

# Chapter 5

## The Greater Mekong Subregion

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# Chapter 5

## The Greater Mekong Subregion

GMS endeavours towards a GMS grid planning and system operation coordination process have been ongoing for some time and is still a long way from realizing all potential benefits of a coordinated GMS grid but below is an overview of the planned GMS structures. The proposed GMS coordination centre has been put on ice at present and the ASEAN Power Pool can learn a lot from the GMS work and its challenges.

### *Proposal for a GMS Coordination Centre*

The Greater Mekong Subregion's (GMS) Ninth Meeting of the Regional Power Trade Coordination Committee (RPTCC-9), RPTCC-9 Sub-groups: Planning Working Group (PWG) and Focal Group presents the following summary of the position paper on the need, governance structure, implementation plan, and funding of the proposed GMS coordination centre.

### **1. GMS Need for Coordination Centre**

There is a need to coordinate the efforts of each GMS member country for the following reasons:

- ▶ To increase cooperation in developing the regional plans and in investments that will expand sustainable generation and transmission,
- ▶ To systematically internalize the environmental and social impacts in the preparation of the GMS Power Expansion Plans,
- ▶ To facilitate common understanding of power sector reform strategies and harmonized regulatory regimes,
- ▶ To promote power trade and ensure equitable trading regimes, and
- ▶ To facilitate learning and support new information and communication technologies.

Therefore, it is proposed that

- ▶ the present regional organization for implementing the GMS Electricity Market (which is an intergovernmental agreement) be completed by establishing an Inter-Utility Memorandum of Understanding (MoU),
- ▶ this MoU is to be signed by the chief executive officers (CEO) of the electricity utilities, and
- ▶ this MoU will establish the basic management and operating principles of the Regional Electricity Market (REM) organization.

The following are the basic principles expressed in the MoU under which the GMS power trade organization could operate:

- ▶ To coordinate and cooperate in the planning, development, and operation of their systems to minimize costs and to protect the environment and offer equitable compensations to the people affected by these systems;
- ▶ To fully recover their costs and share equitably in the resulting benefits;
- ▶ To reduce the overall amount of capital needed for system expansion in the region by promoting the implementation of 'bankable' projects on a least-cost basis;
- ▶ To create an investment environment for the region's power sector that will facilitate the financing of priority generation and transmission projects;
- ▶ To create an ongoing forum in which regional power issues can be discussed and worked out within an agreed-upon policy framework and set of operating principles;
- ▶ To create a transparent and reliable mechanism for the prompt settlement of commercial electricity transactions;
- ▶ To address in good faith issues relating to interconnections in a spirit of cooperation and transparency; and
- ▶ To act in solidarity and refrain from taking advantage of each other.

The following are the proposed design criteria for the REM organization:

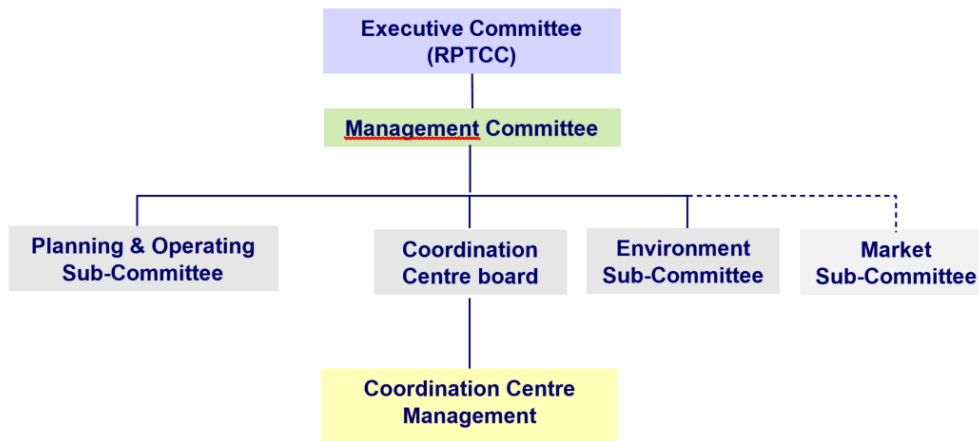
- ▶ The REM should be an independent legal entity.
- ▶ Funding for REM's own administrative operations should come from its members rather than be dependent on governmental budget appropriations.
- ▶ The REM should operate on a strict commercial basis with no interference by a government.
- ▶ The REM should be subject to appropriate regulation to prevent the accumulation of market power and the abuse of monopoly control over essential facilities.
- ▶ The REM's decision-making procedures should comport with international standards for transparency, documentation, and procedural integrity.
- ▶ Membership in the REM can include all entities that own or operate major generation or transmission facilities in the region, which have made a firm commitment to make a major investment in the generation or transmission facilities in the region, or that are or could be a bulk power customer.
- ▶ All entities that are physically interconnected and have an impact on system operation must be members.
- ▶ The process for developing and for changing power trade rules over the course of time must be perceived as transparent, fair, and well grounded, and it should not be subject to domination or manipulation by any one entity or one group.
- ▶ The internal organizational structure of the REM should not only provide for sufficient representation of interests, but also assure the timely delegation of decision-making to appropriate bodies.
- ▶ Members should be able to appeal, in a responsible manner, decisions made by the REM's various internal bodies and to receive a timely response.

