

**Greater Mekong Subregion
Third Meeting of the Regional Power Trade Coordination Committee (RPTCC-3)
Vientiane, Lao PDR
7-8 April 2005**

Summary of Proceedings

Introduction

1. The Third Meeting of the Regional Power Trade Coordination Committee (RPTCC-3) was held in Vientiane, Lao PDR on 7-8 April. The Meeting was co-organized by the Ministry of Industry and Handicrafts (MIH) of Lao PDR and the Asian Development Bank (ADB).

2. The RPTCC-3 meeting discussed the following: (i) second draft of the final report of the study for the regional power trade operating agreement (RPTOA) including- (a) general design, key revisions and changes in recommended actions, (b) draft text of Initial Agreement to install Stage 1 of RPTOA, with timeframe and plan for approval and signing, and (c) proposed institutional arrangements of RPTOA; (ii) interim report for the preparation of the GMS Power Interconnection project Phase I; (iii) country presentations on proposed framework for RPTOA; (iv) GMS energy cooperation projects and institution building for RPTCC; (v) consultants' feedback on discussions on RPTOA and RPTCC institutional development; (vi) update/ revision of the work plan of the RPTCC; (vii) the proposed GMS Power Transmission line interconnection PRC-LAO-THA; (viii) proposed TA paper for energy sector strategy study; and (ix) development partners' perspective on GMS energy cooperation. Attached, as Appendix 1, is the Agenda and Program of the Meeting.

3. The participants included delegations from the Kingdom of Cambodia, the People's Republic of China (PRC), the Lao People's Democratic Republic (Lao PDR), the Union of Myanmar, the Kingdom of Thailand, and the Socialist Republic of Viet Nam and representatives from the Agence Francaise de Developpement (AFD), Japan Bank for International Cooperation (JBIC), Swedish International Development Agency (SIDA), Soluziona (ADB Consultant), Tokyo Electric Power Company (TEPCO)/ Fichtner (ADB Consultant), and World Bank. The list of participants is attached as Appendix 2.

4. The meeting was chaired by Mr. Wang Jun, Deputy Director General, Bureau of Energy, National Development and Reform Commission (NDRC), PRC and co- vice chaired by Mr. Houmphone Bulyaphol, Director General, Department of Electricity, Ministry of Industry and Handicrafts, Lao PDR, and Mr. Urooj Malik, Director, Infrastructure Division, Mekong Department, ADB.

Opening Session

5. H. E. Dr. Nam Viyaketh, Deputy Minister of Industry and Handicrafts, Lao PDR, warmly welcomed the delegates to the 3rd RPTCC meeting and expressed his appreciation to ADB and WB for support to host the meeting. He said the meeting marks a turning point in the efforts to develop the regional power grid. He noted the progress in discussions to formulate the RPTOA and said the robust economic growth of the Mekong subregion necessitated the promotion of regional power interconnection and trade to reduce reliance on unsustainable energy forms. He conveyed his wish for good health for all delegates.

6. Mr. Wang Jun, Deputy Director General, Bureau of Energy, National Development and Reform Commission, PRC and Chairperson of RPTCC, warmly welcomed the officials of GMS countries and representatives of ADB, WB, and development partners to the meeting. He recalled that in RPTCC-2, the delegates expressed themselves freely and recalled the major accomplishments of said meeting. He noted the aim of the current meeting to promote GMS power cooperation, particularly to review the second draft of the PTOA final report and the basic agreement to initiate power trade, as well as to review the work plan. He said PRC supports the working mechanism of RPTCC and will provide its position on the RPTCC work plan and proposal for the PRC-LAO-THA power interconnection project. He added that the meeting would discuss the establishment of the institutional mechanisms for power trade such as the operations and systems planning working group (WG). He thanked the Lao PDR Government and EdL for the warm hospitality and wished the meeting a great success.

7. Mr. James Nugent, Country Director of ADB Lao Resident Mission, warmly welcomed and thanked the participants to the RPTCC-3 meeting and noted the presence of a strong contingent of RPTCC focal persons. He cited the presence of development partners whose valuable insights on workable power trade institutions and energy sector cooperation would be sought. He noted that the GMS Ministers, in their last meeting held in Vientiane in December 2004, emphasized the crucial role of regional power trade in attaining the GMS development agenda in terms of increased connectivity, competitiveness and community. In the case of Lao PDR, he noted the substantial benefits of power trade in the form of rural electrification, improved roads, increased exports and private investments and poverty reduction. He recalled the success of the first and second RPTCC meetings in terms of agreeing on organizational issues and advancing the progress of the RPTOA. He hoped the RPTCC-3 meeting would deliberate successfully on the agreement to initiate stage 1 of RPTOA in time for signing during the Second GMS Summit in July 2005. He expressed confidence that the meeting objectives would be met through substantive deliberations and thanked the Government of Lao PDR for the excellent arrangements for the meeting.

8. Mr. Malik noted the progress achieved by the RPTCC in its first year and outlined the key outcomes expected from the RPTCC-3 meeting as follows: (i) initial agreement to commence stage 1 of RPTOA; (ii) operationalization of RPTOA; (iii) institutional arrangements for RPTOA; and (iv) updated work plan for RPTCC, including discussion on mobilizing government and donor support for other studies/ activities envisaged. He said separate discussions were held to advance the progress of the two interconnection projects (PRC-LAO-THA and LAO-THA-VIE) that will enable power trade in the GMS. He noted that the GMS energy sector strategy study would also be discussed to guide the approach and methodology for the said study.

