

Project Finance and Guarantees

June 2005

Project Finance and Guarantees Group

IDA Guarantee Paves Renewed Interest in Private Hydropower – the Nam Theun 2 Project

Largest Cross Border Project Financing in East Asia

"The NT2 proposals taken as a whole represent a promising development package for Laos: the net environmental, economic and social benefits substantially outweigh the downside costs."

**The International Advisory
Group**

Since 1995, the development of the Nam Theun 2 hydropower project (NT2) has been a top priority for the Government of Lao PDR (GOL). On June 10, 2005, NT2, with an estimated cost (excluding contingencies) of US\$ 1.25 billion reached Financial Close. The project has been sponsored by Electricité de France (EDF) of France, Italian-Thai Development Public Company Limited (ITD) of Thailand and Electricity Generating Public Company Limited (EGCO) of Thailand.

The completion of the NT2 project financing establishes a number of significant milestones. It is the largest ever foreign investment in the Lao PDR; the world's largest private sector cross-border power project financing; the largest private sector hydroelectric project financing; and one of the largest

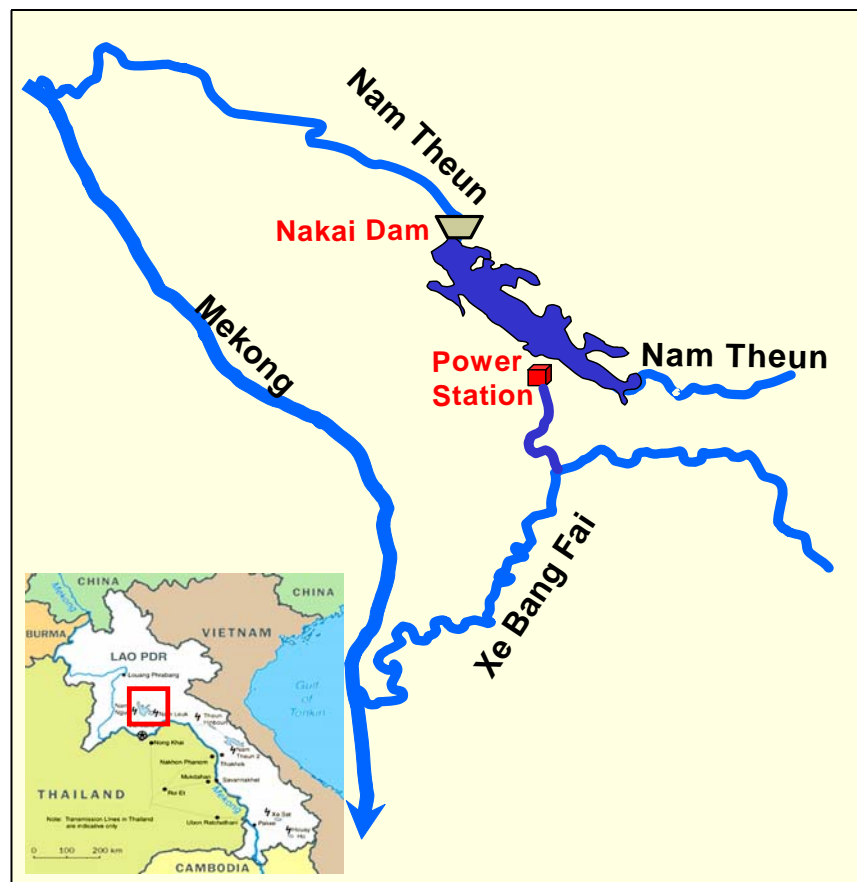
internationally financed IPPs in Asia since the 1997 financial crisis. NT2 also represents a significant step in the cooperation between Laos and Thailand. Its commercial operations are planned to start in late 2009.

The Project

The Project consists of two key components supported by the World Bank Group: (i) a hydropower facility with an installed capacity of 1,070 megawatts (MW), providing 995 MW of power for export to Thailand and an additional 75 MW for domestic use; and (ii) management of the project's environmental and social impacts on the Nakai Plateau, in the NT2 watershed and in the downstream areas of the Nam Theun (NT) and Xe Bang Fai (XBF) rivers.

