

Nam Theun 2 Hydroelectric Project

Project Implementation Plan

Part A: General

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1 Introduction

1.1 Scope of the PIP

This PIP documents how NTPC will implement its obligations with respect to environment and social matters,. Generally, IFI project implementation plans cover the obligations and implementation objectives of all project parties (which in this case would include GOL, the Head Contractor and other major project parties). However, in order to satisfy the requirements of the project lenders, this PIP is part of a suite of documents (including the SDP, EAMP, schedule 11 of the Common Terms Agreement and schedule 4 of the Concession Agreement) related specifically to the implementation of the social and environmental activities because of their important role in the overall success of the project. Therefore, NTPC has prepared this PIP to focus on its own environmental and social obligations and duties in implementing the Project.

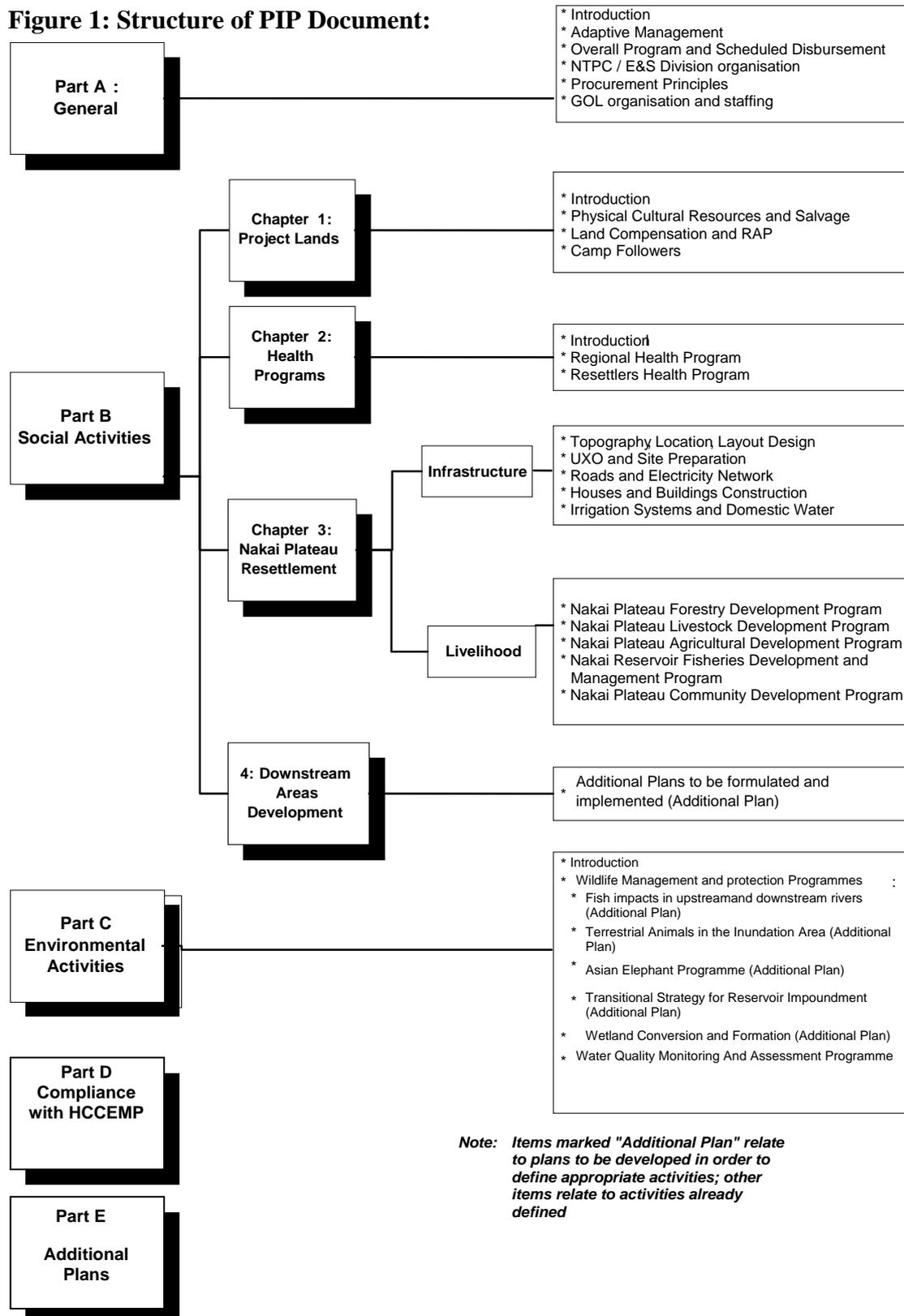
The PIP is essentially derived from the SDP / EAMP / EMMP and the CA Schedule 4 and provides a tool to undertake the agreed activities to fulfil NTPC responsibilities.

Therefore, in this PIP, a reference to an obligation, responsibility or activity to be undertaken or performed by GOL (or any of its departments, agencies or instrumentalities) or any other third party is for reference purposes only and shall not be construed to be an obligation, responsibility or activity to be performed or implemented by NTPC.

Notwithstanding the above paragraph, NTPC does have in some circumstances a contractual obligation to help ensure that GOL and other third parties perform their respective contractual obligations.

1.2 Structure of PIP

Figure 1: Structure of PIP Document:



1.3 The Nam Theun 2 Project

The Nam Theun 2 Project (NT2) involves the development of a hydroelectric scheme in Khammouane, Bolikhamxay and Savannakhet Provinces in central Laos. The scheme will generate 1,070 MW of electricity for supply to the Electricity Generating Authority of Thailand (EGAT – 97 %) and Electricité du Laos (EDL -3%). NT2 is forecast to generate US\$1.9 Billion of revenue for the Government of Laos (GOL) over the 25 year concession period. Lao PDR is recognized as a "least developed country" which relies heavily on external aid. Laos PDR has few options to secure sustainable development and hydropower is recognized as being a key element to achieve this.

NT2 has been developed as a Build Own Operate Transfer (BOOT) project by the Nam Theun 2 Electricity Consortium (NTEC) and the GOL. It is owned by the Nam Theun 2 Power Company Limited (NTPC), a limited company registered under the laws of the Lao PDR, in which the GOL has a 25% equity stake. This approach allows GOL to be mostly protected from construction and operating risks, while at the same time benefiting significantly from its shareholding in the Project. Other shareholders of NTPC are EDF International, a subsidiary of Electricité de France, the world's largest electric utility, with 35%; the Electricity Generating Public Company Limited (EGCO) of Thailand with 25%; and Thailand's leading construction company Italian-Thai Development Public Company Limited (ITD) with 15%.

The GOL will receive an average of US\$80 million annual revenues from NT2 during the concession period - in taxes, royalties and dividends (a total of US\$2,000 million over the 25 year concession period). At end of concession period, the Project will be transferred free of charge to GOL which will then be the sole beneficiary of the project revenues. These much needed GOL incomes will be used in a large portion to implement poverty alleviation programs within the country while providing an important source of revenue to the state budget. NT2 will also contribute financially to the management of a 4,000 km² protected forest area of recognized international significance, forming the watershed of the Project.

The key components of NT2 are:

- Hydropower;
- Social;
- Environment; and
- Watershed Management & Protection Authority (WMPA).

1.3.1 Hydropower

The Project plans to dam the Nam Theun River in the Khammouane Province, creating a reservoir on the Nakai Plateau. The reservoir will have a surface area of approximately 450 km² at full supply level and 82 km² at minimum operating level. The total storage capacity will be 3,910 million m³/s.

Water from the reservoir will drop approximately 350m through a tunnel to a Power Station located at the base of the Nakai escarpment, taking advantage of the difference in elevations between the Nakai Plateau and the Gnommalat plain. From the Power Station, water will then flow into a Regulating Pond and then via a 27km Downstream Channel into the XBF.

The Project will transfer an average flow of 220 million m³/s from the Nam Theun into the XBF. Water from the Power Station may also be released into the Nam Kathang River below the Regulating Dam at a rate equivalent to current natural inflows.

