

**SIZING UP THE GRID:
How the Mekong Power Grid Compares Against the
Policies of the Asian Development Bank**

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The Asian Development Bank (ADB) is promoting the development of a regional power grid and electricity trading system in mainland Southeast Asia fueled primarily by hydropower. This initiative threatens to undermine the fragile Mekong River ecosystem that millions depend on for their livelihoods and survival. This paper examines the ADB's development of the initiative and its compliance with Bank policies and strategies.

The ADB envisions that China's Yunnan province, Burma and Laos – where hydropower potential is huge and community opposition is stifled – will generate cheap, reliable and environmentally sustainable power for growing markets in Thailand and Vietnam. An ADB-financed master plan recommends building transmission lines to connect a dozen proposed hydropower projects to these countries. This includes the controversial Tasang Dam in Burma, the Jinghong and Nuozhadu dams on the Mekong mainstream in China and the Nam Theun 2 Dam in Laos. Hydropower projects are also recommended for development on Cambodia's Se San River, China's Panlong River and rivers in central and southern Laos, among others.

By promoting the Mekong power grid, the ADB is lending considerable institutional support for hydropower development in the region. The ADB is encouraging governments to press ahead with ambitious hydropower plans and rallying public and private investors to finance projects. ADB policies state that such development should proceed through an open and transparent process with full public participation and full consideration of impacts to communities and natural resources. However, in this instance this is not the case.

Despite its grand scale and potentially far-reaching impacts, the ADB is leading the multi-billion dollar Mekong power grid initiative through a very poor process of development. This process has violated the ADB's own safeguard policies on energy, water and indigenous peoples. It has also contravened the ADB's poverty reduction strategy, strategic environmental framework for the GMS and the recommendations of the World Commission on Dams. Some of the ADB policy violations are summarized below.

- The ADB has not consulted with affected people, project beneficiaries or other members of civil society in the region. They have been excluded from the development of this initiative.
- Ethnic minorities have also been excluded from the planning process. Impacts to ethnic minorities have not been assessed.
- The ADB has systematically ignored the initiative's social and environmental impacts and has not proven that the initiative meets ADB environmental standards.
- Impacts to fisheries resources have not been thoroughly assessed.
- The ADB has failed to assess the cumulative impacts of the Mekong power grid or the hydropower projects it would support.
- The economic benefits of the initiative are marginal and have not been verified.

In addition, contrary to the international best practices standards set by the World Commission on Dams, the Bank has not comprehensively assessed the full range of options available to meet the energy needs of the Mekong region.

This paper includes background on the Mekong power grid, an analysis of how the ADB's development of the initiative complies with Bank policies and strategies, and recommendations for the ADB.

1. BACKGROUND

Mekong Power Grid Initiative

Known formally as Power Interconnection and Trade in the Greater Mekong Subregion, the Mekong power grid is one of the flagship initiatives of the ADB's Greater Mekong Subregion (GMS) program, which is supposed to encourage cooperation and economic growth in the six countries sharing the Mekong River basin.¹ As well as creating a regional grid, the initiative would establish a system for regional power trade and encourage private investment in the power sector. Other institutions involved include the World Bank, Japan Bank for International Cooperation (JBIC) and the Association of Southeast Asian Nations (ASEAN).

According to the ADB, the initiative will enable countries to reduce national investments and power reserves, provide a more reliable supply of electricity, reduce operational costs, reduce greenhouse gas emissions and increase consumers' access to the cheapest and most environmentally friendly sustainable source of electricity in the subregion.²

The ADB has played a leading role in facilitating this initiative. The Mekong power grid was conceived in an ADB-sponsored energy sector study for the region completed in 1994 by Norconsult, one of Norway's largest hydropower consulting firms. Since then, the ADB has convened discussions among top Mekong government officials and commissioned studies to guide its development. In 2002, the ADB facilitated the signing of an Inter-Governmental Agreement on Regional Power Trade at a summit of GMS leaders. This agreement, viewed as a key milestone in the initiative's development, committed the Mekong governments to establishing a regional power market and created a high-level leadership body to coordinate the implementation of regional power trade.

In April 2003, the ADB approved a technical assistance grant to help GMS members prepare the regional power trade operating agreement. Three months later, the ADB released the *Indicative Master Plan on Power Interconnection and Trade in GMS Countries*. This master plan, also conducted by Norconsult, examined the technical and economic aspects of the proposed initiative and recommended connecting twelve proposed dams in Burma, China and Laos to the grid. In late 2003, the ADB approved a loan to finance power interconnection between Cambodia and Vietnam, and approved technical assistance grants for the Nam Theun 2 Hydropower Project and for power interconnection between Thailand and Vietnam (via Laos).

¹ The GMS includes Burma, Cambodia, Laos, Thailand, Vietnam and Yunnan Province of China.

