

# Energy Round Table

## ADB Operations in Viet Nam

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# The Greater Mekong Subregion (GMS)

## Myanmar

Land area: 677 thou sq km  
 Population: 57.3 M  
 GDP per capita: US\$216

## Thailand

Land area: 513 thou sq km  
 Population: 65.8 M  
 GDP per capita: US\$3,738

## The GMS in 2007

Land area: 2.6 M sq km  
 Population: 324 M  
 GDP per capita: US\$1,487

## People's Republic of China

Land area: 631 thou sq km  
 Population: 94.8 M  
 GDP per capita: US\$1,484  
 (figures for Yunnan and Guangxi only)

## Viet Nam

Land area: 331 thou sq km  
 Population: 85.6 M  
 GDP per capita: US\$818

## Lao PDR

Land area: 237 thou sq km  
 Population: 5.9 M  
 GDP per capita: US\$673

## Cambodia

Land area: 181 thou sq km  
 Population: 14.5M  
 GDP per capita: US\$596



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# Admirable Economic Growth

- Strong economic growth last 10 years
  - GDP growth 7.5% average
  - Electricity demand 16% (13% in 2008-09)
- Household access to electricity (1995 – 2009)
  - 50% to 95%
  - 156 kWh to 900 kWh per capita (x6 in 15 years)
- Population below poverty line (1993 – 2008)
  - 58% to 15%

# Power sector description 2008

Owner	Capacity		Comment
	MW	%	
EVN	9,359	66	
IPP	3,470	24	Domestic
BOT	1,470	10	Foreign
<b>Total</b>	<b>15,060</b>		

Source	Capacity		Comment
	MW	%	
Hydro	5,257	33	
IPP/BOT	5,044	32	
CCGT	3,268	21	
Coal	1,545	10	
Other	100		Incl SHP

# Power sector investment requirement

## Capacity Projections (MP6)

**2008** 15,060 MW

**2015** 40,000 MW

**2020** 60,000 MW

*Substantial investment requirements*

*Will need external assistance*

*ADB + Co-financing*

*Other IFI/Donors*

*Commercial financing*

Financing requirements  
2007 to 2017

for 42,000 MW

(new master plan being prepared)

Owner	Gen	T&D	Sum
EVN	21.5	13.5	35.0
Private	11.0	0.0	11.0
Sum	32.5	13.5	46.0

# Renewable Energy

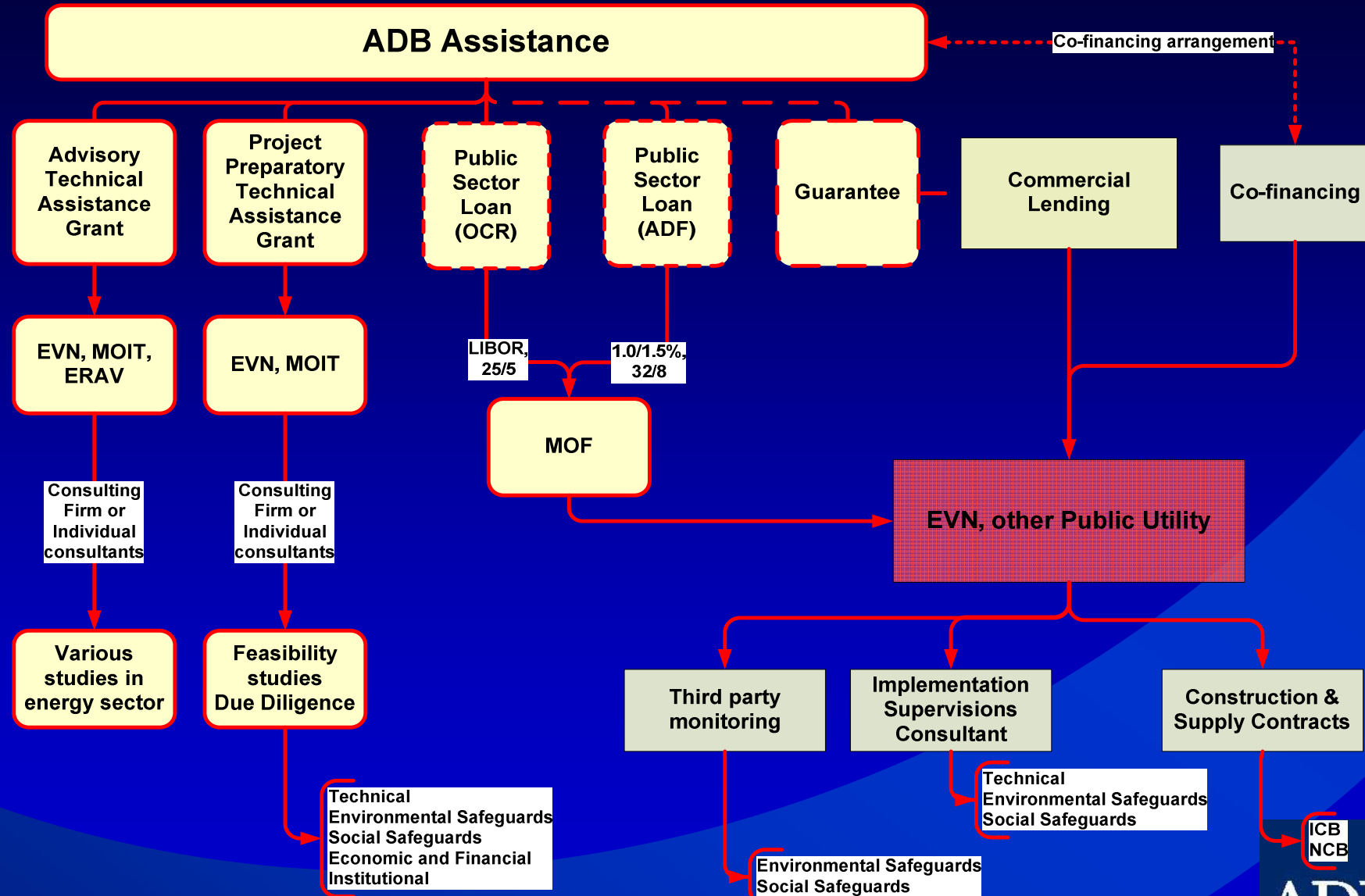
- Viet Nam is vulnerable to climate change and has realized the need to have a policy of sustainable development without significant increase in GHGs.
- Power sector in Viet Nam emitted
  - 25 mn ton CO<sub>2</sub> in 1994
  - 45 mn ton in 2000
  - 105 mn ton in 2010 (est).
- Strategy and Master Plan for Renewable Energy in Viet Nam 2015 being considered for approval by Government
- Targets for RE are:
  - 5.3 TWH (1,200 MW) in 2015 – predominantly small hydro
  - 10.8 TWh (2,500 MW) in 2025 – Wind: 500 MW
- However, 28 wind power projects totaling 2,200 MW being planned or implemented.
- Need subsidy
  - Presently small hydro receive avoided cost tariff (SHP OK)
  - Proposal for feed-in-tariff for wind power (how to finance?)
  - ADB and other donors assisting in RE legislation.

