

# Scaling Up Clean Energy Development in Asia and the Pacific

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Improving Eco-Efficiency: Green Growth for Local  
Governments

UNITAR

8-10 June 2011

Jeju, Republic of Korea

ADB

# Outline

- About ADB
- ADB's Energy Experience
  - The Changing Context
  - 2009 Energy Policy
  - Timeline
- Promoting Energy Efficiency
  - Concept, Coverage, Market Segments, Potential
  - Project Examples
- New Programs/Initiatives

# ADB Basics

## The Asian Development Bank:

- Multilateral development finance institution established in 1966
- Vision: "An Asia Pacific region free of poverty"
- Provides financial and technical assistance
- 67 members - 48 of which are from Asia and Pacific region

## ADB's Strategic Agenda:

- Inclusive economic growth
- Environmentally sustainable growth
- Regional integration

# ADB's Energy Experience

**ADB's First Energy Policy (1981):** response to the oil crisis

**Second Energy Policy (1995):** infrastructure investment and developing financially robust and efficient sector operations

**Energy Policy Review (2000):** reducing poverty, increasing private sector involvement, addressing environment impacts, promoting regional cooperation

**Energy Policy (2009):** Three Pillars

# 1981 Energy Policy

- Overcoming crisis of oil shocks
- Augmenting supply side
- Developing indigenous energy resources
- Helping create energy infrastructure
- Addressing environmental and social impacts of new projects
- Mitigating pollution
- Catalyzing and augmenting external capital flows to DMCs

# 1995 Energy Policy

- Restructure energy sector to improve efficiency and attract private investment
- Support BOT
- Demand side management and energy efficiency
- Comprehensive environment protection
- Promotion of natural gas use in DMCs
- Promotion of rural energy and renewables
- Use of market prices, full costs of supply, avoidance of subsidies and cross-subsidies

## 2000 Energy Review

- For off-grid and poverty reduction projects, power supply options include: mini and micro hydro, biogas driven turbines, wind-solar, wind-diesel, solar-diesel
- Promoting development of renewable energy fund to subsidize power purchasing costs from renewable sources
- Facilitating mandate of minimum percentage of renewable energy in distribution utilities and power companies

# 2009 Energy Policy: Changing Context

## ■ Energy Security

- Increasing demand for energy
- Volatility in energy prices

## ■ Climate Change

- Significance of global warming and climate change
- Need to promote low carbon emission options and technologies

## ■ Energy Access

- MDG targets cannot be met without modern energy services for all
- 2.5 billion people rely on traditional biomass and almost 1 billion without access to electricity
- Mobilizing financing is challenging



