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एनएचपीसी
NHPC

SUSTAINABILITY REPORT

Hydropower for Sustainability

2021 - 2022

NHPC Limited
(A Government of India Enterprise)

Sustainability Report 2021-2022

Hydropower for Sustainability

Evaluation of Performance of NHPC Limited on Environment, Social and Governance (ESG) criteria for FY 2021-22

NHPC Limited
(A Government of India Enterprise)

NHPC Office Complex, Sector 33,
Faridabad, Haryana 121003
February 2024

BOARD OF DIRECTORS

Shri Rajeev Kumar Vishnoi
Chairman and Managing Director

Shri Rajendra Prasad Goyal
Director (Finance)

Shri Uttam Lal
Director (Personnel)

Shri Raj Kumar Chaudhary
Director (Technical)
Additional Charge-Director (Projects)

Shri Mohammad Afzal
Government
Nominee Director

Dr. Uday Sakharam Nirgudkar
Independent Diretor

Prof. (Dr.) Amit Kansal
Independent Director

Prof. (Dr.) Rashmi Sharma Rawal
Independent Director

Shri Jiji Joseph
Independent Director

Shri Premkumar Goverthanan
Independent Director

Source: NHPC website as on January 31. 2024

ABOUT THE REPORT

NHPC Limited has prepared its first Sustainability Report (FY 2021-2022) on a standalone basis covering 22 power generating stations (including Hydropower (20), Solar Power (1) in Tamil Nadu, and Wind Power (1) in Rajasthan), two under-construction Hydropower Projects (Subansiri Lower and Parbati-II), five Regional Offices and Corporate Office. The scope of this report does not cover the subsidiaries, joint ventures, or their respective operations.

The report is prepared on voluntary basis to showcase NHPC's performance on the Environmental, Social and Governance (ESG) Criteria for the fiscal year ending March 31, 2022. The report's scope includes all its business operations and activities that generate value for the stakeholders in the short, medium, and long term. The report summarises the management strategy and progress on key sustainability initiatives and the approaches to mitigate risks while promoting transparency, accountability & integrity for an informed engagement with all stakeholders.

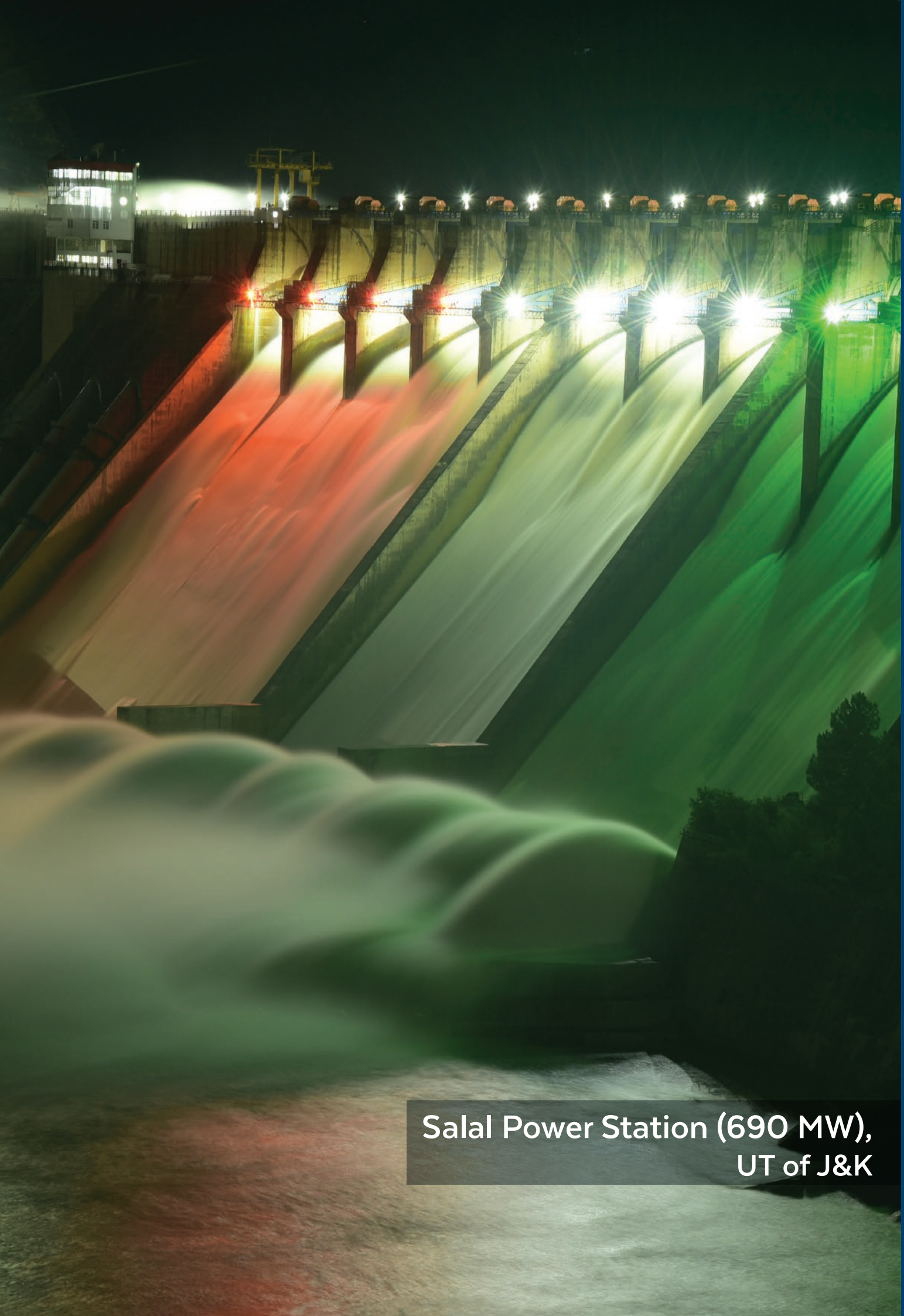
Over the past decade, there has been a significant evolution in disclosure requirements across worldwide. NHPC is committed to integrate ESG responsibilities in the current business landscape and disclose these aspects transparently and comprehensively to stakeholders for a holistic view of its sustainability efforts, fostering trust and accountability in their operations.

NHPC has consistently adhered to exemplary environmental sustainability practices since its establishment. This report aims to highlight the company's ESG initiatives with reference to Global Reporting Initiative (GRI) Standards 2021, which serve as a comprehensive framework for sustainability reporting worldwide. This first Sustainability Report with theme "Hydropower for Sustainability" aims to foster a more sustainable and accountable relationship with the stakeholders.

The report includes disclosures on NHPC's main non-financial attributes to communicate its performance to stakeholders while providing insight into its governance, strategy, and prospects. The report intertwines the ESG goals and targets of NHPC with the UN Sustainable Development Goals (SDG). Processes and activities of vendors, suppliers, contractors, and subcontractors are not considered for this Sustainability Report.

Environment & Diversity Management Division of NHPC has prepared the First Sustainability Report FY 2021-22. For any feedback or queries about this report, please write to:

Environment & Diversity Management Division, NHPC Office Complex, Sector-33, Faridabad - 121003 (Haryana). Email: envdivmgn-co@nhpc.nic.in.



Salal Power Station (690 MW),
UT of J&K

FROM CHAIRMAN'S DESK

Shri Rajeev Kumar Vishnoi
Chairman and
Managing Director,
NHPC Limited

IN THE FACE OF GLOBAL ENVIRONMENTAL CHALLENGES, NHPC HAS EMBRACED SUSTAINABILITY AS A CHOICE AND RESPONSIBILITY. NHPC HAS CONSISTENTLY STRIVEN TO BE AT THE FOREFRONT OF INNOVATION IN THE ENERGY SECTOR. OUR HYDROELECTRIC POWER PROJECTS ARE A TESTAMENT TO OUR TECHNICAL PROCESS AND OUR COMMITMENT TO CONSERVE THE ECOLOGICAL BALANCE.

Dear Stakeholders,

I am delighted to present NHPC's inaugural Sustainability Report, a significant milestone in our journey towards responsible and sustainable business practices. As the Chairman of NHPC, I am honoured to share the progress and initiatives that reflect our commitment to environmental stewardship, social responsibility, good governance, and economic growth. This Sustainability Report is an essential milestone for NHPC, as it encapsulates our journey, experiences, and progress in a structured and comprehensible manner. It provides insight into our environmental, social, and economic performance over the past years. The report is prepared with reference to the Global Reporting Initiative (GRI) sustainability reporting standards, which have been followed and practiced worldwide. It showcases a broad spectrum of sustainability initiatives that NHPC has undertaken. By sharing our achievements, challenges, and goals, NHPC hopes to foster a greater sense of trust and collaboration with all its stakeholders.

The financial year 2021-22 began with the second wave of the COVID-19 pandemic causing uncertainty and challenges for NHPC. Amidst the pandemic, NHPC demonstrated resilience and adaptability to run its power stations efficiently and supported local communities and society at large while prioritizing employee health and safety measures. During 2021-22, despite the challenges, the company achieved the highest annual Plant Availability Factor (PAF) and second-highest annual generation ever.

In the face of global environmental challenges, NHPC has embraced sustainability as a choice and responsibility. NHPC has consistently striven to be at the forefront of innovation in the energy sector. Our hydroelectric power projects are a testament to our technical process and our commitment to conserve the ecological balance. NHPC is harnessing the economically exploitable available hydro

potential to provide clean, sustainable, reliable energy to millions, all the while minimizing our carbon footprint. NHPC's mission is to create a harmonious coexistence between environmental preservation and community development. NHPC prioritizes environmental responsibility through impact assessments, afforestation, and biodiversity preservation, all aimed at safeguarding local ecosystems.

Concurrently, it actively supports, and uplifts communities impacted by our projects through resettlement, healthcare, education, skill development, and infrastructure development. Our commitment to Corporate Social Responsibility and ongoing Research and Development initiatives underscores our dedication to sustainable energy generation and environmental stewardship.

NHPC is committed to sustainability in its operations and decision-making processes, offering clean energy solutions and focusing on climate action and environmental protection. It aligns with national and international standards, including the Paris Agreement's Nationally Determined Contributions (NDCs) and the Hon'ble Prime Minister's vision of 'LiFE', 'Lifestyle for Environment', to combat climate change. As we present our first Sustainability Report, we also acknowledge that this is the beginning of a journey towards a more sustainable and responsible future. We understand that the challenges ahead are formidable, but we are equally committed to overcoming them with innovation, determination, and a sense of shared responsibility.

I want to extend my most profound appreciation to the dedicated team of our Environment & Diversity Management Division, who have worked tirelessly to bring this report to realization. I also acknowledge the collective efforts of Projects, Power Stations, and Corporate Office team, without which our sustainability initiatives would not have achieved the current success.

As a Chairman of NHPC, I am proud to say that we are not merely a power generator but a catalyst for change, a partner in progress. We look forward to build on our successes, addressing the challenges, and fostering greater collaboration with our valued stakeholders, including employees, partners, customers, and the communities in which we operate. Together, we will continue to work towards a brighter, greener, and more sustainable future.

Rajeev Kumar Vishnoi
Chairman and Managing Director, NHPC Limited

Message from Director (Finance)

Shri Rajendra Prasad Goyal
Director (Finance),
NHPC Limited

The release of the 1st Sustainability Report FY 2021-22 of NHPC Limited showcases our accomplishments and commitment to the sustainability of business operations by embracing Environmental, Social and Governance (ESG) framework. Despite the challenges posed by the pandemic, NHPC's power stations have achieved an impressive financial progress of cumulative generation of 24,855 MUs in FY 2021-22.

Additionally, NHPC has remained committed to the wellbeing of its employees and extending vital aid and support to the local communities. The Corporate Social Responsibility (CSR) initiatives during 2021-22 amounted to INR 105.29 crore, showcasing our commitment to address pressing societal needs.

Our commitment and efforts towards sustainability will benefit the environment, society, and economy and create a more resilient future for our nation.

Rajendra Prasad Goyal
Director (Finance), NHPC Limited

Message from Director (Personnel)

Our Sustainability Report, FY 2021-22, proudly highlights the tangible progress we made in fortifying our power generation capabilities, nurturing the well-being of our employees and communities, and embodying the essence of environmental stewardship.

We are filled with immense pride in our exceptional team of highly talented and committed experts. The skills, creativity, and dedication of our workforce hold immeasurable value. These remarkable qualities undoubtedly drive our relentless pursuit of achieving audacious goals and targets of company. Our recruitment process follows a comprehensive approach to attracting the finest talent and guaranteeing that NHPC remains competitive, innovative, and adaptable in an ever-changing industry and sustainability landscape. The paramount focus has been on the well-being and safety of our workforce while ensuring the flawless operation of our facilities to ensure the unwavering provision of sustainable energy to our beneficiaries.

It fills us with immense pride to declare that our esteemed team members whole heartedly propel progress within our efforts and bestow a beneficial influence upon our businesses, communities, environment, and stakeholders. As part of this commitment, we embark on a continuous voyage to significantly impact every aspect of our sustainability efforts.

Shri Uttam Lal
Director (Personnel),
NHPC Limited

Uttam Lal
Director (Personnel), NHPC Limited

Message from Director (Technical/Projects)

Shri Raj Kumar Chaudhary
Director (Technical/Projects),
NHPC Limited

NHPC Limited, an innovator in conceptualizing, implementing, operating, and maintaining hydroelectricity infrastructure in India has embarked on a journey towards sustainability reporting. It gives me immense pleasure to share NHPC Limited's first Sustainability Report, which covers operations from 2021 to 2022.

Although, we at NHPC remain consistent in fostering exemplary practices in strengthening our portfolio within the renewable energy sector, all the while, our commitment to safeguarding the environment and integrating ESG values into every aspect of our operations has been uncompromising.

I am confident that NHPC will persistently uphold sustainability as the utmost priority in all its policies, plans, and practices. Finally, rest assured that NHPC is fully dedicated to constructing the sustainable power-generating infrastructure that fulfils the requirements of our esteemed citizens, all the while safeguarding the precious resources that are part of the planet, we all share.

We would also like to extend special recognition to our Environment & Diversity Management Division for their tireless efforts in bringing this report to fruition.

Raj Kumar Chaudhary
Director (Technical/Projects), NHPC Limited

Chamera-1 Power Station (540 MW),
Himachal Pradesh

Message from Executive Director (EDM/Planning)

Shri Sanjay Darbari
Executive Director (EDM/Planning), NHPC Limited

I am delighted to present the inaugural Sustainability Report (FY 2021-22) of NHPC.

Corporate Environment and Diversity Management (EDM) Division expresses its sincere thanks and gratitude to CMD, NHPC, Director (Finance), Director (Projects), Director (Personnel), and Director (Technical) for their kind support, motivation and guidance extended from time to time in formulation of the inaugural Sustainability Report of NHPC.

The inaugural Sustainability Report of NHPC Limited is a momentous achievement that underscores our dedication to sustainability, transparency, and responsible corporate practices. It signifies our collective vision for a better and more responsible future. The report provides a structured overview of our environmental stewardship, social responsibility, and economic growth over the past year.

NHPC has been implementing innovative ideas, adopting digital technologies, optimising processes, increasing operating efficiency, improving energy efficiency, and implementing environment protection measures in its overall business practices. As we progress, let this accomplishment remind us of our ongoing responsibility to monitor, improve, and communicate our ESG performance. Together, we will continue positively impacting our environment, society, and governance practices and stay at the forefront in corporate excellence.

I am also delighted to share my deep appreciation for the outstanding effort and commitment displayed by NHPC's entire team (including Power Stations, Project sites, Regional Offices, and Corporate Office) in preparing our organisation's inaugural Sustainability Report. The tireless efforts of Dr. Avinash Kumar GM (Env), Sh. Manoj Kumar Singh SM (Env) and Ms. Pooja Sundi, DM (Env) of EDM Division and Sh. Nitin Agarwal, DGM (Civil) and Ms. Arpita Prakash, Manager (Civil) of Planning Division deserve special mention.

I look forward to sharing our Inaugural Sustainability Report with our stakeholders.

Sanjay Darbari
Executive Director (EDM/Planning), NHPC Limited

Message from General Manager (Environment)

Dr Avinash Kumar
General Manager
(Environment)
NHPC Limited

NHPC Limited is continuously moving ahead onto the path of sustainability of its business operation since inception. The concept of sustainable development is ingrained in the 'Vision and Mission' statement of NHPC Limited. Responding to the growing concerns regarding ESG disclosures, NHPC has proactively embarked on a journey to disclose the ESG performance of company for the awareness of its wide stakeholders particularly potential investors. It gives me immense pride and pleasure to share our 1st Sustainability Report which underscores the dedication of company towards environmental stewardship, social responsibility, good governance, and persistence in achieving economic growth. It also signifies our holistic vision for a better and more responsible future.

As we are aware that ESG framework is evolving gradually both in India and other countries, therefore companies will have to streamline the ESG readiness processes in the form of efficient data acquisition tool, formulation of Policies, Plans, capacity building of employees, adoption of 'Mission LiFE (Lifestyle for Environment)' and adequate budget provision for implementation of policies in time bound manners. Thus, collectively, the outcome of ESG readiness will be fruitful for the sustainable development in long run vis-à-vis achieving UN Sustainable Development Goals.

I am delighted to apprise that the NHPC is already on the path of streamlining of its ESG journey to deliver outstanding performance ahead. In this continuous process, I convey my heartfelt appreciation to the entire team of NHPC (Power Stations, Projects, Regional Offices, and Corporate Office) for their valuable inputs submitted to Environment & Diversity Management Division for preparation of 1st Sustainability Report for FY 2021-22. NHPC acknowledges the consultancy support of Deloitte TTILLP in developing this report.

I look forward to continuing this journey of sustainability reporting with more efficient and transparent manner.

Dr Avinash Kumar
General Manager (Environment), NHPC Limited

NHPC ESG HIGHLIGHT (STANDALONE) FY 2021-2022

NHPC ESG Highlights
(Standalone) FY 2021-22

Economic Performance

Total Capacity(MW)	5551.2
Operational Power station	22
Power Plants	Hydropower (20), Wind (1), Solar (1)
Total Income	INR 9379.98 Crores
Net Worth	INR 33,486.10 Crores
Profit After Tax (PAT)	INR 3,537.71 crores
Annual Generation	24,855 million Units
Plant Availability factor (PAF)	88.19%

Protecting Our Natural Environment

% of Renewable Energy of total energy consumption for operations	26%
% Increase in RE Consumption	65%
Total emissions saved for use of solar energy	2651 MT CO_2 equivalent
Biodiversity Conservation	Integrated in EMP of Projects/ Power Stations
MSMEs Procurement % of total procurement value	44%
Environmental norms	Complied

Employee Wellbeing

Total No. of Permanent Workforce (including directors)	5,092
% of differently abled employees	2.24%
Workforce from under privileged communities	22.12%
Average hours of training	19.4
Retention Rate of employees availed paternal leave	100%
Employee Grievances Resolved	83%
Recordable Work-Related Injuries Rate	0.21
Human Rights aspects	Complied

Positive Impact on Social Well-Being

CSR beneficiaries	42,96,896
CSR Spent	INR 105.29 crores
Key focus areas	Education and Skill development, Health and Sanitation, Rural Development
CSR projects undertaken in designated aspirational districts	INR 18.37 crores
Contribution to PM CARES Fund	INR 30 crores

Governance

Expenditure incurred on Research and Development	INR 10.07 crores
Public Grievances Resolved	96%
Operation Sites assessed for Risk related to Corruption	100%

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Abbreviations	Meaning
AEOHD	Association of Environmental & Occupational Health, Delhi
AGM	Annual General Meeting
AIMA	All India Management Association
APTEL	Appellate Tribunal for Electricity
AP	Arunachal Pradesh
BEE	Bureau of Energy Efficiency
BOD	Board of Directors
BRSR	Business Responsibility and Sustainability Reporting
BSE	Bombay Stock Exchange
BSUL	Bundelkhand Saur Urja Limited
CAIDI	Customer Average Interruption Duration Index
PM CARES	Prime Minister's Citizen Assistance and Relief in Emergency Situations
CBIP	Central Board of Irrigation & Power
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CERC	Central Electricity Regulatory Commission
CESL	Convergence Energy Services Limited
CFD	Computational Fluid Dynamics
CIGRE	International Council on Large Electric Systems
CMD	Chairman and Managing Director
COP	Conference of the Parties
CTE	Consent to Establish
CTO	Consent to Operate
CPCB	Central Pollution Control Board
CPP	Central Public Procurement
CPSE	Central Public Sector Enterprises
CPSU	Central Public Sector Undertaking
CSR	Corporate Social Responsibility
CVC	Central Vigilance Commission
CVPPPL	Chenab Valley Power Projects [P] Limited

LIST OF ABBREVIATIONS

Abbreviations	Meaning
DCP	Dry Chemical Powder
DELNET	Developing Library Network
DG	Diesel Generator
DISCOM	Distribution Company
DMP	Disaster Management Plan
DPE	Department of Public Enterprises
DPR	Detailed Project Report
DSCI	Data Security Council of India
EAP	Emergency Action Plan
EC	Environment Clearance
ECA	Export Credit Agencies
EDCSS	Employees Defined Contribution Superannuation Scheme
EDLI	Employee's Deposit Linked Insurance Scheme
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessments
EMC	Environment Monitoring Committee
EMP	Environmental Management Plans
ERM	Enterprise Risk Management
ESG	Environment, Social and Governance
EU	European Union
FPP	Fire Protection Program
FY	Financial Year
GEDCOL	Green Energy Development Corporation of Odisha Ltd.
GeM	Government e Marketplace
GHG	Green House Gases
GHNP	Great Himalayan National Park
GIS	Geographic Information System
GoI	Government of India
GRAT	GHG Risk assessment tool
GRI	Global Reporting Initiative
GRIHA	Green Rating for Integrated Habitat Assessment

LIST OF ABBREVIATIONS

Abbreviations	Meaning
GW	Gigawatt
HazCom	Hazard Communication
HBA	House Building Advance
HEP	Hydroelectric Project
HH	Hearing Handicap
HIRA	Hazard Identification and Risk Assessment
HOD	Head of Department
HOP	Head of Project
HP	Himachal Pradesh
HR	Human Resources
HT	High-tension
HVAC	Heating, Ventilation, and Air Conditioning
ICAI	Institute of Chartered Accountants of India
ICB	International Competitive Bidding
ICSI	Institute of Company Secretaries of India
IEM	Independent External Monitors
IF-EU	Infrastructure - Electric Utilities & Power Generators
IHA	International Hydropower Association
IICA	Indian Institute of Corporate Affair
IIT	Indian Institute of Technology
ILO	International Labour Organization
ILR	Ice Lined Refrigerators
IMS	Integrated Management System
INCOLD	Committee for International Commission on Large Dams,
INHA	Indian National Hydropower Association
INR	Indian Rupee
IPCC	Intergovernmental Panel on Climate Change
IPO	Initial Public Offering
IREDA	Indian Renewable Energy Development Authority
ISEG	Indian Society of Engineering Geology
ISMS	Information Security Management System

LIST OF ABBREVIATIONS

Abbreviations	Meaning
ISO	International Organization for Standardization
ISRM	International Society for Rock Mechanics
ISWM	Integrated Solid Waste Management
IUCN	International Union for Conservation of Nature
J&K	Union Territory of Jammu and Kashmir
JKSPDCL	Jammu & Kashmir State Power Development Corporation Limited
JSA	Job Safety Analysis
JV	Joint Venture
KL	Kilo Litres
KV	Kilovolt
KVA	Kilovolt-Ampere
KWH	Kilowatt Hour
KWP	Kilowatt Peak
LED	Light-emitting Diode
LODR	Listing Obligations and Disclosure Requirements
LPM	Liters per Minute
LRAM	Lost Revenue Adjustment Mechanism
LT	Low Tension
LTHPL	Lanco Teesta Hydro Power Pvt Ltd.
MASW	Multichannel Analysis of Surface Waves
MCA	Ministry of Corporate Affairs
MOEF&CC	Ministry of Environment, Forest and Climate Change
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
MSW	Municipal Solid Waste
MT	Metric Tonnes
$MTCO_2e$	Metric Tonnes of Carbon Dioxide Equivalent
MU	Million Units
MVA	Motor Vehicle Advance
MW	Mega Watt
NDC	Nationally Determined Contributions

