

Existing and Planned Lao Hydropower Projects – 23 January 2009

The table below lists existing and planned large (greater than 10 MW) hydropower projects in the Laos. The table is based on the Lao Government Department of Energy Promotion and Development's "Electric Power Plants in Laos as of January 2009", available at: http://www.poweringprogress.org/index.php?option=com_jotloader&task=files.download&cid=333.

The table is updated regularly by TERRA and International Rivers with new information from news reports, official project documents and other sources. Please send comments, questions or corrections to shannon@internationalrivers.org and fer@terrafer.org.

SUMMARY:

- Projects in operation: 6
- Projects *officially* under construction: 7
- Projects at planning stage: 15
- Projects at feasibility stage: 40
- Projects proposed for Mekong mainstream in Laos/Lao-Thai border: 8

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| KEY: | Existing projects | Projects under construction | Project at planning stage | Projects at feasibility stage |
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PPA = Power Purchase Agreement

COD = Commercial Operations Date

Mekong mainstream projects

| Project (province) | Installed Capacity (MW) | Project Sponsors (Country) | Purpose | Remarks (status, cost, actors, impacts, etc.) |
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| 1. Nam Ngum 1 (Vientiane) | 155 | Electricité du Lao (EdL) (Laos) | Domestic/ Export to Thailand | <input type="checkbox"/> Laos' first large hydropower project, began operation in 1971. <input type="checkbox"/> According to one estimate (Thayer Scudder), approx. 3,500 people were displaced, although exact numbers unknown. <input type="checkbox"/> Project's underperformance led the ADB to finance Nam Song diversion dam to increase Nam Ngum's power output. |
| 2. Xeset 1 (Salavanh) | 45 | EdL (Laos) | Domestic/ Export to Thailand | <input type="checkbox"/> Began operation in 1990. |
| 3. Nam Leuk (Vientiane) | 60 | EdL (Laos) | Domestic/ Export to Thailand | <input type="checkbox"/> Began operation in 2000. <input type="checkbox"/> US\$130 million project was largely financed by ADB and Japanese government. <input type="checkbox"/> More than 9,500 people downstream affected by fisheries losses and clean water shortages; adequate compensation still not provided. <input type="checkbox"/> Built in Phou Khao Khouay NPA. <input type="checkbox"/> More information: http://www.internationalrivers.org/en/southeast-asia/laos/nam-leuk and http://www.internationalrivers.org/node/3343 |
| 4. Nam Mang 3 (Vientiane) | 40 | EdL (Laos) | Domestic/ Export to Thailand | <input type="checkbox"/> Began operation in 2004. <input type="checkbox"/> CWE secured finance from China EXIM to build the project and hand it over to EdL. • More information: http://www.internationalrivers.org/en/southeast-asia/laos/laos-other-projects |

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| 5. Theun-Hinboun (Bolikhamsay) | 210 | EdL (Laos) 60%; Nordic Group [owned by Statkraft] (Norway) 20%; & MDX [GMS Power] (Thailand) 20% = Theun-Hinboun Power Company (THPC) | Domestic/ Export to Thailand | <ul style="list-style-type: none"> <input type="checkbox"/> Began operation in 1998. <input type="checkbox"/> Funded by the ADB and Norwegian aid agency, Norad. <input type="checkbox"/> Despite originally claiming that the project had minimal impacts, THPC and the ADB now admit that more than 29,000 people in 71 villages have lost fisheries, rice fields, vegetables gardens and fresh drinking water supplies as a result of the dam. <input type="checkbox"/> More information: http://www.fivas.org/, http://www.internationalrivers.org/en/southeast-asia/laos/theun-hinboun and http://www.internationalrivers.org/node/3343 |
| 6. Houay Ho (Champasak & Attapeu) | 150 | EdL (Laos) 20%; Suez Energy (Belgium) 60% (?); & HHTC (Thailand) 20% | Export to Thailand | <ul style="list-style-type: none"> <input type="checkbox"/> Began operation in 1999. <input type="checkbox"/> Built by Daewoo (Korea) & Loxely (Thailand); was sold to Tractebel in 2002. In September 2008, Thailand's GLOW Energy, a unit of Suez, said it would buy a 67.25% stake in the project from Suez-Tractebel for US\$45 million (<i>Reuters</i> 9/15/08). <input type="checkbox"/> Resettled about 2,500 mainly ethnic minorities to area with insufficient agricultural land and affected others downstream; adequate compensation still not provided. • More information: http://www.internationalrivers.org/node/3343 and http://www.internationalrivers.org/en/southeast-asia/laos/laos-other-projects |
| 7. Xeset 2 (Salavanh) | 76 | EdL (Laos) | Domestic/ Export to Thailand | <ul style="list-style-type: none"> <input type="checkbox"/> Under construction (80% complete) and expected to be operational by August 2009. <input type="checkbox"/> Estimated cost US\$135 million, largely financed by China EXIM. <input type="checkbox"/> In 2006, Norconsult awarded contract for advisory services and construction supervision; main construction contractor is Norinco of China. <input type="checkbox"/> Will adversely affect approx. 20,000 people in the Xeset River Basin. • More information: http://www.terraper.org/pic_water/Watershed%2011(1).pdf |
| 8. Nam Theun 2 (Khammouane) | 1,088 | Nam Theun 2 Power Company (NTPC), comprising: Lao Holding State Enterprise - LHSE (Laos) 25%; Electricite Du France - EDF (France) 35%; Electricity Generating Company - EGCO (Thailand) 25%; & Ital-Thai Development Co. (Thailand) 15% | Domestic/ Export to Thailand | <ul style="list-style-type: none"> <input type="checkbox"/> PPA signed 2003, and approved by the World Bank in March 2005. <input type="checkbox"/> Currently under construction (90% complete) and expected to be operational by December 2009; reservoir filling began in April 2008. <input type="checkbox"/> Estimated cost US\$1.45 billion, financed by World Bank, ADB, EIB, NIB, a number of export credit agencies and commercial banks. <input type="checkbox"/> Has displaced 6,300 people from Nakai Plateau and will adversely affect 120,000 people downstream along the Xe Bang Fai and along the Nam Theun. More than 10,000 people also affected by project construction. <input type="checkbox"/> Recent field reports document violations of environmental and social safeguards and commitments. <input type="checkbox"/> More information: http://www.internationalrivers.org/en/southeast-asia/laos/nam-theun-2, http://www.internationalrivers.org/node/3343 and http://www.terraper.org/key_issues_view.php?id=4 |