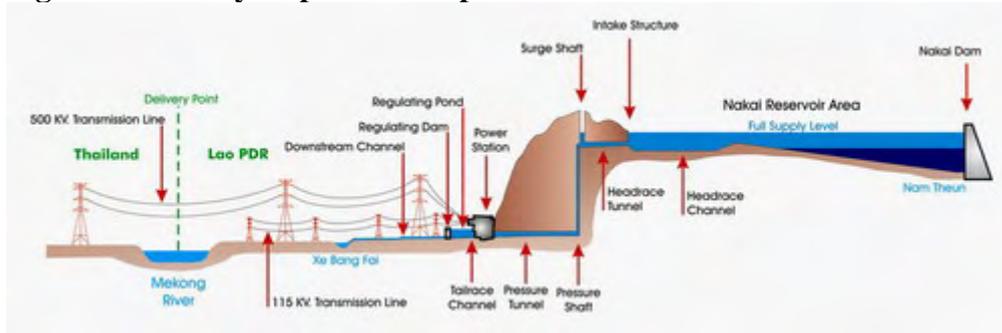
The Power Station will have a generating capacity of 1,080MW (net 1,070MW); 995MW of which will be sold to EGAT, for use in Thailand, delivered at the Lao-Thai border on the Mekong river via a 138km-long 500kV double circuit transmission line. EDL will receive 75MW, for use in Lao PDR, delivered at a substation near the NT2 Power Station.

The main hydropower components are as follows:

- 48m high dam on the Nam Theun and 13 saddle dams to create the Nakai Reservoir;
- 4.25km Headrace Channel and Intake Structure on the Nakai Plateau, approximately 35km southeast of the Nakai Dam to divert water from the Nakai Reservoir to the Power Station;
- Power Station with 6 electricity generating units and accompanying administration, operating and control rooms;
- Regulating Pond (to control downstream flows) and a 27km long, excavated channel to direct the diverted flows from the Power Station into the main channel of the XBF near the town of Mahaxai;
- 500kV, 115kV and 22kV transmission lines to interconnect the Power Station switchyards with the EGAT and EDL power transmission systems; and
- Ancillary works such as access roads, bridges and residences to enable construction, operation and maintenance of the Project and to meet other obligations of NTPC.

1.3.2 Other components

Social, Environmental and WMPA will be discussed in the body of the PIP.

Figure 2: NT2 Hydropower Components

Construction activities will also require road construction and upgrading, sourcing of limestone for aggregate production, disposal of spoil and establishment of construction camps. Construction of the project is estimated to take 54 months and employ approximately 4,000 workers. Four potential zones have been identified for the development of construction work camps. Operation and maintenance of the project is expected to employ 150 staff.

The main area to be affected by the project is the Nakai Plateau. The project will also impact areas between the Nakai Plateau and the Mekong river, along the XBF and Nam Theun (downstream areas), along the alignment of transmission lines and in the NNT NPA (cf. Figure 3 : NT2 Project Features).

Figure 3: Map of Nam Theun Hydroelectric Project Features

Insert map.

2 E & S Measures Description

Environmental and Social measures fall into three categories (as specified in schedule 4 of the CA):

- Social measures as described in the Social Development Plan (SDP), to be implemented by NTPC;
- Environmental studies and associated measures and monitoring of civil works environmental impacts as described in the Environmental Assessment and Management Plan (EAMP) to be implemented by NTPC; and
- Watershed Management and Protection Areas which are described in Social and Environment Management Framework and Operational Plan (SEMFOP) to be implemented by GOL.

These environment and social measures apply in varying ways to each of the project zones described below. These project zones are derived from the SDP and the EAMP and are as follows:

Zone 1: Inundation area

Area below 538 meters above sea level (masl) on the Nakai Plateau to be inundated by the reservoir which will be approximately 450 km² at full supply level (538 masl) and 108 km² at minimum operating level (525.5 masl). Project activities include fisheries and reservoir management.

Zone 2: Protected Areas

Includes NNT NPA (area 350 km²) and the two corridor area (approximately 770 km²) that connects the NNT NPA with the Phou Hin Poun NPA to the west and the NNT NPA with the Hin Nam NO NPA to the south. Project activities include environmental programmes for wildlife, transitional strategies, wetland conversion, water quality and fish impact studies in addition to the WMPA programme undertaken by GOL.

Zone 3: Resettlement Area

This is the 208 km² area along southern rim of Nakai Reservoir selected for resettlement following consultation with affected households and is vegetated with mixed broadleaf and coniferous forest, dry evergreen forest and agricultural areas. Activities include infrastructure and livelihood development programmes.

Zone 4: Nam Theun from Nakai Dam downstream to Theun Hinboun reservoir

- Riparian land along Nan Theun from Nakai Dam to start of Theun Hinboun reservoir approximately 32 km downstream.
- Much of zone is included in the NNT-Phou Hin Poun corridor.
- Nam Phao discharges into Nam Theun approx 11.7 km downstream of the Nakai Dam.
- No established villages or permanent settlements in the zone, though some use of the river by villages for fishing.

Activities include Fisheries studies and Downstream programme.

Zone 5: Downstream of the Theun Hinboun reservoir

Includes Theun Hinboun reservoir and a riparian area along the Nam Kading that potentially stretches to the Mekong.

Zone 6: Lak Sao Road

- Includes Road 8b south of Ban Lak Sao to about the intersection of Road 8b and the border of Zone 2.
- Includes quarry to be opened at Pha Phen (Phou Pako) to provide aggregate for construction.

Activities include those related to environmental monitoring of HC.

Zone 7: Power station

This encompasses the small area immediately surrounding the Power Station and there are no residents in this area but gardens are present. Activities are as for zone 6.

Zone 8: Downstream channel

- Includes 27 km length of the downstream channel from the regulating dam to the XBF confluence.
- Includes adjacent areas that will be modified as part of the construction of the downstream channel.

Activities include those related to the Downstream Programme and environmental monitoring of HC EMMP as well as those related to Project Lands activities.

Zone 9: Nam Kathang

Covers Nam Kathang and riparian land from the regulating pond to its confluence pond with the XBF. Activities are as for Zone 8.

Zone 10: Upper XBF

This zone extends from the confluence of the downstream channel (Nam Phit) and the XBF to the Sayphou Xoy ridge about 25 km downstream of Mahaxai. Activities are as for Zone 8.

Zone 11: Middle XBF

This is the area between Sayphou Ridge and Road 13 crossing. Activities are as for Zone 8.

Zone 12: Lower XBF

- Covers approximately 500 km² from its confluence with the Mekong up to the Road 13 crossing; includes approximately 70 km of river.
- Zone experiences natural flooding almost every year and is hydraulically controlled by the Mekong.

Activities are as for Zone 8.

Zone 14: Road to Thakek

Consists of area along the road between Mahaxai and Thakek along which 115kV Transmission line passes. Activities include those related to project lands and HC EMMP monitoring.

Zone 15: Mekong River

- EAMP and SDP consider the Mekong between its confluence with the Nam Kading and XBF plus consideration of the 500 KV.
- Transmission line crossing immediately north of Savannakhet.
- The CIA considers the wider impacts along the Mekong downstream of Savannakhet.

As for Zone 14 but include Downstream Programme

Figure 4: NT2 Project Zones

2.1 Social

The population in the Nakai Plateau and along the Nam Theun downstream of the Nakai Dam is characterized by low density, pronounced ethnicity, dependence on subsistence livelihoods with household income levels below the national poverty line and limited or no access to infrastructure and services such as education, health, electricity and water supply.

In the XBF basin, the population numbers gradually increase together with income and education levels, livelihoods are more secure and connections to electricity and water supply more common.

Nakai Plateau (Zones 2 and 3)

Over 6000 people living on the Nakai Plateau, or more than 1,100 households (15 villages and 2 hamlets), will need to be resettled.

