



TAYOGA: 1.5 MW Acosta, Costa Rica

May 18, 2014



River Run Hydro seeks Tayoga investment partner for \$1.2 million cash and guarantee of a \$4.6 million construction loan for a 40% stake or for full capitalization of \$5.6 million for a 51% stake.. The hydro model for Tayoga is summarized below.

Parameter	units	Value
Available Head	feet	1400
Pipeline Diameter	inches	24
Flow velocity	feet per second	5
Penstock Flow	cubic feet per second	16
Flow Rate	gallons per minute	7046
Pipeline Length	feet	10000
Head Loss	feet per 100 feet	0.3
Total Head loss	feet	30
Effective head	feet	1370
Turbine efficiency	percentage	85%
Hydroelectric Potential	kilowatts	1477
Annual operation period	months	8
Sell rate	\$/ kilowatt hour	\$0.11
Annual Revenues	dollars	\$935,793
Capital Cost	dollars	\$5,570,000
Payback period	years	6.0
Return on Investment	percentage	16.8%

Property: 1000 hectare privately owned finca that including head waters of the Tiquires River and frontage along the Quebrada Ayaral.

Access: Difficult access, remote. Substantial road improvement required.

Grid: Single phase grid power is located within 4 km of turbine location along unimproved road

Mode: Joint venture: Land owner 20%, Investor 40%, RRH 40% with international construction loan.

Profits: 6 year payback, 17% ROI on a \$6 million capital investment

Flow Measurement: HOBO pressure gauge installed and monitoring depth since 22 Apr 14

Challenges

- 1) Remote with significant road building
- 2) Environmentally sensitive
- 3) Heavy rainy season

Advantages

- 1) No land costs
- 2) Ex-Legislator land owner
- 3) Turbine location ideal site for add-on solar field