"Nam Theun 2 has the potential to provide a model for major development projects involving environmental and resettlement issues."

Independent Panel of Experts



"NT2 has long been regarded by the Government as an essential component of the long-term development plans for the Lao PDR. The project has an important role to play in funding key elements of the National Growth and Poverty Eradication Strategy (NGPES)."

His Excellency Somdy Douangdy, Vice-Minister of Finance of the Lao PDR

"We are committed to fully comply with the NT2 social and environmental risk-mitigation plans, studied and prepared over 10 years, in accordance with the discipline required by our shareholders and financing partners, including the bilateral and multilateral development institutions."

Bernard Tribollet, CEO, NTPC

Revenues to GOL from the NT2 project, comprising the Resource Usage Charges (royalties), taxes and the GOL's share of the project company's dividends, are expected to become available at first exports of power to EGAT. Revenues to GOL from NT2 are expected to rise gradually in the early years, averaging US\$80 million per year over the 25-year life of the concession. It is expected that NT2 revenues will account for between 3 to 5 percent of total revenues to Lao PDR from 2005 to 2020, equivalent to about 60 percent of domestically financed expenditure on education and health. Detailed revenue management arrangements have also been agreed with GOL to ensure that the revenues to GOL from NT2 will be allocated to priority expenditure programs for poverty reduction and environmental conservation and management.

The NT2 hydropower facility comprises a dam 39 meters high and a 450 km² reservoir on the Nam Theun river and the Nakai plateau. Water from the reservoir would be transferred to an above-ground power station located at the foot of the Nakai escarpment (a drop of about 350 meters) through an underground shaft, from where it would be discharged into a regulating pond and a 27 kms downstream channel, and then into the XBF river. The project includes a 130 km, double circuit 500 kV transmission line to the Thai border and about 70 kms of a 115 kV transmission line and 220 kV connections to the regional Lao PDR grid.

Four areas are impacted to different degrees by the project: (i) the Nakai Plateau; (ii) the NT2 watershed; (iii) the downstream area along the XBF river and its tributaries; and (iv) the area along the lower Nam Theun river and its tributaries. The environmental and social mitigation measures that are financed as part of the project will support the following key activities:

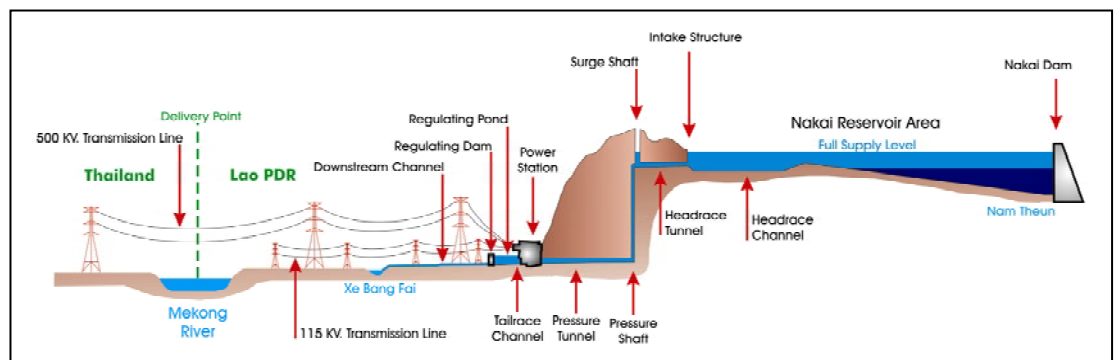
- The implementation of the *Social Development Plan* that comprises the design and construction of resettlement villages for project-affected persons and the provision of basic infrastructure and social services for affected people on the Nakai Plateau;
- The implementation of the *Environmental Assessment and Management Plan (EAMP)* that comprises environmental mitigation measures on the Nakai Plateau and in the downstream areas; and design and implementation of adaptive wildlife management programs on the Nakai Plateau and water quality monitoring and management programs in the reservoir and the downstream areas.

