

Greater Mekong Subregion
Eighth Meeting of the Experts Group on Power Interconnection and Trade (EGP-8)
Yangon, Union of Myanmar
10 October 2002

Summary of Proceedings

Introduction

1. The Eighth Meeting of the Experts Group on Power Interconnection and Trade (EGP-8), was held in Yangon, Union of Myanmar, on 10 October 2002. The Meeting was co-organized by the Ministry of Electric Power (MOEP), Government of the Union of Myanmar, and the Asian Development Bank (ADB).

2. The participants included delegations from 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. Representatives from the World Bank, Japan Bank for International Cooperation (JBIC), Japan International Cooperation Agency (JICA), and ADB also attended. The list of participants is attached as Appendix 1.

3. The EGP-8 meeting discussed the latest developments in the power sector in the GMS countries. It also reviewed the draft guidelines for the establishment of the Regional Power Trade Coordination Committee (RPTCC) and discussed preparations for the study on the Regional Power Trade Operating Agreement (PTOA). Finally, the EGP-8 meeting discussed the requirements for printing of the final report of the Regional Indicative Master Plan on Power Interconnection in the GMS (the "Master Plan").

4. The Agenda and Program of the Meeting is attached as Appendix 2.

I. Inaugural Session for the 9th Meeting of Subregional Electric Power Forum (EPF-9) and EGP-8

5. H.E. U Myo Myint, Deputy Minister, Ministry of Electric Power, Government of the Union of Myanmar, and Mr. Khalid Rahman, Director, Infrastructure Division (MKID), Mekong Department, ADB, delivered the opening remarks.

6. H.E. U Myo Myint, most cordially welcomed the participants to the EGP-8 and EPF-9 meetings and expressed the Government's pleasure at hosting the meetings. He cited the GMS Program, which ADB initiated, as having achieved substantial progress in various sectors such as transportation, power, tourism, HRD, etc. He also noted that the GMS Program fostered mutual trust and goodwill among GMS members. He said that the first decade of the Program faced financial constraints, but added there has been increased interest by UN agencies, ASEAN and other donors. He believed the next decade would be more successful given the new strategic thrust of the Program. He gave a quick preview of the objectives of the EGP-8 and EPF-9 meetings. The discussions in these meetings, he noted, would lead to establishment of important regulatory frameworks for GMS power interconnection. He concluded by thanking the

ADB for the support to the EGP and EPF meetings and wished the meeting success in its deliberations.

7. Mr. Khalid Rahman noted that EGP-8 is at a crucial stage of the energy cooperation program, coming after 11th GMS Ministerial Meeting, during which the final draft of the IGA was initiated. He said that developing soft infrastructure, the enabling frameworks such as the IGA, is more difficult than physical infrastructure since the former requires change in mindset, goodwill and political commitment. He added that the IGA initialing and eventual signing would indicate political commitment by GMS Leaders for the GMS energy cooperation program. He explained that the EGP meeting would finalize guidelines for the establishment of the RPTCC and would also discuss the proposed study on the PTOA, including its implementation arrangements. Myanmar and Viet Nam were asked to present on their power sector policies and long term development plans. He concluded by hoping that decisions and agreements of the meeting would further advance power cooperation. He thanked the Government of the Union of Myanmar for the excellent arrangements made for the meeting.

Objectives of the Meeting

8. Mr. Prutichai Chonglertvanichkul, Assistant Director of EGAT (Thailand) and the Chairman of the EGP welcomed the participants and thanked the GOUM and ADB for jointly organizing the meeting. He cited two recent important developments in power trade in GMS. First was the signing of the power purchase agreement (PPA) between Thailand and Cambodia for power supply to three Cambodia provinces. The second was the initialing of the IGA in the 11th GMS Ministerial Conference in September 2002. He noted the follow up activities after the signing of the IGA in November, namely the establishment of the RPTCC, the first power coordinating committee in GMS and ASEAN, and the study on the PTOA. He added that country presentations during EGP would follow up on the development of the GMS power sector, and looked forward to contributions/ comments from participants.

