

Summary of Discussions
Special Meeting of the GMS Subregional Energy Sector Forum (Special SEF)
Bangkok, Thailand, 18-19 March 2009

1. **Objectives.** The Special SEF meeting was held to refine and finalize the GMS Road Map for Expanded Energy Cooperation, for endorsing it to the 15th GMS Ministerial Meeting to be held in Thailand in June 2009. Formulated in line with the recommendations of the recently-completed GMS Energy Strategy Study, the Road Map was earlier presented at the SEF meeting in Ho Chi Minh City, Viet Nam and at the GMS Senior Officials' Meeting (SOM) in Bangkok, Thailand, both held in November 2008. These meetings agreed to further review and hold internal consultations on the Road Map. The special meeting of the SEF will incorporate the results of the internal review of the Road Map by the GMS countries.
2. Since the Road Map is one of the key items expected to be endorsed at the 15th GMS Ministerial Meeting, the Special SEF meeting will specifically undertake the following: (i) discuss the countries' views on the Road Map, to guide in refining and readying the Road Map for final review of the countries by mid-April 2009 and for endorsement by GMS Ministers at the 15th GMS Ministerial Meeting; and (ii) plan the next steps with respect to the Road Map, such as formulating the detailed proposals and identifying possible partnerships in implementing these.
3. The Special SEF meeting was held in Bangkok, Thailand on 18-19 March 2009 and co-organized by the Energy Policy and Planning Office (EPPO) of Thailand, and the Asian Development Bank (ADB). It was co-chaired by Mr. Chavalit Pichalai, Deputy Director General, EPPO Thailand, and Mr. Yongping Zhai, Lead Professional (Energy), Energy and Water Division, Southeast Asia Department, ADB. It was attended by representatives of the six GMS member countries, as well as by representatives of ADB and Environment Operations Center (EOC). Attached is the agenda and program of the meeting (**Annex 1**) and the list of Special SEF participants (**Annex 2**).

Opening Session

4. Mr. Chavalit Pichalai, Deputy Director General, EPPO of Thailand, warmly welcomed the participants to Thailand and noted the current efforts to expand cooperation to other energy subsectors resulting from last year's energy strategy study. He said the Road Map would be reviewed, revised and finalized for endorsement at the 15th GMS Ministerial Meeting in Thailand in June 2009. He cited the emerging areas of cooperation that would mitigate global warming and lower carbon emissions of the subregion, such as renewable energy, clean coal technology, energy efficiency and conservation, and nuclear energy. He said the Thai Government's policy emphasis is on exploration and development of local energy resources, e.g., biomass, solar, and wind energy, which will reduce dependence on fossil fuels and enhance agriculture incomes. He cited the need for cooperation in technology exchanges such as in clean coal technology experience of PRC and said that detailed priority projects in the Road Map provide opportunities for technology sharing. He expressed confidence that GMS energy cooperation would be rewarded with attainment of the GMS vision of sustainable and equitable development. He thanked ADB for its support and wished everyone successful deliberations and a pleasant time in Thailand.
5. Mr. Yongping Zhai of ADB welcomed the participants and thanked Thailand for the hospitality and excellent meeting arrangements. He explained the meeting's special purpose, e.g., to refine and finalize the GMS Road Map for Expanded Energy Cooperation for

endorsement to the 15th GMS Ministerial Conference in June 2009. He recalled the review process that the Road Map underwent since it was first presented at the SEF-2 in Ho Chi Minh City in November last year. He said comments received from the countries since then provided the basis for the changes reflected in the revised Road Map, which will be presented later. Discussions would also focus on the Road Map's linkages with ADB's Climate Change Implementation Plan (CCIP) and the GMS Core Environment Program. Later on the meeting would tackle the process and timeline for clearing the Road Map for endorsement by the countries, and the next steps to further refine it, such as the development of detailed project proposals starting with the three identified projects whose concept papers would also be presented later. He wished everyone a productive meeting.

