



A Navratna Company



“ Power Behind
GREEN POWER ”

NHPC Limited

(A Government of India Navratna Enterprise)



94.2 MW Tanakpur Power Station
(Uttarakhand) - Barrage

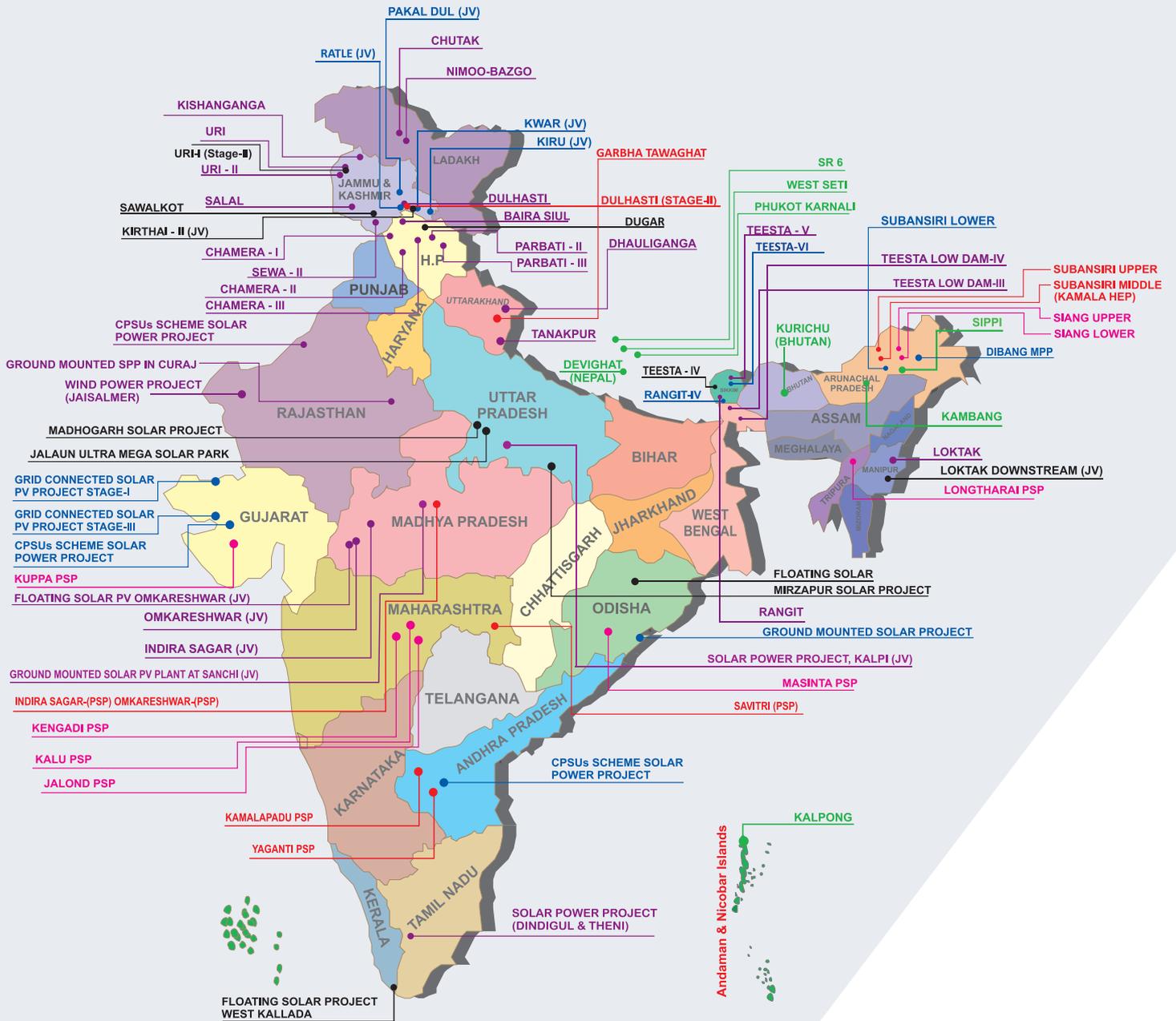
NHPC
100% GREEN ENERGY COMPANY

NHPC Limited was established in 1975. NHPC is a Government of India 'NAVRATNA' Enterprise.

With an authorized share capital of ₹17500 crore and total investment base of ₹87121.11 crore (as on 31.03.2025), NHPC is ranked as a premier organization in India for development of hydropower.

The technical and engineering proficiency and experience of NHPC places it in a leading position in the field of hydropower development in India and neighbouring countries.

FOOTPRINTS OF NHPC



- OPERATING POWER STATIONS
- PROJECTS COMPLETED ON DEPOSIT/TURNKEY BASIS
- PROJECT UNDER CONSTRUCTION
- PROJECTS UNDER SURVEY & INVESTIGATION
- PROJECTS UNDER CLEARANCES / APPROVAL
- NEW INITIATIVES BY NHPC

NHPC - AN OVERVIEW

Year of Establishment	1975
Authorized Share Capital	₹17500 crore
Power Stations in Operation	30 (8140.04 MW)# 24 (6458.34 MW) - NHPC 6 (1681.70 MW) - In Joint Ventures
Power Stations Commissioned on Deposit/Turnkey Basis	5 (70.35 MW) - Completed outside India 2 (74.10 MW) - Completed within India 3 (15.25 MW)
Projects under Construction	15 (9896.86 MW)
Projects under Clearances / Approval	9 (4181 MW)
Projects under S&I	12 (12615 MW)
New Initiatives by NHPC	15 (26444 MW)

