

A black and white photograph of a large hydropower dam. The dam has several spillways with water cascading down. In the background, there are buildings and structures, possibly part of the dam's infrastructure or a nearby town. The sky is overcast.

TRADING AWAY THE FUTURE

THE MEKONG POWER GRID

A quiet threat is brewing in the Mekong region. The Asian Development Bank and the World Bank are planning a regional power grid and electricity trading system that would promote numerous hydropower schemes, undermining the fragile Mekong River ecosystem that millions depend on for their survival. Despite the power grid's wide-ranging impacts, civil society has not been invited to participate in its planning process.

Over 60 million people depend on the Mekong's muddy waters for fish, irrigation, drinking water and many other critical human needs. The river is a symbol of life and fertility, and is considered the lifeblood of mainland Southeast Asia. The Mekong River's ecological wealth is of global importance, as the river is home to several endangered species including the Giant Mekong Catfish and the Irrawaddy Dolphin.

But for institutions like the Asian Development Bank (ADB) and the World Bank, the river is a tempting resource that must be exploited. Despite mounting evidence against hydropower, their plans to create a regional power grid would lay the groundwork for an ambitious program of hydropower development. Power from some of the most controversial dam projects proposed for China, Burma and Laos would be transmitted through the grid to the energy-hungry cities of Thailand and Vietnam. Internationally, hydropower projects have caused tremendous social and environmental problems and have often failed to produce as much power as predicted. In the Mekong region, many projects built during the last decade have left a legacy of damaged livelihoods, cultures and ecosystems in their wake. This devastation will increase if the Mekong Power Grid goes forward.

Environmentally sustainable and socially responsible solutions to meet the region's energy needs do exist.

Demand side management and energy efficiency measures could be introduced to significantly reduce the need for energy in Thailand and Vietnam. Economically feasible, sustainable options to cater for new demand include renewable decentralized energy, co-generation, and repowering existing power plants. The development of sustainable energy plans that equitably allocate risks and benefits would necessarily involve the meaningful participation of civil society.

This paper outlines the threats posed by the regional power grid and opportunities for sustainably and equitably meeting the region's energy needs.

ABOUT THE MEKONG POWER GRID

The Mekong Power Grid is one of the flagship initiatives of the ADB's Greater Mekong Subregion program, which is supposed to encourage cooperation and economic growth in the six countries sharing the Mekong River basin. 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, the Association of Southeast Asian Nations (ASEAN), the Japan Bank for International Cooperation, Agence Française de Développement, and the Swedish International Development Agency.

These institutions envision that China's Yunnan Province, Burma and Laos – where hydropower potential is huge and community opposition is stifled – will provide power to growing markets in Thailand and Vietnam. Proposed transmission lines would link Thailand to the Tasang Dam on the Salween River in Burma and the Jinghong and Nuozhadu Dams on the Mekong mainstream in China's Yunnan Province, and Thailand and Vietnam to the controversial Nam Theun 2 Dam in Laos. Dams are also being considered on Cambodia's Se San River, China's Panlong River and rivers in central and southern Laos, among others. Eventually, the Mekong Power Grid is expected to connect to the industrialized centers of Singapore and Malaysia as part of a larger ASEAN grid.

PRESENT SITUATION

Efforts to promote the Mekong Power Grid gained momentum in November 2002 with the signing of an Inter-Governmental Agreement on Regional Power Trade at a summit of Greater Mekong Subregion leaders. This agreement committed the six Mekong governments to establishing a regional power market and created a high-level leadership body to coordinate the implementation of regional power trade. In July 2005, regional leaders signed a Memorandum of Understanding on the Regional Power Trade Operating Agreement, which takes a first step towards creating the rules for regional power trade.

Construction on the first trans-boundary transmission line under the plan, linking Cambodia and Vietnam, commenced in 2003 with support from the ADB and World Bank, although this project is presently facing difficulties in its implementation. Other components of the Mekong Power Grid, such as the controversial Nam Theun 2 Dam that broke ground in 2005, have been pursued under public-private partnerships. The first transmission line to interconnect Thailand, Vietnam and Laos is proposed to begin construction in 2007.

