

Nam Chiane 1 Dam (Nam Chian 1) Hydropower in Laos by Hobo Maps - [Home](#) [Go Back to Hydropower Web Page](#)

Nam Chiane 1 Hydropower Project is located on the upper Nam Chiane (river) in central Laos. Nam Chiane is a tributary of the Nam Ngiep (river) which joins the Mekong near Paksan. The project is about 70 km southeast of Phonsavanh and the Plain of Jars, a few km above National Road 1D as it heads southwest towards Paksan and the Mekong.

The Project is located at the southern slope of Xieng Khouang Plateau where terrain is high in the north and low in the south. The elevation at the dam site is generally 900 to 1300 meters above sea level while the lower power plant site to the south is 450 to 500 meters above sea level. The Project sites go from Keosed village in Khoun district, Xieng Khouang province to Samkothong village in Thathom district, Xaysomboun province. The main dam is located in Xieng Khouang Province and the powerhouse is in Xaysomboun Province.

Nam Chiane 1 Dams and reservoir images below:



Nam Chiane 1 project layout below:



Construction of Nam Chiane 1 HPP was started in 2013 and the project was completed in March 2018. The project cost was estimated at US\$ 250 million.

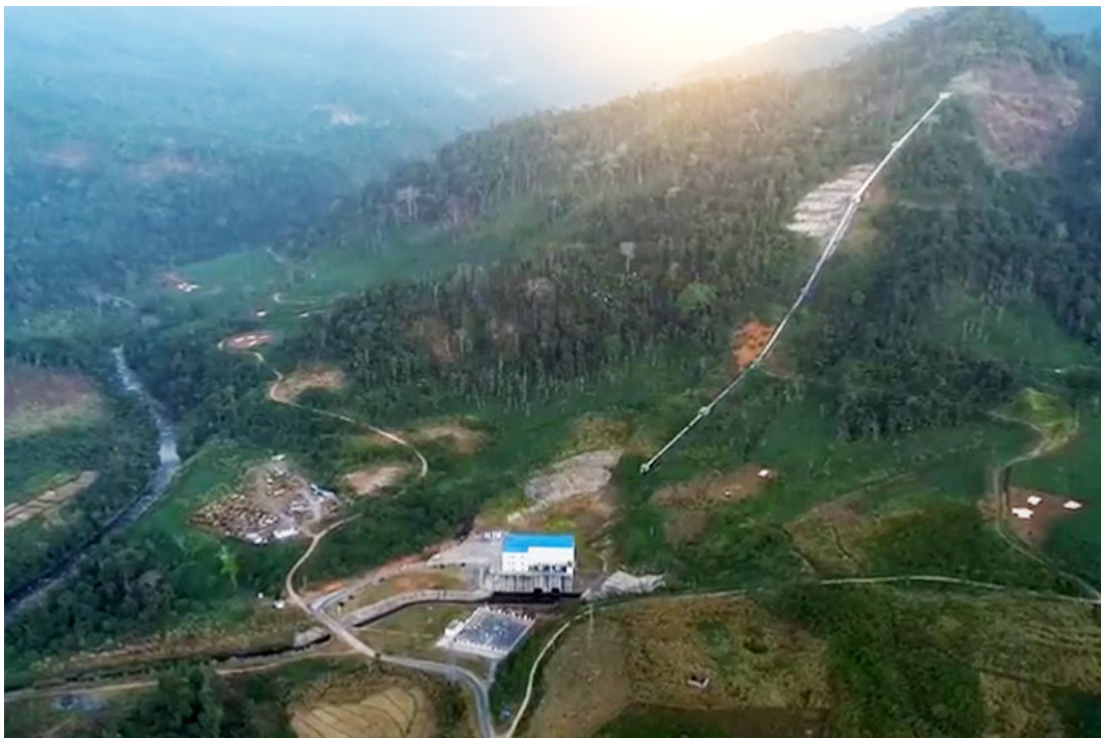
This Lao state-owned hydropower project was developed by Electricite du Laos (EDL) but now owned and managed by EDL GEN. China Gezhouba Group International Engineering Company Limited was the project developer pursuant to an engineering, procurement and construction contract signed Dec. 2012.

Nam Chiane 1 Dam location shown in satellite image below:



The power generated was originally planned to be transmitted to the Thavieng Substation for local consumption mainly in Xieng Khouang Province but in August 2021 an agreement was reached to sell all of its power output to Electricity Vietnam (EVN). Not sure when this power will actually reach Vietnam as there may be a need for new transmission line development.

