

**UPDATE ON LAO PDR: NAM THEUN 2 (NT2)  
HYDROELECTRIC PROJECT**

**INTERIM PROGRESS REPORT**

**February 28, 2008**

## **ABBREVIATIONS AND ACRONYMS**

ADB	Asian Development Bank
CA	Concession Agreement
COD	Commercial Operations Date
DSRP	Dam Safety Review Panel
ECP	Emergency Contingency Plan
GOL	Government of Lao PDR
IAG	International Advisory Group
IFI	International Financial Institutions
IMA	Independent Monitoring Agency
IPR	Interim Progress Report
LSMS	Living Standard Measurement Survey
MAF	Ministry of Agriculture and Forestry
MOL	Minimum Operating Level
NT2	Nam Theun 2 Hydroelectric Project
NTSEP	Nam Theun 2 Social and Environment Project
NTPC	Nam Theun 2 Power Company Limited
POE	Environmental and Social Panel of Experts
UXO	Unexploded Ordnance
VFA	Village Forestry Association
WB	World Bank
WMPA	Watershed Management and Protection Authority

# LAO PDR: NAM THEUN 2 PROJECT: INTERIM PROGRESS REPORT

## Introduction

1. ***This is an Interim Progress Report (IPR) on the Lao PDR Nam Theun 2 Hydroelectric Project (NT2), focusing on the implementation of the project's environmental and social safeguards to address potential impacts on the people directly affected by the project on the Nakai Plateau and downstream.*** It updates the *semi-annual* progress report distributed to the Board of Executive Directors of the World Bank (WB) on December 4, 2007 and the Board of Executive Directors of the Asian Development Bank (ADB), and the technical briefing of the WB Board held on January 15, 2008. The safeguard actions mainly relate to the pace of resettling villagers from the reservoir site on the Nakai Plateau. The new homes, roads, clinics, schools, water wells and other specified components need to be completed before the reservoir begins to fill. In addition, steps are being taken to: strengthen the livelihood programs for those people resettled so that their income targets are reached by the dates stipulated in the Concession Agreement (CA); compensate people for loss of land; provide support to downstream villagers in dealing with changes in water level and quality; and scale up arrangements to support and monitor progress on these actions. If warranted by further developments, another IPR will be issued. Otherwise, the next *annual* Update, to be issued in June/July 2008, will report comprehensively on all aspects of the project.

2. ***NT2 is approaching the important milestone of reservoir impoundment.*** Two actions will initiate the filling of the reservoir: (i) river diversion tunnel closure, currently scheduled to occur on April 10, 2008; and (ii) closure of the Nakai Dam spillway gates, which is planned for mid-June 2008. This IPR spells out the benchmarks for reservoir filling to commence and provides an assessment of the status of the environmental and social actions in the Plateau, Project Lands, and Downstream Areas that need to be completed at various stages of project implementation before the Commercial Operating Date (COD).

3. ***Three benchmarks have to be met for reservoir impoundment to commence.*** These are as follows: (i) resettlement of all impacted households in the Nakai Plateau must be completed, together with essential related infrastructure and services; (ii) the Reservoir Fisheries Plan, and all related sub-plans, must be completed; (iii) an Emergency Contingency Plan (ECP) must be finalized in consultation with the Dam Safety Review Panel (DSRP) and provided to the DSRP, the Environmental and Social Panel of Experts (POE) and the international financial institutions (IFIs). In addition to these benchmarks, the project will have to meet three other measures of performance. These are: (i) a comprehensive framework for the mitigation, compensation and resettlement process, to address impacts in the Downstream Areas, must be established; (ii) selective clearance of the biomass in the permanently inundated zone of the reservoir must be completed; and (iii) implementation of a water monitoring program, including a baseline on water quality conditions, must be operational. .

