



Mitsubishi UFJ Securities

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Asia Clean Energy Forum

Session on the Role of Carbon Markets in Catalyzing Clean Energy Investments

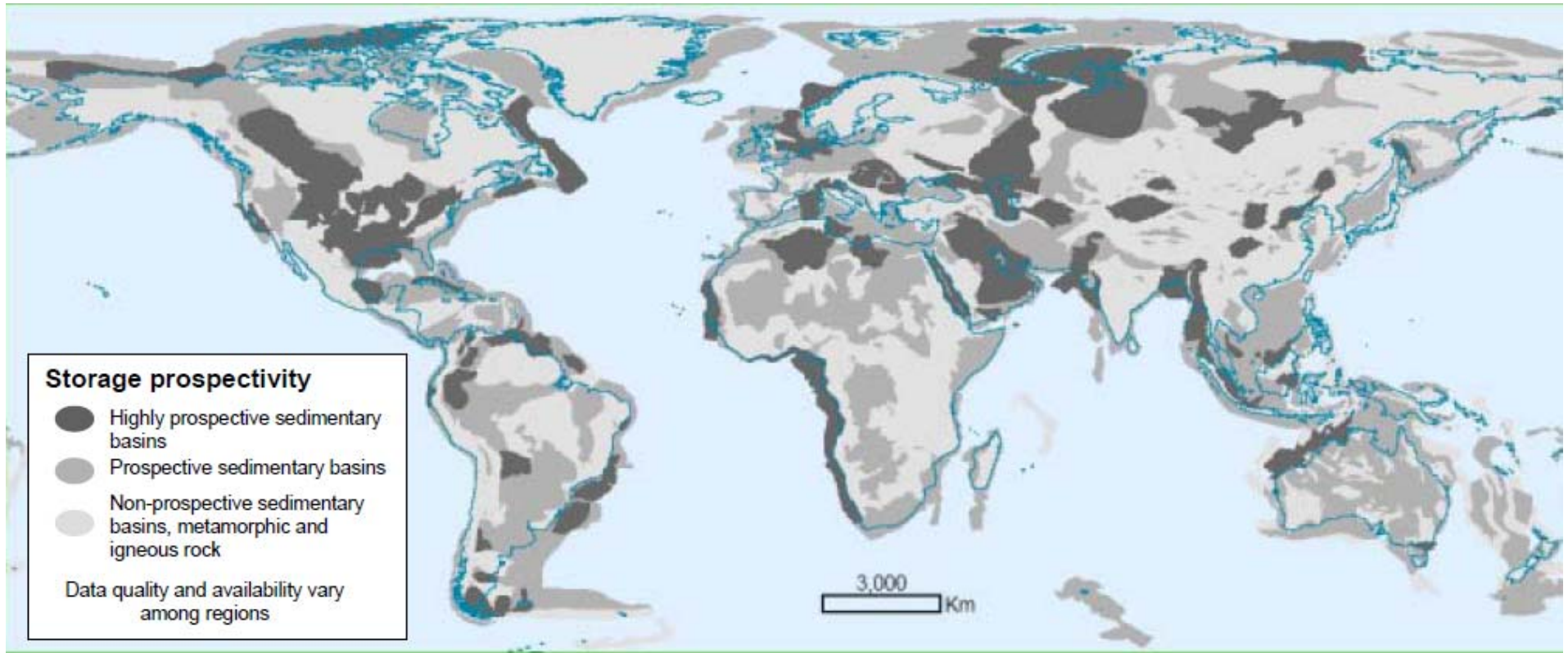
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Presented By
Mitsubishi UFJ Securities
Clean Energy Finance Committee



Carbon Capture and Storage

- High expectation on CCS
- However, CCS is not applicable everywhere



Prospective areas in sedimentary basins where suitable saline formations, oil or gas fields, or coal beds may be found. Locations for storage in coal beds are only partly included. Prospectivity is a qualitative assessment of the likelihood that a suitable storage location is present in a given area based on the available information. This figure should be taken as a guide only, because it is based on partial data, the quality of which may vary from region to region, and which may change over time and with new information (Courtesy of Geoscience Australia).

