



# Technical Assistance Report

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Project Number: 39594  
November 2005

## Proposed Technical Assistance Greater Mekong Subregion Power Trade Coordination and Development (Financed by Agence Française de Développement)

Asian Development Bank

## ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	Agence Française de Développement
FG	–	focal group
GMS	–	Greater Mekong Subregion
Lao PDR	–	Lao People’s Democratic Republic
MKID	–	Mekong Infrastructure Division
MKRD	–	Mekong Department
PRC	–	People’s Republic of China
PWG	–	planning working group
RCSP	–	Regional Cooperation Strategy and Program
RPTCC	–	Regional Power Trade Coordination Committee
RPTOA	–	Regional Power Trade Operating Agreement
TA	–	technical assistance
TOR	–	terms of reference

## TECHNICAL ASSISTANCE CLASSIFICATION

<b>Targeting Classification</b>	–	General intervention
<b>Sector</b>	–	Energy
<b>Subsector</b>	–	Energy sector development
<b>Themes</b>	–	Regional cooperation, capacity development
<b>Subthemes</b>	–	Institutional development, organizational development.

## NOTE

In this report, “\$” refers to US dollars.

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## I. INTRODUCTION

1. Since 1992, the six member countries<sup>1</sup> of the Greater Mekong Subregion (GMS) have embarked on a program of economic cooperation (the GMS Program) that aims to promote development through closer economic linkages. Cooperation in the energy sector in the GMS has focused on the building of physical and institutional infrastructure for regional power trading in the context of the GMS Flagship Program for promoting regional power trading.
2. The Inter-Governmental Agreement on Regional Power Trade in the GMS (IGA) was signed during the first GMS Summit of Leaders in 2002 and a Memorandum of Understanding on the Guidelines for the Implementation of the Regional Power Trade Agreement – Stage #1 was signed during the second GMS Summit of Leaders in 2005. The Regional Power Trade Coordination Committee (RPTCC) comprising representatives of senior government officials from six GMS countries, Asian Development Bank (ADB), and other development partners was created in 2002, and tasked with coordinating, promoting, and implementing regional power trading development. The RPTCC Work Plan (2005–2008) was developed and endorsed by all RPTCC members during the third RPTCC meeting in April 2005. The updated RPTCC Work Plan (2005–2008) is shown in Appendix 1.
3. The physical infrastructure projects for cross-border power trading are ongoing, with the participation of the private sector and other development partners. The GMS countries recognized that it would be essential to optimize RPTCC activities and implement the prioritized work in a timely manner, and requested support from ADB and other development partners. The proposed technical assistance (TA)<sup>2</sup> project responded to this request. The TA project was discussed at the fourth RPTCC Meeting held at Yangon, Myanmar, in September 2005, and all six GMS countries concurred with ADB to pursue the TA. Agence Française de Développement (AFD) supports the initiatives of GMS regional power trading development will provide financing support of Euro (€) 1,000,000 for the implementation of this project. The TA design and monitoring framework is in Appendix 2.

## II. ISSUES

4. The six GMS member countries are characterized by uneven electricity demand along with mismatched availability of resources for economic power production. Power trading in the GMS therefore presents excellent opportunities to promote the efficient use of energy resources. Regional power trading will stimulate investments and economic cooperation in the subregion. The GMS country governments have a strong commitment to and sense of ownership of relevant policies and strategies for developing a regional power trade market.
5. The GMS Summit declaration issued by GMS leaders in November 2002 enunciated a vision of freeing their people from poverty and providing sustainable development opportunities for all their citizens. The GMS needs to be increasingly integrated to attain these goals and to compete in a globalized world. A key objective of GMS cooperation is thus the development of GMS markets and movement of goods and people across common borders. This objective is to be achieved through the implementation of the GMS vision for enhanced connectivity, increased competitiveness, and a greater sense of community. Greater connectivity will help to physically integrate the region through a network of transport, power, and telecommunications facilities. Physical connectivity will help improve the region's competitiveness through greater access to markets.

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<sup>1</sup> Cambodia, People's Republic of China, Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam.

<sup>2</sup> The TA first appeared in *ADB Business Opportunities* (internet edition) on 29 September 2005.