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| <p>9. Nam Ngum 2 (Vientiane)</p> | <p>615</p> | <p>Shlapak Group (USA) 4%; EdL (Laos) 25%; Ch. Karnchang (Thai) 28.5%; PT Construction & Irrigation Co., (Laos) 4%; Ratchaburi Generating Co. (Thai) 25%; Bangkok Expressway PCL (Thai) 12.5%; & TEAM Consulting Engineering and Management Co. (Thai) 1%</p> | <p>Export to Thailand</p> | <ul style="list-style-type: none"> <input type="checkbox"/> Under construction (60% complete) and expected to be operational by 2013. <input type="checkbox"/> EIA finalised and but not publicly disclosed (in violation of National Hydropower Policy). <input type="checkbox"/> Estimated cost US\$832 million, largely financed by Thai commercial banks; EdL's equity share in project was provided by Thai EXIM. Reports that costs have increased by 30% (<i>Bangkok Post</i> 10/7/08). <input type="checkbox"/> Mitsui and Toshiba (Japan) awarded contracts worth approx US\$100 million to supply turbines and generators (<i>JCN Newswire</i> 8/23/06). <input type="checkbox"/> In May 2006, Jakko Poyry (Finland) announced it had been awarded an engineering contract worth EUR8.9 million. <input type="checkbox"/> Displacing approx. 6,100 mainly ethnic minorities from 17 villages; questionable land availability and livelihood proposals; apparent lack of RAP. Will impact fishery of Nam Ngum 1 reservoir, a source of food and income for more than 9,000 people. Transmission line constructed through Phou Khao Khouay NPA. <input type="checkbox"/> Nam Ngum basin is a high-security area, with reports of major mining and logging interests controlled by the military. <input type="checkbox"/> More information: http://www.internationalrivers.org/node/3343 |
| <p>10. Xekaman 3 (Xekong)</p> | <p>250</p> | <p>Vietnam-Lao Power Joint Stock Co. - VLP (Vietnam) 85%; EdL (Laos) 15%</p> | <p>Domestic/ Export to Vietnam</p> | <ul style="list-style-type: none"> <input type="checkbox"/> Under construction (64% complete) since April 2006 and expected to be operational by 2010. <input type="checkbox"/> EIA finalised and but not publicly disclosed (in violation of National Hydropower Policy). <input type="checkbox"/> Estimated cost increased to US\$311.7 (<i>VNA</i> 10/05/08); power purchase price expected to be increased once project is complete (<i>Vte Times</i> 8/14/08). <input type="checkbox"/> Song Da of Vietnam is constructing dam. <input type="checkbox"/> Secured US\$66 million from Vietcom Bank and Bank for Investment and Development of Vietnam (<i>Asia Pulse</i> 7/31/07). <input type="checkbox"/> VLPC shareholders include: Song Da Corporation (49%), PetroVietnam, Bank for Investment and Development of Vietnam (BIDV), PetroVietnam Finance Company (PVFC), and BIDV Securities Company (<i>Xinhua</i> 12/10/07). <input type="checkbox"/> Austrian company Andritz VA Tech Hydro unit has been awarded a 42 million euro contract to supply electro-mechanical equipment Xekaman 3 (<i>Thomson Financial</i> 6/3/08). <input type="checkbox"/> At least 7 ethnic minority villages downstream and 40 villages upstream may be affected. Will inundate one village. Impact Dong Amphan NPA. <input type="checkbox"/> More information: http://www.internationalrivers.org/node/3343 and http://www.terrafer.org/pic_water/Watershed%2012(1).pdf |

