

**NATIONAL HYDROELECTRIC POWER CORPORATION
LIMITED (NHPC)**

(MINISTRY OF POWER)

**COMMITTEE ON PUBLIC UNDERTAKINGS
(2026-27)**

THIRTY-FIRST REPORT

(EIGHTEENTH LOK SABHA)



**LOK SABHA SECRETARIAT
NEW DELHI**

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COMMITTEE ON PUBLIC UNDERTAKINGS (2026-27)

(EIGHTEENTH LOK SABHA)

NATIONAL HYDROELECTRIC POWER CORPORATION LIMITED (NHPC)

(MINISTRY OF POWER)



***Presented to Lok Sabha on 06 August, 2026
Laid in Rajya Sabha on 06 August, 2026***

**LOK SABHA SECRETARIAT
NEW DELHI**

August, 2026/ Shravana, 1948(Saka)

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COMPOSITION OF THE COMMITTEE ON PUBLIC UNDERTAKINGS (2026-27)

Shri Baijayant Panda - Chairperson

Members

LOK SABHA

2. Shri Tariq Anwar
3. Shri Chandra Prakash Joshi
4. Smt. Kanimozhi Karunanidhi
5. Shri Kaushalendra Kumar
6. Shri Shankar Lalwani
7. Smt. Poonamben Hematbhai Maadam
8. Shri B.Y. Raghavendra
9. Shri Rajeev Rai
10. Shri Mukesh Rajput
11. Shri Sukhjinder Singh Randhawa
12. Prof. Sougata Ray
13. Shri Pratap Chandra Sarangi
14. Shri Kodikunnil Suresh
15. Shri Prabhakar Reddy Vemireddy

RAJYA SABHA

16. Dr. John Brittas
17. Shri Milind Murli Deora
18. Dr. Syed Naseer Hussain
19. Shri Sanjay Kumar Jha
20. Shri Surendra Singh Nagar
- 21. Vacant***
22. Shri Arun Singh

SECRETARIAT

1. Shri Anjani Kumar - Joint Secretary
2. Smt. Mriganka Achal - Director
3. Shri Dhruv - Under Secretary
4. Shri Pawan Kumar - Assistant Executive Officer

*Consequent upon the resignation of Shri Debashish Samantaray from the membership of Rajya Sabha w.e.f. 25 May,2026 *vide* Rajya Sabha Builletin Part-II No. 66428

COMPOSITION OF THE COMMITTEE ON PUBLIC UNDERTAKINGS (2025-26)

Shri Baijayant Panda - Chairperson

LOK SABHA

2. Shri Tariq Anwar
3. Shri Sudip Bandyopadhyay
4. Shri Chandra Prakash Joshi
5. Smt. Kanimozhi Karunanidhi
6. Shri Kaushalendra Kumar
7. Shri Shankar Lalwani
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13. Shri Kodikunnil Suresh
14. Shri Prabhakar Reddy Vemireddy
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RAJYA SABHA

16. Dr. John Brittas
17. Shri Neeraj Dangi
18. Shri Milind Murli Deora
19. Dr. Bhagwat Karad
20. Shri Surendra Singh Nagar
21. Shri Debashish Samantaray
22. Shri Arun Singh

INTRODUCTION

I, the Chairperson, Committee on Public Undertakings (2026-27) having been authorized by the Committee to submit the Report on their behalf, present this Thirty-first Report (18th Lok Sabha) on “NHPC Limited”.

2. The Committee on Public Undertakings (2025-26) (18th Lok Sabha) had selected the said subject for detailed examination. As the examination of the subject remained inconclusive during the previous Committee term, the present Committee on Public Undertakings (2026-27) decided to carry forward the subject so as to complete the unfinished task.

3. The Committee on Public Undertakings (2025-26) was briefed about the subject by the representatives of the NHPC Limited on 10th September, 2025 and thereafter took evidence of the representatives of NHPC Limited and Ministry of Power on 10th April, 2026.

4. The Committee considered and adopted the Draft Report at their sitting held on 03August, 2026.

5. The Committee wish to express their thanks to the representatives of NHPC Limited and Ministry of Power for tendering evidence before the Committee and furnishing the requisite information to them in connection with examination of the subject.

6. The Committee wish to express their sincere thanks to the predecessor Committee for their valuable contribution in examination of the subject.

7. For facility of reference and convenience, the Observations and Recommendations of the Committee have been printed in bold letters in Part-II of the Report.

**New Delhi:
03 August, 2026
12 Shravana, 1948(S)**

**BAIJAYANT PANDA
Chairperson,
Committee on Public Undertakings**

Sl. No.	ACRONYMS	
1.	HEP	Hydroelectric Project
2.	PSP	Pumped Storage Project
3.	DPR	Detailed Project Report
4.	CEA	Central Electricity Authority
5.	CERC	Central Electricity Regulatory Commission
6.	CCEA	Cabinet Committee on Economic Affairs
7.	NGT	National Green Tribunal
8.	EIA	Environmental Impact Assessment
9.	FRA	Forest Rights Act
10.	FPIC	Free, Prior and Informed Consent
11.	MoU	Memorandum of Understanding
12.	CAPEX	Capital Expenditure
13.	CUF	Capacity Utilisation Factor
14.	MU	Million Units
15.	PAT	Profit After Tax
16.	PBT	Profit Before Tax
17.	ROE	Return on Equity
18.	DISCOM	Distribution Company
19.	PPA	Power Purchase Agreement
20.	LPS	Late Payment Surcharge
21.	HPO	Hydro Purchase Obligation
22.	CFA	Central Financial Assistance
23.	NER	North Eastern Region
24.	ISTS	Inter-State Transmission System
25.	LADF	Local Area Development Fund
26.	GLOF	Glacial Lake Outburst Flood
27.	EWS	Early Warning System
28.	WOS	Wholly Owned Subsidiary
29.	BSUL	Bundelkhand Saur Urja Limited
30.	JKSPDC	Jammu & Kashmir State Power Development Corporation
31.	NREL	NHPC Renewable Energy Limited
32.	ANGEL	APGENCO NHPC Green Energy Limited
33.	APGENCO	Andhra Pradesh Power Generation Corporation Limited
34.	NHPTL	National High Power Test Laboratory Private Limited
35.	NTPC	National Thermal Power Corporation Limited
36.	DVC	Damodar Valley Corporation
37.	CPRI	Central Power Research Institute

38.	PGCIL	Power Grid Corporation of India Limited
39.	PESB	Public Enterprises Selection Board
40.	NRC	Nomination and Remuneration Committee
41.	CSR	Corporate Social Responsibility
42.	PARIVESH	Pro-Active and Responsive facilitation by Interactive, Virtuous and Environmental Single-window Hub
43.	NLDC	National Load Despatch Centre
44.	TBCB	Tariff Based Competitive Bidding
45.	IPO	Initial Public Offering
46.	FPO	Follow-on Public Offer

REPORT

PART-I

CHAPTER-1

INTRODUCTORY

A. Brief History and Evolution

1.1 NHPC Limited was incorporated on November 7, 1975 as a Private Limited Company under the name 'National Hydroelectric Power Corporation Private Ltd.' The Company was converted to a Public Limited Company with effect from April 2, 1986, and was renamed 'NHPC Limited' in 2008. Presently, NHPC is a Navratna Central Public Sector Enterprise with 67.40% ownership of the Government of India. With an authorised share capital of ₹17,500 crore and an investment base of ₹93,570.28 crore (as on 30.09.2025), NHPC is ranked as the premier organisation in the country for the development of Hydropower.

1.2 While briefing the Committee on 10th September, 2025, the CMD of NHPC gave a concise account of the Company's evolution:

"NHPC was incorporated in 1975 as National Hydroelectric Power Corporation Limited along with NTPC. So, at the same time both the organizations were incorporated. In 1981, our first hydro project was commissioned of 180 MW in Baira Siul in Himachal Pradesh. In 2000, we formed a JV with MP Government, which we call NHDC Limited.We got Mini-Ratna status in 2008, and then we got listed in our Exchange in 2009 with our first IPO.We became a Navratna company in August 24, and now in 2025, we commissioned our very long-pending 800-megawatt Parvati-II hydropower project in Himachal Pradesh."

1.3 During the sitting on 10.04.2026, the CMD updated the Committee on the Company's current status and recent commissioning milestones:

"Last year, in 2025, we commissioned 800 megawatt, Parvati 2 and 300 megawatts Bikaner solar. We have partially commissioned 750 megawatts of

Subansiri Lower also. Sir, this is our journey so far. Our authorised share capital is 17500 crore. As on December, 2025 our net worth, actually we have still unaudited till March. So, we are only giving certain figures up to December, 2025, which is audited one. So, our net worth is 40,133 crore and capital employed is 84,786 crore."

1.4 The Milestones of NHPC's evolution since incorporation as follows:-

Period	Key Milestones
1975–1985	Incorporated 07.11.1975 as a Private Limited Company. Commissioned 180 MW Bairasiul (HP) in 1981-82 — first power station. Revenue of ₹24 crore; net profit ₹7.68 crore in FY 1982-83. 105 MW Loktak (Manipur) also commissioned. Total capacity: 285 MW.
1986–2000	Converted to Public Limited Company (02.04.1986). Commissioned Salal Stage-I & II (345 MW), Tanakpur (94.2 MW), Chamera-I (540 MW), Uri-I (480 MW), Rangit (60 MW). Formed NHDC Limited first Joint Venture with Govt. of Madhya Pradesh on 01.08.2000. Cumulative capacity: 2,149.2 MW.
2001–2010	Commissioned Chamera-II (300 MW), Dhauliganga (280 MW), Indira Sagar (1000 MW, NHDC), Dulhasti (390 MW), Omkareshwar (520 MW, NHDC), Teesta-V (510 MW), Sewa-II (120 MW). Renamed NHPC Limited (2008). Conferred Miniratna status (April 2008). Listed on NSE and BSE via IPO (2009). NHPTL JV formed with NTPC, Power Grid, DVC, CPRI (2009). Cumulative: 5,269.2 MW.
2011–2020	Commissioned Chamera-III (231 MW), Chutak (44 MW), TLDP-III (132 MW), Nimmo Bazgo (45 MW), Uri-II (240 MW), Parbati-III (520 MW), TLDP-IV (160 MW), Kishanganga (330 MW), Jaisalmer Wind (50 MW), TN Solar (50 MW). CVPPPL JV formed with JKSPDC (2011); BSUL JV with UPNEDA (2015). Acquired Teesta-VI HEP (500 MW) via CIRP from LTHPL (2019). Cumulative: 7,071.2 MW.
2021–2026	Acquired Rangit-IV HEP (120 MW) via CIRP (2021). Formed RHPCL with JKSPDC (2021). Incorporated NHPC Renewable Energy Ltd. wholly owned subsidiary (2022). Formed ANGEL JV with APGENCO (January 2025). Conferred Navratna status (August 2024). Commissioned 800 MW Parbati-II HEP (April 2025); 300 MW Karnisar Solar (FY 2025-26).

B. Mandate, Vision and Strategic Objectives

1.5 NHPC's vision is 'To be a global leading organisation for sustainable development of clean power through competent, responsible and innovative values.' Its mission encompasses achieving excellence in development of clean power at international standards; executing and operating projects through efficient and competent contract management and innovative R&D in an environment-friendly and socio-economically responsive manner; developing, nurturing and empowering human capital; practising the best corporate governance; and adopting state-of-the-art technologies to optimise use of natural resources.

1.6 NHPC's core objective is to plan, promote and organise an integrated and efficient development of power through conventional and non-conventional sources in India and abroad — encompassing planning, investigation, research, design, construction, generation, operation and maintenance of power stations and projects, as well as transmission, distribution, trading and sale of power in accordance with national economic policies. NHPC is also mandated to undertake, where necessary, the construction of inter-state transmission lines and ancillary works for timely and coordinated inter-state exchange of power.

1.7 NHPC aspires to achieve a total installed capacity of 36,500 MW by FY 2033-34 and 50,000 MW by the year 2047. In response to a question raised by a member of the Committee regarding specific steps to achieve these targets, the CMD, NHPC explained as under:

"As of now, we have 8,247 MW with us which is under operation. Under construction, there is around 10,000 MW. So, the projects which are under construction, we are almost going to complete most of the projects by 2030 or 2031. Some of these are there next year, 2026-27. Every year, some are getting commissioned. So, with this, we will achieve around 18,000 MW. For the balance 20,000 MW, we have three types of projects. One type is under clearance, which are quite advance stage clearances. We may go for construction of these projects very soon. That is around 8,000 MW. Then, some of them are under DPR. The DPR is expected to be completed within one year..... Then, there are PSPs which are the major ones. we have around 12,000 MW of PSPs..... We are very confident that the projects which are in pipeline with us at various stages of construction, we will be achieving these targets by 2033 definitely But by 2047, we will achieve 50,000 MW also."

1.8 The projected capacity addition and investment plan over the next five years, as furnished in NHPC's written replies, is as under:

Description	2025-26	2026-27	2027-28	2028-29	2029-30
Projected Investment (₹ crore, incl. JV equity)	7,353	11,667	13,210	16,582	20,743
Hydro Capacity Addition (MW)	1,550	2,994	1,040	240	1,110
Solar Capacity Addition (MW)	890	1,045	—	—	1,000
Total (MW)	2,440	4,039	1,040	240	2,110

C. Project Portfolio

1.9 As on 01 April, 2026, NHPC's total installed capacity is 9082.90 MW including 1681.70 MW in Joint Venture, comprising 8521.20 MW from 24 Hydro Power Stations, 511.70 MW from Six Solar Power Projects and 50 MW from a Wind Power Project. NHPC's hydro share of 8521.20 MW is approximately 16.65% of the country's total installed hydro capacity of 51164.66 MW.

1.10 The Ministry of Power, in its written reply, confirmed that NHPC is aligning its business in a responsible and sustainable manner for development of renewable energy, and that NHPC's entire generation capacity is totally from renewable sources including hydro, solar, wind and PSP. The Ministry confirmed that NHPC has incorporated NHPC Renewable Energy Limited (NREL) as a wholly owned subsidiary for Renewable Energy, Small Hydro and Green Hydrogen projects; Bundelkhand Saur Urja Limited (BSUL) as a Joint Venture with UPNEDA for RE projects in Uttar Pradesh and APGENCO NHPC Green Energy Limited (ANGEL) as a Joint Venture with APGENCO for pumped storage and RE projects in Andhra Pradesh demonstrating NHPC's commitment to national energy security and clean energy objectives.

1.11 The Ministry of Power also outlined the policy measures put in place to facilitate achievement of NHPC's capacity expansion targets. These include: (i) recognition of large hydro projects as renewable energy sources and tariff rationalisation measures (March 2019); (ii) Budgetary Support for Enabling Infrastructure — ₹1 crore per MW up to 200 MW and ₹200 crore plus ₹0.75 crore per MW above 200 MW, total outlay ₹12,461 crore (FY 2024-25 to FY 2031-32), supporting approximately 31 GW including 15 GW of PSP capacity; (iii) Central Financial Assistance (CFA) to North Eastern Region (NER) State Governments (notified 08.10.2024) — grant capped at 24% of total project equity (maximum ₹750 crore per project), outlay ₹4,136 crore supporting approximately 15,000 MW; (iv) 100% ISTS charge waiver for HEPs and PSPs; (v) revision of CEA concurrence

threshold upto ₹3,000 crore, with full exemption for off-stream closed-loop PSPs (01.08.2025); and (vi) CEA revised Detailed Project Reports (DPR) guidelines (November 2025) clearance of inter-state aspects not required for PSPs, benefiting 47 PSPs of 47.4 GW.

1.12 During the course of evidence on 10.4.2026 CMD, NHPC stated as under:

"As far as hydropower is concerned, the potential which is exploitable in India is around 133 gigawatts; and if you see under construction in country, it is 12,973 megawatts. So, out of these 12,973 megawatts, around 60 per cent is being constructed by NHPC only, that is, 8,264 megawatts. And out of 133 gigawatts, 44 gigawatts are only developed and out of these 44 gigawatts, 8.5 gigawatts are with NHPC."

1.13 NHPC's project portfolio as per the background note are as follows:-

Category	No. of Projects	Capacity (MW)
Under Operation (NHPC Standalone)	24	6,565.48
Under Operation (JVs/Subsidiaries)	6	1,681.70
Under Construction (NHPC + JVs)	16	9,789.72
Under Clearances / Approval	10	7,666
Under Survey & Investigation	9	9,030
New Initiatives (incl. PSPs)	15	26,444

D. Joint Ventures and Subsidiaries

1.14 NHPC has built an extensive network of eight subsidiaries and joint ventures to harness hydro and renewable energy potential across India in partnership with State Governments and other PSUs. The details are as under:

Company	Promoters & Share	Key Projects
NHDC Limited (01.08.2000)	NHPC: 51.08%; Govt. MP: 26%; NBPCL: 22.92%	Operational: Indira Sagar (1000 MW), Omkareshwar (520 MW), Floating Solar (88 MW), Sanchi Solar (8 MW). Pipeline: ISP-OSP PSP (640 MW)
Loktak Downstream HEC Ltd (23.10.2009)	NHPC: 74%; Govt. Manipur: 26%	Pipeline: Loktak Downstream HEP (66 MW), Manipur
Bundelkhand Saur Urja Limited (02.02.2015)	NHPC: 74%; UPNEDA: 26%	Operational: Kalpi Solar (65 MW, 2024). Under Construction: Jalaun Solar Park (1,200 MW). Pipeline: Mirzapur SPP (100 MW), Madhogarh SPP (45 MW)
Jalpower Corporation Ltd (Acquired 31.03.2021)	NHPC: 100% (WOS)	Under Construction: Rangit-IV HE Project (120 MW), Sikkim
Ratle HE Power Corp. Ltd (01.06.2021)	NHPC: 51%; JKSPDC: 49%	Under Construction: Ratle HE Project (850 MW), J&K
Chenab Valley Power Projects Ltd (13.06.2011)	NHPC: 51%; JKSPDC: 49%	Under Construction: Pakal Dul (1,000 MW), Kiru (624 MW), Kwar (540 MW). Pipeline: Kirthai-II (820 MW)
NHPC Renewable Energy Ltd (16.02.2022)	NHPC: 100% (WOS)	Dedicated vertical for RE, Small Hydro and Green Hydrogen. Rooftop solar in 5 States/8 Ministries
ANGEL — APGENCO NHPC Green Energy Ltd (23.01.2025)	NHPC: 50%; APGENCO: 50%	PSP Pipeline: Rajupalem (800 MW), Gadikota (1,200 MW), Deenapalli (750 MW), Aravetipalli (1,320 MW), Yaganti (1,000 MW)

1.15 NHPC is also a joint promoter (with NTPC, DVC, CPRI and Power Grid, each holding 12.5% except PGCIL at 50%) of National High Power Test Laboratory Private Limited (NHPTL), formed in 2009 for high voltage transformer testing — serving transformers of 132 kV, 220 kV, 400 kV and 765 kV class.