These people are currently subsisting on swidden rice, fish, raising of livestock, hunting and gathering of forest products. These families will be resettled in the area along the southern rim of the Nakai reservoir, as requested by villagers (consultations with affected households), no more than a few km from the previous village locations. The Resettlement Action Plan and Ethnic Minority Development Plan for the Nakai Plateau has been designed to ensure that all resettled families are significantly better off after relocation. Villages are to be relocated in 2 groups¹.

Group 1 (Physically relocated by mid 2006)	Sop Phene, Nong Boua, Phonesavang, Sop On, Bouama, Sopma, Hathkamphane (Hamlet), KengGnao (Hamlet), Sop Hia, Nam Nian
Group 2 (Physically relocated by mid 2007)	Thalang, Done, Khone Khene, Ka Oy, Nakai Tai, Nakai Neua, Oudomsouk

Key activities attached to resettlement will be UXO clearance, construction of infrastructure (roads, land clearance, housing, buildings), livelihood programs (forestry, fisheries, agriculture/livestock, community development, transitional support). A health program for resettlers will be implemented together with a regional health program. These activities will be summarized in specific resettlement action plans.

Downstream Areas (Zones 4, 8, 9, 10, 11 and 12)

The increased flow in the XBF will have some positive impacts, such as more water for irrigation. There will be some negative physical impacts (mainly physical impacts) such as additional erosion, changes in riverbanks gardens and associated requirements for modification/replacement of existing irrigation pumps. There will also be some

¹ Group 1 villages lie in lower elevation on the Nakai Plateau and so are in greater risk of flooding due to construction of coffer dam. They will therefore be moved ahead of Group 2 villages.

issues related to quality of water for domestic use and potential impacts on fish due to increase flows.

From a social perspective, the area downstream of the Nakai dam will also be impacted by the reduced flow in the Nam Theun river. Although there are no permanent settlements or established villages along this reach of the river, some of the households from near by villages occasionally use this part of the river for fishing activities (SDP Volume 1; Chapter 2 and EAMP Chapter 2).

Migration of fish in tributaries upstream of the Nakai Dam in the NNT NPA may be affected also. If fisheries in the upstream tributaries are impacted by the project, households will be compensated accordingly, in addition to the benefit from the SEMFOP livelihood and community development programs (SDP Executive Summary; Volume 3).

NTPC will update the Resettlement, Livelihood Restoration, and Ethnic Minority Development Plan into an Implementation Plan by contracting a firm for the development of an implementation study. A development program sized at US\$16 million will be implemented based on the implementation study in order to restore the livelihood in the downstream areas and in some cases even improving the present conditions.

Project Lands (Zones 6 to 14)

Land acquisition for construction activities will directly impact on PAP fixed assets and productive land assets. Construction works and the associated infrastructure such as worker camps, access roads and quarry sites will result also in some conversion of natural habitats, as well as health and other social impacts related to construction activities.

NTPC will implement the Project Lands Resettlement and Ethnic Minority Development Plan in relation to lands being used by the project for construction-related activities. NTPC will also implement a Physical and Cultural Resources Plan and a Camp Followers Management Plan (SDP Volume 4)

Figure 5: Resettlement Map
Insert Resettlement Map.

2.2 Environment

Environmental measures

Construction and operation of the NT2 will have adverse effects on the environment as described in the EAMP and as summarised in SESIA.

Version 1 of the HCCEMMP would need to have indication of the standards that have to be used for all aspects covered into the sub-plans of the HCCEMMP. Monitoring, and reporting, of construction activities on site will be made against these standards to be defined using best practice on environmental measures for construction sites in developing countries.

The mitigation of the impact of the project on the environment will be achieved by the implementation of a number of key activities. These activities are summarized below.

Key impacts of project operation on physical environment are mainly associated with changes to hydrology, water quality and erosion rates. The project will:

- Implement a Water Quality Management and Monitoring Programme in the various water bodies including reservoirs and ground water in the project area.
- Minimise potential impacts on aquatic and terrestrial habitats relating to the damming of the Nam Theun by the design and implementation of appropriate mitigation measures.

The principal impacts on the biological environment are on aquatic and terrestrial habitats, species diversity, protected areas and endangered species. The project will:

- Implement a management program for the reservoir and fish population.
- Specific conservation/ management / protection programs and survey of key wildlife species will be established.

Environmental protection during construction

The Head Contractor will be responsible for implementation of measures required to avoid or minimise environmental impacts during construction, as defined under the Head Construction Contractor's Environmental Management and Monitoring Plan (HCCEMMP). NTPC will monitor the satisfactory implementation of these measures and procure that the HCC complies with the HCCEMMP in all material respects.

NTPC must procure that the HCC complies with the HCCEMMP in all material respects in the manner described in Part D hereof of the PIP.

NTPC will also monitor and/or manage (depending on whether the work is contracted out) construction activities undertaken in resettlement areas to ensure their

environmental impacts are properly addressed and appropriate mitigation measures are implemented.

2.3 WMPA

Three National Protected Areas (NPA) surround the immediate project area. The Nakai Nam Theun NPA constitutes 88 % of the catchment area for the project reservoir. Each NPA is noted for the presence of several threatened and endangered species. The Project has committed to provide US\$31.5 million of financial assistance and management support for the conservation of biodiversity and improvement of livelihood of the communities residing in the NNT NPA the two adjoining corridors and the Special Conservation Area as provided in detail in the SEMFOP.

3 Overall Program

The timing of implementation of the activities on the Nakai Plateau is closely related to the timing and scheduling of the Project main construction activities. The current schedule is that Financial Close will be achieved in June 2005, that the dam will be closed and the reservoir begin to be filled by mid 2008 with a Project Commercial Operation Date (COD) by end 2009.

The key environmental and social milestones of the Project are as follows:

- The closure of the Nakai Dam, by may 2008 when all affected villagers and dwellings on the Nakai Plateau must be relocated.
- The end of the Resettlement Period, when, on advice from the Panel of Experts, the resettlement objectives and provisions have been achieved.
- Key milestones :

Financial milestones

	Scheduled Date
FCD (Financial Close Date - EGAT PPA)	14 June 2005
SCOD (Scheduled Commercial Operation Date – EGAT PPA)	54 months after FCD = 14 Dec 2009
FC (Financial Close – CA)	=FCD
COD (Commercial Operation Date - CA)	=SCOD

Construction milestones

Notice to proceed (HCC)	9 May 2005
CD (Commencement Date – HCC)	16 May 2005
CCOD (Construction Commercial Operation Date - HCC)	53 months after CD = 16 Oct 2009
CPCD (Construction Phase Commencement Date – CA)	30 May 2005
Close of Cofferdam	End May 2006
Close of Nakai dam	Beginning May 2008