- The implementation of the *Social and Environment Management Framework and First Operational Plan (SEMPOP)* for the NT2 watershed which comprises the preparation and implementation of land use plans in a participatory manner in the watershed; design and implementation of programs to prevent loss of forest cover, wildlife trade and non-sustainable resource use; compensation for livelihood impacts due to resource access restrictions; and technical assistance to strengthen the capacity of GOL's Watershed Management and Protection Agency (WMPA).

Contractual Structure

The NT2 hydropower project is being implemented by Nam Theun 2 Power Company Limited (NTPC), which was established on August 27, 2002, as a limited liability company incorporated under Lao PDR law. Some of the key contractual agreements are:

- The *Concession Agreement (CA)* signed on October 3, 2002 (as amended) between NTPC and the GOL is the basis on which the Government granted NTPC a concession to develop, own, finance, construct, and operate the hydroelectric plant and related facilities, and to transfer the project to GOL at the end of the concession period. The CA is for a period of 25 years from the Commercial Operations Date under the power purchase agreement between NTPC and the Electricity Generating Authority of Thailand (EGAT). The CA contains detailed provisions regarding the rights and obligations of both the GOL and NTPC; in addition to provisions normal for this type of a commercial transaction, it also includes specific detailed provisions relating to environment and social mitigation measures to be undertaken by NTPC and GOL.
- The *Shareholders Agreement (SA)* signed on September 19, 2001 among EDFI, GOL, EGCO, and ITD was acceded to by NTPC following its incorporation in September 2002. The SA, as amended, sets out the rights and obligations of the Shareholders, provides for the objectives, establishment, management and operation of NTPC, and agrees on the Articles of Association of NTPC. The SA has duration of 45 years from signing.
- The *Head Construction Contract (HCC)* signed on April 14, 2005 between NTPC and EDF (the Head Contractor or HC) is a turnkey, price-capped engineering, procurement and construction contract. The HC in turn has subcontracted the construction



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works under five principal subcontracts, three relating to the civil works and two relating to the electromechanical works. The HC will provide key project management and plant operations personnel. The four subcontractors participating in the five subcontracts are ITD of Thailand, Nishimatsu Contracting Company of Japan, General Electric of the USA and Mitsubishi-Sumitomo Electric of Japan – all well-known firms with considerable relevant experience in their respective fields.

- The *EGAT Power Purchase Agreement* (“EGAT PPA”) was signed on November 8, 2003 between NTPC and EGAT. This is the key contract for the project under which NTPC shall make available to EGAT generating capacity of up to 995 MW and electrical energy of 5,636 GWh per year to be purchased at an agreed tariff on a take-or-pay basis. The EGAT PPA is for a period of 25 years from the Commercial Operations Date and includes provisions detailing the rights and obligations of EGAT and NTPC, including performance obligations of EGAT and NTPC, Events of Default, Force Majeure and Termination Events. In addition, the EGAT PPA allocates the hydrological risk to EGAT and NTPC only; GOL does not take any hydrological risk associated with the project, except as a shareholder in NTPC.

- The *EDL Power Purchase Agreement* (or “EDL PPA”) was signed on November 8, 2003 between NTPC and EDL. It defines the obligation of NTPC to make available generating capacity of up to 75 MW and electrical energy of 200 GWh per year to EDL to be purchased at an agreed tariff on a take-or-pay basis. The EDL PPA will be for a period of 25 years from Commercial Operations Date under the EGAT PPA.

- The *GOL Undertaking* between GOL and EGAT identifies and establishes the parameters and framework that are required by all parties to effect a smooth transition of the project and the Project Agreements following NTPC default or prolonged Lao PDR Political Force Majeure under either the CA and/or the EGAT PPA. Under the GOL Undertaking, the GOL recognizes that EGAT has certain rights under the EGAT PPA to step-in and/or purchase the project, and that EGAT is able to enforce its security rights against GOL under the EGAT PPA and the CA.

- The *Technical Services and Personnel Management Contracts* include the operating and maintenance arrangements for the project. NTPC will undertake the operation of the project itself, with the provision of technical support and staffing from EDF and EGCO (acting through its subsidiary EGCO Engineering & Service Co., Ltd. (ESCO)). Overall, four Technical Services and Personnel Management Contracts have been entered into by NTPC with EDF and ESCO.