E. Board Composition and Governance

1.16 All Directors of NHPC are appointed/nominated by the President of India through the Ministry of Power. Functional Directors are selected by the Public Enterprises

Selection Board (PESB); Independent Directors by the Department of Public Enterprises (DPE). As of now, the Board comprised four Functional Directors (including CMD), one Government Nominee Director and four Independent Directors, against a sanctioned strength of five Functional Directors, one Government Nominee Director and six Independent Directors.

Written Replies of NHPC Point No. 26 (page No. 28); Background Note (page No. 3)

1.17 The Committee notes with serious concern that NHPC has faced recurring shortfalls in the number of Independent Directors, including Women Independent Directors, across every financial year from 2020-21 to 2024-25. The year-wise details of non-compliance are:

Financial Year	Nature of Non-Compliance
2020-21	No Independent Woman Director; Functional Directors exceeded 50% of Board; no Independent Director from 08.09.2020 to 31.03.2021; Audit Committee, Nomination and Remuneration Committee (NRC), CSR & Sustainability Committee and Risk Management Committee non-functional at various periods.
2021-22	No Independent Woman Director (01.04.2021 to 29.11.2021); Non-executive Directors less than 50% of Board; Functional Directors exceeded 50%; NRC absent from 01.04.2021 to 06.12.2021.
2022-23	Independent Director less than 50% of Board from 01.04.2022 to 31.08.2022 and from 13.12.2022 to 09.03.2023.
2023-24	Independent Director less than 50% from 18.09.2023 to 31.12.2023.
2024-25	Requisite Independent Director absent from 08.11.2024 to 31.03.2025; Woman Independent Director absent from 10.11.2024 to 31.03.2025; Audit Committee and NRC composition non-compliant.

CHAPTER – II

PHYSICAL PERFORMANCE

A. Capacity Addition and CAPEX

2.1 Over the last ten years, NHPC on a standalone basis added six projects aggregating 1,690 MW, three hydro projects (1,290 MW) and three Renewable Energy projects (400 MW, including 50 MW wind and 350 MW solar). JVs and Subsidiaries added four solar projects of 161.70 MW during the same period. NHPC's capital expenditure has grown substantially, from ₹2,792.92 crore in FY 2015-16 to ₹11,595.96 crore in FY 2024-25. During the sitting of 10.04.2026, the CMD stated as under:

"As regards CAPEX, the target was Rs. 13,300 crore and we have spent Rs. 13,689 crore. This is the highest in the history of NHPC."

2.2 The year-wise capacity addition over the last ten years, as furnished in NHPC's written replies (Point No. 9), is presented below:

Category	Up to 2015-16 (MW)	2016-17	2017-18	2018-19 to 2023-24	2024-25	2025-26	Total (Oct 2025)
Standalone Hydro	4,961.2	160	—	330	—	800	6,251.2
Standalone Solar	—	—	50	—	----	300	350.0
Standalone Wind	—	50	—	—	—	—	50.0
JVs/Subsidiaries Hydro	1,520	—	—	—	—	—	1,520.0
JVs/Subsidiaries Solar	—	—	—	73	88.7	—	161.7
TOTAL	6,481.2	210	50	403	88.7	1100	8,332.9

2.3 The CAPEX utilization over the last 10 years is given below.

Financial Year	CAPEX Utilised (₹ crore)	Financial Year	CAPEX Utilised (₹ crore)
2015-16	2,792.92	2020-21	3,567.90

2016-17	2,437.79	2021-22	5,166.36
2017-18	2,722.48	2022-23	6,961.42
2018-19	2,213.41	2023-24	8,652.32
2019-20	4,154.71	2024-25	11,595.96

B. Hydro Generation vis-à-vis MoU Targets

2.4 The year-wise comparison of actual hydro generation against MoU targets for the last five years is presented below:

FY	MoU Target (MU)	Design Energy (MU)	Actual Gen. (MU)	Variance (%)	Primary Causes of Variance
2020-21	27,500	23,412	24,320	-10.6%	Less inflow + E-flow compliance (3%); reservoir flushing/high silt (1%); unit outages (6.6%). Annual Design Energy achieved.
2021-22	26,996	23,339	24,690	-7.8%	Less inflow + E-flow (2.8%); siltation (2%); unit outages (3%). Annual Design Energy achieved.
2022-23	27,661	23,339	24,907	-9.3%	Less inflow + E-flow (5.8%); siltation (1.8%); outages (1.7%). Annual Design Energy achieved.
2023-24	29,916	23,339	21,614	-27.3%	GLOF/Teesta-V complete shutdown (3%); Parbati-II & Subansiri not commissioned (8%); less inflow (10.3%); siltation (3.6%); outages (2.4%).
2024-25	27,590	23,292	19,736	-28.0%	Continued Teesta-V shutdown – 2,870 MU loss (10.5%); less inflow (12%); siltation (2%); outages (3.5%).

2.5 The significant generation decline in FY 2023-24 and FY 2024-25 was primarily on account of the complete shutdown of the 510 MW Teesta-V Power Station since 4th October 2023 due to Glacial outburst induced flood of Lhonak lake and breach of Teesta Urja-III Dam. During the sitting on 10.09.2025, the CMD had stated in response to a question by a member of the Committee:

"Sir, you have talked about less profits in 2023-24. I have told you about it in my PPT that one of our projects was badly hit by the Glacial Lake Outburst Flood (GLOF) in Sikkim two years back. One project was totally damaged. That was not our project. That was a private sector's project. In fact, it was a project of the Government of Sikkim — 1,200-megawatt Teesta-III hydropower dam. But our project was also affected badly. It was Teesta-V of 500 megawatt. And in another project, down below, generation was affected because of that. So, that has only resulted into less generation. Less generation means less revenue resulting less profit for these two years. By this March, we will complete this rectification work, and our generation from 2026-27, will again be as per our targets."

2.6 During the sitting on 10.04.2026, the CMD provided an updated account, projecting a significant improvement in profits from FY 2026-27:

"In 2023, there was a flash flood, basically a Glacier Lake Outburst Flood (GLOF), in Sikkim and the Teesta River. Due to that, one of our plants, which is 500 megawatt in Sikkim, got badly damaged. It happened on 4th October, 2023 and because of that around 2,000 million units from this plant which we generate — if I take an average of five rupees, then there is a loss of around 6 months' revenue in that financial year, from October to March. As a result, my profit reduced from Rs. 4,439 crore to Rs. 4,295 crore. That was the major reason, Sir, because of that one plant alone. That plant is still under refurbishment. By 15th of June this year, we will be able to recommission that plant. We faced the same problem in 2024; we could not run that plant for the entire year. So, profit reduced to Rs. 4,000 crore because that was the loss for the entire year, whereas 2023-2024 had only 6 months' loss. We could not run the plant this year. As a result, there will again be lower profit. But from this year onwards, we will have a profit which, I think, will be the highest profit in the entire history of NHPC. There are two reasons for this. Firstly, we will be able to start this plant by 15th June. Secondly, we have commissioned 1850 megawatt this year, with 3 units commissioned in Subansiri Lower HE Project in Arunachal Pradesh and Assam"

2.7 An analysis of the variance components over the five-year period reveals important structural insights about NHPC's generation risk profile. Hydrological factors comprising below-normal river inflows and mandatory environmental flow compliance account for 3% to 12% variance in any given year. Siltation-related shutdowns contribute 1-3.6% annually. Operational outages (planned and forced) contribute 1.7-6.6%. These figures confirm that, in the absence of the extraordinary Teesta-V GLOF event, NHPC's generation performance has been highly predictable and broadly in line with design parameters. The mandatory release of environmental flows (E-flows) as ordered by the National Green Tribunal is a recurring source of generation loss accounting for 2.8-5.8% annually that NHPC has flagged as requiring policy attention. E-flow releases during low-flow seasons reduce reservoir levels and thus generating head, disproportionately impacting generation efficiency. NHPC's compliance with NGT orders on E-flows, while legally mandatory, represents a permanent reduction in exploitable hydro potential that was not factored into the original project designs and DPRs.

2.8 The MoU target system for hydropower generation deserves contextual explanation. NHPC's annual MoU targets with the Ministry of Power are set at the beginning of each financial year, incorporating projections of expected river inflows, plant availability and planned maintenance schedules. For FY 2023-24, the MoU target was set at 29,916 MU significantly higher than the Design Energy of 23,339 MU because the target included generation from Parbati-II HEP (814 MU) and Subansiri Lower HEP (1,573 MU), both of which were expected to be commissioned during the year. Neither was commissioned as projected, accounting for 8% (approximately 2,400 MU) of the 27.3% shortfall. This illustrates a structural weakness in the MoU target-setting process: including generation targets from projects not yet commissioned is inherently speculative and leads to over-ambitious targets that cannot be met, distorting performance evaluation. The Committee noted this aspect in its discussions with NHPC management.

C. Hydro Capacity Utilisation Factor

2.9 NHPC's Actual Hydro CUF for FY 2024-25 was 41.30%, which is higher than the All-India Hydro CUF of 35.5% for the same year. The five-year trend in CUF is as under:

Year	Installed Cap. (MW)	Design Energy (MU)	Design CUF (%)	Actual Gen. (MU)	Actual CUF (%)

2020-21	5,451.2	23,412	49.0	24,084	50.4
2021-22	5,451.2	23,339	48.9	24,329	50.9
2022-23	5,451.2	23,339	48.9	24,452	51.2
2023-24*	5,451.2	23,339	48.9	21,608	45.3*
2024-25*	5,451.2	23,292	48.8	19,720	41.3*

**Decrease in CUF attributable to complete shutdown of Teesta-V Power Station since 04.10.2023 due to GLOF.*

2.10 The Ministry of Power, in its reply, stated that it monitors NHPC's generation performance through a multi-tier review mechanism involving monthly, quarterly and annual monitoring by the Central Electricity Authority (CEA) and the Ministry, analysing generation data against hydrological conditions, machine availability and transmission constraints and other operational factors. The Ministry confirmed that NHPC has developed an advanced software platform named 'eAABHAS' for real-time hydrological monitoring, integrated with a video wall system. The Ministry also confirmed that Early Warning Systems have been implemented in 41 out of 46 vulnerable hydroelectric projects and 78 out of 178 non-vulnerable projects across India confirming the comprehensive EWS coverage.

D. Natural Calamities and Disaster Management

2.11 NHPC's power stations are located predominantly in geologically sensitive Himalayan regions prone to GLOFs, cloudbursts and flash floods. The most severe event in recent years was the October 2023 GLOF in Sikkim, causing the complete shutdown of Teesta-V (510 MW), with generation losses of approximately 900 MU in FY 2023-24 and 2,870 MU in FY 2024-25. Other significant events in FY 2023-24 include: Parbati-III (336 MU loss due to high silt); Chamara-II (143 MU loss); and Chamara-III (388 MU loss).

2.12 In response to a question by a member of the Committee regarding NHPC's plans to deal with natural disasters, the CMD acknowledged the extent of the problem during the sitting on 10.09.2025:

"Sir, there is always a risk of natural disaster and we are already witnessing it. This year also, we are witnessing it. Fortunately, we have not been

impacted directly by all these heavy rains or disaster, but, yes, our generation has suffered. Roads were closed in some places and we could not supply the materials there. In J&K, our work is almost standstill for almost 10 days because Udhampur road has been washed out. So, we are not able to go to see our project which are on the upstream of Chenab River. Therefore, work is suffering."

2.13 NHPC has established a 24x7 Master Control Room at Faridabad with real-time monitoring. As per NHPC's written reply, its disaster management framework Comprises: (i) Crisis and Disaster Management Plans (C&DMP) for all Power Stations prepared as per Central Electricity Authority (CEA) guidelines; (ii) dam safety inspections as per Guidelines for Safety Inspection of Dams (2018 and 2021) with reports to DSM Directorate, CWC and State Dam Safety Organisations; (iii) drawdown sluicing during monsoon (maintaining reservoir at MDDL); (iv) drawdown flushing on a monthly basis during monsoon season; and (v) de-silting chambers designed for 90% removal efficiency of coarse particles (>0.2 mm).

2.14 The CMD, NHPC, elaborated on the Early Warning System and its financial benefits during the sitting on 10.04.2026:

"We have installed new technology upstream of those plants. With that, we can predict in advance whether the water level is rising and whether the water will reach our plant, where we have the dam or the powerhouse, within two or three hours. So, we need to take corrective action to avoid loss of human life as well as damage to machinery. Sir, we have already done that in almost all the basins. In fact, we have a control room for that at our corporate office in Faridabad, where all the live data is coming 24x7 to our control room. We can monitor whether the water level is rising or whatever rain is happening. So, it is not a danger to us. We take corrective action accordingly. Sir, the Government has mandated us not only to bring data from our plants, but also from the entire hydro sector. Even from other CPSEs or private sector entities which have installed those instruments in their basins, the data is coming to us. So, we can intimate them also in case of any exigency. This control room is operated 24x7 in three shifts. Our engineers and officials are there in that control room. Sir, I am just mentioning a small benefit of this system that we have put in place. We call it Early Warning System (EWS). It monitors the discharge and the water level. We also take insurance for our plants which are under operation. We do roadshows for that with the insurance companies as well as reinsurers, which are almost all foreign; reinsurers are almost all foreign companies. This time, Sir, we gave a presentation and told them what we have done to avoid any damage to our plants. With

that, there has been an almost drastic decrease in our premium, to the extent of 20 per cent."

E. Role of Hydropower and Pumped Storage Projects in Grid Stability

2.15 As per NHPC's written reply, integrating intermittent renewable energy sources such as solar and wind into the National Grid presents considerable challenges to maintaining grid stability. The development of large-scale hydropower projects and Pumped Storage Plants plays a critical role in enhancing grid stability by providing flexible, on-demand power during periods when renewable energy generation is low. NHPC submitted that 18 Pumped Storage Projects of 20,000 MW are being considered for implementation, all of which will provide much-needed flexibility to the National Grid.

2.16. In response to a question by a Member of the Committee on the functioning and financial viability of PSPs, the CMD gave a detailed explanation during the sitting on 10.09.2025:

"PSP is nothing but a water storage. It is a storage system only and nothing else. We pump the water from the daytime by utilising the excess power in the grid, that is solar power, or in the night also sometimes we access power from the wind station or from the run-of-the-river hydro projects. So, we utilise that power to pump, otherwise we have to stop the plant. That is the option. What we do is that we pump the water from the lower reservoir with the help of that excess power and pump it to upper reservoir. When we have a requirement in the peak hours or at any time, we can utilise that water again for generating. So the efficiency cycles are around 79 to 80 percent. This means that we require more power for pumping definitely, and we generate less. There is a cycle efficiency and that is around 80 percent only. But that is a must otherwise we will lose the daytime power and in the evening we will not have power with us. So, that is the reason, there has to be a balance between PSPs and all that. The battery has some life, they have only 10 to 12 years' life as of now. But PSPs have 100 years of life. It means when we construct anything, it is nothing but a hydro project only, where we have a reversible turbine which can act as a pump as well as a generator, nothing else. Otherwise, it is a hydro project only. So, the battery has a life, and definitely there is an environment impact also, whereas, PSP is a clean power. So, that is the advantage of PSP, and PSPs are the need of the hour. If we talk about the power cost, so definitely it is around Rs. 4 to Rs. 6 approximately. Then, the conversion cost, when we add the pumping power, it will be around Rs. 7 to Rs. 8. But still, I think, it is a viable solution, considering the peak hour at which we purchase from the market, from the exchange,

that sometimes goes to Rs. 12 also. So, comparing to that, it is still a cheaper solution for us."

2.17 The Secretary, Ministry of Power, also confirmed during the sitting on 10.04.2026 the enormous PSP potential in India and the active facilitation measures:

"Regarding the pump storage potential, we have huge potential of pump storage in the country. More than 2,80,000 megawatts is the potential. But we have, as of now, installed only 7,100 megawatts and under construction is 13,000 megawatts, which constitute about 20,000 out of 2,80,000. But most of the projects are under various stages of development, which constitute about more than 93,000. So, our focus is towards the RE power, and the balancing power will be given by the pump storage project in the country. If you see the sector-wise installed capacity, again, it is mostly in the State sector, which is 4,594 MW, which constitute more than 64 per cent. But if you see the projects which are under construction in the country right now, the maximum PSP are coming up in the private sector. Right now, the under construction project is 69 per cent, which is 9,000 megawatts. Most of the projects which are under development, 92,000 MW, which is shown here, are also in the private sector."

2.18 The Ministry of Power, in its written reply, outlined the role of hydropower in ensuring grid stability: (i) Hydro resources, owing to their high ramping capability, are scheduled during increase in demand. Their deployment is aligned with seasonal water availability and system requirements to provide fast response during the evening. (ii) With the increasing share of intermittent renewable energy sources in the energy mix, hydropower is expected to play an important role in balancing fluctuations arising from variable solar and wind generation. In particular, Pumped Storage Projects (PSPs) provide energy storage and grid balancing solutions by storing surplus renewable energy during off peak periods and supplying electricity during periods of high demand. (iii) Hydropower provides critical system services including rotational inertia, frequency regulation, and voltage support, which are vital for maintaining grid stability when intermittent energy sources are high. (iv) Hydro generators provide black start capability which enables them to restart generation without external power supply. This capability is critical for the energization and restoration of the grid during major contingencies.