6. ADB's Regional Cooperation Strategy and Program (RCSP) 2004–2008 supports pro-poor, sustainable growth through four thrusts: (i) strengthening connectivity and facilitating cross-border movements, (ii) integrating national markets to promote economic efficiency and private-sector development, (iii) addressing capacity building associated with subregional linkages, and (iv) managing the environment and shared natural resources. RCSP 2004–2008 has identified the importance of expanding cooperation in energy trading and regional cooperation through joint development of energy sources in the region and has included this TA in the Program.

7. Under the GMS framework and programs, a number of priority projects, especially the provision of regional power sector infrastructure, have been successfully implemented or are being implemented through financial and technical assistance provided by the governments of GMS countries, ADB, and other development partners. ADB has provided three investment loans and 11 TAs with a total amount of \$487 million to promote regional cooperation in the energy sector. Among them is TA 5920-REG,<sup>3</sup> the GMS Regional Indicative Master Plan on Power Interconnection, which provided the framework for cross-border power interconnection projects to be implemented during 2004–2020.

8. The initiative of regional power trade involves building both the institutional and physical infrastructure frameworks that will create conditions for an integrated power system. All GMS member countries recognize that regional power trade will be developed in phases and a regional power market will evolve gradually through institutional change and infrastructure development.

9. GMS member countries also recognize that it is necessary to have adequate institutional arrangements, work programs, and resources to carry out all actions needed to achieve the regional power market. In this context, all GMS countries have formulated and adopted the RPTCC work plan, which identified key prioritized tasks that are brought together in this TA. The components are considered coherent and necessary for implementing the Regional Power Trade Operating Agreement (RPTOA) in the initial stages. The TA emphasizes the essential linkages between them and facilitates the development of a GMS regional power market using a consolidated and integrated approach.

### **III. THE PROPOSED TECHNICAL ASSISTANCE**

#### **A. Impact and Output**

10. The development of a competitive and efficient subregional power trade market will be the final long-term target. Heading to this, and there is need for a progressive evolution from the current independent country systems with very limited power trade to a liquid and competitive subregional market. The findings of TA 6100-REG<sup>4</sup> indicate that this evolution should have four well-defined stages, with targets that must be achieved at each stage before advancing to the next one. The targets in stage 1 are to allow contracted power trade between two neighboring countries. During stage 2 such transactions may extend to all the GMS countries.

11. The TA will focus on developing institutions and building capacity that will lead to the creation of an efficient and competitive GMS power market. The TA will (i) develop a holistic and integrated action plan on regional power trade development; (ii) create adequate institutions to undertake the tasks associated with the implementation of regional power trade in the initial stages; (iii) assist GMS member countries in capacity building and human resource development relating to regional power trade and cooperation; and (iv) develop a platform or

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<sup>3</sup> ADB. 2000. *Technical Assistance for Regional Indicative Master Plan on Power Interconnection in the Greater Mekong Subregion*. Manila (TA 5920-REG).

<sup>4</sup> ADB. 2003. *Technical Assistance for a Study for a Regional Power Trade Operating Agreement in the Greater Mekong Subregion*. Manila (TA 6100-REG).

database for information exchange and a mechanism for communication among GMS power agencies to facilitate regional power trade. The TA outputs will help GMS countries strengthen their capacity to promote regional power trade development.

## **B. Methodology and Key Activities**

12. Given the complex and long-term nature of the development of a GMS power market, the TA will be comprehensive but will focus on the four prioritized components. These components will complement each other to facilitate and promote the development of the GMS power market.

13. **Component 1: Develop a Systematic and Integrated Action Plan on Regional Power Trade Development.** A team comprising consultants and government officials from GMS countries will review and update progress on regional power sector development, diagnose the main issues in regional power trade, and assess the appropriate approach to developing the energy resource in the GMS. Key activities are (i) review and collate information available in past studies, including the Regional Indicative Master Plan on Power Interconnection in the GMS, Study on Regional Power Trade Operating Agreement, and the updated power development plans of the six GMS countries; (ii) analyze the macroeconomic and energy development prospects in the GMS, and provide macro development strategies on regional power trading, including both physical infrastructure investments and institutional development; (iii) assess the current institutional capacity in the power sectors of the GMS countries, diagnose the factors impeding regional power trade development, and provide recommendations and strategies; (iv) update and optimize the regional master plan on cross-border interconnection projects; and (v) synthesize collected information into a systematic and integrated action plan on regional power trade development with concrete and prioritized physical and institutional infrastructure projects to be implemented in a reasonable time frame.