POWER STATIONS IN OPERATION

Power Station	UT/ State	Capacity (MW)	
		Own Project	in JV
Baira Siul	Himachal Pradesh	180	
Loktak	Manipur	105	
Salal	J & K	690	
Tanakpur	Uttarakhand	94.20	
Chamera-I	Himachal Pradesh	540	
Uri-I	J & K	480	
Rangit	Sikkim	60	
Chamera-II	Himachal Pradesh	300	
Dhauliganga	Uttarakhand	280	
Dulhasti	J & K	390	
Teesta-V	Sikkim	510	
Sewa-II	J & K	120	
Chamera-III	Himachal Pradesh	231	
Chutak	Ladakh	44	
TLDP-III	West Bengal	132	
Nimoo-Bazgo	Ladakh	45	
Uri-II	J & K	240	
Parbati-III	Himachal Pradesh	520	
TLDP-IV	West Bengal	160	
Jaisalmer Wind Power Project	Rajasthan	50	
Tamil Nadu Solar Project	Tamil Nadu	50	
Kishanganga	J & K	330	
Parbati-II	Himachal Pradesh	800	
Solar Power Plant, Bikaner****	Rajasthan	107.14	
Indira Sagar*	Madhya Pradesh		1000
Omkareshwar*	Madhya Pradesh		520
Kalpi SPP**	Uttar Pradesh		65
Sanchi SPP*	Madhya Pradesh		08
Ground mounted SPP in Central University of Rajasthan, Ajmer***	Rajasthan		0.70
Floating Solar PV, Unit-D (In the Reservoir of Omkareshwar Project) (M.P.)*	Madhya Pradesh		88
	TOTAL	6458.34	1681.70
	GRAND TOTAL	8140.04 MW	

NHPC has also installed 4084.34 KWp Rooftop grid connected solar power plants in its PS / CO.

* Joint venture between NHPC and Govt. of Madhya Pradesh.

** Joint Venture between NHPC and Govt. of Uttar Pradesh. Project fully commissioned on 29.03.2024.

*** Project synchronization with state grid w.e.f. 14.08.24 and started infusion of energy to CURAJ (Central University of Rajasthan, Ajmer) Project inaugurated on 05.09.24 by Hon'ble Governor, Rajasthan.

****Out of 300 MW capacity, COD of 107.14 MW achieved on 00.00 Hrs. of 12.04.2025.

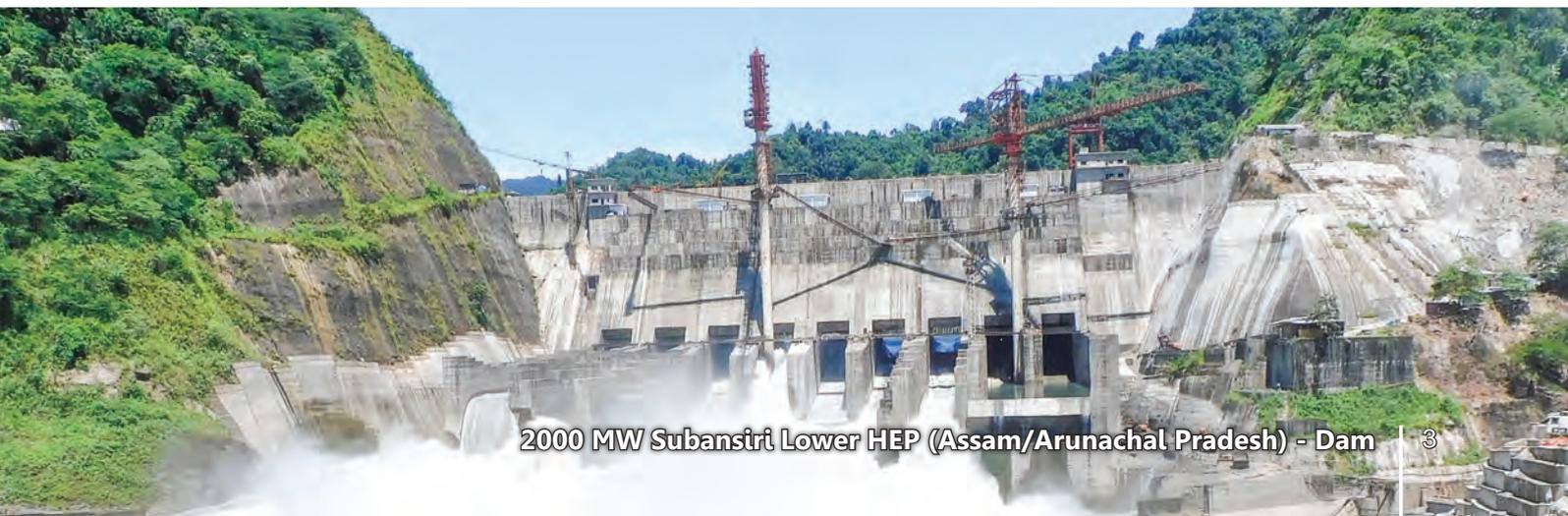
POWER STATIONS COMMISSIONED ON DEPOSIT/TURNKEY BASIS

Power Station	UT/State/Country	Capacity (MW)
Abroad		
Devighat	Nepal	14.10
Kurichu	Bhutan	60.00
India		
Kalpong	Andaman & Nicobar Islands	5.25
Sippi	Arunachal Pradesh	4.00
Kambang	Arunachal Pradesh	6.00
TOTAL		89.35