- ▶ There should be a credible method of enforcing decisions.

## 2. Proposed GMS Governance Structure

Below is the proposed governance structure:

**Figure 9. Proposed GMS Governance Structure**



RPTCC = Regional Power Trade Coordination Committee.

Source: Compiled by authors.

### Executive Committee

- ▶ It is the highest decision-making body for the REM.
- ▶ It comprises representatives of ministries that are in charge of energy and of operating members of the REM.
- ▶ It facilitates the coordination of appropriate measures towards the implementation of the GMS power trade organization.
- ▶ It engages the members in accordance with the prescribed provisions to facilitate the implementation of programs and projects.
- ▶ It approves the new applications for membership.

### Management Committee

- ▶ It is composed of the chief executives of transmission-owning/operating members or of national electricity utilities when they are vertically integrated.
- ▶ It has decision-making authority to develop and implement initiatives to achieve the mission of the REM.
- ▶ It acts as the governing authority, formulates the objectives of the REM, and approves the budget of the GMS Coordination Centre.
- ▶ It approves the governance structure of the REM.
- ▶ It oversees the work and decides on the recommendations of the subcommittees and of the Coordination Centre Board.

### **Subcommittees**

- ▶ They provide support and advice to the management committee on all matters concerning collective policy formulation functions for developing, maintaining, and updating common 'rules of practice' on technical, planning, operational, environmental aspects, and market issues of the REM.
- ▶ They are composed of technical experts drawn from the REM membership.

### **Planning and Operating Subcommittee**

- ▶ It establishes and updates common planning and reliability standards (Stage 1).
- ▶ It periodically reviews the GMS Master Plan (Stage 1).
- ▶ It establishes and updates the methods and standards used to measure technical performance (Stage 1).
- ▶ It conducts system operational studies (Stage 2).

### **Environment Subcommittee**

- ▶ It alerts and advises the management committee on environmental, social, and other matters (Stage 1).
- ▶ It develops the environmental guidelines for GMS and reviews and evaluates such guidelines from time to time (Stage 1).
- ▶ It liaises with the environmental organizations of member states through their appointed representatives (ministries and EOC, for example) (Stage 1).

### **Market Subcommittee (2nd Stage)**

- ▶ It designs and recommends suitable market structure for GMS (end of Stage 1 – Stage 2).
- ▶ It determines the criteria for authorizing members to trade (Stage 2).
- ▶ It is responsible for admitting and authorizing members to trade (Stage 2).

### **Coordination Centre Board**

- ▶ The board consists of representatives of national power utilities with decision-making power, chairpersons of the subcommittees, and the Coordination Centre Manager as a non-voting member.

## **3. Implementation Plan: The Main Duties of the Coordination Centre**

### **Stage 1**

- ▶ Establish and update a database containing historical and other data to be used in Planning and System Operation studies.
- ▶ Develop the GMS Guidelines and Rules as applicable and provide advice on their use, such as on Operating Guidelines (to be established among the operating members), Market Rules and Environmental Guidelines, and others.
- ▶ Provide information and give technical advice/support to members of the GMS power trade, in matters on parallel operation.

- ▶ Evaluate the impact of future projects on the operation of the power trade and advise the management committee.
- ▶ Perform various operational planning studies to highlight possible operating problems.

#### **Stage 2**

- ▶ Monitor continuously the operation of the GMS power trade.
- ▶ Monitor transactions among operating members and between members and non-members.
- ▶ Monitor time correction procedures.
- ▶ Monitor the inadvertent power flows and the return in kind between the members.
- ▶ Provide routine daily reports, data, and information relevant to the operation of the GMS power trade to the Operating Subcommittee and to the members.
- ▶ Monitor and report on the control performance criteria to all the operating members.
- ▶ Convene a post-disturbance committee, following a disturbance affecting the parallel operation of the power trade.
- ▶ Advise on the feasibility of wheeling transactions.

#### **4. Proposed Funding of the Coordination Centre**

Members shall pay their contributions up front for the financial year based on the approved budget of the coordination centre.

Examples:

- ▶ a certain percentage shall be deemed to constitute a benefit payable only by the host member.
- ▶ a certain percentage shall be shared equally among all GMS members (including independent transmission companies, and IPPs, and service providers).
- ▶ a certain percentage shall be allocated among the operating members in proportion to the actual energy (measured in MWh) and those imported from other members or other parties during the financial year.
- ▶ a certain percentage shall be allocated among the operating members in proportion to the actual energy (measured in MWh) for exported energy to other members or other parties during the financial year.
- ▶ a certain percentage shall be allocated among all GMS members in proportion to their Annual System Peak Demand during the financial year.
- ▶ a certain percentage shall be allocated among operating members in proportion to the combined 75°C thermal rating of their interconnections with other members.