Social milestones

RIP (Resettlement Implementation Period)	approximately 9 years in duration
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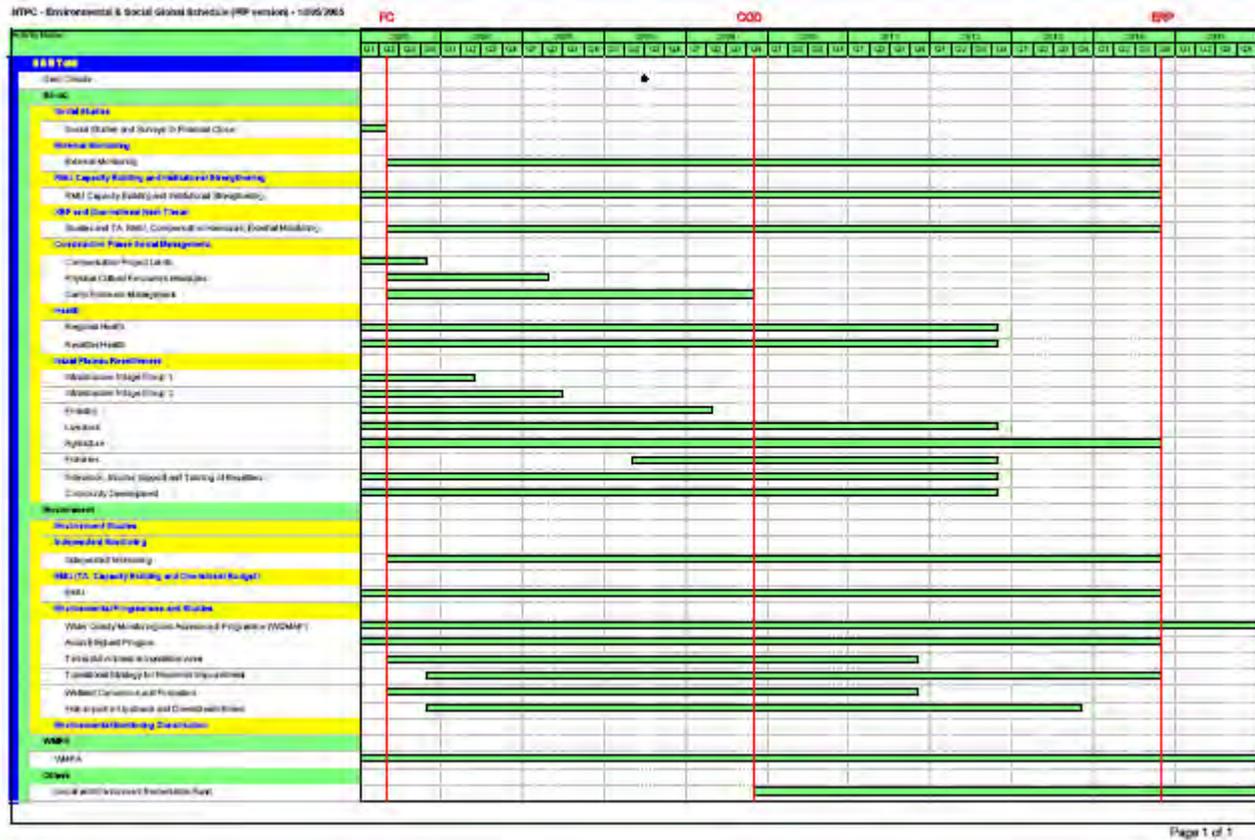
Environmental milestones

Approval by NTPC of version 1 HCCEMMP	June 2005
Start of surveys for the various components of the wildlife programme :	Dates as indicated in Part C of the PIP :
o Fish Impacts in upstream and downstream rivers	o Q4 2005
o Terrestrial animals in the inundation area	o Q2 2005
o Asian Elephant Program	o Q2 2005
o Transitional strategy for reservoir Impoundment	o Q2 2005
o Wetland conversion and formation	o Q4 2006
Release of the management plans under the wildlife programme.	Indicative dates as noted in Part C of the PIP :
o Fish Impacts in upstream and downstream rivers	o Q1 2007
o Terrestrial animals in the inundation area	o Q1 2007
o Asian Elephant Program	o Q1 2007
o Transitional strategy for reservoir Impoundment	o Q1 2007
o Wetland conversion and formation	o Q2 2007
Start of the implementation of the management plans.	
o Fish Impacts in upstream and downstream rivers	o Q2 2007
o Terrestrial animals in the inundation area	o Q2 2007

- Asian Elephant Program
- Transitional strategy for reservoir Impoundment
- Wetland conversion and formation
- Q2 2007
- Q1 2007
- Q3 2007

Figure 6: NTPC E&S Global Schedules shows the social and environmental global schedule.

Figure 6: NTPC E&S Global Schedule



4 Overall Schedule Disbursement

The Concession Agreement (CA) signed on 3 October 2002 (as amended on 25 April 2005), describes the NTPC obligations regarding E&S activities, with the associated budget.

A summary of the overall E&S budget for the Project is set out in the table below:

Project Component B	Pre COD (Million US\$)	Post COD (Million US\$)	Total
Social Development			
Project Lands	3.40		3.40
Health	2.3	0.68	2.98
Plateau Area	24.26	2.7	26.96
Downstream Area	8	8	16
SERF	0	7.5	7.5
Environmental Management	2.92	0.97	3.89
Watershed Management	6.65	24.85	31.5
Total	47.53	44.7	92.23

In addition, NTPC's own internal operational budget or the E&S Division is approximately US\$8 million (FC to COD).

Please refer to Figure 7 NTPC Environmental and Social Disbursement Schedule. The figure sets out the detailed disbursement schedule as anticipated at FC.

Figure 7: NTPC E&S Disbursement Schedule

5 Adaptive Management and Implementation of the Project

Due to the large number of complex interrelated social, environmental and compliance issues involved with the construction and implementation of the Project, the successful implementation of the Project will depend on the normal iterative management practices used in similar type projects.

NTPC will use "adaptive management" principles to collect, interpret and manage the results of its many programmes, plans and activities.

The core principles of adaptive management include:

- collection and monitoring of data and information;
- adjustment to NTPC's programmes, plans and activities to reflect actual circumstances not determinable at the time of baseline planning (for example, the actual numbers of camp followers and number of Asian Elephants etc); and
- formation of the appropriate processes and informal decision making bodies to implement and apply the adaptive management principles on a daily basis, where necessary as described through this PIP.

Adaptive management principles will be applied in different ways depending on the area of the Project concerned and is referred to in this PIP, where relevant. See specifically Parts B and C where AM is discussed further.

6 Procurement Principles

The management of procurement for the E&S measures will be undertaken by NTPC E&S Division. This will be one of the key activities for E&S Division in the first two years after Financial Close. All procurement will be undertaken according to IFI and lenders procedures and in particular with WB procedures and guidelines for procurement.

To achieve efficient procurement management, NTPC will have a dedicated procurement management team working under the Director for E&S Division and supporting the activities teams. This team will be supported by a budget and planning controller as well as by the Administrative and Finance Divisions.

The general procurement approach will be to outsource certain aspects of the programme to different organizations (including local contractors, NGOs and international organizations) depending on requirements, with NTPC taking charge of the management coordination of the separate contracts to produce the desired outcomes.

7 Elements of exit strategy

NTPC will have achieved its objectives in relation to resettlement matters when it can demonstrate to the POE that revenues of resettlers have met required targets.

The SERF can provide support to communities beyond the resettlement period

There is an extensive programme of capacity building for GOL counterpart staff and for villagers and project impacted communities built into all the measures undertaken by NTPC.

All activities undertaken by NTPC in relation to E&S measures are designed in a context of development and thus are intended to be sustainable in the long term.