I. Regional Technical Assistance (RETA): Study on Regional Power Trade Operating Agreement (PTOA)

Presentation on Second Draft Final Report of PTOA- General Design, Key Revisions and Changes in Recommended Actions

9. Mr. Jorge Karacsonyi, Consultant, Soluzion, commenced with the outline of the presentation and followed this with the status of the PTOA project in terms of the tasks and deliverables and their respective time frames. He discussed the recent activities of the RETA study undertaken after the RPTCC-2 discussions (Bangkok, December 2004) and presented the modifications made to the first draft with adjustments to performance standards and settlement

formulation, separation of Planning Working Group (PWG) into Operational PWG (OPWG) and System PWG (SPWG), and institutional changes. He proceeded to discuss the principles for energy trading in GMS. A chart on the core of PTOA showed relationships between PPA/ Regional Dispatch and regional planning, regional institutions, transmission tariffs and performance standards. He gave the elements of the core PTOA transactions and how to ensure their reliability and described the PTOA components (General Design and RPTOA) and listed the regional institutions involved and recommendations on specific issues. Specific to the RPTOA he enumerated the components pertaining to the General part, the Grid Code and the Settlement Code. He defined the performance standards needed for reliable operation and design of the transmission system and the service quality targets particularly in the medium term and after a transition period.

10. On cross-border transmission tariffs, Mr. Karacsonyi defined inter- Transmission System Operator (TSO) charges and the cases to be considered, the computation for new facilities and the standard unit values for each type of facility. He clarified the responsibility for metering of cross-border flows. Stage 1 goals were given in terms of PTOA bilateral transactions, tariffs for cross-border transmission facilities, system and operational transmission planning, establishing regional institutions and other recommended actions. He then detailed the recommendations for Stage 1 in terms of the PPA, for facilitating construction of cross-border lines and system and operational planning. Finally, he provided the goals for stage 2, which begins when a simplified Regional Transmission Network (RTN) has become operative.

11. **Comments.** Mr. Sompol (THA) raised concern on control of AC transmission system during power trade, particularly for two countries with independent frequency control systems. He noted the need to have a 24-hour lead-time for trading, in order to plan the mix for power generation. Mr. Karacsonyi said short-term trading is not mandatory and each country would have flexibility in making offers to supply power to the regional market. The system operator would coordinate power trade transactions, as well as evaluate when a country would be ready to trade. He said institutions such as the RPTCC would help determine the investments needed to correct technical problems when trading. Mr. Varavoot (THA) observed that the networks of most GMS members would not be ready for power trade (stage 1) since connections within a country, and with another country, are mostly designed for bilateral trade with limited transfer capacity. He added that the model proposed is a good one for a competitive regional market and that there is no need for an initial agreement yet. Mr. Karacsonyi replied that the basic design was for stage 1 and eventually stage 2, involving trade among single buyers. He said the grid code was designed for stage 2 and would be revised if the market moves on to higher stage.

12. Ms. Jiang (PRC) observed it was still be too early to establish some institutional mechanisms such as the Regional Regulatory Board (RRB). Mr. Karacsonyi replied that the structure could be set up when demand for it exists. Mr. Daovong (LAO) asked for international examples of the level of transmission tariffs. Mr. Karacsonyi said in the GMS case, tariffs should be set at a level to compensate the investor for building the power line. In the EU, the rate is 1 euro per MW/hour, which is low because the variable cost is almost zero. In Central America, the recommendation is \$5 per MW/ hour, which is higher to cover the cost of developing the line for trade. U Thein Tun (MYA) cited the need for basic rules to guide in future planning for bilateral trade. He agreed that institutions need not be set up this early, but the framework could help speed up the process of trade. Mr. Malik agreed with U Thein Tun on the need to establish basic principles and conduct studies this early to enhance power trade on a sustainable basis. He said there is a need to prioritize the setting up of institutions and examine their cost

implications for planning purposes. Mr. Varavoot (THA) suggested that instead of an agreement, the group adopt only a basic framework that does not require signing by the GMS members. Mr. Malik suggested the group to consider the draft of the initial agreement as the basis for a decision on this issue.

13. Mr. Bonnel (AFD) noted that the current efforts are aimed at building confidence and investments that for the power sector, involves long gestation periods. He observed it is not too early to consider power trade frameworks and institutions at this time, which will help the GMS achieve visibility and attract investors.

Presentation on the Initial Agreement to Install Stage 1- Draft Text

14. Mr. Zhang (PRC) noted that the GMS senior officials and ministers have already agreed that the basic agreement of power trade is a key deliverable for the 2nd GMS Summit, and that the task of the RPTCC meeting is to work out how to make this possible.

15. Mr. Karacsonyi (Soluziona) outlined the contents of the presentation and explained the agreement's objective of formally establishing the start of PTOA Stage 1. He gave the conditions needed to establish the PTOA and to set up its required institutional arrangements. He discussed the situation during initial trading and explained transmission costs as basis for tariffs. He proceeded with the provisions concerning trading arrangements such as: communications mode; interconnection control; maneuvers coordination; scheduling cross-border load flow; real time operation; technical and operative dispute resolution; metering of transactions; use of cross-border facilities; billing and payment of transactions; penalties; and resolution of conflicts, among others. He gave the recommended tasks as additional consideration under the agreement.

