



Department of Mineral Fuels
MINISTRY OF ENERGY



GLOBAL
CCS
INSTITUTE

CCOP CO₂ Storage Mapping Program (CCS-M)

CCS-M Training Course (T2): CO₂ Storage Capacity Estimation 20-23 August 2013, Bangkok

A. The Goal of CCS-M is to enable the government organizations in the CCOP Member Countries in mapping for the geological storage of CO₂ to:

- a. Provide a high level overview of the potential for large-scale CO₂ storage;
- b. Enhance the capacity in the assessment of geological sites for the safe and long-term storage of CO₂; and
- c. Increase the understanding of the potential of CO₂ for EOR.

B. Objectives of T2: To enhance the knowledge of the participants on

1. Methodologies for calculating CO₂ storage capacities of subsurface reservoirs
2. Geological storage systems and applied technologies.

C. Participants and Resource persons:

1. Representatives from oil and gas regulatory and supervisory agencies, research organizations, national oil and gas companies, data management organization, geological agencies, geo-environmental organizations, and academic institutions with geoscience and environmental programs.
2. Resource persons from NPD, IEA, GCCSI, USGS and Australian agencies, partner agencies in CCOP MC and cooperating countries.

D. Date & venue:

1. Date: 20-22 August (T2) and 23 August (field work)
2. Venue: Evergreen Laurel Hotel, Bangkok

D. Implementing / Coordinating Organizations

1. CCOP Technical Secretariat

2. Global CCS Institute
3. Thailand: Department of Mineral Fuels (DMF), Ministry of Energy

E. Draft Program:

Number	Time	Item	Person/Organization
		Arrival of participants/resource persons	CCOP TS
20 August 2013			
1	0830	Registration	CCOP TS
2	0900	<p>Opening Ceremony</p> <ul style="list-style-type: none"> • Welcoming Remarks <ul style="list-style-type: none"> ○ CCOP Director • Opening Remarks <ul style="list-style-type: none"> ○ Permanent Representative of Thailand to CCOP <p>Exchange of Tokens</p>	<p>Dr. Adichat Surinkum Director CCOP Technical Secretariat</p> <p>Mr. Praneet Roibang Permanent Representative of Thailand to CCOP Director-General Department of Mineral Resources (DMR)</p> <p>CCOP TS</p>
3	0930	Keynote Address	Holger Bietz General Manager Global CCS Institute
	0950	Group Photo / Coffee - Tea	CCOP TS
4	1020	Introduction and Background of the CCS-M Training Course (T2)	Simplicio P. Caluyong CCOP TS
5	1040	<p>CCS overview – CO2 Storage</p> <ul style="list-style-type: none"> • Status and where are we now? • Where are we heading? • Barriers and solutions 	Rick Causebrook Australia
		CO2 Storage in the CCOP Countries	
6	1100	<p>CCOP Member Countries Presentation: Sources and volumes of CO2 in the region (~15 min)</p> <ul style="list-style-type: none"> • Fossil fuels consumption and CO2 emissions (<i>trends for the last 5 years</i>) • Associated CO2 volumes from gas production (<i>only for countries with</i> 	Member Countries

		<i>gas production</i> <ul style="list-style-type: none"> Overview of possibility to utilize CO₂ to EOR in oil fields/discoveries 	
	1200	Lunch Break	
	1300	Continue with the Country Presentations	Member Countries
	1500	Coffee/Tea	
7	1530	CCS Regulatory Framework <ul style="list-style-type: none"> Overview of requirements to storage, handling and transport Future trends 	Sean McCoy IEA
9	1640	Summary for Day 1	Chair and Resource persons
	1900	Welcoming Dinner	Host: Department of Mineral Fuels, Thailand <i>Venue: To be announced (Tba)</i> Attire: smart casual
21 August 2013			
CO₂ in the Subsurface			
10	0800	Order for the day and announcement from the Chairperson	Simplicio P. Caluyong
11	0810	Necessary Attributes of a CO₂ storage complex <ul style="list-style-type: none"> CO₂ properties in the subsurface Injectivity Capacity Containment (i.e., trapping mechanisms) Examples 	Fridtjof Riis Norwegian Petroleum Directorate (NPD)
12	0910	Case Study: USGS National Assessment <ul style="list-style-type: none"> Motivation for the USGS National Assessment High level review of the approach Results Next steps 	Sean Brennan USGS (On-line presentation)
	1010	Coffee / Tea	
13	1040	Classification for storage resource estimates <ul style="list-style-type: none"> Scale and resolution of resource estimates The resource estimation hierarchy 	Rick Causebrook
	1200	Lunch	
14	1300	Estimating the technically accessible storage resource (2h) <ul style="list-style-type: none"> Basic formula for saline aquifers Data needs and handling uncertainty 	Sean McCoy

		<ul style="list-style-type: none"> • Open versus closed assumption • Impact of policies, laws, and regulations on storage resource estimates 	
	1500	Coffee / Tea	
15	1530	Converting storage resources to operational capacity : Norwegian Case Study <ul style="list-style-type: none"> • Review of the site screening, selection and characterization process • In-depth look at a Norwegian example 	Fridtjof Riis
16	1630	Workshop/Exercise 1: Capacity Estimation	All Participants
	1700	End of Day 2 – Free evening	
22 August 2013			
Case Studies – Injection Projects			
17	0800	Order of the day and announcement from the Chair	Simplicio P. Caluyong
18	0810	Case Studies: storage resource estimates <ul style="list-style-type: none"> • Australian National Assessment • Norway- North Sea Atlas 	Rick Causebrook Fridtjof Riis
	1000	Coffee / Tea	
19	1030	Case Studies: evaluation of prospects <ul style="list-style-type: none"> • Gorgon (Australia) 	Rick Causebrook
	1200	Lunch break	
20	1300	Workshop/Exercise 2: Evaluation of CO2 storage prospects	All Participants
21	1400	Case Studies: evaluation of prospects <ul style="list-style-type: none"> • Sleipner Field (Norway) 	Ola Eiken (Statoil- On-line)
	1500	Coffee / Tea	
22	1530	<ul style="list-style-type: none"> • Tour de table: comments and observations • Summary and the Way Forward 	All Participants Simplicio P. Caluyong
23	1620	Evaluation and Awarding of Certificates <ul style="list-style-type: none"> • Presentation/briefing on Field work • Closing Remarks 	CCOP TS
	1700	End of (T2) Course	
	1830	Farewell Dinner (hosted by CCOP TS)	Venue: TBA (smart casual)
24		23 August 2013 – Field Trip (Tba) <ul style="list-style-type: none"> • Geological & cultural sites visit 	CCOP TS