LIST OF ABBREVIATIONS

Abbreviations	Meaning
NGO	Non-governmental Organization
NIPM	National Institute of Personnel Management
NIT	National Institute of Technology
NMFR	Near Miss Frequency Rate
NRC	Nuclear Regulatory Commission
NSDC	National Skill Development Corporation
NSE	National Stock Exchange
OBC	Other Backward Classes
ODS	Ozone-depleting Substances
OEM	Original Equipment Manufacturer
OHSAS	Occupational Health and Safety Assessment Series
PAFs	Project Affected Families
PAF	Plant Availability Factor
PAT	Profit after Taxes
PCC	Portland Cement Concrete
PGCIL	Power Grid Corporation of India
PHE	Public Health Engineering
PPA	Power Purchase Agreements
PPE	Personal Protective Equipment
PS	Power Station
PSU	Public Sector Undertakings
PV	Photovoltaics
PVC	Polyvinyl Chloride
PWD	Persons With Disabilities
QSP	Quality System Procedure
RA & MA	Risk Assessment and Method Assessment
RCC	Roller-Compacted Concrete
REHS	Retired Employees Health Scheme
RFCTLARR	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act
RO	Regional Office
RPC	Regional Power Committees

LIST OF ABBREVIATIONS

Abbreviations	Meaning
SAFA	South Asian Federation of Accountants
SASB	Sustainable Accounting Standards Board
SC	Scheduled Castes
SCADA	Supervisory Control and Data Acquisition
SDG	Sustainable Development Goals
SEBI	Securities and Exchange Board of India
SERC	State Electricity Regulation Commission
SIA	Social Impact Assessment
SPCB	State Pollution Control Board
SRMTT	Society for Rock Mechanics and Tunnelling Technology
ST	Scheduled Tribes
STP	Sewage Treatment Plant
TAI	Tunneling Association of India
TBM	Tunnel Boring Machines
TEC	Techno-economic Clearance
TII	Transparency International India
TLD	Teesta Low Dam
TRIR	Total Recordable Incident Rate
UK	Uttarakhand
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UPPCL	Uttar Pradesh Power Corporation Limited
USA	United States of America
USD	United States Dollar
UT	Union Territory
VCS	Verified Carbon Standard
VCU	Verified Carbon Units
VGF	Viability Gap Funding
VH	Visual Handicap
VOC	Volatile Organic Compounds
WB	West Bengal
WIPS	Women in Public Sector Forum

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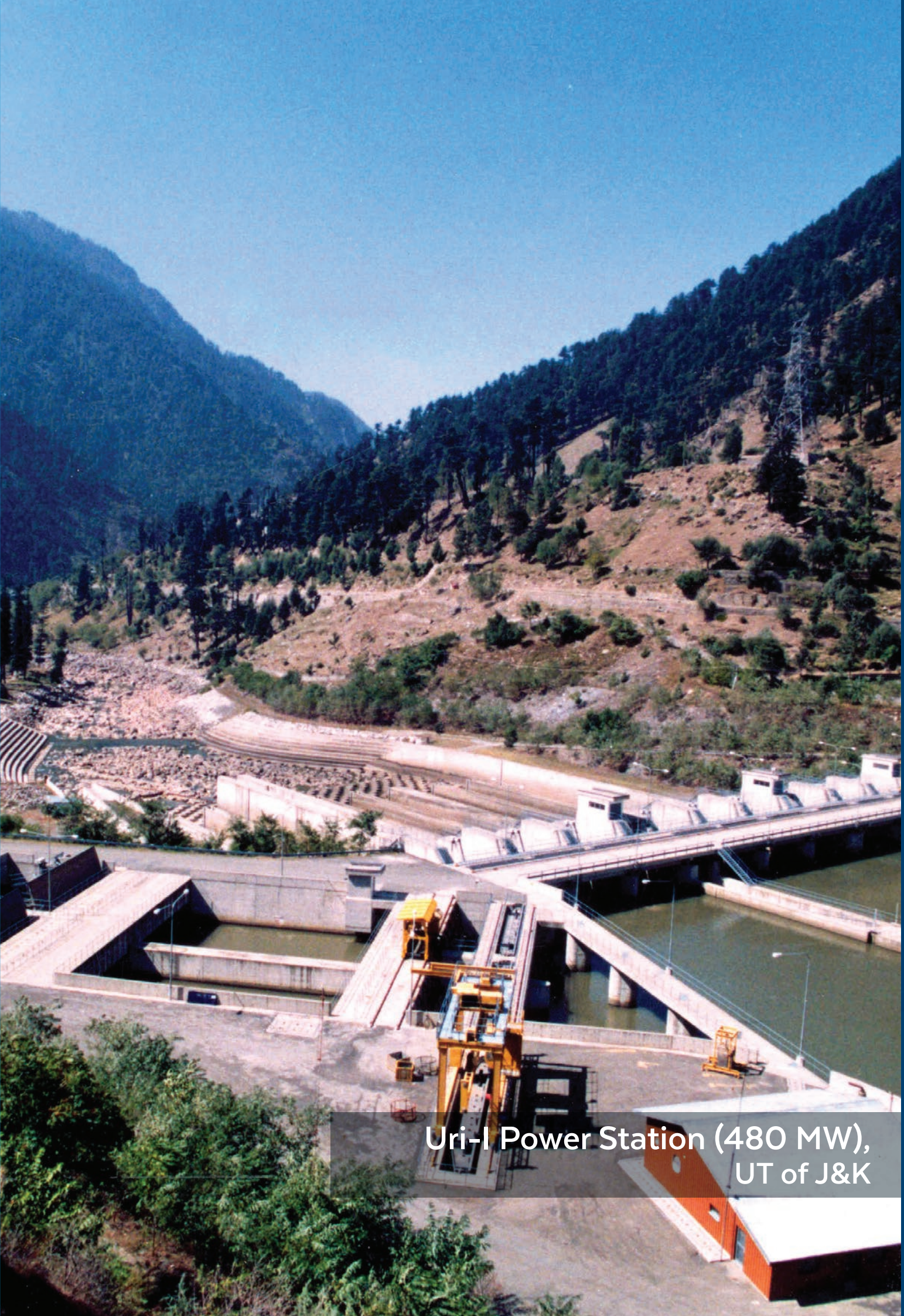
1. ABOUT NHPC LIMITED



Uri-I Power Station (480 MW),
UT of J&K

1. About NHPC Limited

NHPC Limited (Formerly known as National Hydroelectric Power Corporation Ltd.) was incorporated in 1975 under the Companies Act, 1956. The company is mandated to plan, promote and organize an integrated and efficient development of power in all its aspects through Conventional and Non-Conventional Sources in India and abroad. NHPC Limited is India's largest hydropower development organization, with capabilities to undertake all the activities from conceptualization to commissioning of hydropower projects. NHPC has also diversified in the field of solar and wind energy development. NHPC is a listed company on the NSE and BSE after successfully concluding its IPO in 2009. It has Corporate Office in Faridabad with a total employee base of company is 5092 as of 31stMarch, 2022 .

At present, NHPC is a Mini Ratna Category-I Enterprise of the Govt. of India and among the top ten companies in the country in terms of investment base with 70.95 % shareholding by the Govt. of India (as of 31st March, 2022). The Company has an authorised share capital of INR 15,000 Crores, paid-up share capital of INR 10,045.03 Crores and an investment base of over INR 70,300 Crores as of March 31, 2022.

Despite significant obstacles presented by the second wave of the COVID-19 pandemic, NHPC Power Stations demonstrated remarkable performance by attaining the second-highest annual generation of 24,855 million units (MUs) and the highest profit after tax (PAT) of INR 3,537.71 Crore on a standalone basis in the fiscal year 2021-22. This achievement represents a notable increase from the previous fiscal year's profit after tax of INR 3,233.37 Crore. During the fiscal year 2021-2022, the standalone total income and revenue from operations (net) amounted to INR 9,379.98 Crore and INR 8,353.80 Crore, respectively.

1.1. Major Highlights (FY 2021-22):

The Ministry of Power has conveyed the government investment sanction for the implementation of the Ratle HE Project at an amount of INR 5281.94 Crore with a joint venture of NHPC and Jammu & Kashmir State Power Development Corporation Limited (JKSPDCL). Hydroelectric projects in the Subansiri Basin (3800 MW) and projects of 2700 MW in the Siang Basin are proposed to be developed by NHPC.

NHPC bagged a 1000 MW solar power project at a viability gap funding (VGF) of INR 44.90 lakh per MW under the Central Public Sector Enterprises (CPSE) Scheme of the Indian Renewable Energy Development Authority (IREDA) on September 23, 2021. The Company has signed a Power Purchase Agreement (PPA) with Bundelkhand Saur Urja Limited (BSUL) and Uttar Pradesh Power Corporation Limited (UPPCL) for the Kalpi Solar Power Project.

NHPC signed a Promoters' Agreement with Green Energy Development Corporation of Odisha Ltd. (GEDCOL) on January 4, 2022, for "Development of 500 MW Floating Solar Projects on Different Water Bodies in Odisha," with NHPC's shareholding at 74%.

1.2. Commissioned Projects

NHPC has successfully developed and commissioned twenty-two hydroelectric projects (including two through its subsidiary company, i.e., NHDC Limited), one solar power project and one wind power project with an aggregate installed capacity of 7,071 MW.

Table 1.1: List of commissioned projects of NHPC.

Name of Power Stations	State/UT	Year of Commissining	Total Capacity (MW)	Design Energy (MU)
Baira Siul	Himachal Pradesh	1981	180	708.59
Loktak	Manipur	1983	105	448
Salal	UT of Jammu & Kashmir	1987	690	3082
Tanakpur	Uttarakhand	1992	94.2	452.19
Chamera - I	Himachal Pradesh	1994	540	1664.56
Uri - I	UT of Jammu & Kashmir	1997	480	2587.38
Rangit	Sikkim	2000	60	338.61
Chamera - II	Himachal Pradesh	2004	300	1499.89
Dhauliganga	Uttarakhand	2005-06	280	1134.69
Dulhasti	UT of Jammu & Kashmir	2006-07	390	1907
Teesta - V	Sikkim	2008	510	2573
Sewa - II	UT of Jammu & Kashmir	2010	120	533.53
Chamera-III	Himachal Pradesh	2012	231	1108.17
Teesta Low Dam - III	West Bengal	2013	132	594.07
Nimmo-Bazgo	UT of Ladakh	2013	45	239.33
Chutak	UT of Ladakh	2013	44	212.93
Parbati - III	Himachal Pradesh	2014	520	1963.29
Uri-II	UT of Jammu & Kashmir	2014	240	1123.77
Teesta Low Dam - IV	West Bengal	2016	160	717.717
Kishanganga	UT of Jammu & Kashmir	2018	330	1712.96
Hydropower Standalone			**5451.2**	**24601.68**
Wind Power	Rajasthan	2016	50	94.22
Solar Power	Tamil Nadu	2018	50	105.95
NHPC (Standalone)			**5551.2**	**24801.85**
Joint Ventures				
Indira Sagar (JV)	Madhya Pradesh	2005	1000	1980
Omkareshwar (JV)	Madhya Pradesh	2007	520	1166
NHPC (Total)			**7071.2**	**27947.85**

1.3. Hydropower Projects under Construction

In FY 2021-22, NHPC is engaged in the construction of 08 Hydropower Projects of 6434 MW Capacity (including JV & Subsidiaries). The detail is given in table below:

Table 1.2: List of projects of NHPC under construction.

S. No.	State/ UT	Project	Installed Capacity (MW)
(A) Standalone Basis			
1	Himachal Pradesh	Parbati-II HE Project	800
2	Arunachal Pradesh and Assam	Subansiri Lower HE Project	2000
Sub-total (A)			**2800**
(B) Through Subsidiaries/Joint Ventures			
3	Sikkim	Teesta Stage-VI HE Project under Lanco Teesta Hydro Power Limited (LTHPL) (A wholly owned subsidiary of NHPC)	500
4		Rangit-IV HE Project under Jalpower Corporation Limited (JPCL) (A wholly owned subsidiary of NHPC)	120
5	UT of Jammu and Kashmir	Pakal Dul HE Project under CVPPPL (A Joint Venture with JKSPDC)	1000
6		Kiru HE Project under CVPPPL	624
7		Kwar HE Project under CVPPPL	540
8		Ratle HE Project under Ratle Hydroelectric Power Corporation Limited (RHPCL) (A Joint Venture with JKSPDCL)	850
Sub-total (B)			**3634**
Total (A+B)			**6434**

(Source: Annual Report FY 2021-22, NHPC)

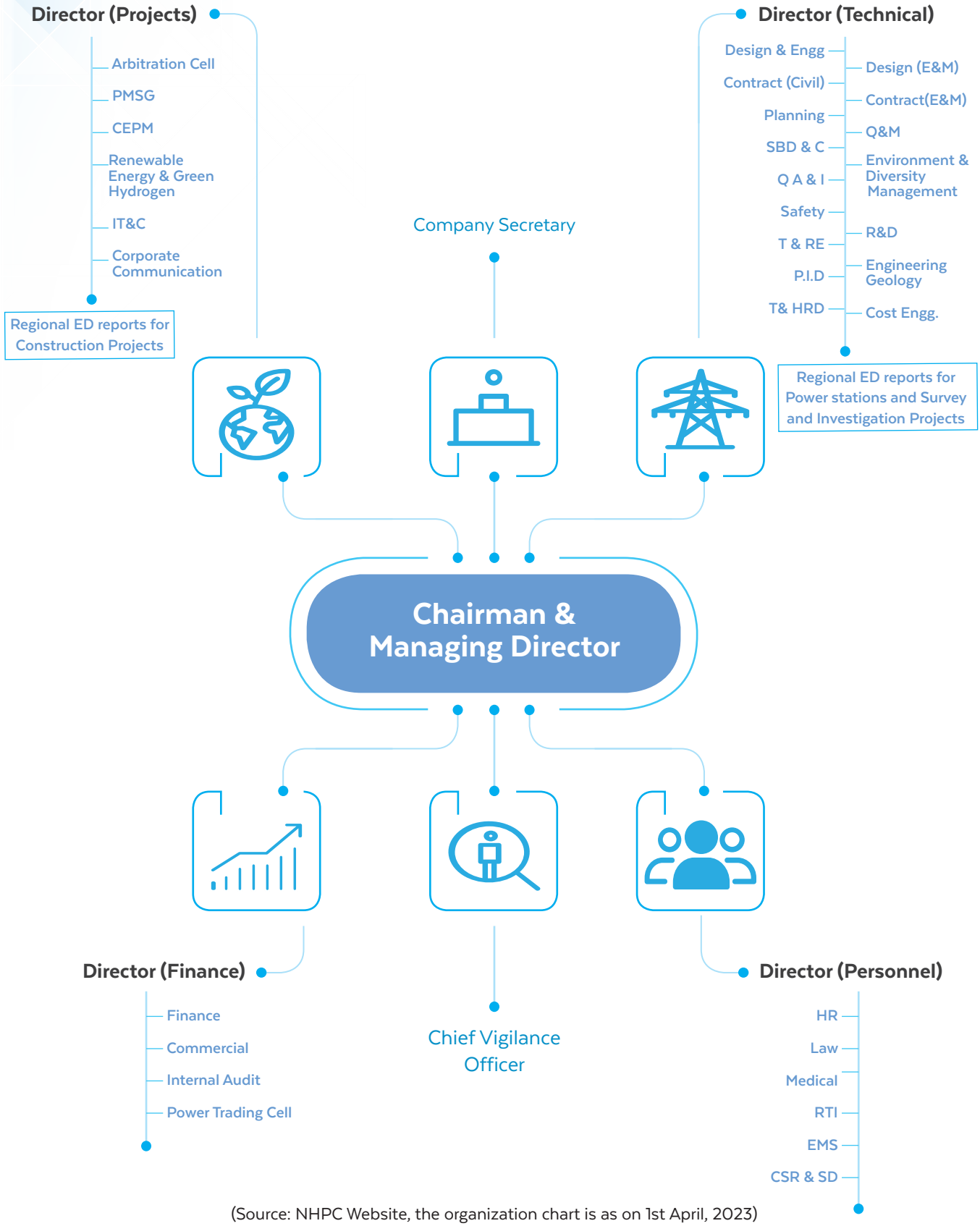
1.4. Hydropower Projects under Clearance/Approval

The status of hydropower projects including of subsidiaries/joint ventures under various stages of clearance/approval (as on March 31, 2022) are given in table below:

S. No.	State/ UT	Project	Installed Capacity (MW)
Standalone Basis			
1	Arunachal Pradesh	Dibang	2880
2	Jammu & Kashmir	Sawalkot	1856
3	Himachal Pradesh	Dugar	500
4	Sikkim	Teesta-IV	520
Sub-total (A)			**5756**
Through Subsidiaries/ Joint Ventures			
5	Jammu & Kashmir	Kirthai-II through Chenab Valley Power Projects Private Limited (A Joint Venture with JKSPDCL)	930
6	Manipur	Loktak Downstream H.E. Project through Loktak Downstream Hydroelectric Corporation Limited (A Joint Venture with Govt. of Manipur)	66
Sub-total (B)			**966**
Total (A+B)			**6752**

(Source: Annual Report FY 2021-22, NHPC)

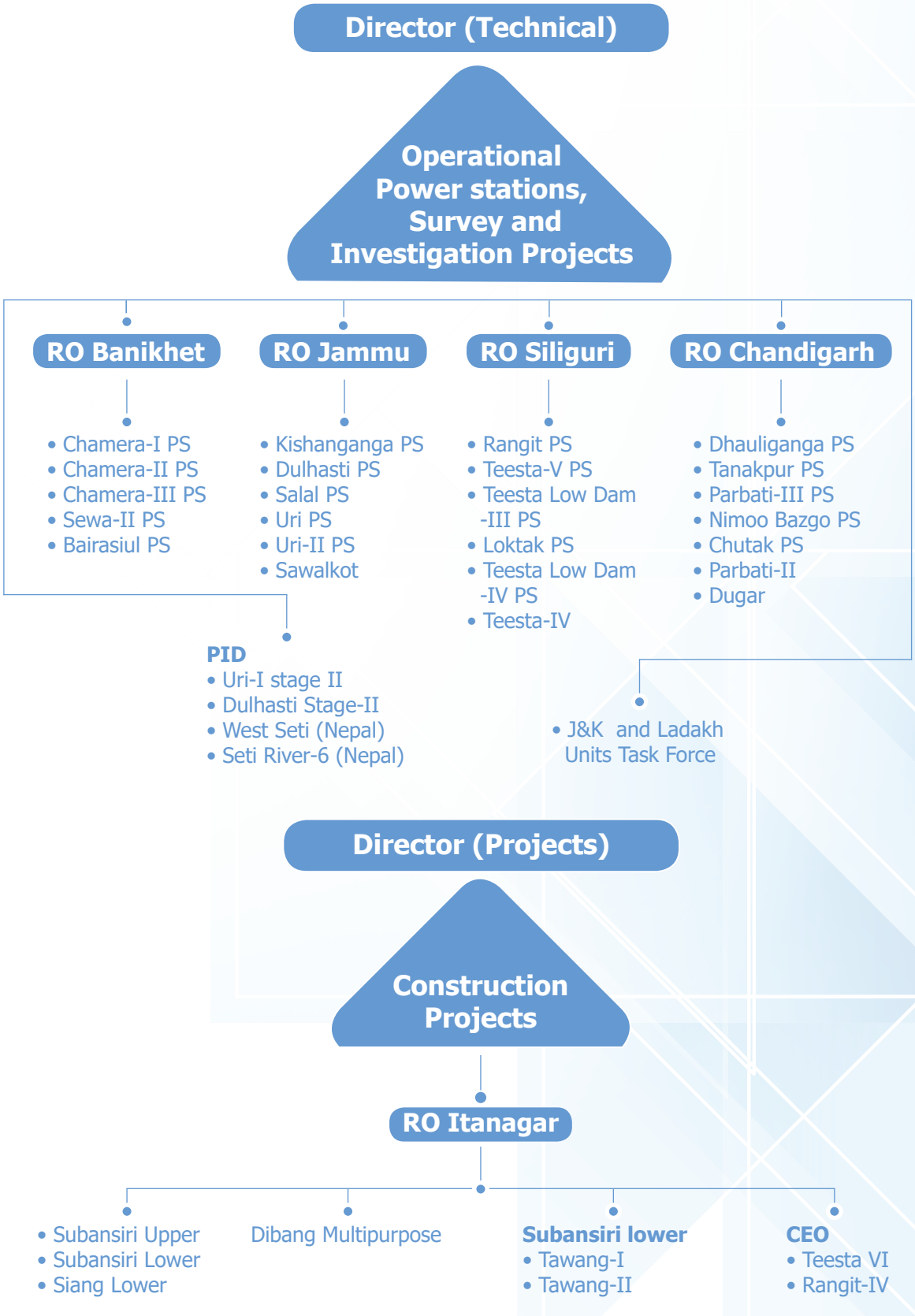
1.5. NHPC Organization Structure



(Source: NHPC Website, the organization chart is as on 1st April, 2023)

Organization Structure

(Survey and Investigation project, under construction projects and power stations)