2.19 On the comprehensive PSP policy framework, the Ministry confirmed in its written reply (i) PSP development guidelines issued in April 2023 — covering allotment methods, exemption from free power and Local Area Development Fund (LADF) obligations, rationalised Environmental Clearance; (ii) Tariff Based Competitive Bidding (TBCB)

guidelines to provide a transparent, fair, standardized procurement framework, for PSP procurement, notified on 06.02.2025; (iii) 100% Inter State Transmission System (ISTS) charge waiver for PSPs extended to projects where construction is awarded on or before 30.06.2028 (order 10.06.2025), applicable for 25 years from commissioning; (iv) off-stream closed-loop PSPs fully exempted from CEA concurrence; (v) inter-state aspects clearance not required for PSPs in Detailed Project Report (DPR) formulation (November 2025); (vi) PSPs appraised under B2 category for faster Environmental Clearance (18.05.2023); and (vii) designated consumers permitted to fulfil Renewable Consumption Obligation through energy storage systems including PSPs (September 2025). The Ministry confirmed that approximately 31 GW of hydro capacity including 15 GW of PSPs would be supported under the Enabling Infrastructure scheme with total outlay of ₹12,461 crore through FY 2031-32.

2.20 The Ministry of Power, in its reply, furnished the sector-wise distribution of under-construction hydroelectric capacity in India: Central sector, 10,882 MW (81.07%); State sector, 2,391.5 MW (17.81%); Private sector, 150 MW (1.12%); Total 13,423.5 MW. This confirms that Central Government CPSEs, led by NHPC, are effectively shouldering the overwhelming burden of new hydropower development in India, with the private sector contributing barely 1.12%. The Ministry further informed the Committee that 29 stalled hydro projects of 32,415 MW in Arunachal Pradesh were indicated to Hydro CPSUs for development, with a further 29 projects of 12,307 MW in May 2023. During 2023, NHPC, SJVNL, THDCIL and NEEPCO signed MoAs with the Government of Arunachal Pradesh for 13 Hydro Electric Projects totalling 12,723 MW, earlier allotted to private developers but remaining non-starters for approximately 15 years. Of these, five have received CCEA approval including the 1,720 MW Kamala HEP assigned to NHPC (approved cost Rs.26,069.50 crore) and the 1,200 MW Kalai-II HEP assigned to THDCIL (CCEA approval 08.04.2026, cost Rs.14,105.83 crore). The Ministry has also approved setting up of tri-axial testing facilities at five Institutes of National Importance — IIT Roorkee, IIT Bombay, IISc Bangalore, IIT Madras and ISM Dhanbad in June 2025 through its R&D budget to support geological investigation for hydro projects.

CHAPTER – III

FINANCIAL PERFORMANCE

A. Revenue from Operations and Profit After Tax

3.1 NHPC operates under Central Electricity Regulatory Commission (CERC) Tariff Regulations with the primary revenue driver being sale of power. The five-year trend in financial performance, as furnished in NHPC's written replies, is as follows:

Particulars (₹ crore)	2020-21	2021-22	2022-23	2023-24	2024-25
Revenue from Operations	8,506.58	8,353.80	9,316.34	8,396.49	8,994.26
Sales of Energy	8,094.06	8,180.57	9,124.85	7,957.43	8,919.56
Total Income	9,657.39	9,379.98	10,150.90	10,024.99	10,573.41
Profit Before Tax	3,913.50	2,776.44	4,439.19	4,295.48	4,000.05
Profit After Tax (PAT)	3,233.37	3,537.71	3,833.79	3,721.80	3,083.98
Net Worth	31,647.31	33,486.10	35,407.96	37,268.61	38,348.48
Capital Employed	60,616.65	63,634.56	67,516.93	70,368.39	78,229.27
Dividend Paid	1,577.07	1,667.48	1,908.56	1,858.33	1,908.56
Dividend Per Share (₹)	1.60	1.81	1.85	1.90	1.91

3.2 NHPC submitted that Revenue from Operations and PAT have remained broadly stable over the five-year period, as no major standalone capacity addition took place from FY 2020-21 to FY 2022-23. Revenue and PAT are expected to improve significantly in the coming years with commissioning of various under-construction projects.

B. Key Financial Ratios and Debt Position

3.3 As per NHPC's written reply, CERC Regulations permit a Debt-to-Equity ratio of 70:30 for hydroelectric projects. NHPC's current D/E ratio of 0.99 is well below this regulatory ceiling, confirming the Company is significantly under-leveraged with substantial headroom for additional borrowing. The Company's ROE has remained in a similar range over the five years due to no major capacity addition and a significant portion of net worth being deployed in Capital Work-in-Progress (CWIP). NHPC's projected cash expenditure will be financed through a combination of Internal Resources, Government

Grant and Debt; the D/E ratio is projected to remain within 0.98 to 1.54 within manageable limits without posing significant funding challenges. The key financial ratios are as under:

Ratio	2020-21	2021-22	2022-23	2023-24	2024-25
Return on Equity (%)	10.50	10.87	11.13	10.30	8.16
Debt-to-Equity Ratio	0.80	0.84	0.85	0.89	0.99
Net Profit Ratio (%)	38.01	42.35	41.15	44.54	34.29
Book Value Per Share (₹)	31.51	33.34	35.25	37.10	38.18
Current Ratio	1.26	1.20	1.09	0.90	0.94

3.4 The CMD confirmed the Company's strong credit standing during the sitting on 10.09.2025:

"Regarding credit rating, we are AAA rated company and with me my Director (Finance) is there. He will tell you about the how we are in the finance and finance is not a constraint for us. We have debt-equity ratio lowest with us as of now. So, finance is not an issue and being a AAA rated company, we are issuing the bonds and all that and we are getting the money at lowest interest rate, at about 6.7 or 6.75 per cent."

3.5 During the course of evidence, the representatives of NHPC elaborated on the ten-year investment roadmap:

"Sir, regarding our next ten years plan, we have a plan of Rs. 1,52,000 crore outlay capex plan for the next ten years and we plan to finance it through the domestic banks..... Roughly it is in the range of Rs. 11,000 crore to Rs. 15,000 crore to Rs. 16,000. Every year, it gets changed and based on that, we plan to finance through financial institutions and banks and sometimes, from the foreign financial institutions also depending upon the best in the course of the company. Sir, we have still the scope for FPO because the Government of India is already holding around 70 per cent and we have the scope for the FPO but right now, our debt-equity ratio is good. Our debt-equity ratio is less than one and we have the scope of making the project out of the present equity itself."

C. Dues from DISCOMs and Receivables

3.6 The details of outstanding dues from DISCOMs (beyond 45 days) and percentage of revenue realised on time are as furnished by NHPC:

Particulars	2020-21	2021-22	2022-23	2023-24	2024-25
Total Billing (₹ crore)	8,879.76	7,467.78	7,694.31	9,144.90	7,822.04
O/S dues >45 days (₹ crore)	968.32	936.06	54.12	132.43	93.89
% Revenue realised on time	89.10%	87.47%	99.30%	98.55%	98.80%

3.7 The dramatic improvement in timely realisation from FY 2022-23 onwards is attributable to the notification of the Electricity (Late Payment Surcharge and Related Matters) Rules, 2022 issued by the Ministry of Power on 03.06.2022, and monitoring through the PRAAPTI Portal.

3.8 The Ministry of Power, submitted on long-term financial sustainability, confirmed that NHPC ensures financial sustainability and viability through prudent financial planning, optimal debt-equity structuring, cost control measures and phased project execution. The company secures stable revenue through long-term Power Purchase Agreements (PPAs) and regulated tariff mechanisms approved by CERC, which allow recovery of project costs along with reasonable Return on Equity (ROE). Government policy support such as Hydro Purchase Obligation (HPO), renewable energy status for large hydro projects and budgetary assistance further strengthen project viability. Further, Ministry of Power submitted that effective receivables management mechanisms such as Letters of Credit (LCs), Payment Security Mechanism (PSM) and enforcement of Late Payment Surcharge (LPS) Rules are being ensured for improving payment discipline, reducing delays in dues recovery, and strengthening the financial sustainability of its Plants.

3.9 On outstanding dues from DISCOMs, the Ministry confirmed that under the Late Payment Surcharge Rules 2022, DISCOMs must clear outstanding dues by the trigger date *i.e.* 75 days from presentation of bill. If DISCOMs fail to pay by the trigger date, their short-term access for sale and purchase of electricity including in power exchanges is regulated entirely by the NLDC automatically. Dues are monitored through the PRAAPTI portal where generating companies upload invoices and DISCOMs adjust payments. The Ministry confirmed this mechanism has ensured timely payment to generating companies.

Consistent with NHPC's data showing improvement in timely realisation to over 98% from FY 2022-23 onwards.

D. Tariff Competitiveness and Returns from Joint Ventures

3.10 On tariff competitiveness and Return on Equity, the Ministry stated that measures taken to address high initial hydro tariffs include: (i) back-loading of tariff with project life extended to 40 years; (ii) debt repayment period extended to 18 years; (iii) escalating tariff to rationalise hydro power tariff; (iv) Budgetary Support for Flood Moderation; (v) Budgetary Support for Enabling Infrastructure at ₹1 crore/MW; and (vi) Inter State Transmission System (ISTS) charge waiver for reducing landed cost by approximately ₹0.50-0.80 per kWh for procuring States. The Ministry confirmed that disbursement under the Scheme for Budgetary Support towards Cost of Enabling Infrastructure to date is ₹135.17 crore covering Luhri Stage-I (₹42.75 crore), Dhaulasidh (₹6.39 crore), Kiru (₹50.56 crore) and Kwar (₹35.47 crore). The Ministry confirmed that no proposal is currently under the scheme of Budgetary Support towards the Cost of Enabling Infrastructure.

3.11 On free power staggering and SGST reimbursement, the Ministry acknowledged that hydropower provides significant benefits to host States including 12% free power and 1% contribution towards Local Area Development Fund (LADF) but high initial tariffs pose challenges for procurers. In the long term, hydropower is inflation-resistant and tariffs decline progressively, becoming competitive after the debt repayment period. Several hydro-rich States have voluntarily adopted free power staggering and SGST reimbursement. The Scheme for Central Financial Assistance (CFA) towards Equity Participation by the State Governments of the North Eastern Region (NER) for Development of Hydroelectric Projects, notified on 08.10.2024, provides financial support for the States' equity contribution and requires participating States to undertake measures such as waiver/staggering of free power and reimbursement of State Goods and Services Tax (SGST) to improve the financial viability of hydropower projects

3.12 Of NHPC's eight Subsidiaries, only NHDC Limited is currently dividend-paying. NHPC confirmed that Presently, NHPC has eight subsidiaries out of which only two subsidiaries i.e. M/s NHDC Limited and M/s BSUL are having operating power stations and generating revenue. The rest subsidiaries have various Projects in construction stage. Moreover, M/s BSUL has commissioned its only 65 MW Kalpi solar project in March 2024 and not generating profit. M/s NHDC Limited is the only dividend paying subsidiary of NHPC.

CHAPTER – IV

PROJECT EXECUTION AND KEY CHALLENGES

A. Time and Cost Overruns in Major Projects

4.1 As per NHPC's submission, three ongoing projects are facing time and cost overruns:

Project	Original ACD	Revised ACD	Revisions	Cost Overrun	Key Reasons
Subansiri Lower HEP (2000 MW), Assam/Andhra Pradesh [Standalone]	Sep 2010	May 2026	4	344.66%	1. Transfer of Forest Land. 2. Power House area Back Hill Slope failure. 3. Intermittent forcible stoppages / Bandh. 4. Local Agitation against construction of Dam. 5. Ban on construction of Project by Hon'ble National Green Tribunal (NGT). 6. Additional works as per DDRP'S recommendation. 7. Impact of COVID-19 pandemic. 8. Natural calamities.
Teesta-VI HEP (500 MW), Sikkim	Mar 2024	Dec 2027	1	47%	1. Impact of COVID-19 pandemic. 2. Poor Geological conditions. 3. Natural calamities.

Rangit-IV HEP (120 MW), Sikkim [Wholly Owned Subsidiary]	May 2024	Apr 2026	3	101%	1. Impact of Covid-19 Pandemic. 2. Poor Geological conditions. 3. Natural calamities.
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4.2 Subansiri Lower HE Project was conceptualized with installed capacity of 2000 MW and annual design energy of 7422 MUs in a 90% dependable year. CCEA approval for implementation was accorded on 09.09.2003 at sanctioned cost of ₹ 6285.33 crore (at Dec'02 PL) and construction of Project was started in January 2005.

(i) **Delay in Project:** The Project got delayed due to agitation by various pressure groups of Assam from Dec'11 and stay on resumption of works by Hon'ble NGT, Kolkata vide order dated 11.12.2015. Works of Project got resumed on 15.10.2019 after NGT order dated 31.07.2019 and signing of MOA with Government of Assam on 23.08.2019. Now, the Project is under advance construction stage and scheduled to be commissioned by May 2026.

(ii) **Cost Over run:** Due to stoppage of work, the estimated cost of Project has increased manifold. Against the CCEA approved cost of ₹ 6285.33 crore at December 2002 Price Level, the Revised Cost Estimate at completion cost is ₹ 27,948.52 crore.

(iii) **Revised tariff:** The tariff of Project got increased due to cost overrun. It is pertinent to mention here that the design energy and installed capacity of the Project remains same with annual design energy of 7422 MUs and installed capacity of 2000 MW annually in a 90% dependable year. The details of same are as under:

Project	Subansiri Lower HE Project
Installed Capacity	2000 MW
Annual design energy	7422 MUs (in a 90% dependable year)
CCEA approved Cost:	₹ 6,285.33 crore (Dec'2002 PL).
Tariff:	First year ₹ 1.53 / Kwh; Levellised Tariff: ₹ 1.93 / Kwh.
Anticipated Project Cost:	₹ 27,948.52 crore (completion cost)
Revised tariff:	First year ₹ 7.87 / Kwh; Levellised Tariff: ₹ 7.49 / Kwh.
Cumulative expenditure:	₹ 25217.22 crore (up to Oct 2025)

Now anticipated completion:	May 2026
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4.3 Regarding the revival of stalled projects, NHPC submitted that the revival strategy for Parbati-II HEP (commissioned April 2025 after a 187-month time overrun) involved: constitution of high-level committees and panels of experts; termination of non-performing or defaulting contractors with re-award to new agencies; resolution of geological constraints and tunnelling issues on priority; and strengthening of project-monitoring framework for tracking timelines. The Teesta-IV HEP remains stalled due to pendency of Forest Clearance (Stage-II) under the Forest Rights Act, 2006. Presently, consent of 7 Gram Sabhas has been obtained while 3 Gram Panchayats' consents remain pending.

4.4 Regarding the Subansiri Lower HEP, the CMD, responding to a question raised by a Member of the Committee during the course of evidence on 10.09.2025:

"Now, the wait is almost over. It is no doubt that there has been a delay in the project. The NGT issue was there. Local issues were also there. Those issues were settled three or four years back and, again, the construction has started after a gap of 10 years. For almost ten years, the work was stopped there. I think, next month, we will give you good news that we will start generating from one unit, or two units, or four units because one clearance is left only. The National Dam Safety Authority is there. So, during the heavy rainy season, they were having some apprehensions. Now, they will go to the site tomorrow and we are hoping that they will give us a clearance to fill up that dam, and once we fill up the dam, then, I think, we will be able to spin our units and start generating from next month. Four units are already ready. So, these four units can start generating from next month onwards and the rest four will come by May, 2026. So, the plant will be commissioned hundred per cent by May, 2026 next year."

4.5 The Chairperson of the Committee, referring to his personal site visit to Dhemaji (Assam), underscored the gravity of such delays during the session with the Ministry of Power on 10.04.2026:

"I was recently at an NHPC site in Assam, in Dhemaji, which to commission 500 megawatts has taken well over 15 years because of all these bottlenecks. Although the project is supposed to be 2,000 or 2,500 megawatts, the rest is yet to be commissioned. These are some of the personal experiences we have had."

4.6 The Ministry of Power, in its reply, outlined the inter-ministerial coordination mechanisms in place to mitigate project execution risks: (i) periodic monitoring of under-construction hydroelectric projects by CEA, with facilitation of coordination among stakeholders; (ii) comprehensive guidelines to reduce time and cost overruns, notified vide O.M. dated 08.11.2019; (iii) Dispute Avoidance Framework through Independent Engineers, instituted vide O.M. dated 27.09.2021. Since, introduction of Dispute Avoidance Mechanism through 'Independent Engineer', 122 disputes has been allotted and 81 are resolved till 30.04.2026; and (iv) Conciliation Committees of Independent Experts (CCIE), constituted vide O.M. dated 29.12.2021. Since, introduction of Committees of Independent Experts (CCIE), for settlement of disputes, 32 disputes has been allotted and 24 are resolved till 30.04.2026. The Ministry confirmed that these mechanisms have facilitated timely resolution of contractual disputes and contributed to savings in overall dispute resolution time, thereby helping prevent time overruns.

B. Land Acquisition Challenges

4.7 Land acquisition in Arunachal Pradesh and J&K has emerged as a significant impediment. Delays in land acquisition arise from complex local administrative and socio-political issues, absence of proper revenue records, and compensation disputes. The CMD highlighted a specific malpractice during the sitting on 10.04.2026:

"You have specifically mentioned about land acquisition. We are doing around four projects in Arunachal Pradesh. We are facing certain issues in the land acquisition. Though the State Government is our partner and they are trying their best so that we can have the land as early as possible, but what happens is that once we issue Section 4, people start constructing houses. Rampant construction is being done by them to claim compensation, and till the time Section 11 is issued. So, this is a big issue that we are facing. The State Government is always supporting us. Even the hon. Chief Minister of Arunachal Pradesh has intervened in the matter and directed his Deputy Commissioners to create a videography of all the areas and ensure that the construction should not be made only for the purpose of compensation."

4.8 As per NHPC's submission, NHPC carries out Environmental Impact Assessment (EIA) before construction to identify positive and negative impacts. Rehabilitation and Resettlement schemes approved by State/Central Government agencies are implemented as per existing rules and regulations. NHPC also conducts confidence building measures with local communities to highlight the direct and indirect benefits of hydro projects like employment, education, healthcare and CSR activities. The Ministry

of Power in its reply, stated that matters relating to changes in agreed terms impacting project viability are taken up with concerned State Governments through appropriate channels for amicable resolution.

