

Summary of Discussions
Fifth Meeting of the Focal Group (FG-5) of the
Regional Power Trade Coordination Committee (RPTCC)
Da Nang, Viet Nam, 21 November 2007

1. **Objectives.** The FG-5 meeting was held to undertake the following: (i) confirm the PWG-4 agreements and recommendations on the priority RPTCC studies and activities; (ii) discuss updates on assistance to power trade of development partners; and (iii) brief GMS representatives with the latest in private technology for transmission development.

2. The FG-5 meeting was held in Da Nang, Viet Nam and was co-organized by the Electricity Regulatory Authority of Viet Nam (ERAV) and the Asian Development Bank (ADB). It was attended by FG nominees of the six GMS member countries, as well as by representatives of ADB, Agence Francaise de Developpement (AFD), Japan International Cooperation Agency (JICA), Swedish International Development Cooperation Agency (SIDA), World Bank (WB), and Soluziona. AREVA T&D was invited to make a technical presentation on the interconnected grids. Attached is the agenda and program of the meeting (Annex 1) and the list of FG-5 participants (Annex 2).

Session I: Opening Session

3. Mr. Anthony Jude, Principal Energy Specialist, Infrastructure Division, Southeast Asia Department (SEID), ADB, welcomed the participants and explained that the FG-5 meeting will first review the discussions on the master plan report and the proposed MOU on the power trade Roadmap and confirm the agreements for their finalization. This would be followed by the presentation of the summary of agreements on the studies on performance standards and transmission regulation, the training plan and database/ ICT strategy. The afternoon session would be devoted to updates of GMS power programs by various development partners, to be followed by a technical presentation of AREVA T&D. The latter is meant to provide GMS countries a wider variety of technical alternatives in developing the regional transmission grid. He wished the meeting fruitful outcomes and success.

Session II: Continuation of Discussion on Priority Studies, Training, Database, Master Plan, and MOU on the Roadmap; Confirmation of Next Steps (Agreements Summary attached, Annex 3)

4. **Performance Standards, Transmission Regulation.** Soluziona (Mr. Castrillo) presented the following agreements on the priority studies on performance standards and transmission regulation:

Performance Standards: (i) all GMS countries agreed to proceed with the proposed option 2 of the Performance Standards, which the consultants will carry out in consultation with ADB; (ii) Soluziona to send documents to ADB corresponding to the achieved milestones; and (iii) Soluziona to prepare a project plan/proposal for the next steps pertaining to the development of the preliminary regional performance standards.

Transmission Regulation: (i) to highlight that the Transmission Regulation Study will be part of Stage 2 of the MOU/Roadmap; and (ii) tasks to be undertaken in Stage 1 to reach

Stage 2 pertaining to the Transmission Regulation Study should be clearly explained in the MOU/Roadmap.

5. **Training Program, Regional Power Database/ ICT Strategy.** The agreements on the training program and database/ ICT strategy are as follows:

Training: (i) identify priority training activities for all countries based on feedback received during and after the 3 training sessions; and (ii) explore feasibility of accommodating training requests of countries in the current TA.

Database/ ICT Strategy: (i) database & website hardware and software shall be deployed in China Telecoms; (ii) CSG will provide System Admin user only in-charge of System Administration; system enhancements, error resolution, and other activities associated with program scripts are not included in the responsibilities of the CSG System Admin; (iii) CSG will confirm and finalize hardware (HW) and software (SW) quotations; (iv) Soluziona will purchase HW & SW with CSG's assistance; (v) HW and SW installation in China Telecom; and (vi) Soluziona will install database & website.

6. **Discussions.** ADB said it would look into the estimated cost of each training course proposed for inclusion in the training program; ADB noted that the WB is implementing some training courses which could address some of the countries' training requirements and will coordinate this with the WB.

7. **Regional Master Plan, MOU on Roadmap.** Soluziona (Mr. Karacsonyi) presented a summary of agreements on the regional master plan and MOU on the power trade Roadmap. The highlights are as follows:

Master Plan: (i) GMS countries will send their detailed comments to the consultants and ADB; (ii) the consultant will counter-check comments received with countries (e.g. comment of ERAV on costs of coal); and (iii) include a comments matrix in the updated report to show how comments were addressed in the current report.

MOU on Power Trade Roadmap: (i) focus on stage 0 and stage 1 including brief descriptions (remove stages 2 onwards); (ii) describe the milestones for both stages including the detailed tasks for each stage to be undertaken but shown in a separate table; (iii) final clean-up the MOU and send to ADB; (iv) GMS countries to be given a revised version of the MOU; and (v) meeting to be held in Bangkok in December 2007 to confirm the MOU.

8. **Discussions.** ADB clarified that the agreements on finalizing the draft MOU on the Roadmap were reached during one-on-one discussions held by ADB with GMS representatives late yesterday and early today. All GMS representatives indicated their availability for the special meeting to confirm the MOU on the Roadmap on 14 December 2007 in Bangkok.

Session III: Update on Development Partners' Assistance

9. **SIDA.** Mr. Goran Haag, Programme Manager, Department for Infrastructure and Economic Cooperation, discussed the structure of SIDA support to GMS power trade consisting of technical assistance projects, expert secondment, advisory services and partner financing in power projects. He explained the rationale for Swedish support for GMS power trade, and noted

that Sweden could bring its experiences gained from power trade in Nordic countries and from Sweden's support for power trade in south and east Africa and the Nile basin. He discussed the existing and planned transmission links from the Nordic countries to continental Europe and UK, and said that the open Nordic market requires infrastructure development and rules harmonization. He said SIDA would like to ensure that environmental aspects are properly addressed in the GMS power trading and that stakeholders especially the poor are given a strong voice in the process.

