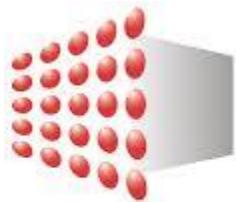


The Greater Mekong Sub-Region

HAPUA-UNESCAP Workshop
17-19 April 2017, Jakarta

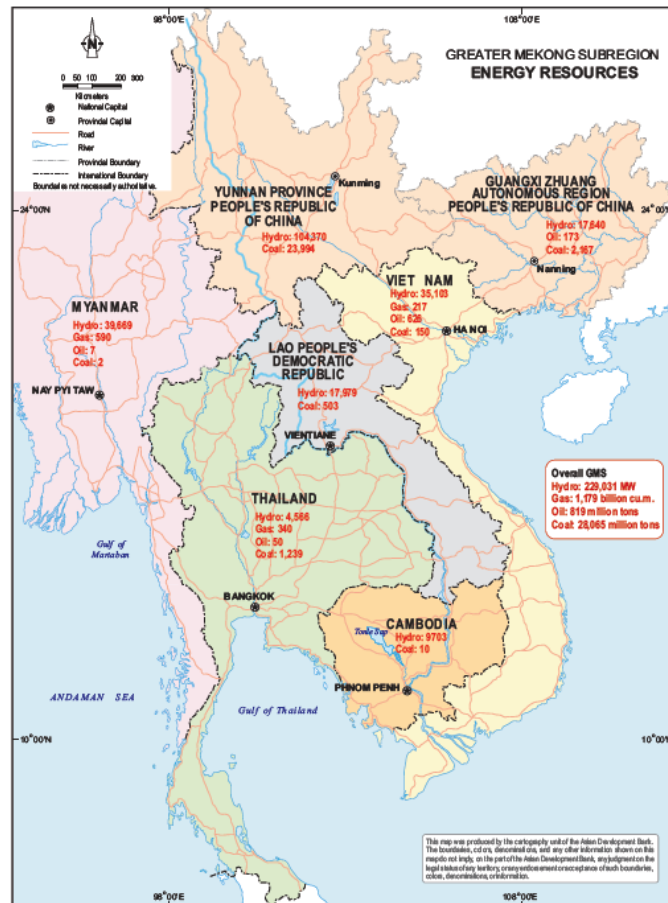


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Greater Mekong Sub-Region (GMS)



