

Summary of Discussions
5th Meeting of the Regional Power Trade Coordination Committee (RPTCC-5)
Siem Reap, Cambodia, 15-16 June 2006

I. Background

1. In the last meeting (RPTCC-4) held in Yangon, the RPTCC members deliberated on the key institutional arrangements for the stage 1 of the Regional Power Trade Operating Agreement (RPTOA), particularly on the establishment of the Focal Group (FG), its TOR and capacity building plan. Since then the FG and the Planning Working Group (PWG) have been established, and their meetings held. The RPTCC-4 meeting also discussed practices/ experiences in regional power trade in other regions to serve as initial lessons in design of power market arrangements.

2. The RPTCC-5 meeting was co-organized by the Ministry of Industry, Mines and Energy (MIME) of Cambodia and the Asian Development Bank (ADB). It was attended by the RPTCC members of the six GMS member countries, as well as by representatives of AFD, Environment Operations Center (EOC), IUCN, JBIC, Mekong River Commission (MRC), SIDA, Soluziona, TEPCO, World Bank and ADB. The meeting was chaired by Mr. Houmphone Bulyaphol, Director General, Department of Electricity, Ministry of Industry and Handicrafts (MIH), Lao PDR and co- vice chaired by Mr. Anthony Jude, Principal Project Specialist, Infrastructure Division, Southeast Asia Department (SEID), ADB.

3. **Objectives.** The RPTCC-5 meeting was held to: (i) discuss and decide on the recommendations of the FG for priority RPTCC activities, and confirm the work plans for both the PWG and FG; (ii) take stock of various ongoing and planned ADB assistance to the GMS energy sector, and (iii) discuss and derive lessons from recent experiences in developing regional energy markets. Attached is the agenda and program of the meeting (Annex 1) and the list of PWG-1 participants (Annex 2).

4. **Opening & Welcome Remarks.** H.E. Khlaut Randy, Secretary of State, MIME, Cambodia, warmly welcomed the RPTCC participants and recalled the contributions of earlier RPTCC meetings toward development of regional power trade. He noted the main items to be discussed at the 5th RPTCC meeting, and expressed his appreciation to ADB for its support to GMS power cooperation.

5. Mr. Houmphone, Director General, Department of Electricity, MIH, Lao PDR and Chair of the RPTCC, warmly welcomed and thanked the members of RPTCC and representatives of development partners. He recalled the outcomes of the last RPTCC meeting and highlighted the progress of priority activities discussed at the PWG and FG meetings. He hoped productive discussions would take place for the key agenda items of the meeting.

6. Mr. Anthony Jude, Principal Project Specialist, SEID, ADB noted that based on PWG and FG recommendations, the RPTCC meeting would decide on the next steps for priority RPTCC activities and confirm the work plans of both the PWG and FG. He said discussions of the ongoing and planned ADB assistance to the GMS energy sector would help realize more rational energy supply and its use in the GMS region. He cited the contributions of development partners in advancing energy cooperation. Their vast experience in developing regional energy markets, as demonstrated in experiences in various regions, could be tapped to provide lessons to GMS countries on critical aspects of GMS power market design. He thanked the Cambodian

Government for its hospitality as meeting host, wished the meeting success and enjoined participants to visit the Angkor Wat after the meeting.

II. Confirmation of Priority Activities of FG/ PWG, Next Steps to Advance Progress of Ongoing Activities

7. *Presentation, Discussion, Confirmation of Work Plans of FG/ PWG.* Soluziona presented the agreed activities of the FG and PWG (Annex 3). He recalled discussion of the TORs for the proposed priority PWG activities. For the short term, he suggested performance standards, transmission regulation and training be undertaken. Activities to be postponed are detailed rules for cross-border electricity trade and operational planning, as these belonged to stage 2 of power trading. He also showed the four major activities of the FG, which include the regional master plan, the development of regional database, best guidelines for PPA and training activities for FG and PWG.

8. **Comments.** Thailand reiterated the need to postpone the study on transmission regulation, which would be needed only when at least three GMS members are trading power. PRC and Viet Nam however agreed with the consultant's recommendation to study this aspect. Lao PDR noted the importance of proper timing of activities. The meeting agreed to review and submit comments on the TORs to the consultant by the end of June 2006.

9. *Recommended Actions to Advance Progress of Various Activities.* ADB, GMS focal points and Soluziona summarized the various PWG/ FG recommendations to advance progress of the following priority activities.

10. *Study on Best Practices.* Soluziona presented a summary of recommendations for the study on best practices (Annex 4), which included, among others: adoption of two-term price structure (capacity/ energy fees); buyer management of reservoir; detailing of constraints/ obligations on other uses of water reservoir; use of competitive bids to award PPA; and preparation of standard TOR for bid.