4. ***Besides these benchmarks and measures, sufficient progress also needs to have been made on a broad range of important social and environmental activities relating to livelihood development for the resettled people, resolving compensation issues in Project Lands and management of downstream impacts.*** The Impoundment Readiness Action Plan of the Government and the Nam Theun 2 Power Company Limited (NTPC) now being finalized will detail the

environmental and social actions that remain to be implemented, together with monitorable indicators to measure progress. This Plan will be made public. The following paragraphs summarize the status of implementing the various environmental and social safeguards actions.

## **Plateau**

5. ***All affected people in the Nakai Plateau are expected to be relocated, and housing and infrastructure completed, before the closure of dam gates in June 2008.*** As of end-February 2008, housing has been entirely completed in 9 of 15 resettlement villages, and in the remaining 6 villages 75 percent of the houses have the structural components in place, including the roof. The remaining houses are expected to be completed before the closure of the Nakai Dam spillway gates in mid-June 2008. The schedule remains tight and is being closely monitored. Of 240 water wells required to meet the target of one well for every five families, more than 200 have been drilled; NTPC expects to drill the remaining wells by May 2008. Permanent village access roads for the southern resettlement villages are not yet complete but all villages are accessible, the construction is being expedited and completion is expected by June 2008. Primary school buildings and health centers are also expected to be completed by the same date. Four villages are already electrified, and electricity is expected to be made available to all resettlers by June 15, 2008. For those villages not yet connected by 22 kV lines, diesel generators will be installed. Also, NTPC will provide roofed granary and compost bins to all families and also suitable waste disposal facilities. Other facilities on track to be provided before June 15, 2008 include fencing around houses, tree nurseries and community buildings such as rice mills and workshops, as well as cattle yards.

6. ***There have been concerns relating to continued rice and protein support for resettled people.*** The Government has confirmed that rice support will continue until the households attain self-sufficiency in rice. Protein support would be phased out after 37 weeks (a time period suggested by past experience) to reduce risks of dependency; however, vulnerable households will be monitored and support will be continued for vulnerable resettlers, according to need. Bi-weekly health check-ups are being conducted. The incidence of malaria and parasite loads has dropped significantly due to the Health Program and improvement in physical conditions.

7. ***The welfare of those people who have resettled is being closely followed by the IFIs to ensure that prompt action is taken if incomes drop before new livelihood options are fully developed.*** The developers are required to ensure that the incomes of resettled people will double within five years of relocation (expected to take place in 2011/2012). The project's commitment has been and remains to ensure that the people most directly affected by this project benefit from it, and efforts on the ground have been intensified, including technical assistance and monitoring, to ensure that the required support is available. Reliable data on income movements is not yet available. The second Living Standard Measurement Survey (LSMS) was conducted in June 2007. The data is currently being analyzed. Meanwhile, preliminary data from a study in the pilot village suggests that income levels dropped in 2007—having risen in previous years, and despite 80 percent of households still exceeding the approximate US\$820 annual household income target—in part due to construction jobs on the project. There are varying opinions on the outlook for 2008: the study itself suggests that households will fare better, but the POE during its recent visit indicated that there may be a further drop due to reduced construction labor opportunities and the probability that reservoir formation will disrupt some of the livelihood activities. The complete results from the LSMS are

expected to provide more accurate data on the status of living standards across the resettled villages and help in the design of remedial actions where warranted.

8. ***The permanent relocation of Vietic villagers from Sop Hia continues to be a matter needing close monitoring.*** The issues regarding the final resettlement sites have been resolved, through a participatory process, with the 14 Vietic households from Ban Sop Hia village as well as several other households from Ban Sop Hia and Ban Nam Nian. These villagers have expressed a preference to stay within their spiritual territory, and consequently they were moved to elevated ground near their original location. Given the complexity of this issue, the guidance of the POE is being regularly sought. Further consultations are planned with these households in the coming months, and through this exercise customized entitlement packages are to be designed. This is expected to include boats for fishing and navigating across the reservoir, piped water supply, health and education facilities, livestock support including large livestock, access to non-timber forest products, and gardens. The IFIs will continue to monitor the situation and offer advice as needed.

