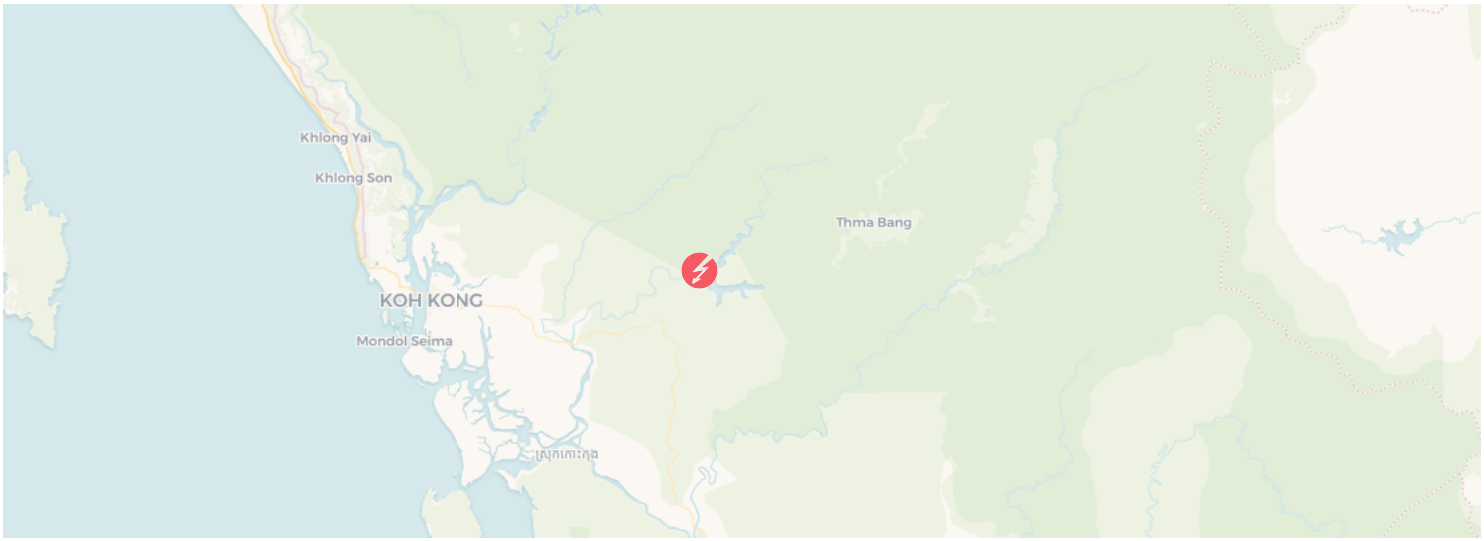


Stung Tatay Hydroelectric Project

Thma Bang District, Koh Kong Province, Cambodia.

WRITTEN BY FUTURE FORUM.

UPDATED ON 11 MAY 2022.

The 246 MW Stung Tatay Hydroelectric Project is an operational dam located in Koh Kong Province, in southwestern Cambodia. The project was developed by a locally registered company majority owned by a subsidiary of Chinese state-owned Sinomach. When approved in 2009, the project was the costliest hydropower dam developed by a Chinese company in Cambodia and has since become an important national power source. Concerns have been raised about its impacts on the forests of the Cardamom Mountains, and the lack of transparency and consultation around its environmental impact assessment.