16. **Comments.** Mr. Trembath (WB) observed that the draft agreement is fairly detailed, and deals with situations that may not exist for 4-5 years hence, and this could require longer review by the GMS members. Mr. Trembath said that the agreement could be considered a template or guidelines to guide future development of the market, since currently only three GMS members (PRC, THA, VIE) have networks or dispatch centers. He queried whether enough time was given to the countries to study the initial agreement. Mr. Malik clarified that the draft agreement was in fact the third draft, with the earlier drafts having been considered in the first and second RPTCC meetings, in Guilin and Bangkok in July and December 2004, respectively. He noted that the latest draft had been circulated in February 2005 and comments have already been received from PRC and MYA. The consultant would incorporate further comments made during this meeting.

17. Mr. Thai (VIE) agreed on the need to simplify the agreement, possibly with focus on strengthening bilateral trade; he suggested that GMS or Energy Ministers sign an MOU to implement the IGA. Mr. Trembath said that a document to establish the next steps is needed, such as setting up the Technical Secretariat (TS), which could be signed at the RPTCC level. Mr. Chavalit (THA) concurred with the proposal to sign an MOU. Mr. Zhang (PRC) clarified that the GMS Minister could sign the MOU on behalf of the energy ministry. Mr. Nolson (CAM) raised system security concerns that could be addressed through proper institutions (Technical Secretariat or WG), and agreed that an MOU would be appropriate in this case. Mr. Daovong (LAO) explored possible signatories for the MOU. Mr. Malik said that a consensus has emerged to sign an MOU and said the GMS members would be consulted on the contents of this MOU

during this meeting. On the personality to sign the MOU, Mr. Malik said that ADB wished to be guided by the GMS countries.

Presentation on Proposed Institutional Arrangements

18. Mr. Leonardo Benitez (Soluziona) explained the general institutional framework with a figure showing the relationships between RPTCC, the Technical Secretariat (TS), the Regional Regulatory Board (RRB), Regional Transaction Coordinator (RTC), Monitoring and Supervision Center (MSC), Dispatch Center (DC) and the various working groups, including the SPWG and OPWG. He gave the functions of the RPTCC, which will oversee the TS, and gave the latter's objectives/ functions and reporting functions to the RPTCC. He quickly described the objectives/ functions of the RRB and showed a table describing the RRB's role for various functions. For the RTC, he gave the composition, its two centers (MSC and DC) and their functions, staffing requirement and main objectives. For the SPWG, he explained the main functions and objectives during stages 1 and 2, and its activities. He did not explain OPWG in detail, but noted that this takes care of the existing short-term concerns. He said other working groups could be set up as needed.

Comments/ Suggestions on Consultant's Reports

19. Mr. Malik called attention to the comments submitted by the E7 Advisor, Mr. Hotte, who could not attend the RPTCC-3 meeting. He noted that the comments were generally positive and encouraging, and will be taken into consideration by the consultant when revising the draft.

II. PPTA for GMS Power Interconnection Project Phase I

Presentation on the Evaluation Report of GMS Power Interconnection Project Phase I

20. Mr. Yasuhiro Yokosawa, Economic Analyst, TEPCO, introduced the methodology and conditions for benefit calculation of the project. He noted the two part benefits from interconnection, the investment savings and the fuel consumption savings, and gave the timing of interconnection commissioning and the target years and models used for the simulation for THA, LAO and VIE. He explained the study scenarios with I-A as the base case, and the rest as alternatives. He focused on the results of the simulation of scenario I-A in terms of system reliability situation, benefits, difference of generation (in 2020), and weekly operation "without interconnection" in the rainy season. He discussed the potential power exchange that would arise from differences in marginal generation cost. He showed the relationship between revenue and wheeling charge in scenario I-A. He presented the results of the economic evaluation in terms of project benefits and costs, and showed EIRR estimates for scenarios I to V. Sensitivity analysis was performed assuming cost increase and benefit reduction for all scenarios. He recommended that to realize the potential large benefits, the project should involve system operators and owners. He added that support for reinforcement of the LAO system would provide incentive for LAO participation in the project.

21. **Comment.** Mr. Varavoot (THA) noted that the consultant should reflect the results of the earlier discussions on the project. Mr. Hung (VIE) reiterated the benefits that could be realized by the project in terms of reduced reserve requirements. He said however that the participating countries earlier requested for more time in conveying its position on the project.

22. Mr. Peter Pintz, Consultant, Fichtner, first presented on the financing modalities for the project and cited the three approaches considered, namely, fully private, fully public and public private partnership. He listed the arguments in favor and against private financing of transmission lines and explained that private financing is a generally possible solution. He discussed the possible financing schemes (under the limited recourse financing framework), namely the special purpose company (SPC), and build-own-operate-transfer (BOOT), which is most appropriate in the Lao context. He gave the basic structure of the BOOT model and explained the advantages, as well as disadvantages/ constraints of private financing, the constraints of public financing and possibilities for public-private partnership (PPP) under this model. He explored the scheme for PPP involving creation of SPC under the BOOT model. He then ranked the four (4) financing modalities, as follows: first, the public joint venture company (JVC) owned by all three countries with 100% equity; second, the public JVC owned by VIE and LAO with 100% equity; third, the public JVC with commercial loan funding; and fourth the PPP (Lao PDR/ private investor) under BOOT model. He gave the pros and cons of each model, the use of ADB loans for financing under each model, as well as each model's implementation schedules.