9. ***The access of resettlers to reservoir fisheries is an important issue.*** A Prime Minister's Decree (Decree 24/PM) on the exclusive rights of resettlers to reservoir fisheries, fish sales and processing, and drawdown area utilization for the first ten years was issued on February 13, 2008. This "3-in-1 decree" also establishes a reservoir management organization. Meanwhile, NTPC has appointed a reservoir fisheries coordinator to develop the program, and boats for household daily subsistence fishing are under construction. The task of providing about 650 small boats—one boat per two families—has already commenced, and expected to be completed by the end of May 2008.

10. ***A selective biomass clearance program will be completed in the permanently inundated zones ahead of impoundment.*** Biomass clearance activities are being guided by two objectives: reducing negative impacts of biomass on water quality (common to all newly inundated reservoirs), and improving the navigability and local fishing grounds for resettled communities. Taking into account a study conducted by NTPC and other available information, including an assessment of biomass clearance options carried out by the WB in July 2007, the last IFI mission recommended that NTPC clear as much biomass as possible in the areas below the minimum operating level (MOL) that will be permanently flooded. Based on these reports, Government and NTPC have decided to remove biomass from at least 1500 hectares; a further 1500 hectares is already substantially clear. This work is due to be completed by March 31, 2008. Additional clearance above the MOL will occur after the initial inundation as the drawdown areas become accessible. Clearance is being carried out through cutting and some burning, by private contractors under the supervision of the Ministry of Agriculture and Forestry (MAF), with NTPC financial support.

11. ***Establishing sustainable livelihoods and achieving income targets remains the most difficult challenge—but one that must be met.*** An income target of about US\$820 per household has to be achieved at the beginning of the fifth year after relocation. During the initial phase of project implementation there were delays in implementing the livelihood options. The Government, NTPC and IFIs have taken urgent steps to address these delays, including additional training, capacity building and technical assistance activities on the plateau among villagers. All parties involved fully understand that delays to livelihood programs pose serious risks to reaching the guaranteed household income targets. Monitoring of income levels and livelihood progress will receive close attention in the weeks and months ahead. Going forward, it will be important to continue the

“adaptive management” approach that has been in place, applying lessons as they are learned to further improve the development of new livelihood activities.

12. ***Livelihood development programs in the Plateau are being implemented.*** As described in the December 2007 Update, the resettlement zones have been divided into three different areas or “clusters” based on differing access to soil, forest, grazing and fishery resources. In anticipation of congestion in one of these clusters, the northern area, the area available to resettlers has been recently expanded by 2600 hectares of additional corridor area by Decree 24/PM. All the 0.66 hectare agricultural plots for households have been cleared, and so far nearly 80 percent of the 1250 lots have been fenced and the balance will be completed by June 15, 2008.

13. ***Irrigation and livestock development are also challenging issues.*** A cautious approach is being taken to irrigation for these resettlement areas, given the investment and operational costs involved for deep-well pumping and surface distribution. A consultative and testing approach will be adopted and this issue may take until COD to resolve. Livestock activities are an important contributor to livelihoods. There have been reports of some buffalo deaths recently, possibly attributable to loss of grazing lands by flooding caused by a cyclone in October 2007 and project-induced shortage of grazing area. If data now being gathered confirms that this is indeed the case, the IFIs will press for urgent remedial action, including consideration of a POE suggestion that the weaker buffaloes be selected for reduction, in consultation with the villagers who hold the buffaloes, with compensation being made at replacement cost for healthy buffaloes.

14. ***Availability of grazing land is therefore an important issue.*** Plans to maximize usage of the drawdown area are being developed. In preparation for access to the drawdown area, trials need to be conducted to develop suitable forage and crop options, including high value, short rotation horticultural crops, millets, sorghums and pulses such as mung bean.

