

# Project Dossier



PROJECT DOSSIER

## SHONGTONG KARCHHAM HEP SLOPE MONITORING

### PROJECT OVERVIEW

Himachal Pradesh Power Corporation Limited (HPPCL) developed the Shongtong-Karchham 450 MW Hydro Electric Project over River Satluj in district Kinnaur of Himachal Pradesh. The project is envisaged as a run-of-river (RoR) Scheme. The barrage site is located near village Powari and the power house is located near village Ralli on left bank of river Satluj near confluence of river Bapsa with river Satluj. The HEP not only provides affordable power to the residents of Himachal Pradesh, but also gives excess power to other states within India.

The project includes:

- Barrage - 26 m high, 122.6 m long at top
- Four 260 m long underground chambers
- 7.7 km headrace tunnel
- 110 m high and 30.6 m diameter surge shaft
- 23 m wide by 54 m high underground powerhouse

Removal of trees on slopes for construction works, and re-working of slopes in the immediate vicinity of roads

has led to landslides. With passage of time, the exposed rock slowly weathers and after some time can become a potential source of landslide. Thus, it was necessary to implement appropriate slope stabilization measures to prevent the possibility of soil erosion and landslides in the abutment/hills. Encardio-rite was entrusted with the monitoring contract for the slope stability of the abutment. Encardio-rite provided comprehensive range of instrumentation along with installation and monitoring for risk assessment during construction of the dam. The dam instrumentation monitoring was carried out for the Contractor. However, the slope monitoring works was directly done for the HPPCL.

Project	Shong Tong Karcham HEP, Abutment Slope Monitoring
Location	Reckong Peo (H.P.), India
Client	Himachal Pradesh Power Corporation Limited (HPPCL).
Contractor	Himachal Pradesh Power Corporation Limited (HPPCL)
Consultants	KFW
Duration	2017-till date



## Monitoring solution

### Turnkey services

Encardio-rite was entrusted for monitoring works on turnkey basis. Scope of works included:

- Supply and installation of geotechnical instruments
- Manual monitoring as per desired intervals
- Weekly reporting.



## INSTRUMENT USED

**Inclinometers** were installed at required locations on the abutment, as decided by the Consultants. The installation of inclinometer on the hills was quite a challenge, especially as the installation was quite deep - upto 100 m below ground level. The manual monitoring on steep hills was also a task. Encardio-rite's experienced engineer posted at the site, carried out both the installation and monitoring works successfully. Weekly reports are submitted on a regular basis. Any variation observed in the data is informed instantly to the stakeholders.



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