23. **Comments.** Noting the high economic returns estimated for the project, Mr. Varavoot inquired whether the expected returns would attract investors. Mr. Pintz said the returns would be largely economic although financial returns would be realized from wheeling charges. Mr. Malik stressed that ADB as a development institution, would be interested in such a project with high economic returns for the country. He stressed the need for parties to agree on the investment modality for the project. Mr. Chavalit asked the consultant's view on which is the best model and Mr. Pintz replied that models 1 and 2 were recommended.

24. Mr. Malik recapitulated on the day's discussions noting that while there had been different viewpoints expressed on the RPTOA, it had been generally agreed to prepare an MOU for signing, at the 2nd GMS Summit. He proposed to prepare a draft MOU and for the consultant's draft to be re-titled as guidelines. Mr. Zhang suggested that each country delegation report to their respective GMS national coordinators on the progress of discussions on the MOU. Mr. Malik said disseminating the record of proceedings is one way of informing the GMS coordinators.

Dinner hosted by Government of Lao PDR

DAY 2

25. Mr. Wang Jun opened the day 2 session of RPTCC-3 and requested the GMS representatives to present their views on the RPTOA framework.

III. Country Presentations on Proposed Framework for RPTOA

Cambodia

26. Mr. Yim Nolson first provided the status of the IGA in Cambodia, which has been sent to Parliament for ratification. He discussed Cambodia's position on the following: RPTOA institutional arrangement- grid code; framework and grid code; and Initial Agreement and work plan. He explained his country's power trade planning assumptions and showed a map of the national transmission grid. He enumerated the hydropower projects for private sector participation and pointed these out in the map of Cambodia.

PRC

27. Ms. Jiang first presented PRC's views on the draft final report of the PTOA, which was found to be more comprehensive and practical. She gave suggestions on the institutional framework design, and agreed to establishment of Technical Secretariat as soon as possible. She said PRC supports the signing of the MOU by July 2005. She provided PRC suggestions on the RPTCC work plan, calling for harmonizing long-term power development plans of GMS members. She enumerated suggestions for GMS energy cooperation covering energy supply security/ economy, rural electrification, and demand side management.

28. Ms. Du Yunhul explained PRC's proposed Seminar on Rural Electrification and Regional Power Sector Cooperation. The proposed venue is Kunming, for duration of 14 days in July 2005 with Yunnan Power Grid Co. of CSG as sponsor. She gave the aims of the seminar, the courses offered, the faculty composition, seminar method, cost estimate and sharing, and detailed seminar schedule. She explained the reasons for selecting Yunnan as venue, which is most convenient travel location for GMS participants. She invited the GMS members to nominate participants to the course.

Lao PDR

29. Mr. Daovong noted that the consultant is aware of the GMS power sector situation as reflected in the submitted reports, which envisions the evolution of the power market in four stages before reaching a competitive market. He discussed detailed comments covering the following sections: grid and settlement code; PTOA institutional arrangements; and Initial Agreement. He noted that EGAT and EdL conduct annual Joint Operation Committee (JOC) meetings to discuss technical issues on power exchanges between the two systems.

Myanmar

30. U Thein Tun stated that detailed comments on the initial agreement were earlier submitted, and added that acronyms and definitions should be included as one article and that signatories should be defined. On the PTOA institutional framework, he said Myanmar already

agreed to this conceptually and suggested 14 days notice for meetings, instead of seven (7) days. He suggested a number of major tasks to move forward, which included formation of needed institutions first, and formulation of training/ workshop plan. On the RPTCC work plan, he cited the need for a clear vision on the formation of a regulatory body and the need for RPTCC to study the organizational structure of regulatory frameworks. He also commented on the PTOA General Design and noted that details such as time for setting up institutions, initial investment costs and operational costs of each institution, would be subject for discussion among countries.

Thailand

31. Mr. Varavoot provided Thailand's comments on the Initial Agreement, PTOA institutional arrangements, grid and settlement code, and PTOA general design. He noted that stages 1 and 2 of power trade in the GMS is still far away in the future. On the institutional framework, he explained that only the SPWG is needed at this time.

32. Mr. Sompol discussed Thailand's views on the relationship between the regional regulator (RRB) and the regulators of individual countries. He also expounded on the relationship between the RTC and dispatch center. He noted the need to differentiate between two types of power trade: one for PPA and the other for day-to-day bidding. He expressed concern that regulations under the PTOA may discourage other parties, and compared the advantages of trade under PTOA versus bilateral contracts.

Viet Nam

33. Mr. Thai updated on the progress of enacting the new electricity law of Viet Nam, which is important for the regional integration of its power system. He proposed that the Deputy Minister of the line ministry sign the MOU, as this will require simpler domestic clearance process. He briefed on the establishment of Viet Nam's internal competitive market, and suggested the establishment of the proposed institutions for power trade only when there is actual need for these. He called for greater cooperation in training and in the development of the grid code. He repeated his point that to avoid overlapping duties and responsibilities of the RPTCC and TS while there is not much work, as well as to save financial contribution from less developed GMS countries, it would be necessary to consider carefully the appropriate time for establishment of TS and OPWG at later stage.