Nam Chiane 1 HPP powerhouse site images below located at coordinates 19°03'54.8"N 103°31'16.4"E (19.065210, 103.521220):







The watershed area upstream of the north dam site of Nam Chiane river contains 281 sq km. Watershed area upstream of the south dam site of Nam Tong Sai river is 41 sq km and the combined watersheds are 322 sq km.

The total reservoir capacity is 14 million cubic meters.

The project includes a rock-filled dam, flushing sluice, access tunnels, power plant buildings and switching plants. The surge tower is 110 meters high and 10 meters in diameter.

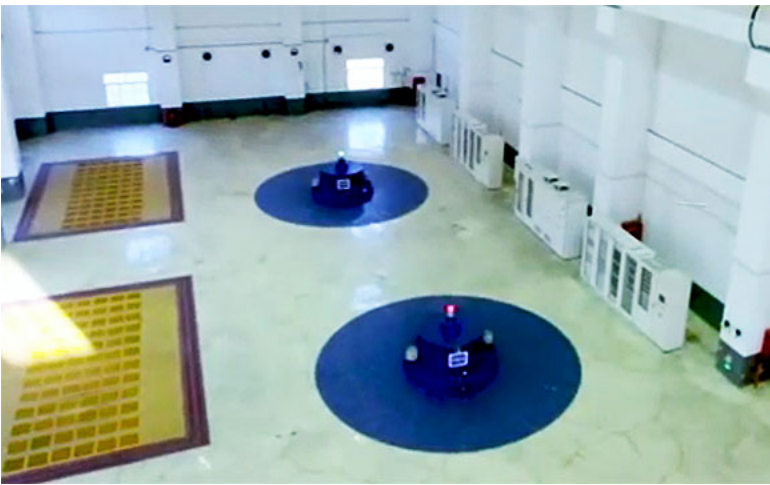
There are constructed waterways 9,915 meters long consisting of a tunnel 7,390 meters long and a penstock 2,525 meters long. The headrace is 533 meters long

The Nam Chiene HPP powerhouse is located on the left bank of Nam Chiane (river). There is a gross head of about 600 meters. Installed Capacity is 104 MW (2 x 52 MW vertical Pelton turbine sets) with mean annual energy output of 451 GWh per year (seems optimistic).

Nam Chiane 1 penstock, powerhouse & switchyard image below:



Nam Chiane 1 powerhouse interior images below:



Nam Chiane 1 dam structure images shown below:





Nam Chiane 1 channel image shown below:



North Reservoir

- Check Flood Level: 1065.38 meters above sea level
- Releasing Discharge : 1897 cubic meters per second
- Design Flood Level : 1061.56 meters above sea level
- Releasing Discharge : 1206 cubic meters per second
- Elevation of free overflow weir crest: 1061 meters above sea level

South Reservoir

- Check Flood Level: 1062.63 meters above sea level
- Releasing Discharge : 800 cubic meters per second
- Design Flood Level: 1062 meters above sea level
- Releasing Discharge: 533 cubic meters per second

- Normal pool level: 1060 meters above sea level
- Dead storage level: 1040 meters above sea level

Output

- Installed Capacity: 104 MW (2 x 52 MW)
- Mean annual energy output: 451 GWh per year (seems optimistic)

Main Dam

- Type: Rockfill dam with clay core (RCC)
- Foundation characteristics: Granite (Plinth foundation)
- Crest elevation/ breast wall top elevation: 1066 meters above sea level
- Maximum dam height: 93 meters
- Dam crest length: 294.5 meters

Turbine

- Type: 2 x 53.61 MW (vertical Pelton)
- Rated speed of rotation: 428.6 rpm
- Rated head: 533 meters
- Rated discharge: 11.43 cubic meters per second