8 NTPC and E&S Division Organisation and Staffing

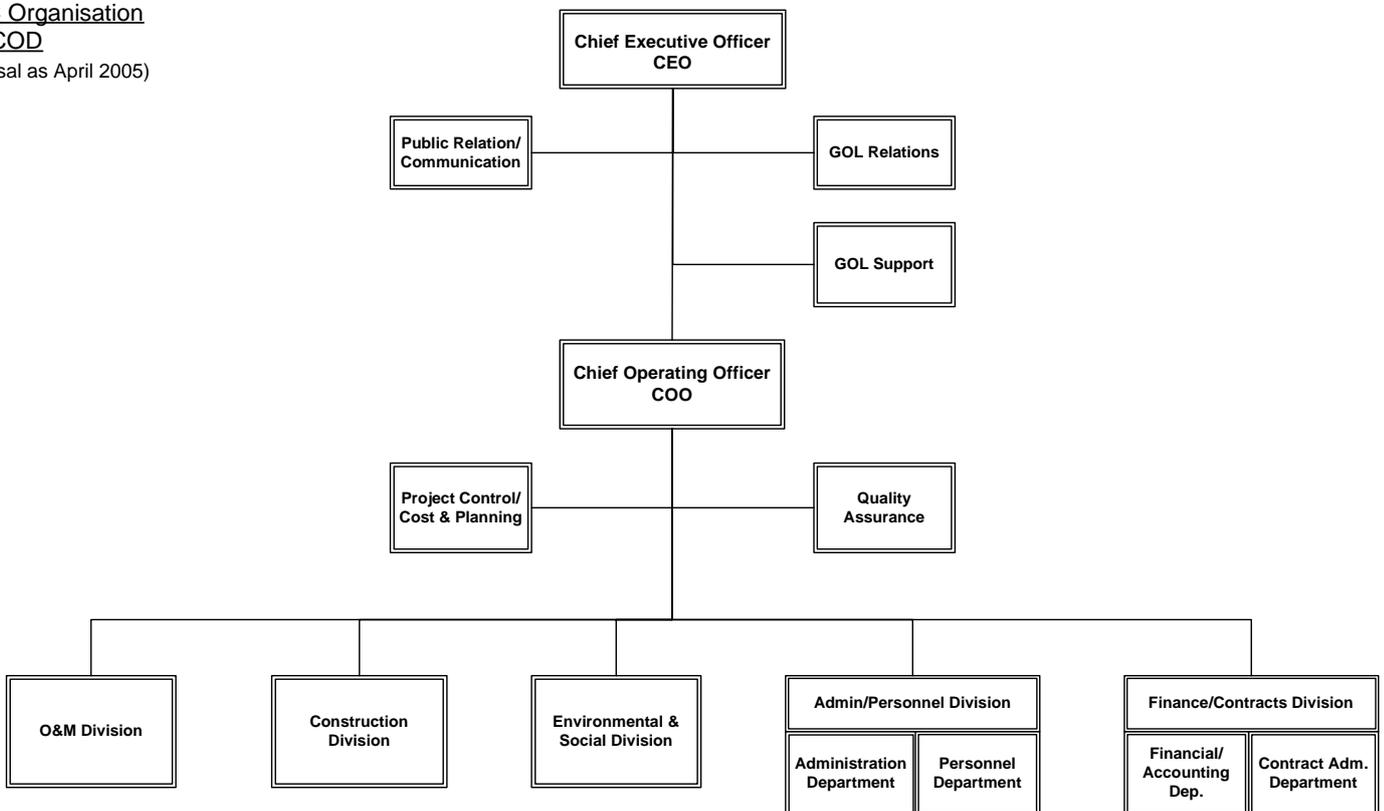
8.1 Overall NTPC organization (including Construction activity and E&S activities)

NTPC is a Lao incorporated company with four investors (EDFI, GOL, EGCO, ITD). Board members are representatives of investors plus a non voting director acting as an environment advisor.

NTPC management includes a CEO, a COO and Directors of the divisions including E&S division. Within the divisions, managers of specific branches work with staff to carry out the activities for which they are responsible.

Figure 8 : NTPC overall organization chart (see also Figure 11)

NTPC Organisation
FC - COD
 (Proposal as April 2005)



The Construction Division of NTPC working with the Owner's Engineer, to supervise and monitor the construction activities of the project, which are performed by the Head Contractor under a turnkey contract.

The Environmental & Social Division covers activities related to environment and social programmes (including Project Lands).

The Operation and Maintenance Division will be staffed progressively 3 years before project commissioning and will be in charge to operate the NT2 hydropower facility and perform the maintenance of all assets.

The Finance and Administration Division is in charge of all administration, personnel and finance matters and plays an important support role for the operational divisions in relation to contracts and procedures, document management, financial aspects, Information Technology, etc.

The Project Land Survey and Coordination Team has been set-up to ensure a timely coordination between construction and E&S divisions with regard to project land activities and forms part of the Environmental and Social Division (see also Figure 11).

8.2 Organization of Construction Division

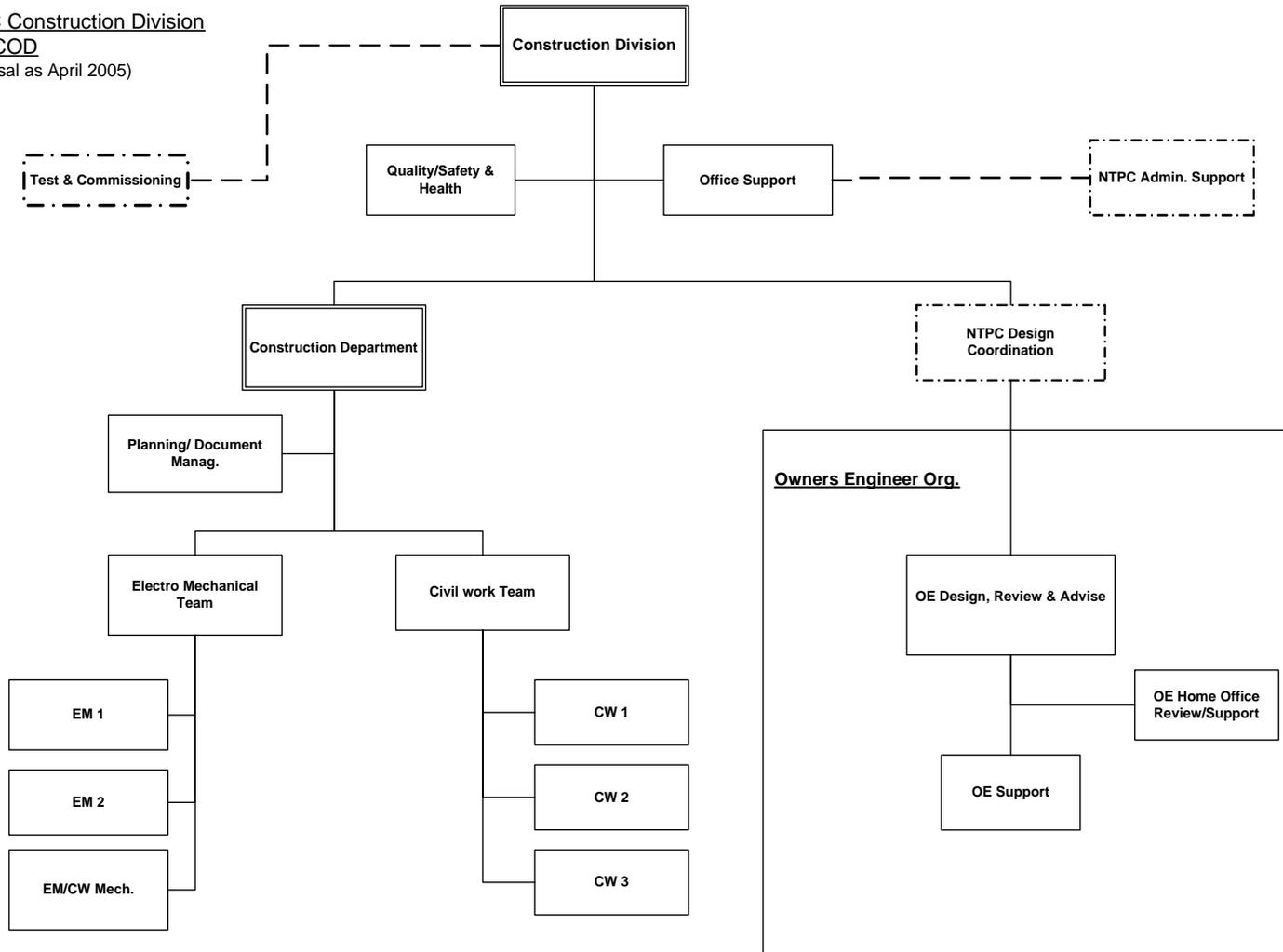
The construction activities will be performed by the Head Contractor (EDF) under a turnkey contract, with fixed prices and a completion time guarantee.

The Head Contractor will direct the activities of Construction Contractors (ITD-Nishimatsu for the civil works packages, GE for the equipment and Sumitomo for the transmission lines).

It is anticipated that the closure of the dam will occur mid- 2008 and that the 4 Francis units of 250 MW each and the 2 Pelton units of 40 MW each will be commissioned in the second half of 2009.

Figure 9 : NTPC Construction Division organization chart

NTPC Construction Division
FC - COD
 (Proposal as April 2005)



8.3 Organization of E&S Division

The E&S Division is composed of 2 offices (the Environment Management Office and the Resettlement Management Office) supported by E&S management together with a procurement team and a planning and cost control team.