14. **Component 2: Facilitate Creation of Institutions to Coordinate and Develop Regional Power Trade.** Component 2 will facilitate the creation of the necessary regional institutions in GMS member countries to coordinate initial activities and eventually perform day-to-day regional power trade operations.

15. The GMS countries agreed to create a focal group (FG) and a planning working group (PWG), to be established in 2006. A technical secretariat and a regional regulatory board will be created later as necessary, depending on the development of the regional power market.

16. At the initial development stage, the FG will coordinate the implementation activities of promoting regional power development in the GMS. The main functions and activities of FG will include developing internal procedures to guide the FG's initial operation and management, and updating short- and medium-term action plans for FG operation. The PWG will be a specialized group to be set up by RPTCC to coordinate the planning of GMS cross-border transmission lines. The PWG will initially have the functions of both operational planning and system planning.

17. Key activities under this component will be to (i) design and develop the detailed structure, functions, and terms of reference (TOR) of the FG; (ii) assess the resource requirements for FG establishment including legal, financial, and human resources, and outline the steps and action plan for its establishment; (iii) develop internal procedures to guide FG's initial operation and management; (iv) develop and update short- medium-term action plans for FG operations; (v) design and develop the detailed structure, functions and TOR of the PWG; and (vi) develop performance standards regarding safety, security, reliability and quality of service.

18. **Component 3: Build Capacity and Develop Human Resources.** Component 3 will provide training and workshops, and mobilize advisers in the field as necessary, for regional

power trade operations and management for GMS countries. It will also support the countries in preparing an overall framework and action plans to strengthen capacity building and develop human resources for regional power sector cooperation.

19. Key activities under this component will be: (i) assess the institutional capacity of the GMS member countries and develop detailed medium-term (2006–2010) capacity-building plans for each country to support the implementation of the Regional Power Trade Agreement; (ii) conduct general training and workshops for national officials and technical staff on regional power trade, including planning, operation agreement, transaction and dispatch, best practices for regional power trade, regulatory pricing, etc. (iii) for officials and state attorneys in legal ministries, conduct training and workshops on laws and regulations relating to the legal issues of cross-border power trading; (iv) review and provide recommendations on key policy interventions and institutional reforms at national and regional levels to remove barriers to increased energy cooperation and trading; and (v) formulate action plans on human resource development in GMS countries, and develop and carry out training programs for operation and management staff to be engaged in the initial stages, particularly the regional regulatory board, regional transaction coordinators, operation and system PWGs, etc.

20. **Component 4: Establish a Platform or Database for Information Exchange and Communication.** To develop a competitive and interconnected regional power market, information on GMS countries' power facilities will be essential and must be made available by all parties. Component 4 will assist GMS countries in promoting the establishment of a platform or database for information exchange and communication among the countries to facilitate regional power trade.

21. Key activities of this component will be: (i) design and develop the information and communication technology strategy applicable to regional power trading for the countries; (ii) assess the requirements for hardware infrastructure, software availability, information technology, and human resources; (iii) conduct an analysis of the GMS energy sector, collect adequate basic data and information, and design and develop an appropriate database; (iv) develop a website on regional power trading development; and (v) for relevant staff of GMS countries, conduct training and workshops on web page application and maintenance.

### **C. Cost and Financing**

22. The total cost of the TA is estimated at \$1,300,000 equivalent comprising €1,000,000 (equivalent to about \$1,200,000) to be financed on a grant basis by AFD and \$100,000 equivalent in kind, to be contributed by the participating six GMS member countries through provision of office facilities, information and reports, etc. Details of the cost estimates and financing plan are in Appendix 3.

### **D. Implementation Arrangements**

23. The TA is being undertaken as a priority activity of the GMS RPTCC Work Plan (2006–2008). The GMS RPTCC will take responsibility for overall coordination, oversight, and facilitation of TA implementation. Coordination with other development partners involved in promoting regional power trade and cooperation will be pursued to avoid duplication of effort.

