

# Project Finance and Methane Capture and Use Projects Asian Development Bank (ADB)



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# ADB Member Countries

## Newly Industrialized Economies (NIEs)

Hong Kong, China  
Republic of Korea  
Singapore  
Taipei, China

## Central and East Asia Developing Member Countries (DMCs)

Armenia  
Azerbaijan  
People's Republic of China  
Kazakhstan  
Kyrgyz Republic  
Mongolia  
Tajikistan  
Turkmenistan  
Uzbekistan

## Southeast Asia DMCs

Indonesia  
Philippines  
Malaysia

## Mekong DMCs

Cambodia  
Lao PDR  
Thailand  
Viet Nam

## South Asia DMCs

Afghanistan  
Bangladesh  
Bhutan  
India  
Maldives  
Myanmar  
Nepal  
Pakistan  
Sri Lanka

## Pacific DMCs

Cook Islands  
Fiji Islands  
Kiribati  
Marshall Islands  
Federal States of Micronesia  
Nauru  
Papua New Guinea  
Samoa

Solomon Islands  
Tonga  
Timor-Leste  
Tuvalu  
Vanuatu

## Developed Member Countries

Australia  
Austria  
Belgium  
Canada  
Denmark  
Finland  
France  
Germany  
Italy  
Japan  
Netherlands  
New Zealand  
Norway  
Portugal  
Spain  
Sweden  
Switzerland  
Turkey  
United Kingdom  
United States

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# PLANNED ADB ASSISTANCE FOR 2005

- Public Sector Loans: \$6.2 billion
- Private Sector Loans and Equity: \$700 million.
- Grants: \$214 million
- TA Grants: \$177.7 million

# ADB's Key Thrusts in Cleaner Energy

- Environment
- Energy Efficiency
- Renewable Energy
- Fuel Switching



# ADB Interest in CBM/CMM Projects in the PRC

- Considerable potential for capture of CMM and CBM, which is a potent greenhouse gas
- Present technology barrier and potential for opening up of CBM/CMM sector is enormous
- Promotes clean power production
- Urgent need to improve miners safety
- Offers considerable potential for arranging financing under CDM

# Barriers to CMM and CBM Development

- Methane treated as 'nuisance product' and emphasis on mining of coal
- Unfamiliarity with determining suitability of coal seams for increased CMM production and inefficient drainage methods
- Inexperience with CBM exploration and development of CBM surface wells
- Absence of ready markets for the methane and inadequate pipeline systems
- Unclear delineation of coal mining and CBM blocks

# Requirements for ADB Support of CBM/CMM Projects

- Strong ownership of the project and clear implementation arrangements
- Detailed assessment of CBM/CMM resources and proven technical feasibility
- Well-defined scope of the project with new technologies
- Available market for the CBM/CMM or power to be produced under the project
- Financial and economic viability
- Availability of required equity and local financing



# Methane Capture and ERs

- Utilization of CH<sub>4</sub> in 50 MW power generation backing out a coal-fired plant
- Project costs : about \$40 million
- GHG savings over project life : 31 million tons of CO<sub>2</sub> equivalent
  - methane capture & less C intensive power
- NPV of ER revenues over 10 years at \$3/ton of CO<sub>2</sub> : about \$ 39 million

# For More Information

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THANK YOU

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