

Project Summary

Location:

District: Darayem

District Center: Shar e safā

N 36 54 697

E 70 22 127

H 1,800 masl

Supply Area: Shar e safā + yamchiyan+ daryim

Water Source:

Yamchiyan River; minimum flow > 0.4 m³/s; water shortages to be expected during dry years

Accessibility: good via off road throughout the year; distance to Faizabad: 63km

Technical Description:

The run-off the river project comprises of a 10 m wide weir of 1.5 m height. The water is conveyed via a 3.1 km long headrace canal to the forebay. With a gross head of 64 m and a nominal discharge of 0.4m³/s the capacity is about 200 kW.

The power is transmitted via a 15 km long 20 kV transmission line and distributed via a 0.4 kV network. Houses are connected via service cable and equipped with electronic meter and RCBOs. The mini-hydropower station will not cover the entire demand of the district centre at peak load during the dry season. A back-up 50kW diesel generator should complete the hybrid supply system.

Socio-Economy

- Number of population: 6,000
- Number of households: 800 (7.5 persons/household)
- Number of houses: 320 (2,5 households per house)

The Bazaar is located in the center of district and comprises of 400 shops, 9 Mosques, 4 schools, 6 hotels, 2 government buildings, 2 health facilities (hospital and clinic), 0 veterinary clinics, and a number of workshops.

Area Supplied

The following villages/hamlets will be connected to the supply system:
Share safā + yamchiyan+ daryim

Environmental Aspects

The Yamchiyan river is perennial. A fish pass is required to allow fish migration.

The project will have no negative impact to houses, land and irrigation. Water conflicts may arise during dry years

Principal Lay-Out



Afghanistan

Darayem

Hydropower Project

Site Reconnaissance

Project Name

Rural Electrification Concept
Badakhshan Province

Number of people supplied

6,000 plus Bazaar

Estimated Costs

1.9 mill US\$; 7,600 US\$/kW; 316 US\$/person

Technical Details

Turbine capacity	200 kW
Rated head	64m
Rated flow	0.4m ³ /s
Turbine type	Pelton/Francis
Planning and construction time	18 months



Survey implemented by:



For the Energy Working Group
under the PDC in Badakhshan
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Legends

- Load Centres
- Power House
- ↓ Intake
- Transmission line

Scale: As Shown

Renewable Energy Supply for Rural Areas (ESRA)

Rural Electrification Concept, Badakhshan Province

Yamchiyan Hydropower Project

Step	Page	Drawing no.
		DRWG

Google Image of the Project Area
Aerial View

INTEGRATION
environment & energy
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