11. **Comments.** Thailand noted that the management of reservoir by the buyer would enhance system security in cases where hydropower would be given priority over thermal plants in power dispatch. Cambodia inquired about the arrangement in case the IPP project involves two countries. Soluziona clarified the benefits of buyer management of reservoir, and noted cases where the IPP plant is in one country, and output is sold to a utility in another country. The meeting discussed examples of managing cascades, especially where power generated feeds into different systems. Lao PDR inquired about legal aspects of IPP regulation and management, and Myanmar inquired about the provisions for price adjustments. Soluziona cited cases relating to IPP management and adjustment of tariffs based on reasonable variations in supplier cost. The meeting agreed that the study would be circulated for review by GMS countries, and to be discussed at the next FG meeting.

12. *Ownership and Benefit Sharing Study.* Mr. Jude (ADB) cited TEPCO's report on the methodology for benefits sharing and investment modality. The need for additional information was stressed and PRC agreed to provide it to the consultant by end of June in order to enable TEPCO to finalize the report by August. The report would then be discussed in the next FG meeting in PRC.

13. *GMS Regional Power Master Plan.* Mr. Jude discussed the importance of ensuring country plans are integrated into the regional master plan, and cited the assistance on power

planning provided by PRC to Lao PDR and Myanmar. He cited the agreement to revise the TOR of the consultant for the AFD-funded TA “*Regional Power Trade Coordination and Development*” and the need to provide more resources in analyzing gaps in power system planning. **He also recalled the FG agreement for each GMS country to nominate a counterpart staff to work closely with consultant.** He noted the differences in the timing of completion of the individual country plans, and that given this, the consultant may have to be engaged at the latter part of the year to ensure all country plans are covered.

14. *GMS Regional Database and Website.* Mr. Jude noted that the database format was earlier circulated to member countries, and reiterated the request for the countries to submit specific comments on the format to the FG Chair. He recalled earlier concerns on what information may or may not be disclosed, and enjoined the countries to decide on this issue by the next FG meeting. He noted that website development and hosting would be CSG’s responsibility, with the consultant helping in terms of software development/ acquisition. He welcomed CSG’s offer to continue and maintain the website, thus ensuring its sustainability.

15. *Other Key Issues/ Matters.* ADB informed that the consultant would discuss the priorities for training with the PWG and FG members. He added that the timeline for the AFD TA consultant’s outputs would be circulated to all RPTCC members next week. On the schedule of country visits of the consultant, he assured the GMS members that they would be given advance notice of the visit (at least 10 working days prior to the visit). The target is to develop the inception report for the AFD-funded TA by the latter part of July 2006, and the report would be discussed in the next PWG/ FG meeting.

III. Status Report of Ongoing ADB RETAs and Other Projects

16. *GMS Power Transmission Line.* EGAT recalled the concept of the study (presentation attached, Annex 5), and discussed its key aspects as follows: CSG’s cost components; EGAT’s avoided cost; the projected power purchase from PRC; the main assumptions (export patterns); and main study results (presented at RPTCC-4). He discussed the resolutions at the last tripartite project meeting and the progress since then (on the Thailand side). He outlined the proposed next steps, and noted the proposed postponement of commercial operation date from 2013/ 2014 to 2016. PRC also discussed the status of the project on the CSG side. The meeting hoped that the next tripartite meeting (tentatively scheduled in Udon Thani in August 2006), would resolve outstanding issues (especially on pricing) and decide on the project’s next steps.

17. *GMS Power Interconnection Project Phase I.* TEPCO (presentation attached, Annex 6) gave the background of the project and the project framework for Phase 1 and Phase 2. Phase 2 of the project study consists of two stages: stage 1 on the power interconnection development plan; and stage 2 on the preparation of pre-feasibility of alternative interconnection (LAO-VIE and LAO-THA). He provided the system configurations: the Northern part and the Southern part. He explained various scenarios for economic analysis, and presented various EIRRs and benefits distribution for the three countries for the 2 system configurations. He also discussed ideas and issues of investment modality and the next steps for the study.

18. **Comments.** Viet Nam expressed concerns about the assumptions of the study, and TEPCO noted that there is a need to do more work in ensuring the accuracy of data used for generation simulations in order to improve study results. ADB provided the status of Viet Nam’s energy pricing and the need to provide different scenarios for different values of the fuel used.