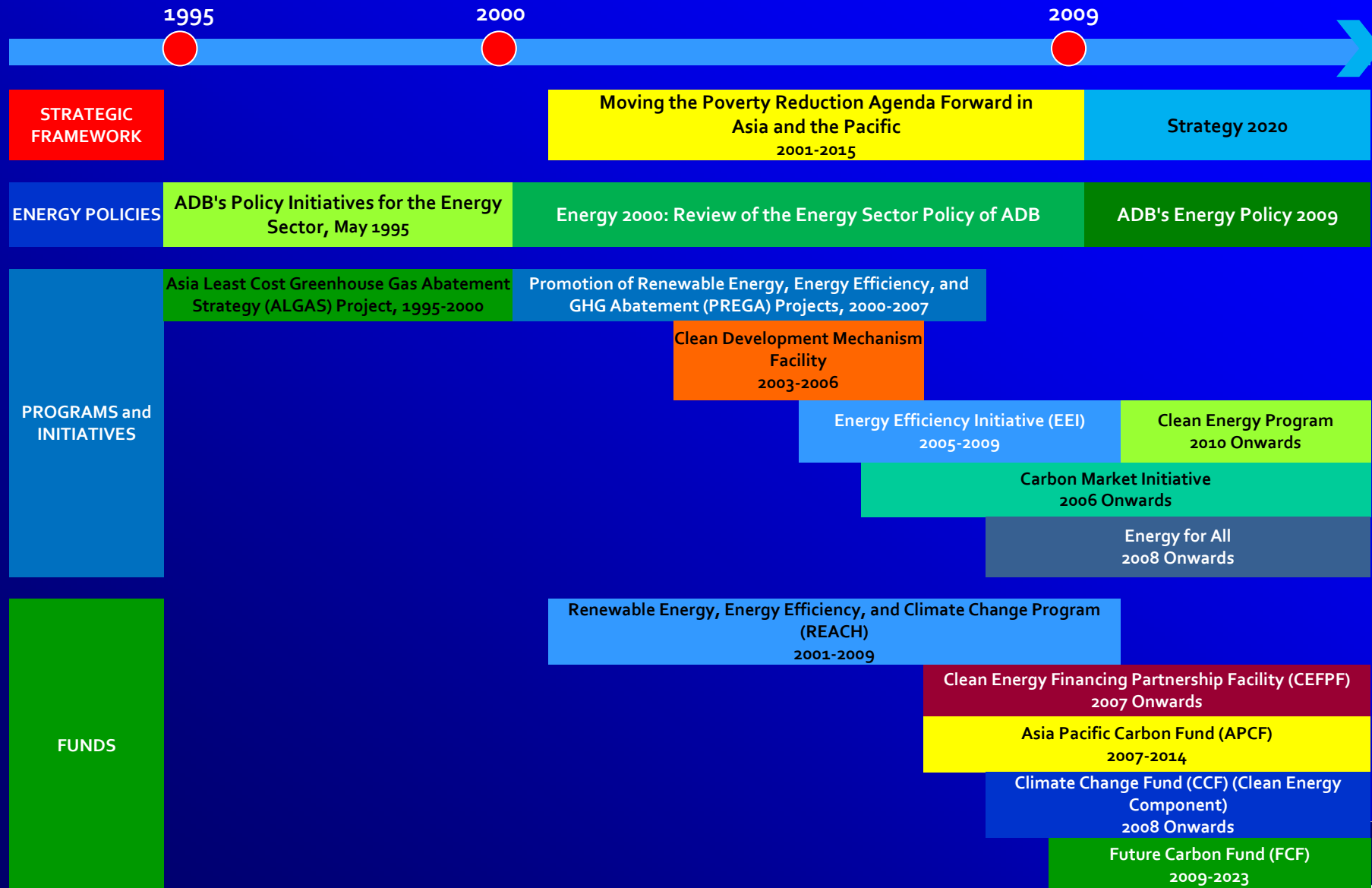
# 2009 Energy Policy (continued)

Clean Energy Target: \$2 billion per year from 2013

## Three Pillars:

- Promoting energy efficiency and renewable energy
- Maximizing access to energy for all
- Promoting energy sector reforms, capacity building, and governance

# Timeline -- ADB's Energy Experience



## REACH Program: Cooperation Funds

- Canadian Cooperation Fund for Climate Change  
(US\$ 4.063 million)
- Danish Cooperation Fund for RE & EE in Rural Areas (US\$ 3.463 million)
- Dutch Cooperation Fund for Promotion of RE, EE, and Greenhouse Gas Abatement  
(US\$ 6 million)
- Finnish Technical Assistance Grant Fund  
(US\$ 3.202 million)

## Dutch Fund (PREGA)

- Promote investments in climate technologies
- Increase access to energy services by the poor
- Realize other strategic development objectives
- Help reduce GHG emissions
- Develop capabilities of national policymakers and professionals in promoting REGA technologies
- Support policy, regulatory, and institutional reforms
- Facilitating access to commercial institutional finance

## Participating Countries

- Uzbekistan, Kyrgyzstan, Kazakhstan
- Mongolia, People's Republic of China
- India, Pakistan, Bangladesh, Sri Lanka, Nepal
- Cambodia, Viet Nam Philippines, Indonesia
- Samoa
  - Meetings
  - country work plans
  - country background reports
  - Pre-feasibility studies

# Promoting Energy Efficiency

- Less energy demand to improve energy security
- Reduced upward pressure of international fuel prices
- Improved local air quality
- Lower GHG emissions

# Energy Efficiency: Concept and Coverage

- Energy efficiency increases when:
  - energy inputs are reduced for a given level of service/output
  - services/outputs are increased or enhanced for a given amount of energy input
- Results in lower consumption of energy and lower greenhouse gas
- EE can be enhanced at both supply-side and use-side: diverse market segments