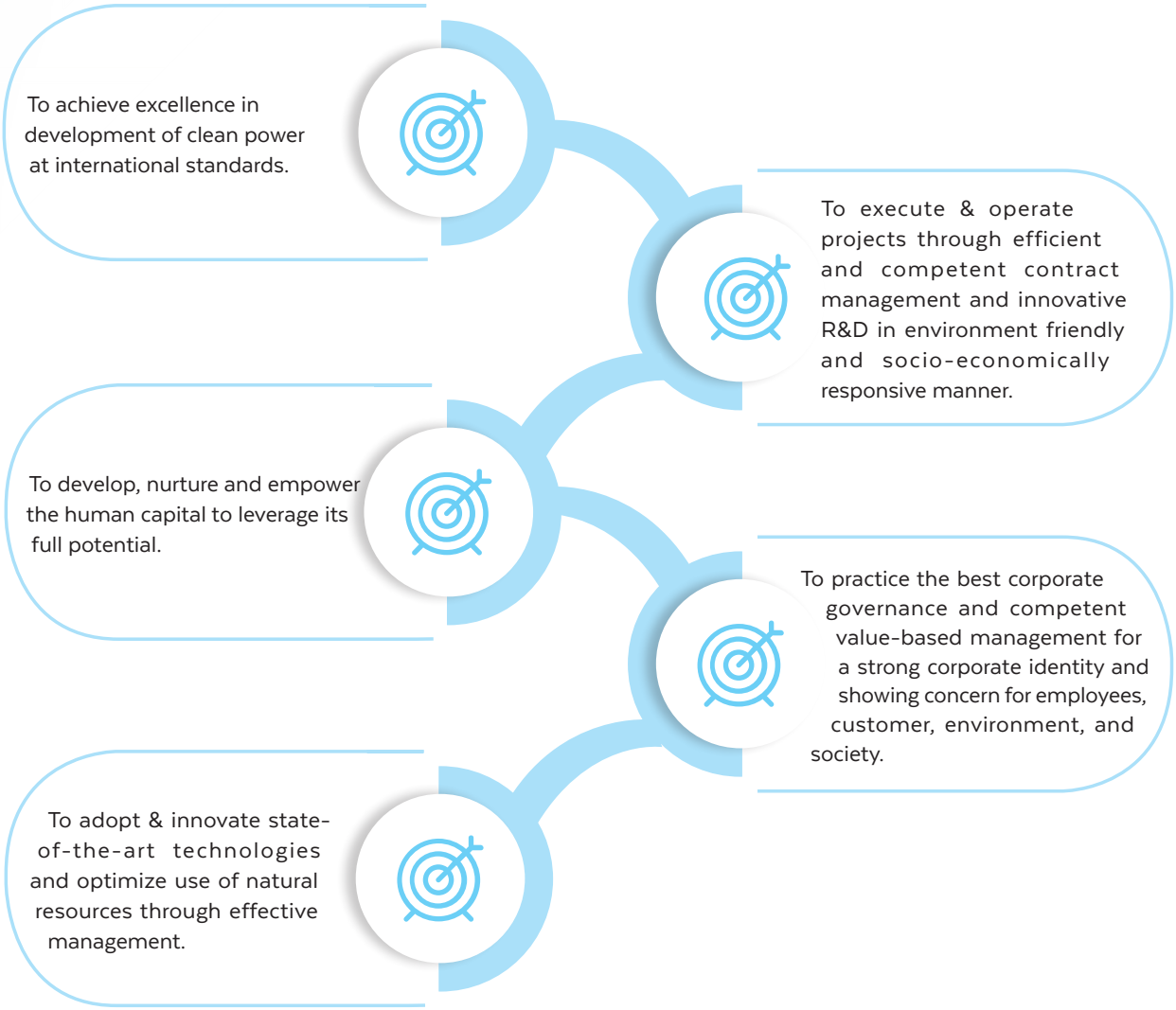


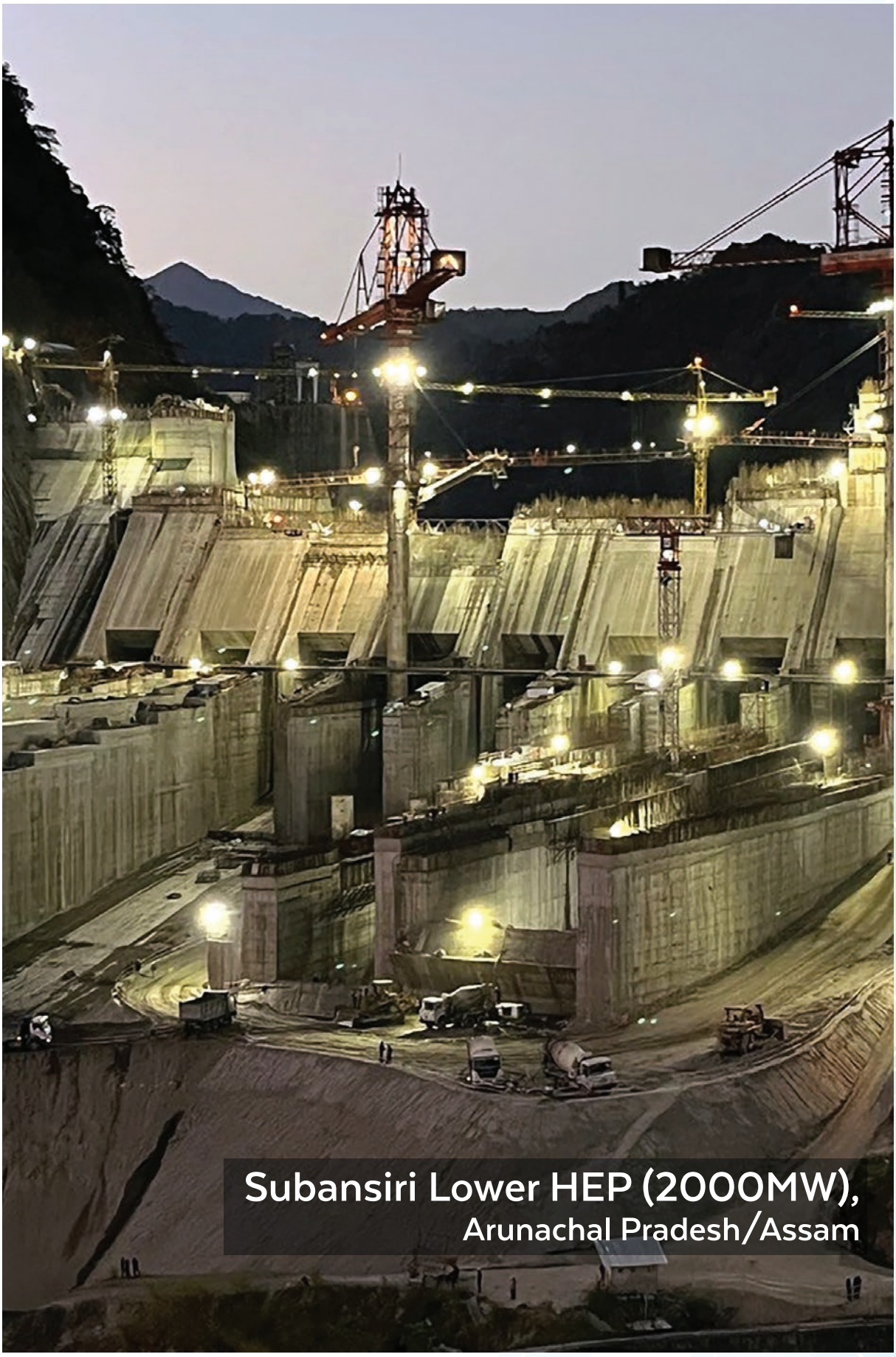
1.6. NHPC Vision & Mission Statements

Vision

To be a global leading organization for sustainable development of clean power through competent, responsible, and innovative values.

Mission





Subansiri Lower HEP (2000MW),
Arunachal Pradesh/Assam

2. ECONOMIC VALUE CREATION

Wind Power Project (50 MW),
Rajasthan

2. Economic Value Creation

Electricity is one of the most critical components for a country's infrastructure development, affecting the economic growth and well-being of the people. The power sector is a crucial enabler of India's economic growth. India is endowed with an enormous hydropower potential and ranks amongst the top countries worldwide for possessing feasible hydropower capacity, much of which still needs to be utilised. The hydropower potential in terms of installed capacity is estimated at 1,33,410 MW (as per the Reassessment Study 2017-23) and consists of hydroelectric schemes with installed capacity above 25 MW.

2.1. NHPC Physical Performance

In 2021-2022, a total of 24,494 MUs of electricity (excluding infirm power of 361 MUs generated by Parbati-II HE Project during FY 2021-22) was generated from installed capacity of 5,551 MW as against 24,235 MUs (excluding infirm power of 236 MUs generated by Parbati-II HE Project during FY 2020-21) from installed capacity of 5,551MW in Fiscal 2021. Accordingly, there was an increase of 1.07% in the number of units generated. Total electricity generated includes Wind and Solar Power, contributing 76 MU and 89 MU, respectively. NHPC achieved the highest-ever overall PAF of 88.19% during FY 2021-22 as against 84.87% PAF of the previous year.

2.2. NHPC Economic Performance

NHPC has a paid-up share capital of INR 10,045.03 Crore and an investment base of over INR 70,300 Crore as of March 31, 2022. NHPC has a credit rating of 'AAA' with a stable outlook assigned by domestic credit rating agencies for its listed bonds. The company's solid financial position makes it competent enough to execute capital intensive large hydroelectric projects.

NHPC earned the highest-ever Profit After Tax (PAT) of INR 3,537.71 Crore on a standalone basis in the FY 2021-22 compared to INR 3,233.37 Crore in the previous FY. The consolidated net profit rose to INR 3,774.33 Crore in FY 2021-22 from INR 3,582.13 Crore in last FY. Total income and revenue from operations (net) on a standalone basis were INR 9,379.98 Crores and INR 8,353.80 Crores, respectively, during the FY 2021-22.

Total comprehensive and other comprehensive income for FY 2021-22 were INR 3,550.47 Crore and INR 12.76 Crore, respectively. Despite enormous challenges posed by 2nd wave of the COVID-19 pandemic, NHPC Power Stations achieved second highest ever annual generation of 24,855 million Units (MUs) during FY 2021-22. Further, NHPC Power Stations recorded the highest annual Plant Availability Factor (PAF) of 88.19%.

Table 2.1: Economic Snapshot of NHPC (INR in Crore).

	2017-18	2018-19	2019-20	2020-21	2021-22
Sales of Power	6,177.90	7,138.24	7,430.81	7,010.44	7,451.55
Income from Finance Lease	213.57	208.28	203.65	371.62	344.95
Income from Operating Lease	477.17	748.61	666.57	712.00	384.07
Revenue from Contracts, Project Management and Consultancy Works	63.25	23.85	27.88	38.52	46.16
Revenue from Power - Trading	0.00	12.96	239.47	216.48	44.85
Other Operating Income	2.14	29.24	167.03	157.52	82.22
Revenue from operations	6,934.03	8,161.18	8,735.41	8,506.58	8,353.80
Other Income	1,491.00	924.78	1,036.18	1,150.81	1,026.18
Total Income	**8,425.03**	**9,085.96**	**9,771.59**	**9,657.39**	**9,379.98**

The figures are extracted from the annual reports of respective financial year.

Total income in Fiscal 2022 decreased by 2.87 % to INR 9,379.98 Crore from INR 9,657.39 Crore in Fiscal 2021, primarily due to decrease in 'Other Income', decrease in 'Revenue from Power Trading', decrease in Lease Income partially offset by increase in Revenue from Project Management and Consultancy works and increase in electricity generation in Fiscal 2022.

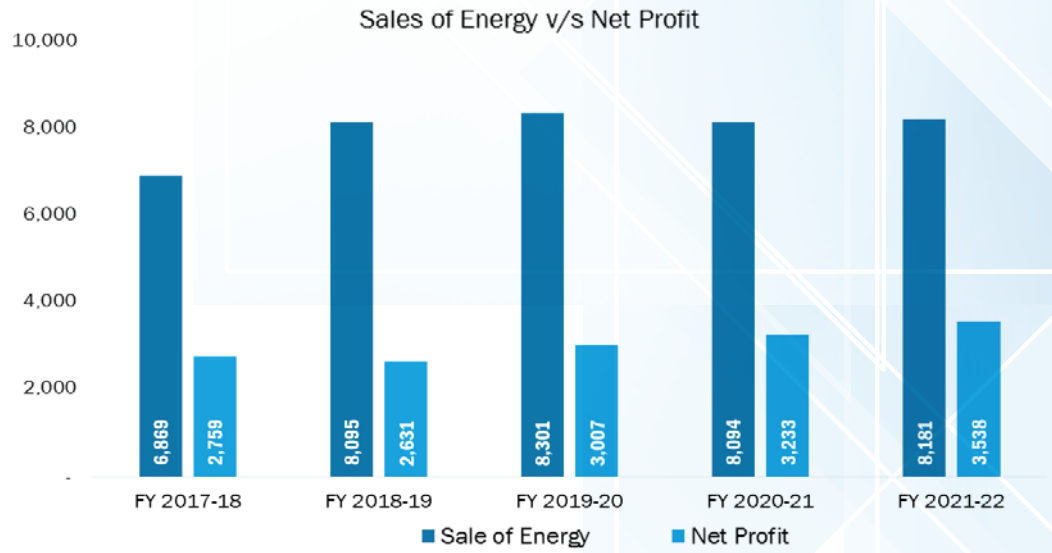


Figure 2.1: Income generated from sales of energy and the net profit earned (after taxes).

The principal source of income of the company is from sale of power to bulk customers comprising, mainly of electricity utilities owned by State Governments/ Private Distribution Companies pursuant to long-term Power Purchase Agreements. Net sales in Fiscal 2022 has increased to INR 8,181 Crore from INR 8,094 Crore in Fiscal 2021. NHPC has earned highest ever Profit After Tax (PAT) of INR 3,537.71 Crore on standalone basis in the FY 2021-22 compared to INR 3,233.37 Crore in the previous FY.

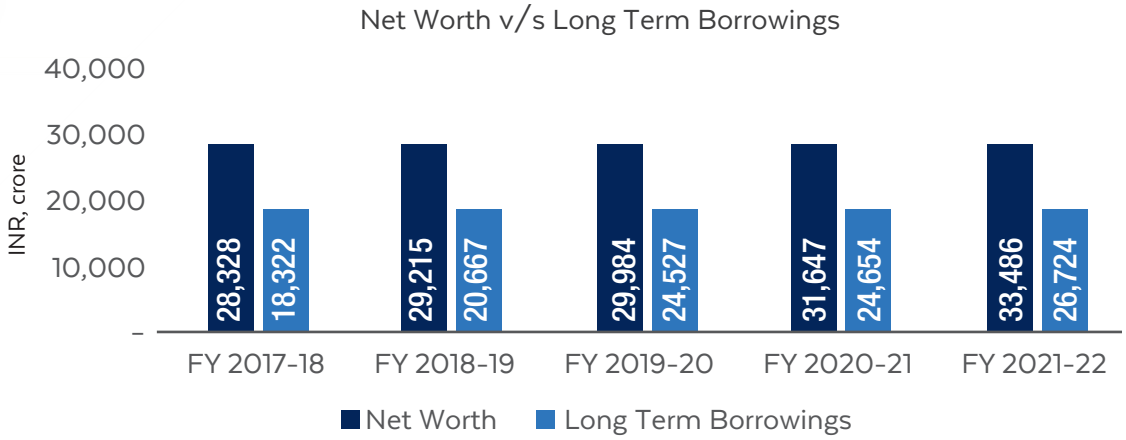


Figure 2.2: Net worth of NHPC and long-term borrowing

Long term borrowings include current maturities thereof, Lease obligations including current maturities thereof and payables towards bonds fully serviced by Government of India.

The net worth of the Company at the end of Fiscal 2022 increased to INR 33,486.10 Crore from INR 31,647.31 Crore in the previous Fiscal registering an increase of 5.96% mainly due to increase in Profit after tax and increase in retained earnings.

Long Term Borrowings mainly comprised of Bonds, Secured Term Loans & Unsecured Loans including Foreign Currency Loans amounting to INR 14,517.90 Crore, INR 2,658.00 Crore and INR 5,990.71 Crore in Fiscal 2022 as against INR 15,679.99 Crore, INR 316.00 Crore and INR 5,235.00 Crore respectively in Fiscal 2021.

The Secured loans include borrowings from domestic banks and financial institutions along with corporate bonds raised in the capital markets that are secured against assets of the company. The increase in Long Term Borrowings to the extent of 9.13% over previous fiscal is mainly on account of borrowings from domestic banks including securitization of return on equity of one of the Power Stations partly offset by redemption of bonds and repayment of borrowings.

Table 2.2: Economic Value (INR in Crore) created and distributed.

	2020-21	2021-22
Direct Economic Value Generated (Total Income)	**9,657.39**	**9,379.98**
Rate regulated Income	**227.09**	**42.85**
Revenue from operations	**8,506.58**	**8,353.80**
Economic Value distributed	**8258.32**	**7703.27**
Purchase of Power - Trading	212.37	44.58
Generation Expenses	854.37	841.24
Employee Benefits Expenses	1,409.26	1,440.78
Finance Costs	649.59	531.75
Depreciation and Amortization Expenses	1,234.50	1,126.22
Community Investments (incl. CSR Exp.)	79.63	105.29
Other Expenses	1,346.26	1,243.26
Exceptional Item	185.00	-
Income Tax expenses	680.13	552.00
Profit After Tax	**3,233.37**	**3,537.71**
Dividend to shareholders	1607.21	1818.15
Economic Value Retained	**1626.16**	**1719.56**
Net Profit Ratio (%)	**38.01**	**42.35**

Net Profit Ratio = Profit After Tax / Revenue From Operations

3. OUR ESG STRATEGY

Solar Power (50 MW),
Tamil Nadu

3. NHPC ESG Strategy

As its first Sustainability Report, NHPC has made significant efforts to ensure the meticulous representation of data related to material topics. NHPC is currently developing and implementing robust protocols to guarantee the precision and all-encompassing portrayal of its sustainability efforts. The GRI Indicators provided in this report specifically pertain to the assets owned by NHPC, the staff employed by NHPC, the establishments owned by NHPC, and the activities conducted by NHPC.

The Sustainability Report (2021-2022) encompasses a comprehensive range of ESG indicators, highlighting a total of 22 power generating stations (Hydropower (20), Solar Power (1) in Tamil Nadu, and Wind Power (1) in Rajasthan), two under-construction Hydropower Projects (Subansiri Lower and Parbati-II), five Regional Offices and a Corporate Office. The scope of this report does not cover the subsidiaries, joint ventures, or their respective operations.

3.1. Stakeholder Engagement & Materiality Assessment

At NHPC, stakeholder engagement is a continuous and iterative process in which the organisation interacts with various stakeholders across different platforms and hierarchies. NHPC comprehensively comprehends and effectively responds to stakeholder's expectations while fostering collaborative relationships with them.

NHPC has a Stakeholder Engagement Policy for fostering partnerships with stakeholders and ensuring their ongoing and progressive involvement in the company's activities and operations. This policy is a critical component of NHPC's broader sustainability vision as it provides a roadmap to get insight into stakeholder's expectations on its activities' environmental, social, and governance aspects.

3.1.1. Identification of Key Stakeholders

The identification and prioritisation of key internal and external stakeholders have been carried out based on their impact on NHPC's business strategy and sustainability vision and the degree to which they are affected by the business decisions. NHPC has conducted a comprehensive analysis to map and identify internal and external stakeholders, encompassing a range of individuals and groups, including in the vicinity of Power Stations/Project Sites. Additionally, NHPC conducted community need assessments, peer comparisons, and key personnel interviews to understand stakeholder's opinions.

3.1.2. Insights into the Stakeholder Engagement

NHPC identifies its internal (employees and workers) and external (Discoms, Community, Regulators, Policymakers, Shareholders, etc.) stakeholders based

on the influence and impact on the sustainability performance. NHPC ensures engagement with its stakeholders on business sustainability issues as part of its everyday operations. The opinion and the opportunities provided by stakeholder group's engagement have paved the way to success in delivering positive outcomes.

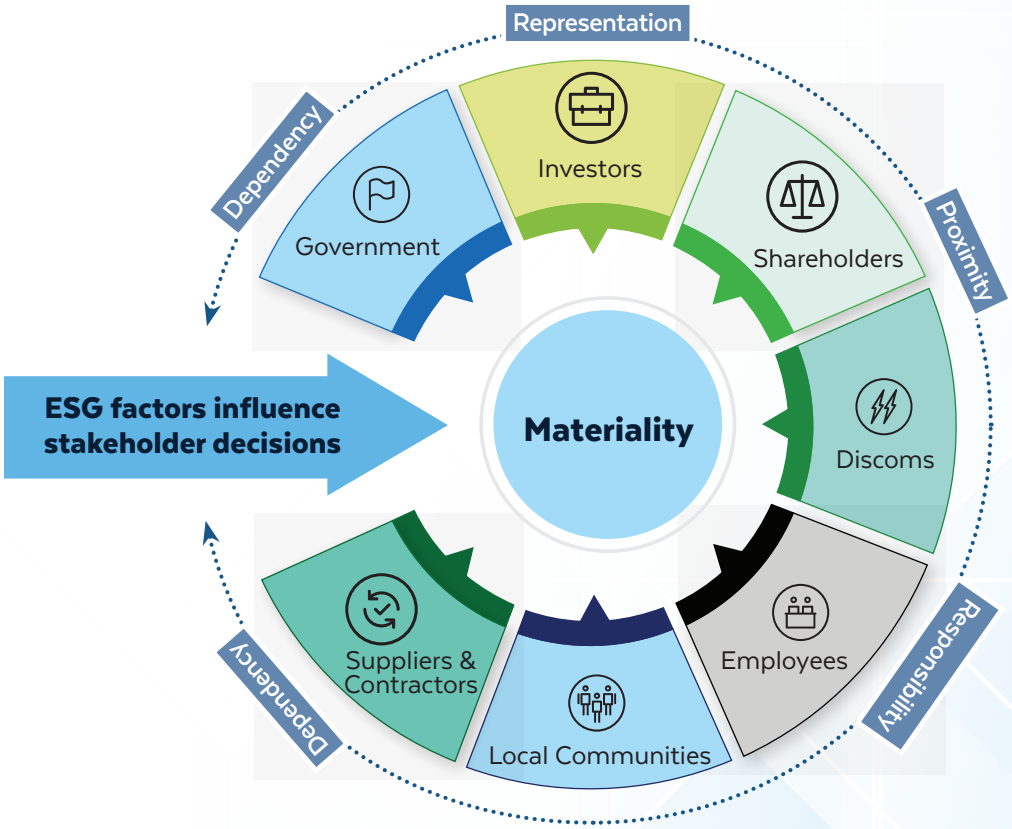


Figure 3.1: Identification of key stakeholders.

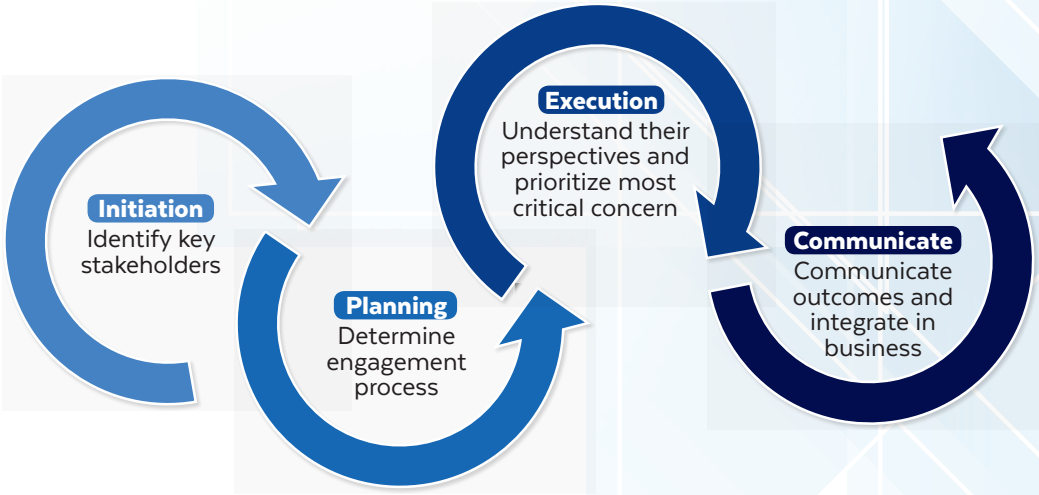


Figure 3.2: Approach to key stakeholder' consultation.

3.1.3. Stakeholder engagement approach of NHPC

NHPC follows the following approach for stakeholder engagement activity.