← | BASIC INFO | PROJECT OUTLINE | PROJECT IMPACTS | KEY SOURCES

Basic Information

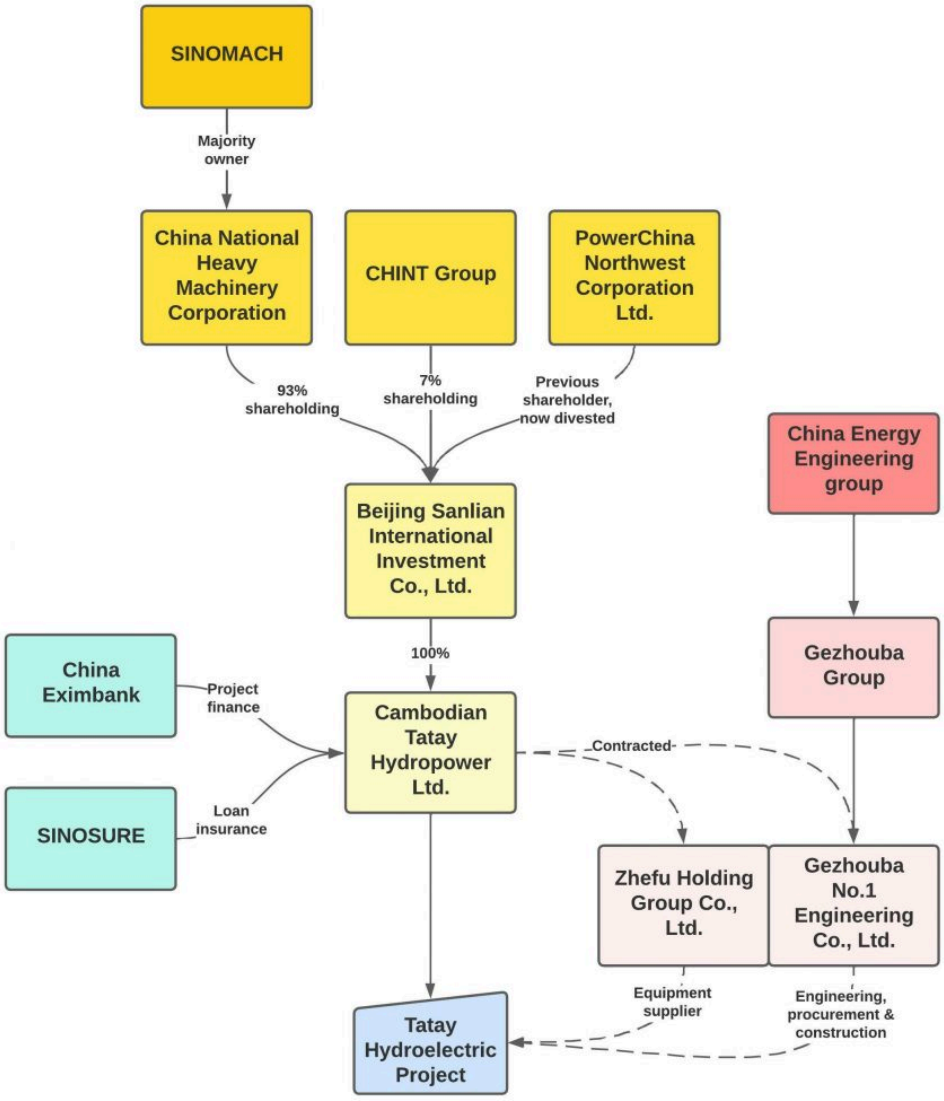
Name: Stung Tatay Hydroelectric Project
Chinese Name: 柬埔寨达岱水电站项目
Location: Thma Bang District, Koh Kong Province, Cambodia.
Type of Project: Energy.
Project Developers: Cambodian Tatay Hydropower Limited (CTHL). CTHL is majority owned by China National Heavy Machinery Corporation (CHMC), which is itself majority owned by China National Machinery Industry Corporation (Sinomach); CHINT Company Limited, a Zhejiang-based manufacturer of electrical equipment, holds a minority share.
Main Contractor: Gezhouba No. 1 Engineering Company Limited (under China Gezhouba Group Company Limited, a subsidiary of China Energy Engineering Group).
Financier: Export–Import Bank of China.
Cost: 540 million USD.
Project Status: Operational.

Project Outline

The 246-megawatt (MW) Tatay River hydropower dam is an operational dam located in Thma Bang District, Koh Kong Province. The project was developed under a concession period of 42 years through a build–operate–transfer (BOT) agreement with the Cambodian Government. This includes five years for preparation and construction and 37 years of operation. The dam was officially inaugurated in December 2015 in a ceremony attended by Cambodian Prime Minister Hun Sen and then Chinese Ambassador to Cambodia Bu Jianguo.

The project is wholly owned by the locally registered Cambodian Tatay Hydropower Limited (CTHL), whose majority shareholder is China National Heavy Machinery Corporation (CHMC), a subordinate to state-owned China National Machinery Industry Corporation (Sinomach). Construction on the project officially began in March 2010 and finished in 2015, with construction work contracted to Gezhouba No. 1 Engineering, a subsidiary of China Gezhouba Group Corporation. The project received financial support in the form of an overseas investment loan from the Export–Import Bank of China (China Eximbank), while China Export & Credit Insurance Corporation (Sinosure) provided insurance for the loan. When it was approved in 2009, the Tatay project was the costliest hydropower project developed by a Chinese state-owned enterprise in Cambodia.

CHMC joined with two Chinese companies, PowerChina Northwest Engineering Company Limited and CHINT Company Limited, to invest in the project. At that time, Beijing Sanlian International Investment Company Limited was created as a joint venture for this purpose. However, current Chinese corporate records show that CHMC and CHINT Group are now the only shareholders of Beijing Sanlian, holding 93.1% and 6.9% of the shares, respectively. The owner of Tatay hydropower dam, CTHL, was established as a special-purpose vehicle to develop the project. In 2007, the project's feasibility study was completed by two Chinese firms, China Jikan Research Institute of Engineering Investigations and Design Company Limited and PowerChina Northwest Engineering Corporation Limited.



Source: Adapted from Future Forum (2021), 'Chinese State-Owned Enterprises and Infrastructure Development in Cambodia: The Tatay River Hydropower Dam Project', BRI Monitor.