II. Country Presentation

Latest Developments in the Power Sector

Thailand

9. Mr. Prutichai provided the update of the power development plan of Thailand. He first gave an overview of EGAT's role in selling and purchasing power for Thailand. He gave the installed capacity and demand for the five main power areas of Thailand (Northern, Northeastern, Central, Southern and Bangkok Metropolitan). Total installed capacity was at 23,754.8 MW. He provided the levels of power generation by type of fuels and total energy sales for FY 2002. Major customers were the industrial and business sectors. He then presented a chart of EGAT's peak generation requirements for FY 1997- 2002 and daily load curves on peak day (FY 1995- 2002). New demand forecasts from 2003-2016 were presented, showing annual growth rates of around 6%. He showed EGAT's power development plan objectives, resource allocation/ generation policy, and transmission system plan. He explained prospective interconnections between Thailand, and Lao PDR and Cambodia.

10. Mr. Rahman asked whether the shift in peak occurred as a result of policy. Mr. Prutichai explained that introduction of demand side management measures and time of use tariffs encouraged industry to move operations to off peak hours.

11. Mr. Chavalit Pichalai, Director, Power Division, NEPO, discussed the past and present management set up for the energy sector in Thailand. He showed an organizational chart of the Ministry of Energy and the five departments under it. He discussed the process of deregulation, which from 1992-2002 focused on introduction of competition at the generation level. He also discussed the restructuring under the current plan, including the privatization of EGAT and establishment of power market and regulatory body. He then discussed the regulations on power purchase from small power producers (SPPs) and showed growing levels of purchase from SPPs. He also discussed power purchase from Independent Power Producers (IPPs). Power purchase from neighboring countries was also discussed, comprising MOUs with Lao PDR, PRC, and Myanmar. Power sale to Myanmar was expected in 2005, while MOU for sale to Cambodia was signed recently. He then proceeded to discuss past power demand, monthly peak and monthly energy demand for Thailand.

12. Based on economic target growth rate of 4.6% per year from 2002 to 2006, peak and energy demand forecasts were shown. He then showed new electricity supply arrangements, comprising separate generation and transmission, and private retail companies, overseen by an independent regulator. The Energy Industry Act (EIA) created to regulate electricity and natural gas supply industries, and currently awaiting Government endorsement, was expected to take effect at end of 2003. He then enumerated the points of concern for the electricity supply industry (ESI) reform, notably promotion of competition and price stability. He then gave the future directions for privatization including tasks to be undertaken. Among conclusions cited were the lessons learned from California's restructuring program.

13. Mr. Houmphone (Lao PDR) asked about prospects for signing of the PPA for Nam Theun 2. Mr. Chavalit explained the efforts of both EGAT and NEPO to facilitate the signing of the PPA for NT2.

Lao PDR

14. Mr. Houmphone Bulyaphol, Director General, Department of Electricity, MIH, presented first the basic facts about Lao PDR. He cited the power sector's achievements for the year 2000-2001, in terms of installed capacity, energy produced and exports. Present facilities included 644 MW of generation capacity and transmission/ distribution lines totaling 4,837 km. He compared the levels of domestic sales of power in 1997 and 2000. He showed figures on the growth of power generated, exports, and domestic consumption. He showed electrification rates for various regions (Northern, Central 1 and 2, and Southern). He then discussed the four power sector policies and the corresponding government initiatives in support of each policy. On policy #2, to promote power for export to generate government revenues, initiatives cited were to develop power trade with GMS members, to maximize IPP development, and to develop transmission infrastructure for regional power trade. Government policy on foreign investment in the power sector was presented, and various investment incentives were cited, such as low income and profit tax, tax holidays, repatriation of capital/ dividend, etc.