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| 11. Nam Lik 1-2 (Vientiane) | 100 | China International Water and Electric Corporation (China) 80%; EdL 20% | Domestic | <ul style="list-style-type: none"> <input type="checkbox"/> Concession Agreement signed October 2006. <input type="checkbox"/> Construction started December 2007 (26% complete), expected COD 2010. <input type="checkbox"/> Estimated cost US\$150 million (<i>Vte Times</i> 10/30/08). <input type="checkbox"/> Dam will be 103 meters high; resettlement required only for construction of access road (<i>Vte Times</i> 12/18/07). |
| 12. Nam Ngum 5 (Vientiane & Xiengkhuang) | 120 | EdL 15%; Sinohydro (China) 85% | Domestic | <ul style="list-style-type: none"> <input type="checkbox"/> Sinohydro announced it had signed a Concession Agreement and PPA for the project in April 2007. <input type="checkbox"/> Construction reportedly began in April 2008 (<i>Vte Times</i> 4/30/08) and confirmed by Ministry of Energy and Mines in May 2008 presentation, before EIA was approved in June 2008; COD expected 2011. <input type="checkbox"/> Estimated cost US\$200 million, will be covered by a loan from national Bank of China (US\$140m); Sinohydro (US\$54m) and EdL (US\$6m) (<i>VOA</i> 4/03/07). <input type="checkbox"/> Affect paddy land of 49 households; questionable livelihood proposals. Lack of baseline data or assessments of downstream impacts. <input type="checkbox"/> Nam Ngum basin a high-security area, and reports of major mining and logging interests controlled by the military in the basin. <input type="checkbox"/> Sinohydro has approached World Bank's MIGA for a guarantee, although construction is proceeding before MIGA's Board has approved its involvement; EIA posted on MIGA's site: http://www.miga.org/news/index_sv.cfm?aid=1640 <input type="checkbox"/> More information: http://www.internationalrivers.org/node/3343 |

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| <p>13. Theun-Hinboun Expansion (Bolikhamsay)</p> | <p>220+60</p> | <p>Theun-Hinboun Power Company (THPC), comprising: EdL (Laos) 60%; Nordic Group [owned by Statkraft] (Norway) 20%; & MDX (Thailand) 20%</p> | <p>Domestic/ Export to Thailand</p> | <ul style="list-style-type: none"> □ PPA signed September 2008; financial close reached October 2008. □ Expected COD 2012. □ Estimated cost US\$665 million (<i>Vte Times</i> 10/13/08). Loans secured from Thai EXIM, ANZ, KBC Bank, BNP Paribas and Thai banks. □ Resettlement Action Plan and EIA conducted by Norplan are available; scandal regarding Norplan EIA, where they used RMR EIA data but reached different conclusions. □ Austrian company Andritz VA Tech Hydro awarded electro-mechanical equipment contract for US\$122 million (<i>International Water Power and Dam Construction</i> 12/17/08); SWECO awarded owner's engineer contract. □ Resettle 4,360 mainly ethnic minorities; questionable land availability and land proposals. Affect 48,411 people downstream, on project lands, and in host villages. Exacerbate flooding and erosion in Hai and Hinboun basins. □ UXO clearance reportedly not being completed by accredited company but instead by Lao army. □ Resettlement housing construction underway; approximately 30 of 120 houses expected to be completed in January 2008; resettlement to be completed by 2010 (<i>Vte Times</i> 11/22/08). □ More information: http://www.fivas.org/, http://www.internationalrivers.org/en/southeast-asia/laos/theun-hinboun and http://www.internationalrivers.org/node/3343 |
| <p>14. Nam Ngum 3 (Vientiane & Xieng Khouang)</p> | <p>440</p> | <p>Marubeni (Japan) 25%; Ratchaburi (Thai) 25%; GMS Power (Thai) 27%; Lao Holding State Enterprise - LHSE (Laos) 23%</p> | <p>Export to Thailand</p> | <ul style="list-style-type: none"> □ A tariff MoU signed with EGAT December 2006; in process of negotiating PPA. □ EIA workshop held in January 2008. □ Pre-construction has begun despite lack of EIA approval; expected to be operational by 2014. □ Estimated cost US\$779.6 million (<i>Vte Times</i> 3/03/08), but increasing costs of approx. 30% led developers to call for re-negotiation of purchase price with EGAT in July 2008 (<i>Vte Times</i> 7/30/08). □ Funding likely from ADB (in lending pipeline), International Finance Corporation and/or JBIC in 2009. □ ADB-financed cumulative impact assessment. □ Resettle 523 people within their village territory. Affect at least 2,455 people downstream and unknown numbers upstream. □ Developers suspended investment in December 2008, citing rising construction costs, credit crunch and uncertain Thai electricity demand (<i>Vte Times</i> 12/17/08). |

