

# **HOSHANGABAD HEP (2x22.5 MW)**

## **INTRODUCTION**

This project having a installed capacity of 45 MW is located in Sehore District near village Banetha. The project has a estimated cost of Rs. 669.34 Crores and will generate 238.59 MU energy on completion.

## **SALIENT FEATURES (As per Draft DPR)**

### **1 LOCATION**

- STATE : MADHYA PRADESH
- DISTRICT : SEHORE
- RIVER : NARMADA  
NEAR VILLAGE BANETHA
- BARRAGE SITE : LATITUDE 22°51'47" N  
LONGITUDE 77°50'12" E
- NEAREST BG RAIL HEAD : BUDHNI
- NEAREST AIRPORT : BHOPAL

### **2 HYDROLOGY**

- CATCHMENT AREA : 39,466 sq km
- LOCATION OF CATCHMENT : LATITUDE 22°51' N TO 23°45' N  
LONGITUDE 77°50' E TO 81°45' E
- AVERAGE ANNUAL RAINFALL : 1295.2 mm
- AVERAGE MAXIMUM TEMPERATAURE : 46.5° C
- AVERAGE MINIMUM TEMPERATURE : 7.40°C

- MAXIMUM OBSERVED DISCHARGE AT HOSHANGABAD G&D SITE (1990-2002) : 26,483 Cumecs
- MINIMUM OBSERVED DISCHARGE AT HOSHANGABAD G&D SITE (1990-2002) : 42 Cumecs

### 3 RESERVOIR

- FULL RESERVOIR LEVEL (FRL) : EL 301 m
- MIN. DRAW DOWN LEVEL (MDDL) : EL 300.80 m
- GROSS STORAGE : 305.99 M Cum
- AREA UNDER SUB-MERGENCE AT FRL : 46.90 sq km (tentative)
- LIVE STORAGE : 9 M Cum

### 4 BARRAGE

- TYPE : CONCRETE GRAVITY FLOOR
- PIER TOP ELEVATION : EL 320 .0 m
- CREST ELEVATION : EL 287.50 m
- DOWNSTREAM FLOOR LEVEL : EL 287.0 m
- TOP BUND LEVEL : EL 305.0 m
- LENGTH AT THE TOP : 487.60 m
- THICKNESS OF D/S RAFT : 2.50 m
- UPSTREAM FLOOR LEVEL : EL 287.0 m

- UPSTREAM FLOOR THICKNESS : 1.0 m
- THICKNESS OF PIER : 2.50 m
- HEIGHT OF BARRAGE : 19.0 m (from deepest bed level)

## 5 SPILLWAY (WEIR)

- DESIGN FLOOD (1 IN 100 YEARS FLOOD) : 30,000 Cumecs
- 1 IN 500 YEARS FLOOD : 37,343 Cumecs
- TYPE : GLACIS
- CREST ELEVATION : EL 287.5 m
- NUMBER & SIZE OF OPENING : 27 NOS , 15.3 m X 13.5 m

## 6 DIVERSION ARRANGEMENT

- TYPE : DIVERSION CHANNEL
- HEIGHT OF DYKES : 8.1 m

## 7 INTAKE

- SILL LEVEL : EL 273.36 m
- NUMBER & SIZE OF GATE OPENING : 2 NOS , 10.2m (W) X 11.4 m (H)
- TRASH RACK : INCLINED AT 25° (FROM VERTICAL)  
2 BAYS OF 12.70 m X 32.80 m
- STOPLOGS OPENINGS : 1 SET STOPLOGS, 10.2 m WIDE AND 20 m HIGH

## 8 HEAD RACE CHANNEL

- SHAPE : TRAPEZOIDAL
- BASE WIDTH : 35 m
- LENGTH : 70 m
- WEIR TOP LEVEL : EL 290 m

## 9 POWER HOUSE

- TYPE & LOCATION : SUB-SURFACE, RIGHT BANK
- DESIGN DISCHARGE : 200 CUMECS (each unit)
  
- INSTALLED CAPACITY : 2 X 22.5 MW
- POWER HOUSE : 35 m (W)X 50 m (L) X 42 m (H)
- DRAFT TUBE OPENING : 2 OPENINGS, 9.925 m (W) X 7.3 m (H)
- GROSS HEAD : 12.87 m
- RATED NET HEAD : 12.62 m
  
- TYPE OF TURBINE : BULB

**10 IMPORTANT ELEVATIONS**

- SERVICE BAY : EL 295 m
- MACHINE HALL FLOOR : El 288 m
- CENTRE LINE OF M/C : El 279.06 m
- BOTTOM OF DRAFT TUBE : EL 275.41 m
- MIN. TAIL WATER LEVEL (for one machine) : EL 288.06 m
- NORMAL TAIL WATER LEVEL (for two machines) : EL 288.64 m
- MAX. FLOOD LEVEL WITH PMF OF 37,343 CUMECS : EL 303.0 m

**11 TAIL CHANNEL**

- SHAPE : TRAPEZOIDAL
- BASE WIDTH : 35.0 m
- LENGTH : 136.0 m
- WEIR TOP LEVEL : EL 286.50 m

**12 SWITCHYARD**

- SIZE AND LOCATION : 100 m X95 m AT EL. 305 m ON RIGHT BANK

**13 POWER GENERATION**

- ANNUAL ENERGY GENERATION IN 90% DEPENDABLE YEAR
    - INITIAL PHASE : 238.59 MU
    - FINAL PHASE : 196.07 MU
- 14 PROJECT COST** (AT SEPTEMBER 2006 PRICE LEVEL INCLUDING IDC)
- TOTAL COST : Rs 669.34 Crores

### PRESENT STATUS

The work of Survey & Investigation, Preparation of DPR and execution of Hoshangabad HEP has been awarded to NHDC. The Draft DPR of Hoshangabad HEP has been prepared by NHDC and viability of the project is being assessed.