

2019 08 22 Pentti Sjomán email Whati - 1200 kW Nailii Hydro Project

From: Pentti Sjomán (Hydrotech) [mailto:pentti.sjomán.hydrotech@gmail.com]

Sent: August 23, 2019 9:09 AM

To: Craig Yeo

Cc: Kevin O'Reilly

Subject: Re: Whati - 1200 kW Nailii Hydro Project.

Just a clarification of the cost estimates:

1. 1200 kW Nailii Hydro Project near Whati at the La Martre River Falls:
 - Based on a 2008-2009 study which included detailed preliminary engineering design of the full hydro project including budget pricing from Dependable Turbines (a British Columbia hydro turbine manufacture) for the two 600 kW turbine-generators.
 - The construction cost estimate was developed in collaboration with a contractor with similar remote location construction experience.
 - The 2009 Construction Cost Estimate was \$10 million.
2. 500 kW Rae-Taka Hydro Project near Gamèti:
 - Based on a 2015 Feasibility Study (a Phase 1 feasibility study).
 - The feasibility level project cost estimate of \$14.5 million included the following:
 - A Phase 2 of the feasibility study,
 - development costs,
 - detailed engineering costs (for construction ready design),
 - feasibility level construction cost estimate.
 - included budget prices for two 250 kW turbine-generators from Ossberger a German turbine manufacturer.
3. 200 kW Kaa Two Tii De'a Hydro Project near Wekweètì:
 - Based on a 2015 Feasibility Study (a Phase 1 feasibility study).
 - The feasibility level project cost estimate of \$12.7 million included the following:
 - A Phase 2 of the feasibility study,
 - development costs,
 - detailed engineering costs (for construction ready design),
 - feasibility level construction cost estimate;
 - included budget prices for two 100 kW turbine-generators from Ossberger a German turbine manufacturer.

Note that all three hydro projects would provide 100% off-set of diesel-generated electricity.

Yes I give permission to table this summary email.

Pentti O. Sjöman, PEng
POSjöman Hydrotech Consulting
9035 Altair Place
Burnaby, British Columbia
Canada, V3J 1A8
Cell: 604-219-1732
SKYPE: pentti.sjomán
pentti.sjomán.hydrotech@gmail.com