Country Comments on the GMS Road Map for Expanded Energy Cooperation

6. Mr. Zhai gave a quick presentation of the revised Road Map (**Annex 3**) based on the comments given by the GMS countries since the SEF-2 meeting in November 2008. He recalled the rationale for expanding GMS energy cooperation and the recent progress and pending issues, and showed the comments received from the countries he used as basis for further revising the Road Map. He outlined the revised Road Map's goal and strategic objectives and policy framework, and presented the detailed work plan listing the priority proposals for 2009-2015. Mr. Tito Tranquilino, Consultant, ADB, briefly discussed the general concepts of three priority project proposals and invited comments on the possible scope, specific activities and financing plan for these projects. Mr. Zhai requested the participants' views on the general framework of the Road Map, and their views on inclusion in the Road Map of cooperation projects in coal and nuclear energy.

7. **Discussions.** The meeting raised the following points on the revised Road Map:

- a. Lao PDR representative noted that the revised Road Map reflects the views of the countries and is now better structured and more focused and achievable. He suggested that the framework explicitly mention cooperation between energy and the transport, agriculture and tourism sectors. He said that small and medium enterprises (SMEs) should be the focus of the Road Map in promoting private participation in energy development.
- b. Thai representative agreed with Lao PDR on the proposed SME focus of the Road Map as far as private sector participation is concerned. He noted that Carbon Capture and Storage (CCS) technology is still in the pilot stage and that the Road Map should instead focus on improving efficiency of existing plants in order to reduce carbon emissions. He suggested for the Road Map to include the sharing of community best practices in biofuels, as well as in increasing awareness of energy efficiency in the residential sector.
- c. Cambodia representative noted the Road Map's similarity with its Strategic Planning and Management (SPM) document for the energy sector, developed as a result of the Johannesburg Earth Summit in 2002. He noted Cambodia's low electrification rate (20%) which needs to be improved, and the priority being accorded to development of renewable energy for off-grid power systems.
- d. Viet Nam representative noted that the revised Road Map is consistent with Viet Nam's national policies. He further noted the need for appropriate financial incentives for promoting renewable energy. He said Viet Nam is looking at nuclear energy development within 10-15 years but conceded that complex issues needed to be dealt

with. He proposed that PRC share its experiences in overcoming initial barriers in nuclear energy development.

- e. PRC representative proposed special attention to enhancing the poor's access to modern energy and thus promote poverty reduction. He suggested that in developing best practices to improve efficiency of thermal plants, mention should be made to promote clean coal technology in general, instead of just IGCC specifically. In regional energy planning, he suggested cooperation through exchange of information and best practices in each country's five-year plans. He noted that PRC has increased its target share of renewable energy from 10% to 15% of total energy; in this case renewable energy includes natural gas and nuclear energy sources.
- f. Myanmar representative reiterated its earlier comments that the Road Map projects should be complementary to the ASEAN energy cooperation program. He said Myanmar would like to include promotion of Clean Coal Technology as well as development of coal-fired power plant in the Road Map and looks forward to PRC sharing its experience in this field. Myanmar currently has no nuclear electrification plan, but will support SEF's suggestion to include study of nuclear in the Road Map for future consideration.

Mainstreaming Climate Change in the GMS Road Map

8. Mr. Jun Tian, Advisor, ADB, presented on ADB's efforts to mainstream climate change in its core development operations (**Annex 4**). He presented ADB's Strategy 2020 in relation to climate change, the core elements of climate change mitigation and adaptation, and the financing tools, initiatives, projects and actions/ activities for mitigation and adaptation. He discussed the climate change related funds, knowledge development activities and the collaboration among development partners in this area, and explained the mechanics of the Climate Investment Funds (CIF).

