 Plans and Status
 TASK FORCE ON OFFSHORE CO$_2$-EOR

Enabling Large-scale CCS using Offshore CO$_2$
Utilization and Storage Infrastructure Developments

Lars Ingolf Eide, Norway
Technical Group Meeting
London, UK
June 28, 2016
The purpose of the Task Force is to highlight:

- Main differences between offshore and onshore CO₂-EOR
- Issues that are different between offshore CO₂-EOR and pure offshore CO₂ storage
- Technical solutions that will benefit both pure offshore CO₂ storage and offshore CO₂-EOR.
Background

• June 2015, Regina, Saskatchewan, Canada:
  • Working group formed to develop additional Action Plan activities

• November 2015, Riyadh, Saudi Arabia
  • Offshore CO$_2$-EOR selected as topic for a new task force
Planned Timeline of the Task Force

- **November 2015:** Task Force decided at Riyadh Meeting.
- **March, 2016:** Membership Established/Finalized.
- **April 20, 2016:** First informal meeting with limited attendance, Austin, Texas, USA
- **June 28, 2016:** Outline of Report Drafted and contributors established, CSLF Technical Group Meeting, London.
- **October 04, 2016:** Progress/Status report at CSLF Technical Group Meeting, Tokyo.
- **Spring 2017:** First draft of report completed and presented at mid-year CSLF Technical Group Meeting
- **Fall, 2017:** Task Force Report finalized and report findings and conclusions to Technical Group at Ministerial meeting
### Task Force Members

<table>
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<tr>
<th>Member state</th>
<th>Persons</th>
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<tr>
<td>Brazil</td>
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<td>Canada</td>
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<td>IEAGHG</td>
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<td>Norway</td>
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<td>USA</td>
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Contributors that will strengthen the Task Force:
- TNO, the Netherlands
- SCCS, UK

May also seek other contributions, e.g. from more oil companies
Report Outline

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EXECUTIVE SUMMARY (~ 3 pages; lead Norway)

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1. INTRODUCTION (~ 1.5 pages; lead Norway)
   • Background
   • Task Force purpose and mandate
   • Objective and structure of report
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2. REVIEW OF OFFSHORE CO₂-EOR STORAGE (Current status) (~ 10 pages)
   • CO₂-EOR – how it works (~2 pages; lead Norway)
   • Global potential (~ 1.5 pages; lead Norway)
   • History of offshore CO₂-EOR projects (~ 1.5 pages; lead Norway)
   • Insights from LULA project (World’s first Offshore CO₂-EOR project) (~ 4 pages; lead Brazil)

3. FUTURE POTENTIAL FOR OFFSHORE CO₂-EOR (~ 8 pages; lead Norway)
   • Oil fields amenable to CO₂-EOR
   • Use of late-life oilfield infrastructure
   • Residual oil zone potential (ROZ)
   • Enhanced Gas Recovery (input from Netherland, TNO – K12-B?)
   • CO₂-EOR on oilfield satellite projects
4. EMERGING TECHNICAL SOLUTIONS FOR OFFSHORE STORAGE AND CO₂-EOR (~ 10 pages; lead Norway)
   - Topside solutions
   - Subsea solutions
   - Novel capture and separation technology
   - Novel well technology
   - Offshore offloading options
   - Using CO₂ foam (input from Arne Graue)

5. CO₂ SUPPLY CHAIN ISSUES (~ 5 pages)
   - CO₂ quality and characteristics
   - Considerations when choosing Transport Methods
   - Status and challenges Pipelines
   - Status and challenges Ships

6. DEVELOPMENT OF INFRASTRUCTURES AND CCS HUBS (~ 5 pages; lead Norway)
   - Gullfaks and/or Sleipner case studies (lead Norway)
   - Korean case study
   - Initiating new offshore transport systems
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7. REGULATORY REQUIREMENTS FOR OFFSHORE CO$_2$ UTILIZATION AND STORAGE (~ 3 pages; lead IEAGHG)
   • Differences between frameworks for storage and EOR
   • How regulations transition might be achieved
   • Risk analysis

8. MONITORING, VERIFICATION AND ASSESSMENT TOOLS FOR OFFSHORE CO$_2$-EOR (~ 4 pages; lead USA)
   • Differences between MVA for storage and EOR
   • How the transition from EOR to storage might be handled

9. RECOMMENDATIONS FOR OVERCOMING BARRIERS EOR (~ 3 pages; lead Norway)
   • Barriers for new Offshore CO$_2$-EOR projects
   • Barriers for initiating new Offshore CO$_2$ Utilization and Storage hubs
   • Financial and regulatory aspects

10. SUMMARY AND CONCLUSIONS (~ 4 pages; lead Norway, Lars Ingolf Eide)

11. REFERENCES (Lead Norway, Lars Ingolf Eide)