# Asian Development Bank and Clean Energy Development in Asia and the Pacific

### **RUNE STROEM**

South Asia

Director

Energy Division, Central and West Asia Department Asian Development Bank



The Pacific



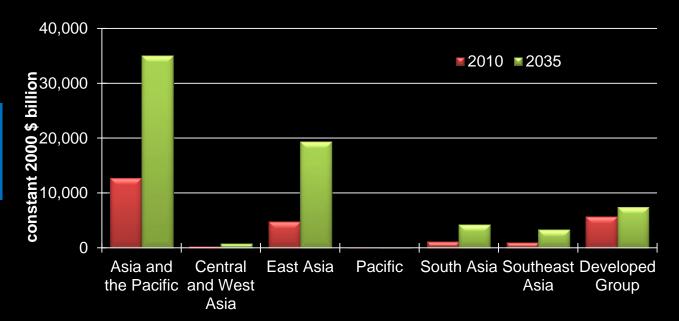
# ENERGY OUTLOOK FOR ASIA AND THE PACIFIC

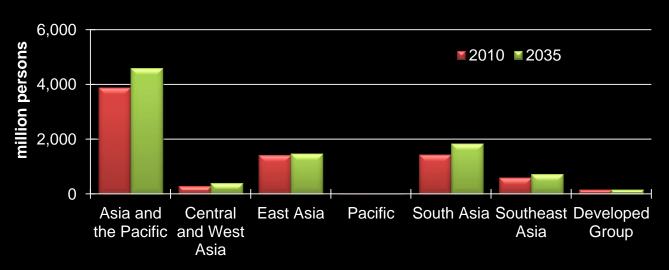
### Coverage of the Outlook

- Time Frame: 2010–2035
- Geographic Coverage:
  - Developing Asia
    - Central and West Asia
    - East Asia
    - Pacific
    - South Asia
    - Southeast Asia
  - Developed Group: Australia, Japan, and New Zealand
- Main Content:
  - 1. Energy supply and demand outlook
  - 2. Electricity outlook
  - 3. CO<sub>2</sub> emissions outlook
  - 4. Energy investment outlook
  - 5. Policy implications

### **Growth in Asia and the Pacific**

GDP Annual Average Growth Rate (2010– 2035) = 4.1%



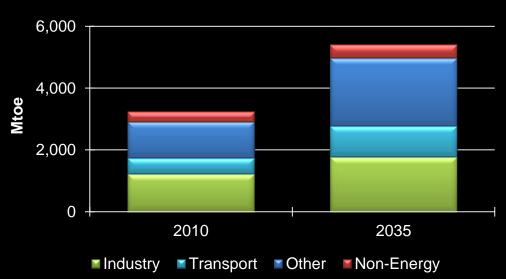


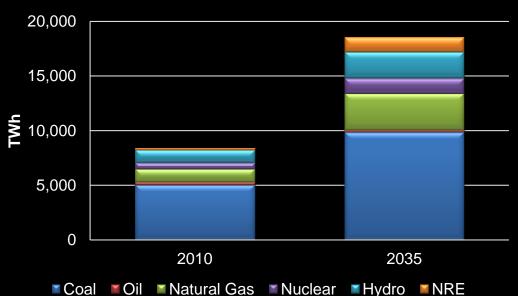
Population Annual Average Growth Rate (2010–2035) = 0.7%