In addition, GOL has established specialized units for the smooth implementation of the Project. A Resettlement Committee has been set up to guide plateau resettlement and downstream livelihoods programs. A Resettlement Management Unit (RMU) supports this committee. An Environmental Management Unit (EMU), under the GOL’s Science,

Technology and Environment Agency (STEA) has been set up for coordinating EAMP activities. In addition, the Watershed Management and Protection Authority (WMPA) will be responsible for ensuring conservation and protection of the NT2 watershed, as set forth in the SEMFOP.

Project Cost and Financing

The estimated base cost of the project (excluding any contingencies) is US\$1,250 million; of this amount, about US\$1,201 million is the cost of the hydro-power component comprising: (i) the Head Construction Contract (HCC) (US\$722 million equivalent); (ii) financing charges (US\$250 million); and (iii) development and various pre-operating costs (US\$229 million).

Overall, NTPC has budgeted US\$90.5 million for environmental and social impact mitigation and compensation program, of which US\$45.8 million will be incurred during the construction phase and will be financed as capital costs; the remaining US\$44.7 million will be funded out of revenues over the 25-year operating period. NTPC has also budgeted US\$5.1 million for external monitoring, of which US\$3.0 million will be incurred during the construction phase and have been financed as capital costs.

Environmental mitigation measures have also been incorporated within the project’s technical designs (for a regulating pond, river bank protection, aeration weirs and other measures) that represent a capital cost of approximately US\$60 million.

The base project cost has been funded 28 percent by equity (US\$350 million) and 72 percent by debt (US\$900 million). The additional US\$200 million of contingent costs are being financed 50 percent by equity and 50 percent by debt, on a pari-passu basis. Project equity is being provided by the four shareholders of NTPC — EDFI (35%); ITD (15%); EGCO (25%); and Lao Holding State Enterprise (LHSE, a newly created state enterprise to hold GOL’s 25% equity in NTPC).

NTPC has also secured US\$1,000 million of debt financing for the project, including contingencies. The following institutions will provide loans to NTPC and/or guarantees to private lenders to mobilize the debt package for the project: (i) Multilaterals including the World Bank Group (IDA and MIGA); (ii) bilateral agencies; and (iii) export credit agencies (ECAs), along with a consortium of 14 international private commercial banks — nine international dollar lenders and seven Thai lenders’.

Multilateral and Bilateral Support to the Project

The international dollar lenders to the project indicated to NTPC that without the availability of adequate political risk mitigation, both in Lao PDR and in Thailand, they would not be able to lend to NTPC for the project. Consequently, GOL and NTPC requested the World Bank to provide risk mitigation to support the international lending package for NTPC. For a project the size of NT2 located in Lao PDR, support through the use of multilateral guarantees offered the only practical solution. Through guarantees and modest direct lending, the

Guarantors and Export Credit Agencies



Multilaterals and Bilaterals



Uses and Sources of Funds

Uses of Funds	THB Millions	USD Millions	Total USD Million Equivalent
Development Costs	80	72	74
Environmental/Social Costs	0	49	49
Head Construction Contract	12,847	401	722
Financing Costs	4,271	144	250
NTPC General and Administrative, incl. Working Capital	414	36	46
Pre-operating and Other Costs	568	94	109
Total Base Costs	18,180	795	1,250
Contingencies	0	200	200
Total Project Cost	18,180	995	1,450

Sources of Funds	THB Millions	USD Millions	Total USD Million Equivalent
Equity			
EDFI	67	121	122
ITD	29	52	52
EGCO	48	86	87
GOL	48	86	87
Contingent Equity	0	100	100
Total Base Equity	192	345	350
Total Project Equity	192	445	450
Debt			
Thai Commercial Lenders	20,000		500
Commercial Loans covered by ECA's - Coface, GIEK and EKN		200	200
Commercial Loans covered by ADB PRG		42	42
Commercial Loans covered by IDA PRG		42	42
Commercial Loans covered by MIGA Guarantees		42	42
Thai Exim Bank		30	30
Nordic Investment Bank		34	34
ADB OCR Loan		50	50
AFD		30	30
Proparco		30	30
Total Debt	20,000	500	1,000
Total Project Financing	20,192	945	1,450

multilaterals and bilaterals (IFIs) were able to use limited amounts of public resources to mobilize over US\$1,150 million in limited recourse private funding.