The Environmental Management Office (EMO):

The EMO:

- prepares monthly reports, detailing implementation progress, difficulties encountered, non-compliance etc;
- reviews and approves the HCCEMMP and monitors its implementation, and ensures that construction phase activities are in compliance with the HCCEMMP;
- assists the EMU to plan and manage an environmental and social public consultation and information program to keep the Lao public informed of the Project Activities;
- manages the subcontracts for specialist studies contemplated under the Environmental Measures and ensures their performance;
- arranges for adequate reporting on a regular basis regarding the results of the Monitoring Program;
- creates and implements programs for all of the budgeting and financial reporting for the operation of the EMO;
- undertakes such internal and external audits as may be necessary to comply with the Concession Agreement and the procedures of NTPC; and
- assists the GOL in conducting public consultation programs, documenting the feedback and incorporating that feedback into program planning.

NTPC through the EMO shall be responsible for implementing and monitoring Environmental Measures which are obligations of NTPC, including:

- developing and implementing the Monitoring Program;
- managing the subcontracts for specialist studies contemplated under the Environmental Measures and ensure their performance;
- liaising and cooperating, in good faith, with the Government Authorities given responsibility for implementing the GOL's Environmental Measures;
- preparing work and cost schedules for the Monitoring Program;
- carrying out any appropriate testing to ensure that the Environmental Measures have been effectively addressed;
- arranging for adequate reporting on a regular basis in relation to the results of the Monitoring Program;

- creating and implementing programs for all of the budgeting and financial reporting for the operation of the EMO;
- undertaking such internal and external audits as may be necessary to comply with the Concession Agreement and the procedures of NTPC;
- assisting the GOL in conducting public consultation programs, documenting the feedback and incorporating that feedback into program planning; and
- implementing Part C and Part D of the PIP.

The Resettlement Management Office (RMO):

The RMO is supported by E&S management together with a procurement team and a planning and cost control team.

This office ensures resettlement of the Nakai Plateau project affected population in time for the closure of the dam, the successful implementation of livelihood programmes on the Nakai Plateau as well as in the downstream areas, and the resettlement plans attached to project lands.

These activities include:

- the construction of needed infrastructure including houses, roads, electricity, water supply for domestic and irrigation (Nakai);
- the development of a number of integrated livelihood programmes on the Nakai Plateau for the benefit of the PAP including agriculture, livestock, irrigation, forestry, fisheries and community development (Nakai);
- the implementation of the downstream programme for compensation of assets and resettlement and livelihood programmes impacted by changed flows, (Downstream Nam Theun dam and along XBF);
- the project lands programme ensuring adequate compensation of assets and resettlement and of livelihood programmes; and
- implementing Part B of the PIP generally including implementation and monitoring of all social programmes including the public health action plan and the camp followers plan.

The activities implemented by the E&S Division are represented in Figure 11 : E&S Division Implementation

Specific activities will be outsourced for implementation by appropriate experts, NGOs and other contractors with relevant capabilities in the area of the desired activity. This will cover mainly health, livelihood and environmental plans.

Most infrastructure activities for resettlement including water, irrigation, housing, electricity, roads will be outsourced to suitable contractors in consultation and partnership with villagers. Essentially, the Environmental and Social Division staff will work on procurement, design and technical specifications reviews, TOR reviews,

goods/equipment inspection, contract management and administration and importantly site supervision and reporting (internal monitoring) to IFIs and lenders.

NTPC will retain the direct management of some of the activities including monitoring of the implementation of the HCCEMMP and resettlement related construction activities, and coordination with RMU & DRWGs.

Some Project activities will be outsourced across all Project areas however, NTPC must procure that the HCC complies with the HCCEMMP in all material respects as well as other E&S activities subcontracted and outsourced.

Figures 10 and 11 show the structure of the E&S Division. The functional and operational layout follows the Implementation Chart presented in Figure 11 : E&S Division Implementation

Environmental and Social Teams will work in cooperation with designated GOL counterparts to achieve their objectives. An indicative number of people is shown in Figure 10 for each team and for support and management teams.

Figure 11 : E&S Division Implementation

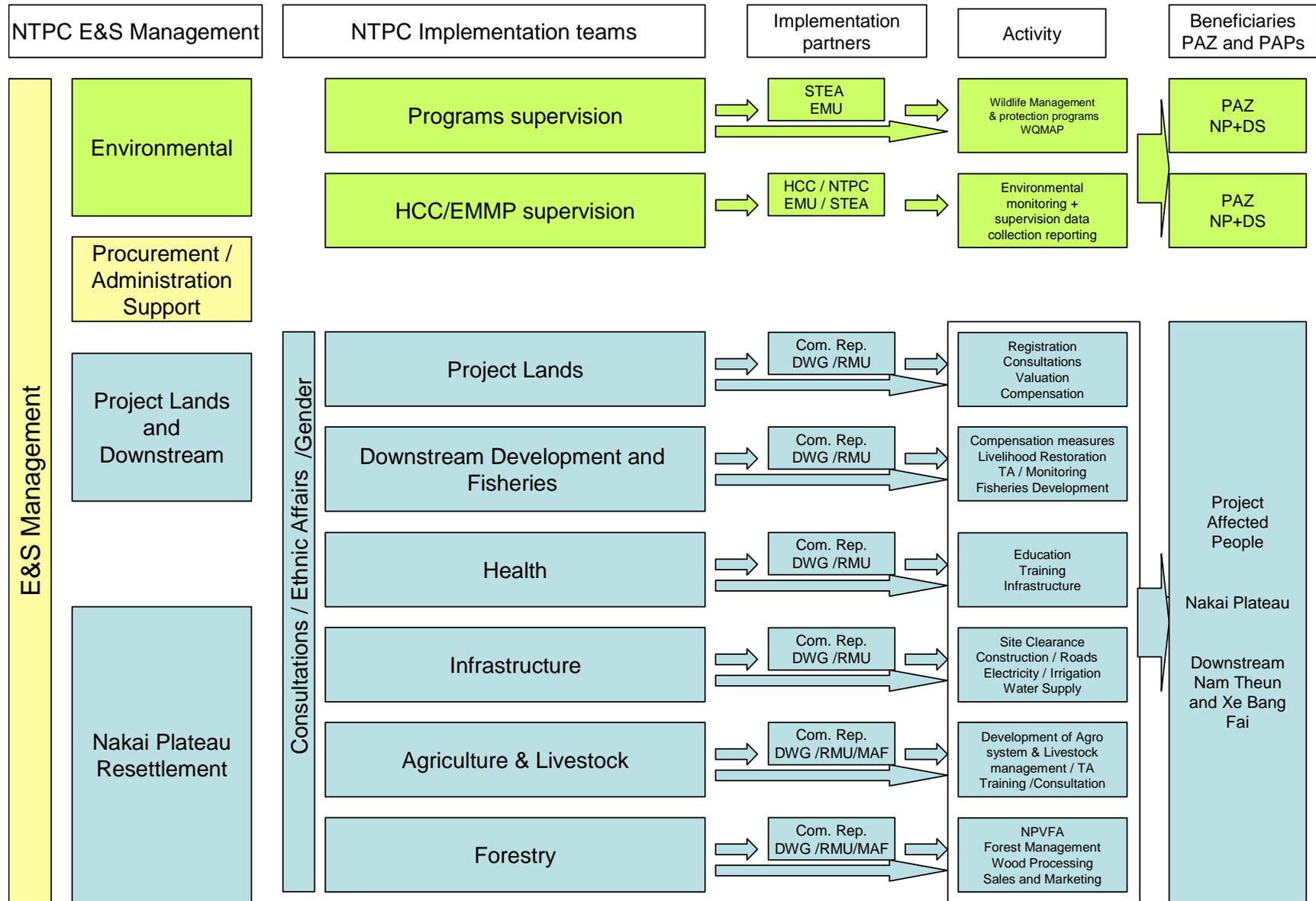
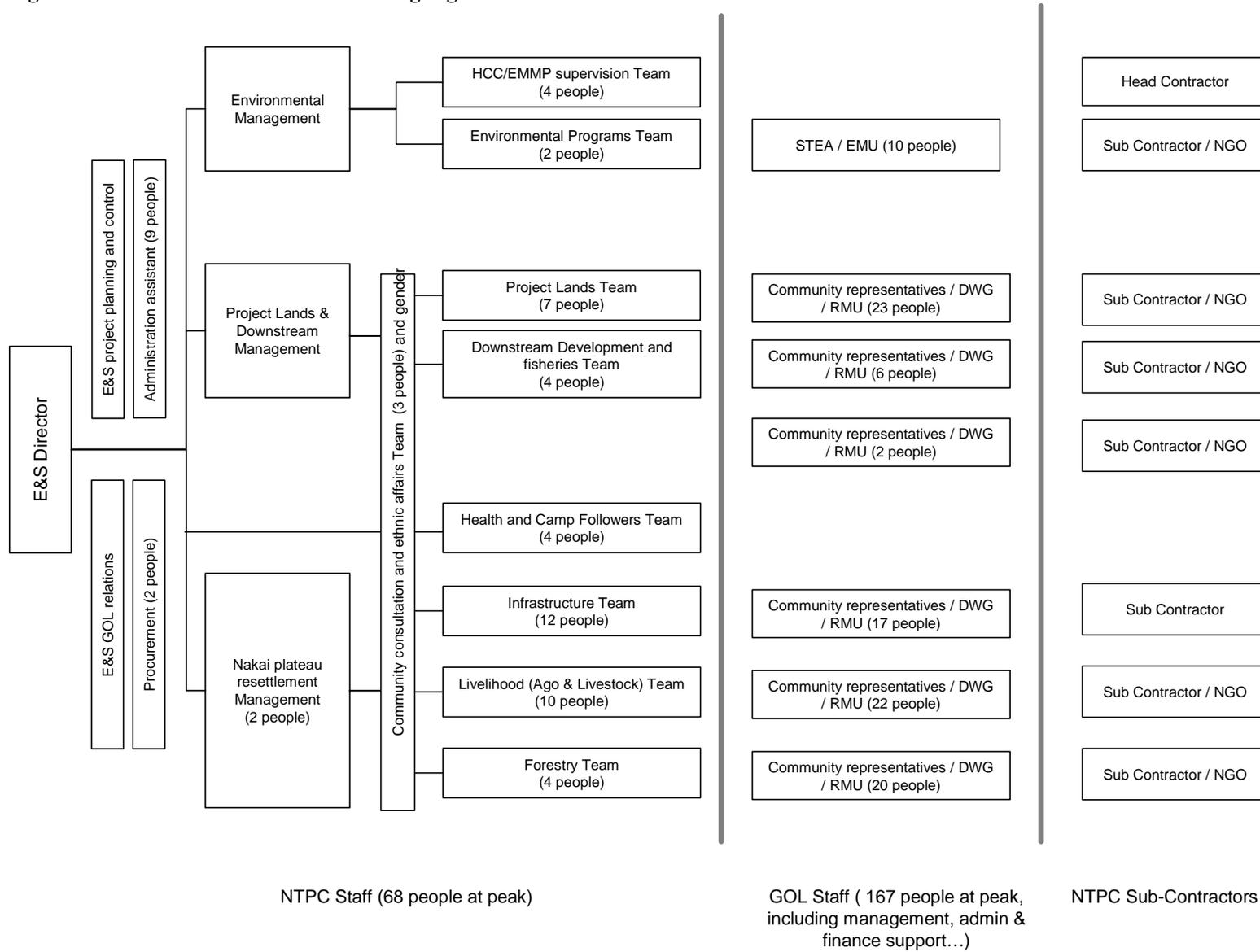