9. Mr. Pavit Ramachandran of the EOC explained the scope of mainstreaming climate change (CC) in the GMS energy sector (**Annex 5**). He explained the climate change risks and energy sector vulnerabilities, showing the cost of potential energy investments that could be affected, power infrastructure included. He discussed the possibilities for climate proofing investments, and cited efforts at CC adaptation at the energy sector level, and at converting challenges into opportunities such as exploring co-benefits of CC mitigation (such as between energy and transport) and off-grid renewable promotion for livelihood development. He summarized the GMS CC portfolio and entry points for intervention such as climate change funds (CCF), the climate change implementation plan (CCIP), the VPOA, country strategic plans and other GMS initiatives (e.g., SEF, WGA).

10. **Discussions.** Thailand representative inquired about access to CIF and asked about examples of climate change responses of developed countries. EOC representative cited the dike system in the Netherlands to stem flooding from storms and the efforts of the US in Louisiana in the wake of Hurricane Katrina. Mr. Zhai asked whether there are EOC estimates of potential CC impacts on hydrology resources for power generation. EOC representative explained that CC will change the intensities and distribution of rainfall which will affect hydrology estimates for hydropower planning and development. The meeting also discussed the extent to which energy investments should be adjusted or retrofitted to account for potential CC impacts. EOC representative said it would be important to account for a project's life span and location in examining CC risks.

Country Presentations on Recent Developments in the Energy Sector (Country Presentations, Annex 6)

11. **Cambodia.** Mr. Victor Jona of the General Department of Energy, Ministry of Industry, Mines and Energy (MIME) presented the current status of energy development in Cambodia, consisting of the overview of Cambodia's energy policy, structure of its energy sector, and its energy efficiency and conservation efforts. He discussed Cambodia's efforts under the ASEAN energy cooperation framework, and presented Cambodia's potential renewable energy (RE) sources (solar, wind, hydro, biomass, biogas, and biofuel). He discussed the national policy on rural electrification by renewable energy, detailed the implementation of specific projects in this area, and showed projections of oil consumption.

12. **Discussions.** Mr. Zhai inquired about the principle followed in energy pricing. Cambodia representative said oil pricing is cost-based while social tariffs for the poor are in force in the power sector.

13. **PRC.** Mr. Gao Shixian, Assistant Director General, Energy Research Institute, National Development and Reform Commission (NDRC), provided an overview of the energy sector in PRC, showing the trend in energy output, consumption and power generation, and 2007 energy balance. He discussed the mechanism for energy administration and future energy policies consisting of enhancing energy infrastructure, optimizing the energy structure, and strengthening international energy cooperation. He showed efforts in the development and management of coal, oil and natural gas, renewable energy (e.g., hydro, wind, solar, biomass/biofuels), and energy efficiency and technology. He expounded on PRC's programs for clean coal use, RE development, and nuclear power development.

14. **Discussions.** Mr. Zhai noted the significant development of wind power in PRC and asked how PRC managed to exceed its target in this area. PRC representative said the incentive for wind power is through a combination of subsidy (including for technology research) and regulation (e.g., allowing wind power for grid connections). In response to Lao PDR representative's query, PRC representative noted that biomass material is composed of rice husks and other agricultural wastes.

15. **Lao PDR.** Mr. Khamso Kouphokham, Chief of Executive Planning Division, Department of Electricity, Ministry of Energy and Mines, provided an overview of indigenous energy production and final energy consumption of Lao PDR. He briefed on the government's development strategies for renewable energy (e.g., biofuels, and small and mini-hydro), rural electrification (using solar technology), and oil and gas. He discussed Lao PDR's participation in energy programs of ASEAN and ACMECS, and Finland's bilateral assistance program.

16. **Discussions.** On ADB's query about the subsidies for RE, Lao PDR representative clarified that the tariff structure receives subsidy only for the maintenance portion.

17. **Myanmar.** U Htin Aung, Deputy Director General of the Energy Planning Department, Ministry of Energy, discussed the policy and institutional structure of the energy sector. He showed the development areas for the oil and gas sector, and its status as exporter of gas by pipeline. He noted the development efforts in coal and electrification by renewable energy. He said the biofuel program is the effort of joint public-private participation and is funded by the private sector.