Debt guarantees from IDA, MIGA and ADB are supporting about US\$126 million of private financing to the project and direct loans of about US\$144 million from IFIs have also been provided to NTPC(private shareholders' equity and long-term private commercial bank debt, including bonding facilities).

Government of Lao PDR Equity in the Project

LHSE holds GOL's share in NT2. LHSE's base equity requirements of US\$87.5 million is funded by:

- (i) an IDA grant of US\$20 million equivalent;
- (ii) an Agence Française de Développement (AFD) grant of Euro5 million (about US\$6.5 million);
- (iii) an European Investment Bank (EIB) loan of about Euro40 million (of which about US\$42.5 million would be applied to base equity after deducting Interest During Construction (IDC)); and
- (iv) an Asian Development Bank (ADB) loan of about US\$20 million (of which about US\$15.5 million would be applied towards base equity, after deducting IDC).

Remaining base equity needs of US\$ 3 million will be funded by the "GOL Contribution" provided by NTPC to GOL. GOL's contingent equity requirement of US\$25 million is to be funded by setting aside the remaining US\$25 million of the GOL Contribution to be paid to GOL by NTPC.

Risk Allocation in the Transaction

The Project has been structured as a limited recourse financing and the allocation of risks follows the traditional private project financing approach where the completion risk ultimately rests with the private project company and/or its contractors. The project structure allocates commercial and political risks to various parties responsible for specific project activities — the plant construction risk rests with the HC, who has in turn has passed on substantial portions of that risk to the five subcontractors under lump sum, fixed price subcontracts. The geological risk is shared amongst the HC and the subcontractors through a target pricing mechanism, with the residual risk (negligible when compared to construction costs) is taken by NTPC. The HC retains a substantial risk for timely and within budget completion of the hydro facility with large amounts of associated liabilities.

The Thai political risk associated with the offtake arrangements is taken by the private parties, including the Thai Baht commercial lenders. Responsibility for the timely completion of the transmission line (in Thailand) that will evacuate the power rests with EGAT. For a portion of the debt, the Thai political risk is also backed by MIGA and ADB guarantees, and ECA cover to private international dollar lenders. The risk of delays on account of GOL rests with GOL, which is being backed by IDA, MIGA, ADB and ECAs for the benefit of the private international dollar lenders. Thai commercial banks are uncovered for both Lao and Thai political risks.

“We see Nam Theun 2 not as a project per se, but as a vehicle through which to make considerable progress in the effort of poverty reduction.”

Shengman Zhang,
Managing Director, World Bank

“NT2 is an outstanding example of infrastructure that can contribute to both growth and poverty reduction. The strong regional cooperation we have seen already was and is essential to its conception and implementation. Our involvement in NT2 does not stop with the signing of the guarantee. That is when it really starts.”

Jemal-ud-din Kassum,
Regional Vice President,
East Asia and Pacific
Region, The World Bank

“Nam Theun 2 ably demonstrates the use of World Bank Guarantees to support Public-Private Partnerships for infrastructure development.”

**Kathy Sierra, Vice
President, Infrastructure,
The World Bank**

Allocation of Key Risks*				
Phase	Risks/Obligation	NTPC Equity Holders, Project Sponsors and Private Participants ⁱ	Lao PDR ⁱⁱⁱ	IDA PRG
Pre-Construction	Project design	■		
	Pre-construction works	■		
	Financing	■		
Construction	Cost overruns	■		
	Construction delays	■		
Operation	Operation and maintenance	■		
	Tariffs	■		
	Transmission	■		
	Hydrological	■		
	"B-period" Tariffs	■		
Concession Term	Thai Baht devaluation	■		
	Lao Political force majeure	■	■	■
	Changes in Lao PDR law		■	■
	Natural force majeure ^{iv}	■	■	■
	Lao – Expropriation		■	■
	Thailand Political Force Majeure	■		
	Thailand - Expropriation	■		