C. Forest Rights Act — Gram Sabha Consent Bottleneck

4.9 The requirement of 100% Gram Sabha consent under the Forest Rights Act, 2006 for Forest Clearance has emerged as a critical bottleneck. As per NHPC's reply, the average time for Forest Clearance of under-construction projects has been 106 months and approximately 7.2 months for Environmental Clearance and 21 months for Forest Clearance of commissioned projects. The CMD stated:

"Necessary intervention is required here, as I mentioned that this compliance of the Forest Act requires consent or NOC from the majority of the Gram Sabha; 70 per cent should suffice where the requirement as of now is 100 per cent. So, we have faced problems in some of the States where we do not get this 100 per cent NOC. Then comes the dual payment, I just conveyed the dual payment on unclassified forest. This is specific to Arunachal Pradesh as of now where we are working. Our submission is that one payment should be there, either to the Government or to the private owners."

4.10 The Committee specifically directed NHPC to provide international benchmarking for the proposed 70% consent threshold:

“मुझे याद है कि 12-15 वर्ष पहले जब लैंड एक्विजिशन लॉ पर चर्चा हो रही थी, उस समय कुछ लोगों का सुझाव था कि 66 प्रतिशत होना चाहिए और कुछ लोगों का सुझाव था कि 3/4 या 75 प्रतिशत होना चाहिए। आपने जो 70 प्रतिशत की सीमा दी है, क्या इसके लिए कुछ सपोर्टिंग है? जैसे कि किसी अन्य देश में कोई नॉर्म हो। यह तो एमिनेंट डोमेन के फील्ड में आता है। So, if the Government decides by law that 70 per cent consent is acceptable, maybe that is correct; maybe it should be 66 per cent; maybe it should be 75 per cent. यदि आप हमें कोई बेंचमार्किंग दे सकते हैं, तो उससे हमें थोड़ी मदद मिलेगी। इसी प्रकार से, आपने फॉरेस्ट राइट्स एक्ट और कंपनसेटरी अफॉरेस्टेशन पर सुझाव दिए हैं। क्या आप हमें कोई बेंचमार्किंग सजेस्ट कर सकते हैं कि कनाडा, ऑस्ट्रेलिया और इंडोनेशिया में ऐसा सिस्टम है और वहां यह अच्छा होता है। क्या आप हमें कोई बेंचमार्किंग दे सकते हैं, जिसके आधार पर

हम अपने नियमों को भी सुधार सकें? So, it will become easy for us to build consensus and recommend something like that."

4.11 In response, the CMD, NHPC, committed to submitting a written note:

"On the issue of the 70 per cent basis and international benchmarking, this was considered an indicative threshold. If two-thirds consent is obtained, it indicates readiness to proceed, and further No Objections can be obtained subsequently. However, this suggestion will be examined, and a written report will be submitted."

4.12 Pursuant to this direction, NHPC submitted additional replies referencing international frameworks as under:

International frameworks such as the Free, Prior and Informed Consent (FPIC), recognized under the United Nations Declaration on the Rights of Indigenous Peoples, guide protection of indigenous and community rights over forests. Many countries have laws similar in spirit to India's Forest Rights Act, 2006, emphasizing community participation in forest governance. In Brazil, constitutional recognition of indigenous land rights is implemented through FUNAI (The Fundação Nacional dos Povos Indígenas), though enforcement faces challenges like illegal mining. Australia recognizes land rights under the Native Title Act 1993, but proof requirements can be restrictive. The Indigenous Peoples' Rights Act 1997 mandates FPIC, ensuring strong community participation, while New Zealand follows the Treaty of Waitangi, promoting co-governance and shared management of natural resources with indigenous groups.

On effective implementation of the Forest Rights Act, NHPC suggested the following Key Best Practices:

(i) FRA processes to be treated as a State-level ongoing governance mechanism rather than project-specific activity; (ii) early integration of FRA processes at the pre-feasibility stage by State Government District Authorities; (iii) strengthening Gram Sabha mechanism with standardised formats and third-party facilitation; (iv) digital monitoring platforms (GIS-based) for tracking FRA claims; and (v) parallel processing of FRA compliance timelines with forest and environmental clearances.

4.13 The Ministry of Power, in its reply on clearance reforms, confirmed that MoEFCC has developed PARIVESH, an integrated online Single-Window Clearance Portal for streamlining statutory approvals for infrastructure and industrial projects including hydropower. Ministry of Power submitted that the Ministry of Environment, Forest &

Climate Change (MoEF&CC) has taken following measure to reduce timelines and improve predictability in the clearance process:

- (i) Ministry of Environment, Forest & Climate Change (MoEF&CC), on 18.05.2023, has notified to appraise PSPs under B2 category subject to certain conditions.
- (ii) The MoEF&CC, on 14.08.2023, issued specific TOR for the proposals involving off steam PSPs wherein collection of baseline data for one season (other than monsoon) is prescribed for off steam closed loop PSPs and collection of baseline data for two seasons (pre-monsoon & post-monsoon) is prescribed for off stream open loop PSPs.
- (iii) The MOEF&CC, in August 2024, has allowed the provisions for drilling investigations in forest area extended to PSPs at par with mining activities; and
- (iv) MOEF&CC vide letter dated 10.09.2025, has allowed to enhance the number of bore holes for undertaking survey and explorations in the forest area for mining and developmental projects such as roads, railways, hydel, etc.

The Ministry also confirmed that disbursement under the Enabling Infrastructure scheme to date is ₹135.17 crore (covering Luhri Stage-I, Dhaulasidh, Kiru and Kwar), which reduces the overall capital cost burden and lowers Interest During Construction, contributing to reduction in project tariff.

D. Compensatory Afforestation — Land Availability Problem

4.14 On the question of Compensatory Afforestation raised by a Member of the Committee, the CMD explained the difficulty of finding suitable land in Arunachal Pradesh during the sitting on 10.09.2025:

"The compensatory afforestation will be double to the land which we will be acquiring. In some of the States, the land is not available, like in Arunachal Pradesh, we are facing a lot of issue. We do not have a revenue land. We have forest. The entire land is covered with forest in Arunachal. We do not get degraded land there. We are now, for meeting that condition of the compensatory afforestation, going to other States. For example, we have tied up with the MP Forest Department, and we have paid the money to them to have a compensatory afforestation. So, they are doing for us by paying some charges to them. That is a mandatory. Without that, they do not give any Forest Clearances to us."

4.15 In his presentation to the Committee on 10.04.2026, the CMD, NHPC, proposed a concrete solution:

"Similar is the case with compensatory afforestation, because whenever we acquire the land, if it is forest land, we have to do the compensatory afforestation on double that land. In Arunachal Pradesh, most of the land is forest land. We do not find ungraded forest or land for this compensatory afforestation. So, we are dependent on other States. Fortunately, this time we got some land in the State of Madhya Pradesh. They helped us to find and identify the land where we can do the compensatory afforestation, but this is a big issue. So, our suggestion is that if we can have a suitable 'land bank' in the various States so that whenever there is a requirement of such compensatory afforestation land, we can directly approach there and deposit the money and get that land for the compensatory afforestation. Secondly, we can deposit that amount with the Forest Department of the State Government, they can identify the land wherever they want and do the afforestation."

4.16 The Ministry of Power submitted additional policy suggestions to rationalise the clearance process: (i) CA on degraded forest land (twice the diverted area) to be permitted to all developers, not just CPSEs; (ii) small dam-toe power houses generating up to 25 MW using e-flow discharge to be allowed without fresh Environmental Clearance; (iii) in case of increase in installed capacity of PSP/Hydro, fresh environmental clearance not required if the diverted forest area remains the same; (iv) river-bed areas and tunnel areas (HRT) not to be counted for CA land requirement; (v) advisory to State Forest Departments to grant permission for in-situ and large size triaxial tests; and (vi) off-stream closed loop PSPs to be treated at par with solar/wind projects for environmental clearance purposes.

E. Ministry of Power Policy Framework and Expectations from States

4.17 During the course of evidence, representatives of Ministry of Power, outlined the Government's facilitation measures:

"With regard to the measures taken by the Government of India to address the challenges faced by the hydro sector, in 2019, the Government took steps to rationalise tariffs so that projects become commercially viable. Budgetary support was also provided for the cost of enabling infrastructure. Earlier, such support was limited to roads and

bridges; however, its scope has now been expanded to include transmission lines up to the nearest pooling station, railway siding, and additional components. The level of support is Rs. 1 crore per MW up to 200 MW, and beyond that, Rs. 0.75 crore per MW. Another aspect is flood moderation. At present, there are two projects with a flood moderation component. One is under construction – the Dibang Project – and another has been sanctioned recently by the Government. The Dibang Project has a total budgetary support of about Rs. 6,000 crore, and for the Kamala Project, it is Rs. 4,700 crore. Further, since most hydropower projects are located in the NER, where State Governments often face constraints in contributing their equity share, the Government of India is providing support for equity infusion. Under this, 24 per cent of the equity is provided as a grant, subject to a limit of Rs. 750 crore per project. Another issue affecting hydropower development is the ISTS charges. These charges have been waived for hydropower projects, including PSPs, which will help improve commercial viability by reducing tariffs by approximately 50 paise to Rs. 1 per unit. Earlier, hydropower projects faced delays due to the time taken in getting DPRs approved. The threshold for projects requiring concurrence from the CEA has now been enhanced from Rs. 1,000 crore to Rs. 3,000 crore."

4.18 During the course of evidence, the representatives of Ministry of Power, articulated expectations from State Governments:

"Hydropower tariffs are generally high in the initial years. To reduce the tariff burden during this period, it is expected that the free power component – typically 12 per cent provided to State Governments – may be staggered in the initial years. Further, States may consider reimbursing the State GST component to help reduce tariffs. Some States have also imposed water cess, which significantly increase tariffs – sometimes by as much as 60 to 70 paise. It is expected that such cess may not be imposed, as water use in such projects is non-consumptive in nature. States are also expected to facilitate timely approvals and clearances, including land acquisition, R&R plans, and environmental and forest clearances. Lastly, there is a need to maintain the sanctity of MoUs and Implementation Agreements signed between developers and State Governments. In some cases, revisions have been made with additional conditions, which affect the viability of projects. Such retrospective changes render projects commercially unviable. Therefore, it is expected that the original terms of agreements be honoured."

4.19 As per NHPC's reply, legal challenges include: (i) water usage charges (water cess) imposed by States of J&K, Himachal Pradesh, Uttarakhand and Sikkim on hydropower generation through respective legislations and issues were challenged by NHPC in respective High Courts, the Himachal Pradesh Act was declared ultra vires by the High Court but the matter is sub-judice before the Supreme Court; and (ii) dual compensation for land in Arunachal Pradesh.

4.20 The Ministry of Power, in its written reply on adherence to Implementation Agreements, stated that MoUs, Implementation Agreements and project-specific agreements between developers and concerned State Governments are legally binding on the respective parties. The Ministry regularly engages with State Governments, CPSEs, developers and other stakeholders through review meetings, consultations and coordination mechanisms. Matters relating to changes in agreed terms and conditions including those impacting project viability are taken up with the concerned State Governments through appropriate channels for amicable resolution.

F. Other Systemic Challenges

4.21 The CMD, NHPC, enumerated additional systemic challenges before the Committee during the sitting on 10.04.2026:

(i) Attrition of Skilled Manpower at Remote Sites:

"Attrition rate is very high. Earlier, workers were not leaving jobs so early. But due to so many infrastructure projects coming in the urban areas, and not much in remote areas, now, people are not staying there and that is creating a lot of issues for us during construction. We are actually facing problem with regard to retaining them. So, that delays our projects."

(ii) Lack of Grid Power at Construction Sites:

"In a 1500-megawatt project, we require around 30 megawatts of power during the construction stage, which increases with the phases only. But the maximum power is 20-30 megawatts, which is a very huge requirement for any project. So, where we do not have a grid power, we face an issue and then, we need to depend on DG sets. Diesel cost is very high. Per unit cost of DG set power is around Rs. 30. But with the increase of rate of diesel, that cost will further increase. And the cost of

grid power is Rs. 6 to Rs. 7. So, that makes a lot of difference. In a project of Rs. 20,000 crore, Rs. 500 crore to Rs. 1000 crore is due to only DG set power. So, the Government of India has made a lot of plans for transmission lines. The Government of India is making an advanced planning so that the transmission lines reach the remote areas and we do not have to depend on the DG sets. The Ministry of Power has submitted a very comprehensive programme for the transmission line through power grid and through the local distribution company, which is in that State."

(iii) Limited Contractor Base:

"Limited contractor base is another issue which we are facing. Because so many infrastructure projects are in the country now, in the hydro sector there are very limited contractors, around four to five active ones. So many projects are coming in hydro as well as pump storage, which is almost like a hydro project, not only by the Government but also by the private sector. So there also, we are facing the issue that the pool of contractors is very small, and this is causing problems. This will be a big concern for us.."

(iv) Breach of Implementation Agreements by State Governments:

"In certain States, we have observed that after signing the implementation agreement, the State Government has not honoured the clauses which are mentioned there regarding free power or certain other concessions. They agreed during the implementation agreement, and later on they said no, they do not agree and want to increase the free power portion. They will not give the SGST waiver which was given in the earlier implementation agreement. So that also sometimes is becoming a problem for us and making the project unviable. So, we are not able to start the project which was supposed to be started two years back."

(v) Dual Compensation on Unclassified State Forest Land in Arunachal Pradesh:

"Certain States, particularly Arunachal Pradesh, have dual payment on unclassified State Forest. We have to pay as per the Arunachal Government Forest policy, and then additionally the State Revenue

Department raises a claim over the same forest land, recognized as private ownership of the local residents. So, the dual payments are there."

(vi) Competition from Private Sector in Solar/RE Bidding:

"A competition in solar cells is a big issue for us being a PSU because there are lot of advantages for the private sector. They even bid sometime for a loss also and then they sell their company to some equity firm in the foreign country for some other reason. Sometimes we have a limitation being a PSU because we have to show some profit as per our company's norms in the beginning itself; that I will get this much of IRR from this project, otherwise, my Board will not approve that. So, there is a limitation for me for bidding. But still, we are doing that. But yes, there is a challenge for PSU to compete with the private. I admit that."

CHAPTER – V

RENEWABLE ENERGY DIVERSIFICATION, PUMPED STORAGE PROJECTS AND NEW INITIATIVES

A. National Context and NHPC's Strategic Pivot

5.1 India has set an ambitious target of 500 GW of non-fossil fuel energy capacity by 2030 as one of its Panchamrit commitments, and to reach net zero by 2070. NHPC has evolved from a dedicated hydropower utility into a comprehensive clean energy company, with its entire generation capacity (present and planned) drawn exclusively from renewable sources. During the sitting on 10.04.2026, the CMD noted that India had already achieved the 50% non-fossil fuel capacity target ahead of schedule:

"Sir, you mentioned net zero by 2070. The way we are progressing in India, particularly towards green and clean energy through solar, wind, hydro, and now nuclear power, there is now a target of 100 gigawatt by 2070. I think, with this target, there is no doubt that we will achieve net zero much before 2070. If you see one target, 50 per cent power capacity from non-fossil fuel-based energy resources was supposed to be achieved by 2030, but we have achieved it in 2025. We have achieved one of the COP-26 targets five years in advance."

5.2 In its reply NHPC confirmed that the Company aligns its development and operational strategies with India's Nationally Determined Contributions (NDCs) and Net Zero by 2070 goal primarily by: (i) aggressively expanding its non-fossil fuel energy portfolio; (ii) developing essential grid stabilisation infrastructure including PSPs and BESS; (iii) diversifying into standalone solar, floating solar, and wind energy projects; and (iv) pursuing green hydrogen technology. NHPC submitted that it operates in the renewable segment only 7,771.2 MW from Hydro, 511.7 MW from Solar and 50 MW from Wind, totalling 8,332.9 MW and not a single unit of electricity is generated through fossil fuels.

5.3 The Ministry of Power provided the national grid-level context, informing the Committee of the Long-Term National Resource Adequacy Plan (LT-NRAP) issued by CEA in March 2026. As per LT-NRAP, India's installed capacity as on 31.01.2026 is approximately 521 GW. The likely installed capacity by the end of 2035-36 is approximately 1,121 GW, with energy storage capacity of 174 GW (BESS 80 GW + PSP 94 GW) by 2035-36.

Year	Likely Installed Capacity (GW)	Likely BESS Capacity (GW)	Likely PSP Capacity (GW)
2026-27	571	6	5
2027-28	629	12	7
2028-29	687	17	15
2029-30	747	24	23
2030-31	811	28	32
2031-32	877	37	44
2032-33	940	46	54
2033-34	999	57	64
2034-35	1,063	68	79
2035-36	1,121	80	94

Note: PSP capacity above does not include existing on-stream PSPs of 3.85 GW classified as conventional hydro.

B. Solar Energy Programme — CAPEX Mode and REIA Mode

5.4 NHPC's solar energy programme operates through two modes, as described in its reply:

(i) CAPEX / Developer Mode:

NHPC is currently implementing six Solar PV projects under CAPEX mode with a cumulative capacity of 1,190 MW, using EPC mode contracts. The 1,000 MW projects under the CPSU Scheme have land arrangement and grid connectivity within the scope of the EPC contractor. Two 200 MW Solar PV projects acquired through TBCB mode are being executed in Solar Parks. A 40 MW Solar project at Odisha and 50 MW Floating Solar at Kerala are being implemented under MoUs with State Governments with land arrangement in the scope of the State Agency. No major land acquisition issues have been encountered to date in these arrangements.

(ii) Renewable Energy Implementing Agency (REIA) Mode:

The projects under REIA mode are set up by selected developers with investment, land and connectivity arrangements entirely within the scope of the developer. NHPC submitted that 6,650 MW RE projects (Solar, Hybrid and FDRE configurations) are being implemented under REIA mode.