10. **Discussions.** ADB provided additional clarifications on the activities that would be undertaken under the new SIDA TA support for GMS power trade and noted that ADB is still in the process of preparing a road map for implementing the SIDA-financed TA. ADB noted that the discussions were held with SIDA on the possibility of moving the functions of the SIDA TA along with the secondee (power interconnection expert) to the ADB Thailand Resident Mission (TRM) in Bangkok, where this team could work more closely with the RPTCC/ FG/ PWG members. ADB will also assign a headquarters staff to ADB TRM to coordinate these activities. As ADB is also involved in interconnection projects, the SIDA secondee will also be involved in assisting with processing of these interconnection projects for financing. The GMS representatives supported this proposal. Mr. Haag provided materials on Nordic grid codes and will look into the possibility of inviting Nordic Power Pool resource persons to future RPTCC meetings. He noted the possibility of working with the GMS Environment Operations Center based in Bangkok.

11. **AFD.** Mr. Herve Breton, Senior Task Manager expressed AFD's satisfaction with the work undertaken so far under the AFD-financed TA. He said that AFD is exploring, on a very preliminary basis, the possibility of providing additional TA resources to examine how climate change concerns could be addressed in the power trade initiative. The GMS representatives supported the idea for this new initiative and ADB would shortly discuss the elements of the draft concept paper with AFD, which could be presented in the next PWG/ FG meeting.

12. **JICA.** Mr. Yasuhiro Yokosawa, Leader of the JICA Study Team, Tokyo Electric Power Company (TEPCO), provided an outline of the project study on power sector regional cooperation in Southeast Asia. He discussed the project's objectives, target countries (Cambodia, Lao PDR, Thailand and Viet Nam), and components. He said the study would look into the benefits of interconnected systems (through reduced investments in reserve margins and savings in fuel costs), and benefits from system reliability improvement. He noted the input data to be used in the simulation exercise and the various discussion points of the study such as status of sector reforms, organization of system operation, power development plan, etc. The project will utilize JICA facilities for capacity building (in transmission and generation) located in Lao PDR and Viet Nam.

13. **Discussions.** Thailand inquired whether the JICA study would overlap with Soluziona's master plan study. Mr. Hayashi (JICA) clarified that while there are common elements in the two studies, the JICA study is for JICA's internal reference to identify potential regional power cooperation projects for future support. JICA found it necessary to do the study to reflect substantial changes in GMS countries' power development plans since three years ago when the last transmission system study was undertaken. Mr. Jude noted that this was a duplication of the work undertaken in preparing the regional power master plan where potential interconnection projects will be identified for priority financing. He also noted that when JBIC and JICA merge in 2018, there will be better coordination on such activities within the GMS to maximize on the limited resources.

Session IV: Technical Presentation- AREVA T&D

14. Mr. Michel Burtin, AREVA T&D Country Chief Representative (Viet Nam) introduced Mr. Ayob Maher of AREVA T&D Systems Business Unit to present on the role and importance of HV interconnections and how to ensure stability and balance in EHV transmission. Mr. Maher discussed the basic principles of energy power flows, the role of interconnections, and their operational challenges, illustrating examples of energy trading in Europe and the problems encountered (power outages and overload).

15. Mr. Maher discussed the elements of modern energy management systems in terms of data collection and processing and prediction (risk analysis) and the mechanics of HVDC systems, which could provide efficient solutions to cross-border bottlenecks and enhance power flow efficiency through reduced fossil fuel use and carbon emissions. He discussed AREVA's research and development program to assess, via statistical analysis, the resistance of power infrastructures against external disturbances, and identifying vulnerable areas of the grid, among others. He concluded by stressing that a large number of modern power systems are currently operated at critical operation margins and that there are available industrial solutions capable of mitigating risks and optimizing the flow of energy.

16. **Discussions.** Mr. Maher noted that while the price of HVDC is more than for AC connections, this price should be assessed in terms of HVDC's larger capacity, flexibility and other advantages.

Session VI: Closing Session

17. **Summary of Agreements.** Mr. Jude gave a quick summary of the meeting highlights covering agreed next steps for the studies on performance standards and transmission regulation, training program, database and ICT strategy, regional master plan and the MOU on the Roadmap for power trade. Development partners provided updates on their respective programs in support of GMS power trade development while AREVA gave a comprehensive presentation on the requisites of energy balance and stability in interconnections.

18. **Consideration and Adoption of Proceedings.** Mr. Jude announced the distribution of the draft summary of proceedings for review by the body. After the FG members reviewed the draft summary of proceedings, and after incorporation of suggested changes, the body therefore approved the minutes of the FG-5 meeting *ad referendum*.

19. **Closing Remarks.** Mr. Jude thanked the participants for their contributions to the discussions and the representatives of development partners for updating on their respective projects in support of regional power trade. He thanked AREVA T&D for the technical presentation that could provide useful reference for future regional interconnections. He expressed satisfaction at the important agreements reached by the PWG/ FG meetings and thanked the Viet Nam government for support in hosting the meeting. He informed that Cambodia would host the next PWG/ FG meetings at a date to be announced later.