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| 15. Nam Ngiep 1 (Bolikhamsay) | 260+18 | Kansai Electric & Nippon Keoi (Japan) 50%; Lao Holding State Enterprise - LHSE (Laos) 30%; EGAT (Thailand) 20% | Domestic/ Export to Thailand | <ul style="list-style-type: none"> <input type="checkbox"/> In process of negotiating PPA and Concession Agreement. <input type="checkbox"/> Construction expected to begin in 2008; planned COD 2015. <input type="checkbox"/> Estimated cost US\$477 million (<i>Vte Times</i> 3/03/08), but increasing costs of approx. 30% led developers to call for re-negotiation of purchase price with EGAT in July 2008 (<i>Vte Times</i> 7/30/08). <input type="checkbox"/> According to feasibility study conducted by Nippon Koei in 2002, the project would affect approx. 13,000 people, displacing 1,600 people; will have serious downstream impacts on aquatic life and fisheries. <input type="checkbox"/> Developers suspended investment in December 2008, citing rising construction costs, credit crunch and uncertain Thai electricity demand (<i>Vte Times</i> 12/17/08) . <input type="checkbox"/> Funding likely from ADB (in lending pipeline). |
| 16. Nam Theun 1 (Bolikhamsay) | 523 | Lao Holding State Enterprise – LHSE (Laos) 5%; Gamuda (Malaysia) 47.5%; EGCO (Thailand) 47.5% | Domestic/ Export to Thailand | <ul style="list-style-type: none"> <input type="checkbox"/> In process of negotiating PPA and Concession Agreement. <input type="checkbox"/> Pre-construction has begun despite lack of final design or EIA approval; expected COD 2016. <input type="checkbox"/> Estimated cost US\$759.68 million (<i>Vte Times</i> 3/03/08), but increasing costs of approx. 30% led developers to call for re-negotiation of purchase price with EGAT in July 2008 (<i>Vte Times</i> 7/30/08). <input type="checkbox"/> Serious questions over economic viability – was screened out of Lahmeyer/Manusell 2004 PSDP. <input type="checkbox"/> Located in Nam Kading Protected Area, site of WCS and World Bank GEF project – major biodiversity impacts. <input type="checkbox"/> Adversely affect more than 30,000 people, mainly upstream and downstream of reservoir (blocked fish migrations, water quality problems, etc.), displace approx 3,500 people from reservoir area. <input type="checkbox"/> Developers suspended investment in December 2008, citing rising construction costs, credit crunch and uncertain Thai electricity demand (<i>Vte Times</i> 12/17/08). <input type="checkbox"/> More information: http://www.internationalrivers.org/en/southeast-asia/laos/laos-other-projects and http://www.internationalrivers.org/node/3343 |

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| 17. Xekong 4 (Xekong) | 300 | Region Oil (Russia) 75%, Lao Holding State Enterprise - LHSE (Laos) 25% | Domestic or Export to Thailand or Vietnam | <ul style="list-style-type: none"> <input type="checkbox"/> MoU for feasibility study signed 2006 and EIA workshop held in Vientiane November 2007; Project Development Agreement signed June 2008. <input type="checkbox"/> Expected COD 2013. <input type="checkbox"/> Estimated cost US\$600 million. <input type="checkbox"/> Russian energy company Vostokhydro Energostroy will carry out the construction over a three-year period. <input type="checkbox"/> Resettle more than 5,000 mainly ethnic minorities; questionable livelihood proposals; many villagers already moved out of reservoir area. <input type="checkbox"/> Cause an estimated US\$6.25 million in fisheries losses annually in Lao part of basin, potentially affecting more than 190,000 people in Laos and unknown numbers in Cambodia; no compensation proposed. No assessment of impacts in Cambodia. <input type="checkbox"/> More information: http://www.terraper.org/pic_water/Watershed%2012(1).pdf, http://www.internationalrivers.org/node/3343 and http://www.internationalrivers.org/en/southeast-asia/cambodia/sekong-river |
| 18. Nam Kong 1 (Attapeu) | 150 | Region Oil (Russia) 80%; Lao Holding State Enterprise - LHSE (Laos) 20% | Domestic or Export to Thailand or Vietnam | <ul style="list-style-type: none"> <input type="checkbox"/> MoU signed 2005 and feasibility study (EIA?) completed in December 2007; Project Development Agreement signed June 2008. <input type="checkbox"/> Expected COD 2013 (<i>Vte Times</i> 12/18/07). <input type="checkbox"/> Estimated cost US\$186 million (<i>Vte Times</i> 6/25/08). <input type="checkbox"/> Villagers already displaced from project area. Impact about 1,612 ethnic minorities downstream; no compensation proposed. <input type="checkbox"/> More information: http://www.terraper.org/pic_water/Watershed%2012(1).pdf and http://www.internationalrivers.org/node/3343 |