² Asian Development Bank, "Technical Assistance for the Study for a Regional Power Trade Operating Agreement in the Greater Mekong Subregion," technical assistance report, April 2003, pp. 1-2.

2. POLICY ANALYSIS

This section examines whether the ADB's development of the Mekong power grid has complied with the Bank's energy, water and indigenous peoples policies; operations manual; poverty reduction strategy; and strategic environmental framework for the GMS. This analysis is based on information publicly available from the ADB.

2.1. Lack of Participation and Consultation

"ADB will promote participation in the management of water resources at all levels and collaborate in fashioning partnerships between governments, private agencies, NGOs, and communities." – ADB water policy.³

"The Bank will encourage the efforts of governments to promote consultation with beneficiaries on proposed energy sector development plans and projects and their implications to the beneficiaries." – ADB energy policy.⁴

"The Bank will encourage a sense of ownership of Bank-assisted projects on the part of stakeholders (e.g., beneficiaries, the DMC government, the executing agency, and the people adversely affected by the project); this sense of ownership will be facilitated by adopting a participatory development process in which the stakeholders are provided opportunities to actively influence and share control over the project and decisions that affect them at all stages of the project cycle, beginning with project identification." – ADB operations manual.⁵

The importance of the participation of civil society in formulating strategies and managing natural resources is stressed throughout the Bank's water and energy policies. The Bank's operations manual explicitly states that participatory development processes will be adopted which allow stakeholders to influence decision-making throughout project development cycles. Despite these stipulations, members of civil society have been excluded from participation in the development of the Mekong power grid initiative over the last ten years. This includes electricity ratepayers in Thailand and Vietnam, those who would be impacted by the proposed transmission lines and hydropower projects and other members of civil society in the region. Their ability to participate in decision-making has been hampered by the lack of transparency and openness surrounding this project. The ADB has not disseminated information or convened discussions with these stakeholders on the initiative.

For most of the last decade, discussion and debate on the Mekong power grid has been largely restricted to meetings of high-ranking government officials; ADB, World Bank and aid agency officials; and hydropower industry representatives.⁶ The initiative was proposed in a 1994 ADB-funded subregional energy sector study completed by Norconsult. Since then, discussions have taken place in two primary forums, the ADB-sponsored Electric Power Forum and the Experts Group on Power Interconnection and Trade. The Electric Power Forum was set up as an advisory body to promote regional power sector development and consists of two members from each of the six GMS countries (one from the government agency responsible for energy

³ Asian Development Bank, *Water for All: The Water Policy of the Asian Development Bank*, 2001, page 30.

⁴ Asian Development Bank, *The Bank's Policy Initiatives for the Energy Sector*, May 1995, paragraph 58.

⁵ Asian Development Bank, "Incorporation of Social Dimensions in Bank Operations," Operations Manual Section 47, January 7, 1997.

⁶ Summary of Proceedings, Meetings of the Experts Group on Power Interconnection and Trade and Electric Power Forum, 1995-2002. Available at

<http://www.adb.org/Documents/Events/Mekong/Proceedings/default.asp#power>

policy matters and the other from the largest national power utility). The Forum has met annually since its first meeting in Burma in 1994.⁷ The Experts Group on Power Interconnection and Trade was set up by the ADB to develop detailed work programs to help implement regional power interconnection and trade. The experts group, which has met annually since 1998, is comprised of senior energy officials from the Mekong governments. Both of these groups have excluded members of civil society and thus their participation in substantive discussions on the Mekong power grid.

Basic information on the Mekong power grid and its potential benefits and costs has not been presented to the public and nongovernmental stakeholders. Information is confined primarily to lengthy technical reports written in English, including the ADB-financed energy sector study and master plan. This lack of translation of important documents into regional languages and failure to create accessible summary materials has largely prevented regional civil society from learning about and engaging in debates on this initiative.

The process for collecting data for the recently completed master plan was limited to reviewing existing reports and meetings with government officials. According to the master plan, a Norconsult specialist visited the GMS countries in February and early March 2001 and met with officials and relevant ministries and power supply operating units to give the specialist "a comprehension of the situation and to exchange ideas on possible future development."⁸ Drafts of the master plan were discussed at three subsequent meetings of the Experts Group on Power Interconnection and Trade held in 2001 and 2002.⁹ It does not appear that drafts or development plans were presented or discussed with electricity ratepayers, affected people or other members of civil society.

Although the ADB's water and energy policies and operations manual stress the importance of participation, the ADB has not encouraged or promoted the participation of civil society in the development of the Mekong power grid initiative. The Bank is moving forward with technical assistance grants and project loans related to the initiative. Meanwhile, the supposed beneficiaries of the initiative, those likely to be impacted and other members of civil society have been shut out from the development process, and effectively left in the dark.