5.5 NHPC has also been designated as Scheme Implementation Partner (SIP) for the PM Surya Ghar Muft Bijli Yojana for five States (Haryana, UT of J&K, Sikkim, Manipur, and Nagaland) and eight Central Ministries/Departments for Rooftop Solar installation. The current status of Rooftop Solar under NHPC's charge is:

Category	Capacity (MW)
Under Operation at NHPC Locations	4.08
Under Construction at NHPC Locations	7.68
Under Tendering for States and Central Ministries	80.01

5.6 Regarding challenges in solar bidding vis-à-vis private players, the CMD acknowledged:

"land is definitely a big issue, which we are facing in almost across the States because I have a charge of SJVN also. There also, we are facing one land issue in the State of Gujarat for almost last one year. We are not able to acquire the land and the rates have also increased a lot. So, that is also impacting the viability of the solar project. The land owner has to give it. The State Government definitely helps us. There is no doubt about that. But park is definitely a safe bet for anyone. So, if the Government go for a solar park methodology to implement the project, then, that will be much more easy as the land will be already available and the developer has to go there and just install the project. So, that is a much better option for installation. We are also focussing on that because land acquisition for a Government company is a big issue for solar. We are facing some issues.

C. Pumped Storage Projects — Core Growth Strategy

5.7 Pumped Storage Projects (PSPs) have emerged as the cornerstone of NHPC's medium and long-term growth strategy. As per NHPC's reply, 18 Pumped Storage Projects of approximately 20,000 MW are being considered for implementation.

5.8 The Secretary, Ministry of Power, confirmed the enormous national PSP potential:

"Regarding the pump storage potential, we have huge potential of pump storage in the country. More than 2,80,000 megawatts is the potential. But we have, as of now, installed only 7,100 megawatts and under construction is 13,000 megawatts..... Most of the projects which are under development, 92,000 MW, are also in the private sector..... The pumped storage project is basically going to be a very huge requirement. मुकेश राजपूत जी ने पूछा था कि आने वाले समय में क्या रूपरेखा होगी, हमारे लिए बैटरी और पम्प स्टोरेज दोनों का बहुत महत्व होगा। पम्प स्टोरेज को आगे लाने के लिए we are trying to bring in more and more of regulatory facilitation and we are assisting the developers, largely the private sector developers, in terms of seeking/getting clearances and even getting the off-take agreements.."

5.9 The comprehensive PSP policy framework submitted by the Ministry of Power in its reply includes:

(i) **Guidelines to Promote Development of PSP:** The Ministry of Power in April, 2023 has issued guidelines for promotion and development of PSPs. These guidelines provide various methods of allotment of PSP sites, exemption from Free Power Obligation as well as Local Area Development Fund, rationalisation of Environmental Clearance process and utilisation of exhausted coal mines, etc. These guidelines would help the State Government in transparent method of allotment of PSP sites and its development.

(ii) **Tariff Based Competitive Bidding guidelines for procurement** : To provide a transparent, fair, standardized procurement framework, Ministry of Power, on 06.02.2025, has notified Tariff Based Competitive Bidding guidelines (TBCB) for procurement of storage capacity/ stored energy from pumped storage plants.

(iii) **Waiver for Inter State Transmission System (ISTS) charges** : Order for Waiver of Inter State Transmission System (ISTS) charges for 25 years for PSPs for which construction work is awarded on or before 30.06.2025, was issued on 29.05.2023. The waiver has been further extended vide order dated 10.06.2025 if the construction work is awarded on or before 30.06.2028.

(iv) off-stream closed-loop PSPs fully exempted from CEA concurrence (01.08.2025);

(v) **Review of requirement of clearance of Inter-state aspects in Detailed Project Report:** CEA in November, 2025, has issued revised guidelines for

formulation of Detailed Project Reports for Pumped Storage Schemes wherein it has been stipulated that clearance of Inter state Aspects is not required for PSPs.

(vi) **Measure for Environmental Clearance**: With continuous efforts of the Ministry of Power in coordination with the MoEF&CC, the following measures for rationalisation and streamlining of the environmental clearance process for PSPs have been undertaken:

(a) The MoEF&CC, on 18.05.2023, has notified to appraise PSPs under B2 category subject to certain conditions. (b) The MoEF&CC, on 14.08.2023, issued specific TOR for the proposals involving off steam PSPs wherein collection of baseline data for one season (other than monsoon) is prescribed for off steam closed loop PSPs and collection of baseline data for two seasons (pre-monsoon & post-monsoon) is prescribed for off stream open loop PSPs. (c) The MOEF&CC, in August 2024, has allowed the provisions for drilling investigations in forest area extended to PSPs at par with mining activities. (d) MOEF&CC vide letter dated 10.09.2025, has allowed to enhance the number of bore holes for undertaking survey and explorations in the forest area for mining and developmental projects such as roads, railways, hydel, etc.

D. Battery Energy Storage Systems (BESS)

5.10 NHPC has been nominated as BESS Implementing Agency (BIA) and BESS capacity of 1500MWh has been allocated to NHPC under the CPSU component. Accordingly, NHPC has already floated state specific tenders for 1500 MWh BESS capacity (500 MWh – Kerala and 1000 MWh – Andhra Pradesh) as BIA under the scheme.

5.11 As per the Ministry's submission, BESS capacity of 10,659 MW is currently under construction nationally, with 22,347 MW under tendering, growing to 80 GW by 2035-36 as per LT-NRAP.

E. Green Hydrogen Initiatives

5.12 NHPC has also taken initiatives for development of Green Hydrogen Technology, wherein one no. 25 kWe capacity Pilot Green Hydrogen Project at Leh, and 2 pilot green hydrogen-based e-mobility projects (one at Kargil, Leh and one at Chamba, Himachal Pradesh) are under implementation. These projects are anticipated to be commissioned

in 2025-26. NHPC is further planning to scale up the capacity for development of Green Hydrogen in a systematic manner based on the learnings from above pilot projects.

5.13 On the issue of Green Hydrogen, CMD, NHPC, during the course of evidence on 10.9.2025 has stated as under:

“three questions regarding challenges in green hydrogen in Leh and Kargil. That I will give to my colleague. In THDC, also, we have done one pilot in our colony only. That is just to understand the concept and how we can operationalise the same. There is no challenge in that. Challenge is ultimately, in a large scale, as to how to sell that green hydrogen, because green hydrogen market is still not matured as such. Still there are cheaper options that are available like, grey hydrogen, black hydrogen, and blue hydrogen. The green hydrogen is not cost-wise, but still, recently one tender has happened in Andhra Pradesh, and one of the companies has bid for around 5,000 approximately, I do not remember this, but it is quite a big quantity, which they will be exporting to other countries. So, challenges are there and cost is the major challenge and nothing else. Technology is maturing day by day, and the electrolyzers are getting cheaper, and the Government is also supporting a lot. They are giving VGF to the electrolyser manufacturers and other people who are into the green hydrogen field. They have given a lot of VGF to them. With this, the cost has come down. The challenge is only cost, I would say. Manufacturing is not a cost, because power is available with us during daytime, green power is available. There is not much issue in that sense.”

5.14 Further, CMD, NHPC, briefed about the Company's current prioritisation:

"green hydrogen is, as such, not our priority because it needs specialisation. The other PSUs like NTPC have been given a big mandate on that. Since we are under the same Ministry, during discussions we suggested them to concentrate on hydro, PSPs and solar, and not to enter into this field unless and until they are sure that they can do something. Therefore, as of now, green hydrogen is not a priority for us, because our hands are full with a lot of other projects. We have been given many projects in J&K due to suspension of IWT, which we have to complete in J&K."

F. Energy Security, Geopolitical Context and Future Roadmap

5.15 On the question raised by a Member of the Committee regarding NHPC's roadmap to achieve 1,000 GW+ power generation for a developed nation by 2047, Secretary, Ministry of Power, responded:

" Sir, I would like to apprise that the Central Electricity Authority prepares the National Electricity Plan. Hon. Prime Minister has given us a guidance of 500 GW of non-fossil capacity till 2029-2030. Keeping that guidance in our view and optimising the overall cost of energy coupled up with our climate commitments, Central Electricity Authority has prepared and published the National Electricity Plan. We are also updating the plan because it is a very dynamic market. The price of battery in the past three years already come down by 70 per cent. The price of solar power has come down. We also need to regularly update our requirements. If you put in the different cost functions, then the capacity mix will also come differently. That updation has also been done for the target year of 2035-2036."

5.16 In its reply NHPC confirmed that the Company aims to expand its operational capacity to 50,000 MW by 2047, entirely in the renewable segment, which will support India's goal of achieving Net Zero by 2070. NHPC envisages adding 9,869 MW through Hydro and other RE by 2030. All future capacity additions (hydroelectric, solar, wind, and pumped storage) are exclusively from renewable sources, making NHPC's growth strategy intrinsically aligned with India's energy security and climate commitments.

5.17 The Ministry of Power, in its reply, confirmed that the LT-NRAP envisages large hydro capacity growing from 51.2 GW (as on 31.01.2026) to 78 GW by 2035-36, and PSP capacity growing from 7.2 GW to 94 GW over the same period.

CHAPTER – VI

GOVERNANCE, HUMAN RESOURCES AND CORPORATE SOCIAL RESPONSIBILITY

A. Human Resources — Strength, Composition and Strategy

6.1 The trend in employee strength over the last five years is as under:

Employee strength as on	31.03.2021	31.03.2022	31.03.2023	31.03.2024	31.03.2025
Executive	3,281	3,166	3,084	3,193	3,166
Supervisor	196	173	293	631	509
Workmen	2,092	1,753	1,399	1,105	902
Total	5,569	5,092	4,776	4,929	4,577

6.2 The overall decline in workforce from 5,569 in March 2021 to 4,577 in March 2025 against a sanctioned strength of 5,736, reflects natural attrition, particularly of workmen. During the sitting of 10.04.2026, the CMD reported current total manpower of 4,615 (Executives: 3,386; Supervisors: 447; Workmen: 782) with 11% female representation. NHPC's reply confirmed that NHPC follows EPC mode (Engineering, Procurement & Contract) for development of solar and wind projects, and has adopted a 'Hub and Spoke' model, technical experts stationed at Head Office providing support to all projects, with dedicated site teams handling day-to-day operations.

6.3 During the course of evidence, CMD, NHPC, addressed on a query raised by a member of the Committee on SC/ST/OBC representation:

"We follow all the policies of the Government of India with regard to the recruitment process. We have always maintained that percentage of SC, ST, OBC and EWS, whatever the percentage defined by the Government of India. We have been following it 100 per cent without any default. We can also provide a detailed list of it. As of now, we have 714 SC candidates, 397 ST candidates and 1,124 OBC candidates, it is as per norms."

6.4 The Ministry of Power, in its reply, confirmed that NHPC complies with the Companies Act, 2013, SEBI (LODR) Regulations, 2015, DPE Guidelines and Secretarial Standards issued by ICSI. Transparency is ensured through timely disclosures, Annual

Reports, Vigil Mechanism and robust audit systems including internal, Statutory, Secretarial and C&AG audits.

B. C&AG Audit Paras

6.5 As per the Background Note submitted by NHPC to the Committee, as of 30.06.2025 the Company had 164 pending C&AG audit paras comprising 31 Part IIA and 133 Part IIB paras, against an opening balance of 140 paras as on 01.04.2025. During the year, 27 fresh paras were received and only 3 were settled indicating a growing rather than declining backlog.

Particulars	Part IIA	Part IIB	Total
Opening Balance (01.04.2025)	26	114	140
Add: Paras received during year	5	22	27
Less: Paras settled	—	3	3
Outstanding (30.06.2025)	31	133	164

6.6 During the course of evidence, CMD, NHPC made a specific submission regarding the audit paras referred to the Committee for review:

"C&AG has raised some audit paras. They have referred to this Committee for your review..... My submission is that out of seven matters, three have already been complied with, and their compliance can now be demonstrated. The remaining four may be considered for relaxation, as they do not result in any loss."

C. Corporate Social Responsibility

6.7 NHPC has consistently exceeded its mandatory CSR expenditure (2% of average net profits of preceding three years) in each of the last five years:

FY	Mandatory Limit (₹ crore)	Actual Expenditure (₹ crore)	Excess (₹ crore)
2020-21	59.43	79.63	20.20
2021-22	65.45	105.29	39.84
2022-23	72.14	127.31	55.17

2023-24	80.04	85.73	5.69
2024-25	82.30	109.64	27.34

6.8 NHPC has implemented CSR initiatives across various regions of India. The beneficiary states and Union Territories include Jammu & Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, West Bengal, Sikkim, Manipur, Assam, Arunachal Pradesh, Haryana, Delhi, Rajasthan, Bihar, Gujarat, Maharashtra, Tamil Nadu, Kerala, Uttar Pradesh, Punjab, Andhra Pradesh, Madhya Pradesh, Tripura, Chandigarh, and Nagaland. It is also pertinent to mention that NHPC supports three Aspirational Districts: Baramulla (Jammu & Kashmir), Chamba (Himachal Pradesh), and West Sikkim (now known as Gyalshing) in Sikkim.

6.9 The representative, NHPC, during the course of evidence briefed the Committee on CSR guidelines as under:

"As far as CSR is concerned, as you know, two per cent of the last three years' net profit is our minimum. I would like to brief you that in the last five years, NHPC, as a responsible corporate citizen, has always overspent that. I will just quote the figure for the year 2024-25. Rs.82.30 crore was the mandatory CSR expenditure, whereas we have made expenses of Rs.109.64 crore, which includes administrative expenses. As per the Government guidelines, which are issued from time to time in our rules in commonality with the DPE and the Ministry of Power, there is a theme "Health and Nutrition". For the last four years, it is health and nutrition that has come to all the Central Public Sector Enterprises (CPSEs) from Departmental Policies (DP). Sixty per cent of the CSR expenses have to be on health and nutrition. Secondly, all the projects have to spend 80 per cent of the CSR expenses near their projects or within 25 kms of the area. I would like to give you a beautiful example of this. In Arunachal Pradesh, it is a matriarchal society, and as a women empowerment measure, we have sericulture and yarn-related schemes there. The consumption of pork is very high, so piggery is also there. These are all run by the local women. So, we have developed them and made their own boats. Now, they are self-sufficient. As far as health is concerned, if you visit the Medical College in Chamba, we have given a 1.5 Tesla MRI and a CT scan machine. It is one of the aspirational districts under the Aspirational District Programme."

6.10 The Ministry of Power, in its reply on environmental compliance, confirmed that MoEFCC grants Environmental and Forest Clearances with specific stipulated conditions of environment safeguard measures. The primary monitoring mechanism includes: (i) six-

monthly compliance reports uploaded on the company's website and reviewed by MoEFCC; and (ii) multidisciplinary committees at each project level comprising members from State Forest Department, Fisheries Department, State Pollution Control Board and MoEFCC representatives, conducting periodic monitoring and site visits; and (iii) Rehabilitation and Resettlement schemes are implemented and monitored by District Administration under the RFCTLARR Act, 2013.

6.11 On CSR fund utilisation and impact assessment, the Ministry confirmed that NHPC follows a structured mechanism includes need assessment through stakeholder consultations, Board approval on recommendations of the Committee of Directors on CSR and Sustainability, MOUs with implementing partners specifying deliverables, periodic monitoring and fund utilisation reviews. Impact assessment studies are conducted through independent agencies for CSR projects with outlays of ₹1 crore or more, completed not less than one year before the study, and results are annexed to the Annual Report on CSR. The Ministry confirmed that NHPC has consistently met the minimum 2% CSR spending requirement from FY 2019-20 to FY 2025-26. On reservation in direct recruitment, the Ministry confirmed that the Central Government pattern is followed *i.e.* SC: 15%, ST: 7.5% and OBC: 27%.

PART – II

OBSERVATIONS AND RECOMMENDATIONS OF THE COMMITTEE

NHPC LIMITED — AN OVERVIEW

1. The Committee note that NHPC Limited, a Navratna Company of the Government of India under the administrative control of the Ministry of Power, is the country's premier hydropower generating organisation. Incorporated on 7th November, 1975 as a Private Limited Company, NHPC was initially assigned three of the most challenging and near-abandoned hydroelectric projects (180 MW Bairasiul in Himachal Pradesh, 105 MW Loktak in Manipur, and 345 MW Salal-I in Jammu and Kashmir) from the erstwhile Central Hydroelectric Project Control Board. The Company was converted into a Public Limited Company in 1986, conferred Miniratna status in 2008, and listed on NSE and BSE through its IPO in 2009. In August 2024, the Company was elevated to Navratna status, recognising its sustained growth and strategic importance to the national energy sector. The Government of India presently holds 67.40% stake in the Company. With an authorised share capital of ₹17,500 crore and an investment base of ₹93,570.28 crore as on 30.09.2025, NHPC is an ISO-9001:2015, ISO-14001:2015 and ISO-45001:2018 certified organisation.

The Committee note that NHPC has established itself as India's leading renewable power utility, with a vision to achieve 36,500 MW installed capacity by FY 2033-34 and 50,000 MW by 2047 through an expanding portfolio of hydro, solar, wind and pumped storage projects supported by its Joint Ventures and Subsidiaries. As on 1 April 2026, NHPC had an installed capacity of 9,082.90 MW, accounting for about 16.65% of the country's hydro capacity, with all electricity generated exclusively from renewable sources. The Committee further note that NHPC is executing around 60% of the country's hydro capacity currently under construction, while consistently demonstrating strong operational performance through generation above Design Energy, record capital expenditure, higher-than-national hydro CUF, and its strategic role as the Renewable Energy Implementing Agency, BESS Implementing Agency and developer of nearly 20,000 MW of Pumped Storage Projects, thereby reinforcing its pivotal contribution to India's clean energy transition.

The Committee note that NHPC's generation performance experienced a variance in FY 2023-24 and FY 2024-25, recording 21,614 MU and 19,736 MU respectively against MoU targets of 29,916 MU and 27,590 MU, primarily on account of the operational interruption of the 510 MW Teesta-V Power Station since 4th October, 2023, caused by a Glacial Lake Outburst Flood (GLOF) in Sikkim following the breach of the Teesta Urja-III Dam. The resultant generation variance of

approximately 900 MU in FY 2023-24 and 2,870 MU in FY 2024-25 correspondingly moderated NHPC's Profit Before Tax from ₹4,439.19 crore in FY 2022-23 to ₹4,000.05 crore in FY 2024-25. The Committee note that NHPC has established a 24x7 Master Control Room at Faridabad with an Early Warning System (EWS) across all vulnerable basins, which has also resulted in a 20% reduction in insurance premiums, and that Teesta-V is targeted for recommissioning by 15th June, 2026.