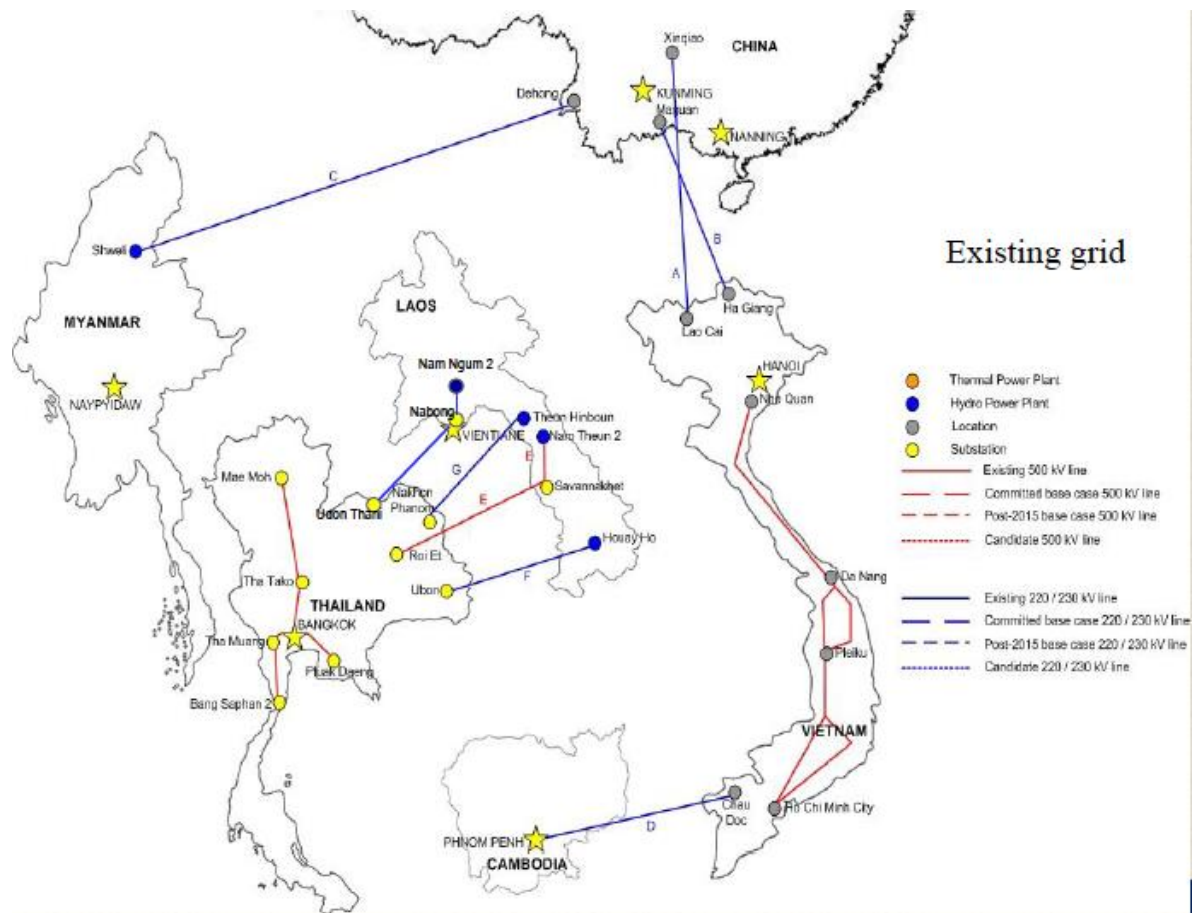
GMS Overview

The GMS countries are Cambodia, the People's Republic of China (PRC, specifically Yunnan Province and Guangxi Zhuang Autonomous Region), Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam. They have a combined population of 326 million. Excluding the PRC, the other 5 are all members of ASEAN.

In 1992 the 6 countries entered into a programme of sub-regional economic cooperation, designed to enhance economic relations among the countries.

The GMS Programme helps the implementation of high priority sub-regional projects in transport, energy, telecommunications, environment, human resource development, tourism, trade, private sector investment, and agriculture.

Current Interconnections



Motivation for Power Trade

- Major hydro potential of Laos PDR and Myanmar
- Rapid economic growth of Thailand
- Ending of various regional conflicts
- Desire to reduce dependence on oil-fired generation
- Boost foreign revenue receipts for China and Laos PDR
- Balancing out peak load across the region
- Cost savings for importers

BUT

- Lack of infrastructure a major constraint, and high cost of resolving this problem (US\$585 billion)

Timelines

- 1994: ADB published first GMS energy study identifying benefits of cooperation
- 2002: Completion of the Regional Indicative Master Plan on Power Connection
- 2004: The GMS governments established the Regional Power Trade and Coordination Committee (RPTCC) with the role of completing the initial Regional Power Trade Operating Agreement to support the establishment of a regional power market in the GMS
- 2007: MOU signed
- 2008: 2nd MOU to clarify the guidelines up to 2012 in preparation for stage 2 signed
- 2010: Indicative Regional Master Plan on Power Interconnection in the GMS published
- 2012: RPTCC replaced by the Regional Power Coordination Centre, designed to ensure common rules were followed and the planning of the transmission grid

Summary of Power System Development (ADB, 2013)