### **Increasing Demand for Energy** and **Electricity Generation**

Final Energy Demand
Annual Average
Growth Rate (2010–
2035) = 2.1%



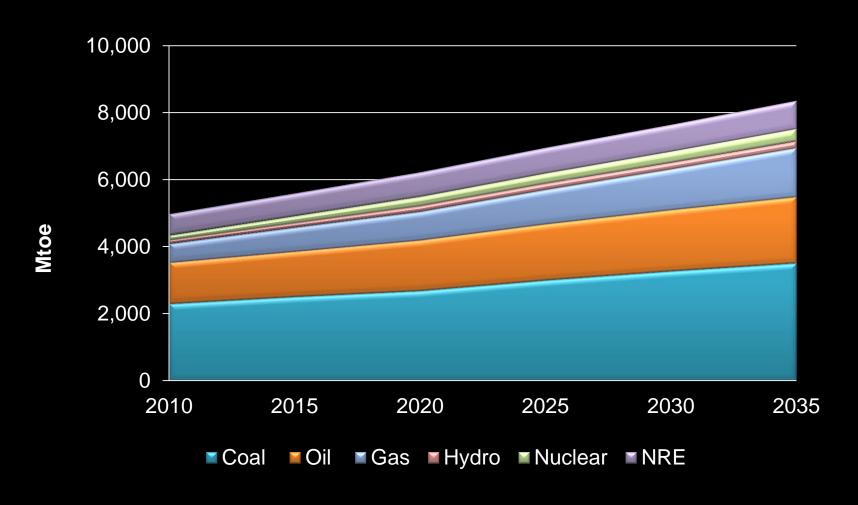


Electricity
Generation Annual
Average Growth Rate
(2010–2035) = 3.4%



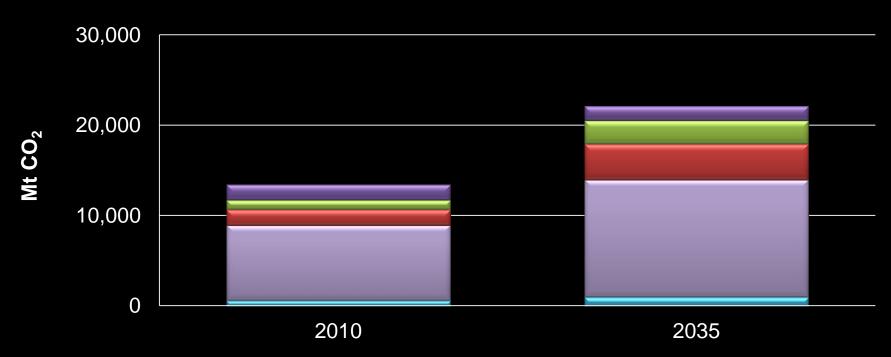
### **Primary Energy Demand**

Annual Average Growth Rate = 2.1% Fossil fuels still supply the majority



### **Carbon Dioxide Emission**

2010: 13,404.0 million tons 2035: 22,112.6 million tons Average growth rate = 2.0%

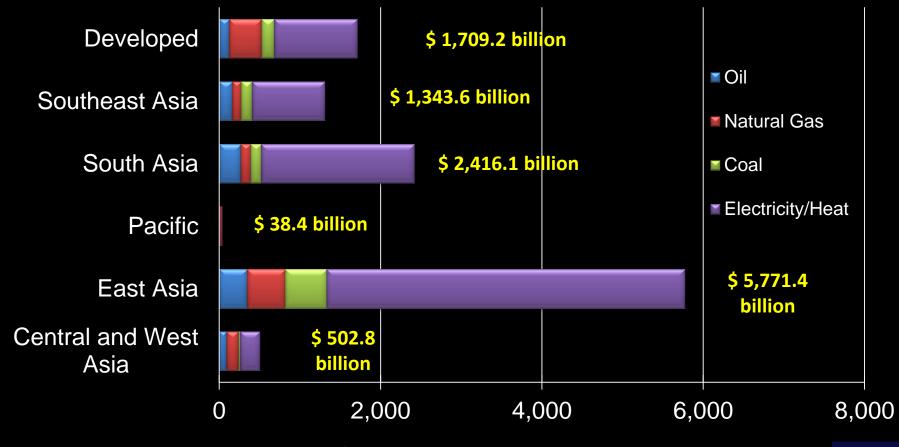


■ Central and West Asia
■ East Asia
■ Pacific
■ South Asia
■ Southeast Asia
■ Developed Group



## Cumulative Investment Requirements in Energy Sector (2010–2035)

- Cumulative investments by 2035 : \$11.7 trillion
- More investment in developing members



\$ billion (constant, 2006 prices)

ADB

### **Policy Implications**

- Energy security concern: Asia and the Pacific will continue rely upon imported fossil fuel, such as oil and gas
- 2. Demand for coal will grow by more than 50% from 2010 to 2035
- 3. Asia and the Pacific has a large untapped renewable energy potential
- 4. There is room to reduce energy demand both from the demand side and supply side (e.g. through the widespread use of high efficiency appliances, or the rehabilitation/phasing out of aging, unreliable, and low efficiency power plants). There is a need to rehabilitate and/or phase out aging, unreliable, and low efficiency power plants
- 5. Large amounts of investments is required



# Asian Development Bank WHO WE ARE



The Asian Development Bank (ADB) is an international development finance institution owned by 67 members, 48 of which are from Asia and the Pacific.