19. *GMS Northern Power Transmission.* ADB provided status of the PPTA (Annex 7) and showed the map of the proposed route of the 115 kV transmission line. He explained the project's scope (739 km., 5 substations, distribution lines), purpose (e.g., to import power from Thailand in the short run, to allow THA-LAO trade in the long run), current status, loan amount (\$20 million) and executing (EdL)/ counterpart agencies (PEA/ EGAT). He proposed circulating the TA paper to RPTCC members for comments by next week. Thailand requested that the consultant's TORs also include the scope to examine the system reinforcements on the Thai side. ADB confirmed that this was included into the TA scope. RPTCC members expressed support for the project.

20. *GMS Power Interconnection Project Phase II.* CSG briefed on the progress of the project (Annex 8), noting the MOU signed by EVN and CSG in October 2005, and the agreement of both sides to study the feasibility of the 500 kV interconnection. CSG has prepared the TOR for the consultant to prepare the study. He discussed the objectives of the study and its major principles, and discussed the work for the next stage (preparation of request for proposals and competitive bidding for consultant). RPTCC members supported the project and requested being invited to the meetings as observers.

21. **Comments.** Viet Nam added that the TOR of consultant has been finalized, and reiterated Viet Nam Government's support for the project. Thailand, Lao PDR, Cambodia and Myanmar RPTCC members also noted that lessons from this project could be shared with other GMS members. ADB informed that \$1 million was allocated for the project's PPTA under the RCSP, but since WB will be funding this, other routes may then be explored; the alternative however must be endorsed by the RPTCC. He requested the Viet Nameese delegation to consider the Soc Son to Guangxi interconnection, and this could then be discussed at the next FG/ PWG meeting in PRC.

22. *Proposed SIDA TA Support for RPTCC Activities.* Mr. Goran Haag, Programme Manager, Department for Infrastructure and Economic Cooperation, SIDA, presented on the proposed TA for "Facilitating Sustainable Environment-Friendly Regional Power Trading in the GMS" (Annex 9). He discussed the structure of the support, noting the plan for seconding one staff to ADB, providing advisory services to RPTCC WGs, and partnering in preparation/ financing of regional projects. He discussed the scope of the TA support, with its 3 components (e.g. facilitating regional power trade, capacity building for EIA, and energy efficiency/ conservation) and gave a recap of comments received from development partners/ GMS members. He pointed out that while the assistance is to the GMS region, the focus is on SIDA's bilateral partner countries- namely, Cambodia, Lao PDR and Viet Nam. He informed of discussions on the 3 components of the TA and the proposed next steps. He informed GMS delegations of the availability of CD-ROMs containing Nordic countries' experiences in power interconnection and trade.

23. **Comments.** PRC supported the proposed components of the TA and discussed these in relation to similar work by the PRC Government. He proposed that experts from the region be engaged as consultants for the TA, given the local experience and knowledge. Viet Nam informed of the 3-S study (Se Kong- Se San- Sre Pok) and suggested that the environment component of the TA coordinate with MRC and the EOC to minimize overlaps with this study. Viet Nam also noted that the TA should focus on capacity building and regional power trade more than energy efficiency as proposed in component 3 of the TA. Although work on energy efficiency is important, it is outside the focus of the RPTCC work plan. Mr. Jude (ADB) noted the comment. Cambodia suggested looking into transboundary/ cumulative impacts of development along different river systems, which should be done in close cooperation with the MRC. Lao

PDR also supported the assistance and was particularly interested in the energy efficiency component. The WB proposed the preparation of a matrix showing the linkages of the proposed TA with the RPTCC work plan, and suggested that the TA plan a more strategic use of its resources in support of RPTCC activities, such as preparing a communication plan for the power trade program. ADB noted the need to optimize the use of resources to carry out priority activities such as capacity building and assessment of downstream impacts of development. Overall the RPTCC members (PRC, Lao PDR, Cambodia, Viet Nam, Thailand) supported the proposed SIDA-financed TA and agreed to submit additional comments on the proposed TA to ADB by the first week of July 2006.

24. *Financing GMS power trade development: contributions and financing tools from AFD.* Mr. Alexis Bonnel, Head of the Infrastructure Division, AFD, presented the different financing tools available from AFD, and the possibilities and opportunities these might generate (Annex 10), in addition to the RPTCC Advisory TA recently put in place with ADB's assistance. These tools, which are all untied aid, comprise grant-based project preparation financing, including (i) Project Preparation Funds (PPF) already located at the country level in PRC, Vietnam, Thailand, Cambodia and Laos, and also (ii) a GMS Project Preparation Technical Assistance Fund (GMS PPTA) located within ADB and that can be tapped for the preparation of GMS-related projects. Regarding project financing, AFD can provide a wide range of tools such as equity financing, private sector loans, guarantee schemes and sovereign and non-sovereign lending. Mr. Bonnel developed on lending concessionality criteria and on the specificities of non-sovereign lending, a type of loan that could be quite adapted to the financing of interconnections. On the regional database and website, he suggested to focus first on the strategic objectives being followed with the database, before getting into the detailed design of the database format. He also suggested further investigating issues relating to information reliability and confidentiality, and to institutional/financial arrangements to ensure the sustainability of the database and website.