	Published Current Development Plan	International Connections	Private Participation
Cambodia	There is a power development plan, but it does not seem to be publicly available.	Several cross-border interconnections are planned mainly at low voltage. A 230 kV line to Lao PDR may be constructed, but it is not clear.	This is significant both for large-scale and small-scale generation.
Lao People's Democratic Republic (Lao PDR)	No power system expansion plan appears to be publicly available.	Many cross-border connections are planned mainly for the export of power to Thailand and Viet Nam.	Very strong in generation and potentially will enter transmission.
Myanmar	No power system expansion plan appears to be publicly available.	Very large investments are likely to be needed to evacuate power to the PRC and Myanmar. These pose great challenges of sustainability.	There is considerable private finance at present and it is the only conceivable basis for expansion on the scale envisaged.
People's Republic of China (PRC) (Guangxi and Yunnan)	No power system expansion plan could be found.	Strong links will be needed if the projects with Myanmar proceed. FS is being prepared for a 500 kV link to Viet Nam; a 500 kV link to Thailand via the Lao PDR may be reexamined.	Some private participation in IPPs, mostly domestic, and in large part from corporatized subsidiaries of the SOEs.
Thailand	A detailed and regularly updated power system expansion plan is freely and publicly available.	There are strong connections with the Lao PDR and several planned cross-border connections with Cambodia, the PRC, and Myanmar.	The most recent PDP appears to eschew private finance, except for SPPs and VSPPs.
Viet Nam	A PDP is prepared, regularly updated, and a summary is published as a decree. The underlying analysis is not publicly available.	There are several lines to the PRC that may be substantially strengthened; greater connectivity to Cambodia is likely.	Private finance was successful in the early 2000s, but then dried up. Reforms have been made to the PPP regime.

Possible Electricity Trade in 2020 & 2025 (GWh)

(ADB, 2013)

	Exporter			
2020	Cambodia	Lao People's Democratic Republic	Myanmar	Total
PRC	NA	NA	45,600	45,600
Thailand	NA	24,900	9,800	34,700
Viet Nam	1,800	16,700	NA	18,500
TOTAL	1,800	41,600	55,400	98,800
2025				
PRC	NA	NA	100,000	100,000
Thailand	NA	30,200	13,500	43,700
Viet Nam	1,800	18,200	NA	20,000
TOTAL	1,800	48,400	113,500	163,700

Power Trade 2010

Country	Imports	Exports	Total Trade	Net Imports
Cambodia	1,546	-	1,546	1,546
Lao PDR	1,265	6,944	8,210	- 5,679
Myanmar	-	1,720	1,720	- 1,720
Thailand	6,938	1,427	8,366	5,511
Vietnam	5,599	1,318	6,917	4,281
People's Republic of China	1,720	5,659	7,379	- 3,939
Total	17,069	17,069	34,139	-
Notes: - = nil, All Values in GWh = gigawatt-hour				

Planned Stages of GMS Power Market Integration

Stage 1 (current stage): Power trade is conducted predominantly under bilateral agreements between the PPA provider and the national utility of the importing country.

Stage 2: Transit trade between any pair of GMS countries, eventually using transmission facilities of a third member country.

Stage 3: Further development of interconnectors and granting trade access to third parties other than national power utilities.

Stage 4: Establishment of a regional competitive power pool market, with multiple sellers and buyers, within and across member countries. A precondition for this would be the establishment of national competitive markets.

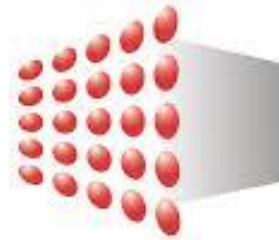
Main Obstacles for Transition to Stage 2

- No overarching regulator across the GMS
- Different technical standards and regulatory arrangements between the member states, requires reform in national markets
- Lack of an adequate transmission network across the GMS region, and unclear as to how new transmission lines will be financed (asymmetric benefits)
- IPPs reluctant to give third-party access to their dedicated transmission lines
- Territorial disputes and water use issues

Thank you!

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