PROJECTS UNDER CONSTRUCTION

Project	UT/State	Capacity (MW)	
		Own	Project Cost (In Cr.)
(A) NHPC - Own			
Hydro			
Subansiri Lower	Arunachal Pradesh	2000	26075.54
Dibang Multipurpose	Arunachal Pradesh	2880	31876.39
Teesta-VI	Sikkim	500	5748.04
Sub Total		5380	63699.97
Solar			
1000 MW CPSUs scheme Solar PV Power Project(s) anywhere in India			
600 MW	Gujarat	600	4295.63
300 MW	Rajasthan	192.86 #	1731.57
100 MW	Andhra Pradesh	100	577.20
Ground Mounted Solar Power Project, Ganjam	Odisha	40	151.74
Floating Solar Power Project, West Kallada	Kerala	50	259.72
200 MW Grid connected Solar PV Project (600 MW Solar Park at Khavda), Stage- I	Gujarat	200	929
200 MW Grid connected Solar PV Project (600 MW Solar Park at Khavda), Stage- III	Gujarat	200	854.10
Sub Total		1382.86	8798.96
Total- A (Own)		6762.86	72498.93
(B) JVs / Subsidiaries			
Hydro			
Rangit- IV	Sikkim	120	1828.11
Ratle	J&K	850	5281.94
Pakal Dul	J&K	1000	12670
Kiru	J&K	624	5409
Kwar	J&K	540	4526.12
Sub Total (JVs/Subsidiaries)		3134	29715.17
GRAND TOTAL (A+B)		9896.86	102214.10

#Out of 300 MW, COD of part capacity i.e. 107.14 MW achieved on 00.00 Hrs. of 12.04.2025



2000 MW Subansiri Lower HEP (Assam/Arunachal Pradesh) - Dam

PROJECTS UNDER SURVEY & INVESTIGATION

Project	UT/State	Installed Capacity (MW)	Remark
(A) NHPC - Own			
Hydro			
Dulhasti Stage-II	UT of J&K	260	DPR submitted to CEA on 28.03.25.
Garba Tawaghat HEP	Uttarakhand	630	
Kamala	Arunachal Pradesh	1720	DPR submitted to CEA on 22.10.2024.
Subansiri Upper	Arunachal Pradesh	1605	Pre-DPR submitted.
West Seti	Nepal	800	DPR of the project forwarded to IBN, Nepal.
SR 6	Nepal	460	Final DPR of SR-6 has been submitted to IBN, Nepal.
	Sub Total	5475	
Pump Storage Projects			
Savitri PSP	Maharashtra	2400	DPR is under preparation.
Masinta PSP at Deogarh (Up-Stream of Rengali Reservoir)	Odisha	1000	Preparation of DPR is under progress.
Kuppa PSP	Gujarat	900	
	Sub Total	4300	
	Total (A) - Own	9775	
(B) NHPC - JVs / Subsidiaries			
Pump Storage Projects			
Indirasagar-Omkareshwar PSP (On Stream)	Madhya Pradesh	640	DPR Preparation is under progress.
Gadikota PSP	Andhra Pradesh	1200	Projects is being executed through APGENCO NHPC Green Energy Ltd. (ANGEL), JV of NHPC. Preparation of DPR is under progress.
Yaganti PSP		1000	
	Total (B) - JVs	2840	
	Total (A+B)	12615	

PROJECTS UNDER CLEARANCES / APPROVAL

Project	UT/State	Installed Capacity (MW)	Clearance Pending as on 15.04.2025
(A) NHPC - Own			
Hydro			
Teesta- IV	Sikkim	520	FC-II
Sawalkot	J&K	1856	Defence, FC-I & II, EC
Dugar	Himachal Pradesh	500	FC-I & II, EC
Uri-I Stage-II	J&K	240	FC- II
	Sub Total	3116	
Solar			
100 MW Floating Solar Project at Rengali Reservoir	Odisha	100	Under Tendering Process
	Sub Total	100	
	Total Own (A)	3216	
(B) Projects in Joint Venture			
Hydro			
Kirthai- II	J&K	820	FC-I & II, EC, IWT
	Sub Total	820	

Cont...

Solar			
Mirzapur Solar Project (BSUL, JV with UPNEDA)	Uttar Pradesh	100	PPA & Investment approval.
Madhogarh Solar Project (BSUL, JV with UPNEDA)	Uttar Pradesh	45	PPA & Investment approval.
Solar Park			
Jalaun Ultra Mega Solar Park, 1200 MW (BSUL, JV with UPNEDA)	Uttar Pradesh	–	Investment approval.
	Sub Total	145	
	Total J.V (B)	1075	
	Grand Total (A+B)	4181	

