RITE GEOSYSTEMS

ENCARDIO RITE METASENSING FOR MEGA STRUCTURES

Project Dossier

PROJECT DOSSIER

PUNATSANGCHHU-II HEP

PROJECT OVERVIEW

Punatsangchhu-II Hydroelectric Project is on downstream of Punatsangchhu-I being developed by Punatsangchhu Hydroelectric Project Authority, a joint venture of Governments of India and Bhutan. India's Water and Power Consultancy Services (WAPCOS) is engineering and design consultant for this project.
The power house of the project is located on the right bank of Punatsangchhu River along the Wangdue-Tsirang highway between 22 km and 35 km downstream of Wangdue Bridge. The dam site is about 94 km from Thimphu. The Punatsangchhu-II Hydroelectric Project is an environment friendly run-of-the river scheme and consists of the following:

- Concrete Dam, 86 m high x 213.5 m wide at the top
- Diversion tunnel, 12 m dia x 888 m length
- Downstream surge chamber
- Butterfly valve chamber
- Three pressure shafts & six penstocks
- Headrace tunnel, 11 m dia x 8.6 km length
- Tailrace tunnel, 11 m dia x 3.3 km length
- Underground machine hall cavern
- Underground transformer hall cavern

Project	**Punatsangchhu-II Hydroelectric Project**
Location	Wangdue Phodrang Dzongkhag, Bhutan
Client	Punatsangchhu-II Hydroelectric Project Authority (PHPA)
Contractor	Contracts C1 & C3-Jaiprakash Associates Ltd., C2- Gammons India
Consultants	Water and Power Consultancy Services (WAPCOS) Ltd.
Duration	2013-2020

Monitoring solution

Encardio-rite was awarded the contract for supply, installation, commissioning, monitoring and maintenance of instruments for power house complex.

Turnkey services

- Supply of geotechnical instrumentation for power house complex
- Installation services
- Commissioning, monitoring, reporting and maintenance

INSTRUMENT USED

- **Multi-point borehole extensometers:** To monitor subsurface deformation around power house complex
- **Piezometers:** To monitor pore pressure of water around the power house complex
- **Anchor bolt load cells:** To monitor load on the rock bolts
- **Measuring anchor:** To monitor subsurface movements
- **Bireflex targets:** 3D monitoring of deformations

TUNNELS | HYDROELECTRIC | CONSTRUCTION | STRUCTURAL | METRO & RAIL | BRIDGES | MINING

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