# Energy Efficiency: Market Segments

- Supply-side efficiency in power generation, transmission and distribution
- Industrial energy efficiency including changes in industrial processing and equipments
- Building energy efficiency including public, commercial, and residential sectors



# Energy Efficiency: Market Segments (continued)

- Municipal infrastructure such as street lighting, water, waste and sewage treatment and pumping
- Transport efficiency including urban mass transit
- Irrigation such as efficient pumps, foot valves, and pipe sizing
- Equipment and appliance standards

# EE Market Potential

- ADB estimates the total EE market size for DMCs to be about \$24 billion/yr over 10 years
- IEA's accelerated technology scenarios make sustainable energy path possible through 2050 – Demand side EE to contribute 50% of reductions in CO<sub>2</sub> emissions
- The international community is strongly advocating EE through a variety of approaches to address climate change.
- The efforts for promoting EE need to be radically scaled up to capture the full technical and economic potential of the EE market.

# ADB's Energy Efficiency Initiative

- Initiated in 2005
- **Objective:** Scale up ADB's clean energy investment to \$1 billion per year starting in 2008
- **Results:**
  - Country-level strategies formulated to identify CE investments in PRC, IND, INO, PAK, PHI, VIE
  - ADB's 2008 CE investments reached \$1.753 billion; \$1.313 billion in 2009; \$1.756 billion in 2010
  - Established Clean Energy Financing Partnership Facility (CEFPPF) in April 2007, with contributions from Australia, Japan, Norway, Spain, and Sweden
  - Built up institutional EE capacities in ADB

# Energy Efficiency Initiative (Clean Energy Program)

## Objective

(ADB Energy Policy)

**Reliable, adequate, and affordable energy for inclusive growth in a socially, economically and environmentally sustainable way.**

- An early shift to the low-carbon economy



## Scope

### Lowering energy demand

- Improve efficiency in household, utility (water, gas, heating), transport, buildings and industrial applications

### Lower losses in energy supply

- Improve efficiency in transmission and distribution of electricity, gas and other fuels

### Lower CO<sub>2</sub> emissions

- Upgrade power generation technology, including carbon capture use and storage
- Waste reduction and use, including methane capture
- Use alternate fuels, electric vehicles, rapid and mass transit modes, bulk freight services

### Early commercialization of RE technologies

- Develop wind, solar, biomass (without conflicting food security), geothermal,
- Off-grid applications to provide Energy for All

# Energy Efficiency Initiative (Clean Energy Program) (2)

## Initiatives

- Carbon Market Initiative/Program
- Energy for All
- Wind Quantum Leap
- Asia Solar Energy Initiative
- Low-Carbon Technology Transfer Market Place
- Asian Renewable Energy Certificates Initiative
- Asian Clean Energy Venture Initiative
- Climate PPP Fund

## Funds and Partnership

- Clean Energy Financing Partnership Facility (CEFPF)
- Climate Change Fund
- Asia Pacific Carbon Fund, and Future Carbon Fund
- Asia Accelerated Solar Development Fund (proposed)