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| <p>19. Nam Ou (Phongsaly & Luang Prabang)</p> | <p>1,100</p> | <p>Sinohydro (China) 75%-90%; GoL 10-25%</p> | <p>Domestic or Export to Thailand or China</p> | <ul style="list-style-type: none"> <input type="checkbox"/> Project Development Agreement signed October 2007. <input type="checkbox"/> According to Sinohydro, the Nam Ou cascade involves 6-7 projects which will be operational between 2013-2016. <input type="checkbox"/> American company, Pacific Resources, conducted geological surveys on the Nam Ou in the late 1990s and reportedly determined that many locations were risky due to seismic faults. <input type="checkbox"/> Nam Ou 8, the largest of proposed dams, is expected to start construction in 2009 and be operational by 2015. <input type="checkbox"/> Increasing costs of approx. 30% led developers to call for re-negotiation of purchase price with EGAT in July 2008 (<i>Vte Times</i> 7/30/08). <input type="checkbox"/> Estimated cost for cascade is US\$2 billion. <input type="checkbox"/> On 27 Nov. 2007, Sinohydro announced it had signed an agreement to sell 90% of electricity from Nam Ou dams to Thailand, noting it was more profitable than selling to China; and Nam Ou has been included in Thailand's revised PDP (Jan 2008). <input type="checkbox"/> Nam Ou 8 would affect approximately 50,000 people, displacing some 7,000; 300km² reservoir would inundate part of Phou Dendin NBCA; "fish life and habitats badly impacted."^b |
| <p>20. Don Sahong, Mekong mainstream (Champasak)</p> | <p>360</p> | <p>Mega First Corporation Berhad - MFCB (Malaysia) 80%; GoL 20%</p> | <p>Domestic/ Export to Thailand</p> | <ul style="list-style-type: none"> <input type="checkbox"/> MoU for feasibility study signed 2006; and Project Development Agreement signed February 2008. <input type="checkbox"/> Estimated cost US\$300 million. <input type="checkbox"/> Expected COD 2015. <input type="checkbox"/> EIA has reportedly been submitted to Lao government, but has yet to be publicly released. <input type="checkbox"/> Block main fish migration channel in the Khone Falls area, causing severe fisheries impacts for Laos, Cambodia and region; would threaten last Irawaddy Dolphin population in Laos and jeopardize tourism value of Khone Falls area and potential RAMSAR status. <input type="checkbox"/> Affected villagers not properly informed; no consultations in Cambodia. <input type="checkbox"/> More information: http://www.terraper.org/key_issues_view.php?id=13, http://www.internationalrivers.org/node/3343 and http://www.internationalrivers.org/en/southeast-asia/mekong-mainstream-dams |

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| 21. Xe Katam (Champasak) | 61 | Kansai (Japan) 55%; Thai investor 20%; GoL 25% | Domestic | <ul style="list-style-type: none"> <input type="checkbox"/> Project Development Agreement signed December 2007. <input type="checkbox"/> EIA completed but not disclosed (in violation of National Hydropower Policy). <input type="checkbox"/> Expected COD 2012. <input type="checkbox"/> According to 2006 feasibility study, project will cost an estimated US\$120 million. <input type="checkbox"/> Kansai expects support from JBIC and Nippon Export and Investment Insurance (NEXI). <input type="checkbox"/> Resettle 235 mainly ethnic minorities; questionable land availability and livelihood proposals. Affect unknown numbers downstream; no compensation proposed. <input type="checkbox"/> More information: http://www.internationalrivers.org/node/3343 |
| 22. Nam Sane 3 (Xiengkhuang) | 60 | Romas Eco Industries Berhad (Malaysia) 75%; GoL 25% | Domestic | <ul style="list-style-type: none"> <input type="checkbox"/> Project Development Agreement signed June 2008. <input type="checkbox"/> Expected COD 2013. |
| 23. Nam Mo (Xengkhuang) | 105 | Viet-Lao Economical Cooperative General Company (Vietnam) 85%; GoL 15% | Domestic/ Export to Vietnam | <ul style="list-style-type: none"> <input type="checkbox"/> Project Development Agreement signed March 2008. <input type="checkbox"/> Expected COD 2014. <input type="checkbox"/> Potential resettlement of people from Ban Maung Ngat 1.^a |
| 24. Xekaman 1 (Attapeu) | 320 | Vietnam-Lao Power Joint Stock Co. - VLPC (Vietnam) 70-85%; GoL 15-30% | Domestic or Export to Vietnam | <ul style="list-style-type: none"> <input type="checkbox"/> MoU for feasibility study signed in 2006. <input type="checkbox"/> Construction expected to begin in 2008 and COD expected in 2013. <input type="checkbox"/> Estimated cost US\$400 million to be financed by VLPC (<i>Xinhua</i> 12/10/07). <input type="checkbox"/> Resettle about 800 ethnic minorities; many others already displaced from reservoir area. Affect up to 10,000 people through water quality changes, fisheries losses and erosion. Impact Dong Amphan NPA. <input type="checkbox"/> More information: http://www.terrafer.org/pic_water/Watershed%2012(1).pdf and http://www.internationalrivers.org/node/3343 |
| 25. Nam Lik 1 (Vientiane) | 60 | Hydro Engineering Co. (Thailand) 80%; GoL (20%) | Domestic | <ul style="list-style-type: none"> <input type="checkbox"/> Project development Agreement signed April 2008; expected COD 2013. <input type="checkbox"/> Estimated cost US\$109 million (<i>KPL</i> 4/09/08). <input type="checkbox"/> Environmental certificate expected to be issued in December 2008 (<i>Vte Times</i> 11/24/08). |
| 26. Xelanong 2 (Salavanh) | 60 | JRC Service Co. Ltd (Japan) 75%; GoL 25% | Domestic | <ul style="list-style-type: none"> <input type="checkbox"/> Project Development Agreement signed September 2007. <input type="checkbox"/> Feasibility study ongoing. |
| 27. Xayabouri, Mekong mainstream (Xayabouri and Luang Prabang) | 1,260 | Ch. Karnchang (Thailand); PT Construction and Irrigation (Laos) | Domestic/ Export to Thailand | <ul style="list-style-type: none"> <input type="checkbox"/> Project Development Agreement signed November 2008 and construction could begin in 2010. <input type="checkbox"/> Estimated cost US\$1.7 billion. <input type="checkbox"/> According to 1994 Mekong Secretariat study, project would displace approx. 1.720 people. <input type="checkbox"/> More information: http://www.terrafer.org/key_issues_view.php?id=13 and http://www.internationalrivers.org/en/southeast-asia/mekong-mainstream-dams |
| 28. Xepian-Xenamnoi (Attapeu and Champasak) | 390 | SK Engineering & Construction - SKEC (Korea) 26%; KOWEPO (Korea) 25%; Ratchaburi (Thailand) 25%; & GoL 24% | Export to Thailand | <ul style="list-style-type: none"> <input type="checkbox"/> Project Development Agreement signed November 2008. <input type="checkbox"/> Expected COD 2015. <input type="checkbox"/> Estimated cost US\$668 million. <input type="checkbox"/> Would be built in the area where people resettled from Houay Ho Dam currently reside, possibly in conjunction with large bauxite mining project. <input type="checkbox"/> Resettle at least 4 villages and affect at least another 8 villages. Impact Xepian River downstream. |

