technologies**

Chair: Mohamed Hamel, Head, Energy Studies Department, OPEC

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|---------------|--|
| 09:20 – 09:40 | Update on CCS technologies and costs – Harry Audus, General Manager, IEA Greenhouse Gas R&D Programme  |
| 09:40 – 10:00 | Overview of existing CO <sub>2</sub> Geological Storage Schemes (Sleipner, Snohvit, In-Salah, K-12b) – Wolfgang Heidug, General Manager, International Association of Oil & Gas Producers  |
| 10:00 – 10:40 | European proposals for integrated Power Generation with CO <sub>2</sub> Capture and Storage: BP Peterhead, Statoil/Shell Mid Norway – Tor Fjaeran, Senior Vice President Environment, Statoil; Iain Wright, CO <sub>2</sub> Project Manager, BP Group Technology |
| 10:40 – 11:00 | ReMoVe: An EU integrated project on verification and monitoring of CO <sub>2</sub> geological storage – Petra David, Co-ordinator, TNO Built Environment and Geosciences, National Geological Survey   |
| 11:00 – 11:20 | Discussion   |
| 11:20 – 11:40 | <i>Coffee break</i>  |

<b>Session 2:</b>	<b>Prospects of CCS in OPEC Member Countries and the EU</b> Chair: Mohammad Al-Sabban, Senior Advisor to the Minister of Petroleum and Mineral Resources, Kingdom of Saudi Arabia
11:40 – 12:00	Further R&D paths for securing commercial breakthrough of CCS – Derek Taylor, Energy Advisor, Directorate General for Transport and Energy, European Commission and David Pollard, Alstom Power
12:00 – 12:20	The In-Salah CCS experience – Redouane Haddadji, Senior Assistant to Corporate Director for HSE, Sonatrach, Algeria
12:20 – 12:40	CCS and CDM: The Nigerian Experience – Abiodun Ibikunle, Office of the Honourable Minister of State Petroleum Resources, Nigeria
12:40 – 13:00	CCS: The views of Saudi Aramco – Osama Fageeha, Carbon Management Team Leader, Saudi Aramco
13:00 – 13:20	ADNOC Perspectives on CCS – Ahmed Braek, Petroleum Resources Development Division, ADNOC, United Arab Emirates
13:20 – 13:40	Discussion
13:40 – 15:00	<i>Lunch</i>
<b>Session 3:</b>	<b>Non-technical factors essential for CCS breakthrough</b> Chair: Derek Taylor, Energy Advisor, Directorate General for Transport and Energy, European Commission
15:00 – 15:20	Current policies and regulations – Tania Constable, General Manager, Resources Development Branch, Department of Industry, Tourism and Resources, Australia
15:20 – 15:40	Toward a regulatory framework for CCS – Jane Amilhat, Policy Officer, Directorate General for Environment, European Commission
15:40 – 16:00	The role of the CDM in CCS – Adrian Stott, CDM Consultant, Mitsubishi Securities
16:00 – 16:20	Ensuring public acceptance for CCS – The ACCSEPT project – Ole Andreas Flagstad, Principal Research Engineer, DNV Research
16:20 – 16:40	Discussion
16:40 – 17:00	<i>Coffee break</i>
17:00 – 17:45	<b>High-level panel discussion – The role of the EU-OPEC Energy Dialogue in Promoting CCS Technologies</b> Chair: Hasan M. Qabazard, Director, Research Division, OPEC  Participants from the EU and OPEC and their Member Countries and IEF Secretariat

**17:45 – 18:00    Closing remarks**

Derek Taylor, Energy Advisor, Directorate General for Transport and Energy, European Commission

Hasan M. Qabazard, Director, Research Division, OPEC

Majid Al-Moneef, Saudi Arabian Governor to OPEC