NEW INITIATIVES BY NHPC

Project	Country/ State	Installed Capacity (MW)	Remarks
A) Hydro Projects in Nepal			
Phukot Karnali	Nepal	624	MoU between NHPC and VUCL, Nepal exchanged on 01.06.2023 for development of Phukot Karnali Project. Further, Review of DPR submitted to VUCL on 30.03.2024.
	Sub Total	624	
B) Hydro (Indicated by MOP)			
Siang Lower	Arunachal Pradesh	2700	
Siang Upper Multipurpose Project	Arunachal Pradesh	11200	
	Sub Total	13900	
C) Pump Storage Plants			
Kengadi PSP	Maharashtra	600	PFR submitted to Govt. of Maharashtra on 22.11.2023.
Longtharai PSP	Tripura	800	PFR has been prepared & submitted to Government of Tripura. NHPC vide its letter dated 29.04.2025 asked TSECL to send its consent to undertake the work of DPR preparation on cost basis.
Kalu PSP	Maharashtra	1350	DPR is in progress.
Jalond PSP	Maharashtra	2400	Revised MoU has been signed with Deptt. of Water Resource, Govt. of Maharashtra on 03.09.2024.
Harbhangi	Odisha	300	Under PFR Stage.
Badanala Stream	Odisha	600	Under PFR Stage.
Kurund	Chhattisgarh	1000	Preparation of PFR is under progress.
Singli PSP	Rajasthan	1000	Preparation of PFR is under progress.
Paharkalan PSP	Rajasthan	1000	
Aravetipalli	Andhra Pradesh	1320	Projects being executed through APGENCO NHPC Green Energy Ltd. (ANGEL). Preparation of DPR is under progress. The feasibility report completed.
Rajupalem PSP	Andhra Pradesh	800	
Deenepalli	Andhra Pradesh	750	
	Sub Total	11920	
	Grand Total (A+B+C)	26444	

SUBSIDIARIES / JOINT VENTURES

- **NHDC Limited** - JV with Govt of Madhya Pradesh.
- **Chenab Valley Power Projects Limited** - JV with JKSPDC in UT of J&K.
- **Ratle Hydroelectric Power Corporation Limited** - Incorporated with NHPC & JKSPDC holding equity share of 51% & 49% respectively. The JVC will implement 850 MW Ratle HEP in UT of J&K.
- **Lanco Teesta Hydro Power Limited** - Wholly owned subsidiary of NHPC for Teesta-VI HEP (500 MW) in Sikkim.
- **Jal Power Corporation Limited** - Wholly owned subsidiary of NHPC for Rangit-IV HEP (120 MW) in Sikkim.
- **APGENCO NHPC Green Energy Ltd. - ANGEL** - JV of NHPC & Andhra Pradesh Power Generation Corporation (APGENCO), Andhra Pradesh. Both companies hold a 50:50 equity stake.
- **NHPC Renewable Energy Limited (NREL)** - Wholly owned subsidiary of NHPC for development of Renewable Energy, Small Hydro and Green Hydrogen based business.
- **Bundelkhand Saur Urja Limited** - JV with UPNEDA, Govt. of Uttar Pradesh
- **Loktak Downstream Hydroelectric Corporation Limited** - JV with Govt. of Manipur
- **National High Power Test Laboratory Pvt. Limited** - JV with NTPC, PGCIL, CPRI and DVC.
- **Proposed JV in Odisha** - with Green Energy Development Corporation of Odisha Ltd. (GEDCOL) with NHPC & GEDCOL holding equity share of 74% & 26% for development of 500 MW Floating Solar Power Projects on different water bodies in Odisha.



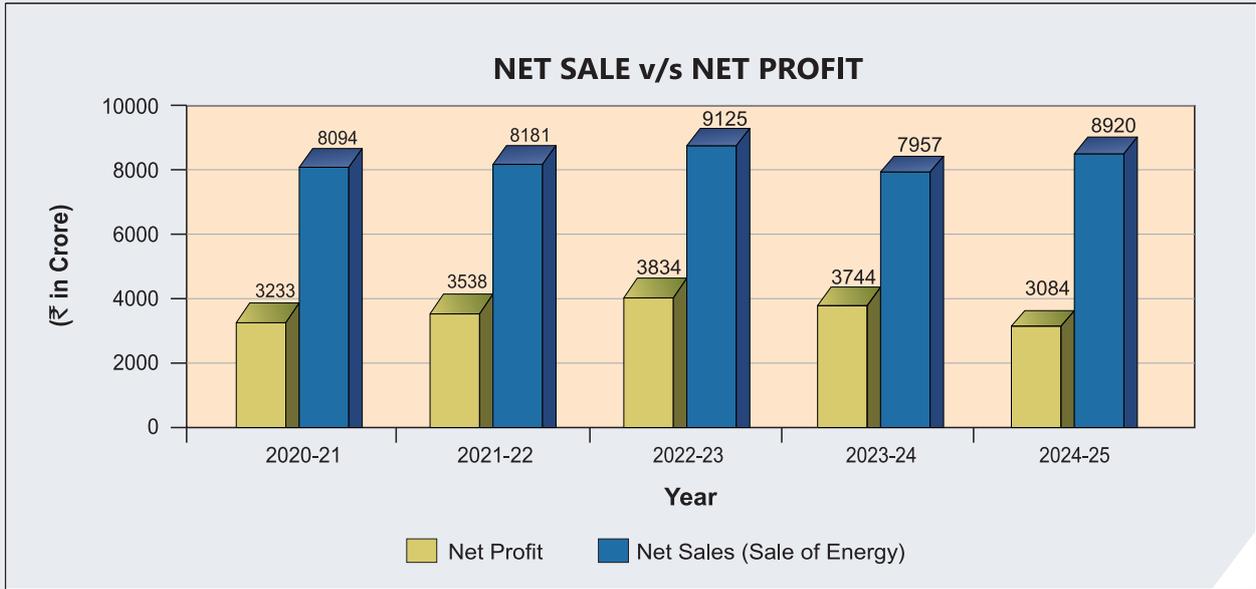
1000 MW Indira Sagar Power Station (Madhya Pradesh)-Dam