Stakeholders and their significance	Purpose of Engagement	Frequency and mode of engagement	Interfacing Department
Government and Regulators: • Owner • Policy maker and Key enabler • Regulator and Monitor	• Act and Policy Compliances, • Implementation of Government initiatives • Environmental Compliances • Regulatory Compliances	**Continuous**: Calls and meetings with Government officials, MOU, Seminars and interactions with Departments and Industry Chambers	• Planning • EDM • SBD&C • Commercial • Company Secretary
Public/investors: • Owners/ shareholders • Capital Investors	• Corporate Governance and Ethics • Cost optimization and improved Profitability • Return on Investment • Risk Management • Innovation and Digitization • Focus on Sustainability and ESG	**Monthly**: Stock Exchange Filings **Quarterly**: Earnings conference calls and presentations, Investor and Analyst meets **Annual**: Annual Report, Annual General Meeting (AGM), Plant/Facility Visits **Investors Grievance Mechanism**	• Investor Relation Cell • Company Secretary
Board of Directors and Key Managerial Personnel: • Business Decision maker	• Implementation of the Company Vision, Mission, Objectives in true, transparent, efficient, and ethical manner • Collective direction of the Company's affairs whilst meeting the appropriate interests of our stakeholders and shareholders • Corporate Governance	• Scheduled Board meetings • Scheduled and special Board Committee meeting	• Company Secretary
Distribution Companies (DISCOM's): • Principle source of business sustenance	Quality and Regular availability of Power	**Monthly**: Meetings, Emails, Power Purchase Agreement, Industry meets	• Commercial

Stakeholders and their significance	Purpose of Engagement	Frequency and mode of engagement	Interfacing Department
Employees: • The key resource for competitive advantage and sustainable growth	• Health and Safety • Remuneration Appraisals • Learning and Development • Diversity and Inclusion	**Monthly**: Emails, Meetings, Company Intranet, Employee and Grievance Mechanism, Social Media, Trainings and Awareness and programs	• Human Resource • T&HRD
Communities: • Potentially affected (directly / indirectly) from business operations	• Local community development • Employment generation	**Monthly**: CSR programs Meetings with communities, Grievance redressal mechanism	• HOPs (PS/ Projects) • CSR • EDM
Suppliers and Contractors • Critical value chain partners • Intrinsic to NHPC's business operations and delivery	• Procurement of Quality Raw Materials and Equipment • Ethical business practices • Payment terms	**Monthly**: Suppliers meet, Contracts documents and agreements, Workshops, Trainings and Awareness Sessions	• Contracts
Media • Key Informer for stakeholders about our business development, activities, • Gerenal Awareness about the company's operations & activities • Safety & Precautions	• Transparency and relevance of information • New business opportunity • Financial and Operational Performance	**Monthly**: Media briefings, Press Releases **Continuous**: Company website, Social Media Platforms like Facebook, Twitter, Instagram, YouTube	• Corporate Communication
Employee Unions and Associations: • Key source communication/ messenger	Help set standard for education, skill-levels, wages, health and employee benefit and working conditions of our employees.	Regular meetings and scheduled surveys Dedicated surveys	• Human Resource

3.1.4. Approach towards Materiality Assessment

Materiality is typically used to identify an organisation's most important Environmental, Social and Governance (ESG) issues, which become foundational material topics to drive ESG strategy, performance, and reporting on managing these topics. For FY 2021-22, NHPC undertook a materiality assessment with reference to the GRI Standards to include a sustainability-focused approach into the corporate strategy.

Figure 3.3: Internal stakeholder consultation at NHPC on sustainability reporting.

The materiality analysis process begins with identifying sector-specific material topics using the SASB framework. This included industry patterns, legal prerequisites, significant issues highlighted by stakeholders, and potential risks and opportunities. Subsequently, these topics are compared to peer companies and ranked according to NHPC's enduring strategic objectives. These critical material topics are discussed during stakeholder engagement to understand their main concerns, and anticipations and outcomes are aligned with the GRI framework. Over 600 internal and external stakeholders participated in the exercise, including value chain partners like employees, local communities (Parbati II and Parbati III), suppliers, discoms, contractors, and government.

The sensitivity of an issue to stakeholders and NHPC, in terms of importance, forms the basis of the materiality analysis, guiding the processes for identifying, managing, and devising specific action plans for addressing these material aspects. This assessment resulted in identifying goals and targets (in line with UNSDG) that are most important to its stakeholders and for NHPC to create value in the short, medium, and long term. These material topics also provide further insights into risks and opportunities described in subsequent sections.

Figure 3.4: Focused group discussion with external stakeholders

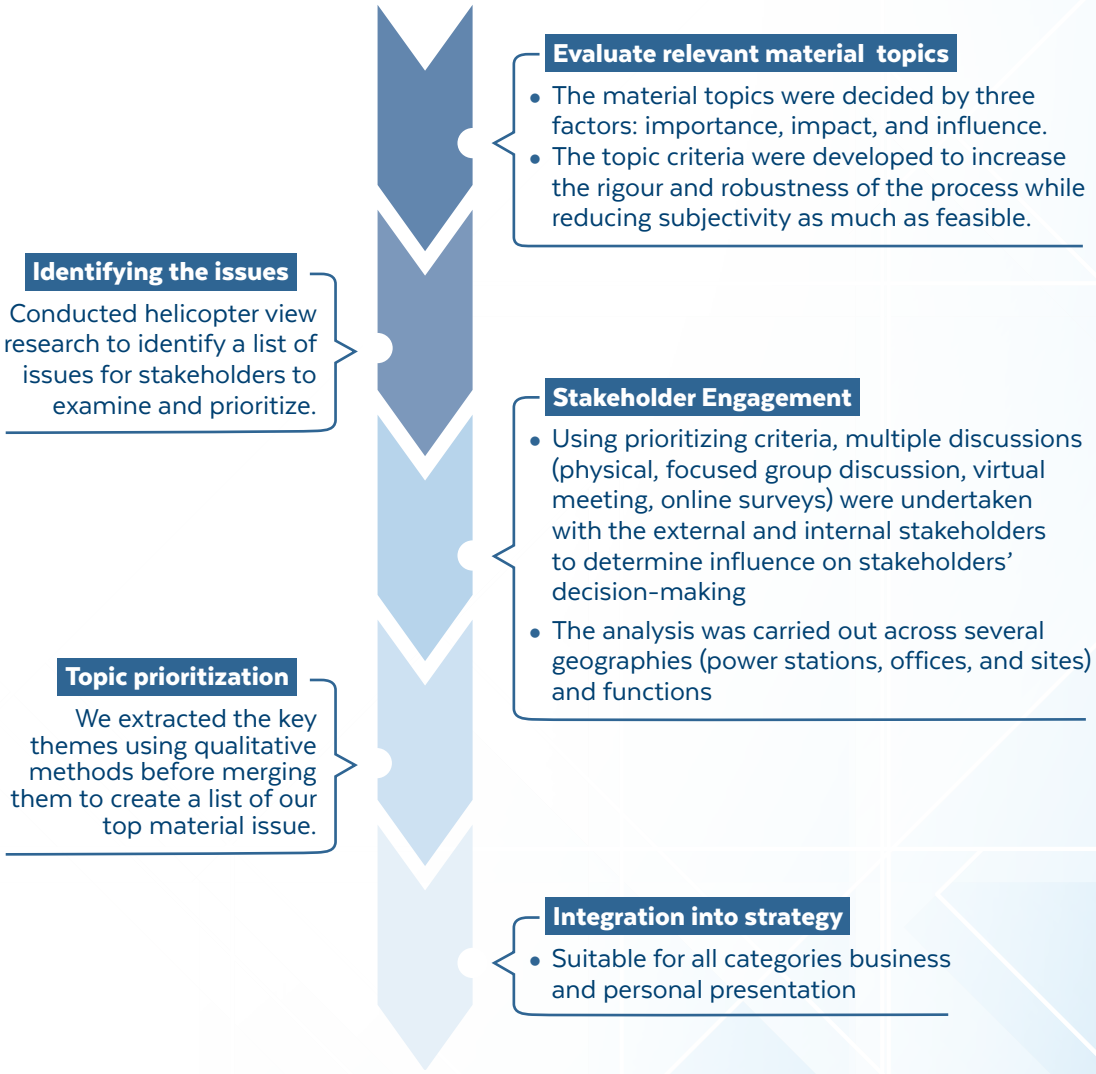


Figure 3.5: Process for Stakeholder Engagement and Materiality Assessment.

The material issues prioritised by stakeholders are plotted on the Materiality Matrix against the priorities of strategic business importance. The topics are categorised relative to each other, and the position of each topic represents its relative importance. Topics have been rated on a high to very high scale for their impact on business and significance as perceived by stakeholders. This assessment has helped NHPC to validate its priorities related to emerging business risks and to leverage opportunities for future growth. NHPC is in the process of defining double materiality (union of impact materiality and financial materiality), which will help in understanding how the operations and the business of NHPC are impacted by sustainability issues and how the activities of NHPC impact society and the environment. NHPC intends to review its materiality matrix at regular interval to update and include the voice of stakeholders and in context of evolving reporting landscape.

3.2 Materiality Assessment for NHPC Limited

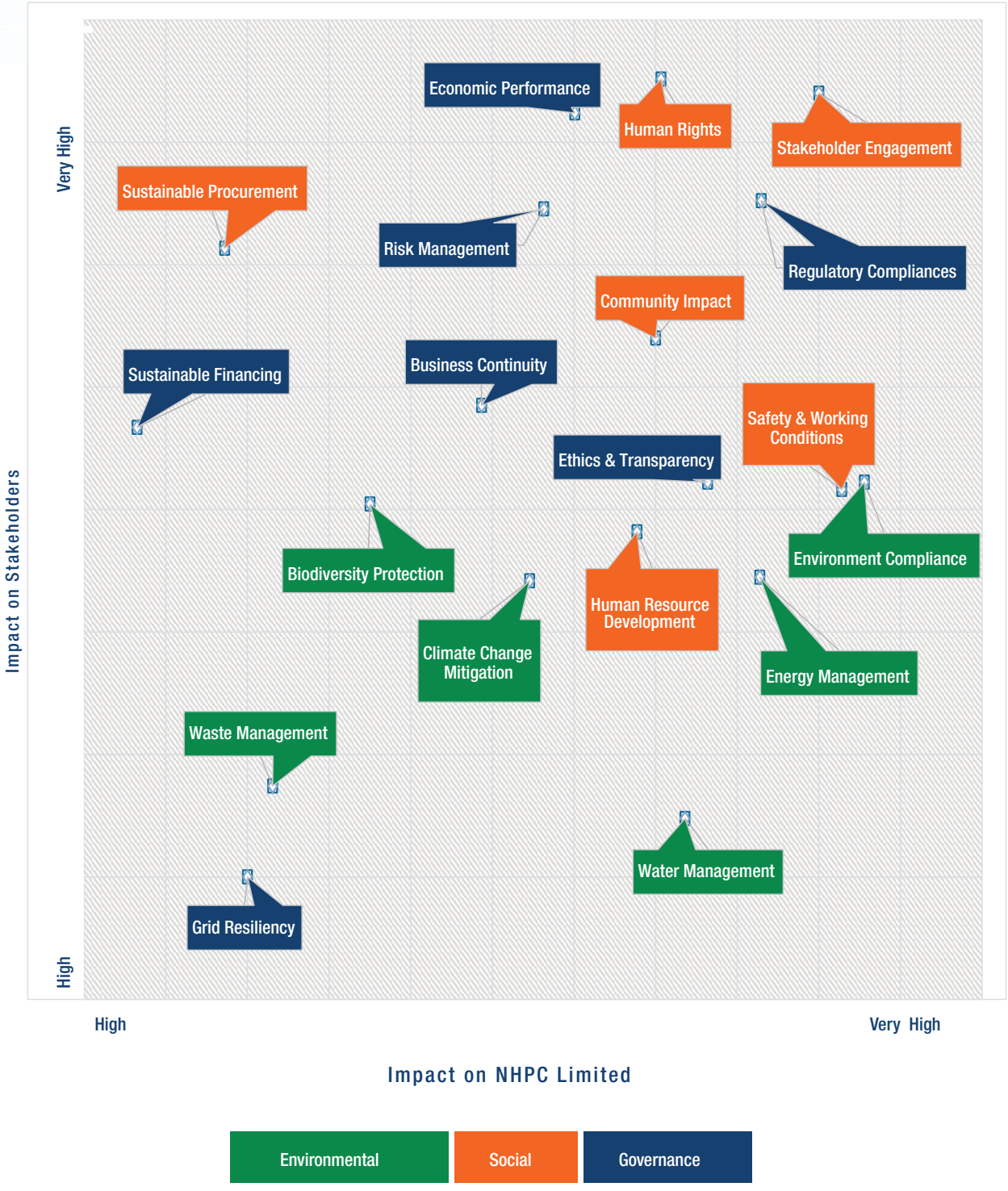


Figure 3.6: Materiality Matrix.

3.3. Management Approach for Material topics

The material topics were mapped for GRI and SASB alignment. The approach of NHPC in addressing these material topics is provided below:

Table 3.1: Approach of NHPC on material topics.

Material Topic	Category	GRI and SASB Alignment	Section in Sustainability Report	Management Approach
Stakeholder Engagement	Social	**GRI 2-29**: Approach to stakeholder engagement	Sustainability Approach of NHPC	NHPC maintains strategic relationships with both internal and external stakeholders, responding to their expectations and concerns in a timely and appropriate manner, displaying a commitment to continuing and progressive engagement in the company's activities and operations.
Human Rights	Governance	**GRI 405**: Diversity and Equal Opportunity **GRI 406**: Non-Discrimination **GRI 407**: Freedom of Association and Collective Bargaining **GRI 408**: Child Labor **GRI 409**: Forced or compulsory Labor **GRI 412**: Human Rights Assessment	Workplace Safety & Well-Being	NHPC is dedicated to preventing discrimination, harassment, abuse, and bias in its operations and value chain, and to treating all with dignity and integrity. It adheres to ethical business practices and respects employee and community rights. All the operational activities are imbued with the determination to safeguard and strengthen individual rights, as well as to promote inclusivity, diversity, and equality.

Material Topic	Category	GRI and SASB Alignment	Section in Sustainability Report	Management Approach
Economic Performance	Governance	**GRI 201:** Economic Performance	Economic Value Creation	NHPC strives to leverage economic interests while improving sustainability performance. NHPC's strong commitment to generating long-term that value for the business that contributes to the company's strong economic performance and market leadership.
Regulatory Compliances	Governance	**GRI 2-27** Compliance with laws and regulations	Governance & Ethics	To achieve zero cases of non-compliance across all ESG norms, NHPC ensures compliance with statutory and regulatory laws, regulations, and requirements.
Risk Management	Governance	**GRI 201-2** Financial implications and other risks and opportunities due to climate change	Governance & Ethics	NHPC has developed and implemented an effective risk identification, mitigation, and management strategy that is aligned with international standards and includes ESG risks as well as financial and regulatory risks, including the impact of climate change on business continuity. Cyber security and data protection procedures are implemented as part of risk management to provide a zero-default environment for data leakage and breaches.

Material Topic	Category	GRI and SASB Alignment	Section in Sustainability Report	Management Approach
Community Impact	Social	**GRI 413:** Local Communities	Positive Impact on Social Well-Being	NHPC fosters the well-being and growth of the communities in which it operates in. NHPC works with communities to reduce the likelihood of current and future disputes, maintain smooth operations, and increase livelihood prospects. Furthermore, through frequent assessments, NHPC ensures the identification of areas for continual improvement.
Sustainable procurement	Social	**GRI 204:** Procurement Practices **GRI 308:** Supplier environmental assessment **GRI 414:** Supplier social assessment	Sustainable Procurement	NHPC follows the Government of India Procurement policy and guideline to adopt responsible and sustainable procurement practices to minimise negative social and environmental impact.
Environment Compliance	Environmental	**GRI 307:** Environmental compliance	Protecting the Natural Environment	NHPC complies with environmental laws and regulations established by governmental agencies or other regulatory bodies to protect natural resources, ecosystems, and human health. Numerous monitoring mechanisms (6 monthly report to MoEF&CC, Monitoring by SPCB, EMC meetings) are in place to ensure compliance.

Material Topic	Category	GRI and SASB Alignment	Section in Sustainability Report	Management Approach
Safety and Working Conditions	Social	**GRI 403:** Occupational Health and Safety	Workplace Safety & Well-Being	NHPC prioritises worker health and safety, as well as good working conditions and a conducive working environment that encourages staff productivity along with a good health. NHPC has put in place steps to assure continuous improvement, such as updating safety guidelines, giving safety training, and conducting regular mock drills on probable emergency scenarios to increase the awareness among employees and other stakeholders.
Business Continuity	Governance	**GRI 201:** Economic Performance	Protecting the Natural Environment	NHPC has established a set of procedures for coping mechanism, maintaining productivity and quick recovery in the unfortunate event of a catastrophic setback to the business.
Ethics & Transparency	Governance	**GRI 205:** Anti-corruption **GRI 206:** Anti-competitive Behaviour	Governance & Ethics	NHPC has fostered a business culture on integrity and open communication. Maintaining ethical integrity and openness in the governance process integrates ethical leadership, generates confidence, and creates long-term benefit for all stakeholders.

Material Topic	Category	GRI and SASB Alignment	Section in Sustainability Report	Management Approach
Human Resource Development	Social	**GRI 2-7** Employees **GRI 401:** Employment **GRI 402** Labour/ Management Relations **GRI 404:** Training and Education	Workplace Safety & Well-Being	NHPC strives for holistic employee and extended workforce development, from recruitment to retention to career development to training to retirement. It includes strategies and mechanisms to address employee well-being, remuneration grievances, diversity, and inclusion concerns to ensure and boost productivity among the company's employees.
Energy management	Environmental	**GRI 302:** Energy	Protecting the Natural Environment	NHPC monitors, evaluates, and conserves energy at all operating locations by adopting energy efficient solutions and shifting towards renewable energy sources to reduce environmental footprint.
Sustainable Financing	Environmental	**GRI 203:** Indirect Economic Impacts	Protecting the Natural Environment	NHPC has committed financial resources to initiatives that promote environmental sustainability, social well-being, and ethical governance. It comprises incorporating ESG considerations into investment decisions and financial practices to promote long-term development goals.

Material Topic	Category	GRI and SASB Alignment	Section in Sustainability Report	Management Approach
Biodiversity Protection	Environmental	**GRI 304:** Biodiversity	Protecting the Natural Environment	NHPC has always been pursuing opportunities related to the mitigation of organizational impact on biodiversity, including land use management and monitoring of business activities. NHPC assures the long-term conservation of the flora and fauna of the regions in which NHPC operates through EMP.
Climate Change Mitigation	Environmental	**GRI 305:** Emissions	Protecting the Natural Environment	Hydropower is renewable energy and no greenhouse gas is released during the generation. NHPC has taken several steps to mitigate climate change, which includes a wide range of strategies and measures aimed at reducing Scope 1 and Scope 2 emissions from its operation activities and facilities such as vehicles, offices and colonies. It entails implementing new technologies and renewable energies, making older equipment more energy efficient, obtaining renewable energy credits, or changing management practices to reduce scope 1 transport fuel usage.

Material Topic	Category	GRI and SASB Alignment	Section in Sustainability Report	Management Approach
Water Management	Environmental	**GRI 303:** Water and Effluents	Protecting the Natural Environment	NHPC has a very low water footprint because hydroelectricity generation is mostly non-consumptive. Furthermore, NHPC optimises water consumption by implementing a series of water-saving measures at Offices/Power Stations, efficiently managing, and treating wastewater discharges, and preserving local water Sources by ensuring a mechanism for reuse, recycling, and restoration of water across operational sites.
Waste Management	Environmental	**GRI 306:** Waste	Protecting the Natural Environment	NHPC aims at waste reduction from its facilities by implementing a robust waste management system and ecologically acceptable waste disposal via e-auction/authorised vendors. NHPC intends to raise an understanding of the circular economy within the company.
Grid Resiliency	Environmental	SASB: Grid Resiliency IF-EU-550a.1. Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations		NHPC has established methods to minimise the probability and magnitude of impacts from extreme weather events and cyber-attacks while remaining competitive in the face of external competition by supporting the grids in the best feasible manner.

3.4. ESG Strategy

India announced a net-zero emission objective at the COP26 climate summit in Glasgow, with a strong climate ambition to reach by FY 2070. The Government of India adopted an updated Nationally Determined Contribution (NDC) under the Paris Agreement to increase India's response to the challenge of climate change. The updated NDCs include aggressive targets on five essential elements (Panchamrit) that would speed the transition to a low-carbon economy. In 2019, Ministry of Power, Government of India, has declared Large Hydropower Projects as renewable energy source. NHPC's commitment to hydropower aligns with the broader mission of achieving net-zero emissions, as it supports India's efforts to transition towards cleaner and more sustainable energy sources. By harnessing the power of flowing water, NHPC generates electricity without emitting greenhouse gases or other pollutants into the atmosphere, unlike fossil fuel power plant.

An approach to environmental stewardship includes strategies and actions centred on emission reduction, effective non consumptive use of water and energy conservation, waste reduction, and increased use of renewable energy by implementing established environmental safeguard measures. NHPC has integrated environmental protection, ecological conservation, social well-being, and responsible corporate governance in all its activities. The onset of Hydropower Stations by NHPC has contributed to the socioeconomic progress of the region through the creation of employment opportunities, the development of infrastructure, and community development initiatives as part of its CSR initiatives. It has provided several indirect employment/ entrepreneurial opportunities in the field of transportation, construction, tourism, and other small-scale businesses, thus promoting the continuous sustainable progress through an Environmental, Social, and Governance (ESG) vision.

Our ESG Vision

NHPC aims to lead India's energy sector by safeguarding the environment, fostering societal welfare, and upholding governance principles. NHPC seeks to create a vibrant, eco-friendly future while positively impacting communities through innovative hydroelectric projects and renewable energy initiatives. NHPC is committed to continuous enhancements in ESG performance, active stakeholder collaboration, and significant contributions towards a resilient, equitable, and sustainable world.

3.4.1. Strategic ESG Goals and Targets

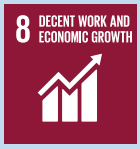
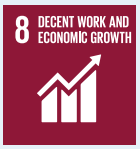
NHPC is committed to the vision of being a "Global leading organization for sustainable development of clean power through competent, responsible, and innovative values." Being an environmentally conscious and socially responsible company, NHPC strives to align its ESG goals with the requirements of national and international sustainability frameworks, such as the United Nations Sustainable Development Goals (UNSDGs) and the Business Responsibility and Sustainability Reporting (BRSR).

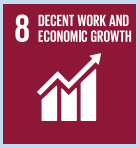
Table 3.2: ESG goals and targets.