Southeast

Asia

East Asia

### Vision

An Asia and Pacific region free of poverty

West Asia

### Mission

To help its developing members to reduce poverty and improve their living conditions and quality of life

### **Main Instruments**

- Loans
- Technical assistance
- Grants
- Guarantees
- Equity investments

The Pacific

Policy dialogues



### **Our Strategy: Strategy 2020**

#### **Core Objectives**

Inclusive economic growth
Environmentally sustainable growth
Regional integration

#### **What We Promote**

Private sector development/operations
Good governance and capacity development
Gender equity
Knowledge solutions
Partnerships

#### **Key Areas of Operation**

Infrastructure
Environment, including climate change
Regional Cooperation
Financial sector development
Education



### Asian Development Bank

### **FOCUS AREA: ENERGY**

### **Energy Policy 2009**

### **Objective**

To help ADB's Developing Member Countries provide reliable, adequate, and affordable energy for inclusive growth in a socially, economically, and environmentally sustainable way



**Clean Energy** 



Sector Governance and Reform



**Access to Energy** 



**Regional Cooperation** 





# Asian Development Bank CLEAN ENERGY PROGRAM

### **Evolution of the Clean Energy Program**

2009

**Policy Initiatives for** the Energy Sector May 1995

**Energy 2000: Review of the Energy Sector Policy of ADB** 

### **ADB's Energy Policy 2009**

Energy security needs, transition to a low-carbon economy, universal access to energy

Increase clean energy investments to \$2 billion per year from 2013

**Asia Least-cost** Greenhouse Gas **Abatement** Strategy (ALGAS)

**Project** 

1995 - 2000

1995

Promotion of Renewable Energy, **Energy Efficiency, and GHG Abatement Projects (PREGA)** 2000 - 2007

**Energy Efficiency Initiative** (EEI) 2005 - 2009

> **Energy for All (EfA) Initiative**

**Clean Energy Program** 

**Energy for All (EfA) Initiative** 



### **Clean Energy Program**

### Objectives

Increase EE in energy, transport, & urban sectors in DMCs

Adopt renewable energy technologies

Improve access to energy for the poor

#### **Initiatives**

**Funds & Partnerships** 

Solar/Wind Initiative

**Energy for All Initiative** 

New Energy Efficiency Initiative

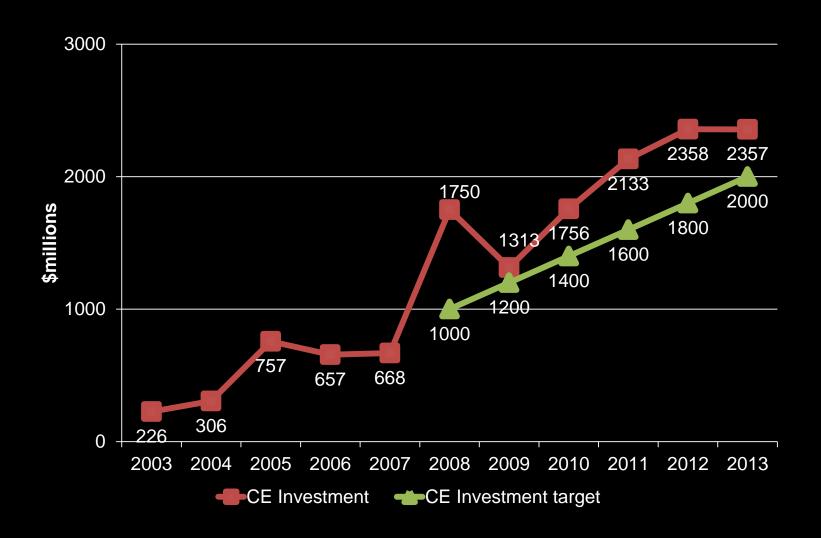
Clean Energy Financing
Partnership Facility