The project's implementation required the excavation of 7 million cubic metres of earth and 900,000 cubic metres of stone, and resulted in the creation of a 1,600-hectare reservoir, flooding a large area of forest. Two adjacent concrete-face rockfill dams, a gated overflow spillway equipped with a chute and flip-bucket, and an 11-kilometre long, 8-metre-wide headrace tunnel were built. A power generation system sits on the left bank, adjacent to a three-hole spillway, and connects to the national grid via a 63-kilometre transmission line. The dam's three generators have operated with an average annual capacity of 849 GW/h since 2015 (author's calculation based on annual output figures reported by Électricité du Cambodge). The author estimates the dam's power generation contributed about 24% of Cambodia's total hydropower generation, or approximately 10% of Cambodia's total domestic energy in 2020 alone. Geographically, the dam is close to the Cardamom forest, which is home to a wide variety of wildlife, including endangered elephants, sun bears, wild boars, dragonfish, as well as critically endangered animals such as the Siamese crocodile.

The Tatay project qualified for Certified Emission Reduction (CER) credits via the Clean Development Mechanism (CDM) under the United Nations Framework Convention on Climate Change (UNFCCC) as a renewable power source. Based on the CDM credit system, the dam was estimated to provide an annual greenhouse gas emission reduction of 393,329 tonnes of carbon dioxide equivalents. The credits guaranteed by the project were then sold to

the Netherlands between September 2013 and 2020. The project was recertified in 2020 by Shenzhen CTI International Certification to allow further credits to be sold to the Netherlands for the next seven years, between September 2020 and August 2027.

In 2020, CTHL signed a BOT agreement to develop another dam on the upper reaches of the Tatay River. Located about 20 kilometres upstream of the Tatay dam, the Upper Stung Tatay Hydropower Project will have an installed capacity of 150 MW and will be developed under a 35-year BOT agreement.

Project Impacts

- **Employment:** Before construction, the government estimated the project would generate employment for 3,000–4,000 workers, who would live onsite. The conservation group Wildlife Alliance raised concerns about the impacts this would have on the surrounding area and requested the government ensure mitigation measures were put in place.
- **Environment:** The draft environmental impact assessment (EIA) report noted the reservoir created by the project would flood 2,949 hectares permanently and 182 hectares temporarily. However, the project design document published on the UNFCCC CDM website stated the dam would inundate 1,600 hectares. Satellite images of the location from January 2022 indicate the size of the reservoir is about 1,500 hectares at the time the images were taken (which was during dry season).
- **Local community:** The project's draft EIA estimated the dam would impact the livelihoods of 1,549 families who rely on the area's forest and its resources.
- **Governance:** The developer did not publicly disclose the project details and study reports, including the feasibility and final EIA reports (only a draft summary EIA is available). The project received government approval before the EIA had been approved by the Ministry of Environment, which non-profit organisation International Rivers described as a violation of Article 6 of Cambodia's Law on Environmental Protection and Natural Resource Management.`

Cambodia's energy ministry lauded the Tatay dam when it became operational, claiming it had created new jobs and boosted annual tax revenues by 12 million USD, with minimal social and environmental impacts. The investing companies commended the project for lowering electricity costs and spurring economic development. Sinomach, the parent company of CHMC (see Figure 1), received an award from the state utility, Électricité du Cambodge, for 'Highest Efficiency, Safe Operation and Excellence of Power Generation in 2021'.

During construction, in 2012, International Rivers sent a letter to the CDM's executive board raising concerns about the accuracy of the documents submitted by the company, violations of Cambodian law, insufficient community consultation, and omissions of impacts on local biodiversity and the protected Central Cardamom Mountains. Similarly, the local environmental nongovernmental organisation (NGO) Mother Nature expressed concerns over the construction of the project's 30-metre-wide transmission lines and their impact on the pristine forest of the Southern Cardamom Mountains. In addition, academic researchers pointed out the EIA only covered the direct and obvious impacts of the dam while downplaying secondary effects, such as those on local livelihoods and downstream fish stocks.

As noted above, International Rivers raised concerns with the CDM executive board alleging the project violated Article 6 of Cambodia's 1996 Law on Environmental Protection and Natural Resource Management, which requires the EIA to be reviewed and evaluated by the Ministry of Environment before being submitted to the government for approval. However, the government approved the Tatay project in 2009 and construction started in 2010, before the approval of the final EIA in early 2011. There was no public response from the CDM board.

In July 2021, Future Forum (the organisation that authored this profile) discussed these issues with a representative of the Ministry of Mines and Energy. Officials said the Ministry of Environment had evaluated the draft EIA report before the government reviewed and approved it and there was not much difference between the draft and the final EIA. In addition, they explained that an official final EIA report must be stamped, and sometimes the process is delayed. Without access to the official final EIA, it is not possible to make a comparison with the draft version, and therefore it is unclear whether the draft was an adequate primary source for the government to base its final decision on.

This profile is adapted from 'Chinese State-Owned Enterprises and Infrastructure Development in Cambodia: The Tatay River Hydropower Dam (TRHD)', published by BRI Monitor. *The full report can be viewed here.*

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Cover Photo: Tatai River, Koh Kong Province. Credit: (CC) Dnrallis.

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