Figure 12: Environmental and social staffing organization²

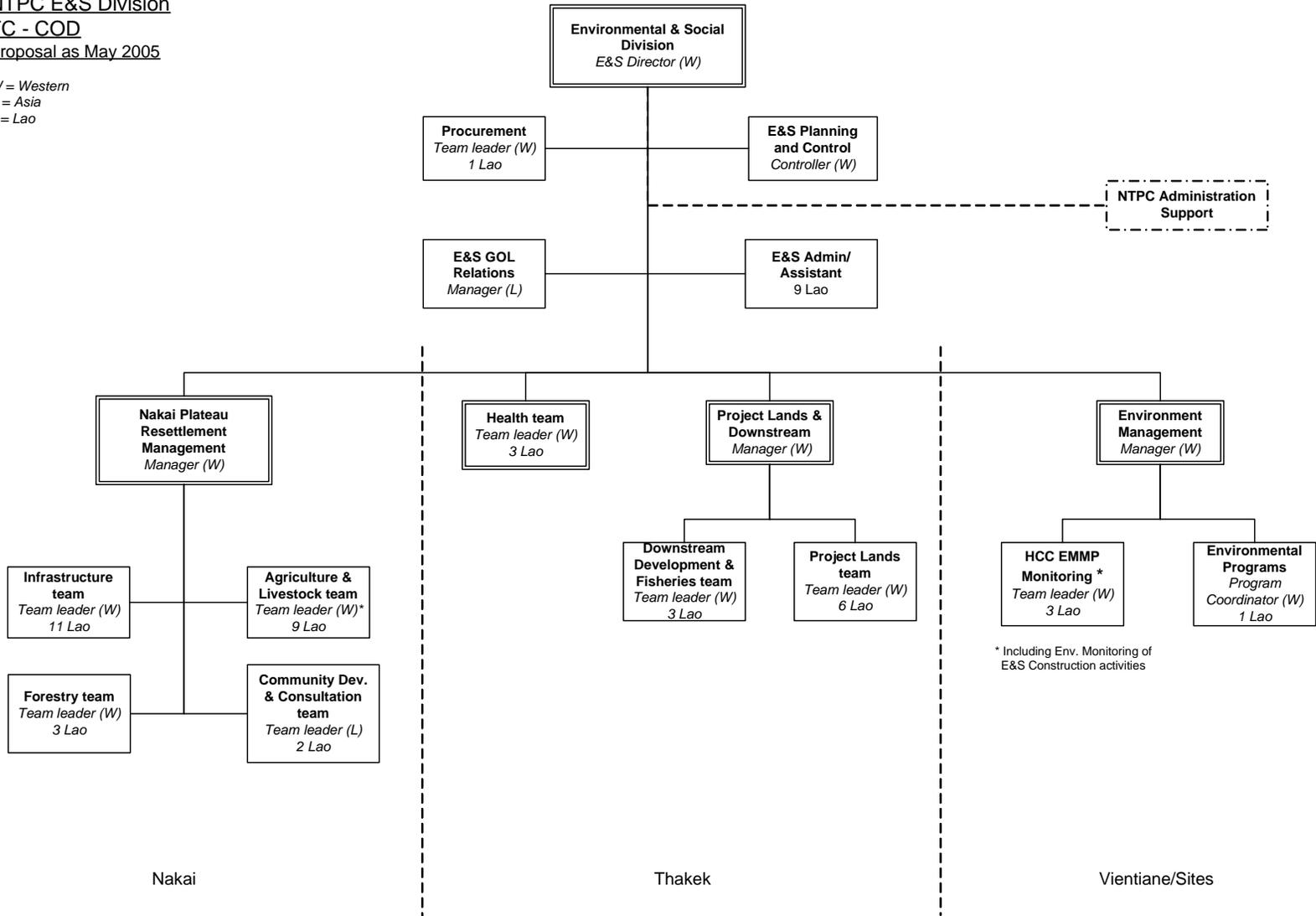


² Indicative values.
Nam Theun 2 Hydroelectric Project

Figure 13 : S&E Organization chart

NTPC E&S Division
FC - COD
 Proposal as May 2005

W = Western
A = Asia
L = Lao



* Including Env. Monitoring of E&S Construction activities

8.4 NTPC and E&S Division – Resource Planning

NTPC staff will subcontract some activities and retain the direct management of some activities. NTPC will be in charge of the procurement of subcontract packages, the review of designs and technical specification as well as the contract management and supervision.