**Based on a simple analysis of key Project Agreements.*

Risk Coverage under the IDA Guarantee

The IDA Partial Risk Guarantee (PRG) covers a US\$42 million commercial debt tranche provided to NTPC by nine (9) international dollar lenders with door-to-door maturity of 16.5 years. The IDA PRG backs any debt service default on the covered tranche resulting from a limited set of activities and actions that are under GOL's control. Specifically the following risks are covered under the IDA PRG:

- Expropriation by the Lao PDR;
- Timely issuance and renewal of permits for construction and operation;
- Change in Laws, taxes and duties regime;
- Other specific GOL obligations of a sovereign nature defined in the CA and other related agreements and deemed critical for obtaining finance; and
- Natural force majeure events that are beyond the control of NTPC and that cannot be insured in the public or private insurance market.

The IDA PRG only covers Lao sovereign risks as defined in the key project agreements, and does not cover any Thai sovereign risks (even though the project sells electricity to the Thai utility EGAT and is subject to the offtake risk arising out of the EGAT PPA). The PRG is non-accelerable i.e. in case of a call on the guarantee, the outstanding guaranteed loan balance would be paid out as per the underlying loan repayment schedule, and the principal payments would not be accelerated. As with other guarantees of similar nature, the IDA PRG does not create any additional contingent liabilities for GOL since it backs the commitments already made by the GOL in connection with the project.