Generator

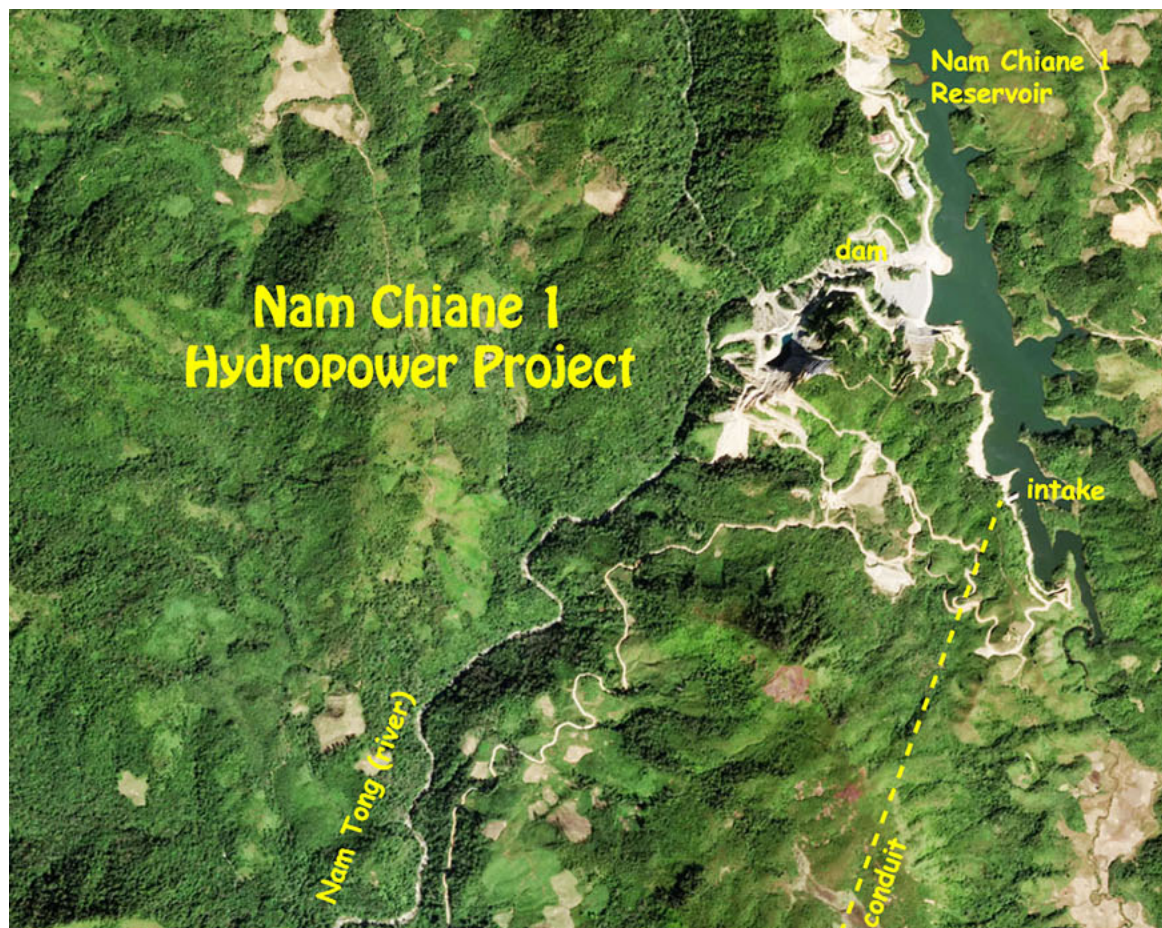
- Type: Model: SF55-14/4850 (2 sets)
- Rate Power: 52 MW
- Rated capacity: 57.78 MVA