15. ***Salvage logging is almost complete.*** On February 4, 2008, the Provincial authorities issued the notice to close the salvage logging road, and this needs to be urgently implemented. Most of the commercially viable timber has been harvested, and boundaries have been respected. A May 2007 review found that there had been no major impacts on local communities and no significant evidence of illegal logging, aside from rosewood, in the Watershed area or the Village Forestry Association (VFA) forest. Any damage to roads as a result of salvage logging is being monitored and will be addressed.

16. ***The wildlife programs are progressing well and recent publicly disclosed documents provide additional information about the status of wildlife populations in the project area.*** The Wildlife Management and Monitoring Program is now in place and is divided into two phases: (i) pre-impoundment species and habitat inventories, and development of a pre-impoundment wildlife management program; and (ii) implementation of part of the management plan and training of relevant GOL staff to implement the remainder. The last NT2 Update (December 2007) provided more information on the progress made. Although implementation is underway, the final plan still needs to be provided by NTPC.

17. ***The VFA has completed its role in the supply of timber for housing and community building construction.*** At present, the VFA is processing small pieces of wood for handicrafts and furniture supply to schools and village offices. On-the-job training for villagers in sawmill

operations, wood carving and furniture making is ongoing. Meanwhile, the VFA has contracted the Forestry Inventory and Planning Department in the MAF to undertake the forest management survey and inventory of the VFA permanent forest area. Going forward, a clear transition mechanism will need to be pursued for handover from the current Government leadership—which is helping to increase capacity of the association—to the villagers after 2008. The Government has already taken action to prevent reallocation of 1500 hectares of forest land for urban use in Oudomsouk, and provided access to additional forest lands through Decree 24/PM, in order to ensure the integrity of the forest area under the VFA.

## **Project Lands**

18. ***For the Project Lands, NTPC and GOL had agreed on specific entitlement provisions to be delivered for loss of agricultural land for those severely affected.*** Those households losing more than 10 percent of their productive assets are deemed “severely affected.” While there is a clear preference for land-for-land compensation to avoid the risks to livelihoods of cash compensation (e.g., cash spent unproductively), there are cases where suitable land for this purpose is just not available. In such cases, the agreed two-phase approach is to pay cash compensation for land, with this cash compensation going into special accounts that can be used either to purchase alternative land when it is found or to invest the compensation in livelihood activities, with NTPC and GOL providing technical assistance. This approach responds to the expressed preference of communities. However, at the suggestion of the POE, the possibility of going back to the land-for-land option based on potential new land tracts is also receiving active consideration. Currently, GOL and NTPC are carefully assessing the land situation and whether additional suitable land is in fact available.

## **Downstream Program**

19. ***The impacts on downstream people, who are not being physically moved but who are impacted by the project, calls for carefully crafted mitigation programs.*** This is another critical area, receiving significant additional attention. Many downstream villages will be impacted. Changes in water levels and disruption to water flow will affect fish supplies, water for gardens and farming plots and hence, basic livelihoods. The Downstream Program consists of: (i) infrastructure provision; (ii) livelihood restoration; and (iii) fish catch monitoring, and is outlined in more detail in the December 2007 Update. The framework document for the Downstream Program was prepared and publicly disclosed from mid-2004 to early-2005 in the project area, and since then several consultations have been held at the local level on the preparation of the detailed implementation plan. However, there have been delays in NTPC’s finalization of the detailed implementation plan. A GOL/NTPC workshop in Thakek on February 22, 2008 gave all the parties an opportunity to further comment and reach agreement on areas of the plan. This plan is currently being reviewed by Government, NTPC and the IFIs. From this, a rolling implementation program for the period until COD will be finalized and is expected to be endorsed by the GOL and IFIs by March 31, 2008, after which it will be disclosed more widely in the country and through the IFIs’ respective disclosure mechanisms. However, it should be noted that several activities are ongoing, including pilot livelihood activities and provision of basic services, and it is critical that lessons learned from this experience are built into implementation of activities until COD and thereafter. IFI supervision is being strengthened, given the past constraints faced by GOL and NTPC in moving forward on schedule.