24. ADB will be the Executing Agency for the TA. The Infrastructure Division (MKID) of Mekong Regional Department (MKRD) will take the lead in implementing the TA, in full collaboration and consultation with other departments involved in GMS program activities, AFD, and the GMS countries. MKID will be supported by a consultant energy specialist with experience in subregional power trading and cooperation, acting as focal point for and overall adviser to the TA to ensure quality outputs and outcomes, and to guide the TA consultants. The

energy specialist will be engaged as an individual consultant for 6 person-months of intermittent service, in accordance with ADB's *Guidelines on the Use of Consultants*.

25. A small TA secretariat will be established within MKID, under the overall direction of the assigned Task Manager, to ensure smooth coordination between and among the GMS countries, consultants, and ADB, and will help produce reports and disseminate them on time. The secretariat, which will include the consultant energy specialist referred to above, will closely coordinate with the GMS countries, each of which will establish a focal point and a counterpart agency to liaise directly with the TA consultants and the secretariat.

26. The RPTCC members from six GMS countries will be the counterpart agencies for TA implementation. Each counterpart agency will provide relevant national data and information, facilitate consultation with national stakeholders, and provide adequate supporting services including office facilities for in-country activities to efficiently execute the consulting services.

27. The TA itself will be implemented by an international consulting firm. ADB will select and engage consultants in accordance with its *Guidelines on the Use of Consultants*. The quality- and cost-based procedure will be used. To expedite project implementation, advance recruitment of consultants will be required. All procurement under the TA will be in accordance with ADB's *Guidelines for Procurement*.

28. The TA will be implemented in two phases, with an overall period of approximately 24 months, from January 2006 to December 2007. The first two components will be implemented in phase 1, while the remaining two components will be done in phase 2. It is estimated that the TA will require 34 person-months of international consulting inputs and 32 person-months of domestic consulting inputs. The experts will have expertise in cross-border power trading and development, including power system planning, institutional development, capacity building, and information system development. The international firm of consultants will engage domestic consultants as sub-consultants. The outline terms of reference to which the international consulting firm will implement the TA are in Appendix 4.

29. The consultants will prepare inception, interim, draft final, and final reports for each component. The TA outputs will be disseminated by a variety of means (website, in-country workshops, electronic reports, and brochures).

#### **IV. THE PRESIDENT'S RECOMMENDATION**

30. The President recommends that the Board approve ADB administering technical assistance not exceeding the equivalent of €1,000,000 (equivalent to \$1,200,000) to be financed on a grant basis by Agence Française de Développement for the Greater Mekong Subregion Power Trade Coordination and Development Project.

**GMS—REGIONAL POWER TRADE COORDINATION COMMITTEE**  
**Updated Work Plan (2005–2008)<sup>a</sup>**

<b>Outputs</b>	<b>Time Frame</b>	<b>Source of Funds</b>	<b>Implementing Agencies</b>
<b>A. Finalization of RPTOA and Signing of MOU on Guidelines for Implementation of RPTOA Stage 1</b> <ol style="list-style-type: none"> <li>1. Review and comment on the MOU on the Guidelines for Implementation of RPTOA Stage 1</li> <li>2. Government consideration and approval by GMS countries</li> <li>3. Signing of the MOU at the Second GMS Summit in July 2005</li> <li>4. Revise and finalize RPTOA study reports: General design, grid and settlement code, and institutional arrangement</li> </ol>	<p align="center">Apr 2005</p> <p align="center">Jun 2005</p> <p align="center">Jul 2005</p> <p align="center">Dec 2005</p>	ADB	ADB/GMS countries
<b>B. Institutional Buildup</b> <ol style="list-style-type: none"> <li>1. Create a FG and each GMS country to appoint focal points to assist in initiating the functions of the FG</li> <li>2. Conduct the RPTCC-4 meeting and first Meeting of Technical Secretariat at Myanmar, and discuss Technical Secretariat tasks and programs</li> <li>3. Create a Planning Working Group to coordinate and develop initial activities on regional power trade</li> <li>4. Channel resources from cofinancing partners and pursue an ADB TA project to facilitate institutional buildup</li> <li>5. Define organization structure for regional power trade, and establish a regional regulatory board for coordination of regulatory function</li> </ol>	<p align="center">Sep 2005</p> <p align="center">Sep 2005</p> <p align="center">2006</p> <p align="center">Dec 2005</p> <p align="center">2006–2007</p>	<p align="center">ADB</p> <p align="center">AFD/ADB</p> <p align="center">AFD/ADB</p>	<p align="center">ADB/GMS countries</p> <p align="center">ADB/Myanmar</p> <p align="center">ADB/GMS countries</p> <p align="center">ADB/GMS countries</p> <p align="center">ADB/GMS countries</p>
<b>C. Establishment of Information Exchange and Communication Mechanisms</b> <ol style="list-style-type: none"> <li>1. Establish a platform or database for information exchange and communication mechanism</li> </ol>	2006–2007	AFD/ADB	ADB/GMS countries