18. **Thailand.** Mr. Samerjai Suksumek, Acting Director of the Bureau of Power Policy, EPPO, updated on the developments in Thailand's institutional and policy framework for energy, comprised by its energy policy under the current government, energy industry regulation, and strategies to enhance energy security. He then discussed the progress in Thailand's energy programs, namely (i) natural gas supply management, (ii) oil supply management, (iii) alternative/ renewable energy strategy, plan, actions and targets (including for nuclear energy), and (iv) energy efficiency improvement. He discussed the mechanics of demand side management by bidding mechanism.

19. **Discussion.** Thai representative clarified that the target for RE would depend on the potential for the particular RE source. Thai representative also explained the mechanics of the energy conservation fund, which is used to finance RE projects. Lao PDR representative asked about the key to success of development programs, and Thai representative said that firm guidance and clear directions from policy makers are important success factors. Myanmar observed that time is now ripe to develop RE sources, in anticipation of oil prices rising in the future.

20. **Viet Nam.** Mr. Nguyen Anh Tuan, Chief, Power System Development Department, Institute of Energy, provided an overview of the energy sector covering the production, final consumption, power generation, generation fuel mix, and demand forecast. He discussed the potential and current use for various types of RE sources such as small hydropower and solar energy. He presented the primary energy supply capability and energy demand-supply balance, and discussed the various considerations in energy development planning and implementation. He gave the policy and strategy for RE development and the energy issues and challenges that should be addressed.

21. **Discussion.** Thailand representative asked whether low power tariffs act as disincentive to investors. Viet Nam representative responded that low power tariffs indeed pose constraints to RE development.

22. **General Comments on Presentations.** Mr. Tian of ADB shared his understanding of PRC's success in promoting RE, having been a former official of NDRC. He shared that the major constraint in RE is the high cost of such technologies, and PRC's thrust is to lower the cost, particularly for wind turbines and super-critical power technologies, through its focus on research and development, and reduction in manufacturing cost. He explained the tariff policy which allowed rate increments for the amount of power obtained from RE sources. The rate increases are blended in the tariff structure and not subsidized by government. He discussed the new obstacles that emerged after the take-off of wind power sources, such as the risk of disruptions due to natural upheavals, and the changes in value-added taxation which will have the effect of reducing the incentive to local governments to develop RE sources. He informed of the experiment to follow an order of preference for dispatch of energy to the grid, which would be RE first, then nuclear, followed by gas and then finally coal.

23. Thai representative it may be difficult to impose higher cost to the consumer for energy obtained from RE sources, especially if the cost increase will be used to pay for the RE equipment manufactured in another country.

Integration of Country Comments in the Revised Road Map/ Plenary Discussions on Revisions/ Discussion of Next Steps for the Road Map

24. Mr. Zhai cited the importance of information sharing in GMS energy cooperation as demonstrated in the meeting discussions on RE development. He raised additional questions to the countries to clarify further the points made during the country presentations. In Thailand's case, it was explained that the subsidies paid to RE sponsors are financed out of levies on energy sales.

25. Thai representative noted the need to clarify the benefits from particular RE sources, which could be used as benchmarks when determining the viability of RE development. Mr. Lefevre informed that a number of studies have yielded benefits estimates for various RE sources, in relation to Kyoto Protocol requirements, and these estimates are available at the web. Mr. Lefevre will provide ADB with the links to the websites containing such information. Mr. Zhai said that development of benefits benchmarks for various RE sources in the GMS, and comparing these to the costs of RE development, could be a good area of study under the Road Map. The output of such study will facilitate the conduct of feasibility studies for RE projects.

26. The meeting discussed the risks in implementing market-based energy pricing. Mr. Tian discussed the problems with full market deregulation experienced by the power grids in California and the Northeastern areas of the US, because it led investors to work the grid system to its maximum technical capacity which later led to power outages. Viet Nam representative explained the regulatory and market practices adopted for the Viet Nam power system, which were designed to safeguard against such problems. PRC representative explained the discussions in PRC on the power sector unbundling issue. Lao PDR representative informed of CDM-supported projects in Lao PDR.