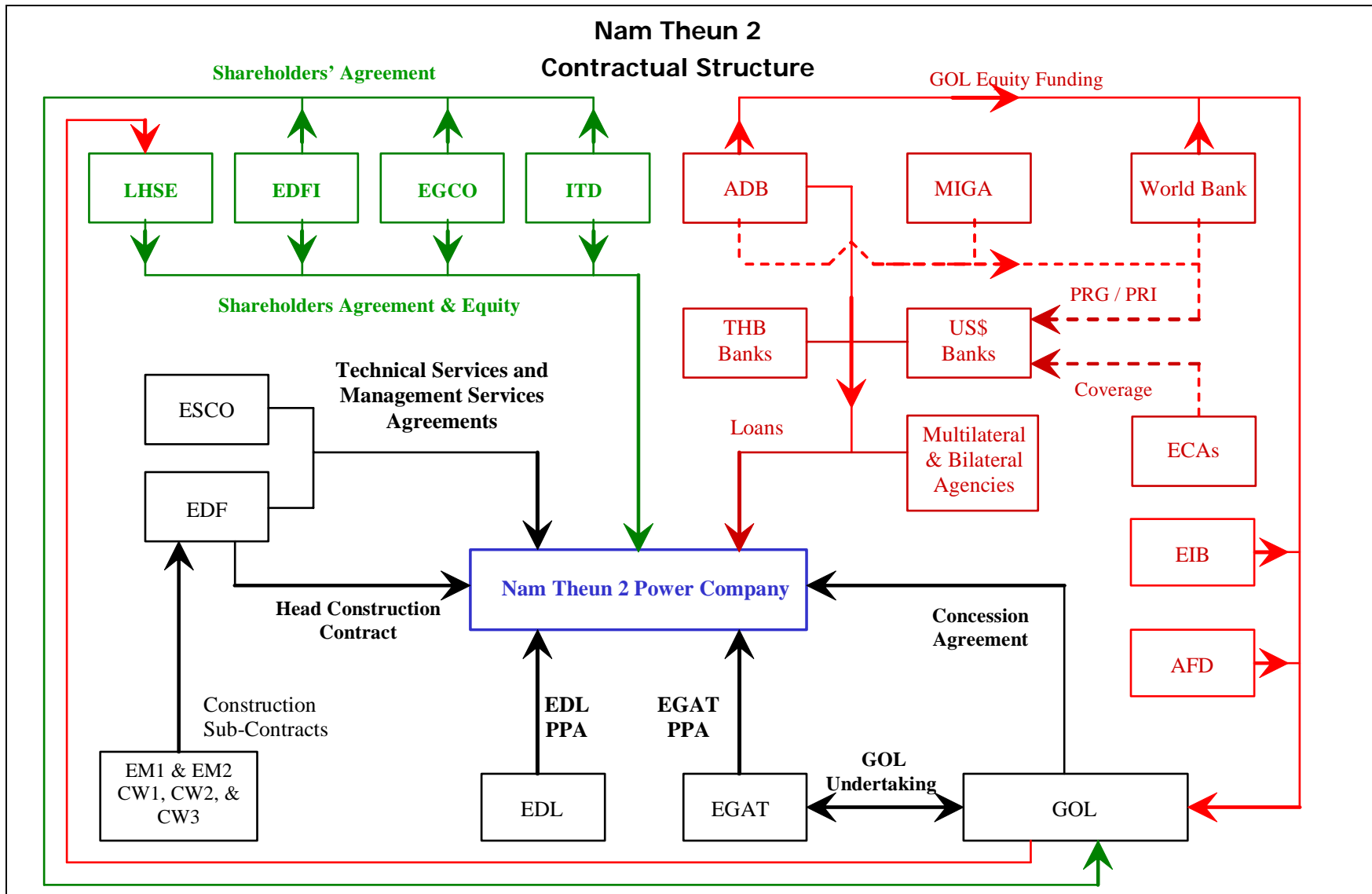
World Bank Participation

NT2 is one of the few hydropower projects to be undertaken based on a BOT scheme under private ownership. It is the first private hydropower cross border project to be undertaken for export purposes. The World Bank was a catalyst for the successful financing of NT2 and the project would not have been possible without the involvement of the World Bank. The World Bank's best practice environment and social implementation, its economic and financial assessment and transparency principles allowed other multilateral and bilateral agencies to support the project.

The NT2 CA was negotiated considering all of the requirements of the World Bank — it includes detailed obligations of all parties supporting the project particularly in respect of environment and social mitigation measures making it a comprehensive document when compared to other private transactions of similar size and scope.

NT2 project financing is one of the first large lending package that is conditioned upon common environmental and social principles that all lenders have subscribed to, i.e. a default by NTPC on environmental and social matters will lead to a default under the commercial as well as multilateral and bilateral financings.

NT2 is the largest financing package put together by the private sector in recent years. NT2 PRG is the first IDA Guarantee to support hydropower development. NT2 is the first project to use a mix of IDA, MIGA and ADB guarantees. About US\$ 42 million of IDA PRG achieved about US\$ 1.15 billion of private lending and investment, a ratio of 1:28 — confirming the benefit of World Bank guarantees in mobilizing private capital. It is expected that the IDA PRG will help in establishing a track record for Lao PDR's performance for future private projects.



ⁱ The US\$ senior debt facilities include those covered by political risk guarantees from IDA (World Bank), ADB and MIGA; export credit agency support from COFACE of France, EKN of Sweden and GIEK of Norway; and direct loans from ADB, Nordic Investment Bank (NIB), Agence Française de Développement (AFD), PROPARGO and Export-Import Bank of Thailand. Nine international commercial banks (ANZ Bank, BNP Paribas, Bank of Tokyo Mitsubishi, Calyon, Fortis Bank, ING, KBC, SG and Standard Chartered) and seven Thai commercial banks (Bangkok Bank, Bank of Ayudhya, KASIKORN BANK, Krung Thai Bank, Siam City Bank, Siam Commercial Bank and Thai Military Bank) are providing long-term loans to NTPC.

ⁱⁱ Including EGAT as an offtaker; Engineering, Procurement and Construction (EPC) contractors; project lenders and GOL, as a shareholder in NTPC. Some risks may not affect all of the listed parties but only some.

ⁱⁱⁱ Excludes risks taken by GOL as an NTPC shareholder.

^{iv} Natural force majeure: acts of God, earthquakes, fires, typhoons, etc.

For more information on the Nam Theun 2 Hydropower Project and the World Bank's Partial Risk Guarantee, please contact Pankaj Gupta at 202-473-6188 or pgupta2@worldbank.org of the Project Finance and Guarantees Group, The World Bank.

To obtain a copy of the brochure, *The World Bank Guarantee: Catalyst for Private Capital Flows*, please contact Andres Londoño at 202-473-2326 or alondono1@worldbank.org