Outputs	Time Frame	Source of Funds	Implementing Agencies
<p>among the GMS power industries and related entities</p> <p>2. Establish a new RPTCC or GMS power trade website, including existing agreements, projects for regional power trade</p>			
<p><b>D. Develop Good Practice Guidelines for Regional Power Trade</b></p> <p>1. Develop good practice guidelines for bilateral power trade agreements in GMS including (i) hydropower specific issues in PPAs, (ii) transmission access and pricing, and (iii) provisions for transition to the market.</p> <p>2. Develop regional guidelines for social and environmental assessment in regional power trade</p>	2005–2006	<p>WB/Japan Policy and Human Resources Development Fund</p> <p>To be identified</p>	<p>WB/Lao PDR</p> <p>To be identified</p>
<p><b>E. Review and Update Power Grid Interconnection Projects</b></p> <p>1. Update GMS development matrix—to review and update the proposed power interconnection projects with high potential for regional trade, especially those in advanced stage of preparation, regular update of the regional indicative master plan</p>	2005–2006	ADB	ADB
<p><b>F. Capacity Building</b></p> <p>1. Conduct a seminar on rural electrification and regional cooperation</p> <p>2. Formulate training and workshops plan for human resource development and capacity building on technical, commercial, institutional, financial aspects, etc.</p>	<p>Jul 2005</p> <p>2006–2007</p>	<p>CSG/ADB</p> <p>AFD/ADB</p>	<p>CSG</p> <p>ADB/GMS countries</p>
<p><b>G. Public–Private Partnership and Coordination with Other Development Partners</b></p> <p>1. Develop GMS power trade businesses/investment forum to explore private financial and investment channels</p> <p>2. Coordinate with other regional</p>		To be identified	To be identified

Outputs	Time Frame	Source of Funds	Implementing Agencies
initiatives (ASEAN/ACE, APEC, ESCAP, MRC, GMS business forum, GMS investment forum) 3. Coordinate with other bilateral funding agencies, NGOs, private sector			
<b>H. ADB RETA: Energy Sector Strategy Study</b> 1. Review and comment on TA paper by GMS countries 2. Submit for ADB internal review and approval 3. TA implementation phase 1: develop a comprehensive strategy to expand GMS energy sector cooperation with targeted policy interventions 4. Phase 2: identify priority investment projects and institutional development	Sep 2005  Oct 2005  2006  2007	ADB	ADB
<b>I. ADB RETA: GMS Power Trading Coordination and Development</b> 1. Review and comment on TA paper by GMS countries 2. Submit for AFD/ADB internal review and approval 3. TA Implementation	Sep 2005  Dec 2005  2006–2007	AFD	ADB
<b>J. World Bank: Power Import and Export Study</b> 1. Power system development planning for Lao PDR and Cambodia 2. Regional guidelines for integrated water resources development	2006–2007  2006–2007	WB  WB	Cambodia/ Lao PDR  GMS countries

ADB = Asian Development Bank, AFD = Agence Française de Développement, APEC = Asia-Pacific Economic Cooperation, ASEAN/ACE = Association of Southeast Asian Nations/Asean Center for Energy, CSG = China Southern Power Grid Company, Ltd., ESCAP = Economic and Social Commission for Asia and the Pacific, FG = focal group, GMS = Greater Mekong Subregion, Lao PDR = Lao People's Democratic Republic, MOU = memorandum of understanding, MRC = Mekong River Commission, NGO = nongovernment organization, PPA = power purchase agreement, RETA = regional technical assistance, RPTCC = regional power trade coordination committee, RPTOA = Regional Power Trade Operating Agreement, TA = technical assistance, WB = World Bank.