Comments

34. On the expected date of Cambodia's ratification of IGA. Mr. Nolson said this could come anytime soon, and Mr. Malik said it would be desirable that this takes place before the 2nd GMS Summit. On PRC's rural electrification seminar, Mr. Malik noted that the proposed program reflects the needs of GMS members and enjoined them to discuss ways to further cooperation in this area; he announced that ADB would contribute a modest amount for the PRC training. He said U Thein Tun proposed practical views on moving the MOU forward. He also cited proposals on legal and regulatory mechanisms for power trade made by the GMS members. He said a draft MOU has been drafted and would be circulated shortly for review by the GMS members.

IV. Presentation on GMS Energy Cooperation Projects

Proposed Transmission Line Investments and FS for Hydropower Projects in Cambodia and Lao PDR

35. Mr. Morten Larsen (WB) presented on the tentative scope of the GMS power trade program tranche 1, and showed a figure on the WB's GMS power trade strategy outlining the relationship between WB assistance (institutional and infrastructure components) and progression of power trade. He briefed on the WB's implementation arrangements as well as institutional support for the GMS power trade program, and explained that WB's adaptable program lending, enables financing in tranches as investment needs appear, with tranche 1 for release in 2006. He discussed the infrastructure component consisting of transmission and generation investment projects for Cambodia and Lao PDR. He gave the schedule/ time frame for tranche 1, from project preparation in January 2005 to completion in early 2008, during which time project preparation for tranche 2 would commence. He listed the tranche 2 components for CAM, LAO and VIE, with projects in THA and PRC to be determined through consultations with RPTCC and at country level.

36. **Comments.** Mr. Haag (SIDA) asked how the WB's energy program is related to the GMS program and how this could be of interest to a potential cofinancing partner like SIDA. Mr. Larsen replied that the projects would be implemented at the national level and that these projects represent only the initial investment requirements. Mr. Malik said that the RPTCC serves as the forum for energy projects with GMS dimensions. Mr. Houmphone inquired as to why some priority projects have not been included in the WB program. Mr. Larsen said the study on ownership models for the PRC- LAO- THA interconnection line is a priority that should have been included. On the LAO- THA- VIE line, he noted some concerns that would need to be addressed by the participating countries and ADB.

Presentation on Institution Building for RPTCC - Best Practice Guidelines for Power Trade

37. Mr. Barry Trembath, Lead Power Engineer, East Asia and Pacific Region, WB, presented on the draft terms of reference for the preparation of Good Practice Guidelines for Bilateral Trade Agreements in the GMS Region. He provided the background for the study, necessitated by the move from the current limited bilateral trading to the future market-based trading mechanisms, and cited the challenges involved in such move and the bilateral principles that constrain long-term economic efficiency. He explained the principle, objectives and outputs of Good Practice Guidelines study, as well as the beneficiaries of the study, which included the generation planners in both importing and exporting countries. He discussed the scope of work for hydro, transmission and market transition issues. For hydro, the main issues concern the tariff structure and value of carbon credits. For transmission the main issue is regional coordination of the network, and concerns included uniform principles for access regulation and balancing public control with private ownership. For market transition, the concern was on avoidance of market risks for IPPs and purchasers. He explained the methodology of the study, which included conduct of desk studies, running of simulation models, production of draft reports and consultation/ review. He then provided the time frame, financing and implementation arrangements for the study.

V. Feedback on Discussion and Presentations Regarding PTOA and Institutional Development of RPTCC

38. Mr. Malik stressed the need to coordinate the activities of the governments and development partners to minimize duplication of efforts in developing regional power trade. Mr. Karacsonyi discussed the importance of incorporating certain features in the agreement such as flexible pricing formulas and ancillary services, to ensure that the PTOA is responsive to the needs of the GMS members.

39. **Discussion on MOU.** Mr. Malik noted that the draft just circulated to participants contains the essence of guidelines for stage 1 of RPTOA as reflected in the MOU's four articles. Mr. Thai commented on provisions concerning institutional arrangements, which was noted by the consultant. Mr. Varavoot queried on the need for the MOU to cover bilateral arrangements. Mr. Karacsonyi said this was done in order to harmonize bilateral arrangements and prevent them from obstructing power trade in the future. U Thein Tun cautioned on any reference to RPTOA in the MOU, since the RPTOA will be signed much later. Mr. Zhang suggested that a videoconference be held among the six GMS members in the next few weeks to ensure that concerns on the MOU are addressed, and the MOU is prepared for signing in July 2005. Mr. Houmphone and Mr. Daovong (LAO) provided additional comments on the draft, which were noted by the consultant for incorporation in the draft MOU. Mr. Malik noted the request by PRC and MYA to finalize the MOU by the end of the April. However, considering the coming holidays in Thailand, Lao PDR and Cambodia, it was agreed that GMS countries submit additional comments on the MOU including the name of signatory, on or before 29 April 2005. The MOU's third version, reflecting suggestions during the meeting, is attached as Appendix 3. The consultant will then immediately revise the MOU, after which a videoconference will be organized shortly thereafter in May for further revisions and to address additional concerns.