Goal	Target	NHPC initiatives	SDG Linkage
Focus area 1: Drive sustainability best practices throughout NHPC's operations to minimise environmental footprint			
Optimise resource efficiency and business operation management	**Target 1**: Continuation of investment in renewable energy, improve energy efficiency, and minimise greenhouse gas emissions through dedicated initiatives and fostering sustainable energy landscape	Ventured into other renewable forms of energy i.e., solar and wind energy. Signed the E-mobility agreement with Convergence Energy Services Limited (CESL). Formulated Corporate Environment Policy and Energy Conservation policy. Constituted Energy Conservation Task Force. Conducted Energy Audit through BEE certified agencies. GRIHA certified Corporate Office building. Grid Solar Power station Energy of capacity of 230 kWp at Corporate Office.	 SDG 7: Affordable and Clean Energy  SDG 13: Climate Action
	Target 2 Ensure environmental flow from all its operational sites to maintain ecological health and achieve socioeconomic and cultural sustainability	e-flow is maintained by Hydropower Stations. NHPC electricity generation involves non-consumptive usage of (water) resources.	 SDG 12: Responsible Consumption and Production
	Target 3 Conserve the ecosystem through Integrated Sustainable Waste Management (ISWM) and contributing to a responsible future	Defined Waste management policy and an e-Waste Policy in place. Waste (Hazardous & Non-hazardous) generated are properly handled and disposed with approved agencies. The MSW is collected and disposed by the local municipalities, wherever applicable. Disposal of Waste water is as per the standard procedures of SPCB through STP and septic tanks at some power stations commissioned early years.	 SDG 12: Responsible Consumption and Production

Goal	Target	NHPC initiatives	SDG Linkage
	Target 4 Implement effective water-saving measures to achieve water conservation.	Formulated a Water Conservation Policy which aims to: Optimise the use of water through installing efficient water systems. Installed rainwater harvesting measures at some of the sites and offices including the Corporate Office.	 Goal 6 Clean Water and Sanitation
	Target 5 Demonstrate unwavering dedication in preserving and enhancing the natural environment.	NHPC has maintained a 'No Net Loss' of forest land across all operational sites through compensatory afforestation for the diversion of forest land. NHPC has a Biodiversity Conservation Policy in place. To check the menace of soil erosion, extensive Catchment Area Treatment measures have been adopted by NHPC at its projects. EMP suggests project-specific conservation measures for biodiversity conservation based on the findings of EIA study. The activities include both ex-situ conservation measures such as the development of Herbal Parks, Biodiversity Conservatories such as Arboretum and Orchidarium, Butterfly Parks, and so on, as well as in-situ conservation measures such as habitat improvement, the preservation of biologically rich area, anti-poaching activities, and so on. Compensatory Afforestation through State Forest Department and Voluntary afforestation. Restoration of Muck Dumping sites & Quarry sites. Landscaping and Development of Garden, Green belt. Fisheries Management Plan.	 SDG 15: Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal	Target	NHPC initiatives	SDG Linkage
	Target 6 Encourage a shared objective of sustainability with the upstream value chain by collectively nurturing responsible supply chain management practices.	NHPC has a Sustainable Procurement Policy to encourage suppliers to abide by ESG directives. NHPC follows International Competitive Bidding (ICB) system for selection of qualified, competent, and performing agencies for executing the construction of Hydropower Projects. The techno-commercial bids are examined in line with ICB practices, CVC guidelines, prescribed norms/ initiatives of Govt. of India. Directions of Govt. of India under Public Procurement (Preference to Make in India), Order 2017 with latest amendments is being complied with to promote indigenous products. Various contracts have been signed with local people in the project area for vehicle hiring, material handling, housekeeping, waste disposal, and gardening, among other things. In addition, provisions have been made for Micro and Small Enterprises and Start-Ups in the bidding and awarding of procurement of services and goods for all the procurement works.	 SDG 12: Responsible Consumption and Production

Goal	Target	NHPC initiatives	SDG Linkage
Focus area 2: Improve social impact of NHPC throughout company's value chain and communities in which it operates			
Promote an inclusive and healthy work environment	**Target 1** Foster diversity and Nurture equality to drive a more inclusive and dynamic organizational culture. Encourage women in leadership role at NHPC	NHPC promotes equal opportunity in all aspects. NHPC has been encouraging women leadership in all activities Established Internal Complaints Committee under Sexual Harassment of Women at Workplace (prevention, prohibition & Redressal) Act, 2013. For employees, NHPC has established creche at its Corporate Office.	 SDG 5: Gender Equality  SDG 8: Decent work and economic growth
	Target 2 Maintain a "zero accident" and "zero fatality" work environment on a year-on-year basis	Corporate Safety Policy in place along with separate safety policies for Power Stations and Construction Projects towards target of Zero hazard potential. Most of the Power Stations are OHSAS-18001:2007 /ISO 45001: 2018 certified. Regular Safety monitoring by safety officer. NHPC has been conferred with 'AEOHD Occupational Health Excellence Award – Public Sector' for exemplary contribution in the field of EHS. Minimum 10 hours of training for all contract workers Safety promotional activities are being celebrated at Power Stations & Projects like safety week/day, fire Service week, safety competitions, poster making & etc. to increase the awareness among employees.	 SDG 8: Decent work and economic growth

Goal	Target	NHPC initiatives	SDG Linkage
	Target 3 Encourage employees, workers, and local communities to work together by promoting awareness to strengthen efforts in addressing SDG agenda.	NHPC has a Stakeholder Engagement Policy in place to guide stakeholder interaction at different management levels through multiple engagement platforms. NHPC has conducted stakeholder engagement and materiality assessment exercise to analyse the perspective and interests of their important stakeholders to further map and prioritise the material issues.	 SDG 8 Decent work and economic growth
	Target 4 Maintain its pro-active thrust as socially conscious company on elevating the quality of life and building essential facilities/ opportunities for its communities.	NHPC has implemented CSR initiatives in the areas of Education, Health, Sanitation, Rural Development, Skill Development, Environmental sustainability, Women Empowerment, Promotion of sports, arts & culture etc. Established a Committee and Policy on CSR & Sustainability. NHPC has been conducting impact assessment of its CSR projects through independent agencies Contributed INR 30 Crores in PM CARES. Resettlement and Rehabilitation schemes for Project Affected Families (PAFs) to provide economic sustenance. NHPC has formulated a policy for reservation of certain type of works through competitive bidding for PAFs and locals residing near its Projects/ Power Stations. Benefits to the home state by providing 12% of the energy free of cost. Local Area Development Fund (LADF) @1.5% of total estimated cost of the project in Himachal Pradesh.	 SDG 1 End poverty in all its f orms everywhere  SDG 3: Ensure healthy lives and promote well-being for all at all ages  SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal	Target	NHPC initiatives	SDG Linkage
Focus area 3: Uphold business integrity and establish clear governance mechanism			
Upholding business ethics, integrity, and transparency	**Target 1** Strive to ensure a zero tolerance for corruption and unethical practices.	Committed to ethical conduct and is vigilant against any form of corruption. Adopted Conduct, Discipline and Appeal Rules to maintain to maintain order, ensure fair treatment of individuals, and uphold ethical standards. Whistle Blower Policy wherein Directors, employees, contractors, and vendors of the Company are free to report any unethical practice, violation of applicable laws, rules, regulations, or Company's code of conduct. Framed a Fraud Prevention & Detection Policy. A policy on Prevention, Prohibition and Redressal of Sexual Harassment of Women at Workplace, in line with the provisions of the Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013 is in place.	 SDG 16: Peace, justice, and strong institution
	Target 2 Ensure that NHPC is compliant with local and national regulations.	Compliance with all the regulation as mandated by Government of India and homestate. Compliance with safety systems & procedures and environmental laws is regularly monitored. NHPC has sound internal control systems and processes in place for smooth and efficient conduct of business and ensure compliance to relevant laws and regulations. Six monthly compliance reports on environmental aspects of Projects/ Power Stations are submitted to MoEF&CC and are available on company website. It is ensured that all plants of NHPC Limited are compliant with applicable environmental laws/ regulations and guidelines.	 SDG 16: Peace, justice, and strong institution

4. PROTECTING THE NATURAL ENVIRONMENT

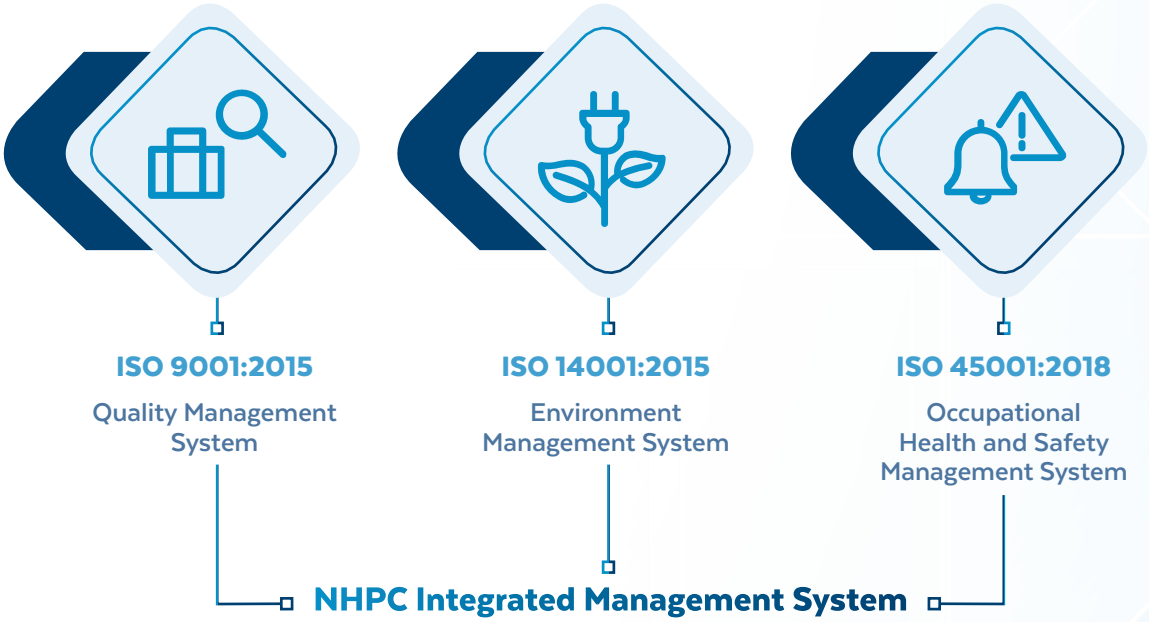
Arial View of Sewa-II Power Station
(120 MW), UT of J&K

4. Protecting the Natural Environment

NHPC's business approach is centred on offering sustainable and clean energy solutions, and the company is dedicated to climate action and environmental conservation. NHPC has developed a Corporate Environment Policy (CEP) to address environmental and social aspects for the long-term development of clean energy sources. The policy stems from the efforts to make a positive environmental effect as part of the commitment to sustainability. This led to formulating a strategy or management plan to reduce impacts to the most significantly feasible.

Independent external agencies (accredited by the National Accreditation Board for Education and Training (NABET), a Constituent Board of Quality Council of India and approved by MoEF&CC), perform Environmental Impact Assessments (EIAs) of hydroelectric projects prior to start of construction activities. Based on the EIA report, agency prepares site-specific Environmental Management Plans (EMPs), evaluating the environmental risks associated with planned projects and suggesting mitigation measures as required during construction and operation of Project. EIA & EMP Reports are appraised through public consultation process and Expert Appraisal Committee of MOEF&CC in order to obtain environmental clearance of project. NHPC ensures that all statutory norms and compliance processes, as prescribed by MoEF&CC and respective state governments, are met before the construction process of the projects. Six monthly compliance reports on the environmental aspects of projects/Power Stations are submitted to MoEF&CC and are available on the company website and MoEF&CC's portal. The respective State Pollution Control Board and the State Forest Department conducts regular monitoring.

NHPC has adopted Integrated Management System (IMS) certification, which highlights its efforts to carry out development in an environmentally conscious manner. Aside from implementing approved Environment Management Plans, NHPC undertakes several environmental conservation and protection actions such as Afforestation, Waste Management, Water Conservation, and Energy Conservation as regulatory requirements and voluntary initiatives.



One of the defining features of NHPC's commitment to environmental conservation is the regular monitoring of environmental safeguard measures by a multidisciplinary committee, i.e., the Environment Monitoring Committee (EMC), constituted as a prerequisite of Environment Clearance accorded by MoEF&CC, Government of India.

NHPC Limited is committed to combating climate change through sustainable practices and providing renewable energy, notably hydropower. Hydroelectricity is generated through the non-consumptive use of water, resulting in one of the cleanest forms of energy generation. NHPC has also ventured into other renewable energy sources, viz. solar (Tamil Nadu) and wind (Rajasthan), targeting a low-carbon future consistent with India's climate action goals and commitment. NHPC is committed to environmental stewardship and leadership by diligently upholding environmental compliance in all operations. Additionally, NHPC actively fosters the preservation of biodiversity and wildlife while striving to mitigate the adverse effects of climate change. Basis the GRI standards, NHPC's efforts in environmental sustainability can be categorised into six focus areas:

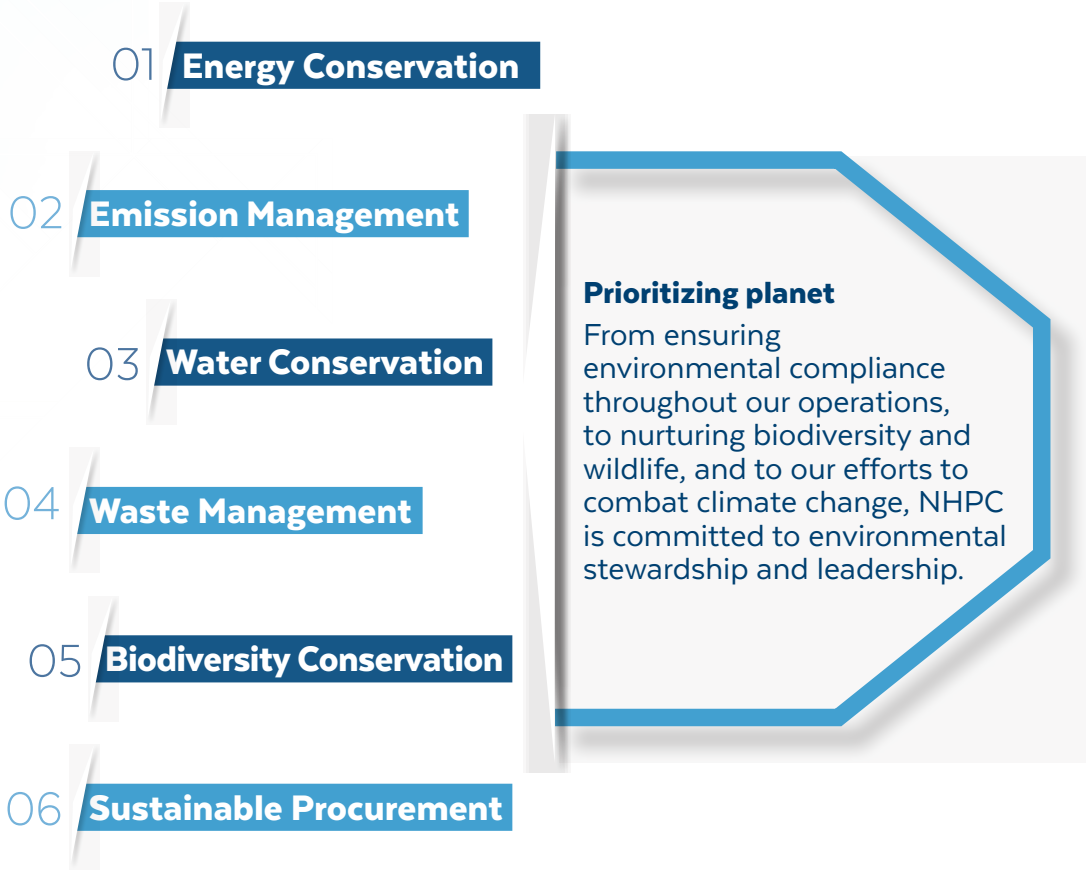


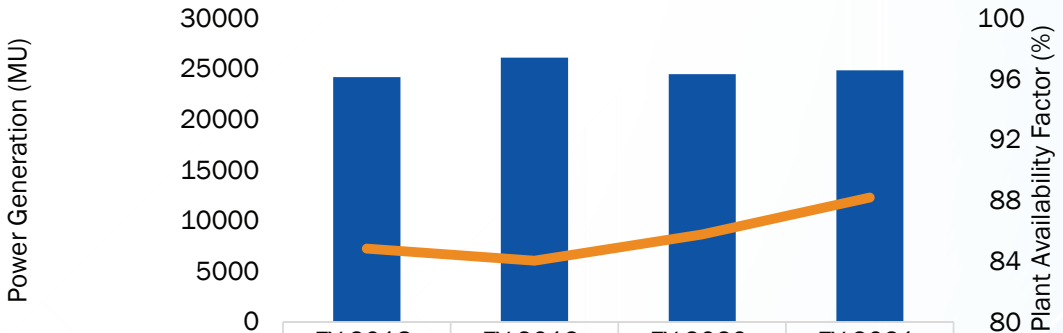
Figure 4.1: The focal areas of Environmental Sustainability at NHPC.

Environment & Diversity Management Division

NHPC has a dedicated Environment & Diversity Management Division to meet environmental planning needs during the planning, clearances, construction, and operation phases of a Power Project. The Division has defined roles and responsibilities, mainly related to obtaining the statutory clearances required for the construction of the hydropower projects, finalization of EIA/EMP studies, Remote Sensing and GIS, CDM, providing inputs of NHPC on draft policy/Acts/guideline of Government related to environment & Forest matters, coordination with the State Government for SIA and R&R plan as per ''The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCTLARR, 2013). NHPC deputes dedicated officials at Projects to ensure proper implementation of the EMP at construction sites. The Division coordinates with different Power Stations to ensure regulatory compliance and implementation of EMP and post-construction EIA studies for the sustainable development of hydropower projects.

4.1. Energy Generation and Conservation

NHPC has successfully generated 24855 million units (MUs) of electricity during the fiscal year 2021-22, which includes an additional 361 MUs of infirm generation from Parbati-II. This achievement marks an increase compared to the previous fiscal year, where NHPC generated 24471 MUs of electricity. The primary objective is to enhance energy efficiency across the entire value chain, encompassing the processes of energy generation, transmission, and distribution.



	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Power Generation	24193	26121	24471	24855
PAF (%)	84.84	84.04	85.76	88.19

Figure 4.2: Power generation for the financial years (2018-2022)

The power sector in India is undergoing a significant transformation due to the escalating demand for energy and the country's expanding global influence. India's increasing adoption of renewable energy sources has sparked a surge in exploring hydropower's potential in grid stabilization and fulfilling peak power requirements. The growing recognition and support from policymakers have propelled NHPC towards a growth trajectory, solidifying its role as a prominent entity in hydropower development.

NHPC is committed to aligning with India's ambitious "Panchamrit" commitment, which aims to achieve 500 GW installed electricity capacity from non-fossil fuel sources by 2030. NHPC has effectively achieved the development and execution of twenty-two Power Stations, which includes 20 HEP, one solar power project and one wind power project, resulting in a combined installed capacity of 5551.2 MW (standalone).

The utmost priority is strategically implementing a range of energy conservation measures to diminish the ecological footprint. The primary goal is to implement a holistic and all-encompassing energy management strategy. This proposed strategy entails meticulously monitoring energy usage, determining between renewable and non-renewable energy resources, and implementing initiatives

to optimise sustainable energy practices. The organisation has implemented a comprehensive energy consumption strategy that intelligently blends grid-sourced electricity with renewable energy sources. This approach ensures that all facilities, buildings, and offices are powered by a sustainable and environmentally friendly energy mix.

4.1.1. Energy Conservation and Efficiency measures

NHPC has successfully incorporated a diverse range of energy conservation measures into its operations. NHPC is fully committed to integrating energy-saving practices across all facets of its operations.

- Within the Corporate Office, a specialised Energy Conservation Task Force is constituted to champion energy conservation. This task force aims to enhance user awareness, closely monitor the implementation of energy-saving measures, and offer valuable feedback to the management team. The team will periodically provide expert guidance on optimising energy consumption and promoting sustainable practices.
- The Energy Audit of NHPC Office Complex in Faridabad is conducted by accredited External Agencies recognised by the Bureau of Energy Efficiency (BEE). Previously, a comprehensive energy assessment was conducted for eighteen Power Stations to assess the efficiency of diverse electrical apparatus, including generators, transformers, and related equipment.
- At Corporate Office, lighting is controlled through Building Management Systems, occupancy sensors, and motion detectors.

Developing New Frontiers in the Renewable Energy Sector

Aligned with the initiatives of the Government of India in the Renewable Energy Sector, NHPC is exploring new opportunities for power generation through the development of solar parks/ floating solar projects and solar power projects under the CPSU Scheme in various potential-rich states of India. NHPC has signed a Promoters' Agreement with Green Energy Development Corporation of Odisha Ltd. (GEDCOL) for the "Development of 500 MW Floating Solar Projects on Different Water Bodies in Odisha" Proposed equity participation ratio for the Joint Venture between NHPC and GEDCOL is 74% to 26%. This project will be one of the largest floating solar installations in the world upon completion.

- GRIHA certification was awarded to NHPC Corporate Office (Neer Shakti Sadan). The Corporate Office (Jyoti Sadan) is accredited with a prestigious three-star rating by the Bureau of Energy Efficiency (BEE) for its remarkable sustainable building practices.

Figure 4.3: GRIHA Rating of NHPC corporate office (Neer Shakti Sadan)

- NHPC regularly conducts routine maintenance on the HVAC (Heating, ventilation, and air conditioning) system to ensure optimal yearly performance and efficiency. During busy seasons, the dirty filters are cleaned or replaced every month to provide optimal energy savings.
- A state-of-the-art Grid Solar Power Station, boasting an impressive capacity of 230 kWp has been successfully installed on the rooftop of the Corporate Office. The residential colony of NHPC Corporate Office is partially powered through rooftop solar panels of 1000 kWp, connected with grid.
- Variable frequency drives are installed in the operation of the AHU and other motor operation.
- NHPC effectively raises awareness among the staff about energy-saving practices using thoughtfully designed posters aligned with the Mission LiFE (Lifestyle for Environment) initiative.

Table 4.1: Total energy consumption by NHPC.

Energy Consumption (MWh)				
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Electricity Purchased (From Grid)	61,968	51,082	55,863	58,047
Non-Renewable Energy sources	17,360	22,898	15,729	16,040
Renewable Energy sources	16,480	17,157	15,690	26,111
Total Energy Consumption	**95,808**	**91,137**	**87,282**	**1,00,199**

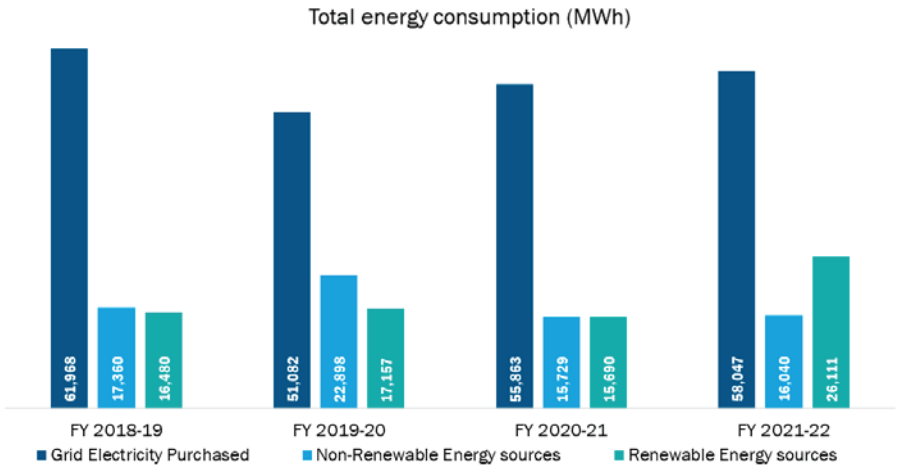


Figure 4.4: Energy Consumption at NHPC (in MWh)

Table 4.2: Energy intensity of NHPC.

Energy Intensity	measure	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Total energy consumption	MWh	95,808	91,137	87,282	1,00,199
Product throughput or Power Generation or Number of full-time employees or Monetary units (such as revenue or sales).	Million Units (MUs)	24,193	26,121	24,471	24855
Energy Intensity (in MWh/ (MU or No. of employee or revenue INR crore)	(MWh/ MUs)	3.96	3.49	3.57	4.03

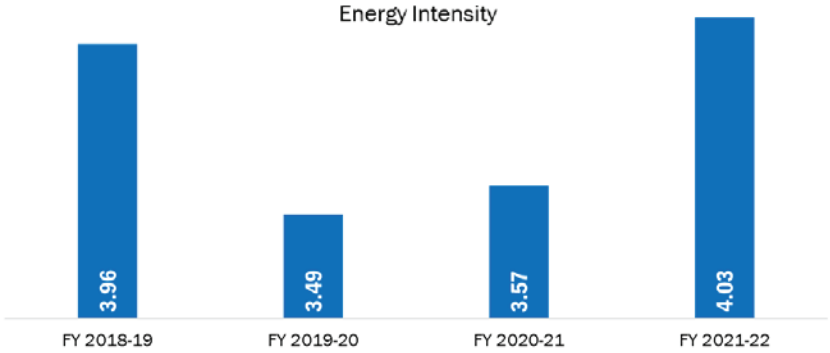
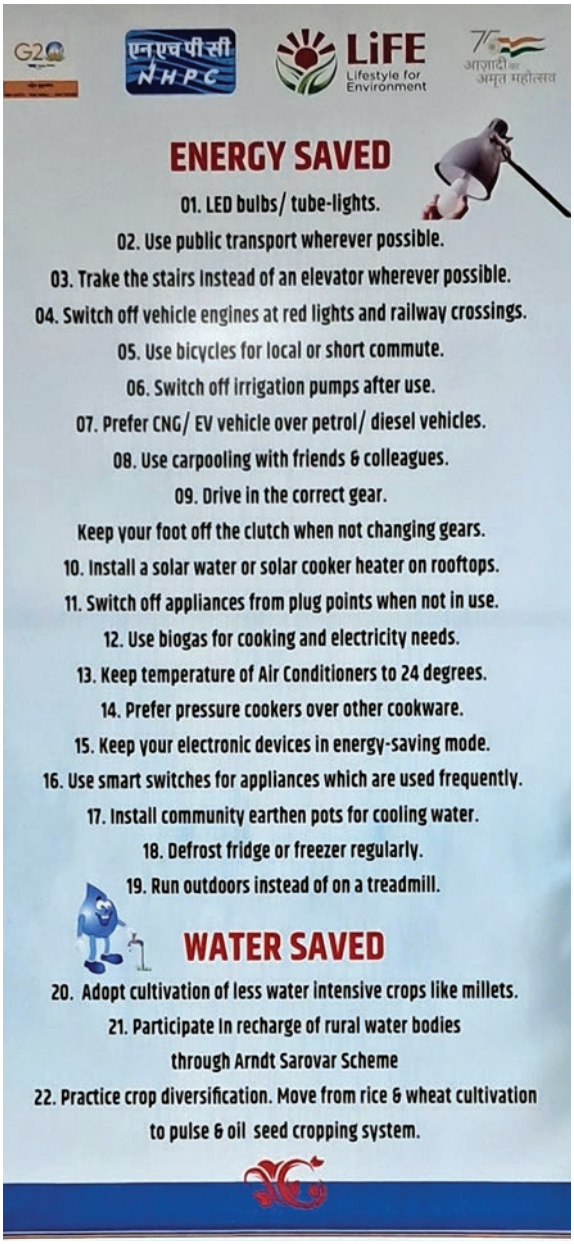


Figure 4.5: Energy Intensity per MU of electricity generated.