2.2. Indigenous Peoples Not Engaged in Development Process

"Initiatives should be compatible in substance and structure with the affected peoples' culture and social and economic institutions, and commensurate with the needs, aspirations, and demands of affected peoples. Initiatives should be conceived, planned, and implemented, to the maximum extent possible, with the informed consent of affected communities, and include respect for indigenous peoples' dignity, human rights, and cultural uniqueness." – ADB indigenous peoples policy.¹⁰

"In development efforts that affect indigenous peoples, it is necessary that ADB integrate concern for indigenous peoples into each step of programming, project processing, and policy

⁷ "South Asia Growth Quadrangle Cooperation in the Energy Sector," paper by S. Chander, Asian Development Bank Senior Project Engineer, 2000.

⁸ Norconsult, *Indicative Master Plan on Power Interconnection in GMS Countries*, Volume IV, Institutional and Regulatory Arrangements, June 2002, page 1-1.

⁹ Summary of Proceedings, Fifth and Sixth Meetings of the Experts Group on Power Interconnection and Trade, Greater Mekong Subregion, 2001 and 2002. Available at <http://www.adb.org/Documents/Events/Mekong/Proceedings/default.asp#power>

¹⁰ Asian Development Bank, *Policy on Indigenous Peoples*, 1999, policy objectives, page 17.

development cycles." – ADB indigenous peoples policy.¹¹

The ADB's indigenous peoples policy states that special attention must be given to development initiatives that impact indigenous peoples. The Mekong power grid and the hydropower projects that the grid would support are likely to impact ethnic minorities living in the region. Ethnic minorities are most likely to be displaced by hydropower projects in the region, which are often in upland areas. Transmission lines are likely to cut through ethnic minority lands, displacing people and destroying their farmlands, fields and ancestral homelands.

The ADB's policy on indigenous peoples is applicable to ethnic minority groups in the Mekong region. The Bank defines indigenous peoples as "groups with social or cultural identities distinct from the dominant or mainstream society. Indigenous peoples is a generic concept that includes cultural minorities, ethnic minorities, indigenous cultural communities, tribal peoples, scheduled tribes, natives, and aboriginals."¹²

Thus far, ethnic minority representatives have been excluded from the planning process. They have not had an opportunity to voice their concern, provide their consent or discuss alternatives. Concern for indigenous peoples has not been integrated into each step of programming, project processing and policy development regarding this initiative.

The potential impacts of hydropower projects and transmission lines on the survival of ethnic minorities was recognized in the 1994 energy sector strategy.

"Disruption of these communities by intrusion of other groups and infrastructure development programs can be destructive to the survival of these communities if they are unacculturated to these changes...As hydropower projects tend to be located in higher mountainous areas many of these projects will be located within ethnic minority areas. Transmission lines may also traverse these areas. Hydropower planners need to clearly identify impacts that these projects may have on the livelihood of any ethnic minority groups."¹³

Ten years ago, it was recognized that the Mekong power grid and its associated hydropower projects could threaten the survival of ethnic minority groups. Since that time, the ADB has moved forward with the power grid initiative by commissioning an indicative master plan and approving several technical assistance grants related to the initiative. Yet despite this forewarning in the energy sector study, the ADB has not conducted a cursory survey to determine which ethnic minority groups are likely to be impacted and to what extent their culture, livelihoods and social and economic institutions would be affected by this initiative. This also contradicts a provision in the indigenous peoples policy stating that "[s]trategies and approaches to development that affect indigenous peoples must include clear mechanisms for accurate, objective analysis of their circumstances."¹⁴

Despite organizing ongoing discussions with high-ranking government officials about the Mekong power grid, the ADB has not consulted with or encouraged governments to consult with members of ethnic minority groups. By failing to consult with ethnic minorities, the ADB has fallen short of the objectives of its indigenous peoples policy, which says that plans should be conceived, planned and implemented to the maximum extent possible with the informed

¹¹ Asian Development Bank, indigenous peoples policy, operational approaches, page 20.

¹² Asian Development Bank, "Indigenous Peoples," Operations Manual Section 53, December 21, 2000.

¹³ Norconsult, *Subregional Energy Sector Study for Asian Development Bank - Final Report*, November 1994, page 3-16.

¹⁴ Asian Development Bank, indigenous peoples policy, page 17.

consent of affected communities. If the ADB pursues the Mekong power grid in an ad-hoc fashion without integrating concern for ethnic minority groups into the initiative or engaging them in the development process, the ADB is likely to jeopardize the cultural survival of these groups, as forewarned in the energy sector study.

