

# **BRIEF SUMMARY OF JANGI THOPAN POWARI HYDROELECTRIC PROJECT (804 MW)**

## **INTRODUCTION**

SJVN Limited (SJVN) is constructing the Jangi Thopan Powari Hydro-electric Project (JTPHEP) plant of 804 MW capacity in district Kinnaur, Himachal Pradesh. It is a run of the river type project proposed to harness the hydel potential of river Satluj. The project envisages construction of a concrete gravity dam of 48 m high from river bed level across river Satluj near Jangi village, and underground power house on the right bank upstream of Tehsil boundary (Kashang Nallah).

## **PROJECT COMPONENTS DETAILS**

**Dam:** A 48 m high, concrete gravity dam from river bed level ( $\pm 2260.0$  m), with integral 5 nos. gated spillways having size of 7.5m (W) X 15.0m (H) have been proposed. Upper level spillway having width of 8.0m has been proposed in block no. 6 on the left bank side. The spillway has been designed to pass assumed design flood corresponding to Probable Maximum Flood of 6212 cumecs. The Full Reservoir Level has been kept at 2305.0 m and Minimum Draw Down Level at El. 2302.0 m. The dam would provide a gross pondage of about 27.45 MCM and live storage of about 4.17 MCM. The length of the dam at top shall be 189 m.

**Head Race Tunnel:** It is proposed to excavate a circular-shaped HRT of diameter 9.40 m and length of approximately 12 km using Tunnel Boring machine.

**Power House Site:** Underground power house having size of 165.0 m (L) x 22 m (W) x 50 m (H) shall be provided on the right bank. Water shall be released back into the river through a 9.5m diameter horse shoe shaped tail race tunnel.

## **PROJECT LOCATION (COORDINATES)**

The project is situated on Satluj River, having its dam site near Jangi Village in Kinnaur, and power house on the right bank of Tehsil boundary (Kashang Nallah). The dam is located at Longitude  $78^{\circ}25'55.17''E$  and Latitude  $31^{\circ}37'34.55''N$ . At a distance of approximately 3 km downstream from the TWL of JTPHEP, the lip of reservoir of an under-construction project, namely Shontong Karcham hydroelectric project having installed capacity of 450 MW, exists.

## **LAND REQUIREMENT**

The tentative land requirement for the project is 295.93 ha out of which 270.43 ha is forest land and 25.5 ha is private land.

## **DETAILS ON SUBMERGENCE AREA**

Construction of dam will result in submergence of about 156.2917 ha. of land out of which 143.2093 ha. is forest land and 13.0824 ha. is private land. Further, the project

would involve construction of various project components, which would result in new land use in the area.

**DETAILS ON ECOLOGICAL SENSITIVE AREA:** Lippa Asrang Wildlife Sanctuary falls at an aerial distance of about 7 km. from the project.

### **ENVIRONMENTAL RELEASES**

The environmental discharge released from the dam will be as per Cumulative Environmental Impact Assessment (CEIA) study got conducted by MOEF&CC, which has been approved in the 29th & 30th EAC meeting held on 5 Dec., 2019 & 27 Jan., 2020. As per the CEIA study of Satluj basin, project falls in no fish zone and therefore, the recommended EFR values of 20% of mean lean season flow i.e. mean flow in the month of December, January & February for 90% dependable year have been considered to be released throughout the year.

The hydrological series for 27 years data (1992-93 to 2018-19) has been approved by CWC for preliminary project planning. The 90% dependable year worked out as 2001-02. The discharges in the year 2001-02 & e-flows to be released as per approved CEIA work out to 9.415 cumecs.

### **PROJECT BENEFITS**

1. Capacity addition of 804 MW in the Northern Region and reducing peaking power shortage in the region. Annual generation of 2777.56 MU with 95% machine availability (design energy).
2. Integrated development of Kinnaur region in the areas of employment, communication, education, health, tourism etc.
3. Out of 13% free power to the home state Himachal Pradesh, 1% shall be utilized for contribution towards local area development.

### **STATUS OF OTHER STATUTORY CLEARANCES**

**Forest Clearance:** Application for diversion of 270.43 ha forest land is required for the project is yet to be submitted.

**Wildlife Clearance:** Proposal yet to be submitted.

### **PROJECT COST AND EMPLOYMENT GENERATION**

The project is estimated to cost ₹ 5708.35 Cr. and is expected to provide employment to approximately 3500 people during construction period (approx. 5 Years).

### **R&R DETAILS**

R&R plan in respect of acquisition of 25.5 ha private land will be as per Land Acquisition, Rehabilitation and Resettlement Act, 2013.

### **DETAILS OF CONSULTANT**

**NAME** - EQMS India Pvt. Ltd.

**Letter of Accreditation:** QCI/NABET/ENV/ACQ/18/0701 dated on July 17, 2018 valid up to May 23, 2019; (**Validity Extended up to:** 31<sup>st</sup> October, 2020 vide letter dated April 30, 2020)

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