The Committee note that NHPC is a AAA-rated company with a Debt-to-Equity ratio of 0.99 in FY 2024-25 well below the CERC-permitted ratio of 70:30 indicating significant headroom for raising additional debt. The Company has drawn up a ten-year investment plan of ₹1,52,000 crore to be financed primarily through domestic banks, with the option of a Follow-on Public Offer (FPO) in the medium term. A marked improvement in DISCOM dues realisation from FY 2022-23 onwards with over 98% of billed revenue being realised on time was also noted, following the notification of the Electricity (Late Payment Surcharge and Related Matters) Rules, 2022.

The Committee further note that three of NHPC's ongoing construction projects, most critically the 2,000 MW Subansiri Lower HE Project, experience schedule and cost revisions, and that NHPC navigates a distinct set of structural factors in project execution, including the 100% Gram Sabha consent requirement under the Forest Rights Act, non-availability of Compensatory Afforestation land in Arunachal Pradesh, dual compensation on Unclassed State Forest land, retrospective revision of Implementation Agreements by State Governments, a concentrated pool of specialised hydro contractors, absence of grid power at construction sites, retention dynamics of skilled manpower, and competitive differentials vis-à-vis private players in solar and RE bidding.

The Committee have no doubt that NHPC, with its unparalleled expertise in developing hydropower in some of the most challenging terrains in the country, and its growing portfolio in solar, pumped storage and battery storage, is uniquely positioned to lead India's clean energy transition of India's exploitable hydropower potential of approximately 1,33,000 MW, only about 44,000 MW (barely one-third) has been developed so far. NHPC's role in bridging this gap, while simultaneously developing PSPs and BESS to provide grid stability for the integration of intermittent solar and wind power, is of critical national importance. The Observations and Recommendations of the Committee, are aimed at addressing the challenges identified in the course of this examination and enabling NHPC to fulfil its strategic mandate as mentioned in succeeding paras.

2. Time and Cost Overruns — Need for Robust Project Monitoring

The Committee observed that three of NHPC's ongoing projects face significant time and cost overruns. The most severe case is the 2,000 MW Subansiri Lower HE Project, whose estimated completion cost of Rs.27,948.52 crore represents a 344.66% overrun over the original CCEA-approved cost of Rs.6,285.33 crore, with the levellised tariff rising from Rs.1.93/kWh to Rs.7.49/kWh and commissioning delayed. The Company submitted before the Committee that the schedule variance in Subansiri Lower HEP was primarily due to external operational interruptions, local stakeholder interventions, an NGT regulatory stay from December 2015 to October 2019, additional works on account of DDRP recommendations, COVID-19, and adverse environmental events. The Ministry of Power acknowledged that hydropower projects are capital-intensive with long gestation periods and guidelines were introduced to address time and cost overruns. The Committee note that while external factors contributed to the timeline adjustments, a project navigating a comprehensive multi-year developmental span underscores the scope for continuous improvement in project monitoring, stakeholder management, and clearance coordination. The Committee, therefore, recommend that the Ministry of Power institute a proactive quarterly optimisation framework for all projects where schedule or financial variances reach 20%, facilitating strategic elevation to a Secretary-level monitoring group. Furthermore, the Committee advise commissioning a comprehensive evaluation of the Subansiri timeline adjustments to codify strategic best practices for the accelerated advancement of all current and future projects. Upon conclusion, a detailed analytical report be submitted to apprise the Committee of these constructive insights.

3. Generation Performance — Restoration of Teesta-V and Climate Risk Management

The Committee observed that the Company's hydro generation fell to 21,614 MU in FY 2023-24 and 19,736 MU in FY 2024-25 against MoU targets of 29,916 MU and 27,590 MU respectively. The primary cause was the complete period of operational latency of the 510 MW Teesta-V Power Station since 4th October 2023, following a Glacial Lake Outburst Flood (GLOF) in Sikkim. The cumulative generation loss from this event alone exceeded 3,770 MU over two years, severely depressing NHPC's revenue and Profit After Tax. Additional generation variances were recorded at Parbati-III (336 MU), Chamera-II (143 MU) and Chamera-III (388 MU), necessitated by silt-related operational transition in FY 2023-24. NHPC submitted before the Committee that it has established a 24x7 Master Control Room at Faridabad with an Early Warning System (EWS) operational across all vulnerable river basins, capable of predicting rising water levels up to two to three

hours in advance. NHPC informed the Committee that this EWS investment has also resulted in a 20% reduction in insurance premiums. All power stations have Crisis and Disaster Management Plans in place as per CEA guidelines. NHPC confirmed that restoration of Teesta-V is targeted by 15th June 2026. The Committee note that despite the GLOF-related disruption, NHPC's CUF of 41.30% in FY 2024-25 remains above the All-India Hydro CUF of 35.5%, reflecting the inherent efficiency of its plants while appreciating the EWS investment and the resulting reduction in insurance premiums, the Committee recommend that NHPC ensure alignment with its June 2026 recommissioning timeline for Teesta-V. and submit monthly progress reports to the Ministry of Power, also a comprehensive Climate Risk Assessment Framework should be developed for all operational and under-construction projects, evaluating operational resilience to Glacial Lake Outburst Flood, cloudbursts and extreme weather. The Committee recommend that EWS be extended to all JVs and Subsidiaries in a timely manner, and that all information and technology be shared with other PSUs working in the same field.

4. Forest Rights Act — Rationalising Gram Sabha Consent Threshold

The Committee observed that the average time taken for Forest Clearance for under-construction projects has been approximately 106 months. The requirement of 100% Gram Sabha consent under the Forest Rights Act, 2006 for Stage-II Forest Clearance has emerged as the single most critical bottleneck, with projects such as Teesta-IV HEP being indefinitely stalled because consent from a small minority of Gram Panchayats remains pending. NHPC submitted before the Committee that the 100% consent requirement is practically unachievable in many cases and that a 70% super-majority threshold should suffice. NHPC furnished international benchmarking from Brazil (FUNAI), Australia (Native Title Act, 1993), and New Zealand (Treaty of Waitangi) in support of a rationalised consent threshold, and recommended that FRA processes be initiated at the pre-feasibility stage. The Ministry of Power acknowledged the challenge and noted that the State Government of Arunachal Pradesh has been actively supportive in resolving clearance delays. The Committee note that the 100% consent requirement, while socially well-intentioned, has in practice occasionally resulted in extended schedule variances driven by specific stakeholder segments, impacting the timelines of projects of national importance. The Committee, therefore, recommend that the Ministry of Power take up with the Ministry of Tribal Affairs and MoEFCC the feasibility of adopting a qualified super-majority consent threshold in the range of 70-75% for large hydropower infrastructure projects of national importance, with appropriate social safeguards and desire that not hampering any interest of the Gram Sabha concerned. FRA compliance processes

must be initiated at the pre-feasibility stage to prevent delays at the Stage-II clearance stage.

5. Compensatory Afforestation — Creation of a Digitised Land Bank

The Committee observed that the absence of suitable degraded forest land for Compensatory Afforestation (CA) particularly in Arunachal Pradesh, where over 50% of the land area is forest cover is causing serious delays in Forest Clearances. NHPC has been compelled to tie up with the Madhya Pradesh Forest Department to undertake CA, since no suitable land is available within Arunachal Pradesh, creating a prolonged and ad hoc clearance process. NHPC submitted before the Committee a concrete proposal that a suitable land bank of degraded forest land be created across States, enabling developers to directly approach it, deposit money and fulfil CA obligations without spending time on land identification. NHPC also suggested that deposits with State Forest Departments who identify and undertake CA at their discretion could serve as an alternative. Further, the Ministry of Power confirmed that Madhya Pradesh had recently provided CA land for the Kamala and Kalai-II projects, resolving the immediate bottleneck. The Committee note that the current adaptive framework highlights the need for strategic standardisation as NHPC's project pipeline in Arunachal Pradesh grows significantly. The Committee, therefore, recommend that the Ministry of Power in coordination with Ministry of Environment, Forest and Climate Change and coordination with State Forest Departments, create and maintain a nationally accessible, digitised Land Bank of degraded forest land suitable for CA, linked with the PARIVESH portal. The Committee hope that Remote Sensing and GIS technology are being used for survey and verification of land. The Committee further strongly desire that CA site allocation must be made time-bound not exceeding six months from application to prevent Forest Clearances from being delayed on this account.

6. Dual Compensation on Unclassed State Forest Land

The Committee observed that in Arunachal Pradesh, NHPC faces a unique dual payment burden on Unclassed State Forest (USF) land being required to pay NPV and CA costs to the Government under the Forest Conservation Act and simultaneously separate compensation to tribal communities for loss of customary rights under the AP R&R Policy 2008. This three-tier compensation structure adds significantly to project costs. In this regard, NHPC submitted before the Committee that concurrent compensation frameworks for the same land parcel highlight a need for policy harmonisation, recommending a streamlined disbursement model

exclusive to either the Government or the private community. NHPC stated that this matter has been taken up with the Government of Arunachal Pradesh. The Ministry of Power confirmed that USF land disputes between Forest Ministry obligations and community ownership claims are a recurring challenge in Arunachal Pradesh causing significant cost escalation and delays. The Committee note that while tribal community rights must be fully protected, parallel compensation structures on the same piece of land for the same project impact create a disproportionate administrative impact on the Companies, thereby increasing overall project expenditure. The Committee, therefore, recommend that the Central Government, through an inter-ministerial group involving the Ministry of Environment, Forest and Climate Change, Ministry of Tribal Affairs, Ministry of Power, and the Government of Arunachal Pradesh, develop a national uniform framework for USF land compensation that resolves overlapping disbursements, based on the principle of a single integrated compensation package covering all obligations, whilst ensuring the interests of the concerned communities and Government authorities remain fully protected.

7. Sanctity of Implementation Agreements and Non-Imposition of Water Cess

The Committee observed that several State Governments have introduced post-agreement modifications to signed Implementation Agreements with NHPC, including revised expectations for free power, reassessment of SGST waivers, and the application of water cess on hydro generation. As such changes have impacted the commercial feasibility of certain projects and necessitated timeline adjustments for construction commencement. NHPC submitted before the Committee that independent realignment of agreed terms is a significant administrative priority, with certain projects currently navigating an extended pre-execution phase as a direct result. The Ministry of Power, in its presentation before the Committee, explicitly acknowledged that subsequent changes to Implementation Agreements impact project commercial feasibility and stated that States are expected to honour the originally established terms. The Ministry also noted that water cess, which adjusts tariffs by 60-70 paise per unit, should not be applied, as water use in hydropower is non-consumptive in nature. The Committee note that the Government of India itself has acknowledged water cess to be outside the States' legislative framework, yet the practice continues, impacting the financial sustainability of public investment in hydropower. The Committee, therefore, recommend that the Ministry of Power issue formal directives to all State Governments reiterating the structural integrity of Implementation Agreements and the operational necessity of avoiding post-agreement revisions. A well-researched standard Model Implementation Agreement with structured dispute resolution

clauses, change-in-law protections, and a viable, mutually agreeable water cess framework should be developed and adopted nationally.

8. Grid Power Availability at Hydropower Construction Sites

The Committee observed that the absence of grid power at remote hydropower construction sites forces NHPC to depend entirely on diesel generator sets. DG set power costs approximately Rs.30 per unit against Rs.6-7 per unit for grid power, and in a large project of Rs.20,000 crore, this differential adds Rs.500-1,000 crore to the project cost on account of power charges alone. NHPC submitted before the Committee that a large hydropower project requires approximately 20-30 MW of power during peak construction. The Government of India has made plans for extending transmission lines to remote areas and the Ministry of Power confirmed that budgetary support for enabling infrastructure including transmission lines up to the nearest pooling station is available at Rs.1 crore per MW up to 200 MW. The Committee note that while the Ministry's inclusion of transmission lines in enabling infrastructure support is welcome, actual grid connectivity at construction sites continues to experience timeline variances, necessitating financial recalibration for hydropower projects. The Committee, therefore, recommend that the Ministry of Power, in coordination with Power Grid Corporation and State distribution companies, treat provision of grid power at hydropower and PSP construction sites as a pre-condition of project sanction and ensure its availability before peak construction commences. A time-bound plan for grid extension to all ongoing construction sites should be submitted to this Committee.

9. Strengthening the Contractor Ecosystem for Hydro and PSP Sector

The Committee observed that the hydropower and PSP construction sector in India is supported by a highly specialised network featuring a select group of four to five active contractors. With NHPC alone having approximately 10,000 MW under construction alongside a significantly larger pipeline, and with other CPSEs and private developers simultaneously pursuing hydro and PSP projects, this scarcity of specialized contractors is highlighting a primary area for structural optimisation. The Company submitted before the Committee that the highly specialised contractor base highlights a key area for strategic alignment, with the simultaneous construction of multiple large hydro and PSP projects necessitating the concurrent engagement of this select group, thereby presenting an opportunity to optimise capital efficiency and standardise project lifecycles. The Ministry of Power, while acknowledging increasing private sector interest in PSPs, noted that

regulatory facilitation is being enhanced to attract more developers into the sector. The Committee note that unlike solar or wind projects, hydropower and PSP construction requires highly specialized skills and equipment, and the private sector has not invested in developing this capability at large scale. The Committee, therefore, recommend that the Ministry of Power should develop a dedicated policy framework to grow the hydro and PSP contractor ecosystem, including pre-qualification incentives, structured mentoring between experienced and emerging contractors, facilitated access to project financing and targeted skill development in specialized areas such as tunnelling, cavern construction and hydraulic engineering.

10. Commercial Viability of New Hydropower Projects — Need for Tariff Support

The Committee observed that hydropower tariffs are generally high in the initial years of operation on account of the capital-intensive and long-gestation nature of these projects. The levelled tariff of the Subansiri Lower HEP has risen to Rs.7.49/kWh significantly above prevailing solar and wind costs making PPA conclusion with DISCOMs increasingly difficult. Water cess, SGST non-reimbursement and higher free power demands by States further erode commercial viability. The Ministry of Power submitted before the Committee that the Government has taken several measures to improve hydropower viability — tariff rationalisation in 2019, budgetary support of Rs.1 crore per MW, ISTS charge waiver reducing tariffs by 50 paise to Rs.1 per unit, and enhancement of the CEA concurrence threshold from Rs.1,000 crore to Rs.3,000 crore. The Ministry acknowledged that new hydro projects will cost approximately Rs.7-8 per unit unless strong cost control is exercised, which makes PPA conclusion challenging at current market prices. The Committee note that despite these measures, the commercial attractiveness of new hydropower projects remains constrained, making it difficult to attract PPAs from DISCOMs. The Committee, therefore, recommend that the Ministry of Power explore a structured Viability Gap Funding framework specifically for new hydropower projects, to strategically harmonise early-stage operational economics with prevailing market prices, on the lines of Viability Gap Funding support already available for battery storage and biomass. This proactive measure will ensure that India's vast hydropower potential can be sustainably harnessed.

11. Strategic Priority for Pumped Storage Projects and BESS

The Committee observed that NHPC is pursuing approximately 20,000 MW of PSP capacity across various States, and has been designated as a BESS Implementing Agency with 1,500 MWh allocated. PSPs with a round-trip efficiency of 79-80% and a useful life of 100 years represent the most cost-effective and

environmentally benign form of grid-scale storage, essential for integrating intermittent solar and wind power. The Ministry of Power informed the Committee that India's total PSP potential exceeds 2,80,000 MW, of which only 7,100 MW has been installed. NHPC submitted before the Committee that PSP power costs approximately Rs.7-8 per unit, which is competitive against peak-hour exchange prices that can reach Rs.12 per unit. The Ministry of Power confirmed that dedicated PSP development guidelines were issued in April 2023 and February 2025, covering Tariff-Based Competitive Bidding(TBCB) mode procurement, site allotment, and exemptions from free power and Local Area Development Fund(LADF) obligations. The Ministry also confirmed that it is actively facilitating both NHPC and private sector developers in PSP development. The Committee note that PSPs and BESS are indispensable for India's energy transition, and NHPC with its hydropower expertise and existing reservoir infrastructure is uniquely positioned to lead India's PSP development. The Committee, therefore, recommend that the Company accord the highest strategic priority to its 20,000 MW Pumped Storage Project pipeline. The Ministry of Power should provide dedicated facilitation including expedited site allotments, clearance prioritization and off-take guarantee mechanisms to ensure that national Pumped Storage Project targets are met in line with grid stability requirements.

12. Manpower Planning and Retention at Remote Project Sites

The Committee observed from Chapter V of this Report that NHPC's total workforce has declined from 5,569 in March 2021 to 4,577 in March 2025, creating a significant gap against the approved strength of 5,736. Attrition of skilled workers at remote construction sites has become a serious operational concern, with workers increasingly preferring urban infrastructure projects that offer better amenities and connectivity. NHPC submitted before the Committee that maintaining workforce continuity at remote locations presents ongoing administrative complexities due to compensation differentials in urban infrastructure projects. For RE projects, NHPC has adopted a Hub and Spoke model with centralised domain experts at Head Office providing support to all project sites, optimising site-level manpower requirements. The Committee note that NHPC's target to achieve 36,500 MW by FY 2033-34 requires a substantial and skilled workforce. The current workforce transition trends and site-level retention variances, without strategic intervention, have the potential to influence the pace of capacity addition. The Committee, therefore, recommend that NHPC undertake a comprehensive manpower planning exercise aligned with its ten-year capacity addition targets. Specific measures to address attrition at remote sites including improved residential facilities, enhanced connectivity, performance-linked

incentives and structured career advancement should be implemented on priority. A skills upgrading programme for specialised hydropower competencies should also be developed.