(Source: IPCC)



- Identification of proper storage sites
- Site needs to be close to large stationary emission points for transportation (e.g. coal power station)
- Limited experience of CCS technologies (separation of CO₂ at power generation or factories)
- Long term implication is still unknown
 - Interactions between CO₂ and underground minerals and fluid
 - Potential contamination of underground water
 - More testing at different geographic setting is needed
- Cost of development/operation is still too high
 - Feasibility study
 - CO₂ capture and separation
 - Transportation (infrastructure)
 - Injection
 - Monitoring



- Post-Kyoto!!
- Approving CCS as a CDM activity
- Would it be CER?
 - CCS does not prevent or destroy GHG gases (it stores)
 - It is not Sink
- What happens to credits, if it leaks?
- Who would be responsible beyond the crediting period?
- How should the site be selected?
- Additionality issue in case of EOR



- Domestic/international legal and regulatory framework
- Need to increase public awareness/acceptance
- Technology transfer is needed
 - There are 13 commercial and R&D projects sites worldwide
 - There nearly 20 full scale CCS projects in the pipeline
 - Most of them are located in Annex I (Australia, Scandinavia, US, Canada and Japan)



Transportation



- One of the high emitting source, 30% of worldwide emission by 2010 (IPCC)
- Direct impact to economical development→High social benefits
- Five Approaches
 - Energy Efficiency Improvement
 - Low Carbon Alternative Fuels
 - Increasing the Operating Efficiency of the system
 - Reducing Travel
 - Policy Measure
- Existing Methodology
 - Centralization of current system (AM0031)
 - Energy Efficiency improvement through new technology & AMS-III. S) (AMS-III. C)
 - Bio-fuel (AMS-III. T)
- Aviation and Ships (Post Kyoto)



- Complexity
 - Double Counting (Bio-fuel)
 - Data Availability
 - Baseline Determination
 - Management of Projects
- Applicability of Methodology
 - Uniqueness of Every Projects
- Require Large Investment and Intensive Management
 - Infrastructure
 - Management of the Project
 - Data Collection
- **Possible Solutions:**
 - Programmatic CDM
 - However, uncertainty of Programmatic CDM is casting a shadow on project implementation
 - Small Scale Methodologies



Fuel Efficiency Improvement and Pollution Abatement in Public Transportation in Metro Manila, The Philippines

Points:

- As the most popular mean of public transportation, Jeepney is widely used in the Metro Manila.
- The project involves replacement of 60,000 Jeepneys' old motors with newer and more efficient motors.
- Uses the Programmatic CDM.
- A new motor costs around USD 6,800 (300,000 Pesos) while an used motor costs around USD 230 (10,000 Pesos).
- Each Jeepney is expected to reduce 8.44 t CO₂/year, 480,000 t CO₂/year for 60,000 Jeepneys through the project.



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- 1) As part of new environmental business unit, it was established in Feb. 2001 to assist renewable energy and energy efficiency projects in developing countries with our firm's financial expertise.
- 2) The Committee is a fully-fledged business unit with thirty-five staff, speaking fourteen languages in total.
- 3) Networking with local consultants in China (Beijing and Hong Kong), India, Indonesia, Thailand, Malaysia, Philippines, Brazil and Argentina.
- 4) A global leader in CDM consultancy: one of the three private firms in the world to have six approved methodologies.



- 1) Methodology Development
 - 6 Approved
 - 1 Consideration by the Methodology Panel

- 2) MUS has written over 100 PDDs for CDM projects in various countries.
 - Registered projects :17
 - Validation :15

- 3) MUS has completed series of research projects for Japanese Government, Multilateral Development Agencies and International Financial Institutions.

- 4) To promote further development of CDM projects, MUS has hosted capacity building workshops around the world.



A. Initial Project Assessment

1. The policy frameworks relating to the CDM
2. Preliminary assessment of the Project
3. Estimated amount of CERs

B. Assistance in the Management of the Project for CDM

1. Revenue and cost estimates for the Project under the CDM
2. Scheduling
3. Presentations to the management, the board of directors, and other decision-making organizations
4. Advice on client workload and staffing for CDM finance

C. Development of the Project Design Document (PDD)

1. Formal analysis of relevant factors
2. Production of a PDD
3. Development of a baseline and monitoring methodology, if necessary, and submission to the Methodology Panel.

D. Assistance in Obtaining Necessary Approvals

E. Structuring the Sale of CERs from the Project



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