

Project Factsheet #4



Component 1 - Hydropower Facility

The TRHDP will consist of 4 components: (i) Hydropower Facility (HPF); (ii) Access Road; (iii) Transmission Line; (iv) Technical Assistance (TA). This fact sheet will detail Component 1 – Hydropower Facility.



Component 1 - Hydropower Facility (HPF) - US \$185.66 million

Under a 34-year PPA (including 4-year construction period), the Project Company, Tina Hydro Limited, will develop, finance, construct and operate the HPF with an installed capacity of 15 MW located on the Tina River, 20 km southeast of Honiara, and will comprise of :

- (a) A roller-compacted-concrete (RCC) dam 72 m high (from foundation) located in a narrow gorge on the Tina River;
- (b) A waterway including a 3.3 km headrace tunnel in 3.3 m diameter, surge shaft and a surface-type steel penstock in 3.0 m diameter to convey water from the dam to the powerhouse;
- (c) A powerhouse 5.7 km downstream of the dam site that will house three 5 MW Francis turbines and an extra bay for future installation of a possible fourth 5 MW turbine.

The salient feature of the Hydropower Facility are provided in the table below

River Basin	Ngalimbiu River
River	Tina River
Catchment Area at Dam Site	125 km ²
Average River Discharge at Dam Site	13.1 m ³ /s
Dam Type	Roller compacted concrete (RCC)
Dam Height	72 m from foundation
Dam Volume	207 m
Dam Volume	199,000 m ³
Full Supply Level (FSL)	175 m above sea level
Reservoir Length	2.6 km
Reservoir Area at FSL	30 ha
Reservoir Volume	Active Storage- 1.42 million m ³
Reservoir Volume	Dead Storage - 3.25 million m ³
Headrace Tunnel Length	3.3 km
Penstock Length 116 m	116 m
Tailrace Length	16 m
Design Discharge	18 m ³ /s for 3 units
Gross Head	102 m
Installed Capacity	5 MW x 3 nos.
Annual Energy	78.35 GWh per annum
Tailrace Length	16 m
Net GHG Emissions Reduction	49,500 tCO ₂ eq/year or 2.48 million tCO ₂ eq over the 50-year project life (based on Bank's Guidance Note: Greenhouse Gas Accounting for Energy Investment Operations)
River Bypass Section Length	5.7 km
Environmental FLOW	1.0 m ³ /s

Source: Feasibility Study prepared by SIG (executed by Entura).