13. Corporate Social Responsibility — Outcome-Based Assessment

The Committee observed that NHPC has consistently exceeded its mandatory CSR expenditure of 2% of average net profits in each of the last five financial years, with actual spending of Rs.109.64 crore in FY 2024-25 against a mandatory requirement of Rs.82.30 crore. NHPC's CSR activities span 24 States and Union Territories, covering healthcare, women empowerment, sports development and community development in some of India's most remote and underserved areas, including the Line of Control region of Ladakh. NHPC submitted before the Committee that 60% of CSR expenditure is mandated on health and nutrition and 80% must be spent within 25 km of project locations as per Government guidelines. NHPC committed to presenting a detailed outcome-based CSR presentation in a subsequent sitting. The Committee note with appreciation that NHPC has consistently exceeded its mandatory CSR obligations, demonstrating genuine commitment to inclusive development. The Committee, however, recommend that NHPC conduct a systematic outcome-based impact assessment of its CSR expenditures with measurable beneficiary outcomes tracked on a project-by-project basis. A dedicated CSR annual report covering outcomes, beneficiary data and geographic spread should be published and submitted to the Ministry of Power as part of NHPC's annual performance review.

New Delhi:
03 August, 2026
12 Shravana, 1948(S)

BAIJAYANT PANDA
Chairperson,
Committee on Public Undertakings

Billing and Outstanding Dues of NHPC for Last 5 years

Annexure-I

	2020-21		2021-22		2022-23		2023-24		2024-25	
DISCOMs	Billing	O/s dues more than 45 days	Billing	O/s dues more than 45 days	Billing	O/s dues more than 45 days	Billing	O/s dues more than 45 days	Billing	O/s dues more than 45 days
JKPCL, UT of J&K	1598.06	769.80	1451.34	928.35	1388.93	19.93	1598.30	59.99	1414.23	51.42
TPDDL (Delhi)	202.31	0.00	187.39	0.00	178.07	0.00	239.92	0.00	204.68	0.00
BRPL (Delhi)	383.77	0.00	342.02	0.00	335.62	0.00	470.19	0.00	379.38	0.00
BYPL (Delhi)	201.42	0.00	176.89	0.00	172.53	0.00	228.95	0.00	222.83	0.00
NDMC (Delhi)	0.00	0.00	0.00	0.00	2.90	0.00	5.80	0.00	37.56	0.00
(Total Delhi)	787.50	0.00	706.29	0.00	686.22	0.00	944.86	0.00	844.46	0.00
JVVNL (Rajasthan)	255.43	0.10	227.10	0.00	213.31	7.73	263.74	11.71	280.94	0.32
AVVNL (Rajasthan)	172.32	8.97	153.22	0.00	146.93	0.00	191.15	0.00	202.61	0.25
JdVVNL (Rajasthan)	206.75	0.00	183.79	0.00	184.96	0.00	238.33	9.85	216.86	9.15
(Total Rajasthan)	654.81	45.51	590.74	0.00	573.18	7.73	711.62	21.56	700.41	9.72
UPPCL (U.P)	1537.97	0.00	1510.99	0.00	1395.00	0.00	1974.23	0.00	1568.04	12.21
PSPCL (Punjab)	865.33	82.48	740.58	0.00	851.98	25.26	1085.54	0.00	933.49	1.27
HPPC (Haryana)	573.53	0.00	496.67	0.00	575.11	0.00	674.83	0.00	603.80	0.00
UPCL (Uttarakhand)	276.75	0.00	251.11	0.00	217.76	0.00	345.66	0.00	291.52	0.00
HPSEBL (H.P)	74.10	0.00	69.27	0.00	71.66	0.00	103.36	0.00	108.66	0.42
UT (Chandigarh)	103.40	0.00	105.97	0.00	108.67	0.00	122.61	1.24	119.91	12.67
NBPDCL (North Bihar)	88.17	0.00	87.73	0.00	94.20	0.00	71.51	0.00	30.69	0.00
SBPDCL (South Bihar)	103.89	0.00	103.03	0.00	110.87	0.00	84.56	0.00	36.75	0.00
(Total Bihar)	192.06	0.00	190.76	0.00	205.08	0.00	156.06	0.00	67.44	0.00
WBSEDCL, West Bengal	1528.61	48.99	652.14	0.00	858.43	0.00	761.53	0.00	489.13	0.00

GRIDCO (Odissa)	146.30	0.00	139.60	0.00	149.54	0.00	105.12	0.00	21.08	0.00
JBVNL (Jharkhand)	103.29	2.57	101.42	0.00	108.30	0.00	63.23	0.00	23.46	0.86
DVC	73.10	0.00	71.85	0.00	76.68	0.00	53.07	0.00	18.94	0.00
Power Deptt. (Sikkim)	10.05	5.79	9.88	7.71	16.72	0.00	6.09	0.00	2.60	0.00
MeECL (Meghalaya)	0.00	0.00	0.00	0.00	16.05	1.20	16.66	0.00	26.60	0.00
MSPDCL (Manipur)	58.88	21.21	51.46	0.00	43.58	0.00	24.87	0.00	60.27	2.87
APDCL (Assam)	56.74	0.00	49.47	0.00	56.70	0.00	39.56	0.00	63.52	0.00
P&E Deptt. (Mizoram)	9.69	1.42	8.46	0.00	9.51	0.00	6.81	0.00	10.84	0.00
TSECL (Tripura)	22.50	0.00	19.72	0.00	22.27	0.00	15.66	0.00	25.22	0.00
Deptt. of Power, Arunachal	9.54	0.00	8.35	0.00	9.25	0.00	6.31	0.00	10.61	0.00
Deptt. of Power (Nagaland)	12.40	0.00	10.82	0.00	12.10	0.00	8.59	0.00	14.57	0.00
GUVNL, Gujrat	0.00	0.00	0.00	0.00	0.00	0.00	34.49	0.00	3.84	0.00
MPPCL (Madhya Pradesh)	8.87	0.35	9.35	0.00	8.57	0.00	13.60	0.00	16.39	0.00
MEA - Power to Nepal	25.70	5.39	25.70	0.00	23.70	0.00	15.56	0.00	0.00	0.00
Solar Power (TANGEDCO)	38.70	20.59	37.77	0.00	38.62	0.00	38.80	0.00	34.01	2.45
CSPDCL - Chattisgarh	132.18	0.67	184.69	0.00	195.75	0.00	236.31	49.64	349.01	0.00
	8879.76	968.32	7467.78	936.06	7694.31	54.12	9144.90	132.43	7822.04	93.89

Consolidated Return on Capital Deployed in Subsidiary Co/JV (in %)

Annexure-II

Equity Investment in Subsidiary Co/JV	FY 2024-25		FY 2023-24		FY 2022-23		FY 2021-22		FY 2020-21	
	Equity Invested as on 31.03.2025	Dividend Income	Equity Invested as on 31.03.2024	Dividend Income	Equity Invested as on 31.03.2023	Dividend Income	Equity Invested as on 31.03.2022	Dividend Income	Equity Invested as on 31.03.2021	Dividend Income
NARMADA HYDRO ELECTRIC DEVELOPMENT CORPORATION LIMITED (NHDC)	1002.42	419.01	1002.42	488.18	1002.42	369.89	1002.42	292.71	1002.42	283.68
NATIONAL HIGH POWER TEST LABORATORY PRIVATE LIMITED (NHPTL)	35.64	0.00	48.80	0.00	30.40	0.00	30.40	0.00	30.40	0.00
CHENAB VALLEY POWER PROJECTS LIMITED (CVPPPL)	3330.21	0.00	2622.00	0.00	2172.19	0.00	1839.56	0.00	1388.00	0.00
LOKTAH DOWNSTREAM HYDROELECTRIC CORPORATION LIMITED (LDHCL)	105.56	0.00	105.56	0.00	105.56	0.00	105.56	0.00	98.90	0.00
BUNDELKHAND SAUR URJA LIMITED (BSUL)	102.83	0.00	91.83	0.00	86.22	0.00	84.22	0.00	44.40	0.00
LANCO TEESTA HYDRO POWER LIMITED (LTHPL) *	0.00	0.00	1724.41	0.00	1724.41	0.00	1440.50	0.00	995.50	0.00
JAL POWER CORPORATION LTD. (JPCL)	533.10	0.00	281.49	0.00	281.49	0.00	281.49	0.00	165.00	0.00
RATLE HYDROELECTRIC POWER CORP. LTD. (RHPCL)	598.71	0.00	446.26	0.00	137.70	0.00	137.70	0.00	0.00	0.00
NHPC RENEWABLE ENERGY LIMITED (NREL)	20.00	0.00	20.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00
Total (Rs. in Cr)	5728.47	419.01	6342.77	488.18	5560.39	369.89	4921.85	292.71	3724.62	283.68
Consolidated Return on Capital Deployed in Subsidiary Co/JV (in %)	7.31		7.70		6.65		5.95		7.62	

* LTHPL merged with NHPC during FY 2024-25

ORGANIZATION STRUCTURE

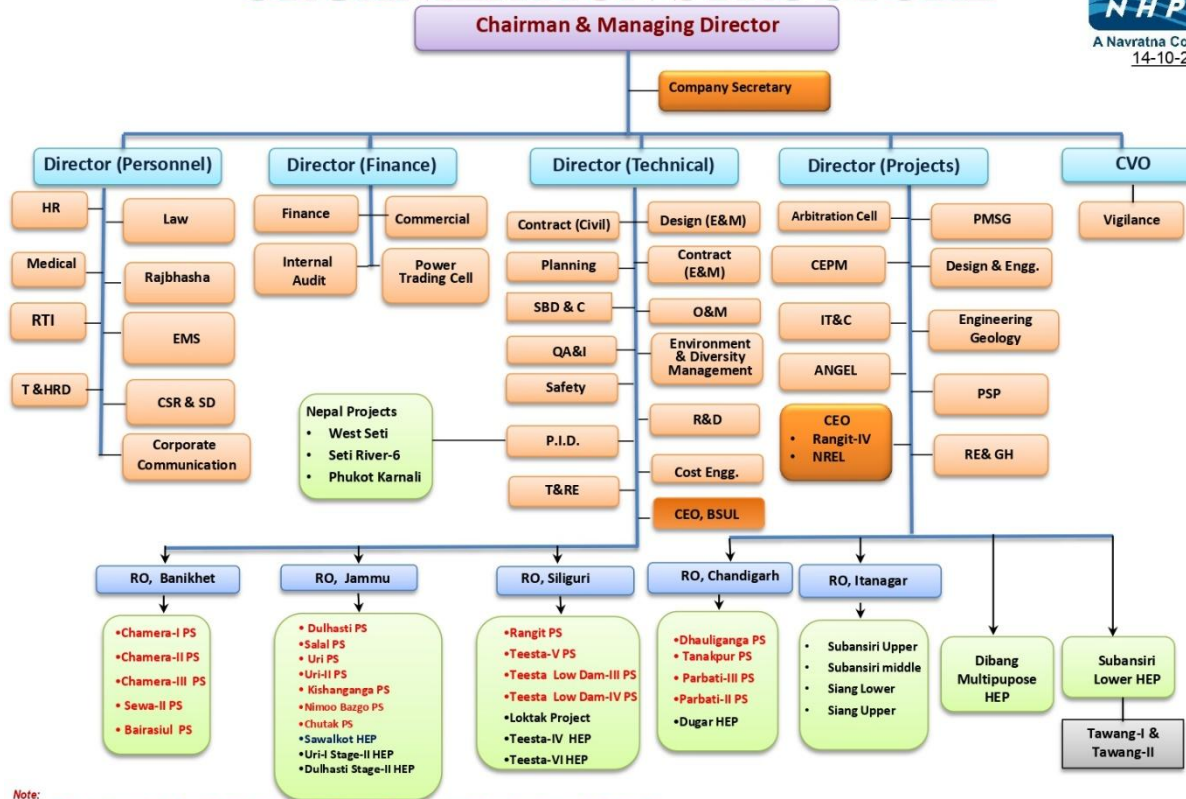


Table 1

NHPC's total approved and actual employee strength as on March 31, 2025, with a detailed breakdown (grade-wise, discipline-wise)		
Designation/ Discipline	As on 31st March 2025	
	Sanction Strength	In-Position
EXECUTIVE		
EXECUTIVE DIRECTOR (E9)		
Technical	26	25
HUMAN RESOURCE	2	
FINANCE	2	1
LAW	1	1
Total	31	27
GGM/GENERAL MANAGER (E8)		
TECH		
CIVIL	124	104
ELECTRICAL	53	65
ELECTRONICS	7	8
MECHANICAL	37	33
ENVIRONMENT	3	6
GEOLOGY/GEOPHYSICS/RESEARCH	4	4
INFORMATION TECHNOLOGY / CONSULTANCY	3	6
Sub Total	231	226
NON-TECH		
COMPANY SECRETARY	1	1
FINANCE	17	17
HUMAN RESOURCES	13	16
INDUSTRIAL ENGG.	1	
RAJBHASHA	1	
LAW	3	3
MEDICAL	9	4
PUBLIC RELATION	1	2
Sub Total	46	43
Total (E8)	277	269
GDGM/DY. GENERAL MANAGER (E7)		
TECH		
CIVIL	129	129
ELECTRICAL	93	93
MECHANICAL	53	53
ELECTRONICS&COMMUNICATION	11	11
GEOLOGY/GEOPHYSICS	9	9
ENVIRONMENT	8	8
RESEARCH	4	4
INFORMATION TECHNOLOGY/ CONSULTANCY	15	15
Sub Total	322	322

NON-TECH		
COMPANY SECRETARY	1	
HUMAN RESOURCE	32	32
FINANCE	46	45
INDUSTRIAL ENGG.	4	4
RAJBHASHA	5	0
LAW	8	9
LIBRARY	1	1
MEDICAL	17	17
PUBLIC RELATION	6	6
Sub Total	120	114
Total (E7)	442	436
EXECUTIVE (E5-E6)		
TECH		
CIVIL	264	255
ELECTRICAL	235	304
MECHANICAL	147	133
ELECTRONICS	41	44
ENVIRONMENT	15	21
GEOLOGY/GEOPHYSICS	25	28
INFORMATION TECHNOLOGY	64	69
EXE. D/MAN	1	1
SURVEY	10	0
RESEARCH	2	2
SAFETY	2	0
FISHERIES	3	0
GEOTECHNICAL	2	0
EARTHQUAKE	1	0
Sub Total	812	857
NON-TECH		
COMPANY SECRETARY	3	1
FINANCE	108	159
HUMAN RESOURCES	72	54
LAW	11	7
MEDICAL	23	27
PUBLIC RELATION	8	9
INDUSTRIAL ENGG.	1	2
RAJBHASHA	12	11
LIBRARY	4	5
ADMINISTRATION	2	0
SECRETARIAL	18	14
STATISTICAL	2	2
Sub Total	264	291
Total (E5-E6)	1076	1148
EXECUTIVE (E2-E4) DM/AM/ENGG/OFFICER		
TECH		
CIVIL	509	385
ELECTRICAL	393	202
MECHANICAL	291	179

ELECTRONICS	78	73
ENVIRONMENT	23	4
GEOLOGY/GEOPHYSICS	31	6
INFORMATION TECHNOLOGY	135	111
EXE. D/MAN	12	0
SURVEY	18	16
RESEARCH	8	0
FIRE/SAFETY	13	8
FISHERIES#	0	3
GEOTECHNICAL	0	2
EARTHQUAKE	0	1
Sub Total	1511	990
NON-TECH		
COMPANY SECRETARY	4	7
FINANCE	197	127
HUMAN RESOURCES	145	28
LAW	25	7
MEDICAL	43	8
PUBLIC RELATION	21	6
INDUSTRIAL ENGG.	1	0
RAJBHASHA	7	4
LIBRARY	8	8
ADMINISTRATION	5	2
SECRETARIAL	58	67
Sub Total	514	264
Total (E2-E4)	2025	1254
EXECUTIVE (E1) AE/AO		
TECH		
CIVIL	94	0
ELECTRICAL	60	0
MECHANICAL	48	0
ELECTRONICS	15	0
INFORMATION TECHNOLOGY	7	0
EXE. D/MAN	3	0
SURVEY	10	6
FIRE/SAFETY	8	0
Total	245	6
NON-TECH		
FINANCE	35	0
HUMAN RESOURCES	8	0
RAJBHASHA	17	6
LIBRARY	2	0
ADMINISTRATION	26	0
HOSPITAL	6	2
SECRETARIAL	21	14
Sub Total	115	22
Total (E1)	360	28
Total Executive	4211	3162
SUPERVISOR		

TECH		
JE (CIVIL)	229	115
JE(ELECT)	129	82
JE(MECH)	107	56
JE(E&C)	25	8
SR SUP(IT)/SUP(IT)	16	15
SR SUP(SURVEY)	21	20
SR.SUP/ SR. F/MAN		
CIVIL	17	3
ELECT	94	40
MECH	86	13
SR SUP(FIRE/SAFETY)	7	7
SR D/MAN	2	0
SUB TOTAL	733	359
NON-TECH		
PS Gr-I & Gr-II	30	9
SR. ACCTT	46	32
SR. SUP(RAJBHASHA)	10	1
OS	96	88
SR SUP(STORE)	10	6
SR.SUP(LAW)	0	0
SR. SUP(HOSPITAL)	19	13
HUMAN RESOURCE		
SR SUP(CARE TAKER)	4	1
SUB TOTAL	215	150
TOTAL SUPERVISOR	948	509
WORKMEN		
(A1) HIGHLY SKILLED/SKILLED		
ELECTRICIAN	306	248
FITTER	10	5
MECHANIC	11	3
WELDER	55	48
MACHINIST	20	18
OPTR. UTILITY	23	23
DRIVER	25	80
ASSISTANT	37	40
SCIENTIFIC ASSISTANT	14	50
STOREKEEPER	40	1
HINDI TRANSLATOR	14	9
DRAFTSMAN	22	17
CRANE*	0	2
RIGGER*	0	2
FIREMEN*	0	1
HEM OPERATOR*	0	3
LINEMAN*	0	1
SWITCH BOARD TECHNICIAN*	0	3
BLASTER*	0	1
CARPENTER*	0	4
MASON*	0	1
PAINTER*	0	1

PLUMBER*	0	1
ASSISTANT(HINDI)*	0	1
CARETAKER*	0	2
OPERATOR (PHOTOSTATE)*	0	4
OPERATOR (COMMUNICATION) *	0	2
STENOGRAPHER*	0	14
TIMEKEEPER*	0	1
WORK ASSISTANT*	0	5
COOK *	0	18
CLEANER*	0	6
TYRE REPAIRER*	0	2
DAFTRY*	0	1
Sub-total (HS/SK-WMAN)	577	618
(A2) UNSKILLED		
HELPER/BELDAR/ATTD.T.*	0	196
SECURITY GUARD*	0	8
SAFAIWALA*	0	15
Sub-Total(USK)	0	219
SUB TOTAL(A)	577	837
(B) PARAMEDICAL STAFF		
STAFF NURSE*	0	10
PHARMACIST*	0	6
X-RAY TECH.*	0	4
LAB TECHNICIAN*	0	2
ANM*	0	7
DRESSER*	0	6
LAB ASSISTANT*	0	5
OT ASSISTANT*	0	2
SUB TOTAL(B)	0	42
(C) MISC. CADRE		
TEACHERS*	0	23
TOTAL WORKMEN = (A+B+C)	577	902
Grand Total(Exe+Sup+W/men)	5736	4573

(i) '**'marked designations are surplus & superannuary designations which shall be phase out with their retirement. The exisitng manpower strength in these designations may be considered for re-skilling for their gainfull utilization or may be proposed for VRS also.