## Investments

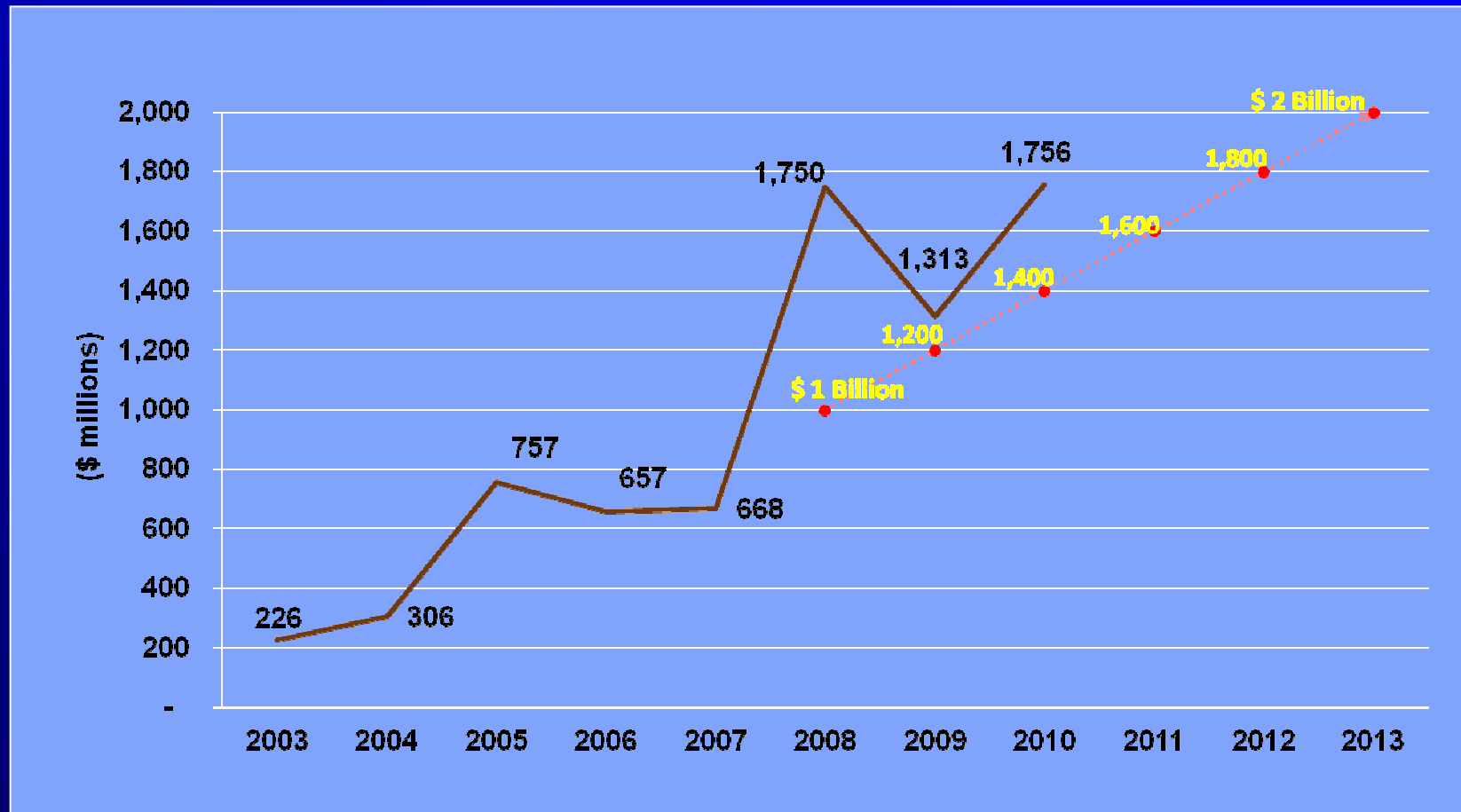
- Renewable Energy
- Energy Efficiency
- Cleaner Fuel

## Knowledge Products

- Technical Assistance Reports
- Workshops/Conferences
- Publications
- Innovative Instruments