VI. RPTCC Work Plan

Discussion on Work Plan of RPTCC, and Updates/ Revisions on Priority Work Plan Areas

40. Mr. Tianhua Luo, Energy Sector Specialist, Infrastructure Division, Mekong Department, ADB, provided an outline of his presentation and explained that among the main objectives of the RPTCC work plan were to achieve common understanding on promoting regional power trade and to explore financing resources and cooperation partnerships. He explained the criteria for the preparation of the work plan and the key aspects of regional power trade that would serve as basis for the work plan, which includes adoption of the RPTOA, institutional development and regional planning and technical aspects. He then discussed detailed work program (activities and outputs) for each of the following major RPTCC work areas: (i) finalizing RPTOA and signing of the Initial Agreement; (ii) institutional build-up; (iii) information sharing; (iv) develop good practice guidelines; (v) prioritize cross-border interconnection projects; (vi) capacity building; and (vii) private sector participation and coordination with other partners. He discussed the work program for a separate ADB RETA to conduct the Energy Sector Strategy study. He then summarized the prioritized actions which include: signing of Initial Agreement to implement stage 1 (by July 2005); finalizing RPTOA documents (Dec. 2005); establishing Technical Secretariat for regional power trade development; pursuing TA projects for institutional build up; and establishing RPTCC website and database, among others. He requested the GMS countries to update their RPTCC membership list and submit this to ADB as soon as possible.

41. **Comments.** Mr. Houmphone noted that changes in the timing of work plan activities are needed based on preceding discussions. Mr. Luo replied that the changes would be made to

reflect the meeting agreements. Mr. Varavoot queried on the rationale for assigning priority to projects, since low priority ones could be advanced if found to be feasible. He suggested instead classifying projects into short, medium and long-term. Mr. Zhang said the presentation was comprehensive, but hoped more capacity building activities be added to the work plan. He noted that ADB is developing middle-income country policies that would lead to ADB's recognition of existing safeguards policies in such countries. Mr. Malik said the work plan would be revised to reflect the discussions during the meeting and agreed with Mr. Varavoot that the work plan be referred to in revising the MOU. The revised RPTCC work plan is attached as Appendix 4.

VII. Proposed GMS Power Transmission Line Interconnection Between PRC- Lao PDR- Thailand

Presentation on the Draft Findings of the Joint Feasibility Study (Phase I) and Work Plan for Next Steps

42. Mr. Mo Jun (PRC) presented the main conclusions of the earlier PRC-Thailand joint study and briefed on the main designing principles and alternatives for the project. He noted that seven options were proposed, grouped into three types. He compared the AC and DC options and recommended options most suitable given varying conditions and said option 3 is most economically and technically preferable. He said options 4 and 5 were developed to take into account injection of hydropower from Lao PDR, with option 5 more economically feasible and less complex. He presented the conclusions about the selection of technical options and compared investment requirements among various options. He gave the working schedule for subsequent activities.

43. Mr. Varavoot noted that there would not be much system reinforcement required, but there is need for further economic study of the transmission line project. Mr. Houmphone added that the study recommended possible DC connection to a hydropower source in Northern Lao PDR. He said that the study would examine further the benefits of the project to Lao PDR.

Discussions

44. Mr. Bhargava (ADB) queried on the timing of hydropower projects in Lao PDR envisioned to feed power into the proposed line. Mr. Houmphone said there is need to review closely and coordinate the timing of generation plants and transmission lines. Mr. Trembath explored the many alternatives for Lao PDR to generate benefits from the project, including taxes on the transmission and generation companies. He briefed on the plan for conduct of the WB's ownership model/ benefits sharing study.

VIII. Proposed ADB RETA: Energy Sector Strategy Study

Presentation on the Draft RETA Paper for the Energy Sector Strategy Study and Implementation Plan

45. Mr. Pradeep Perera, Energy Sector Specialist, Mekong Infrastructure Division, ADB, commenced with the presentation outline and followed this with a background to the study, where he explained the progress of promoting GMS power trade. He noted that the EPF was expanded to cover broader energy sectors in 2004, and discussed the relevant issues related thereto, such as: importance of regional cooperation to meet national energy demands;

economic advantages of regional energy trading; need for regional institutions; and policy interventions to create conducive environment for public-private partnerships in regional energy projects. He explained the methodology and key activities for Phase I and Phase II of the study. Phase I included establishing demand-supply balance for each country and energy sub-sector, and preparing comprehensive strategy for GMS energy cooperation. Phase II included proposing key policy interventions and institutional reforms and identifying risk perceptions of private investors. He noted the expected outcomes for Phase I and Phase II. Finally, he discussed the implementation arrangements, which included a Steering Committee reporting to the GMS Energy Sector Forum (ESF).

46. **Discussions.** Mr. Zhang expressed that the expansion of energy cooperation is a timely initiative and proposed that the study consider energy security and energy conservation issues. He said the study should look into investment facilitation in energy and work closely with the GMS investment promotion group. U Thein Tun agreed with PRC on the need for counterpart agency and focal point for information exchange and training; he noted however that a GMS energy group could duplicate work of the ASEAN Center for Energy (ACE) since most GMS members are also ASEAN members. Mr. Chavalit said Thailand supports expansion of energy cooperation given the high oil prices at present and its adverse impact on the economy. He noted Thailand's efforts at ethanol production from farms and Thailand's interest to purchase oil and natural gas from PRC. Mr. Daovong agreed with Myanmar's observation on possible duplication of a GMS energy mechanism with ACE. Mr. Malik clarified that the proposed group is just the ADB MKID energy team to coordinate studies and conduct meetings, and assured that ADB would work closely with ACE. He said that while focus is on GMS, ADB is cognizant of the larger energy goals such as the ASEAN power grid and the ASEAN gas grid.