15. Demand forecast up to 2010 was presented based on expected annual growth rate of 10%. He showed planned generation up to 2010, which would amount to 441 MW (installed

capacity) from seven projects. He then showed the transmission line projects up to 2010 for the various regions, including their commissioning years. Organization chart of power sector agencies showed the roles played by the ministries in terms of PPA negotiation, power sales, generation, etc. Update on the progress of the Nam Theun 2 project was given. He wished the PPA with EGAT could be signed in November 2002. Shareholder agreement showed the following shares for NT2: EDF 35%, EdL 25%, EGCO 25% and Italian Thai 15%.

16. Dr. Thein Tun (Myanmar) asked about the extent of exports and legislation to promote IPPs. Mr. Houmphone discussed the efforts made by Lao PDR government to negotiate MOUs with other governments and the private sector.

Cambodia

17. Mr. Chan Sodavath, Acting Executive Director, EdC, gave the organizational structure for the management of the power industry, comprising the Electricity Authority of Cambodia (regulator), Ministry of Industry, Mines and Energy (policy, planning and standards) and the Ministry of Economy and Finance (shareholder). He enumerated the constraints on power sector development, which included poor financial performance, weak investment planning, and weak human resource base. He explained the policies for power sector development. Demand and supply balance was provided. He discussed a map that indicated the plan for generation and transmission development, in relation to the load centers and generation potentials (hydro) in the various regions.

18. Mr. Rahman asked which agency signs the PPA for government. Mr. Sodavath replied that signing of PPA would be between the IPP and EdC (developers and the utility). Mr. Rahman asked whether there had been any study to evaluate demand at lower tariffs. Mr. Sodavath replied that the focus of power sector strategy was on price reduction and the projected demand took into account the expected gradual reduction in the power supply cost and tariffs.

Power Sector Policy and Long Term Development Plan of Myanmar

19. Dr. Thein Tun, Director General, MOEP, started with brief geographic/ topographic country profile in relation to challenges in the development of infrastructure, such as long transmission lines from power sources to load centers. He cited the structural changes made in the power sector, beginning with the establishment of the Ministry of Electric Power in 1997. He showed an organizational chart of the Ministry and its three departments. The policy for the sector called for hydropower as long term source of energy for domestic use and export. He gave the strategies required to fulfill the country's energy requirements. He showed the total installed capacity at 1,204.5 MW and the main power sources (gas turbine, hydro, steam and diesel). He showed a map of connections between hydro and gas turbine stations. He showed tables on hydropower and gas turbine projects, developed before and after 1988.

20. He briefed on the present situation of the national grid system, which showed dominance of gas turbine/ combined cycle power plants (45% of total capacity) and the various efforts for harnessing gas fields. Demand forecast for 2000- 2011 was given using the high, base and low growth cases. The power system expansion program comprised 16 hydropower projects with commissioning dates from 2003 to 2006. Photos of progress of various hydropower projects under construction, including the schedule of project implementation for generation and

transmission projects, were also shown. He then discussed the resources for power generation from hydro and coal. He gave the objectives of the 30-year long-term generation expansion plan. He then explained that the mini-hydropower and border area development initiatives as electrification solutions for remote areas. Most of financing came from government funds or supplier's credit from neighbors, since ODA sources have been absent for 12 years in this sector. Reforms have also been introduced to promote private sector participation/ foreign investment in the sector. He cited export-oriented projects of Tasang, Hutgyi, and Tamanthi, which have attracted foreign firms. He concluded by stressing the need to further attract the private sector.

21. Mr. Zhang Yunzhou (PRC) asked about the progress of some projects, which would involve joint development with PRC. Dr. Tun reviewed progress of projects included in the power development plan.

22. Mr. Rahman asked about breakdown of costs between generation and transmission. Dr. Tun replied that the estimate for generation is \$687 million, and for \$410 million for transmission. Mr. Prutichai asked about tariffs in Myanmar and Dr. Tun replied that for domestic consumers the rate is 2.5 to 25 kyats per unit (kwh), while for industry it is 25 kyats per unit. Mr. Jona asked about electrification rate and Dr. Tun replied that the power development plan had an ambitious target of 90-100% by 2030 from the current electrification rate of 15%. Mr. Chavalit asked about the power shortage and Dr. Tun replied that power requirements are already being met for the Yangon district.