25. **Comments.** PRC expressed appreciation for the AFD assistance particularly on development of the regional power database and development of the regional power master plan.

IV. Lessons from Recent Experience with Regional Energy Market Development (Introduction)

26. *GMS Electricity Market Progress and Challenges.* Mr. Jude provided an overview (Annex 11) of the GMS Program's vision and its aims of promoting connectivity, competitiveness and community, and showed a cascading connectivity map for transport, energy and telecommunications for 1992, 2004 and 2012. He related all these to the timeline of achievements in GMS power cooperation in terms of past studies and agreements (IGA, Master Plan, etc.). He explained the objectives of the study on the Regional PTOA and discussed the four stages for implementation of power trade, which will have a bearing on the PTOA, operation security, regulation and planning. He described the core transactions of the PTOA and how reliability is achieved. He then discussed the challenges and next steps for the interconnectors (RTN) and the regional institutions (RPTCC, RRB, RTC), as well as challenges/next steps for regional cross-border trading and other activities.

27. *World Bank Perspective on Regional Electricity Markets.* Mr. Mohinder Gulati, Lead Energy Specialist, East Asia and Pacific Region, World Bank, presented on "Regional Electricity Markets: Issues and Challenges, World Bank Approach" (Annex 12). He cited energy security as a key benefit of the regional energy market (REM), and cited the work done to lay the REM

groundwork. He presented the key issues and challenges for developing the GMS REM, and discussed the WB's perspective in support of REM development. In relation to the various forms of WB assistance for GMS REM development, he cited the various criteria to be eligible for WB support.

28. *Experience from the Regions: Energy Community of Southeast Europe (ECSEE)*. Mr. Kari Nyman, Lead Energy Specialist, Europe and Central Asia Region, WB, presented on the issues, challenges and future outlook of the ECSEE (Annex 13). Given Europe's energy agenda and SEE's power challenges, he discussed the composition, main objectives and benefits of ECSEE's regional approach. He described the ECSEE's market structure, the time frame for the milestones in the ECSEE, and the regional coordination/ implementation mechanism. He enumerated the reforms in establishing power markets in various members and discussed WB's program of support for the ECSEE and reflections on experiences in other regions.

29. **Comments.** Myanmar requested clarification on the stage of power trade in the ECSEE. Presentor clarified that most ECSEE members are in stage 2 with some in stage 3. WB inquired about the concrete benefits accruing to ECSEE market participants. Presentor noted that the market enhanced investments in the power sector and that in ECSEE, 10% of total power consumed is from cross-border trade, which is fairly good considering the member countries all have generation capability. In a REM, the 20% figure is considered good. He stressed the value of unbundling, wherein the transmission company should be under separate management.

V. Recent Experience in Developing Regional Energy Markets: ECSEE

30. *The Roadmap to a Single Regulatory Space in ECSEE* (Annex 14). Presented by Mr. Nick F. Frydas, Chairman of the Board, Energy Regulatory Office (ERO), Kosovo. He discussed the benefits of energy trade and regional markets and the pre-requisites for competition in power markets, stressing the importance of harmonizing the regulatory framework. He gave a brief on the ECSEE Treaty, its beginnings, difficulties, provisions, governance structure/ institutions, national obligations and regional/ other commitments. He cited the challenges in the implementation of the REM and explained the key elements of a credible regulatory system (independence, accountability, transparency and predictability). Finally, he enumerated the main obstacles and mitigation measures for the ECSEE, such as limited interconnection capacity, cross-subsidies and lack of tariff rationalization, and cumbersome licensing procedures, among others, and noted certain issues specific to the SEE region.

31. **Comments.** Mr. Zhai (ADB) noted that privatization was not mentioned as a condition for the successful operation of the REM. Presentor opined that the incentives provided by the regulatory framework are more important determinants of success of the REM. AFD asked about the responsibility for regulating the regulator, and whether a regional entity like RPTCC could contribute to building the accountability of national regulators. He also asked about the source of financing for ECSEE activities. Presentor discussed the various accountabilities of the ERO and the funding for its activities. In response to Lao PDR's query, presentor clarified that the members of the ERO should be independent of any energy entity. WB inquired about the process of agreeing on the tariff methodology. Presentor clarified that at regional level, ECSEE only has inter-TSO compensation and congestion management fees; the rest are national transmission tariffs. Also discussed were issues on management of the grid code and handling of PPAs.