<sup>a</sup> This work plan is updated based on the discussions at the Third and Fourth Regional Power Trade Coordination Committee Meetings in 2005.

Source: ADB estimates.

## DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b>  Promote the efficient use of energy resource</p> <p>Improve reliability of electricity supply</p> <p>Promote investments on grid connectivity in GMS</p> <p>Institutional development and capacity building</p>	<p>Establish cross-border grid connections among neighboring countries to allow contracted power trade and share resource available by 2010</p> <p>Achieve cross-border power trade of 500 megawatts per year by 2010</p> <p>Establish institutions promoting cross-border power trade by 2007</p>	<p>RPTCC meetings</p> <p>Country economic and energy sector reports</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Governments have strong political will and commitment.</li> <li>• GMS countries have overall political and macroeconomic stability.</li> </ul>
<p><b>Outcome</b>  Implementation of initial regional power trade agreement</p> <p>Creation of institutions to coordinate and develop regional power trade</p> <p>Staff in national power services empowered and equipped to implement efficient and effective power trading</p>	<p>Regional Power Trade Agreement</p> <p>Integrated action plan on regional power trade development</p> <p>Establish a focal group and a planning working group</p> <p>Create a website on regional power</p> <p>Hold training and seminars for national staff on power trade planning and operation</p>	<p>RPTCC meetings</p> <p>Working group meetings</p> <p>Consultant study reports</p> <p>Training and workshops</p> <p>Database and website</p>	<p><b>Assumptions</b></p> <ul style="list-style-type: none"> <li>• Governments agree on priority areas for cooperation.</li> <li>• Institutions are created on time.</li> <li>• Adequate institutional capacity available in GMS member countries.</li> </ul> <p><b>Risk</b></p> <ul style="list-style-type: none"> <li>• Project is delayed due to lack of adequate information and available data.</li> </ul>
<p><b>Outputs</b>  A systematic and integrated action plan on regional power trade development</p>	<p>Formulate an integrated action plan by December 2006</p>	<p>RPTCC meetings</p> <p>Working group meetings</p>	<p><b>Assumption</b></p> <ul style="list-style-type: none"> <li>• GMS member countries have adequate human resources and institutional</li> </ul>

<b>Design Summary</b>	<b>Performance Targets/Indicators</b>	<b>Data Sources/Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
<p>Institutions to coordinate and develop regional power trade</p> <p>Capacity building and human resource development</p> <p>A platform and database for information exchange and communication</p>	<p>Create the focal group by June 2006 and the planning working group by June 2007</p> <p>Conduct training and workshops for national staff on regional power trade planning and operations in 2006–2007</p> <p>Create a database and website to facilitate regional power trade by December 2007</p>	<p>Consultant study reports</p> <p>Training and workshops</p> <p>Database and website</p>	<p>capacity.</p> <p><b>Risk</b></p> <ul style="list-style-type: none"> <li>• Project is delayed due to lack of adequate information and available data.</li> </ul>
<p><b>Activities and Milestones</b></p> <ol style="list-style-type: none"> <li>1. Develop a systematic and integrated action plan on regional power trade development by December 2006               <ol style="list-style-type: none"> <li>1.1 Review and collate information available in past studies</li> <li>1.2 Develop an integrated action plan</li> </ol> </li> <li>2. Create the FG by June 2006 and the PWG by June 2007               <ol style="list-style-type: none"> <li>2.1 Develop detailed structure, functions, and internal procedures of the FG's initial operation</li> <li>2.2 Develop detailed structure, functions of the PWG, and performance standards regarding safety, security, reliability, and quality of service</li> </ol> </li> <li>3. Provide training and workshops for national staff on regional power trade planning and operations in 2006–2007               <ol style="list-style-type: none"> <li>3.1 Develop midterm capacity building plans (2006–2010)</li> <li>3.2 Hold training and workshops on regional power trade, including laws and regulations concerned</li> </ol> </li> <li>4. Create a database and website to facilitate regional power trade by December 2007</li> </ol>			<p><b>Inputs</b></p> <ul style="list-style-type: none"> <li>• \$1,200,000 provided by AFD to finance (i) consulting services (\$660,000); (ii) training, workshops, and conferences (\$290,000); (iii) equipment, survey, and others (\$250,000)</li> <li>• In-kind support in terms of office facilities from six GMS countries estimated at \$100,000</li> </ul>