FINANCIAL HIGHLIGHTS

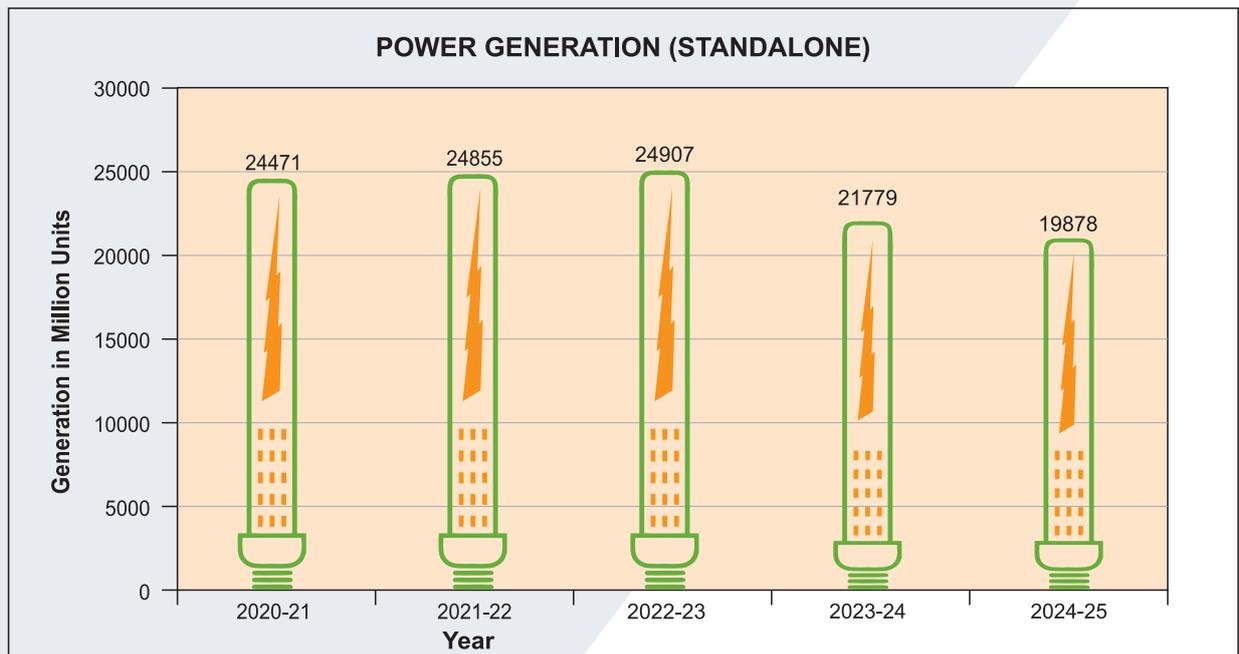


“Started power generation in 1982 with a turnover of ₹ 24 crore and net profit of ₹ 7.68 crore.”

“Listed on Indian bourses - BSE & NSE w.e.f. 1st September 2009 after successfully concluding its IPO worth over ₹ 6000 crore.”