2.3. Environmental and Social Concerns Not Guiding Decision-Making

"[E]nvironmental sustainability...has to be in the forefront of all decision-making and development in the DMCs and in ADB initiatives at all levels...sector development policies and regional plans must include environmental protection to ensure effective resource management within each DMC and across the region." – ADB Poverty Reduction Strategy.¹⁵

"The Bank should support regional trade in electricity between neighboring countries from projects where this meets environmental standards and is cost-effective for all parties." – ADB energy policy.¹⁶

"Increasingly, the Bank will emphasize the need for DMCs to incorporate systematically environmental considerations as well as social considerations (such as resettlement and rehabilitation) and the associated costs and constraints in their energy planning models so that project costs adequately reflect the environmental and social costs." – ADB energy policy.¹⁷

In its energy policy and poverty reduction strategy, the ADB states that environmental and social considerations will be at the forefront of decision-making and energy planning, with these considerations factored into project costs. The energy policy states specifically that the Bank should support regional power trade where this meets environmental standards. In spite of these policy statements, the Mekong power grid is going forward without an adequate assessment of its environmental impacts and without proof that it meets environmental standards.

Two of the pivotal studies guiding energy development in the Mekong region are the ADB-commissioned 1994 energy sector study and the master plan. These influential studies have focused on technical and economic issues related to energy sector development, while failing to adequately address the social and environmental impacts of such activities. Nevertheless, these studies have influenced policymaking on power interconnection and trade, led to the formation of regional advisory groups and are guiding ADB technical assistance activities.

According to Norconsult, the energy sector study "should probably have been updated and made more complete on subjects such as socioeconomic implications and benefits of expanding the GMS power trade."¹⁸ While the energy sector study devotes one chapter to the general environmental and socioeconomic impacts of thermal and hydropower development, it does not adequately examine the impacts of specific projects recommended for development. Norconsult categorized 54 hydro projects in terms of low, moderate, high or severe environmental impact. This was assigned based on reservoir size, area of forests and agricultural land flooded, number of people resettled, degree of flow regulation and presence of ethnic minorities. Some projects were classified although no environmental impact assessments were available on which to base these simplistic classifications. Norconsult acknowledged that

¹⁵ Asian Development Bank, *Moving the Poverty Reduction Agenda Forward in Asia and the Pacific: The Long-Term Strategic Framework of the Asian Development Bank (2001-2015)*, February 2001, paragraph 28.

¹⁶ Asian Development Bank, energy policy, page 31.

¹⁷ Asian Development Bank, energy policy, page 21.

¹⁸ Norconsult, 2002, Volume IV, page 7-10.

environmental information was lacking for most hydropower projects and that assessments “should not be assumed to be a definitive appraisal...”¹⁹ During the eight years which elapsed between when the energy sector study and master plan were completed, no additional environmental and social impact assessments were carried out.

The ADB defined the terms of reference for the master plan so narrowly that social and environmental concerns, which the ADB stated should guide decision-making, were not investigated. Instead, the master plan focused on examining the technical and economic feasibility of power interconnection in the Mekong region.²⁰ Norconsult noted that the terms of reference for the master plan provided little room to elaborate on the social impacts of the Mekong power grid initiative.²¹ Consequently, analysis of the social and environmental impacts of hydropower projects proposed in the plan is limited to statements about the number of people who would be displaced and a graph comparing resettlement with mean energy costs.

The master plan did not assess the total number of people who would be resettled or impacted by the proposed generation and transmission projects nor did it assess the potential impacts faced by ethnic minority groups. The report did not examine the potential impacts of the transmission corridors on communities, forests or nature reserves.

Norconsult points out several times in the report that possible environmental impacts of the initiative are uncertain and that further studies should be conducted. The company admits that the study level of the generation projects considered in the master plan is varying and that “possible environmental implications are quite uncertain.” It also recommends that findings “need to be verified in more detailed studies before investment decisions are made.”²² The master plan also states that “[h]ow to deal with environmental and socio economic matters should be subject to clarification in connection with implementation of the master plan. These tasks include legislation as well as an adapted governance structure.”²³

Despite these warnings, the ADB is irresponsibly moving forward with the Mekong power grid initiative before more detailed studies have been completed and appropriate governance structures have been put in place to cope with such development.

Some of the dangers inherent in moving forward without adequate governance structures and regulatory systems to resolve conflicts in the basin are apparent in the case of the Yali Falls Dam in Vietnam. This project was built in 2000 without consultation with potentially affected people living in either Cambodia or Vietnam. By altering the hydrology of the Se San River, the dam has destroyed rice fields and vegetable gardens; led to the drowning deaths of 36 people and many livestock; destroyed fishing gear; and impacted fish populations for tens of thousands of Cambodians living downstream in Ratanakiri and Stung Treng provinces. Many have also suffered from stomach ailments, eye infections and skin rashes. Many of those displaced by Yali

¹⁹ Norconsult, 1994, page 2-50.

²⁰ Asian Development Bank, *Regional Indicative Master Plan on Power Interconnection in the GMS*, Summary information on technical assistance grant, March 8, 2000. The scope of the TA “will include to (i) assess electric power demand and review the generation and transmission expansion plans in the member countries; (ii) update power grid interconnection earlier, based on the revised demands and supply projections; (iii) formulate an indicative transmission master plan to promote regional power trade; and (iv) identify the institutional and regulatory issues that need to be addressed to properly implement the plan.