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| 29. Xekong 5 (Xekong) | 400 | Region Oil (Russia); others to be invited | Domestic or Export to Thailand or to Vietnam | <input type="checkbox"/> MoU signed in 2005 and feasibility study ongoing. <input type="checkbox"/> Resettle unknown numbers of mainly ethnic minorities; many villagers already displaced from reservoir area. Exacerbate fisheries losses and water quality problems caused by Xekong 4. Bisect Xesap NPA. <input type="checkbox"/> More information: http://www.terrapeer.org/pic_water/Watershed%2012(1).pdf , http://www.internationalrivers.org/node/3343 and http://www.internationalrivers.org/en/southeast-asia/cambodia/sekong-river |
| 30. Nam Bak 1 (Vientiane) | 132 | Shlapak Group (USA) 4%; EdL (Laos) 25%; Ch. Karnchang (Thai) 28.5%; PT Construction & Irrigation Co., (Laos) 4%; Ratchaburi Generating Co. (Thai) 25%; Bangkok Expressway PCL (Thai) 12.5%; & TEAM Consulting Engineering and Managment Co. (Thai) 1% = Nam Ngum 2 Power Company | Export to Thailand | <input type="checkbox"/> MoU signed April 2007; feasibility study ongoing. |

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| 31. Nam Bak 2 (Vientiane) | 27 | Shlapak Group (USA) 4%; EdL (Laos) 25%; Ch. Karnchang (Thai) 28.5%; PT Construction & Irrigation Co., (Laos) 4%; Ratchaburi Generating Co. (Thai) 25%; Bangkok Expressway PCL (Thai) 12.5%; & TEAM Consulting Engineering and Management Co. (Thai) 1% = Nam Ngum 2 Power Company | Domestic/ Export to Thailand | <input type="checkbox"/> MoU signed in April 2007; feasibility study ongoing. |
| 32. Dak Emeule (Xekong) | 130 | Vietnam-Lao Power Joint Stock Co. - VLPC (Vietnam) 75%; GoL 25% | Domestic/ Export to Vietnam | <input type="checkbox"/> MoU signed January 2008. <input type="checkbox"/> Construction expected to begin in 2009 (<i>Vte Times</i> 1/10/08). <input type="checkbox"/> Estimated cost over US\$155 million (<i>Vte Times</i> 1/10/08). |
| 33. Xepone 3 (Savannakhet) | 100 | China National Machinery & Equipment Import & Export Corporation (CMEC) (China) | Domestic | <input type="checkbox"/> MoU signed April 2008. |
| 34. Houay Katam (Champasak) | 33 | ETEL Co Inc. (Japan) | Domestic | <input type="checkbox"/> MoU signed April 2006; expired. |
| 35. Nam Tha 1 (Oudomxay) | 168 | China Southern Power Grid Co. (China) | Domestic | <input type="checkbox"/> MoU signed August 2006 and study submitted in September 2007. <input type="checkbox"/> Concession Agreement under negotiation. <input type="checkbox"/> Construction of access road and transmission line before EIA approval. <input type="checkbox"/> Resettle 8,000 mainly ethnic minorities; questionable land availability and livelihood proposals. Affect more than 4,600 downstream and unknown numbers upstream. Impact Bokeo Reserve and Nam Ha NPA. <input type="checkbox"/> More information: http://www.internationalrivers.org/node/3343 and http://www.internationalrivers.org/en/southeast-asia/laos/laos-other-projects |
| 36. Nam Beng (Oudomxay) | 50 | China Electrical Equipment Corp. (China) | Domestic | <input type="checkbox"/> MoU signed June 2006; expired. |
| 37. Xekaman 4 (Xekong) | 155 | Vietnam-Lao Power Joint Stock Co. - VLPC (Vietnam) | Export to Vietnam | <input type="checkbox"/> MoU signed December 2006; construction expected to begin in 2009. |
| 38. Xe Neua (Khammouane) | 40 | Phonesack B. & Road Construction Co. | Domestic | <input type="checkbox"/> MoU signed in May 2006; feasibility study ongoing. |