IX. Presentation by Development Partners on GMS Energy Sector Cooperation

47. Mr. Alexis Bonnel, Head, Infrastructure Division, AFD, presented on the proposed contributions of AFD. He briefed on the AFD group, its presence in over 80 countries, resources committed in 2004, range of financing goods, and untied nature of its assistance. He explained AFD's operation in GMS countries and its sector selective approach where it has comparative advantage, like the power sector. For the latter, AFD plans to provide project financing and support to regional coordination. He discussed the proposed AFD assistance to EPF/ RPTCC backed by 1 million Euro grant commitment in 2005. He discussed the possible utilization of funds regarding RPTCC which could include studies on cross-border electricity exchanges, establishment of database for information exchange, and promoting regional coordination as resource for national stakeholders. He explained the proposed next steps, which includes finalizing AFD-ADB discussions on channeling AFD grants through ADB and drawing up the ADB- AFD financing agreement to support EPF/ RPTCC.

48. Mr. Goran Haag, Program Manager, SIDA, shared Nordic experiences in power trade and exchange, which currently involves physical and financial trading under NordPool. He discussed the lessons learned which were gained over a long time period. He said power trade occurred even before introduction of competition, and that having common working groups is a must. He then outlined planned SIDA support to the RPTCC work plan, energy sector strategy study, investment projects and project preparation TA. SIDA indicated an initial support to the RPTCC work plan and the Energy Sector Strategy study of 1.5- 2.0 million Euro. Future co-financing of investments could range between 30- 50 million Euro totally over a period of 3-5 years.

49. Mr. Koji Yamada, Representative, Bangkok Office of JBIC, presented on Japan's strategy for GMS power sector development assistance, and cited the commitment base of \$1.4 billion for fiscal year 1998-2004. He discussed JBIC's assistance for the power sector in Lao PDR and provided detailed information of the Greater Mekong Power Network Development project to develop the 115 kV line from Pakxan to Pakbo. He explained the project's implementation schedule and expected effects and showed possible future connection with the grid system from Nam Theun 2 Hydropower plant in Lao PDR. He discussed the major issues of the Lao PDR power sector for the short, middle and long-term plan. He then discussed JBIC's assistance strategy to Cambodia's power sector, which is a priority area for JBIC's assistance covering power supply development, support for lowering power tariff, and collaboration with other donors. On assistance to Viet Nam, he discussed the 330 MW Ninh Binh II Thermal Power Plant construction project and gave its expected effects. He showed the successive plan for the establishment of the environment management system (EMS) including Ninh Binh II Thermal Power Plant.

Closing Session

Consideration and Adoption of Proceedings

50. Mr. Malik announced the distribution of the second version of the MOU and draft summary of proceedings for review by the body.

51. Additional comments on the MOU (second version) were discussed and incorporated by the consultant in the third version of the MOU (Appendix 3). A major issue discussed was the provision concerning the Technical Secretariat (TS). It was agreed to retain provision on the concept of TS in the MOU although changes were made to reflect the views of RPTCC members. The revised MOU would be distributed for further review by the GMS members and the agreed due date for submission of comments on the MOU (third version) from GMS members is April 29, 2005.

52. The RPTCC members reviewed the draft summary of proceedings and after incorporation of suggested changes, the body therefore approved the minutes of the RPTCC-3 meeting.

Closing Remarks

53. Mr. Wang Jun congratulated the participants for the great outcome of the meeting and thanked the representatives of GMS governments, ADB, WB and development partners for their participation and support to the meeting. He enumerated the key outcomes of the meeting particularly the formulation of the MOU and the updating of the RPTCC work plan. He pledged to continue to promote GMS power cooperation and to maintain good relations among the GMS members. He especially thanked ADB for its contribution to GMS power cooperation and thanked the Government of Lao PDR for the warm hospitality.

54. Mr. Houmphone Bulyaphol extended his appreciation to the participants for contributing to the success of the meeting, during which frank and constructive discussions took place. He reviewed the main accomplishments of the meeting and thanked Mr. Wang Jun and Mr. Malik for successfully guiding the discussions, and all the participants for their contributions to the meeting.

55. Mr. Urooj Malik thanked the participants for their substantive contributions. He thanked the Chair, Mr. Wang Jun, and Mr. Houmphone, the co vice-chairperson, for steering the discussions. He also thanked the development partners present, and the ADB staff and meeting secretariat for the strong support in organizing the meeting. He announced that Lao PDR would assume the chairmanship of the RPTCC in the next RPTCC meeting, which is scheduled in August or September (after the 2nd GMS Summit in July).