Table 2

NHPC's employee strength as on March 31, 2025, with a detailed breakdown (category-wise: SC/ST/OBC/EWS/General/Women/Persons with Disabilities).

CATEGORYWISE-IN-Position						EWS	EXSM	Female	Sanction Strenght
Grade	Gen	OBC	SC	ST	Total				
Executive	1552	817	539	254	3162	33	3	284	4211
Supervisor	222	184	74	29	509	38		33	948
Workmen	646	77	98	81	902	3		151	577
Total	2420	1078	711	364	4573	74	3	468	5736

PHYSICALLY CHALLENGED			
NORMAL	HI	OH	VI
3058	3	89	12
490	3	15	1
896	1	5	
4444	7	109	13

COMMITTEE ON PUBLIC UNDERTAKINGS
(2025-26)

MINUTES OF THE TENTH SITTING OF THE COMMITTEE

The Committee sat on Wednesday, the 10th September, 2025 from 1130 hrs. to 1315 hrs. in Committee Room No. 'B', Ground Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Baijayant Panda - **Chairperson**

MEMBERS

Lok Sabha

2. Shri Tariq Anwar
3. Shri Chandra Prakash Joshi
4. Shri Shankar Lalwani
5. Smt. Poonamben Hematbhai Maadam
6. Shri B.Y. Raghavendra
7. Shri Mukesh Rajput
8. Shri Sukhjinder Singh Randhawa
9. Shri Pratap Chandra Sarangi
10. Shri Lalji Verma

Rajya Sabha

11. Dr. John Brittas
12. Dr. Bhagwat Karad
13. Shri Surendra Singh Nagar
14. Shri Debashish Samantaray

SECRETARIAT

- | | | | |
|----|---------------------|---|------------------|
| 1. | Smt. Mriganka Achal | - | Director |
| 2. | Sh. Tenzin Gyaltzen | - | Deputy Secretary |
| 3. | Sh. Dhruv | - | Under Secretary |

**REPRESENTATIVES FROM NATIONAL HYDROELECTRIC POWER
CORPORATION LTD. (NHPC)**

- | | | | |
|----|-------------------------|---|----------------------|
| 1. | Shri Bhupender Gupta | - | CMD |
| 2. | Shri Uttam Lal | - | Director (Personnel) |
| 3. | Shri Sanjay Kumar Singh | - | Director (Project) |
| 4. | Shri Suprakash Adhikari | - | Director (Technical) |
| 5. | Shri Sipan Kumar Garg | - | Director (Finance) |

2. At the outset, Hon'ble Chairperson welcomed the Members and the representatives of the NHPC and outlined the nature of agenda for the day i.e. Briefing by the representatives of NHPC Limited in connection with comprehensive examination of 'NHPC Ltd'. Further, Chairperson reminded representatives of Direction 55(1) of the 'Directions by the Speaker' regarding confidentiality of the proceedings before Parliamentary Committees.

3. In his address on the subject, Hon'ble Chairperson while seeking NHPC's comprehensive review of all operational aspects of NHPC (a Navratna CPSU) further sought clarification on various aspects viz. present capacity of 8,200 MW across 30+ stations; status of 15 under construction projects of 9800 MW capacity; status of 11 pending clearances, 9 under survey projects and ongoing 15 initiatives; NHPC's ambitious roadmap to reach 60,000 MW i.e. 38,000 MW by 2033–34 and 50,000 MW by 2047; NHPC's diversification into solar, pumped storage and green hydrogen; including NHPC's role as a Renewable Energy Implementing Agency (REIA) and as a Battery Energy Storage Systems (BESS); implementation of Subansiri Lower, Ratle and Pakal Dul; NHPC's financial position, CSR expenditure, impact assessment and updates on green hydrogen pilot projects; alongwith international collaborations, status of Parliamentary assurances and overall policy and operational challenges faced by NHPC.

4. The representatives of NHPC made a brief presentation on the subject. The presentation covered various important aspects including NHPC's role as leading hydropower Company and their portfolio; details of Joint Ventures/Subsidiaries/Associate Companies; human resource aspects and financial performance of the Company; Performance of Power Stations including Diversification projects undertaken as well as exploring new opportunities; and CSR initiatives.

5. Thereafter, Members sought clarification on various matters pertaining to the subject regarding the functioning, performance and future roadmap of NHPC Ltd. Members also desired to know the specific steps being taken to achieve the capacity addition targets of 38,000 MW by 2033–34 and 50,000 MW by 2047 and Organisational proposals to maintain a proper balance among hydro, solar, wind, pumped-storage and green-hydrogen projects in its overall energy portfolio. Also, clarifications were sought on extended timelines in obtaining clearances, land acquisition challenges and measures adopted to resolve local concerns affecting project timelines. Members sought information on modernization and renovation of existing plants to enhance generation efficiency, environmental safeguards and compliance with statutory norms, as well as rehabilitation and resettlement of affected families. Members further asked about the status and challenges of solar and green-hydrogen projects, the reasons for extended timelines in major hydro schemes, tariff structure including power purchase arrangements and the financial viability of ongoing and upcoming ventures. Queries were also made regarding NHPC's activities in neighbouring countries, adoption of new technologies in renewable energy, representation of SC/ST/OBC categories in employment and utilisation of CSR funds, particularly in backward and aspirational districts.

6. The representatives of NHPC briefed the Members on various issues that had been raised during the discussions. They provided clarifications on operational challenges, ongoing projects, future plans of the organization, Capacity addition targets (38,000 MW and 50,000 MW), Balancing hydro, solar, wind, PSP and green hydrogen including land acquisition, clearances, local resistance, Modernisation, R&D, and efficiency improvement. Further briefing was given on issues such as environmental

safeguards, compensatory afforestation and R&R, Progress of major projects (Subansiri, Ratle, Pakal Dul, etc.) alongwith tariff and power purchase arrangements. Also, the Committee was briefed on issues like financial position, credit rating and funding sources alongwith SC/ST/OBC representation in employment, CSR initiatives and examples of expenditure. The discussion also highlighted areas requiring policy support and potential improvements. Overall, the session facilitated a comprehensive understanding of NHPC's functioning and allowed Members to deliberate on key concerns effectively.

7. Concluding the discussion, Hon'ble Chairperson thereafter thanked the representatives of NHPC for their valuable suggestions/deliberations and assisting the Committee on the subject and desired to have first hand experience of NHPC's project at Leh during the upcoming Study-visit of the Committee. The Chairperson also thanked the Members of the Committee for their active participation and valuable contribution made by them on the subject.

The Committee, then, adjourned to reassemble after lunch.

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COMMITTEE ON PUBLIC UNDERTAKINGS
(2025-26)

MINUTES OF THE NINETEENTH SITTING OF THE COMMITTEE

The Committee sat on Friday, the 10th April, 2026 from 1500 hrs. to 1600 hrs. in Committee Room No. '1', Ground Floor, Extension to Parliament House Annexe, New Delhi.

PRESENT

Shri Baijayant Panda - **Chairperson**

MEMBERS

Lok Sabha

2. Shri Tariq Anwar
3. Shri Kaushalendra Kumar
4. Shri Shankar Lalwani
5. Shri Mukesh Rajput
6. Shri Pratap Chandra Sarangi

Rajya Sabha

7. Shri Surendra Singh Nagar

SECRETARIAT

1. Smt. Mriganka Achal - Director
2. Sh. Tenzin Gyaltzen - Deputy Secretary
3. Sh. Dhruv - Under Secretary

REPRESENTATIVES FROM NATIONAL HYDROELECTRIC POWER
CORPORATION LTD. (NHPC)

1. Shri Bhupender Gupta - CMD
2. Shri Uttam Lal - Director (Personnel)
3. Shri Sanjay Kumar Singh - Director (Project)
4. Shri Suprakash Adhikari - Director (Technical)
5. Shri Mahesh Kumar Sharma - Director (Finance)

2. At the outset, the Hon'ble Chairperson welcomed the Members and the representatives of NHPC and outlined the agenda for the day, *i.e.*, evidence by the representatives of NHPC Limited in connection with the comprehensive examination of 'NHPC Ltd.' Further, the Chairperson reminded the representatives of Direction 55(1) of the 'Directions by the Speaker' regarding the confidentiality of the proceedings before Parliamentary Committees.

3. In his address, the Hon'ble Chairperson highlighted NHPC's important role in the hydropower sector and its expansion into renewable energy areas such as solar, wind, and other new technologies. The Chairperson sought a brief presentation and asked for details on the Company's performance, especially with regard to capacity addition, project execution timelines, variations in project costs, and challenges in land acquisition, along with clearances, and other related issues. Further, the Chairperson also wanted to understand NHPC's preparedness in view of changing global energy conditions and the increasing focus on energy security and alternative energy sources.

4. The representatives of NHPC made a brief presentation on the subject highlighting the Company's growth, current capacity, and major ongoing projects, along with projects under construction and in the pipeline. Further, key financial and operational aspects, including power generation, CAPEX, and CSR activities, were also outlined. The presentation mainly focused on major challenges such as land acquisition aspects, R&R issues, statutory clearances, difficult terrain, natural disasters, and a shortage of contractors, which impact project timelines and costs. Also, some suggestions were made to simplify procedures and improve project execution.

5. Thereafter, the Members sought clarifications on key issues related to NHPC's performance and future plans. Major queries pertained to the profitability position, renewable energy implementation status, and related targets, and challenges in project execution such as land acquisition as well as emerging issues related to local approvals. Members also raised different aspects about the impact of climate change, the need for better disaster management systems, and rising costs in solar projects. Further questions were asked regarding the future focus on solar and wind energy, India's progress towards the net-zero target along with delays in project completion, and rising costs, etc.

6. The representatives of NHPC responded to the queries raised by the Members. They explained that the decline in profits was mainly due to damage to a major plant caused by floods, which affected power generation, and stated that profits are expected to improve with new and upcoming projects. They also clarified that gaps in targets were due to project timelines and NHPC has also been utilising systems such as Early Warning Systems for disaster mitigation and management. The representatives further stated that the Company will continue to expand in solar and wind energy. Further, all issues related to land acquisition, approvals, and local clearances were highlighted as major challenges, and the need for policy support was specifically emphasized. Also, on issues related to project completion and rising costs, NHPC stated that efforts are being made to resolve these issues through better coordination with State Governments and by speeding up approvals.

7. In conclusion, the Chairperson thanked the representatives of NHPC and directed that, in respect of the points for which information was not readily available and where additional information is required to be furnished, written replies thereon may be submitted to the Committee Secretariat at the earliest.

The Committee then took up the second agenda of the day.

COMMITTEE ON PUBLIC UNDERTAKINGS
(2025-26)

MINUTES OF THE TWENTIETH SITTING OF THE COMMITTEE

The Committee sat on Friday, the 10th April, 2026 from 1600 hrs. to 1700 hrs. in Committee Room No. '1', Ground Floor, Extension to Parliament House Annexe, New Delhi.

PRESENT

Shri Baijayant Panda - **Chairperson**

MEMBERS

Lok Sabha

2. Shri Tariq Anwar
3. Shri Kaushalendra Kumar
4. Shri Shankar Lalwani
5. Shri Mukesh Rajput
6. Shri Pratap Chandra Sarangi

Rajya Sabha

7. Shri Surendra Singh Nagar

SECRETARIAT

- | | | |
|----|---------------------|--------------------|
| 1. | Smt. Mriganka Achal | - Director |
| 2. | Sh. Tenzin Gyaltzen | - Deputy Secretary |
| 3. | Sh. Dhruv | - Under Secretary |

REPRESENTATIVES FROM MINISTRY OF POWER

- | | | |
|----|----------------------------|-----------------------|
| 1. | Shri Pankaj Agarwal | - Secretary |
| 2. | Shri Milind Ganesh Gokhale | - Member (Hydro), CEA |
| 3. | Shri Mohammad Afzal | - Joint Secretary |
| 4. | Shri Mahabir Prasad | - JS&FA |

2. At the outset, the Hon'ble Chairperson welcomed the Secretary, Ministry of Power, and his colleagues, and outlined the agenda for the day, *i.e.*, evidence by the representatives of the Ministry of Power in connection with the comprehensive examination of 'NHPC Ltd.' Further, the Chairperson reminded the representatives of Direction 55(1) of the 'Directions by the Speaker' regarding the confidentiality of proceedings before Parliamentary Committees.

3. In his address, the Hon'ble Chairperson referred to the earlier interaction with NHPC and stated that the present meeting was intended to understand the policy framework of the power sector, particularly renewable energy and hydropower sector along with the role of the Ministry. The Chairperson sought details on the steps taken to address key challenges such as land acquisition, clearances, and other bottlenecks affecting projects and related timelines. The Chairperson also emphasized the need to ensure and strengthen energy security and sought the Ministry's views on support for expansion into areas such as solar, wind, and other emerging technologies.

4. The representatives of the Ministry of Power made a presentation on the subject providing an overview of the hydropower sector, including total potential, existing capacity, and major projects under construction and in the pipeline, with a focus on the North-Eastern Region. The importance of Pumped Storage Projects for supporting renewable energy was also highlighted. The presentation further highlighted the key challenges such as difficult terrain, land acquisition and R&R issues, procedural timelines for clearances, and long project timelines.

5. The Ministry informed the Committee of the steps taken by the Government to support the sector. These included financial and policy support to ensure project viability, assistance for infrastructure as well as State participation, along with measures initiated to expedite approvals and reduce costs. The Ministry also highlighted efforts such as regular monitoring of projects, resolution of disputes, and enhanced coordination with State Governments. It was also emphasized that support from States is critical for land acquisition, clearances, and the smooth and time bound implementation of projects.

6. Thereafter, Members sought clarifications on key issues relating to the power sector such as major queries pertaining to future electricity demands and planning, issues in smart metering, consumer convenience, and the impact of global developments on the energy sector. Members also raised concerns regarding delays in land acquisition and clearances and inquired about specific steps taken to improve these processes. Further, queries were raised on environmental measures and the need for policy and legal changes to expedite project implementation.

7. The representatives of the Ministry responded to the issues raised by the Members. They informed that future power planning is being carried out in line with national targets and is regularly updated and all concerns regarding smart metering were noted for discussion with States. It was also stated that advance planning has been undertaken for transmission, and efforts are being made to resolve issues related to land, clearances, and other matters in coordination with State Governments. The Ministry highlighted ongoing efforts to support hydropower projects and noted that Pumped Storage Projects are expected to play an increasingly important role in meeting future energy need.

8. In conclusion, the Chairperson thanked the representatives of the Ministry of Power and directed that, in respect of points for which information was not readily available and where additional information was required to be furnished, written replies thereon may be submitted to the Committee Secretariat.

The Committee then adjourned.

COMMITTEE ON PUBLIC UNDERTAKINGS
(2026-27)

MINUTES OF THE THIRTEENTH SITTING OF THE COMMITTEE

The Committee sat on Friday, the 3rd August, 2026 from 1600 hrs. to 1630 hrs. in Committee Room No. 'C', Ground Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Baijayant Panda - **Chairperson**

MEMBERS

LOK SABHA

2. Shri Tariq Anwar
3. Shri Kaushalendra Kumar
4. Shri Shankar Lalwani
5. Smt. Poonamben Hematbhai Maadam
6. Shri B.Y. Raghavendra
7. Shri Rajeev Rai
8. Shri Mukesh Rajput
9. Shri Pratap Chandra Sarangi
10. Shri Kodikunnil Suresh
11. Shri Prabhakar Reddy Vemireddy

RAJYA SABHA

12. Dr. John Brittas
13. Dr. Syed Naseer Hussain
14. Shri Sanjay Kumar Jha

SECRETARIAT

1. Smt. Mriganka Achal - Director
2. Shri Tenzin Gyaltsen - Deputy Secretary
3. Shri Dhruv - Under Secretary

2. The Hon'ble Chairperson briefly apprised the Members on the six draft Reports. The Committee then considered and adopted the following draft reports, without any changes/modifications: -

- (i) Comprehensive Examination of “NHPC Limited (NHPC)”;
- (ii) Horizontal Examination of “Review of Performance of Insurance Sector CPSUs”;
- (iii) Action Taken Report on the Observations/Recommendations contained in the Fourteenth Report (18th Lok Sabha) on “Bharat Sanchar Nigam Limited (BSNL) setting up of 25,000 Wi-Fi Hotspots in BSNL Rural Telephone Exchanges [Based on C&AG Audit Para No. 4.2 of Report No. 16 of 2023]”;
- (iv) Action Taken Report on the Observations/Recommendations contained in the Nineteenth Report (18th Lok Sabha) on “Rural Electrification Corporation Limited (REC Ltd)”;
- (v) Action Taken Report based on the Observations/Recommendations contained in the Twentieth Report (18th Lok Sabha) on “Nuclear Power Corporation of India Limited (NPCIL)”;
- (vi) Action Taken Report based on the Observations/Recommendations contained in the Twenty-First Report (18th Lok Sabha) on “Review of Performance of Petroleum & Natural Gas Sector CPSUs”.

3. The Committee authorized the Chairperson to finalize the draft Reports on the basis of factual verification as suggested by the concerned CPSUs/Ministry/Department/C&AG and presentation of the Reports to Parliament soon.

(The Committee took another agenda for the day)

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