Issues and Lessons on the Power Sector Strategy of Viet Nam

23. Mr. Nguyen Van Vy, Deputy Director, Planning Department, EVN, commenced with a brief country profile and proceeded with the power demand and supply situation. He showed charts on electrification and capacity and energy generation in 2001. Capacity totaled 8,478 MW, which mainly came from hydropower plants followed by gas turbine and coal fired plants. He then discussed the master plan study of the power sector, which is currently under Master Plan V.

24. Power generation plan included development of hydro, gas and coal potentials, IPP/ BOT/ joint venture sources and imports. He then presented the required length of transmission for 530 kV, 220 kV and 110 kV lines. He explained each of the required interconnection lines with Cambodia, and Lao PDR, which would also allow power trade with Thailand. He showed a map on the Trans-ASEAN gas pipeline. He then showed the investment requirements for generation and transmission for the period 2001-2010.

25. U Soe Myint Lwin (Myanmar) asked about the variations in projected share of IPPs versus EVN's and whether there were limitations in the IPP participation. Mr. Vy noted the various initiatives under the power development plan that encouraged IPP and private sector participation in power. Mr. Rahman asked about the directions for power deregulation and the development of the legal framework for this. Mr. Vy replied that deregulation would be pursued for improving efficiency.

III. Establishment of Regional Power Trade Coordination Committee (RPTCC)

Discussion/ Review of Guidelines for Establishment of RPTCC

26. Ms. Diane Minogue, resource person, WB, noted the following possible points for discussion: Introduction (shorten); use of “Interim” RPTCC; role of the PTOA Project Manager; relationship between EPF/EGP to RPTCC and Working Groups; role of national coordinators/utility CEOs; financing and other support; and others identified by EGP. She cited the three key roles of the PTOA Project Manager, which are related to coordination of PTOA drafting processes, liaison with higher levels, and production of draft final PTOA. She added that the “interim RPTCC” is the transition phase between existing formulation stage and implementation of PTOA. As to financing of activities during the drafting/ transition stage, it was proposed that each country finances its costs of participation in RPTCC/ EGP/ national level work, with donor assistance where necessary. She suggested that the home institution of the PTOA Project Manager could act as Secretariat. Ms. Minogue then presented the possible institutional framework for drafting the PTOA, composed of the RPTCC, Vice Chair, national coordinators, and various working groups. She also showed the two options for the institutional framework of the IGA, one with the broader-based EGP, the other with working groups.

27. *Discussions on RPTCC guidelines.* Mr. Prutchai explained that assuming the EGP-8 and EPF-9 meetings adopted the RPTCC guidelines, then the EPF as presently constituted could become the RPTCC. Mr. Khang (Viet Nam) opined however that countries should decide on the composition based on required level of representation from ministries. He added that membership to RPTCC must be nominated officially and recognized by government to ensure consistent representation. Mr. Feng Qinghu (PRC) noted that the RPTCC provided for in the IGA would be formed only when the IGA is ratified by at least three countries. Ms. Minogue added that flexibility is required in constituting the RPTCC prior to this point. Mr. Daovong supported Mr. Feng’s view, and suggested that EPF be tasked as acting RPTCC.