²¹ Norconsult, 2002, Volume IV, pp. 7-10 to 7-11.

²² Norconsult, 2002, Volume III-A, page 8-5.

²³ Norconsult, 2002, Volume IV, page 7-13.

Falls do not have stable incomes or adequate cultivable land and suffer from shortages of food and drinking water. Lack of a regulatory system has meant that affected people have no legal recourse to seek redress for impacts suffered due to the project. The transboundary impacts have further complicated the issue. Although people have not received compensation for their suffering, the Vietnamese government has started construction work on a second dam on the Se San River.

By failing to broadly define the terms of reference for the master plan to assess the Mekong power grid's potential social and environmental impacts, the ADB is violating its energy policy and poverty reduction strategy. By implementing the master plan without assessing its full impacts and without having adequate grievance mechanisms in place to address these impacts, the ADB is gambling with the future health and well-being of communities living throughout the region.

2.4 Impacts to Fisheries Resources Not Assessed

"The Bank finances many projects that impinge on water resources in the irrigation, drainage, hydropower, and other sectors. It is important that, in formulating such projects, their effects on fisheries resources be thoroughly assessed, and that any potential negative impacts on those resources be identified, investigated, and eliminated or mitigated. The Bank's environmental assessment requirements and review procedures require that every project be reviewed from an environmental point of view, and this process ensures that impacts on fisheries, among other resources, will be assessed." – ADB's fisheries policy.²⁴

The ADB's policy on fisheries states that the impacts of Bank projects on fisheries must be thoroughly assessed and eliminated or mitigated. However, the ADB has not fully assessed the impacts of the Mekong power grid or the hydropower projects it would support. These projects are likely to have significant impacts on fisheries and subsequently on the livelihoods of people who depend on them.

The master plan recommends the development of the Jinghong and Nuozhadu dams on the Upper Mekong in China. These dams are part of a planned cascade of eight dams on the Upper Mekong which are likely to severely disrupt the Mekong's flood-drought cycle and block the flow of sediment downstream. It is predicted that these impacts will lead to a major decline in fisheries in the basin, including possible extinction of some species.

The master plan also recommends construction of the Nam Theun 2 Hydropower Project in Laos. This project would divert water from the Theun River to the Xe Bang Fai River, a Mekong tributary on which over 120,000 people depend for fishing, gathering wild vegetables and irrigating their rice fields. A 2001 livelihood survey of people living in the Xe Bang Fai basin detailed the complex fish migration patterns which people intimately depend on for their livelihoods. According to the report, wild capture fisheries "are clearly one of the most important livelihood resources in the Xe Bang Fai basin."²⁵

Despite the potential impacts to fisheries of these dams and others recommended in the master plan, no assessments have been carried out in accordance with the ADB's fisheries policy.

²⁴ Asian Development Bank, *The Bank's Policy on Fisheries*, September 1997, page 18.

²⁵ Bruce Shoemaker, Ian G. Baird and Monsiri Baird, *The People and Their River: A Survey of River-Based Livelihoods in the Xe Bang Fai River Basin in Central Lao PDR*, Canada Fund, Vientiane, November 15, 2001.

2.5. Cumulative Impacts Not Considered

"Potential hydropower projects will be evaluated in the context of integrated water resource management of the entire watershed and take into consideration, to the extent possible, the cumulative impacts of possible future reservoir developments." – ADB energy policy.²⁶

The Bank's Strategic Environmental Framework project was designed to ensure that infrastructure investments in the GMS are "environmentally and socially sustainable, and that environmental and social aspects, as well as cumulative impacts, are considered at an earlier stage in the planning process than currently takes place." – Strategic Environmental Framework.²⁷

The Bank is proceeding with the Mekong power grid although no assessment of the cumulative impacts of planned hydropower projects in the Mekong basin has been completed. This violates the Bank's energy policy and contradicts the Bank's Strategic Environmental Framework in the GMS project.

Despite these stipulations, the ADB-financed master plan envisages the construction of 10 key power interconnection projects, associated hydropower projects, substations and other infrastructure projects without considering the cumulative impacts of these projects. Nor does it consider how these impacts may exacerbate impacts of projects already built or those currently under construction. The cumulative impacts of the proposed hydropower projects have not been assessed, including impacts to fisheries, water and sediment flow, downstream communities and plant and animal biodiversity. The repercussions of displacing people from their lands and the subsequent impact on natural resources has also not been considered.