POWER GENERATION



NHPC'S CAPABILITIES

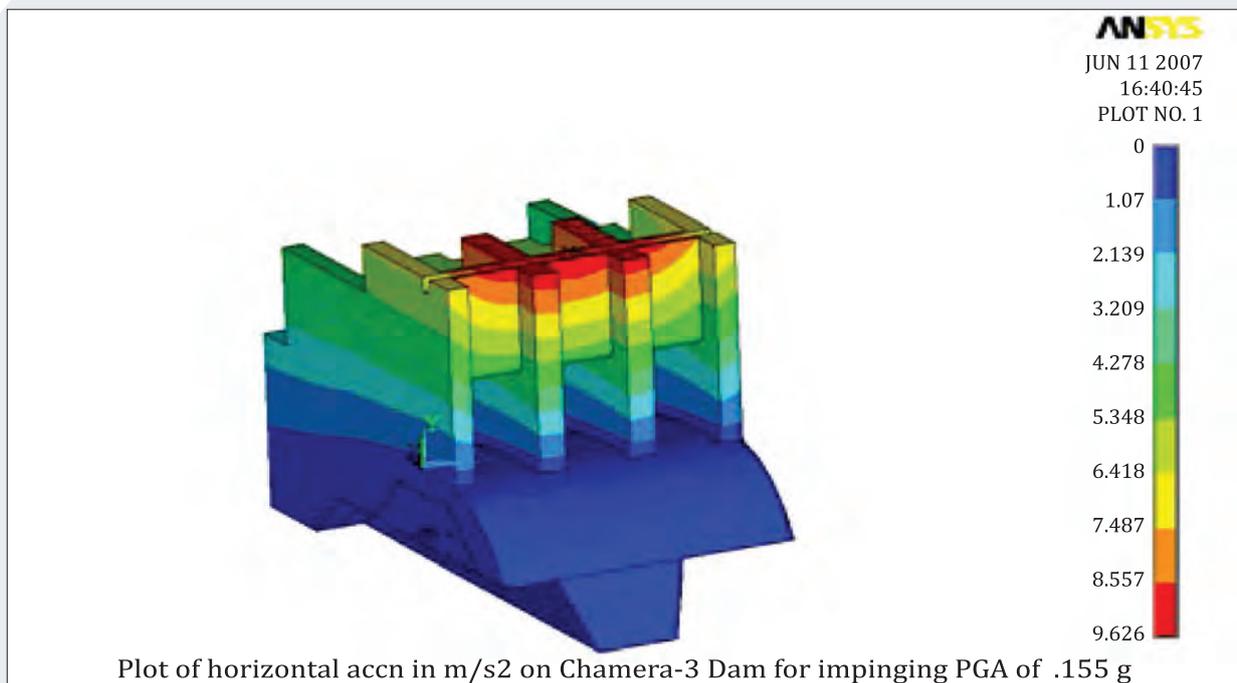


- Planning, Investigation, Design & Engineering and Execution of Hydroelectric Projects from concept to commissioning.
- Operation, Maintenance Renovation and Modernization & Dam safety evaluation.
- Development of Solar and Wind Power projects.
- Real time monitoring and alert generation by master control room as early warning system for hydropower developers.

DESIGN & ENGINEERING

Design & Engineering is a major thrust area for NHPC. Its Design division is well equipped with modern design tools and a well trained manpower which handles the planning and design of all componets associated with hydropower projects from concept to commissioning including trouble shooting during construction as well as O&M stages of projects.

NHPC has gathered vast experience in construction of underground structures in the complex Himalayan geology which is used for evolving constructable designs for its own projects as well as for consultancy assignments relating to Design & Engineering of hydro-projects in India & abroad.



EXPERTISE IN RCC DAM CONSTRUCTION



Roller Compacted Concrete (RCC)

uses construction process, which combines the economical and rapid placing techniques used for fill dams with the strength and durability of concrete.

160 MW TEESTA LOW DAM-IV POWER STATION, WEST BENGAL

First Roller Compacted Concrete (RCC) dam by NHPC and is only the third of its kind in India.

MAJOR FEATURES OF RCC DAM

160 MW Teesta Low Dam-IV Power Station, West Bengal

Height of Dam (from deepest foundation)	45 m
Total volume of concrete in dam	170000 cum



160 MW Teesta Low Dam- IV Power Station (West Bengal)

GEOLOGICAL AND GEOTECHNICAL CAPABILITIES



NHPC has been pioneering in development of engineering geological and geotechnical appraisal for civil structures related to hydropower/pump storage projects

Complete rockmass characterization for design of all civil structures of hydropower /pump storage projects is the forte of engineering geologists in NHPC

Capability to explore entire spectrum of geological, geophysical, geotechnical and construction material investigations related to hydropower and pump storage projects.

NHPC has a Fully-equipped Geotechnical lab to carry out laboratory rock mechanics test. It is a lab with prestigious ISO/IEC-17025:2017 accreditation from National Accreditation Board for Testing and Collaboration Laboratories (NABL). This lab is equipped to conduct all lab rock mechanic tests required for Geology chapter of DPR of hydropower projects.

Sophisticated remote sensing lab with capabilities to generate topographic survey maps from satellite imageries for optimization of layout in inaccessible areas

Geological Studies

- To plan, investigate and monitor the Geological and Geotechnical, aspects of hydropower/Pump storage projects in an efficient and scientific manner including preparation of feasibility and detailed project reports(DPR) in accordance with the regulations laid down by the Govt. of India.
- To provide geological recommendations to avoid or to minimize the threat of geological uncertainties (fault, thrust, thick shear zone, poor rockmass condition, high ingress of ground water, rock bursting, squeezing ground condition) in surface and underground space being faced during construction of various civil structures (Dam, Head Race Tunnel (HRT), Powerhouse (surface or underground).
- Timely acquisition of progressive geological and geotechnical data for optimization of layout and modification in rock support system/change in design layout during investigation stage & construction stage respectively.

Construction

Materials Studies

- Capability to conduct in-house field survey, in-situ / laboratory tests and advice on the availability of suitable construction materials studies in terms of quality and quantity vis-a-vis the project requirements and to assess the techno-economic viability of the project.

Geophysical Studies

- Expertise in geophysical studies for investigation, construction and post construction stages
- Geophysical techniques like Seismic Refraction/Reflection, Resistivity Imaging, liquefaction potential assessment techniques.
- Application of advanced geophysical techniques like High Resolution Seismic Tomography and Resistivity Imaging for investigations in complex geological terrains.
- Tunnel Seismic Prediction for assessment of geological conditions ahead of tunnel face is available only with NHPC in India.

Seismological Studies:

- NHPC has setup 57 Accelerograph for earthquake monitoring at all its power station and JVs projects covering entire Himalayas.
- A Real Time Seismic Data Centre has been established in NHPC for continuous online monitoring of all power stations. NHPC is the only Power utility in the country to have such data centre.
- Technical coordination for Site Specific Design Parameter & Seismological Studies like Micro Earthquake/Local Earthquake Tomograph/MT survey for large dams in accordance with NCSDP guidelines & Dam Safety Act, 2021.
- NHPC has developed mitigation plan w.r.t. Reservoir Triggered Seismicity in the Himalayas/liquefaction potential assessment etc.

SURVEY & INVESTIGATION CAPABILITIES

Investigation is an intrinsic aspect of hydropower project during all stages of its development. NHPC is equipped with various state-of-art technologies/instruments and capable of undertaking various investigations.