ADB = Asian Development Bank, AFD = Agence Française de Développement, FG = focal group, GMS = Greater Mekong Subregion, PWG = planning working group, RPTCC = regional power trade coordination committee TA = technical assistance.

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Director-General, MKRD

**COST ESTIMATES AND FINANCING PLAN**  
(\$'000)

Item	Total Cost
<b>A. Agence Française de Développement Financing<sup>a</sup></b>	
1. Consulting Services	
a. Remuneration and Per Diem	
i. International Consultants <sup>b</sup>	550.0
ii. Domestic Consultants	80.0
b. International and Local Travel	70.0
c. Reports and Communications	10.0
2. Training, Workshops, and Conferences	
a. Training/National Workshops	120.0
b. RPTCC Conferences	120.0
3. Equipment, Software Licenses, and Office Support <sup>c</sup>	50.0
4. Website, CD-ROM Production	20.0
5. Surveys, Data, Maps	30.0
6. Secretariat Costs	50.0
7. Contingencies	100.0
<b>Subtotal (A)</b>	<b>1,200.0</b>
<b>B. Greater Mekong Subregion Governments Financing<sup>d</sup></b>	
1. Office Accommodation and Supplies	20.0
2. Remuneration of Counterpart Staff	60.0
3. Administrative Support and Other Costs	20.0
<b>Subtotal (B)</b>	<b>100.0</b>
<b>Total</b>	<b>1,300.0</b>

GMS = Greater Mekong Subregion, RPTCC = regional power trade coordination committee.

<sup>a</sup> Administered by the Asian Development Bank (ADB).

<sup>b</sup> Including consultant energy specialist to be engaged as an individual.

<sup>c</sup> Computers, printers, and relevant software would be procured under the technical assistance.

<sup>d</sup> In kind.

Source: ADB estimates.

## OUTLINE TERMS OF REFERENCE

### A. Objectives

1. The objectives of the regional technical assistance (TA) project are to support the prioritized programs to implement regional power trade in the initial stages, and facilitate and promote effective cooperation among the Greater Mekong Subregion (GMS) member countries on development of a regional power market. The TA will focus on institutional and capacity development and the TA outputs will enable GMS countries to strengthen the necessary institutional capacity for promoting regional power trade development.

### B. Scope of Work

2. The work comprises four coherent components and will be undertaken in two phases. The consultants' work in each component will include, but will not be limited to the listed items.

#### 1. Phase 1

a. **Component 1: Developing a Systematic and Integrated Action Plan on Regional Power Trade Development** (8 person-months international, 4 person-months domestic)

3. The consultants' tasks include the following:

- (i) Review and collate information available in past studies, including, but not limited to the Regional Indicative Master Plan on Power Interconnection in the GMS, Study on Regional Power Trade Operating Agreement, the updated power development plans of six GMS countries, and relevant socioeconomic and energy development policy.
- (ii) Thoroughly analyze the macroeconomic and energy development prospect in the GMS, and provide macro development strategies on regional power trading, including both physical infrastructure projects and institutional development.
- (iii) Assess the current institutional capacity in the power sector of GMS countries, diagnose the key factors impeding regional power trade development, and give adequate recommendations and strategies.
- (iv) Update and optimize the regional master plan on cross-border interconnection projects.
- (v) Based on the above, synthesize the collected information into a holistic and integrated Regional Power Trade Development Action Plan with concrete and prioritized physical and institutional infrastructure projects to be implemented in a reasonable time frame.

b. **Component 2: Facilitating Creation of Institutions to Coordinate and Develop Regional Power Trade** (9 person-months international, 6 person-months domestic)

4. The consultants' tasks include the following:

- (i) Design and develop the detailed structure, functions, and terms of reference (TOR) of the focal group (FG).
- (ii) Assess the resource requirements including legal, financial, and human resources for FG establishment, and outline the steps and action plan.
- (iii) Develop internal procedures to guide the FG's initial operation and management.