Strategic environmental assessment is also highlighted in the Bank's guidelines on environmental assessment. The Bank states that "[c]umulative impacts are important because impacts of individual projects may be minor when considered in isolation, but significant when the projects are viewed collectively."²⁸ Despite this, the ADB recently stated that for the Mekong power grid "[e]ach project would be evaluated on its own merit," and "once ADB's involvement is decided on the project would have to be designed to meet ADB guidelines and policies."²⁹

Further, Bank policies state that hydropower projects will be examined in an overall context of integrated water resource management (IWRM). The Bank's water policy states that the "ADB will help the DMCs introduce IWRM and undertake comprehensive water resource assessments in river basins as the basis for future water investment projects." IWRM is defined as

"a process to improve the planning, conservation, development, and management of water, forests, land, and aquatic resources in a river basin context, to maximize economic benefits and social welfare in an equitable manner without compromising the sustainability of vital environmental systems."³⁰

²⁶ Asian Development Bank, energy policy, page 23.

²⁷ Asian Development Bank and Stockholm Environment Institute, "Strategic Environmental Framework for the Greater Mekong Subregion: Integrating Development and Environment in the Transport and Water Resource Sectors," Executive Summary, undated.

²⁸ Asian Development Bank, "Strategic Environmental Assessment," undated, available at http://www.adb.org/documents/guidelines/environmental_assessment/strategic_environmental_assessment.pdf

²⁹ Letter to International Rivers Network from Jong-Inn Kim, Project Engineer, Asian Development Bank, Mekong Department, Infrastructure Division, September 22, 2003.

³⁰ Asian Development Bank, water policy, page 19.

This sentiment is echoed in the Bank's Strategic Environmental Framework, which states that "[t]he ADB should only consider financing hydropower development projects if compatible with an endorsed river basin management plan."³¹

It does not appear that the Bank has considered the power grid initiative in an overall context of integrated water resource management. To achieve this, the Bank should work with institutions such as the Mekong River Commission to assess the condition of natural resources in the basin; determine how and the extent to which people use and depend on these resources for their livelihoods; analyze options for development of these resources for agriculture, energy, water, transport and other uses; and assess the potential impacts of these development options.

2.6. Cost-effectiveness Not Proven

*"The Bank should support regional trade in electricity between neighboring countries from projects where this meets environmental standards and is cost-effective for all parties." – ADB energy policy.*³²

While the ADB says consumers will benefit from access to the "cheapest and most environmentally friendly sustainable source of electricity in the GMS," the project's economics are questionable.³³ It has not been proven that the Mekong power grid is cost-effective or that consumers in electricity-importing countries will benefit from cheaper electricity rates.

The scenario recommended for development in the master plan is estimated to save about \$900 million compared to a non-grid option. However, Norconsult admits the savings are only on the order of 1-2 percent, meaning that grid development will have minimal impacts on consumer electricity tariffs. The generation and transmission system is estimated to cost \$43 billion. In the master plan, Norconsult states

"...it is observed that although the differences between the scenarios are considerable in absolute terms, they are in the order of magnitude of 1-2% in relative terms. Thus, even if existing tariffs to final consumers were cost-based today (which they are not), the selection of scenario would not have major impacts on average GMS consumer tariffs for electricity. In practice, the impact for exporting countries may be lower tariffs if these countries choose to use import revenues to subsidize electricity, while the impact for importing countries probably will be minor."³⁴

Furthermore, Norconsult stated that cost estimates used in the master plan and the initiative's potential environmental impacts were uncertain. Thus, Norconsult concluded further studies should be carried out before investments in the grid are made. In the recommendations section of the master plan, Norconsult wrote

"It should be noted that the study level of the generation projects considered is varying. Therefore, the plant characteristics, construction cost estimates and possible environmental implications are quite uncertain. This is important for consideration of potential risks associated with power interconnection investments.

³¹ Asian Development Bank and Stockholm Environment Institute, page 9.

³² Asian Development Bank, energy policy, page 31.

³³ Asian Development Bank, "Intergovernmental Agreement on Power Interconnection and Trade," media briefing note, Phnom Penh, November 3, 2002.

³⁴ Norconsult, 2002, Volume III-A, page 6-25.

The findings of this Indicative Master Plan on Power Interconnection in the GMS Countries need to be verified in more detailed studies before investment decisions are made."³⁵

In a 2002 meeting of the Experts Group on Power Interconnection and Trade, a Norconsult representative admitted that there were questions about the quality of the data used to estimate the costs of the limited and extended power cooperation scenarios in the master plan.³⁶

The ADB's energy policy stipulates that the ADB should support power trade that is cost-effective for all parties. However, the cost-effectiveness of the initiative has not been proven. The master plan explicitly states that there are uncertainties regarding the initiative's cost estimates and environmental implications and that further studies should be completed before investment decisions are taken. The ADB should heed this advice and suspend investment decisions on the Mekong power grid until its cost-effectiveness has been proven.