Early Warning System

To minimize damages from floods in the upper Himalayan region, NHPC has developed a Central Control Room and Command Stations for Early Warning System (EWS) catering to hydropower projects of NHPC as well as of other entities. EWS is equipped with automatic instruments (AWLR and telemetry) and has strategic tie-ups with different expert agencies (IMD, CWC, DGRE, NRSC and NGRI).

Topographical Survey

- Expertise in carrying out all kinds of survey works required during planning, construction and maintenance of Engineering Projects.
- Capable of producing topographical maps, DEM\DTM from data acquired by conventional as well as photogrammetry and remote sensing techniques.
- Latest survey equipments such as GNSS System , Reflector less Total Station, Long Range 3D Terrestrial Laser Scanner and Latest Softwares.
- More than 50,000 Hectare survey has been carried by Conventional Method.
- Maps of more than 35 projects has been developed by photogrammetry and remote sensing techniques.

Exploratory Drilling

- Equipped with the latest technologies and expert drilling crew for carrying out exploratory drilling works in difficult terrain and remote areas
- More than 40000 meters of drilling/ works completed.
- Expertise in carrying out exploratory core drilling works in river beds.
- Latest Swedish Diamec drilling rigs for doing fast core drilling.

CONSTRUCTING INDIA'S LARGEST HYDROPOWER PROJECT

2880 MW DIBANG MULTIPURPOSE PROJECT

Situated on river Dibang in Lower Dibang Valley District of Arunachal Pradesh, the 2880 MW Dibang Multipurpose Project is being implemented by NHPC. The Project is expected to generate 11,223 MUs (Million Units) of electricity. After construction, the Project will be one of the biggest projects in terms of power generation in India. The Project has been conceived as a Reservoir Scheme for flood moderation and lean season peaking.

Major Features

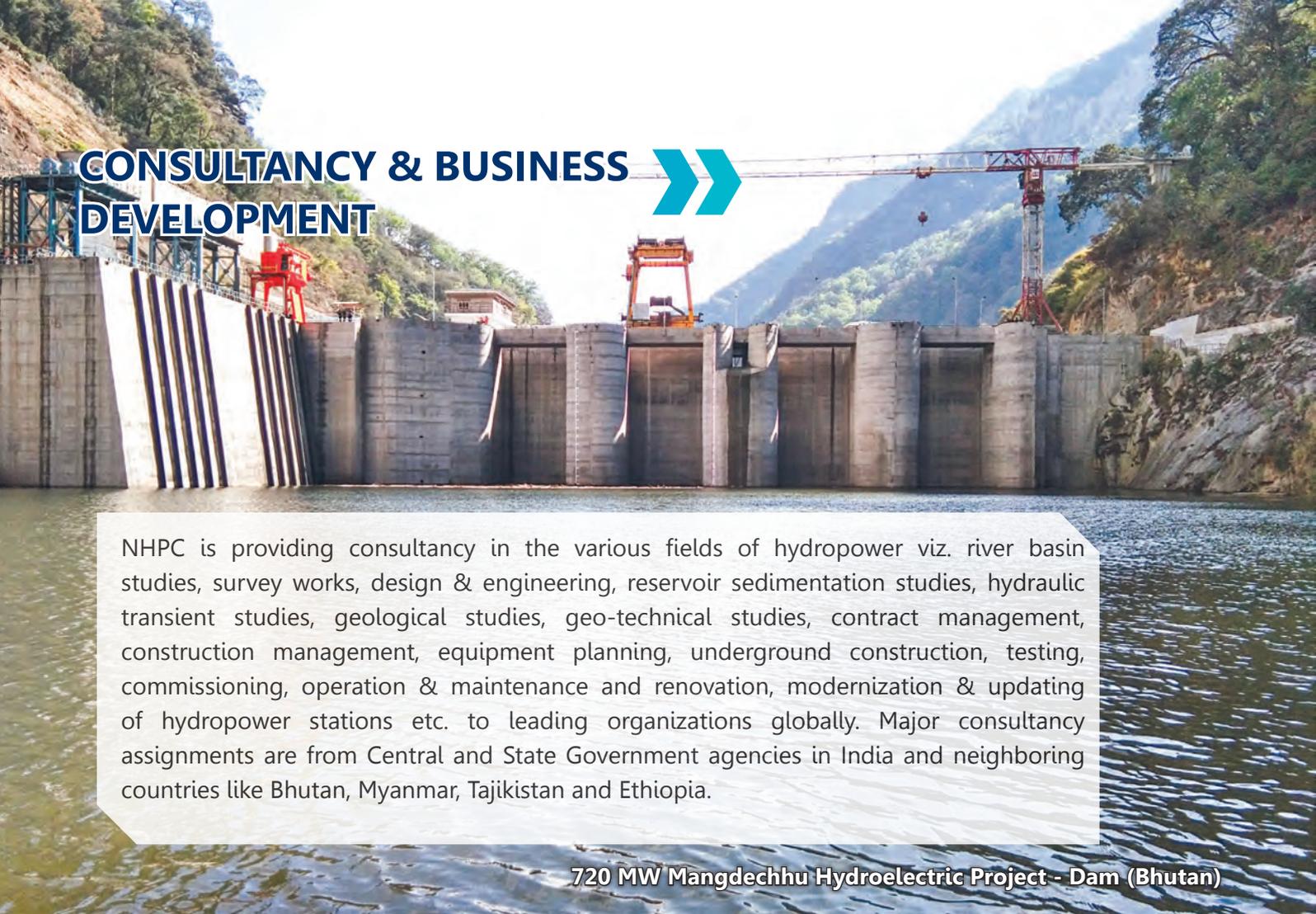
Height of Concrete Gravity Dam from deepest foundation - 278 m (One of the highest dams in India/Asia)
--