Through its technical assistance (TA) program, the ADB is supporting the development of the power grid. In 2006, two ADB-supported TAs are proposed. The first TA will prepare for the construction of a transmission line between Thailand and China, via Laos. A second TA will prepare another interconnection between Thailand, Vietnam and Laos. As each transmission line is built, remote mountainous regions previously inaccessible to hydropower development are opened up.

UNPROVEN COSTS AND BENEFITS

The Mekong Power Grid may be a risky way to meet the region's energy needs. Dr. Brett Garrett, a Canadian power grid expert who reviewed the ADB plans, questions the wisdom of

committing to an expensive, long-term electricity trading arrangement without the certainty of economic benefits. ADB consultants estimate that a combined investment in transmission and generation of US\$43 billion will yield savings of just over two percent compared to a limited power trading scenario. Even these marginal benefits are in doubt. The costs of constructing



The controversial Nam Theun 2 hydropower scheme now under construction in Laos.

most of the proposed hydropower schemes are at present unknown. Dr. Garrett states that "without completed hydrological, geological/geotechnical and environmental studies, little confidence can be placed in the assumed production costs from these future plants," calling into question the economic viability of the entire plan.

Despite the uncertain economic feasibility of the plan, the construction of the transmission infrastructure is being pushed forward, although not at the risk of the hydropower investors' cash. In fact, it will be local electricity consumers who will pay the costs of transmission grid construction through their electricity tariffs and public loans from the ADB and other financial institutions, and who will therefore shoulder the risks of investment with no guarantee of cheaper electricity. Rural communities affected by the hydropower projects are least likely to benefit as their precious natural resources are taken from them to generate

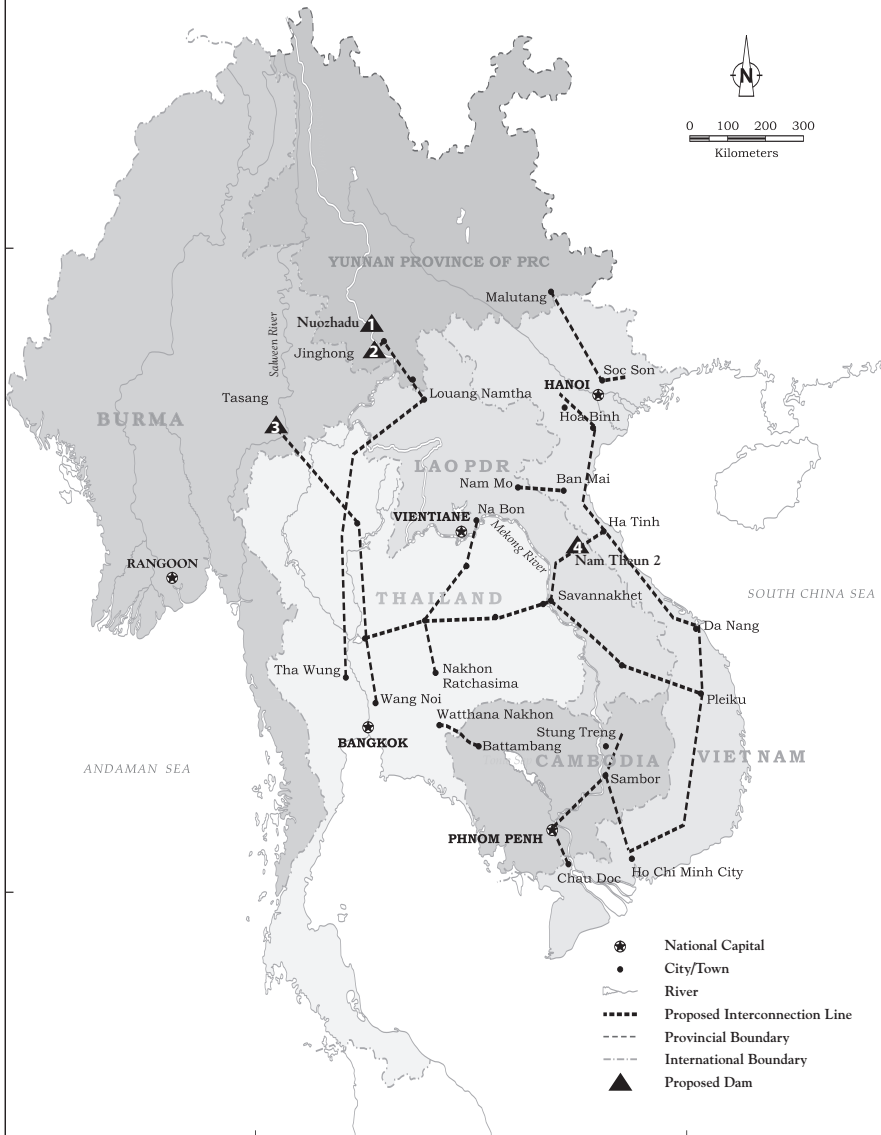
electricity for urban centers. Furthermore, the impacts of the Mekong Power Grid are not limited to just those associated with hydropower projects. Clearing of land for transmission lines will forcibly displace villagers and destroy vast swathes of forests and wildlife habitat. Ethnic minorities, in particular, will face impacts because transmission lines will likely cut through the forested highland areas where they reside.