28. The meeting summarized the agreements as follows:
- a. That RPTCC would be formally constituted upon entry into force of IGA (i.e., IGA is ratified by at least three countries);
 - b. That upon IGA signing, the EPF and EGP could act as base to form RPTCC and working groups (tasked to determine first steps for establishing power trade arrangements);
 - c. Change the term “Country” to “Party”;
 - d. To appoint three representatives to the RPTCC (one from ministry responsible for power, one from the power utility and the third at the discretion of government);
 - e. Flexibility in naming the power trade coordinator, who would coordinate activities and serve as link between RPTCC, PTOA working groups and governments;
 - f. To retain the first paragraph of introduction (since it provides background on the RPTCC);
 - g. To drop the “Interim” from RPTCC (since guidelines suggest continuous evolution towards the RPTCC, despite IGA providing for “Interim”);
 - h. RPTCC chair to be rotated annually;
 - i. Vice chairperson to serve as PTOA Project Manager and would not be rotated until draft PTOA has been agreed;
 - j. Home institution of PTOA Project Manager to provide administrative support for drafting RPTCC during drafting of PTOA;

- k. ADB was asked to consider continuing funding support for RPTCC activities especially since EPF would continue discharging its other functions (Lao PDR);

29. Ms. Minogue proposed to incorporate the changes in the guidelines, which would be circulated for review by the GMS members, prior to adoption by EGP-8 meeting of these guidelines. Mr. Feng proposed, and the EGP meeting accepted, to form a core group (with one member from each country) to review the revised RPTCC guidelines simultaneous to the EGP meeting. The core group continued its discussions up to 6:30 p.m. and re-convened at 8:00 a.m. the following day. The revised RPTCC guidelines (attached, Annex 3) were subsequently presented to and adopted by EGP-8.

Printing of Final Report on Master Plan

30. Mr. Jong-Inn Kim, MKID, ADB, presented sections of the Final Report, which could be printed consisting of volumes I, II, III-A, and IV. He noted the consultant's recommendations, which pertained to reservations for printing of Vol. III-B. For these he listed the sub-sections which may be printed with reservations, and those which may not be printed on account of confidentiality and other issues. He enumerated the proposed corrections in the case of the report on Cambodia. He sought each member's views on the proposed sections for printing and provided EGP members with a detailed table of contents of the sections that are candidates for printing.

31. All GMS members agreed to disclose all the information contained in the appendices of the Master Plan Final Report. He said if there is a need to correct the information in the main text, the members are requested to provide specific necessary reason to ADB by 30 October 2002.

32. Lao PDR informed the meeting that the high voltage transmission line from Jinghong project (via the Northern part of Lao PDR) was not included in the study of benefits to Lao PDR and should therefore be considered in the subsequent Jinghong line study.

Discussion for Study on PTOA

33. Mr. Kim recalled the previous discussions for the study on PTOA, namely on objectives and scope. He said the focus of the session would be on the implementation arrangements and tentative schedule, for which he showed a chart detailing the arrangements between national coordinators, the Steering Committee (EPF or Interim RPTCC), PTOA Project Manager, stakeholders, a team of counterpart staff in each country, and advisory panel. He showed the tentative implementation schedule (attached as Appendix 4) starting with the expected TA approval in May/ June 2003. The EGP members agreed on the proposed implementation arrangement. Mr. Kim asked for EGP members' comments on the terms of reference distributed in the folder by 15 November 2002.

34. EGP members suggested use of term "coordinator" instead of "national coordinator" and one of these coordinators could be the PTOA project manager.

IV Closing Session

Consideration and Adoption of Proceedings

35. The EGP members reviewed the draft minutes and after incorporation of suggested changes, the body therefore approved the minutes of the EGP-8 meeting.

Closing Remarks

36. Mr. Prutichai thanked the Government of the Union of Myanmar and ADB for the support, and the EGP members for their contributions. He hoped to see the EGP members again in the next meeting. He proposed that the next meeting be held in Cambodia (although the date has not been set yet) and this would be subject to confirmation by Cambodian Government.

37. Mr. Rahman noted that it had been a good day under the able stewardship of Khun Prutichai. He said that the fruitful discussions yielded agreements on a number of critical issues needed to move GMS energy cooperation forward. He thanked the participants for their contributions, and expressed his appreciation to the Government of the Union of Myanmar for hosting the meeting.