## **5. Intergovernmental MoU for the GMS Regional Power Coordination Centre**

The Inter-Governmental Memorandum of Understanding for the Establishment of the Regional Power Coordination Centre (RPCC) was signed in December 2012. The objective of the RPCC is to promote the synchronized operation of the national power system towards a unified, fair, and transparent regional electricity market with the ultimate goal of providing the GMS countries with stable and reliable electricity supply at the most economic costs. This will be enhanced by facilitating the balanced development of the diverse energy resources of the GMS countries for their mutual benefit, long-term cooperation in the power sector, uninterrupted electricity transit, and increased cross-border power trade.

### **5.1. Functions of the Regional Power Coordination Centre**

The RPCC coordinates the proper implementation of the regulatory and technical framework in a phased approach, represents the common interests of the member countries on matters relating to power trade, and undertakes the following:

- a. Establish and update a regional database containing historical and other data to be used for planning and system operation purposes,
- b. Develop and maintain an information system to monitor the activities of power trade in the GMS,
- c. Develop and conduct necessary capacity building of members to advance regional power trade,
- d. Assist the members in the resolution of conflicts,
- e. Promote cooperation between the RPCC and other organizations, and
- f. Recommend measures to strengthen environmentally and socially sustainable development of power trade in the GMS.

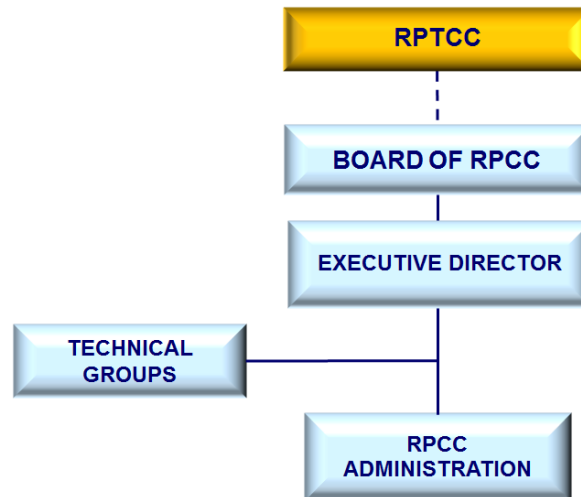
Another function of the RPCC is to encourage and monitor all participating national transmission system operators (TSOs), national power authorities, or power utilities in the GMS countries in the following functions:

- g. Preparing a common criterion for coordinated system planning, common technical standards for operational reliability and quality of supply in the GMS's interconnected transmission system, and any proposed principles and procedures;
  - h. Facilitating the implementation of the GMS priority transmission projects, developing measurable standards to harmonize electricity planning, and operating the interconnected GMS power systems;
- Ensuring effective implementation and compliance with mandatory standards, and effective communication and information sharing to improve cross-border and reliable flows of electricity in the GMS; and
  - Developing a common and shared position to progressively implement power exchange and move towards an agreed final market model.

## 5.2. Governance of the Regional Power Coordination Centre

The parties of the IGMOU are the members of the RPCC. The governance structure of the RPCC is composed of the following: the Board of RPCC, the executive director, the technical groups, and the RPCC Administration.

**Figure 10. Governance Structure of the Regional Power Coordination Centre**



RPTCC = Regional Power Trade Coordination Committee.

Source: Compiled by authors.

## 5.3. Board of the Regional Power Coordination Centre

The RPCC Board is composed of

- a. One designated representative from the government, or the TSOs or national power authority or national power utility per member country; and
- b. the executive director of RPCC as a non-voting member.

### Executive Director

The executive director of the RPCC is appointed by the board for a term of 3 years, renewable only once. The executive director is the legal representative of the RPCC and is responsible for the management of the RPCC Administration.

### Technical Groups

Technical groups shall be established by the board as deemed necessary and will be responsible for

- a. providing technical support to the board to fulfil its missions,
- b. organizing professional cooperation,
- c. making decisions on relevant operative issues, and
- d. coordinating regional activities in the interest of the GMS.



### **Regional Power Coordination Centre Administration**

The RPCC Administration is responsible for

- a. assisting and supporting the bodies and the processes of the RPCC,
- b. communicating with external stakeholders under the guidelines set by the board,
- c. drafting proposals for decision-making, and
- d. informing the bodies and members on RPCC activities.

The RPCC Administration performs the secretariat function for all meetings of the technical groups. The RPCC Administration is composed of experts provided by the members or recruited directly, as well as technical and administrative staff necessary to accomplish its missions and to perform its functions.

#### **5.4. Financing of the Regional Power Coordination Centre**

The budget of the RPCC shall consist of contributions from members. In addition, the RPCC may receive contributions from donors and other sources for its operation, investment programs, and studies. Such donation shall not allow the influence of donors or other contributors on any decision-making process of the RPCC.

#### **5.5. Location of the Regional Power Coordination Centre**

The location of the RPCC Administration shall be decided by the RPTCC. A Headquarters Agreement shall be negotiated and entered into with the host government.