For international power trade to be successful, a high degree of technical and political cooperation between governments is essential to avoid power failures and system blackouts. In the Mekong region, this degree of cooperation does not exist. Power trade under this context is extremely risky for consumers, and costly blackouts and system failures are likely to occur.

EXAGGERATED CLAIMS FOR THE GRID

Overestimation of power demand growth is a common problem with energy planning all over the world and leads to overinvestment in new power plants. In Thailand, over the past 13 years all nine of the 'base-case' demand forecasts issued by the Thai government have over-estimated current power demand, sometimes by as much as 48 percent. These projections form the basis for Thailand's 'Power Development Plan' which specifies future investment in new power plants and is prepared by the electricity utility, the Electricity Generating Authority of Thailand. In 2004, Thailand's National Economic

PROPOSED MEKONG POWER GRID



Adapted from Asian Development Bank Map

The Mekong Power Grid would be powered by some of the most controversial hydropower projects in China, Burma and Laos. This map highlights just a few of these projects.

1,2-Upper Mekong Dams

A planned cascade of eight dams on China's Upper Mekong River threatens the livelihoods of millions of people living downstream. Two of these dams, Jinghong and Nuozhadu, are intended to provide power to the regional grid.

3 - Tasang

This dam would devastate the lives of ethnic minorities living along the Salween River, mainland Southeast Asia's last major free-flowing river. People living in Burma's Shan State, where the dam would be located, have suffered from forced relocations, forced labor, extrajudicial killings and intimidation.

4 - Nam Theun 2

Approved in 2005 despite strong resistance by civil society, around 6,200 indigenous people will be displaced to make way for the dam. Up to 120,000 people who live along the Xe Bang Fai River will be affected due to negative impacts on fisheries, riverbank gardens and agriculture.

and Social Advisory Council, a government advisory body, examined the demand projections and concluded that power demand growth over the upcoming 13 years had potentially been over-estimated by up to 6000 MW. The Council prepared an alternative Power Development Plan which concluded that much of Thailand's new supply could be met with lower cost, lower impact and lower risk resources, avoiding the need for imported hydropower or investment in an expensive regional power grid.

Satisfying Thailand's energy needs is central to the Mekong Power Grid plan, and exaggerated forecasts result in false claims regarding

the benefits of regional power trade. A similar independent evaluation of power demand growth figures should be undertaken in Vietnam, the other major consumer of energy from the grid.