Total volume of Concrete in Dam - 190 lakh cum (approx.)
--

Large gross storage at MWL (EL 538.00 m) - 3510 MCM



CONSULTANCY & BUSINESS DEVELOPMENT



NHPC is providing consultancy in the various fields of hydropower viz. river basin studies, survey works, design & engineering, reservoir sedimentation studies, hydraulic transient studies, geological studies, geo-technical studies, contract management, construction management, equipment planning, underground construction, testing, commissioning, operation & maintenance and renovation, modernization & updating of hydropower stations etc. to leading organizations globally. Major consultancy assignments are from Central and State Government agencies in India and neighboring countries like Bhutan, Myanmar, Tajikistan and Ethiopia.

720 MW Mangdechhu Hydroelectric Project - Dam (Bhutan)

GLOBAL INITIATIVES



NHPC plans to continue expanding its international operations and help in harnessing the hydro potential available internationally by leveraging its existing relationship and goodwill earned through past consultancy assignments.

Bhutan

- Chamkharchhu-I Hydroelectric Project
- Kuri Gongri Basin Projects
- Mangdechhu Hydroelectric Project

Tajikistan

Varzob Hydroelectric Project

Nigeria

Shiroro Hydroelectric Power Station

Ethiopia

Ethiopia Electric Power Company

Nepal

- West Seti Hydroelectric Project
- SR-6 Hydroelectric Project
- Phukot Karnali Project

Myanmar

- Tamanthi Hydroelectric Project
- Shwezaye Hydroelectric Project

BUSINESS INITIATIVES



510 MW Teesta-V Power Station (Sikkim) - Power House

- Memorandum of Understanding signed between NHPC and Vidhyut Utpadan Company Limited (VUCL), Nepal for development of Phukot Karnali Hydro Electric Project (624 MW) in Nepal.
- Memorandum of Understanding signed between NHPC and Water Resource department Govt. of Maharashtra on 03.09.2024 for the development of Pumped Storage Schemes and other Renewable Energy Source Projects in State of Maharashtra.
- MOU has been signed on 08.08.2022 between NHPC and Investment Board of Nepal for development of West Seti (750 MW) and SR 6 (450 MW) Projects in Nepal.
- MOU signed between NHPC and KSEB on 16.06.2023 for providing Consultancy Services to KSEB for HE Project in the state of Kerala
- MOU has been signed on 23.06.2023 between NHPC and Govt. of Odisha for development of PSP and RE Projects in the state of Odisha.
- MOA signed between Government of Arunachal Pradesh and NHPC on 12.08.2023 for implementation of two Hydro Projects aggregating to 3800 MW (Kamla HEP- 1800MW and Subansiri Upper HEP- 2000MW) in the state of Arunachal Pradesh.
- NHPC and Rajasthan Renewable Energy Corporation Limited (RRECL) signed a Letter of Intent (LOI) for development of 10000 MW Renewable Energy (RE) Projects/ Parks in the state of Rajasthan.
- Promoter's agreement signed between NHPC and Green Energy Development Corporation of Odisha Ltd. (GEDCOL) for development of 500 MW Floating Solar Power Projects in different water bodies in Odisha.
- Government of Tripura has allotted 04 numbers of PSP sites to NHPC for detailed Survey & Investigation Works and their subsequent Implementation based on their techno-commercial viability.
- An MOU has been signed between NHPC and ONGC on 15.12.2023 for Cooperation in exploration and development of Pumped Hydro Storage and other Renewable Projects.

STRATEGIC DIVERSIFICATION IN RENEWABLES



Achievements

- Bundelkhand Saur Urja Limited (BSUL), a JV has been promoted for development of Solar Power in Uttar Pradesh. 65 MW Kalpi Solar Power Project being implemented by BSUL was fully commissioned on 29.03.2024
- 50 MW Solar Project in Tamil Nadu has been commissioned on 23.03.2018
- NHPC's first Wind Power Project of 50 MW capacity at Jaisalmer, Rajasthan was successfully commissioned on 30.09.2016
- Cumulative 700 MW capacity solar power projects awarded by NHPC Limited as intermediary procurer have been successfully commissioned in Rajasthan"

50 MW Solar PV Project (Tamil Nadu)

Upcoming Projects

- 40 MW Solar Power Project in Ganjam, Odisha under Solar Park Scheme
- 1000 MW capacity under CPSU scheme has been awarded to NHPC by IREDA & further NHPC has awarded EPC contract on 12.05.2022 for 1000 MW.
- 6660 MW Solar, FDRE and Hybrid projects awarded to Developers under REIA scheme through tariff based competitive bidding are under implementation.
- 1200 MW Solar Park Development in Jalaun (UP) through BSUL
- 500 MW Floating Solar Projects in Odisha under UMREPP (300 MW in Phase-I) in JV mode with GEDCOL.
- 50 MW floating Solar Power Project in Kerala.

50 MW Wind Power Project, Jaisalmer (Rajasthan)



44 MW Chutak Power Station (UT of Jammu & Kashmir)- Dam



330 MW Kishanganga Power Station (UT of J&K)



A Navratna Company

NHPC Limited

(A Government of India Navratna Enterprise)

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MAY 2025

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