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| 39. Nam Ngiep 2 (Vientiane) | 155 | China International Water and Electric Corporation (China) | | <input type="checkbox"/> MoU signed December 2008. |
| 40. Nam Feuang (Vientiane) | 60 | EVN International Joint Stock Company (Vietnam), Bac Ha Investment Joint Stock Company (Vietnam) | Domestic | <input type="checkbox"/> MoU renewed October 2008. |
| 41. Nam Khan 2 (Luang Prabang) | 130 | Sinohydro (China) | Domestic | <input type="checkbox"/> MoU expired. |
| 42. Nam Khan 3 (Luang Prabang) | 95 | Sinohydro (China) | Domestic | <input type="checkbox"/> MoU expired. |
| 43. Nam Seuang 1 (Luang Prabang) | 56 | Bru Thai International Co. Ltd (Thailand) | Domestic/ Export to Thailand | <input type="checkbox"/> MoU expired. |
| 44. Nam Seuang 2 (Luang Prabang) | 220 | Bru Thai International Co. Ltd (Thailand) | Domestic/ Export to Thailand | <input type="checkbox"/> MoU expired. |
| 45. Nam Pha (Luangnamtha & Bokeo) | 70 | AP Bizlink Group (Malaysia) | Domestic | <input type="checkbox"/> MoU expired. |
| 46. Nam Phak (Champasak) | 55 | Kobe Green Power Co. Ltd (Japan) 40%; EdL 20%; other investor TBD | Domestic | <input type="checkbox"/> MoU signed May 2007; feasibility study ongoing. |
| 47. Pak Lay, Mekong mainstream (Xayabouri and Vientiane) | 1,320 | China National Electronics Import and Export Corporation - CEIEC and Sinohydro (China) | Domestic/ Export to Thailand | <input type="checkbox"/> MoU signed June 2007; feasibility study ongoing. <input type="checkbox"/> Estimated cost US\$1.7 billion (<i>Vte Times</i> 6/13/07). <input type="checkbox"/> According to 1994 Mekong Secretariat study, project would displace approx 11,780 people . <input type="checkbox"/> More information: http://www.terraper.org/key_issues_view.php?id=13 and http://www.internationalrivers.org/en/southeast-asia/mekong-mainstream-dams |
| 48. Nam Kong 3 (Attapeu) | 35 | Region Oil (Russia) | Domestic | <input type="checkbox"/> MoU signed December 2005, but according to Region Oil, they will prioritise the 3 other projects in the Xekong basin (<i>Vte Times</i> 10/24/06). <input type="checkbox"/> Feasibility study ongoing; handover to GoL? <input type="checkbox"/> Displace roughly 1,550 people from three villages; inundate approximately 23 sq km of forested lands. ^a <input type="checkbox"/> More information: http://www.terraper.org/pic_water/Watershed%2012(1).pdf |
| 49. Nam Mang 1 (Bolikhamsay) | 60 | Far-East Industrial Co., Ltd | Domestic | <input type="checkbox"/> MoU signed in February 2007; feasibility study ongoing and expected to be completed in early 2009. <input type="checkbox"/> Expected COD 2012. |

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| 50. Luang Prabang, Mekong mainstream (Luang Prabang) | 1,410 | PetroVietnam Power Corporation (PVPower), subsidiary of PetroVietnam (Vietnam) | Domestic/ Export to Vietnam | <input type="checkbox"/> MoU signed October 2007. <input type="checkbox"/> Construction expected to begin in 2010; expected COD 2016. <input type="checkbox"/> Estimated cost US\$2 billion. <input type="checkbox"/> Electricity Construction Consultancy Company No. 1 was awarded contract to survey proposed project site. Survey expected to be completed April 2008 (VNA 12/03/07). <input type="checkbox"/> PVPower Engineering Consulting Joint Stock Company signed the internal corporation agreement with the Moscow Irrigation and Construction Design Institute. Along with the joint stock company, the other four companies to have recently joined PVPower include the Machinery and Spare Parts Company, the Viet Nam Technology Service Petrol Power Company, the Viet Nam Real Estate Petrol Power Company and a consulting business (VNA 12/21/07). <input type="checkbox"/> According to 1994 Mekong Secretariat study, project would displace approx. 6,580 people. <input type="checkbox"/> More information: http://www.terraper.org/key_issues_view.php?id=13 and http://www.internationalrivers.org/en/southeast-asia/mekong-mainstream-dams |
| 51. Pak Beng, Mekong mainstream (Oudomxay/ Xayabouri) | 1,300 | Datang International Power Generating Co. (China) | Domestic or Export to Thailand or China | <input type="checkbox"/> MoU signed August 2007. <input type="checkbox"/> According to 1994 Mekong Secretariat study, project would displace approx. 1,670 people. <input type="checkbox"/> More information: http://www.terraper.org/key_issues_view.php?id=13 and http://www.internationalrivers.org/en/southeast-asia/mekong-mainstream-dams |
| 52. Xanakham Mekong mainstream (Xayabouri/ Vientiane) | 500 | Datang International Power Generating Co. (China) | Domestic or Export to Thailand or China | <input type="checkbox"/> MoU signed December 2007. |
| 53. Xelanong 1 (Savannakhet) | 80 | Norpower Co. Ltd (Norway) | Domestic | <input type="checkbox"/> MoU signed November 2007. |
| 54. Nam Nga (Luang Prabang/ Oudomxay) | 80 | Norpower Co. Ltd (Norway) | Domestic | <input type="checkbox"/> MoU signed November 2007. |
| 55. Xekong 3 (Xekong) | 150 | Vietnam-Lao Power Joint Stock Co. - VLPC (Vietnam) | Domestic/ Export to Vietnam | <input type="checkbox"/> MoU signed January 2008. <input type="checkbox"/> Cost approx. US\$280 million (<i>Vte Times</i> 1/30/08). <input type="checkbox"/> According to the original design, the project would inundate the provincial capital of Xekong Province. |
| 56. Nam Ngum Downstream (Vientiane) | 70 | China National Electronics Import and Export Corp. - CEIEC (China) | Domestic | <input type="checkbox"/> MoU signed January 2008. |