- (iv) Develop and update short- and medium-term action plans for FG operation.
- (v) Plan and facilitate the creation of other required institutions including the Planning Working Group (PWG), as well as the technical secretariat at the appropriate time.
- (vi) Conduct at least two regional workshops to discuss and finalize the TOR and work plans of the FG.
- (vii) Design and develop the detailed structure, functions, and TOR of the PWG. Prepare all relevant documents required, such as internal operational procedures of the PWG.
- (viii) Assess the resource requirements including legal, financial, and human resources for PWG establishment, and outline the steps and action plan.
- (ix) Develop performance standards on safety, security, reliability, and quality of service.

## **2. Phase 2**

### **a. Component 3: Capacity Building and Human Resource Development** (10 person-months international, 10 person-months domestic)

5. The consultants' tasks include the following:

- (i) Assess the institutional capacity of six GMS member countries and develop detailed medium-term (2006–2010) capacity-building plans for each GMS country to support the implementation of the Regional Power Trading Agreement.
- (ii) Conduct general training and workshops for national officials and technical staff on regional power trade, including planning, operation agreement, transaction and dispatch, best practices for regional power trade, regulatory pricing, etc.
- (iii) For officials and the state attorney in legal ministries, conduct training and workshops on laws and regulations relating to the legal issues of cross-border power trading.
- (iv) Review and provide recommendations on key policy interventions and institutional reforms at national and regional levels for removing barriers to increased energy cooperation and trading.
- (v) Formulate action plans on human resource development for the GMS countries, and develop and carry out training programs for operation and management staff to be engaged in the initial stages, particularly the regional regulatory board, regional transaction coordinators, operation and system PWGs, etc.

### **b. Component 4: Establishment of a Platform and Database for Information Exchange and Communication** (7 person-months international, 12 person-months domestic)

6. The consultants' tasks include the following:

- (i) Design and develop the information and communication technology development strategy applicable to regional power trading for the GMS member countries.
- (ii) Assess the state and requirements of hardware infrastructure, software availability, information technology, and human resources. Design and develop relevant short-term (1–2 years) and medium-term (5 years) action plans with

realistic implementation schedules for the development of a sustainable platform for information exchange, such as a database and website.

- (iii) Conduct proper analysis of the GMS energy sector including system simulation, collect adequate basic data and information, and design and develop an appropriate database.
- (iv) Design training modules for database operation and a maintenance manual. Conduct training and workshops for relevant staff of GMS countries.
- (v) Design an appropriate hub and develop a website on regional power trading development. A prototype of the website will be developed toward the end of TA implementation.
- (vi) Conduct training modules for web page application and a maintenance manual. Conduct training and workshops for relevant staff of GMS countries.

### **C. Resources Required**

7. The Asian Development Bank (ADB) will be the Executing Agency for consulting services. The GMS Regional Power Trade Coordination Committee (RPTCC) will take responsibility for overall coordination, oversight, and facilitation of project implementation.

8. The RPTCC members of six GMS countries will be the counterpart agencies for project implementation. Each member will provide adequate support services including office facilities for in-country activities, documents and information required to efficiently execute the consulting services. Consultants will be required to coordinate all work with the relevant government agencies.

9. The consultants will include specialists with experience in energy sector development policies, institutions and regulations, regional power trading operation, human resource development and training, and information technology.

10. An estimated 34 person-months of international and with about 32 person-months of domestic consulting services will be recruited, in accordance with ADB's *Guidelines on the Use of Consultants*. The assignment is scheduled to be carried out over 24 months, commencing in January 2006.

### **D. Reporting Requirements**

11. The consultants will produce the following documents:

- (i) inception report, within 4 weeks from the start of the assignment of each component.
- (ii) interim report, within 2 months after approval of the inception report;
- (iii) draft final report, within 2 months after approval of the interim report; and
- (iv) final report, within 1 month after the approval of the draft final report, taking into account feedback and advice received from ADB and RPTCC.

12. Besides the above reports, the consultants will submit a brief monthly progress report within 15 days from the end of each month.