3. World Commission on Dams

The recommendations of the World Commission on Dams represent current international best practice standards for water and energy development planning. The WCD was established by the World Bank and IUCN – The World Conservation Union to assess the past performance of dams and issue guidelines for future energy and water development. When the WCD report was released in 2000, the ADB expressed its support for the WCD's recommendations.³⁷

The ADB's support for the WCD's recommendations was further incorporated into a 2000 ADB energy policy paper, which stated that

*"For new hydropower projects, the approach recommended by the World Commission on Dams will be pursued."*³⁸

As the Mekong power grid would support the development of a dozen proposed hydropower projects, the WCD's recommendations apply to the ADB in its development of this initiative. The analysis below, however, shows that the ADB has not followed one of the WCD's most important principles.

3.1 Comprehensive Assessment of Energy Options Not Completed

"Planning approaches that take into account the full range of development objectives are used to assess all policy, institutional, management, and technical options before the decision is made to proceed with any programme or project." – World Commission on Dams strategic priority.³⁹

One of the most important principles in the WCD report calls for the comprehensive assessment of options before decisions are taken to proceed with any program or project. The WCD also states that "Assessing options should start early in the planning process and can be

³⁵ Norconsult, 2002, Volume III-A, page 8-5.

³⁶ Summary of Proceedings, Seventh Meeting of the Experts Group on Power Interconnection and Trade, Chiang Mai, Thailand, May 29-30, 2002.

³⁷ Letter to Kader Asmal, Chair of the World Commission on Dams, from Asian Development Bank President Tadao Chino, December 22, 2000.

³⁸ Asian Development Bank, *Energy 2000: Review of the Energy Policy of the Asian Development Bank*, 2000, page 55.

³⁹ World Commission on Dams, *Dams and Development: A New Framework for Decision-Making*, London: Earthscan Publications, November 2000, page 221.

incorporated into master plans and sector plans using strategic impact assessments and other planning tools."⁴⁰

The ADB is implementing the proposed Mekong power grid and trade initiative although no comprehensive analysis of energy options has been conducted to prove that the construction of a power grid fueled by new hydropower projects is the best option for meeting the region's energy needs. The master plan and energy sector study did not comprehensively analyze the full range of energy options, including demand-side management and renewable options, as detailed below. Despite this, the ADB is continuing to promote the development of the power grid and its associated hydropower projects as the most environmentally sound and economically viable option.

3.1.1 Renewables, decentralized options

The ADB has not assessed the viability of large-scale renewable energy options or decentralized small-scale energy systems for meeting the growing energy needs of Thailand and Vietnam. The 1994 energy sector study focused exclusively on the potential development of thermal (coal, oil, gas) and hydropower projects for connection to a regional power grid. The master plan included an overview of power sectors in Mekong countries. The options examined for Thailand included hydropower imports from Laos, China and Burma, combined cycle gas plants and thermal plants using imported coal. Norconsult briefly mentioned that the Electricity Generating Authority of Thailand is involved with solar, wind, geothermal, fuel cells and solar water heating projects. However, Norconsult states that these resources will not likely make major contributions to the Thai energy supply by the year 2020, dismissing these options without assessing or quantifying their potential.⁴¹

The master plan states that options available for future generation in Vietnam include hydropower, coal and gas, geothermal heat and nuclear power. Hydropower and thermal options are investigated in detail, with tables listing potential projects and basic information on their generating capacities and locations. The report mentions that Vietnam aims to develop more renewable sources of energy in the future and that 200 MW of geothermal-based generation are included in Vietnam's power development plan up to 2020. However, no details are given about the total estimated geothermal potential in Vietnam or of specific projects that may be implemented. No other renewable or decentralized energy options are considered for Vietnam. This is inadequate treatment given the more detailed analyses of hydropower projects proposed for implementation.⁴²

Recent developments indicate that renewable technologies have considerable potential for meeting energy needs in Thailand. A 1998 study commissioned by Thailand's National Energy Policy Office found that biomass-fired power plants had the potential to generate 3,000 MW of economically viable power. According to the Thai energy expert Detcharut Sukkamnoed, the technical potential of biomass in agro-industrial factories is as high as 7,000 MW. The Thai energy minister announced last August that the government hopes to raise electricity production from renewable energy to 8 percent of total national consumption. One option highlighted for reaching this goal is allowing local communities to own power plants using renewable energy sources.⁴³

⁴⁰ World Commission on Dams, 2000, pp. 222-223.

⁴¹ Norconsult, 2002, Volume III-A, page 2-3.

⁴² Norconsult, 2002, Volume III-A, pp. 2-19 to 2-22

⁴³ "Thailand Government Aims to Save Energy Costs Worth 3.1 Trillion Baht," *Bangkok Post*, August 29,

In Vietnam, the use of small decentralized systems such as mini-hydro plants and wind generators, large-scale photovoltaic power systems and biogas plants also have significant potential.⁴⁴ Any energy strategy for the GMS should take into account the potential of renewable options not only in Thailand but in meeting needs in other countries in the region. Renewable energy options should be assessed as equal contenders to traditional options, with social and environmental factors given the same significance as technical, financial and economic factors.