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| 57. Ban Koum, Mekong mainstream (Champasak) | 2,330 | Ital Thai Development Co. (Thailand) and Asia Corp Holdings Limited | Domestic/ Export to Thailand | <input type="checkbox"/> MoU signed March 2008. <input type="checkbox"/> Thai and Lao governments authorized their respective “government agencies to supervise the project and coordinate with the Italian-Thai Development Company and Asia Corp. on the feasibility study.” <input type="checkbox"/> According to a March 2008 report prepared and presented by Panya Consultants and Macro Consultants, Ban Koum would have an installed capacity of 1,872 MW and reservoir area of 98,806 rai (approx. 15,800 ha). <input type="checkbox"/> More information: http://www.terraper.org/key_issues_view.php?id=13 and http://www.internationalrivers.org/en/southeast-asia/mekong-mainstream-dams |
| 58. Nam Ngum 4A (Vientiane & Xiengkhaung) | 60 | Saigon Investment Group (Vietnam) | Domestic or Export to Vietnam | <input type="checkbox"/> MoU signed March 2008. |
| 59. Nam Ngum 4B (Vientiane & Xiengkhuang) | 60 | Saigon Investment Group (Vietnam) | Domestic or Export to Vietnam | <input type="checkbox"/> MoU signed March 2008. |
| 60. Nam Xam (Houaphan) | 750 | Saigon Investment Group (Vietnam) | Domestic or Export to Vietnam | <input type="checkbox"/> MoU signed March 2008. |
| 61. Lat Sua, Mekong mainstream (Champasak) | 800 | Charoen Energy and Water Asia Co. (Thailand) | Domestic or Export to Thailand | <input type="checkbox"/> MoU signed March 2008. |
| 62. Houay Lamphan Gnai (Xekong) | 86.7 | EdL | Domestic | <input type="checkbox"/> New Jec Inc. (Japan) commissioned to undertake feasibility study in May 2008 (<i>Vte Times</i> 5/12/08). <input type="checkbox"/> World Bank provided funds (approx. \$1 million) for study as part of GMS Power Trade (Laos) Project, approved in 2007. <input type="checkbox"/> Australian company GHD conducting feasibility study. |
| 63. Nam Et 1, 2, 3 (Houapanh) | 240 (420?) | Yunnan Provincial Power Investment (China) or EVN International Joint Stock Company and Bac Ha Investment Joint Stock Company (Vietnam)? | Domestic | <input type="checkbox"/> MoU signed December 2008. |
| 64. Nam Ma 1, 2, 3 (Houapanh) | 420 (175?) | Linh Linh, JFC Electrical Construction Investment Joint Stock Company (Vietnam) | Domestic or Export to Vietnam | <input type="checkbox"/> MoU signed December 2008. |
| 65. Nam Phoun (Xayabouri) | 60 | SOK Corporation | Domestic | <input type="checkbox"/> MoU signed December 2008. |
| 66. Nam Theun 4 (Bolikhamsay) | 110 | REE Power Plant Inc. (Vietnam) | | <input type="checkbox"/> MoU signed September 2008. |
| 67. Xebanghieng 1 (Savannakhet) | 65 | Song Da Corporation (Vietnam) | | <input type="checkbox"/> MoU signed November 2008. |
| 68. Xebanghieng 2 (Savannakhet) | 250 | Song Da Corporation (Vietnam) | | <input type="checkbox"/> MoU signed November 2008. |

^a Norplan, 2004, *Lao PDR – Strategic Impact Assessment*, Annex 1: Project Descriptions

^b Lahmeyer and Worley. 1998. *Nam Theun 2 – Study of Alternatives*

For more information on hydropower development in Laos, see:

<http://www.internationalrivers.org>

<http://www.terrafer.org>

<http://www.probeinternational.org/catalog/Mekong.php>

<http://www.poweringprogress.org>