

Turubalá Hydro Power Plant

Case History



Pelton runners

Turubalá 2 Hydro Power Plant Zunil in Quetzaltenango Guatemala

Project owner
Fuerza de Gravedad SA



Status:

³⁵₁₇ License under application

Key Figures:

³⁵₁₇ Head: abt. 400 m

³⁵₁₇ Qm 6,5 m³/s

³⁵₁₇ Qt : 6,0 m³/s

³⁵₁₇ Waterway Tunnel & penstock

³⁵₁₇ Turbine 20 MW (2 * 10 MW)

³⁵₁₇ Annual generation : 130 GWh

³⁵₁₇ Estimated cost – 40 mUSD

³⁵₁₇ Specific cost 0,31 USd/GWh

³⁵₁₇ Expected PPA is 0,14 USd/kWh

Construction time:

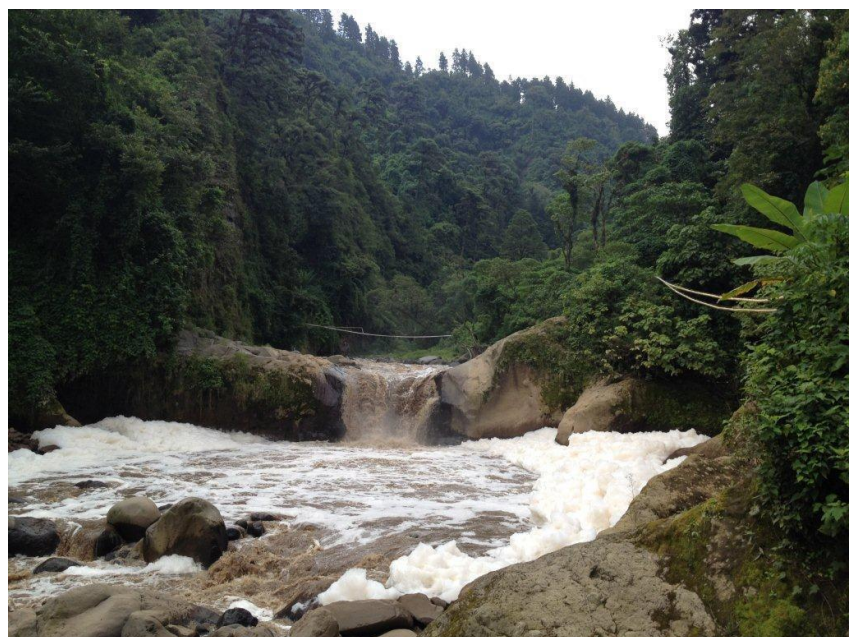
Abt. 24 months

Year:

2014-2016

Commissioning:

12 / 2016



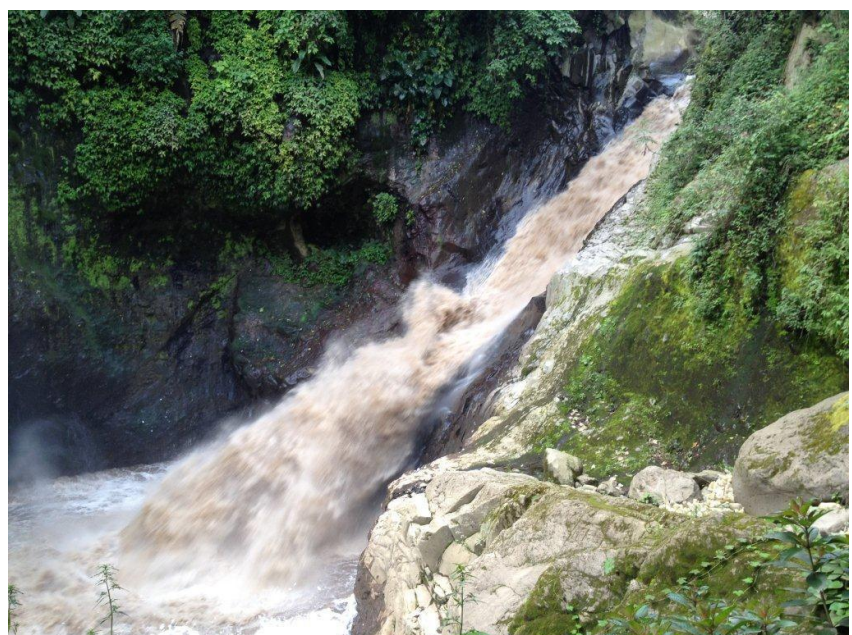
Rio Samalá intake alternative 1



66 kV sub-station nearby



Santa Maria intake just below



Turubalá at Santa Maria on Rio Samalá

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Brief project description



Property seller Juan Quec Quec

The project will be a run of the river project located on the highland plateau of Quetzaltenango in the western part of Guatemala on the Pacific, approximately 3 hours drive from the Capital Guatemala City.

The river Rio Samalá has a catchment area of about 770 km² and has been gauged for more than 30 years during the period of 1978 to present. The gauging station Cantel is located about 3 km upstream of Zunil while another gauging station El Tunel is located between Zunil and Santa Maria.

The hydrological records proves an average annual flow of about 6,0 m³/s at Cantel and about 6,2 m³/s at El Tunel.

The project is located about 6 km down-stream of the Turubalá I project on the same river Rio Samalá. Its water intake is just below the power station of Turubala I, and the water is conducted by tunnels 6 km down river, with a final fall of 400 meters down to the station.

An annual 30-years averaged run-off pattern is presented below, and the red curve clearly indicates the plant to be operated on full load about half the year and about 50% the remaining period resulting into a load factor of about 6300 operating hours.

The run-off curve is similar to Turubala I since it is the same water.

The surrounding land was bought by Fuerza de Gravedad SA from the local owner who is a family of indigenous Mayan Quiché origin. The local community is in favour of the project, and previous owners have been well paid for the land. The project does not need more than 2000m² of cultivated land; the rest is gorge and cliffs. The family is offered a participation in the development through an operation and maintenance agreement. To the left is a picture of the previous owner.

The project will be undertake a full sociological, biological and environmental investigation and and been declared sound and feasible without any major remarks prior to any construction.



Location of Turubalá in Zunil, Quetzaltenango