27. Mr. Zhai asked the countries to share examples of successful public-private partnerships in energy projects. He further suggested that for future SEF meetings, the country presentations include specific cases that could be shared with the countries. He cited the possible cases for specific countries as follows: (i) for PRC, the success factors in wind power development, the policy, funding, grid connections, and technical issues; (ii) for Thailand, the workings of incentive packages such as escrow funds; (iii) for Cambodia, the efforts to sustain donor funding such as maintenance fees charged to consumers; (iv) for Lao PDR, its experience in securing CDM support, which could provide feedback to the donor community in streamlining the CDM process; and (v) for Viet Nam, its experience in power sector restructuring and benefits it derives from the wholesale competitive market. Mr. Zhai said this information sharing in SEF meetings would be included as a mechanism under the Road Map. The GMS representatives suggested additional topics that could be shared during SEF country presentations. Cambodia representative requested Lao PDR to present on the lessons on public-private partnerships from Nam Theun 2. Lao PDR representative would like to learn more about market based energy pricing in PRC.

28. Mr. Zhai said that a further refinement to the Road Map is the introduction of performance targets. He noted that in the country presentations, certain targets have already been mentioned by the countries, such as for rural electrification coverage and share of RE to total energy. The targets already adopted by the countries were listed as follows:

- a. PRC- RE development from 8% (2008) to 10% (2010) and 16% (2020); Nuclear power to increase to 5% of capacity by 2020;
- b. Cambodia- Target is to achieve 100% village electrification by 2020, and 70% of households with access to electricity by 2030;

- c. Thailand- Target alternative energy to comprise 20.3% of total energy by 2022, and energy saving target is set at 10.8% in 2011;
- d. Lao PDR- Target biofuel consumption share to total energy mix to 10-30% in 2020 and to increase percentage of households with access to electricity to 90%;
- e. Myanmar- Rural electrification and promotion of biogas are undertaken on area-specific basis;
- f. Viet Nam- Share of RE to total energy to increase from 3% in 2010 to 5% in 2020, biodiesel use to increase from 1% of gasoline demand in 2015 to 5% in 2025, rural access to grid to rise to 100% in 2020.

29. Mr. Zhai announced circulation of the revised Road Map (**Annex 7**) incorporating the comments made during the meeting. He asked the countries to submit additional comments, if any, within two weeks. He informed of the immediate next steps with respect to the Road Map, such as submission to the GMS National Coordinator for internal government clearances and review/ endorsement by the GMS Minister. He noted further steps needed such as formulating the detailed proposals and identifying possible partnerships in implementing these projects.

30. Lao PDR representative suggested including in the Road Map, an initiative on energy stockpiling and strategic reserves for enhancing energy security. He also suggested that the Road Map explain the implementation procedure for advancing progress of priority projects. Viet Nam suggested indicating the timeline for each project in the work plan. Mr. Zhai said that a section called "Implementation" will be added in the Road Map. This section will describe the further steps to be taken in formulating the concept notes and detailed proposals, the lead roles of GMS countries in the development of each proposal (leading to enhanced GMS ownership of the projects), and the identification of possible partnerships in financing and implementing the projects.

Session VI: Closing Session

31. **Synthesis of Discussions/ Agreements.** Mr. Zhai was pleased to note the meeting's substantive discussions and agreements on the Road Map. He reiterated his request for the countries' additional feedback on the proposed Road Map within two weeks.

32. **Consideration and Adoption of Proceedings.** Mr. Zhai announced the distribution of the draft summary of proceedings for review by the body. After the SEF members reviewed the draft summary of proceedings, and after incorporation of suggested changes, the body therefore approved the minutes of the Special SEF meeting *ad referendum*.

33. **Closing Remarks.** Mr. Zhai thanked the participants for their substantive contributions to the meeting. He thanked the Thai Government for successfully hosting the meeting.