The Interconnection of Power Systems in the Greater Mekong Subregion
Greater Mekong Subregion (GMS)
Greater Mekong Subregion

Peak demand 2000
Development of GMS Energy Cooperation

GMS Economic Cooperation Program - ADB

- Study on the framework of GMS energy cooperation
- World Bank Power Trade Strategy Study
- To promote development of the regional transmission network
- Policy Statement on Regional Power Trade
- Inter-Governmental Agreement on Power Trade in GMS, IGA
- Regional Indicative Master Plan on Power Interconnection in GMS
- World Bank Study for Options in the GMS Power Market
- Formation of the Regional Power Trade Coordination Committee RPTCC (2004)
- To draft the Regional Power Trade Operating Agreement
Energy Cooperation Milestones

- **Endorsement of the Policy Statement on Regional Power Trade in the GMS** - January 2000
  - By the GMS Ministerial Conference
    - Major commitments by GMS members toward integrating national systems into a regional grid

- **Completion and adoption of the Regional Indicative Master Plan on Power Interconnection in the GMS** May 2002
  - Confirmed the economical benefits of regionally harmonizing the development of power systems in GMS
  - Recommended the interconnection grid capable of providing the power transfer capacities to fully benefit from the pooling of resources with a least-cost solution
Energy Cooperation Milestones

- Signing of the Inter-Governmental Agreement on Regional Power Trade in the GMS - November 2002
  - Represents the highest commitment by GMS members
    - To promote regional power trade
    - Toward a competitive electricity market
  - Establishes the authority and broad framework to implement power trade

- Setting up of the Regional Power Trade Coordination Committee - 2004
  - To coordinate implementation of regional power trade
  - To draft the Regional Power Trade Operating Agreement - to be approved by the end of 2005
Regional Indicative Master Plan

- Technical Assistance (TA) project funded by the Asian Development Bank
- Developed by a team of experts from an international consultant based in Norway
- Required a significant effort over a period of approximately 18 months
- Yielded a very comprehensive and detailed report on:
  - Regional power demand forecast
  - Generation expansion scenarios
  - Transmission and interconnection development plans
  - Institutional and regulatory arrangements
Main findings and conclusions

- An Extended Power Cooperation Scenario would yield a discounted net gain of approximately 0.9 billion USD over the 2005-2020 period.

- An additional gain of approximately 0.4 billion USD has been estimated in regard to reduced greenhouse gas emissions.

- A 500 kV interconnection grid is required to provide the required power transfers to fully benefit from an Extended Power Cooperation Scenario.

- An optimal interconnected grid has been identified and justified, with the list and characterization of specific projects to be realized along with their implementation schedule.
Greater Mekong Subregion

Regional Indicative Master Plan

Projected generation capacity 2020

138 218 TOTAL MW (Excluding Myanmar)

39 300 MW

4 787 MW

35 648 MW

56 738 MW

1 745 MW

Projected generation capacity 2020
Greater Mekong Subregion

Regional Indicative Master Plan

Recommended export-oriented generation 2020

11,628 TOTAL MW

3,600 MW

3,763 MW

3,460 MW

163 MW

442 MW

200 MW

Economic hydroelectric power plants project

Installed capacity
500 kV interconnection project

Existing and planned 500 kV lines

Existing substation

230 kV interconnection project

Total estimated cost of interconnection facilities
1.9 billion USD (2001 costs)

Greater Mekong Subregion

Regional Indicative Master Plan

Proposed 500 kV interconnection grid 2020
Conclusion - Systematic Approach toward RECI

Features strategically important elements

- A strong support by important international institutions (Asian Development Bank and World Bank)
- Regional coordinating groups to foster and organize RECI (EPF, EGPT, RPTCC)
- Signing of an IGA confirming the highest political commitment to promote regional power trade and to set out principles (following a Policy Statement on Regional Power Trade)
- Establishment of a Regional Indicative Master Plan
- Development of a Regional Power Trade Operating Agreement