Dinner Hosted by ADB



**Greater Mekong Subregion
The 3rd Meeting of the Regional Power Trade
Coordination Committee (RPTCC-3)**

**7-8 April 2005
Vientiane, Lao PDR
Agenda and Programs**

Chair: Mr. Wang Jun,
Deputy Director General, Bureau of Energy,
National Development and Reform Commission, P. R. China;

Co- Vice Chair: Mr. Houmphone Bulyaphol,
Director General, Department of Electricity, Ministry of Industry
and Handicrafts, Lao PDR;

Co- Vice Chair: Mr. Urooj Malik,
Director, Infrastructure Division, Mekong Department,
Asian Development Bank

6 April 2005

Arrival of delegates¹

1700 – 1900 Kick-off meeting with Consultants (Soluziona, TEPCO/Fichtner, Yvon Hotte, ADB)

Day 1, 7 April 2005

0900 - 1200 Site seeing²

1200 – 1300 **Lunch Break**

1300 – 1330 **Registration**

1330 - 1350 **Opening and Welcome Remarks**

1. Dr. Nam Viyaketh, Deputy Minister of Industry and Handicrafts, Lao PDR
2. Mr. Wang Jun, Deputy Director General, Bureau of Energy, National Development and Reform Commission, P. R. China, Chair of RPTCC
3. Mr. James Nugent, Country Director of ADB Lao Resident Mission

1350 – 1400 **Group Photo Session**

1400 - 1500 **Session I – RETA: Study on Regional Power Trade Operating Agreement (RPTOA)**

Presentation on the Second Draft Final Report of RPTOA - General Design, Key Revisions and Changes in Recommended Actions
- by Soluziona, ADB Consultants
- Discussions

¹ The 2nd Steering Committee Meeting for **PPTA: GMS Power Interconnection Project Phase 1** will be held on **6 April 1300 – 1700 at Lao Plaza Hotel**. The meeting agenda includes (i) presentation on revised Evaluation Report Phase 1, (ii) discussion on investment modality and phase 2 schedules; and (iii) scheduling of the 3rd Steering Committee Meeting. Participants include steering committee members from Vietnam, Lao PDR, Thailand, consultants and ADB.

² A separate meeting on the proposed **GMS Power Transmission Line Project (PRC- Lao PDR- Thailand)** will be held on **7 April 0830-1200 at Lao Plaza Hotel**. Participants include delegations of Lao PDR, Thailand, PRC, WB and ADB.

- 1500 – 1515 **Coffee Break**
- 1515 - 1600 **Session I (Cont.) - Presentation on the Initial Agreement to Install Stage I – Draft Text**
 Timeframe for finalizing documents, government approval and signing during the 2nd GMS Summit in July 2005
 - by Soluziona, ADB Consultants
 - Discussions
- 1600- 1630 **Session I (Cont.) - Presentation on Proposed Institutional Arrangements**
 - by Soluziona, ADB Consultants
 - Discussions
- 1630 – 1645 **Comments/Suggestions on Consultant’s Reports**
 - by Yvon Hotte , E7 Advisor to RPTCC
- 1645 – 1745 **Session II - PPTA – GMS Power Interconnection Project Phase I**
 Presentation on the Interim Report of GMS Power Interconnection Project Phase I
 - by TEPCO/ Fichtner, ADB Consultants
 - Discussions
- 1900 – 2100 **Dinner hosted by Government of Lao PDR - Lanxang Hotel**

Day 2 – 8 April 2005

- 0830 - 0930 **Session III - Country Presentations on Proposed Framework for RPTOA (10 minutes per country)**
- 0930 - 1000 **Session IV - Presentation on GMS Energy Cooperation Projects**
 Proposed transmission line investments and feasibility studies for hydropower projects in Cambodia and Lao PDR
 - by World Bank (B. Trembath / M. Larsen)
 - Discussions
- 1000 - 1030 **Session IV (Cont.) - Presentation on Institutional Building for RPTCC – Best Practice Guidelines for Power Trade**
 - by World Bank (B. Trembath / M. Larsen)
 - Discussions
- 1030 – 1045 **Coffee Break**
- 1045 – 1115 **Session V – Feedback on Discussion and Presentations Regarding RPTOA and Institutional Development of RPTCC**
 - by Soluziona, ADB Consultants, and ADB (P. Perera)
- 1115 – 1200 **Session VI - RPTCC Work Plan**
 Discussion on Work Plan of RPTCC, and Updates/ Revisions on Priority Work Plan Areas
 - by ADB (T. Luo / A. Jude)
 - Discussions
- 1200 – 1330 **Lunch Break**

- 1330- 1430 **Session VII - Proposed GMS Power Transmission Line Interconnection between PRC – Lao PDR - Thailand**
Presentation on the draft findings of the joint feasibility study (Phase 1) and work plan for next steps
- CSG, EGAT
- Discussions
- 1430- 1500 **Session VIII- Proposed ADB Regional Technical Assistance (RETA) – Energy Sector Strategy Study**
Presentation on the Draft RETA Paper for the Energy Sector Strategy Study and Implementation Plan
- by ADB team (P. Perera / A. Jude)
- Discussions
- 1500 - 1515 **Coffee Break**
- 1515 -1615 **Session IX- Presentation by Development Partners on GMS Energy Sector Cooperation**
- by representatives of AfD, JBIC, SIDA, and others (to be confirmed)
- 1615 -1700 **Closing Session**
- Synthesis of RPTCC Discussions
- Consideration and Adoption of Proceedings
- Closing Remarks**
1. Mr. Wang Jun, Deputy Director General, NDRC, PRC
 2. Mr. Houmphone Bulyaphol, Director General, MIH, Lao PDR
 3. Mr. Urooj Malik, Director, Mekong Infrastructure Division, ADB
- 1900 – 2100 **Dinner hosted by ADB – Don Chan Palace Restaurant**³

³ Transportation will be provided from Lao Plaza to the Restaurant.

**Greater Mekong Subregion
Third Meeting of the Regional Power Trade Coordination
Committee (RPTCC-3)
7-8 April 2005
Vientiane, Lao PDR**

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