The cornerstone of sustainability is efficient resource use, a concept that reduces operating costs and serves as a vital safeguard for the world's future. Within this context, process redesigns, equipment conversion, and retrofitting stand out as powerful tools for bringing about change.

Our deliberate and carefully planned efforts in energy saving, such as the installation of power-efficient lighting and other energy-saving initiatives, have resulted in Energy savings of 7,777 GJ in FY 2021-22, which is higher than the previous fiscal year 2020-21(4,976 GJ). This significant accomplishment results in substantial cost savings and a notable decrease in greenhouse gas emissions. The energy saved equates to reducing emissions by 1,706.52 Metric Tonnes of Carbon Dioxide Equivalent ($MTCO_2e$) in the fiscal years 2021-22.

These savings have been made possible by implementing energy-efficient processes, adopting cutting-edge technology, and updating outdated machinery. Whether switching to LED lighting systems, improving HVAC systems, or streamlining power generation procedures, each small change has a significant overall effect.

Figure 4.6: Energy and emission reduction through various initiatives.

Figure 4.7: MoU with Convergence Energy Services Limited on EV charging infrastructure

4.2. Emission Management

India's goal of attaining net zero emissions by 2070 and meeting 50% of its power demand through renewable sources by 2030 is a watershed moment in the global fight against climate change. India is creating an excellent example of sustainable development by pioneering a new paradigm of economic advancement that avoids carbon-intensive approaches. Because of its enormous contribution to generating low-carbon electricity on a broad scale through non-consumptive water usage, hydropower is a vital component in aiding the transition to a greener energy future. According to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), hydropower has lower median lifecycle greenhouse gas emissions than most other sources of power generation, with only wind and nuclear power having lower emissions.

4.2.1. Scope 1 and Scope 2 Emissions

As a leading organisation in the Indian power sector, NHPC enjoys a significant position as one of the country's largest hydropower producers. NHPC is actively involved in generating electricity by utilising the power of hydropower as well as other ecologically friendly renewable energy sources such as solar and wind. This contributes to India's efforts to meet its commitments under international climate agreements like the Paris Agreement.

NHPC has established procedures and frameworks for collecting and managing Scope 1 and Scope 2 emissions data. Even though the hydroelectric power generation operations do not emit significant greenhouse gas or air pollutants, NHPC is trying to ensure an accurate and comprehensive representation of the environmental footprints. In Scope 1 emissions, NHPC has included the direct emissions arising from the facilities owned or under the control of NHPC. At most of its sites, the maintenance of the HVAC system is outsourced through annual maintenance contracts (except SEWA II, TLDP-IV, and Tamil Nadu Solar Power Station). Hence, the fugitive emission of refrigerants from these sites is included in Scope 1.

Furthermore, NHPC has implemented a dry chemical fire extinguisher in most of its sites; hence, the fugitive emissions from the CO_2-based fire extinguishing system were included in the calculation, wherever applicable. Scope 2 emissions have retained the indirect emissions that arise from the generation of purchased energy. The current report uses conversion factors from the IPCC to compute the quantitative data disclosed under emissions management.

NHPC is committed to spearheading initiatives to mitigate emissions by

implementing energy-efficient practices. The performance of solar power generation units at its offices and Power Stations, along with efficient grid power consumption and other interconnected activities for auxiliary and allied purposes, has paved the way to significantly reducing greenhouse gas emissions.

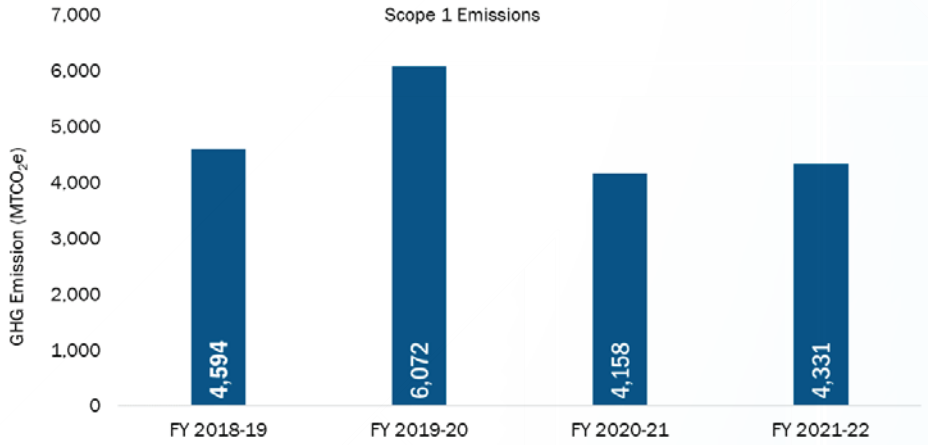


Figure 4.8: Assessment of Scope 1 emissions.

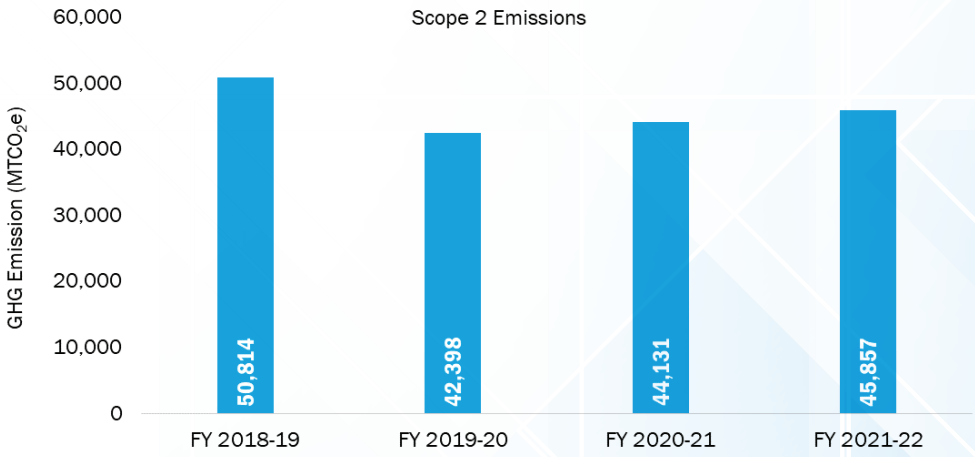


Figure 4.9: Assessment of Scope 2 emissions.

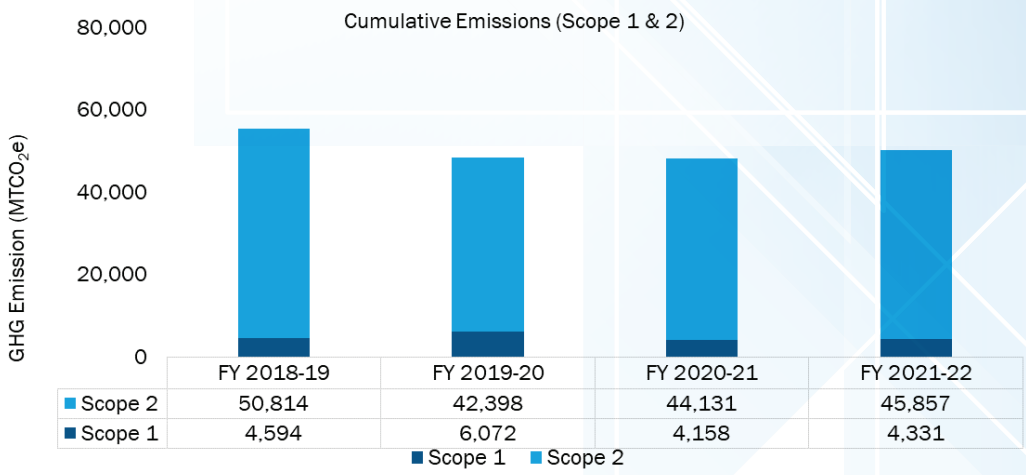


Figure 4.10: Cumulative inventory of (Scope 1 & 2) emissions.

Greenhouse gas (GHG) emission studies were conducted for NHPC's Power Stations (Dhauliganga St-I and Teesta-V) as part of the post-construction EIA. The GRAT model, developed by UNESCO/IHA in 2012, predicted high GHG emissions in the initial phase of filling up the Dhauliganga reservoir in 2005. However, the predicted emissions decreased after 12 years (2017) and became miniscule in the next 100 years. The model indicates a Medium GHG risk; hence, no net GHG emissions assessment is required.

4.2.2. GHG emission Intensity

NHPC is committed to making significant strides in sustainability with a steady commitment to reducing greenhouse gas emissions. In the reporting year, the greenhouse gas emission intensity was observed as 2.01, as measured in $MTCO_2e$ (Metric Tonnes of carbon dioxide equivalent per million units). NHPC intends to calculate its Scope 3 emission, though the current reporting boundary is confined to Scope 1 and 2 emissions.

The evident demonstration of NHPC's dedication to environmental stewardship and its commitment to mitigating climate change is exemplified by the extensive afforestation initiatives, both compensatory and voluntary, undertaken in the hydroelectric project. Afforestation activities result in a noticeable transformation towards a greener environment and are also studied worldwide on their efficacy as a carbon sink.

Table 4.3: Emission Intensity of NHPC Limited.

Emission Intensity	MEASURE	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Total Scope (1+2)	$MTCO_2e$	55,407	48,470	48,289	50,189
Power Generation	Million Units (MUs)	24,193	26,121	24,471	24,855
Total Scope (1+2)/ Power Generation	$MTCO_2e$/ Million Units	2.29	1.86	1.97	2.02

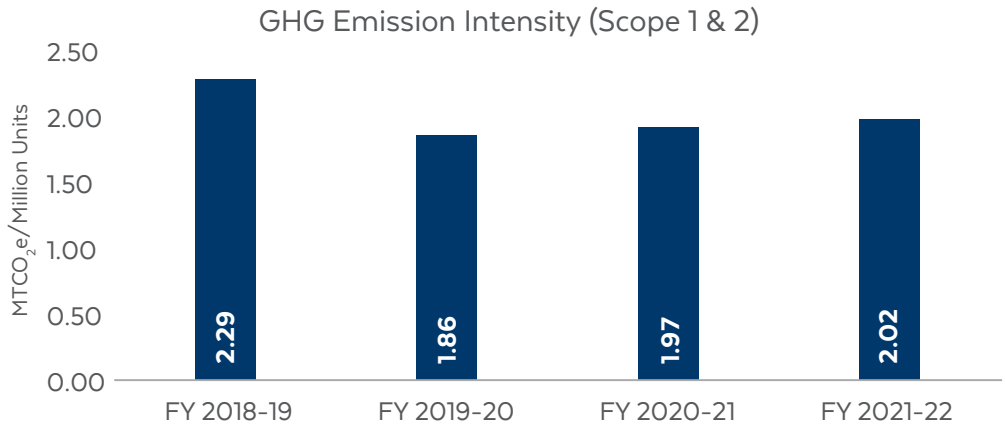


Figure 4.11: Emission intensity ($MTCO_2e$/Million Units) of NHPC.

4.2.3. NHPC's Carbon Credits trading

Clean Development Mechanism (CDM) of United Nations Framework Convention on Climate Change (UNFCCC) allows emission-reduction projects in developing countries to earn Certified Emission Reduction (CER) credits, each equivalent to one tonne of CO_2. These CERs can be traded and sold, used by industrialised countries to meet a part of the emission reduction targets under the Kyoto Protocol. VCS Mechanism (Verified Carbon Standard, driven by VCS Board, USA) is the world's most widely used voluntary GHG reduction Program. Emission reductions certified by VCS are eligible to be issued as Verified Carbon Units (VCUs), with one VCU representing one metric tonne of greenhouse gas emissions reduced or removed from the atmosphere. Carbon Credits have been earned for various Power Stations of NHPC under (A) Clean Development Mechanism (CDM) of United Nations Framework Convention on Climate Change (UNFCCC) and (B) Verified Carbon Standard (VCS) program of Verra.

Benefits accrued under CDM:

Nimmo Bazgo and Chutak Power Stations of NHPC are certified under CDM of UNFCCC. Revenue of INR 1.67 Crore was earned from sale of CERs of these two Power Stations.

Table 4.4: Benefits accrued under CDM at Nimmo Bazgo and Chutak Power Stations.

S. No.	Power Station	Verification Period	CERs issued	CERs sold	Sale rate (USD)	Revenue realised (INR in lakhs .)	Remarks
1	Nimoo Bazgo PS	17.06.2013-30.06.2015	1,38,595	1,38,595	0.95	117.53	CERs sold in FY 2021-22
2.	Chutak PS	01.02.2013-31.01.2015	58,615	58,615	0.95	49.70	
	Total	-	**1,97,210**	**1,97,210**	-	**167. 23**	-

Benefits accrued under VCS:

The following Power Stations of NHPC have been certified under VCS program of Verra. Revenue INR 51.34 Crore has been earned from sale of VCUs of these Power Stations.

Table 4.5: Benefits accrued under VCS at the Power Stations of NHPC.

Sl. No.	Power Station	Verification Period	VCUs issued	VCUs sold	VCUs available for sale	Sale rate in (USD)	Revenue realised (INR in lakhs.)	Remarks
1	Teesta-V PS	01.04.2008-31.05.2012	80,53,439	18,66,600	24,36,839	0.45	279.95	Sold till FY 2013-14
				37,50,000		1.0, 1.05, 4.35	3213.99	Sold in FY 2021-22.
2.	Uri-II PS	25.09.2013-28.09.2014	13,05,089	13,05,089	0	0.195, 0.26, 0.2605	133.81	Sold in FY 2019-20 & FY 2020-21
3.	Parbati-III PS	24.03.2014-29.03.2015	6,30,977	6,30,977	0	0.195, 0.35	101.98	
4.	TLD-IV PS	14.02.2016-16.07.2017	8,05,717	8,05,717	0	0.195, 0.285	68.22	Sold in FY 2019-20
5.	Kishanganga PS	13.03.2018-31.05.2019	6,85,478	6,85,478	0	2.36	1336.20	Sold in FY 2021-22
	Total	-	**1,14,80,700**	**90,43,861**	**24,36,839**	-	**5,134.14**	-

Further, the certifications of VCUs for subsequent verification periods are being taken up for the above Projects/ Power Stations.

4.2.4. Air Quality

NHPC consistently monitors ambient air quality for its projects throughout the construction and operational phases as per the norms of the State Pollution Control Board. During the construction phase, a multitude of activities can have an impact on the air quality within the project area. These activities include vehicular traffic, material handling, the generation of dust from unpaved roads, and construction machinery operation. These anthropogenic activities contribute to the particulate matter and gaseous emissions during construction phase are subsided once projects are commissioned.

At all its construction sites, NHPC ensures the implementation of air pollution control measures (such as use of water sprinklers, covering the construction material and debris etc.). Periodic monitoring of the ambient air quality at the construction

sites are conducted by NHPC through NABL certified laboratories. SPCB also regularly monitors these activities and emissions for compliance.

The operational activities of NHPC (Hydroelectricity generation) do not emit criteria air pollutants (such as Sulphur Dioxide (SOx), Oxides of Nitrogen as NOx, Respirable Suspended Particulate Matter (RSPM / PM10) and Fine Particulate Matter (PM2.5), Persistent Organic Pollutants (POPs) etc). Furthermore, NHPC being a power generator, has extremely low dependency on diesel genset, NHPC has been diligently conducting monitoring of the emission from DG sets at some of its operational sites (for example, SEWA II, Parbati II, Parbati III) through NABL-certified laboratories. The observed values are well within the limits defined by Central Pollution Control Board, Government of India. As a commitment to environmental sustainability, NHPC aims to establish the periodic air quality monitoring mechanism of all DG sets within its operational control, regardless of usage.

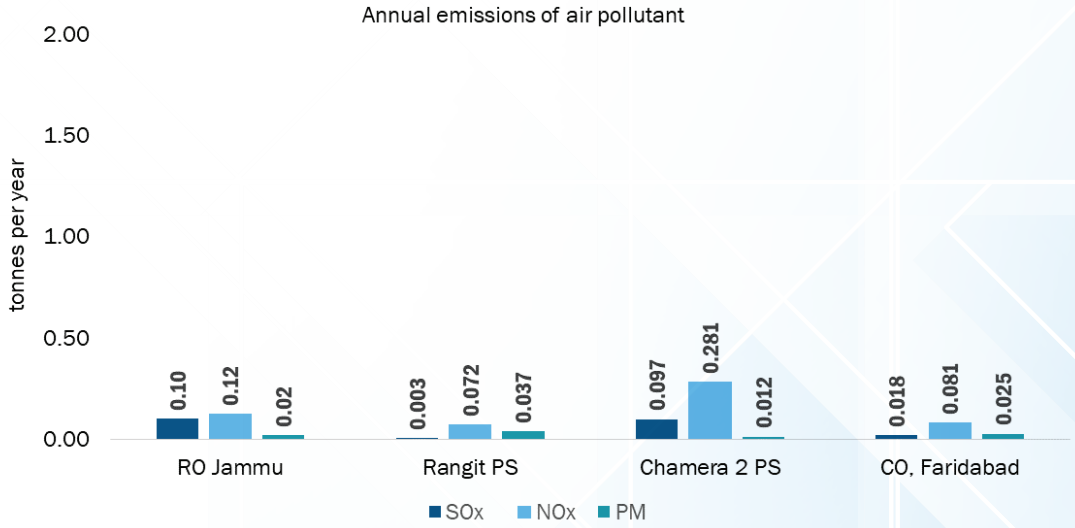


Figure 4.12: Annual emission of SOx, NOx and particulate matter from DG stacks at selected Regional Office and Power Stations of NHPC.

These values are calculated from the average emission values from the DG sets and number of operational hours.

4.3. Water Conservation

Acknowledging the fundamental significance of water in sustaining life and ecological systems, NHPC has commendably undertaken initiatives to preserve and effectively govern water resources. NHPC has a Corporate Environment Policy showcasing its commitment to implementing effective water management strategies across all activities, thus aiming at the well-being of ecosystems and communities. The primary business operation of NHPC, hydropower generation, entailed the non-consumptive utilisation of water. The water is primarily used for facilities of office and residential colonies.

Water conservation is actively promoted and prioritised across all its operations, fostering a profound sense of stewardship among the dedicated team members. NHPC optimises water conservation efforts through sustainable consumption, transitioning towards reclaimed water utilization, and the targeted implementation of rainwater harvesting and storage systems for most of its sites.

The dam reservoir serves multiple purposes as a water-conserving structure such as providing flood cushions, supplying potable water, recharging the groundwater table, and enhancing agricultural productivity in the vicinity. Moreover, the regulated water supply (environmental flow) through diversion structures ensures conservation of aquatic environments, enhanced agricultural productivity and fulfil the socio-cultural requirements.

4.3.1. Water Withdrawal

NHPC has set a commendable objective of practising responsible water utilization and its management. The water conservation strategy encompasses multiple considerations, including project-specific risks and impacts, such as maintaining environmental flow.

Based on the data on water withdrawal for the fiscal year 2021-2022, it is evident that surface water constitutes the predominant source for the requirement for the facilities of office and residential colonies. NHPC adheres to regulatory permits and ensures water intake quantity is considered water consumption, ensuring it does not negatively impact water bodies from where it is withdrawn.

Table 4.6: Water Withdrawal for facilities.

Water Withdrawal (Kilolitres)				
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Municipal Water Supply (Third Party)	11,385	11,042	12,787	14,100
Tanker water	3,429	3,429	3,429	3,666
Ground water (bore/open wells)	5,33,641	5,46,422	5,36,790	4,97,677
Surface water	10,44,045	10,49,307	10,66,873	10,25,367
Total Water Withdrawal	**15,92,500**	**16,10,199**	**16,19,879**	**15,40,810**

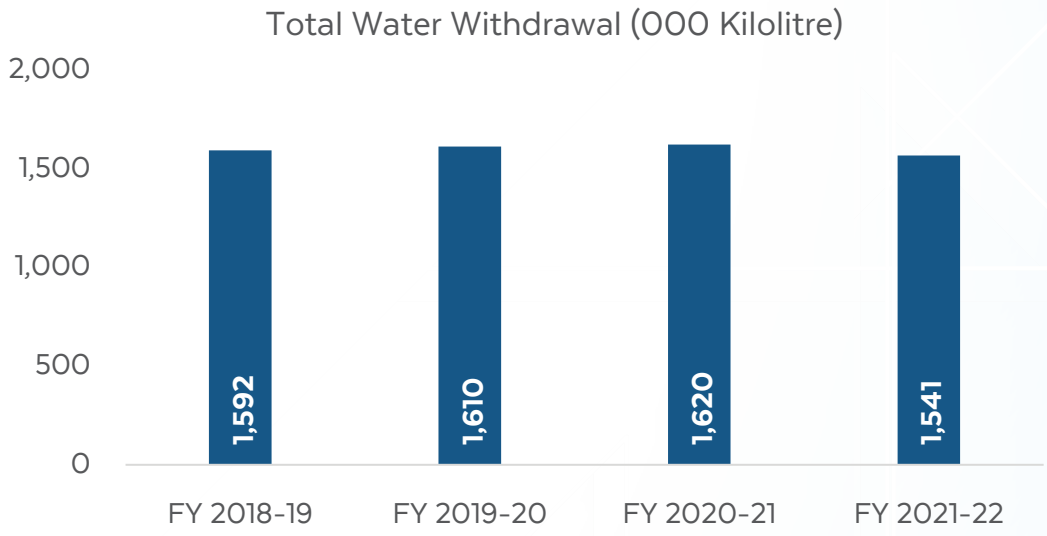


Figure 4.13: Total Annual Water Withdrawal for 2018-2022.
(000 Kilolitres indicates multiple of 1000= million litres).

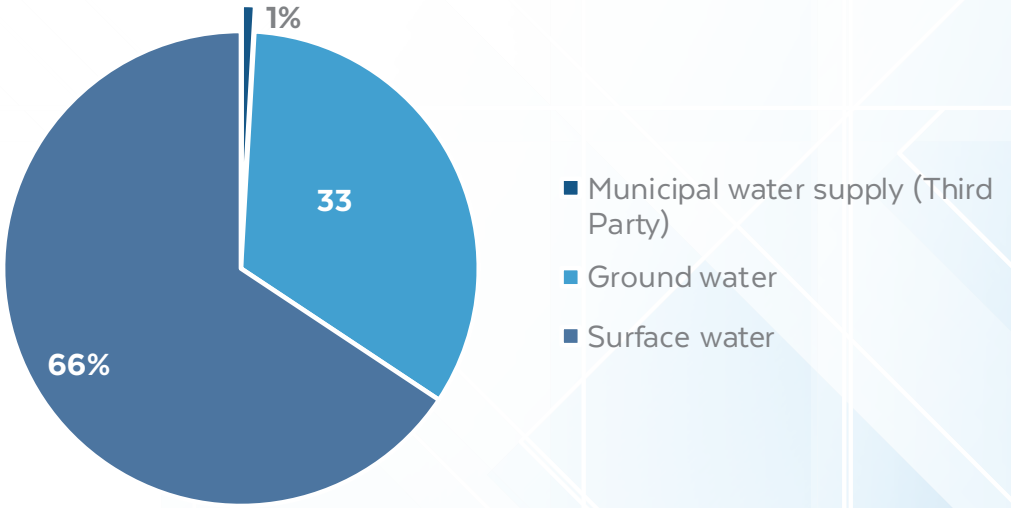


Figure 4.14: Key sources of water utilised for the offices and colonies.