In order to implement the activities of E&S Division, the target number of staff will reach approximately 68 people by FC +1. At beginning of 2005, the division comprises 42 people who are working on the implementation of some pilot field activities (including Project Lands, consultations, village layout and design, UXO) and the completion of safeguard documents for the WB / ADB project appraisal process.

The RMU and NTPC RO will be housed in the same offices and arrangements have already been made to purchase and upgrade an existing structure from the GOL in the town of Oudomsouk. Physical presence of the RO staff (including expatriate team leaders for each of the livelihood programmes and a general field manager for the Social Branch) with the RMU and the DRWGs will enhance the coordination mechanisms.

NTPC E&S offices are located in Vientiane, Thakhek and Nakai (as will be most of the E&S staff). The Vientiane office has been, up to the finalization of the safeguards documents, the main office where most staff has worked. As Financial Close draws near and activities scale up to meet the challenge of resettlement, environmental management and full scale civil works activities, staff activities will shift towards the Nakai Plateau and the downstream areas of the XBF and the Nam Theun Rivers.

Most of the E&S staff is expected to be based in Nakai for significant part of their time (Nakai being the main area affected by the project). The Thakek office is likely to become important initially for logistical support but also for implementation of the downstream programme post FC and closer to COD.

As of March 2005 NTPC E&S Division has 67% of maximum required staff, as shown in the graph below.

Figure 14 : S&E Staffing plan as of 31st March 2005

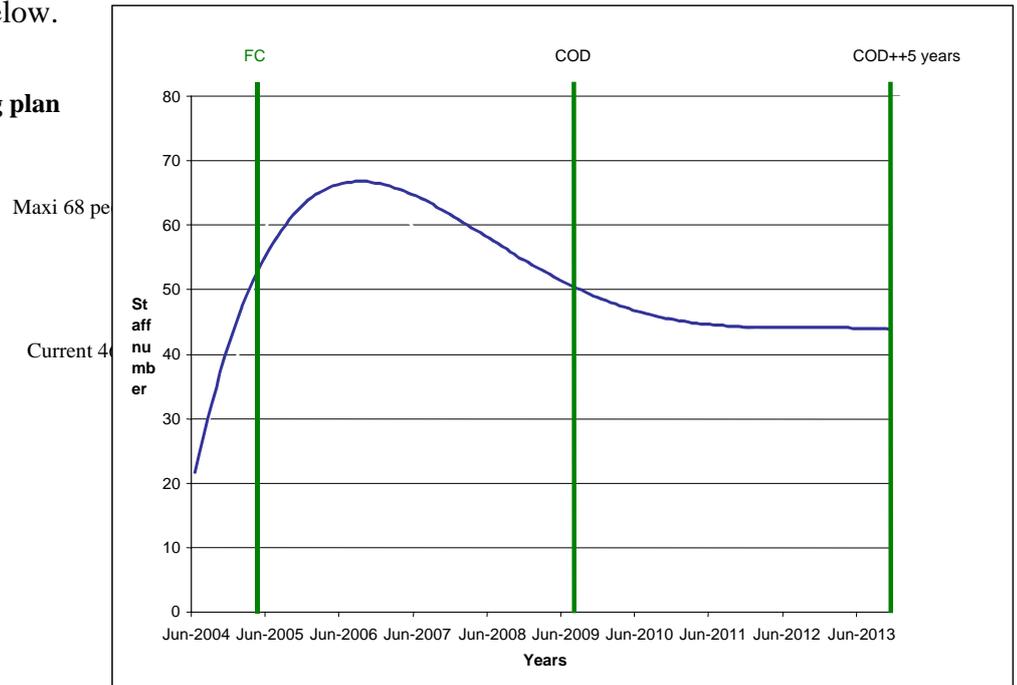


Figure 15: NTPC Operation E&S Expenditure sets out NTPC’s anticipated internal expenditure on E&S compliance

NTPC's own internal operational budget or the E&S Division is approximately US\$8 million between FC and COD as detailed below.

E&S Division	2005	2006	2007	2008	2009	Cost FC - COD
Total	1,493,428	2,315,292	1,813,644	1,538,320	1,148,350	8,309,034

9 GOL organization and staffing

Institutional arrangements are shown in Figure 13 and explained below.

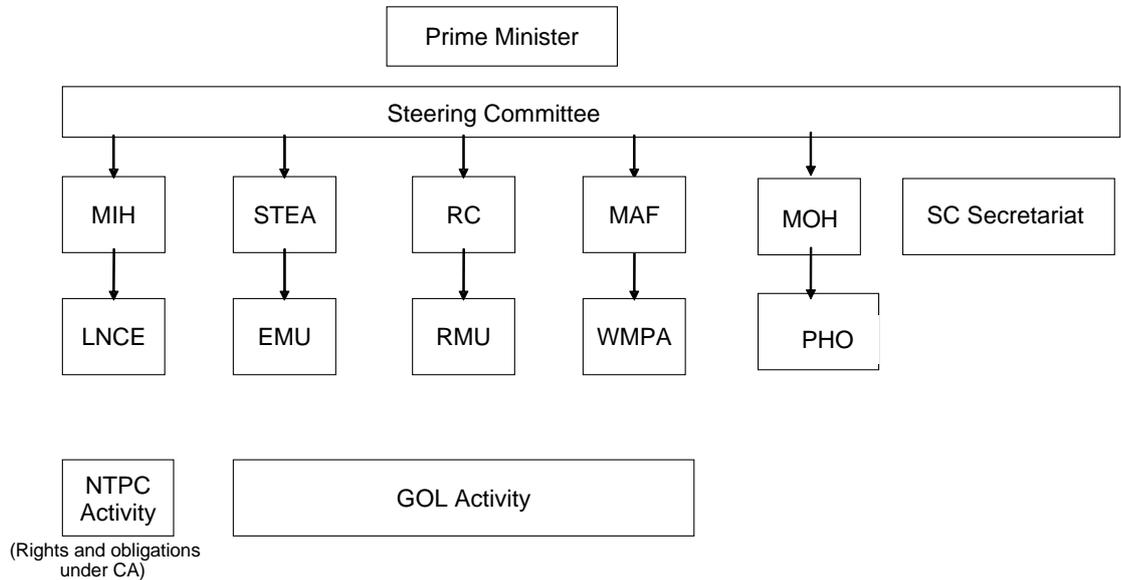


Figure 16 : Organization of GOL entities (For information only).

A Steering Committee with its secretariat

The GOL has set-up a “Steering Committee for the Implementation of Nam Theun 2 project” to coordinate the action of all Ministries involved with the implementation of the project. This Steering Committee is reporting to the Prime Minister, is chaired by the Minister of Industry and Handicraft. It includes among others Ministry of Agriculture and Forestry, the Science, Technology and Environment Agency, Ministry of Health, Ministry of Labour, Ministry of Transport, Deputy Governors of Khammouane and Bolikhamsay provinces.

A Resettlement Committee (RC) with Resettlement Management Units (RMU) and District Working Groups (DWG)

The RC will oversee activities and policies issues related to resettlement activities attached to the project. The RMU will coordinate and monitor GOL responsibilities and DWG will carry-out relocation in coordination with Village Resettlement Committees.

A National Environmental Committee (NEC), Science, Technology and Environment Agency (STEA) and Environmental Management Unit (EMU)

NEC is an inter-ministerial working group advising Government on management and protection of the environment and coordinating the plans between the Ministries and local agencies.

STEA currently has the prime responsibility of coordinating the environmental policies within GOL. It will have a key responsibility in relation with NTPC for monitoring the implementation of mitigation and compensation measures associated to the project. For this specific purpose an EMU has been established under responsibility of STEA.

A Watershed Management & Protection Authority (WMPA)

Established under Prime Minister Office, it will be responsible for coordinating and managing all activities within the Watershed Area³.

More detailed GOL obligations are included in each section of the PIP under “Obligations per CA” where relevant.

NTPC is responsible to assist GOL in the management of procurement process.

³ Prime Minister Decree 25 of 2001 relative to the establishment of the Nam Theun 2 Watershed Management and Protection Authority