20. ***An Emergency Protein Program is being put in place for 37 villages along the Nam Theun River, downstream of the Nakai Dam.*** These villages will suffer impacts of reduced fisheries due to the reduced flow in the Nam Theun River following diversion tunnel closure scheduled for April 10, 2008. The Emergency Protein Program will address the diet deficiencies due to the loss of fisheries. This will be an interim measure while the development of long-term livelihood programs takes place. This is another area where IFI supervision will be strengthened.

21. ***Regarding the livelihoods component, although lessons from the pilot villages are encouraging, the challenge of scale-up remains significant.*** Important lessons from the implementation of livelihood programs in the 20 pilot villages have emerged, as described in the December 2007 Update. The program was scrutinized—particularly the design and risk-sharing arrangements relating to micro-credit—at the Thakek workshop in February. These important lessons will be incorporated during the scale-up to cover the remaining villages, under a suitably adaptive and participatory approach to be laid out in the implementation program.

### **Watershed**

22. ***The Watershed Management and Protection Authority (WMPA) continues to make commendable progress but still requires internal strengthening.*** The POE and the Independent Monitoring Agency for the WMPA have suggested administrative reorganization and re-staffing to strengthen performance further in terms of monitoring and enforcement, and this is under examination by GOL. An aspect that also needs closer attention is the relationship between the conservation of the Protected Area and the development of the villagers living there. There is a need for the WMPA to develop a clear strategy that articulates how it will manage the conservation of the area while at the same time helping to improve the living standards of its population. On another point, the previously reported small-scale gold mining within the Protected Area, which presented a serious threat to its integrity, has been successfully halted by the GOL.

### **Supervision and Monitoring Arrangements**

23. ***IFI field supervision capacity is being strengthened to ensure that safeguard standards are met through actions on the ground.*** In particular, additional WB specialists are joining the Vientiane Office, including a resettlement specialist and a rural development specialist. Some of them are also expected to be located in the project site for varying lengths of time depending on the issues that need to be resolved. The WB task management of the Nam Theun 2 Social and Environment Project (NTSEP) has now been assigned to one of the Vientiane-based international staff of the WB. Additional expertise in Vientiane includes staff focused on social development, health, environment, communications, water and fisheries, as well as technical staff in Bangkok covering forestry, environment and public financial management. Furthermore, WB and ADB technical staff based in Washington DC and Manila, who have experience in all aspects of the project, travel regularly to the field.

24. ***The extensive monitoring arrangements for NT2 are serving their purpose in identifying and managing risks well.*** The multi-layer NT2 oversight arrangements include the International Advisory Group (IAG, reporting to the President of the WB), and the POE (reporting to the GOL). Both groups undertake regular visits to the project and both visited the project (independently of each other) in February 2008. At the end of their visits, both the POE and the IAG debriefed GOL,

NTPC, IFIs and the public. GOL and NTPC are continuing to consult with the POE on the findings of its visit and the formal reports from the visits of both the POE and the IAG are now being prepared. The Lenders' Engineer, DSRP, GOL Engineer and the Independent Monitoring Agencies are also continuing to carry out their supervision missions and reporting and commenting on project implementation.

## **Conclusion**

25. NTPC and GOL are making progress towards satisfactory implementation of the explicit benchmarks to be met prior to reservoir filling and the various environmental and social actions that need to be completed at different stages before COD. In consultation with the POE, GOL and NTPC are finalizing an Impoundment Readiness Action Plan that covers all these activities. The IFIs will supervise the implementation of this plan, working closely with GOL and NTPC. The Action Plan would be made public. Progress on this Action Plan will be monitored not only by the IFIs but also by other monitoring groups, including the POE. The challenges of implementing the unprecedented range of commitments associated with the NT2 project are formidable, particularly in a capacity constrained environment. However, the key parties—GOL and NTPC in particular—remain fully committed to their successful implementation.