NEED FOR A PARTICIPATORY PLANNING PROCESS

Despite these numerous concerns, the multi-billion dollar Mekong Power Grid initiative is being pushed forward in the absence of participation of civil society in the Mekong Basin and with no consultation with those who will be directly affected by the transmission lines or hydropower projects it would promote. Key studies sup-

porting the Mekong Power Grid have been carried out by a Norwegian company with vested interests in the hydropower industry. No independent assessment of the various options for meeting the region's energy needs has been conducted. The cumulative impacts of the proposed dams on the Mekong River ecosystem and those communities that depend upon it have not been assessed.

In January 2006, 29 civil society organizations working in the region called on the ADB to support an open and participatory process to determine the energy needs of the region and the best options for meeting those needs. In light of the potential impacts of the Mekong Power Grid and the poor development process thus far, the ADB and other institutions should immediately halt the Mekong Power Grid initiative and support the call for a participatory energy sector planning process.

WHAT YOU CAN DO

In 2006, the ADB will support a study that is designed to shape the energy strategy for the Greater Mekong Subregion. At the same time, based upon the flawed and outdated Mekong Power Grid plan, several upcoming studies will prepare major transmission infrastructure projects that will open up new territory to hydropower development. We urge individuals and organizations to pressure the ADB and other supporting institutions to conduct an open and transparent participatory process to determine the true energy needs of the region, and to postpone the upcoming transmission line studies until the participatory planning process has identified the best solutions to the region's energy needs.

For more information, contact International Rivers Network at the address below.

Published in September 2006.

SUSTAINABLE ENERGY SOLUTIONS FOR THE MEKONG REGION

Economically feasible energy solutions that are both environmentally and socially sustainable do exist. Promoting good energy policy leads to sustainable economic development that avoids negative impacts on people and the environment.

Energy Efficiency and Demand Side Management

As is increasingly the norm in other parts of the world, improving energy efficiency should be investigated before considering new supply options. Energy efficiency measures are cheaper and faster to come online than constructing new power plants. At present, Thailand's use of energy is very inefficient. In 2003, Thailand used almost three times more energy per dollar of GDP than Japan, and 40 percent more than the United States. Vietnam was even more inefficient, using over five times more energy than Japan, and almost three times more than the United States. Clearly, Vietnam and Thailand have significant potential for demand side management and energy efficiency measures. Steps that can be taken include:

- Promotion of energy saving technologies such as compact fluorescent light bulbs and high efficiency air-condi-

tioners and refrigeration devices

- Improved management of peak-time electricity demand that would reduce the need for building extra power plants
- Promotion of 'cogeneration' power plants. Cogeneration plants generate both heat and electricity and therefore use fuel between three and four times more efficiently than traditional power plants, which only generate electricity.
- Existing power plants could be refurbished or 'repowered' to improve their efficiency.



Renewable Energies

Escalating fossil fuel prices together with the looming specter of global warming have made renewable energy technologies an increasingly attractive option in recent years. Many technologies, including wind, solar, biomass, and micro-hydropower, are economically

feasible when installed under the appropriate physical conditions and policy environments. The estimated total potential for renewable energy in Thailand alone is over 14,000 MW, of which almost 3,100 MW is currently commercially viable. Currently only 560 MW of electricity from renewable energy is supplied to Thailand's national grid.

Decentralized renewable energy is widely considered a promising approach to rural electrification, and has been promoted by the World Bank in Cambodia under the "Renewable Energy and Rural Electrification" project. Under decentralized schemes, small-scale renewable electricity sources, such as micro-hydropower schemes and household-scale solar panels, feed into local power grids to provide electricity to consumers. In some cases, surplus energy may also be sold back into a national grid. Decentralized power systems that incorporate domestic renewable energy production provide more room for public participation and control over power supply, and are considered by many energy experts as the future of electricity generation and distribution in both developed and developing countries.

International Rivers Network protects rivers and defends the rights of communities that depend on them. IRN opposes destructive dams and the development model they advance, and encourages better ways of meeting people's needs for water, energy and protection from damaging floods.