

TEHRI DAM AND HYDRO POWER

INTRODUCTION :

Tehri Hydro Power Complex (2400 MW), comprises the following components:

1. Tehri Dam & Hydro Power Plant (1000 MW)
2. Koteshwar Hydro Electric Project (400 MW)
3. Tehri Pumped Storage Plant (PSP) (1000 MW)

The Govt. in March, 1994 approved the implementation of Tehri Dam & HPP (1000 MW) along with committed works of Koteshwar HEP and essential works of Tehri PSP, as Stage-I of Tehri Power Complex. With the synchronization 4th unit of 250 MW in March-07, Tehri Power Station has become fully operation with installed capacity of 1000 MW. The Corporation entered into an era of providing much needed peaking power to the Northern Grid. This project has become the landmark and pride of the Nation as a whole.

The 400 MW Koteshwar HEP, was approved by Govt. in April,2000 and the work has progressed in right earnest and after completion of major excavation work in Dam & Spillway, Stiling Basin and Power Intake area, the concreting was started and is progressing in full swing.

Investment approval for Tehri PSP (1000 MW) has been accorded by the Govt. in July'06 at an estimated project cost of Rs. 1657.60 Cr. (at Dec'05 Price Level) with Debt Equity ratio of 70:30. The essential works of Tehri PSP have already been completed with Tehri Dam & HPP Stage-I. The process of award of major works is in progress.

Benefits from the Tehri Hydro Power Complex	
• Addition to the installed generating capacity in the Northern Region (1000 MW on completion of Tehri Stage-I)	2400 MW
• Annual energy availability (Peaking) (3568 MU on completion of Tehri Stage-I)	6200 MU
• Irrigation (additional)	2.70 Lac.ha.
• Stabilisation of existing irrigation (besides above)	6.04 Lac.ha.
• Additional Generation in downstream Projects	200 MU
• 300 Cusecs (162 million gallons per day) of drinking water for Delhi which will meet the requirements of about 40 lac people.	
• In addition, 200 Cusecs (108 million gallons per day) of drinking water for towns and villages of U.P. which will meet the requirement of 30 Lac people.	
• Flood Moderation	
• Integrated development of Garhwal region, including construction of a new hill station town with provision of all civic facilities; improved communication, education, health, tourism, development of horticultures, fisheries, and afforestation of the region.	

TEHRI DAM & HPP (1000 MW) (Under Operation)

The 1000 MW Tehri HPP comprises a 260.5 m high Tehri Dam, which is the highest Earth & Rockfill Dam in the Asian Region, 2 nos. Head Race Tunnels, an underground Hydro Power House Complex having four conventional Turbine/Generator sets of 250 MW each and Spillway System comprises Chute Spillway, 2 gated Shaft Spillways and 2 ungated Shaft Spillways. The Intermediate Outlet Level (ILO) shall enable water releases for irrigation purposes, when the machines are not in operation.

Tehri Dam & HPP STAGE – I (1000 MW)

All the four units (Unit IV, III, II & I) of 250 MW each have been commissioned during 2006-07 and 1000 MW Tehri Power Station is fully operational. Command Area has also started availing Irrigation Benefits and Drinking Water is being supplied to NCT of Delhi.

Major Components of Projects are

Earth & Rock Fill Dam :

Type	:	Rock and Earth Fill
Height	:	260.5 m
Base	:	1128 m
Width at top	:	25.5 m
Length at the top	:	592 m

Tehri Reservoir

Water Spread	:	42 SQ KM
Gross Storage	:	3540 Miliion Cum
Live Storage	:	2615 Million Cum

Power House

Power House	:	Under ground
Cavern Size	:	197mx24mx63m
Type of Turbines	:	Francis
Rated Head	:	188 M
Speed	:	214.3 RPM
Installed Capacity	:	4x250MW
Annual Energy	:	3568 MUs