32. *Challenges and Perspectives on the Regional Power Market (Annex 15)*. Presented by Mr. Bogdan Popescu-Vifor, Director Power Markets Operations Division, Transelectrica- The Romanian TSO. In relation to the SEE REM, he discussed the evolution of unbundling process in Romania and the resulting power market structure. He described Transelectrica's role and responsibilities as the TSO and its investment plan until 2025, and explained key aspects of its operations, which include: commercial arrangements on the power market; tariff determination methodology; power market and system operation; power market and system balancing; cross-border transmission tariffs; and rationale for capacity allocation. He expounded on agreements with neighboring TSOs and concluded that Romania's gains in transmission network development and market mechanism implementation (e.g. sale of Transelectrica's stock to private investors) could provide useful lessons for GMS

33. **Comments.** On Viet Nam's query on household tariffs, presenter noted that these tariffs are regulated since households are captive markets. On Thailand's query whether power generators could buy into the transmission company, presenter clarified that there are no restrictions on who can purchase Transelectrica shares, but currently only 10% of shares are offered publicly. On the objective of privatization, presenter clarified that this is pursued to realize different objectives, and one is to generate funds for investment projects that are not eligible for multilateral financing (e.g. nuclear plants). WB asked whether the TSO is necessary; the presenter replied that the TSO's role is critical. In response to PRC's query, presenter described the operational solution to the congestion problem, involving system balancing. Viet Nam inquired about compensation for ancillary services, and presenter described the various fees collected to perform various ancillary services, such as realizing energy reserves. Myanmar inquired about responsibility for dispatch, ownership of the transmission facilities and extent of planned privatization of Transelectrica; presenter replied that Transelectrica is responsible for dispatch and owns the facilities, but is not aware of the extent of plans to privatize Transelectrica.

34. *Cross-Border Transmission- Tariff Methodology, Challenges in Integration, Incentives for Investment in Cross- Border Interconnections (Annex 16)*. Presented by Ms. Snezana Mijailovic, Deputy General Manager, Electricity Coordination Center, Serbia and Montenegro. She provided a background on the ECSEE, its geographic coverage, market model, and common technical, operational, institutional and regulatory requirements. She then discussed the ECSEE's investments in cross-border interconnections, including measures for improving security, increasing transmission capacity, improving planning cooperation, and developing regional database. She described transmission capacity allocation and congestion management, focusing on allocation in SEE region and coordinated auctions (CA) and its advantages. Finally, she discussed the process of inter-TSO compensation and the cross-border trade (CBT) methodology, which involves a two-step model with clear basis for compensation. She discussed the main technical, legal and financial problems in CBT implementation in the SEE region, which were solved by consensus of all parties.

35. **Comments.** The presenter elaborated on how the ECSEE works to avoid the "pancaking" effect, which involves the tedious process of going from border to border to obtain needed capacities to sell power to a buyer separated by one or more countries.

VII. Closing Session

36. *Consideration and Adoption of Proceedings*. The chair announced the distribution of the draft summary of proceedings for review by the body. The RPTCC members reviewed the draft

summary of proceedings and after incorporation of suggested changes, the body therefore approved the minutes of the RPTCC-5 meeting.

37. **Closing Remarks.** The chair gave a quick summary of discussions and enumerated the outcomes according to the objectives of the meeting. He noted that the meeting confirmed the work plans submitted by the PWG and FG. He noted also the progress of proposed projects and cited the assistance provided by AFD and SIDA to promote power trade development. He also cited the useful lessons derived from experiences in developing regional energy markets in Southeast Europe.

38. Mr. Jude thanked the presentors who shared their experiences on power trade in Southeast Europe and thanked the WB for financing their engagement. He informed that a consultant has been engaged for the Energy Sector Strategy study (Integrated Resources Management of Austria) and will commence work shortly. The meeting agreed that if RPTCC is held next year, the chair will be Myanmar, but if this is held within the year, Lao PDR will remain as chair. He also thanked Ms. Evelyn Panlilio who will be leaving us soon. He thanked her for all of her help and assistance not only with this RPTCC meeting but also with the arrangements for the last four meetings. He enjoined the participants in thanking her for her services over the last 5 years.

39. The chair extended his appreciation to the participants for their contributions during the discussions. He cited the immense learning and sharing that took place during the meeting.