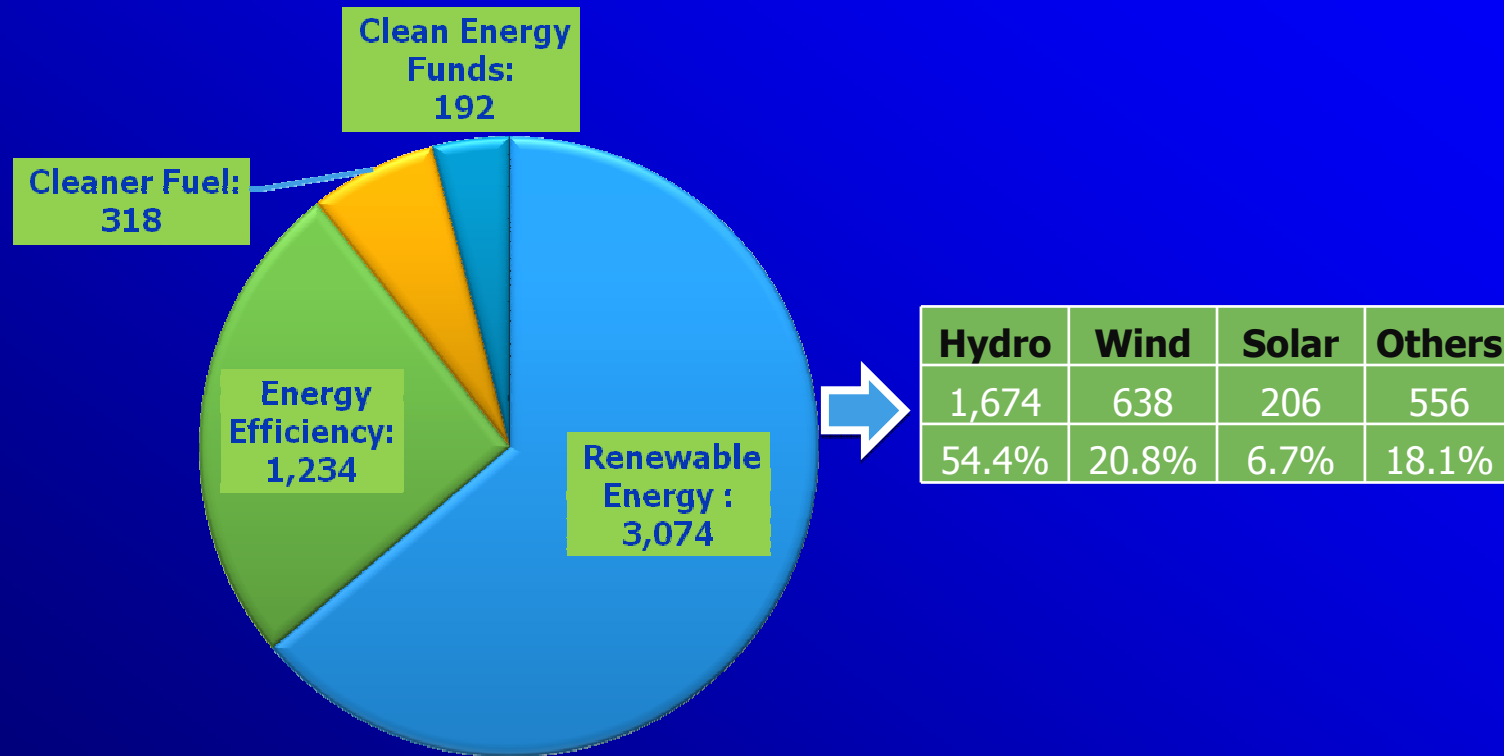
# ADB Clean Energy Financing

(Target = \$2 Billion by 2013)



# ADB's Composition of CE Financing

(Cumulative 2008-2010, in US\$ million)



**Total Energy-related Investment (2008-2010): \$ 9.1 Billion ;**  
**Total Clean Energy Investment (2008-2010): \$ 4.8 Billion.**

Note: "Others" in the breakdown of RE projects pertains to biomass/biogas, waste to energy

# Project Examples

## Demand-side (End-use) Energy Efficiency

ADB supports the large-scale deployment of energy-efficient technologies across multiple end-use sectors in market transformation programs:

### Philippine Energy Efficiency Project

- Will distribute **13 million CFLs** to households to assist in the phase-out of remnant incandescent bulbs in the residential sector
- Will push efficient technologies in government buildings, streetlighting, off-grid households, commercial enterprises and industrial plants through various mechanisms
- Will create Super ESCO and lamp waste management capacities
- Expected to save \$100 million in annual fuel costs and defer \$450 million in investments needed to produce 300-450 MW of new generating capacity



# Project Examples

## Demand-side (End-use) Energy Efficiency

ADB supports the large-scale deployment of energy-efficient technologies across multiple end-use sectors in market transformation programs:

### Pakistan Energy Efficiency Investment Program

- 30 million CFL program to build a 1,100 MW virtual power plant to ease current power supply deficit during peak hours and wash out remaining incandescent bulbs in the residential sector (world's largest CFL power plant)
- ADB approved a \$780 million multi-tranche financing facility to cofinance a 10-year \$3.78 billion energy efficiency investment program
- Future tranches to catalyze utilization of efficient technologies in the residential, industrial, public, finance and gas sectors

# Project Examples

## Demand-side (End-use) Energy Efficiency

ADB channels financing of energy efficient improvement projects in the industrial sector through government financial institutions:

### Guangdong Energy Efficiency and Environment Improvement Investment Program

- ADB is providing a \$100 million multi-tranche financing facility to “build” a **107 MW efficiency power plant** (EPP) by supporting lending for industrial retrofit projects through Guangdong Provincial Government
- Estimated energy savings of 532 GWh/yr
- Annual electricity bills reduced by \$42.6 million
- Guangdong’s overall energy efficiency improved by 16%
- SO<sub>2</sub> emissions reduced by 15%

