



**Plans and Status**  
**TASK FORCE ON OFFSHORE CO<sub>2</sub>-EOR**

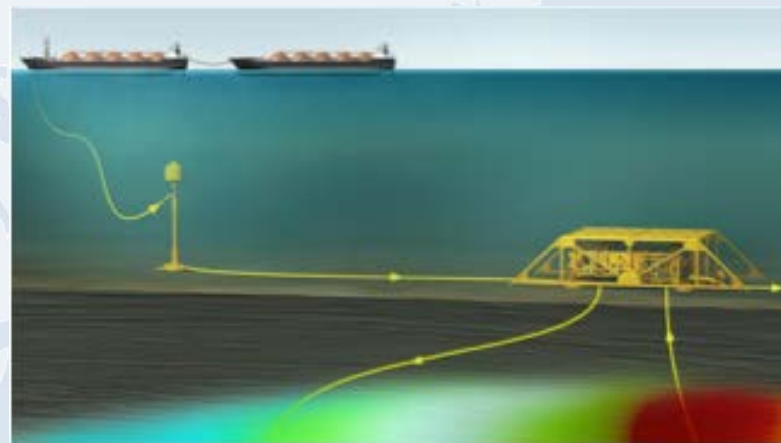
**Enabling Large-scale CCS using Offshore CO<sub>2</sub>  
Utilization and Storage Infrastructure  
Developments**

**Lars Ingolf Eide, Norway**  
**Technical Group Meeting**  
**Tokyo, Japan**  
**04 October, 2016**



## Purpose of Task Force

- The purpose of the Task Force is to highlight
  - Main differences between offshore and onshore CO<sub>2</sub>-EOR
  - Issues that are different between offshore CO<sub>2</sub>-EOR and pure offshore CO<sub>2</sub> storage
  - Technical solutions that will benefit both pure offshore CO<sub>2</sub> storage and offshore CO<sub>2</sub>-EOR.



Courtesy: AkerSolutions



## Background

- **June 2015, Regina, Saskatchewan, Canada:**
  - Working group formed to develop additional Action Plan activities
- **November 2015, Riyadh, Saudi Arabia**
  - Offshore CO<sub>2</sub>-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.*
- *Mid-January 2017: All chapters have initial text*
- *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, update

Member state	Persons
Brazil	1
Canada	1
IEAGHG	1
Norway	5 (up from 4)
USA	2 (up from 1)

Others who have offered assistance to the Task Force:

- SCCS, UK

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



## Update from London meeting

- Received three contributions (Brazil, IEAGHG and Norway)
- Chapter on Lula very extensive
- Held one teleconference (22 Sept) with positive outcome:
  - Seven members participated
  - All confirmed their commitments



## More from teleconference

- Good discussion on content, agreed to add something on why there may be different motives for doing CO<sub>2</sub>-EOR in different parts of the world:
  - Economic, additional production of oil
  - Climate change mitigation, reducing emissions of greenhouse gases
- Combine chapters on CO<sub>2</sub> SUPPLY CHAIN ISSUES and DEVELOPMENT OF INFRASTRUCTURE AND CCS HUBS



## Report Outline

### TABLE OF CONTENTS - DRAFT

EXECUTIVE SUMMARY (~ 3 pages; lead Norway)

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION (~ 1.5 pages; lead Norway)

- Background
- Task Force purpose and mandate
- Objective and structure of report





## Report Outline

### TABLE OF CONTENTS - DRAFT

2. REVIEW OF OFFSHORE CO<sub>2</sub>-EOR STORAGE (Current status) (~ 10 pages)
  - CO<sub>2</sub>-EOR – how it works (~2 pages; lead Norway)
  - Global potential (~ 1.5 pages; lead Norway)
  - History of offshore CO<sub>2</sub>-EOR projects (~ 1.5 pages; lead Norway)
  - Insights from LULA project (World's first Offshore CO<sub>2</sub>-EOR project) (~ 4 pages; lead Brazil)
  
3. FUTURE POTENTIAL FOR OFFSHORE CO<sub>2</sub>-EOR (~ 8 pages; lead Norway)
  - Oil fields amenable to CO<sub>2</sub>-EOR
  - Use of late-life oilfield infrastructure
  - Residual oil zone potential (ROZ)
  - Enhanced Gas Recovery (input from Netherland, TNO – K12-B?)
  - CO<sub>2</sub>-EOR on oilfield satellite projects



## Report Outline

### 4. EMERGING TECHNICAL SOLUTIONS FOR OFFSHORE STORAGE AND CO<sub>2</sub>-EOR (~ 10 pages; lead Norway)

- Topside solutions
- Subsea solutions
- Novel capture and separation technology
- Novel well technology
- Offshore offloading options
- Using CO<sub>2</sub> foam (input from Arne Graue)

### 5. CO<sub>2</sub> SUPPLY CHAIN ISSUES (~ 5 pages)

- CO<sub>2</sub> quality and characteristics
- Considerations when choosing Transport Methods
- Status and challenges Pipelines
- Status and challenges Ships
- Case studies, existing and planned

# Carbon Sequestration Leadership Forum

## Report Outline

[www.cslforum.org](http://www.cslforum.org)



### TABLE OF CONTENTS - DRAFT

6. REGULATORY REQUIREMENTS FOR OFFSHORE CO<sub>2</sub> UTILIZATION AND STORAGE (~ 3 pages; lead IEAGHG)
  - Differences between frameworks for storage and EOR
  - How regulations transition might be achieved
  - Risk analysis
  
7. MONITORING, VERIFICATION AND ASSESSMENT TOOLS FOR OFFSHORE CO<sub>2</sub>-EOR (~ 4 pages; lead USA)
  - Differences between MVA for storage and EOR
  - How the transition from EOR to storage might be handled
  
8. RECOMMENDATIONS FOR OVERCOMING BARRIERS EOR (~ 3 pages; lead Norway)
  - Barriers for new Offshore CO<sub>2</sub>-EOR projects
  - Barriers for initiating new Offshore CO<sub>2</sub> Utilization and Storage hubs
  - Financial and regulatory aspects
  
9. SUMMARY AND CONCLUSIONS (~ 4 pages; lead Norway, Lars Ingolf Eide)
  
10. REFERENCES (Lead Norway, Lars Ingolf Eide)