Xekaman 3 Dam Hydropower Info - by Hobo Maps - Go Back to Hydropower Projects Web Page



Xekaman 3 Dam images below:







Xekaman 3 hydroelectric power project is located near the border with Vietnam on the Nam Pagnou South (river), a main tributary of Xe Kaman (river), Dak Cheung district, Sekong province, Lao PDR. Xe Kaman (river) is a tributary to the Xekong (Sekong) river system. The project is about 40 km distance from the Vietnam-Laos border crossing at Nam Giang - Dak Ta Ooc.

The hydropower project was put into operation in 2013 at a cost of over US \$311 million and is operated under a 25-year Build-Operate-Transfer concession

The project has a capacity of 250 MW with average annual energy production up to 978 GWh. 90% of the electricity generated is to be exported to Vietnam.

Xekaman 3 Power Ltd. Co. is owner of the power plant. Viet-Lao Power Joint Stock Company is the majority shareholder at 85 percent while Electricite du Laos (EDL) holds a share of 15 percent.

Main Designer to the hydropower plant was Song Da Consulting JSC. Main contractor was Vietnam-based Song Da Corporation. Construction period was 2006 – 2013

The Xekaman 3 hydropower project has a 101.5 meter high concrete face rockfill dam, a 6,008 meter long headrace tunnel, a 1,110 meter long penstock and a 520 meter gross head.

Xekaman 3 powerhouse image below:



Xekaman 3 Hydropower Project sites image below. The power plant site is located at 15° 22' 31.2" north 107° 24' 23" east (15.3753, 107.4064) and the dam structure is at 15° 25' 29" north 107° 21' 48.5" east (15.4247 N 107.3635 E).

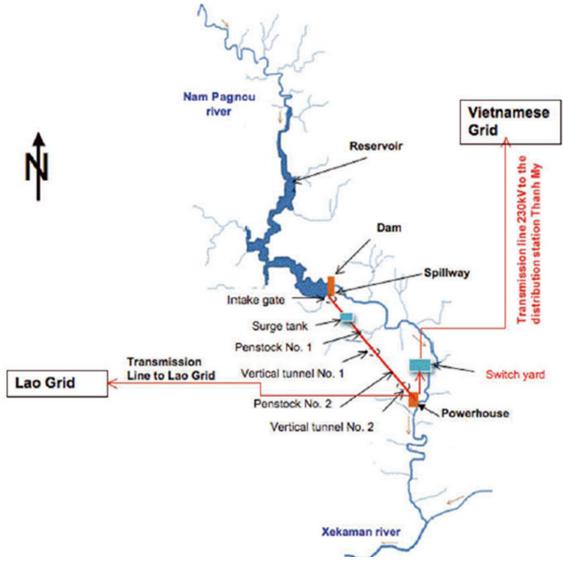


The reservoir surface full supply water level is 960 meters above mean sea level with low supply level at 925 meters above mean sea level. Active storage volume is 108.5 million cubic meters.

The project catchment area is 725 square kilometers.

A transmission line connects to the Vietnam national grid through a 230 $\rm kV$ dual circuit line with a length of 92 km. The voltage for power supplied to the Vietnamese national grid is 230 $\rm kV$ while for Laos the voltage is 115 $\rm kV$.

Xekaman 3 Hydropower Project layout images below:



Xekaman 3 dam image below located at 15° 25' 29" north 107° 21' 48.5" east (15.4247 N 107.3635 E):



Xekaman 3 area and reservoir images below:







Xekaman 3 Project statistic charts below:

Table 1: Characteristics of the Hydropower Plant

Parameter	Unit	Value
Generation capacity	MW	250
Maximum rated flow rate	m³/s	62.3
Operating hours per year	Hours	3,910
Average annual power production	MWh	977,500
Internal usage of electricity	Percentage	1.5%
Electricity production for the grid per annum	MWh	962,838