**Climate Change Fund** 

**Asia Pacific Carbon Fund** 

**Future Carbon Fund** 

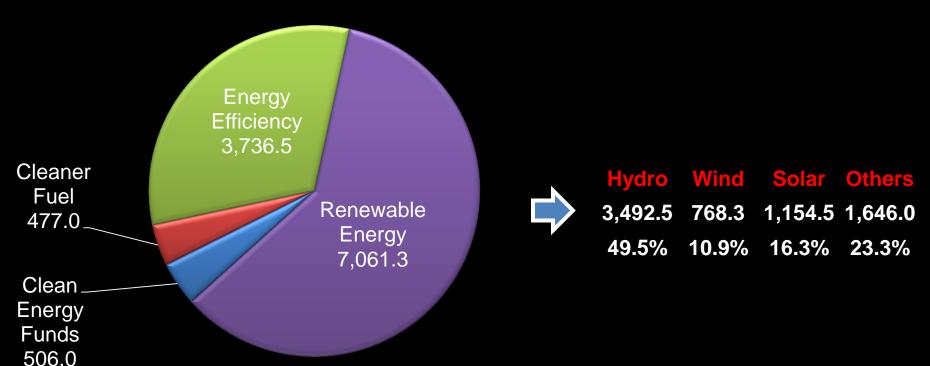
### **ADB Clean Energy Investments**





## ADB's Cumulative Clean Energy Investment by Project Type (2008-2013)

in \$ million

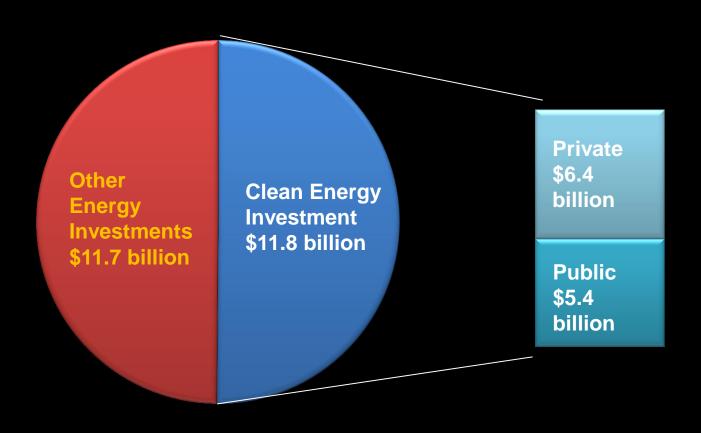


Total Energy-related Investment (2008-2013): \$ 23.5 Billion; Total Clean Energy Investment (2008-2013): \$ 11.8 Billion.

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



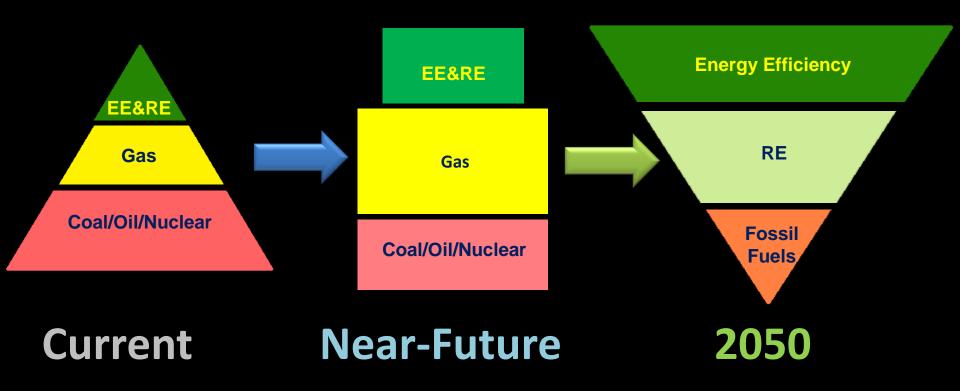
### ADB's Cumulative Clean Energy Investment – Public vs. Private Sector (2008-2013)



Total Energy-related Investment (2008-2013): \$ 23.5 billion



## Market Transformation: Unlock Asia's Clean Energy Future



### **THANK YOU**