4.3.2. Water Consumption

NHPC is cognizant of the growing concern around the scarcity of freshwater resources and thus strives to implement sustainable water management initiatives. With surface water as the primary source, NHPC has taken initiatives to monitor and reduce freshwater consumption. In the operations, the water consumption is mainly for regular use in facilities (offices and colonies) of Power Stations.

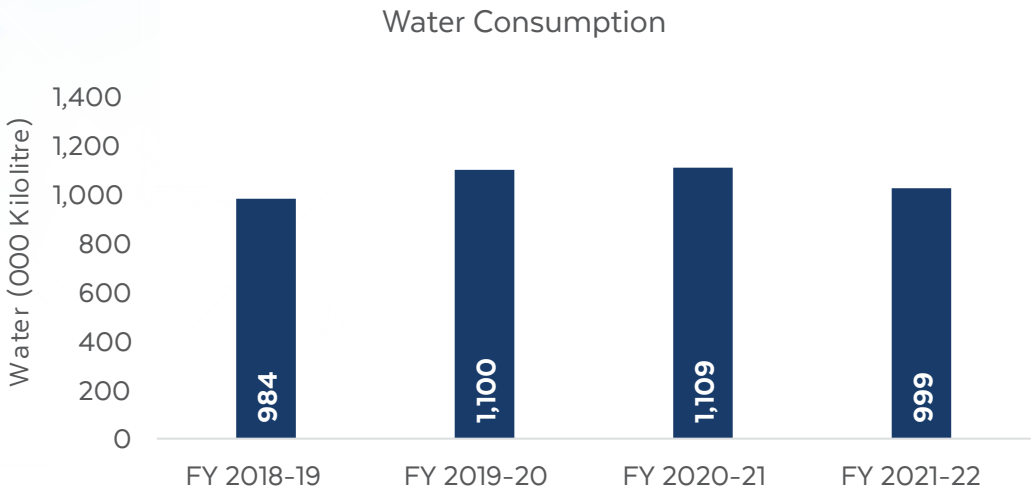


Figure 4.15: Water consumption by the offices and colonies.

4.3.3. Wastewater disposal

NHPC is committed to upholding environmentally conscientious practices, exemplified by diligent wastewater management. The discharge of wastewater is in strict accordance with the 'General Discharge Standards' set forth by the Central Pollution Control Board (CPCB) and the Government of India, ensuring that only treated wastewater is released. Appropriate strategies for managing untreated wastewater originating from various sources, such as installing soak pits, septic tanks, and other relevant infrastructure, are already in place. NHPC is establishing Sewage Treatment Plants (STPs) at various projects. The NHPC residential colony at Faridabad complies with Zero Liquid Discharge.

Figure 4.16: Sewage treatment plant, Parbati II HEP, Nagwain, Himachal Pradesh.

The amount of wastewater generation and discharged is provided in the Table 4.7; in the locations where the wastewater is discharged into septic tanks or soak pits, the volume of wastewater generated was not measured, which has been estimated for the report as 80% of the volume of water withdrawal.

Table 4.7: Wastewater disposal and recycling.

	MEASURE	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Wastewater generated	000 Kilolitres	639.54	550.60	579.93	637.25
Wastewater recycled/ reused	000 Kilolitres	30.13	40.37	69.02	95.75
Wastewater discharged	000 Kilolitres	608.89	510.23	510.91	541.50

4.4. Waste Management

NHPC prioritises environmental protection by responsibly managing waste generated through its business operations. NHPC's Corporate Environment Policy promotes environmental conservation by managing waste responsibly and ethically by the government's Waste Management Rules. It has incorporated leading industry standards and follows waste management procedures that meet or surpass the applicable legal obligations.

The facilities follow all relevant Environment, Health, and Safety (EHS) requirements to ensure ecologically responsible disposal practices. NHPC ensures that waste generated by labour camps and the site office is treated and disposed of according to SPCB requirements. Reuse and recycling, storage and segregation, collection and transportation, and disposal are all parts of solid waste management at NHPC. The generated waste is collected, separated, and disposed of, following the rules and notifications issued by the Government of India (GoI) and the Central Pollution Control Board (CPCB). Awareness drives are conducted for good waste management practices.

Table 4.8: Quantity of hazardous waste generated.

Economic Snapshot of NHPC (INR in crore)				
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
E-Waste	2.21	0.79	4.96	2.68
Drums/Tins	1.91	1.76	5.77	7.60
Acrylic waste, plastic	0.00	0.00	0.00	0.00
Used Batteries	5.75	0.46	8.48	7.21
Waste Oil	66.80	10.35	61.31	17.67
Bio-Medical Waste	2.98	0.85	3.44	1.35
Total Hazardous Waste Generated	**79.65**	**14.22**	**83.96**	**36.51**

Table 4.9: Quantity of non-hazardous waste generated.

Non-Hazardous Waste (Metric Tonnes)				
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Organic Waste	916.26	419.53	404.48	442.26
Demolition waste	0.00	0.00	0.00	21.76
Ferrous Scrap	3.91	355.33	1,284.91	625.78
Tyres	0.05	0.04	0.43	0.02
Non-Ferrous Scrap	12.40	16.18	63.19	47.65
Drums/Tins	0.29	0.30	10.98	0.36
Wooden Scrap	48.00	0.00	50.00	0.00
Other Non-Hazardous Waste	43.18	42.32	44.45	44.54
Total Non-Hazardous Waste Generated	**1,024.10**	**833.70**	**1,858.43**	**1,182.36**

NHPC has suitable waste management procedures for each type, including solid waste, hazardous waste, and e-waste. Non-hazardous waste, such as scrap, ferrous metals, and so on, is collected in designated places and auctioned off periodically when it reaches an appropriate level. Hazardous waste (oil, batteries, e-waste, etc.) is also stored and disposed of regularly by authorized recyclers/vendors. In the buy-back policy, batteries are exchanged at a discounted rate.

NHPC has adopted an e-Waste Policy, and all e-waste disposal is done through authorized e-waste handlers. Biomedical waste is either disposed of by authorized recyclers/vendors or buried in deep burial pits in the case of remote sites following Biomedical Waste Management Rules, 2016. The construction and demolition waste generated from operation and maintenance activities fills low-lying areas and road patches.

Table 4.10: Quantity of hazardous waste disposed through authorised vendors.

Hazardous waste directed to disposal (Metric Tonnes)				
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Incineration	0.00	0.00	0.00	0.00
Landfilling	0.00	0.00	0.00	0.00
Other disposal operations	77.44	13.43	79.01	33.83
Total	**77.44**	**13.43**	**79.01**	**33.83**

Table 4.11: Quantity of non-hazardous waste directed to disposal.

Non- Hazardous waste directed to disposal (Metric Tonnes)				
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Incineration	0.00	0.00	0.00	0.00
Landfilling	43.18	42.32	44.45	44.54
Other disposal operations (Disposed through authorised vendors/recyclers)	964.26	419.53	454.48	442.26
Total	**1,007.45**	**461.85**	**498.93**	**486.79**

Table 4.12: Quantity of hazardous waste diverted from disposal.

Hazardous waste diverted from disposal (Metric Tonnes)				
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Recycled	0.00	0.00	0.00	0.00
Re-used	0.00	0.00	0.00	0.00
Other recovery operations (Recycled through authorised vendors/ recyclers)	2.21	0.79	4.96	2.68
Total	**2.21**	**0.79**	**4.96**	**2.68**

Table 4.13: Quantity of non-hazardous waste diverted from disposal.

Non-Hazardous waste diverted from disposal (Metric Tonnes)				
	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Recycled	0.00	0.00	0.00	0.00
Re-used	0.00	0.00	0.00	21.76
Other recovery operations (Disposed through authorised vendors/recyclers)	16.65	371.85	1,359.50	673.81
Total	**16.65**	**371.85**	**1,359.50**	**695.57**

NHPC ensures that non-biodegradable waste is separated and transported to designated disposal locations, which are selected in consultation with local authorities. The dumping sites during the construction phase are monitored monthly by NHPC and the State Pollution Control Board. Even though NHPC has adopted numerous waste management strategies for its operational activities such as waste to compost machine at NHPC residential colony, Faridabad, the quantity of non-hazardous waste generated is not measured or is measured at irregular periods. NHPC is developing a system for maintaining waste generation and disposal records on its intranet portal.

Figure 4.17: Cleanliness drive by the Corporate Office, NHPC.

4.5. Biodiversity Conservation

NHPC, as a conscientious organization, places great emphasis on environmental stewardship, with a primary focus on promoting clean and sustainable power generation. NHPC demonstrates a steadfast dedication to the preservation of natural habitats and the advancement of a more sustainable future through the safeguarding and enhancement of ecosystems. NHPC's Corporate Environment Policy ensures the provision of clean energy while upholding environmental safeguard measures and prioritising biodiversity conservation across all its projects, Power Stations, and establishments.

Hydropower projects are commonly situated in geographically isolated regions of India, particularly in the North and North-eastern States, known for their abundant biodiversity. These states host a rich assemblage of floral and faunal species, showcasing remarkable biodiversity. NHPC thoroughly examines this aspect as part of the Environmental Impact Assessment (EIA) process carried out during a project's survey and investigation phase.

The Environmental Management Plan (EMP) report recommends project-specific conservation measures for preserving biodiversity based on its observations of EIA studies. Project-specific biodiversity management plans are prepared based on baseline data in the EIA report. Respective State Forest Departments implement these plans at the cost of NHPC and include activities such as afforestation, habitat conservation, and anti-poaching activities. Other initiatives encompass ex-situ conservation strategies such as establishing Herbal Park, Orchidarium, Butterfly Park, Biodiversity Conservatories, and more.

The Subansiri Lower HEP, Arunachal Pradesh and Assam, necessitates the implementation of anti-poaching measures and biodiversity conservation strategies to uphold and enhance the habitat for floral and faunal species as per EMP.

The orchidarium at Gerukamukh (Assam), Tippi, Arunachal Pradesh, and at TLDP IV have been established with the primary objective of conserving and safeguarding the diverse floral species in these regions. Habitat improvement for one horned rhinoceros under CA scheme at TLDP-IV has been carried out by Forest Department at the cost of NHPC.

The Butterfly Park at Teesta-V PS in Sikkim was created in collaboration with the State Forest Department, with partial funding support of NHPC. Aside from that, habitat improvement has been carried out to preserve local faunal species such as the flying fox. In addition, several preferred food plants of butterflies and birds have been planted wherever possible in the green belt to conserve the butterfly fauna and its habitats.

Figure 4.18: Butterfly Park at Teesta V.

The Parbati-II Hydroelectric Project in Kullu district of Himachal Pradesh has taken up biodiversity conservation activities in Great Himalayan National Park (GHNP) in Himachal Pradesh through State Forest Department. For effective implementation and monitoring of biodiversity conservation activities, a dedicated Parbati Valley Conservation Cell has been established by State Forest Department. The conservation activities implemented by State Forest Department in GHNP include afforestation efforts and habitat improvement activities for conserving the Western Tragopan and other endangered species within the region.

Figure 4.19: Orchidarium at Subansiri Lower HEP and Teesta Low Dam IV.

NHPC has demonstrated its commitment to environmental conservation by extending financial assistance to support conservation initiatives in the Parbati Valley of Himachal Pradesh. This effort is being carried out by the State Forest Department with financial aid from NHPC. The State Forest Department has undertaken two projects aimed at promoting sustainable environmental practices and conservation efforts.

- Sustainable Livelihoods based approach in biodiversity conservation in the Great Himalaya Conservation landscape: INR 17.41 Crores
- Conservation of Endangered species in Himachal Pradesh: INR 20 Crores

4.5.1. Catchment Area Treatment

Catchment Area Treatment measures to combat soil erosion is implemented through State Forest Department in all the hydropower projects at the cost of NHPC. These include engineering measures like check dams, gabion walls, catch water drains, bio-engineering like brushwood/ bamboo check dams, geo-textile, palisade structures, and biological measures, such as plantation of indigenous species. These measures have significantly treated degraded land and reduced soil erosion, with some areas forming lush vegetation cover.

4.5.2. Green Belt Development

NHPC Projects focus on environmental enhancement through landscaping, beautification, and green belt development measures. Green belts are created around the reservoir periphery to prevent soil erosion and sedimentation. Fruit-bearing, ornamental, avenue, patch, and fast-growing tree plantings are also undertaken at power stations, project sites, offices and residential colonies to improve the area's aesthetic appeal.

4.5.3. Restoration of Dumping Sites and construction areas

Dumping Sites are required to dump muck excavated from tunnelling or road works. Therefore, during the planning stage of a project, dumping sites are identified. During construction work, muck is dumped, and levelling is done. Some parts of muck are reused for aggregates. After filling of the dumping sites, restoration works are done by putting soil and plantations. The restored dumping sites located on the forest land, are handed over back to the State Forest Department.

In Himachal Pradesh, the Mining Department permits lifting of dumped muck at designated dumping site of projects for the use of third-party crushing plant operations. This, in turn, protects another new quarry site being harnessed, and the State Government gets a royalty from crushing plant owners. Presently, dumped muck is being lifted from one of the dumping site (DS-3 Tarera) of Parbati-III PS as per the permission of Himachal Pradesh Mining Department.

NHPC implements suitable restoration measures on dumping sites and other construction areas to restore the environmental resilience of the area. In Parbati II, NHPC had collaborated with the Institute of Himalayan Bio-resource Technology Palampur, Himachal Pradesh, to implement slope stabilization and afforestation measures at ten closed dumping sites to restore these sites.

After completion of dumping activities, most of the dumping sites of Parbati-II Project, Parbati-III PS and Chamera-III PS etc. located on forestland have been restored and handed over back to State Forest Department.

Figure 4.20: Restored dumping site at Parbati-III PS after plantation by Himachal Pradesh Forest Department.

4.5.4. Landscaping and Restoration of Construction Area

NHPC has implemented landscaping initiatives on the suitable area after the completion of construction. This includes establishing children's playgrounds and gardens, greenbelt plantations. NHPC has established herbal parks at Corporate Office, and at some of the power stations to conserve and encourage medicinal and economically valuable plant species, including those indigenous to areas.

4.5.5. Compensatory Afforestation

Compensatory afforestation (CA) is a process undertaken by the respective State Forest Department at the cost of NHPC to compensate for the area of forest land diverted for project construction (The Forest (Conservation) Act, 1980). NHPC has carried out CA over degraded forest twice in extent of the forest area diverted. This includes planting tree species of local importance, habitat and wildlife conservation, and enhancing the environment. Additionally, NHPC carries out afforestation regularly under its Green Belt Development plan and Voluntary Afforestation schemes.

Figure 4.21: Greenbelt at NHPC colony, Faridabad.

Figure 4.22: Herbal Park at Corporate Office, NHPC.

Figure 4.23: Plantation at Herbal Park at Corporate Office, Faridabad.

Figure 4.24: List of medicinal plants at Herbal Park, Corporate Office, Faridabad.

4.5.6. Reservoir Rim Treatment

Reservoir rim treatment measures are implemented as per EMP to prevent soil dislodging from unstable patches, such as landslides or slips, around the reservoir periphery. Green Belt development measures are also implemented to avoid soil erosion and sedimentation, ensuring stability and preventing landslides and falls.

4.5.7. Fisheries Management

NHPC is implementing mitigation measures to minimise the impact of damming on aquatic systems, including fisheries as per the EMP of the Projects/ Power Stations. Fish passage facilities are provided to protect and conserve migratory fish and fish ladder gates are operated with sufficient discharge during migrating periods to ensure favourable conditions for fish migration. Fish ladder has been constructed along the RCC dam at TLD-IV PS, West Bengal, allowing for the movement of migratory fish like Mahseer and Snow Trout. Likewise, fish ladders are also installed at TLDP-III PS West Bengal, and Tanakpur PS, Uttarakhand and Uri-I PS, J&K to facilitate fish migration. Wherever, the fish ladder is not feasible, the fish hatcheries/fish farms are developed by State Fishery Department, with financial aid from NHPC for the propagation of indigenous fish species by adopting river ranching programme.

Figure 4.25: Fish ladder along a RCC dam at TLD-IV PS, West Bengal

Figure 4.26: Trout Fish Hatchery at Nimmo-Bazgo PS, UT of Ladakh.

4.5.8. Environmental Flow

NHPC is committed to responsible hydropower generation and conserving aquatic ecosystems, biodiversity, and downstream user needs. Maintaining environmental flow downstream of diversion structures is crucial for the long-term survival of biological diversity and ecosystem health.

Environmental flow release recommendations are based on modelling studies to reduce the impact of altered flow regimes during peaking and non-peaking power generation. NHPC also complies with the regulatory norm of e-flow to ensure the environmental sustainability.

Figure 4.27: Arrangement for e-flow at Parbati-III PS, Himachal Pradesh.

4.6 Ensuring Sustainability across the Supply Chain

NHPC is committed to fostering sustainability throughout its supply chain by implementing innovative procurement strategies. NHPC, through its strategic procurement approach, is actively promoting the development of a sustainable and socially responsible supply chain ecosystem. The primary objective is to establish consistency in the procurement norms, standards, policies, procedures, practices, and guidelines across NHPC. This aims to enhance transparency and foster public accountability in the operations.

NHPC utilises the Government of India e-tendering platform (GeM) to reach a vast network of vendors and suppliers effectively, ensuring seamless coordination and optimal resource allocation. All the tenders are processed through the GeM Portal and the Central Public Procurement (CPP), which serve as platforms for transparent and efficient procurement procedures as defined by the Government of India from time to time. This ensures openness and fairness within the bidding process, ensuring that all interested parties have an equal opportunity to participate and succeed. All the government policies regarding public procurement viz; Public Procurement (Preference to Make in India) Order'2017, Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012, Policy related to Land Border sharing etc. along with NHPC's own preferential policy for project affected family etc. are being strictly followed. The tenders are evaluated through a constituted committee (except category bidding on GeM) complying CVC guidelines and vendor/ supplier assessment criteria encompassing social, environmental, and governance parameters.

NHPC, a leading proponent of sustainable energy solutions, adheres to the globally recognised International Competitive Bidding (ICB) system, ensuring that only the most qualified, competent, and high-performing agencies are

selected to construct the hydropower projects. The techno-commercial bids are meticulously evaluated as per internationally recognised ICB practices, the established guidelines set forth by the Central Vigilance Commission (CVC), and various other prescribed norms and initiatives of the Government of India. NHPC has recently entered a Memorandum of Understanding (MoU) with Transparency International India.

Promoting local procurement

NHPC adheres to the latest Government of India Directives on Public Procurement, promoting indigenous products and ensuring procurement of services and goods for Micro and Small Enterprises and Start-Ups. A part of the local procurement is reserved for local and project-affected families. NHPC has contracted with the local communities for various projects, including hiring of vehicle, material handling, housekeeping, waste disposal, and gardening. The annual procurement plan for Micro and Small Enterprises (MSEs) is uploaded on NHPC's website and offers benefits like exemption from tender fees, earnest money deposit, purchase preference, interest on delayed payments, and prior experience – prior turnover criteria. During FY 2021-22, NHPC procured products and services from MSEs, forming 44.0% of total procurement of goods produced and services rendered by MSEs, against the 25% mandate set by the Ministry of Micro, Small and Medium Enterprises, Govt. of India. During the year, 2,302 MSEs benefited, with 94 owned by SC/ST and 213 by women entrepreneurs. The Trade Receivables Discounting System (TReDS) platform facilitates invoice discounting for MSMEs, and NHPC is registered on the platform for their benefit.

This strategic partnership aims to implement the Integrity Pact Programme effectively as per the guidelines set forth by the Central Vigilance Commission (CVC). Additionally, a grievance redressal policy has been established, which involves the engagement of Independent External Monitors (IEMs) as outlined in the bid/tender document. NHPC has established these measures to promote accountability and address any concerns or issues arising during the procurement process.

4.6.1 ESG Expectations from Suppliers

NHPC is establishing guidelines for its suppliers to encourage them to adhere to the ESG framework requirements, which are part of the collaborative approach to sustainability. NHPC aims to create a more responsible and resilient business ecosystem by upholding these standards. Most of NHPC's vendors and suppliers are reputed companies with strong ESG practices. Since NHPC has established procedures for sustainable sourcing, all procurements are considered sustainable and safe. However, these are exhaustive in nature and procured from different sources. NHPC places a premium on ensuring that its operations and suppliers have no direct negative environmental and social impact on any stakeholders or community members. NHPC's commitment to sustainability goes beyond transactional interactions, aligning with the shared values and principles covering the following:

Occupational Health and Safety: The well-being of employees and contractors is paramount for NHPC. NHPC strongly advocate for its suppliers to proactively establish and rigorously maintain robust management protocols for health and safety. This commitment aims to create a work environment where the highest safety standards are upheld, ensuring all personnel's physical and mental well-being.

Labour and Human Rights: Upholding the dignity and rights of workers is a shared commitment. NHPC encourages its suppliers to conduct their operations strictly with all applicable local, state, and national labour and human rights laws. This includes fair labour practices, non-discrimination, and equal opportunities for all, fostering an inclusive and just workplace.

Environmental Sustainability: Environmental stewardship is at the core of NHPC's sustainability efforts, as it encourages its suppliers to adopt and maintain adequate policies and procedures dedicated to managing and mitigating their environmental impact. By reducing resource consumption, minimising waste, and promoting sustainable practices, NHPC collectively contributes to a healthier planet.

Business Integrity and Ethics: NHPC endorses the suppliers' alignment with NHPC's Code of Conduct, which upholds the highest business integrity and ethics standards. This commitment includes transparency, fair competition, anti-corruption measures, and responsible corporate citizenship, fostering trust and ethical conduct throughout its business relationships.

These efforts underscore the shared values of NHPC and the principles that guide the collaboration with the supply chain. By embracing these standards, NHPC works together to create a more responsible and sustainable business environment where social, environmental, and ethical considerations are integral to the collective success.