Table 2: Characteristics of the Reservoir

Parameter	Unit	Value
Reservoir level at normal water level	meter	960
Reservoir level at dead water level	meter	925
Reservoir level at surcharge water level (check flood)	meter	964
Reservoir area at normal water level	km ²	5.13
Reservoir area at maximum water level	km ²	5.251
Power density	W/m ²	47.6
Total volume of reservoir	million m ³	141.5
Useful volume of reservoir	million m ³	108.5
Length of dam crest	meter	540
Maximum height of dam	meter	101.5

Xekaman 3 powerhouse images below:





Xekaman 3 dam images below:





Xekaman 3 project images below:





Xekaman 3 switchyard image below with surge tank in background:





Xekaman 3 rotor images below:





Xekaman 3 powerhouse interior images below:





Xekaman 3 controls image below:



Xekaman 3 tunnel images below:





Xekaman 3 office image below:



Xekaman 3 site view image below:



Xekaman 3 tailrace view below:



Xekaman 3 area village below:



Xekaman 3 Hydropower Project location is shown at right side of map below:



The Xekaman 3 project was designed to qualify as a Clean Development Mechanism (CDM) project under the Kyoto Protocol to receive carbon-reduction credits. The project is estimated to reduce greenhouse gas CO2 emissions annually by 499,481 tonnes by producing electricity from a renewable source. View or download CDM application document HERE.

The Xekaman 3 power plant site is located at 15° 22' 31.2" north 107° 24' 23" east (15.3753 N 107.4064 E) as shown in satellite images below:

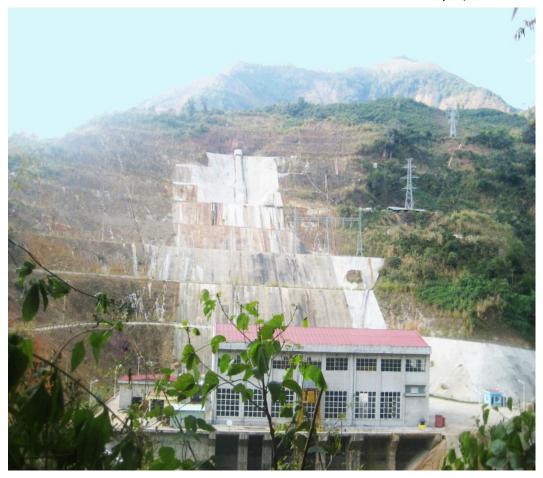


Penstock damage December 2016 - Fairly soon after completion, the Xekaman 3 power plant started to be plagued by landslide problems at the penstock which appears to have been constructed on an ancient landslide slope. Problems started soon after the reservoir was filled as small land displacements caused major damage to the penstock and associated pipelines. At one location it appeared that a sinkhole was opening up and there also may have been a new channel being formed.

Work was ongoing to try to solve the landslide problems. A telescopic section of pipe was installed into the pipeline to try and accommodate the land movement. But on 16 December 2016 a major failure occurred on this slope which destroyed the penstock infrastructure and sent flood waters into the powerhouse. Thankfully the breach in the penstock posed no threat to people living downstream.

The damage was extensive as the power house and its equipment were inundated. Measures for stabilizing the landslide were carried out by removing soil from the head of the landslide, dewatering the cut slope and constructing a concrete shearpile wall. Hopefully the problems have now been resolved.

Penstock image below shows water discoloration on the slope:



Xekaman 3 flooded control room image below from penstock breach Dec. 2016



Maybe a New Dam & Reservoir for Xekaman 3?

Possible expansion of Xekaman 3 tributary river system and reservoir may be the new dam and reservoir we see on satellite images at Dak Cheung town as shown below. We see an existing tributary river flowing just below the Dak Cheung reservoir that would take flows released from the Dak Cheung reservoir about 5 km to the Xekaman 3 reservoir. This may not be a diversion but a way to hold back more water in the wet season that may have otherwise overflowed the Xekaman 3 dam and not passed through the turbines.

In March 2022 this is unconfirmed. If anyone can confirm or explain otherwise please send us email at hobomaps@gmail.com .

Dak Cheung Dam is located at coordinates 15°27'39.6"N 107°16'04.8"E (15.461, 107.268) at red marker below.



A stream and river flow from just below the Dak Cheung dam structure to the Xekaman 3 reservoir as shown below.