# Project Examples

## Demand-side (End-use) Energy Efficiency

ADB catalyzes private sector investments in end-use energy efficiency improvements by working through local partners (e.g. local financial institutions and energy service companies):

### Energy Efficiency Multi-project Financing Program (PRC):

- ADB will provide partial credit guarantee (PCG) assistance of up to **CNY 800 million** in favor of selected Partner Banks
- An international energy service company (ESCO), as Technical Partner, will support the Partner Banks throughout the project cycle (e.g. marketing, energy audits, technical due diligence, setting energy standards for the end users and equipment procurement)

# Project Examples

Strengthening the Capacity of Pacific Developing Member Countries to Respond to Climate Change

This program will assist the Pacific DMCs in addressing climate change impacts and is expected to result in:

- 14 Pacific DMCs with national adaptation and mitigation strategies and plan of actions
- Improved climate-adaptive sector plans linked to capital and recurrent budgets in the 14 Pacific DMCs
- Increase of renewable energy sources in energy mix

# New Programs/Initiatives

- **Asia Clean Energy Venture Initiative**

ADB will provide early equity to start-up Asian companies with readily deployable clean energy technologies in order to: (i) kick-start the development of nascent eligible technologies; and (ii) helping minimize perceived risk of investing in target technologies among potential co-investors.

- **Low-Carbon Technology Transfer Marketplace**

ADB will establish a marketplace to support willing buyers and sellers of low carbon technologies to facilitate technology transfer and rapid diffusion of these technologies in the region.

- **Partial Credit Guarantee for Building EE Projects**

In May 2011, ADB signed the partnership agreement with the Shanghai Pudong Development Bank, providing CNY300 million in partial credit guarantees to SPDB to support private-sector financing of energy-efficient buildings across the People's Republic of China

# Concessional Resources

- **ADB's Clean Energy Financing Partnership Facility;** pledges \$103 m; target \$250 m
- **ADB's Climate Change Fund;** adaptation and mitigation for innovation/incubation; \$40 m (depleted) + \$10 m new replenishment; open for contributions
- **MDBs' Climate Investment Funds;** ADB as implementing agency, adaptation and mitigation; pledges: \$6.1 b
- **Global Environment Facility;** ADB as executing agency, adaptation and mitigation; \$2 b under GEF-5
- **Asia Accelerated Solar Development Fund (to be launched);** target \$500 million for rapidly enlarging the solar energy market

# Knowledge Platforms

- Annual Asia Clean Energy Forum
- Asia Solar Energy Initiative
  - First Meeting of Asia Solar Energy Forum  
Manila, 5-6 July 2010
  - Second Meeting of Asia Solar Energy Forum,  
Japan, 1-2 December 2010
  - Third Meeting of Asia Solar Energy Forum,  
Bangkok, 30-31 May
- Quantum Leap in Wind Power







# 2011 Asia Clean Energy Forum www.adb.org/ACEF

6th Asia Clean Energy Forum 2011: New Business Models and Policy Drivers EN English (United States) Handwriting Drawing Pad

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## 6th Asia Clean Energy Forum 2011: New Business Models and Policy Drivers -- Building the Low-Carbon Future

On this page:

**ADB Headquarters : 20 Jun 2011 - 24 Jun 2011**

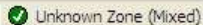


**ASIA CLEAN ENERGY FORUM 2011**  
NEW BUSINESS MODELS AND POLICY DRIVERS:  
BUILDING THE LOW-CARBON FUTURE  
Manila • June 20-24, 2011

**Announcements:**

### EVENT DOCUMENTS

- Energy Efficiency Policy and Regulation: Training Workshop on EE Regulatory Mechanisms and Support for ESCOs
- Renewable Energy Policy and Regulation: Training Workshop on Feed-in Tariffs
- Asia Dialogue on Clean Energy Policy and Regulation
- Quantum Leap in Wind: Overcoming Challenges and Building Momentum in Asia 20-21 June 2011
- Energy for All Investor Forum (Invitation Only)
- Week at a Glance

Done 



**Thank You !**

**Contact**

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