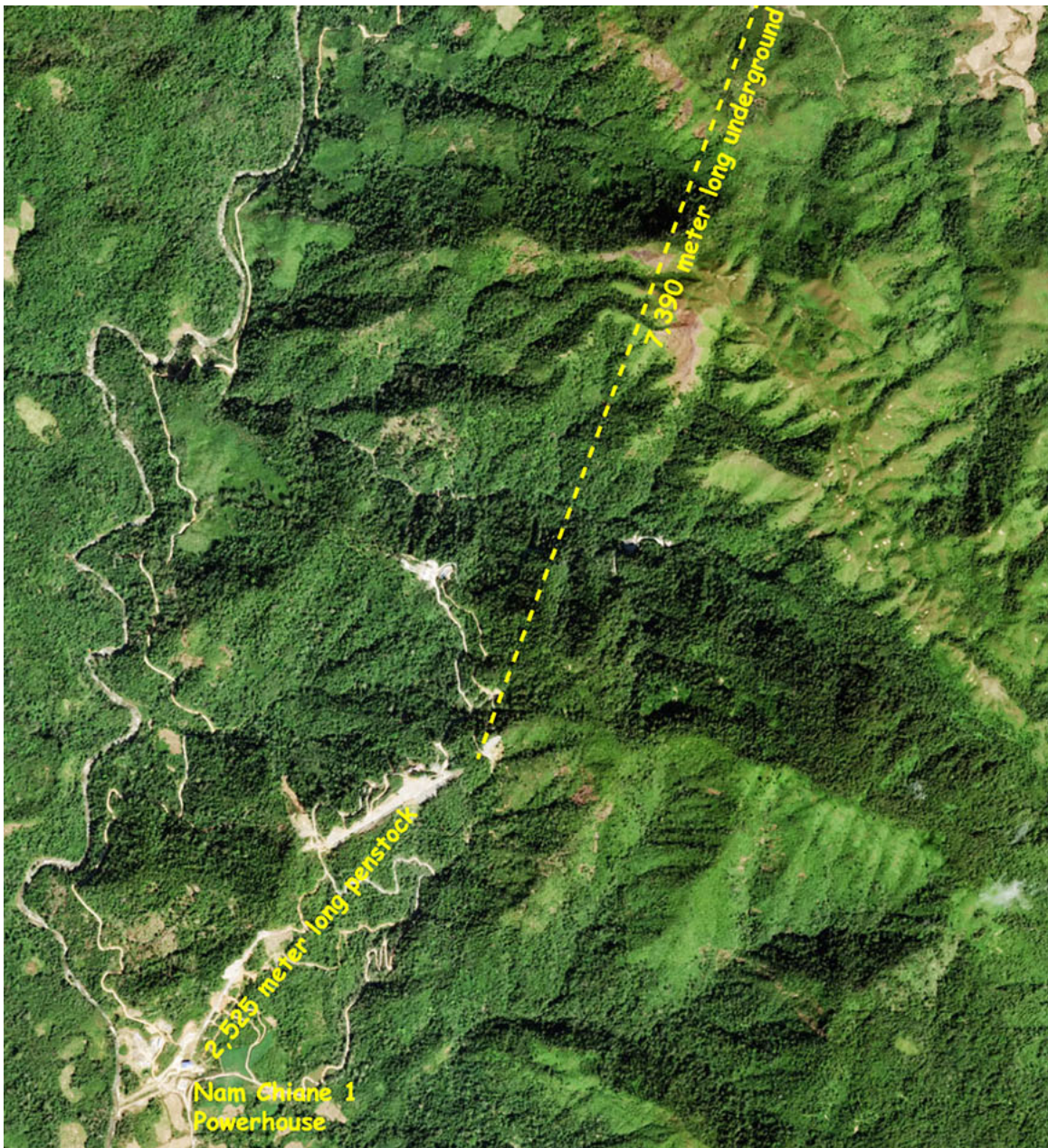
Water Releasing Structure

- Spillway (Positive slot type on the river bank, free overflow)
- Foundation : Granite
- Crest level: 1060 meters above sea level
- Dead water level 1,040 meters above sea level
- Free overflow weir length: 80 meters
- Energy dissipating mode: Ski-jump style