3.1.2 Demand-side management and supply-side efficiency

"The Bank should finance new capacity additions only if the utility pays adequate attention to both supply side efficiency options such as economically sound rehabilitation and retrofitting of existing plants, system loss reduction and optimization of system operations, as well as demand-side management options." – ADB energy policy.⁴⁵

"Increasing the effectiveness and sustainability of existing water, irrigation, and energy systems are given priority in the options assessment process." – WCD strategic priority.⁴⁶

The ADB's energy policy and the WCD stress that demand-side management and supply-side efficiency options should be given priority over the financing of new electricity generating projects. It does not appear that these options were considered in the ADB-financed energy sector study or master plan. The ADB-financed energy sector study did not analyze the potential to reduce energy demand or improve the efficiency of existing infrastructure to help meet the region's growing needs. The master plan states that the effects of demand side management were factored into the estimates of Thai future energy demand. However, the potential energy savings from demand-side management is not quantified, analyzed or discussed in the report. Potential savings from expanding Thailand's energy efficiency and conservation program should have been thoroughly and transparently assessed, particularly since Thailand is the main beneficiary of the grid initiative.

The Bank's energy policy also stresses that the Bank "should encourage power utilities to prepare and implement master plans for DSM measures" and that Bank sector studies "will have to focus on methods that minimize or eliminate" institutional barriers to implementing DSM. However, recently approved ADB technical assistance grants and loans do not appear to have incorporated assistance to help countries implement DSM measures.

According to the magazine *Watershed*, the International Institute for Energy Conservation estimates that implementation of demand-side management measures could save 2,200 MW in Thailand.⁴⁷ This could result in energy savings at a lower cost and with fewer environmental and social impacts compared with the construction of controversial new power plants. Given these benefits, the ADB should have adequately considered and supported supply-side efficiency and demand-side management options before moving forward with the Mekong power grid initiative.

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⁴⁴ Grainne Ryder, "Ending Vietnam's Hydro Threat to Cambodia's Mekong Tributaries: Why Power Sector Reform Matters," Probe International, November 2002.

⁴⁵ Asian Development Bank, energy policy, page 30.

⁴⁶ World Commission on Dams, page 221.

⁴⁷ Apsara Palettu, "The Role of the State in the Marginalization of Alternative Energy," *Watershed*, Vol. 7, No. 3, March-June 2002, page 26.

4. CONCLUSION AND RECOMMENDATIONS

"ADB will adopt a cautious approach to large water resource projects – particularly those involving dams and storage – given the record of environmental and social hazards associated with such projects." – ADB water policy.⁴⁸

The ADB's water policy states that the Bank will adopt a "cautious approach" to large water resource projects. However, rather than adopting a cautious approach to development, the ADB is pressing forward to implement the Mekong power grid despite uncertainties regarding project data, without consultation with civil society in the region and without adequate analysis of its social, environmental and economic impacts.

The Mekong power grid initiative is an ambitious plan – recommending the construction of 12 hydropower projects and hundreds of miles of transmission lines across the region and costing an estimated \$43 billion. According to the ADB, this initiative will provide cheap, reliable and environmentally sustainable power for Thailand and Vietnam. However, as this analysis shows, the ADB has not proven that this initiative is economically, environmentally or socially sustainable. The ADB has promoted this initiative through a poor process of development, violating its own safeguard policies on energy, water and indigenous peoples, and contravening its poverty reduction strategy, strategic environmental framework for the GMS and the recommendations of the WCD.

Rather than rushing forward to implement the Mekong power grid, the ADB should step back and take a "cautious approach" to development in accordance with the Bank's policies and strategies. We call for the Bank to implement the following recommendations.

- 1) Given the uncertainties regarding the power grid initiative, its potential social, environmental and economic costs and questionable benefits for electricity consumers in Thailand and Vietnam, the ADB should suspend the Mekong power grid initiative.
- 2) The ADB should ensure that a comprehensive assessment of energy options for the region is undertaken in accordance with WCD recommendations. This process should be open, transparent and participatory. This assessment should consider demand-side management, supply-side efficiency and both large-scale and decentralized renewable options. Social and environmental concerns should be given equal consideration as technical and economic concerns.
- 3) As part of the comprehensive options assessment, studies should be carried out to examine the cumulative environmental and social impacts of the Mekong power grid. This should be completed with the full participation of affected people. Particular emphasis should be placed on consulting with and assessing the impacts to ethnic minorities.

We urge the ADB to follow these recommendations and ensure that the Mekong power grid initiative will not undermine the environment, negatively impact people's livelihoods and cause economic hardship.

⁴⁸ Asian Development Bank, water policy, page 21.