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# How can ADB Provide Assistance

- ADB has several financial instruments for its member countries, of which relevant to this forum would be:
  - Technical assistance grants (pre-investment studies)
  - Loans (to public and private sector)
  - Co-financing facility (ADB will seek other donors or institutions to help finance a project)
  - Multitranche financing (a package of projects under one Board approval)
  - Guarantees
- ADB has several sources of funds
  - Ordinary Capital resources (OCR)
  - Asian Development Fund (ADF – concessionary)
  - A variety of specialist grant funds provided by member countries, such as JFPR, Climate Change Fund, Tsunami Fund, Regional Cooperation and Integration Fund, etc.

# Typical Financing Structure for Public Utility



# ADB Projects

- ADB can finance projects that among other:
  - Are supported by the Government (a three-year rolling program is negotiated annually between Government and ADB for public sector projects)
  - Are economically and financially feasible
  - Comply with ADB and national social and environmental safeguards
  - Has a Project owner that is qualified to construct and operate the project facilities
  - Has adequate counterpart funds for construction and operation

## ADB's Energy Program in Viet Nam

- Since 1995, lending assistance to the Viet Nam power sector has reached \$1,944 million, of which:
  - Transmission and distribution \$666 mn
  - Thermal Power (1 @ 1,000 MW) \$931 mn
  - Hydropower (1 @ 156 MW) \$196 mn
  - Renewable Energy \$151 mn
  - Transmission (guarantee) \$230 mn
- Technical assistance totals \$23.65 million
  - Thermal power \$5.52 mn
  - Transmission and distribution \$3.76 mn
  - Energy efficiency and conservation \$2.16 mn
  - Energy Sector Development \$5.07 mn
  - Large Hydro \$3.20 mn
  - Renewable Energy \$4.00 mn

## Lending Assistance in 2010

- 750 MW O Mon IV CCGT (\$270 mn, of which ADB \$50 mn)
- O Mon Gas Pipeline (Guarantee)
- Ha Noi Power Transmission (Guarantee)

## Technical Assistance in 2010

- Wind Energy Development (\$600')
- Energy Efficiency Program in Industrial Sector (\$1,200')
- Rehab and efficiency improvement of Pha Lai Thermal Power Plant (\$1,200')
- GMS Rural Renewable Energy (\$2,000)
- Ensuring sustainability of GMS Regional Power Development (\$1,400')
- And possibly:
  - Increasing efficiency of NPT Corporation
  - GMS Developing the Regional Transmission and Regulatory Authority
  - East-West Corridor Power Transmission
  - Developing of Road Map and capacity Buiding for Carbon Capture and Storage in SEA

## For More Information

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