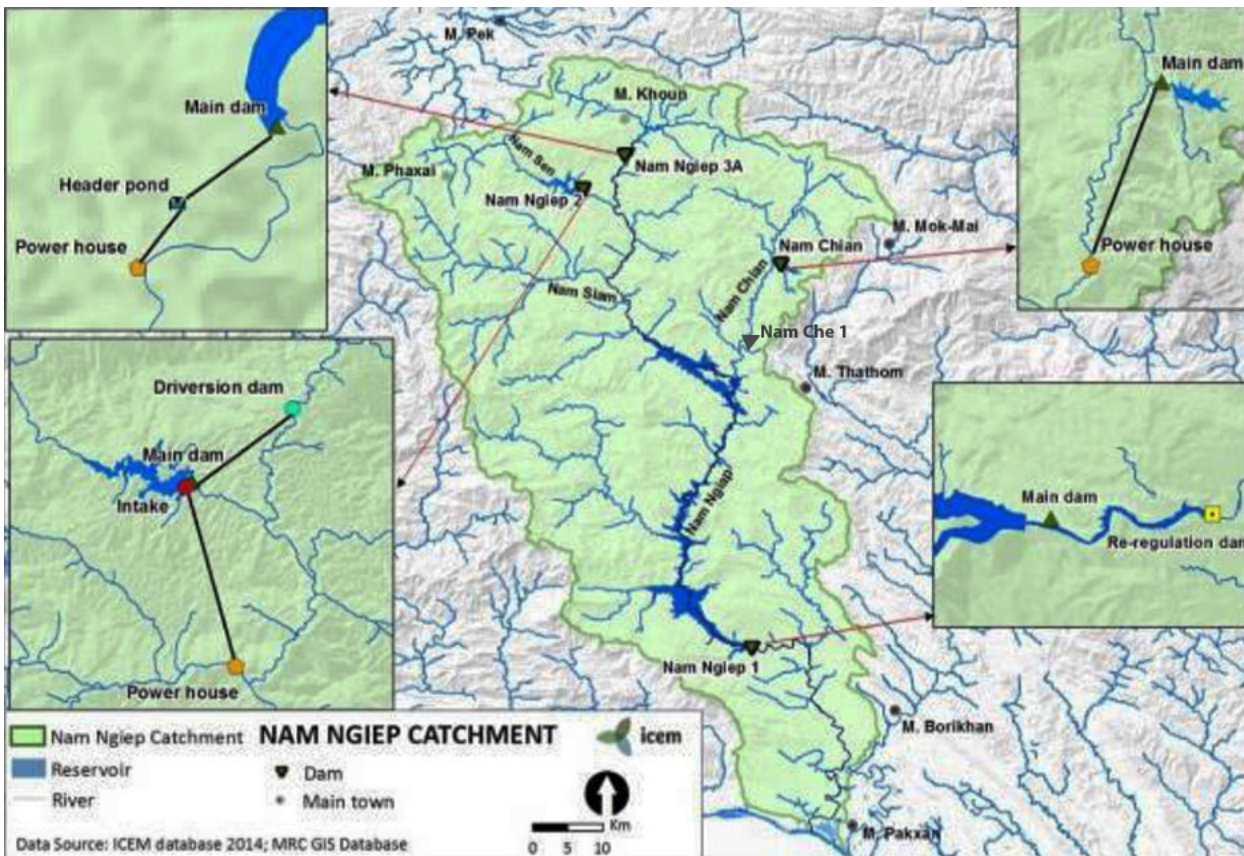
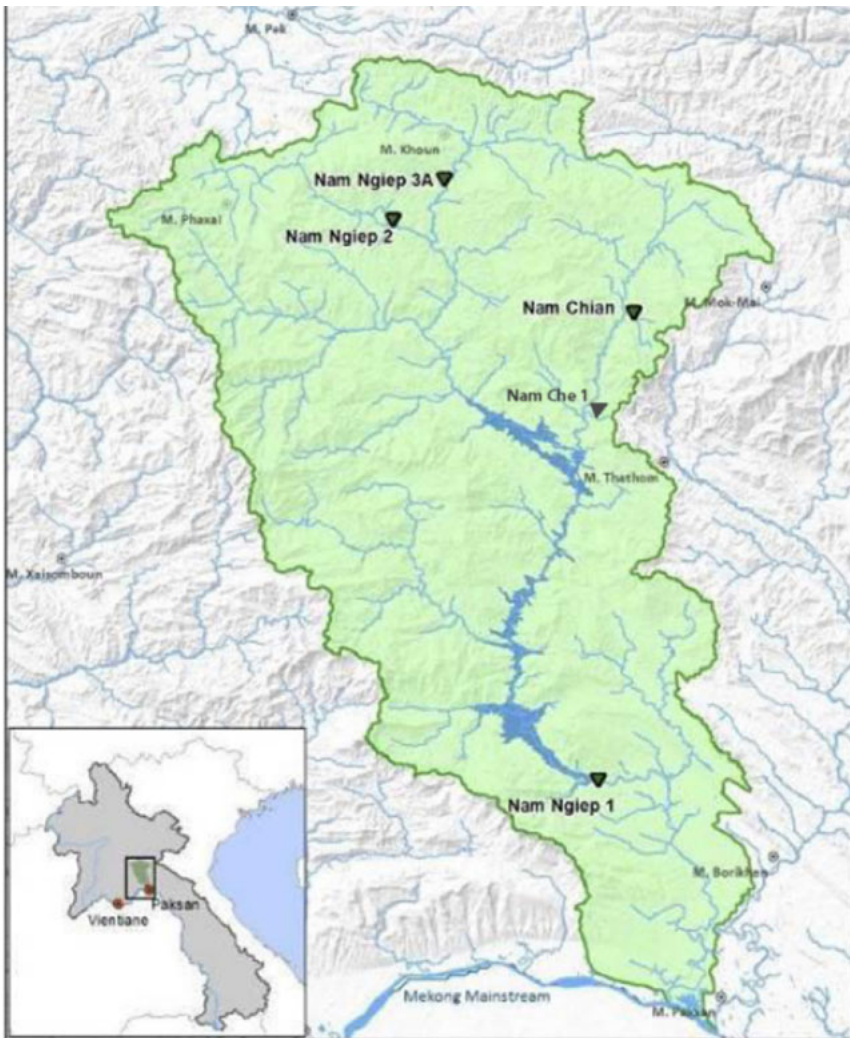
Transmission line for transfer of output is a two circuit 115 kv line.

Nam Chiane 1 layout image below:





Nam Chiane 1 Project is shown on right side of map below:



Satellite image map below for Nam Ngiep River Basin hydropower projects:



Nam Chiane Dam image below:



See nice 2 minute amateur video of Nam Chiane main dam here - <https://www.facebook.com/100001107327469/videos/pcb.3424476937599183/3424474224266121>