4.6.2. Supplier code of conduct

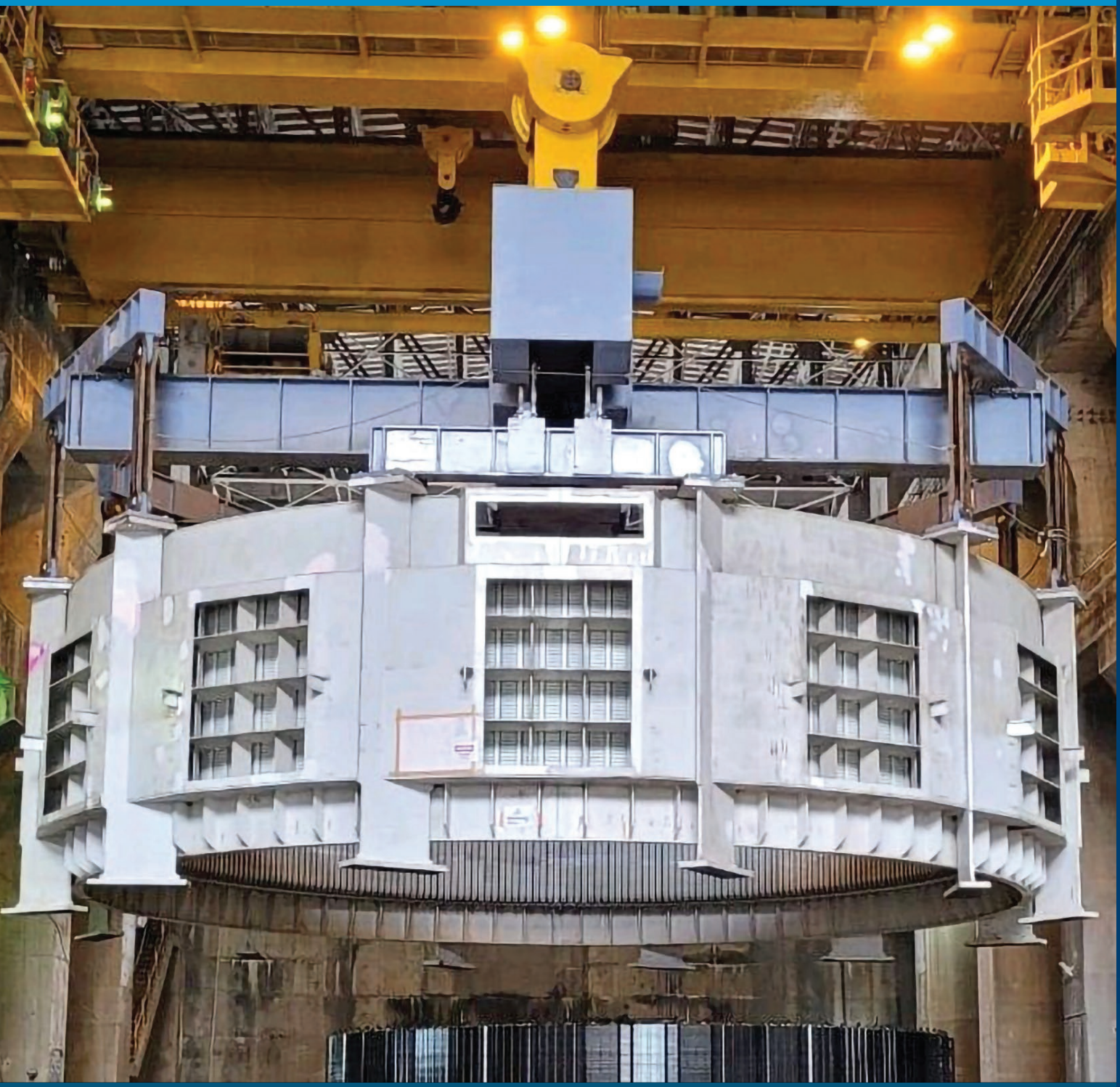
NHPC expects from its vendors and suppliers to strictly follow or adhere to the Supplier Code of Conduct for procurement of Goods, Services and Works and encourages all the vendors and suppliers to comply with the said principles. NHPC is committed to responsible, sustainable, and ethical business practices to encourage environmental conservation, adhere to human rights and labour standards, promote social welfare and community development, ethical business conduct, and is aligned with ESG landscape.

NHPC adheres with the tendering process which is well defined and transparent and takes due care of all dimensions of Human Rights and Labour in order to eliminate Forced Labour, Child labour, comply with occupational health and safety standards, discrimination and harassment, freedom of associations and collective bargaining etc. It takes all efforts to optimize environmental aspects like energy consumption, resource usage, greenhouse gas emissions, biodiversity, land conservation etc. Government guidelines viz; minimum wages, labour laws etc. are as applicable also incorporated in the tender document as a minimum qualification criterion.

NHPC's procurement is conducted in line with the procurement manual as well as standard tender document for procurement of Goods, Services and Work as it evaluates vendors on basis of well-defined tender terms and conditions that includes various social and environmental aspects. NHPC regularly organizes training programs for various stakeholders like suppliers/ contractors and vendors, project affected family members and employees on varied socio-environmental and governance parameters.

The vendors and suppliers are expected to be committed to supply products and services of desired quality that meet all applicable standards including product packaging, labelling and after-sales service obligations. Compliance to Human Rights and Labour laws regarding Forced Labour, Child labour, Occupational health and safety, discrimination and harassment, freedom of associations and collective bargaining etc. is sought for. The supplier is expected not to indulge in Corrupt, Bribery, Fraudulent, Collusive, Coercive practices and comply with all applicable laws and regulations, both in letter and in spirit, in all the territories in which it operates. It should strive to provide a safe, healthy and clean working environment for its employees, workers, and extended workforce while aiming for environmental sustainability and resource efficiency, particularly for greenhouse gas emission, water management, waste and hazardous materials management. Under the integrity pact, there is a mutual commitment of Bidder(s)/Contractor(s) as well as employer (NHPC) to follow the transparent procedure during tendering and execution of the contract.

5. EMPLOYEE WELLBEING & WORKPLACE SAFETY



Stator assembly of Subansiri Lower HEP (2000 MW),
Arunachal Pradesh/Assam

5. Employee Wellbeing & Workplace Safety

NHPC takes pride in its employees, who are the cornerstone of its success, serving as the driving force behind its accomplishments. The success of NHPC's ecosystem depends on its employees' steadfast dedication, diligent efforts, and extensive expertise. This enables NHPC to consistently provide value to its esteemed customers, investors, and stakeholders. NHPC is firmly dedicated to fostering the professional development of its employees, prioritising their physical and mental well-being, facilitating meaningful experiences, promoting the acquisition of new skills, and offering continuous support for their cumulative growth.

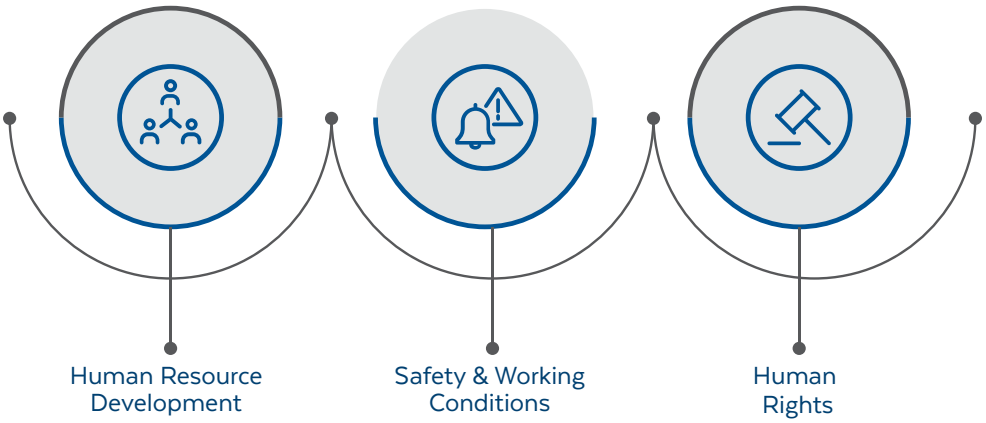


Figure 5.1: NHPC's approach to Employee Well-being and Workplace Safety

5.1. Human Resource Development

NHPC takes great pride in the exceptional team of highly talented and committed experts it has cultivated. This team excels in the crucial areas of recruiting, developing, and retaining outstanding talent. NHPC recognises the immense value that lies within the skills, creativity, and dedication of its workforce. These qualities play a pivotal role in propelling towards the realization of its audacious objectives. Consequently, NHPC seeks out individuals who demonstrate exceptional excellence in their respective fields. The commitment of NHPC extends well beyond the scope of mere recruitment. A holistic strategy is essential for attracting top talent and ensuring NHPC remains competitive, innovative, and flexible in an ever-evolving industry landscape. In the fiscal year 2021-22, NHPC proudly showcases a remarkable and dedicated team of 12,114 individuals (including temporary work force) , demonstrating its commitment to excellence. This exceptional team comprises 3,339 highly committed permanent employees and 1,753 skilled permanent workers (Table 5.1).

Table 5.1: Gender wise distribution of workforce of NHPC.

Employment type	FY 2018-19		FY 2019-20		FY 2020-21		FY 2021-22	
	Male	Female	Male	Female	Male	Female	Male	Female
Permanent Workforce								
Management	246	10	212	10	235	12	240	13
Other Employees (Non- management)	3,130	309	3,023	303	2,932	298	2,797	289
Permanent workers	2,666	392	2,247	336	1,812	280	1,510	243
Total Permanent Workforce	**6,042**	**711**	**5,482**	**649**	**4,979**	**590**	**4,547**	**545**
Temporary Workforce								
Contract Workers	4,941		5628		6,264		7,022	
Total Workforce	**11,694**		**11,759**		**11,833**		**12,114**	

Table 5.2: Age wise distribution of the permanent Workforce.

Age Group	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Below 30 years	237	165	127	89
30 to 50 years (Including 30 and 50)	3,208	3,094	2,937	2,803
More than 50 years	3,308	2,872	2,505	2,200
Total	**6,753**	**6,131**	**5,569**	**5,092**

Table 5.3: Permanent Workforce Turnover at NHPC.

Category	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Male	531	554	518	470
Female	56	62	59	45
Total Workforce Left	587	616	577	515

This include retiring, resigning, terminated, and deceased employees during the year.

5.1.1. New Employees Hired

During the fiscal years 2018-19 and 2019-20, there were no hires made. In the year 2020-2021, there were a total of 16 new hires, however in the year 2021-22, there were a total of 42 new hires. No new hire had an age above 50.

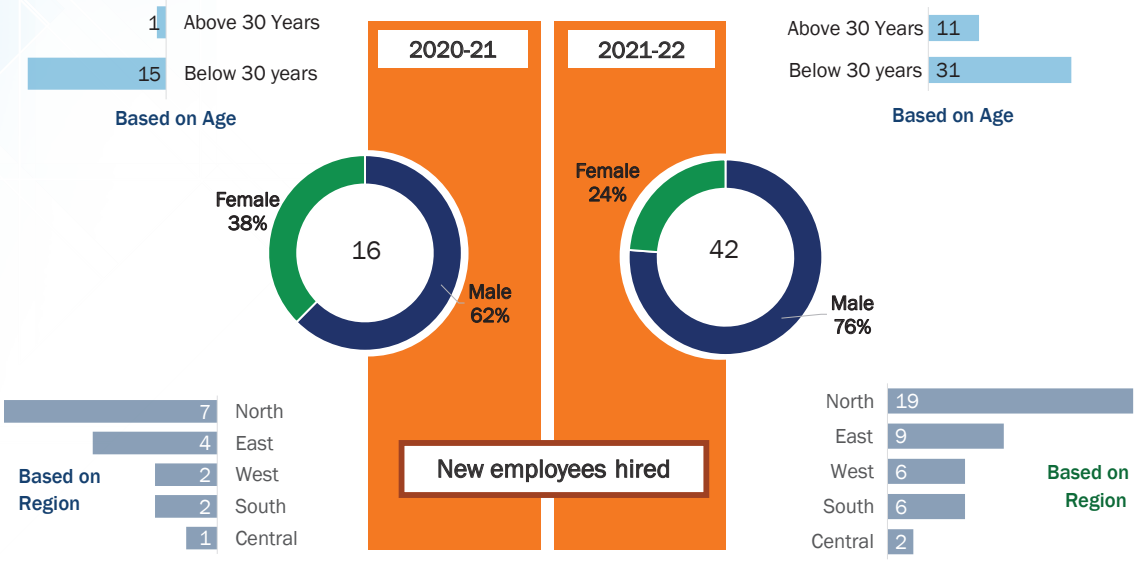


Figure 5.2: Overview of new employees hired.

5.1.2. Diversity and Inclusion

NHPC is committed for cultivating diversity and guaranteeing equal opportunities throughout the workforce. NHPC's primary goal in developing the Equal Opportunity Policy, is to create a work environment that promotes inclusivity and encourages collaboration among employees. The policy ensures that every workforce member, regardless of gender, nationality, community, religious beliefs, or physical and mental abilities, is accorded the highest respect and dignity and given equal opportunity.

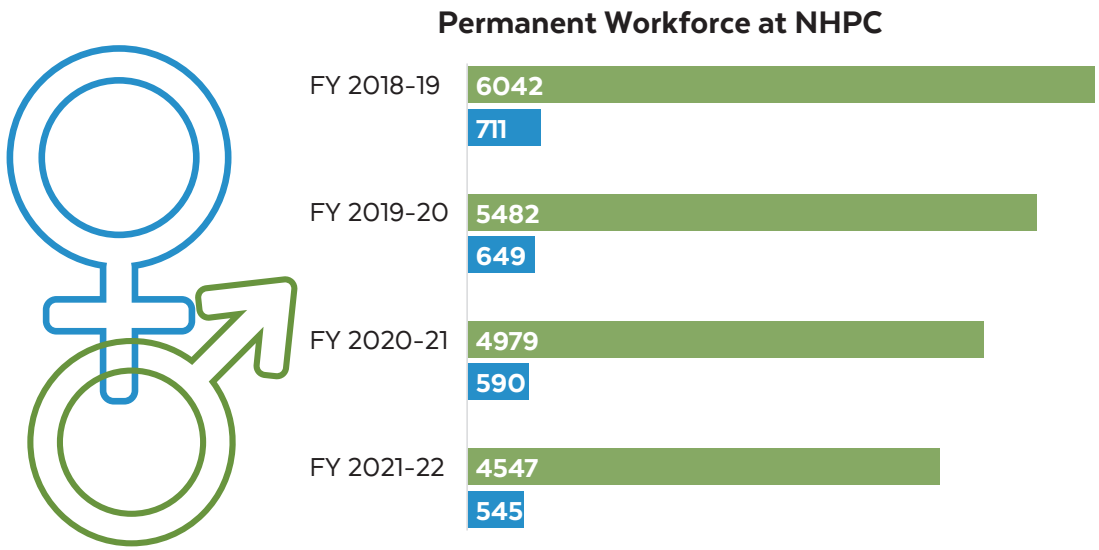


Figure 5.3: Gender diversity at NHPC (Green bar represents male and blue as female).

NHPC acknowledges and appreciates the immense importance of embracing diversity as a strategic approach to unlocking the full potential for innovation, fostering creativity, and harnessing a more comprehensive collective wisdom. NHPC not only promotes a dynamic work environment but also positions itself as a socially responsible and forward-thinking organization that thrives on the diverse talents of the workforce.

NHPC strictly adheres to the guidelines set forth by the Department of Personnel and Training (DoPT), thereby ensuring the implementation of reservation and relaxation policies for candidates hailing from the Scheduled Caste (SC), Scheduled Tribe (ST), and Other Backward Classes (OBC) categories during the process of direct recruitment. The same approach, which encompasses relaxed criteria and reservation, also applies to SC/ST employees during the promotion evaluation process. The management diligently organises regular meetings to actively engage with the esteemed SC/ST/OBC employees and effectively address any specific concerns they may have. To enhance the well-being of the SC/ST and OBC employees, NHPC has taken the initiative to establish specialised cells, each headed by a dedicated Liaison Officer.

Table 5.4: SC/ST/OBC employees as of March 31, 2022.

Total No. of Permanent Workforce (*including directors)						
	SC	Percentage	ST	Percentage	OBC	Percentage
5092	781	15.34%	345	6.78%	838	16.46

5.1.3. Support to Differently abled employees:

NHPC is committed to proactively eliminating obstacles that might impede the engagement and professional growth of individuals with disabilities. The Equal Opportunity, aligned with the Rights of Persons with Disabilities Act 2016, places great importance on the creation of accessible workspaces, the provision of reasonable accommodations, and the cultivation of a culture that values respect and understanding. Embracing diversity in all its forms, including disability, is a powerful catalyst for enriching the workforce, fostering creativity, and strengthening NHPC's social responsibility.

Table 5.5: Total Differently-abled Workforce of NHPC.

Total Differently-abled				
Workforce	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Male	116	111	110	106
Female	6	6	6	8
Total	**122**	**117**	**116**	**114**

In the fiscal year 2021-22, NHPC had the privilege of having 114 exceptional individuals with disabilities (VH=Visual Handicap, HH=Hearing Handicap, OH= Orthopaedic Handicap) as part of the workforce. These talented individuals accounted for 2.24% of the total permanent team.

Table 5.6: Differently abled employees at NHPC.

Total No. of Permanent Workforce (*including directors)	Category of the Differently abled employees			% Of differently abled employees	
Workforce	VH	HH	OH	Total	Percentage
5092	12	3	99	114	2.24%

NHPC has successfully implemented various measures to prioritise and safeguard the well-being of the esteemed, differently-abled employees. These measures encompass reservation and relaxation in direct recruitment and promotions, as per the guidelines provided by the Department of Personnel and Training (DoPT) and the Ministry of Social Justice & Empowerment. Furthermore, NHPC proudly offers a wide range of welfare schemes meticulously crafted to cater to the unique needs of differently abled employees. In the case of caregivers responsible for physically or mentally disabled children, they are granted an exemption from rotational transfers. Additionally, they can select the desired posting location during transfers or promotions. NHPC offers financial assistance for vocational training to dedicated employees who, unfortunately, experience physical handicaps during their tenure with NHPC. NHPC has a reimbursement program for valued employees who are deaf and their dependents. This program covers the expenses associated with the purchase of hearing aids.

NHPC is proud to provide financial assistance to employees and their dependents by offering interest-free loans designed to cover the expenses of acquiring artificial limbs. This initiative underscores the commitment to ensuring the well-being and welfare of the workforce, as NHPC firmly believes in supporting them in every possible way. To provide equitable access to medical and other benefits, age restrictions are compassionately waived for children with physical or mental disabilities who are deemed dependents. NHPC Retired Employees' Health Scheme also guarantees a lifelong medical benefit for dependent children with disabilities of 40% or higher. This applies to retired or deceased employees. To ensure the protection of PWD employees' interests, it is imperative that the Grievance Redressal Committee includes at least one PWD Employee. NHPC's comprehensive measures are a testament to its commitment towards fostering an inclusive and supportive environment for differently-abled employees.

5.1.4. Employee Benefits

NHPC is committed to delivering a robust and all-encompassing suite of employee benefits that place utmost importance on the well-being and contentment of the workforce. The regular employees are provided with the comprehensive coverage of the Group Personal Accident Insurance Scheme and the Employee's Deposit Linked Insurance Scheme (EDLI). Furthermore, NHPC also supports House Building Advance (HBA), Motor Vehicle Advance (MVA), and higher education advances for children of the deceased. This comprehensive benefits package is designed to provide the employees with competitive compensation that aligns with the significant value they bring to NHPC.

Defined Contribution Plans

- **Social Security Scheme**: The Company provides a monthly matching contribution for each employee. The program has been established to aid and support families who have experienced the loss of an employee due to death or permanent total disability.
- **Employees-Defined Contribution Superannuation Scheme (EDCSS)**: The organization offers an employee-defined contribution superannuation scheme to provide pension benefits to its employees. According to the scheme, each employee is required to contribute 5% of the Basic Pay and Dearness Allowance.

Defined Benefit Plans

The following is a list of the post-employment benefit requirements that the corporation has established

- **Provident Fund**: The Company provides a fixed contribution to the Provident Fund at predetermined rates. This contribution is directed to a separate Trust, which invests the funds in permitted securities.
- **Gratuity**: The Company offers a defined benefit gratuity plan, which adheres to the ceiling limit established by the Payment of Gratuity Act of 1972. Employees who have completed five or more years of service are entitled to a gratuity of 15 days per year, up to a maximum of INR. 0.20 Crore in the event of superannuation, resignation, termination, disablement, or death.
- **Retired Employees Health Scheme (REHS)**: The Company offers a Retired Employee Health Scheme that provides medical facilities to past employees, spouses, and eligible dependent children of deceased/former employees. These facilities are available in both company hospitals and empanelled hospitals.
- **Allowances on Retirement/Death**: The Company provides relocation assistance for employees transitioning to a new location after retirement. Additionally, in

the unfortunate event of an employee's passing, their family can also receive this benefit, which is determined through actuarial valuation.

- **Memento to employees on attaining the age of superannuation**: The Company has a policy to provide employees with a Memento valued at INR 10,000/- upon the superannuation.

NHPC Employees Family Economic Rehabilitation Scheme

The scheme, which was implemented in April 2021, is designed to provide financial assistance and support to employees in the event of Permanent Total Disability and families in the event of death. It is important to note that the Permanent Total Disability or death must occur during the employee's tenure with the Company to be eligible for this assistance.

Other long-term employee benefits (Leave Benefit)

The Company provides employees with earned and half-pay leave, which accumulate annually at a rate of 30 and 20 days, respectively. These leaves can be converted into cash while the employee is still employed.

5.1.5. Learning and Development

NHPC prioritises continuous learning and development, providing its employees various opportunities to enhance their skills, knowledge, and professional capabilities. The training programs are strategically crafted to align with the most current industry trends and best practices, guaranteeing that its team members remain at the forefront of a swiftly changing landscape. NHPC is committed to actively promoting job rotation and facilitating inter-location transfers throughout the organization. This strategic approach serves multiple purposes, primarily contributing to the planned development of careers and expanding the team members' perspectives.

NHPC conducts a range of developmental initiatives for its employees, focusing on enhancing their behavioural, managerial skills, and core competencies. In the fiscal year 2021-22, a total of 19.4 average hours of training was provided to all permanent employees. The Company organises continuous learning initiatives, either in-house or through premier management and engineering institutions, to help employees stay updated with the latest developments and changes in their area of operation. The programs are conducted on various topics encompassing functional areas such as Engineering, Finance, HR, Information Technology/ Cyber Security, Renewable Energy, Geology, and more.

Table 5.7: Average hours of training per year.

	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Total Average Hours Per Employee	9.51	16.20	17.84	19.4
Total Average Hours Per Male Employee	9.77	15.48	17.55	18.85
Total Average Hours Per Female Employee	7.33	22.21	20.27	24.03

NHPC conducts a five-week induction training programme on hydropower development for newly joined engineer trainees/trainee officers. Also, NHPC consistently sponsors its executives to pursue advanced qualifications and specialized training, boosting their productivity and effectiveness.

Figure 5.4: Induction and orientation programme for new joiners.

During the COVID-19 pandemic, NHPC successfully organised virtual training workshops to cater to the developmental requirements of its employees. The inclusion of knowledge-sharing webinars has further enhanced these workshops. NHPC recognizes the importance of embracing contemporary and evidence-based training approaches and establishing suitable infrastructure to anticipate future training requirements resulting from technological advancements. Additionally, NHPC facilitates specialized training in critical domains such as project planning, execution, management, operations maintenance, and research development through collaborative efforts with esteemed institutions in relevant fields, both domestically and globally.

NHPC has recently launched the 'Scheme for Engagement of Retired Executive (Below Board Level) of NHPC, as Consultant'. Through the scheme, NHPC Limited engages retired executives as consultants to leverage their extensive experiences, specialised skills, and specific domain knowledge acquired during their tenure of service. In addition, these executives also engage in the training of young executives, thus fostering a culture of knowledge exchange and cultivating a conducive learning atmosphere. The topics covered include Financial Management, Lifestyle Management, Emotional and Physical Health Management, and the Corporation's post-retirement schemes and facilities.

Figure 5.5: Annual Environmental Meet-2019

Figure 5.6: Knowledge dissemination through workshops and seminars.

5.1.6. Employee Welfare and Wellness

The employee welfare and wellness programs exemplify NHPC's commitment to cultivating a flourishing workforce, enabling employees to realise their maximum potential while upholding a harmonious work-life balance. These initiatives encompass comprehensive measures to establish a conducive and well-being-oriented work environment. NHPC provides a wide range of benefits that extend beyond conventional offerings. NHPC is committed to delivering comprehensive wellness programs prioritising physical health, mental well-being, and overall quality of life. NHPC demonstrates an evident dedication to employee welfare, as evidenced by its efforts to promote work-life balance and provide health and fitness resources. NHPC organises various regular activities, seminars, and awareness sessions on wellness topics. These initiatives aim to empower its employees by giving them the knowledge and tools to make informed choices for their health and happiness. These initiatives not only serve to improve employee satisfaction and morale but also contribute to heightened productivity and foster a stronger sense of belonging within NHPC community.

Parental leave is a crucial component of employee welfare initiatives, specifically designed to support employees during significant life transitions when they become parents. This policy allows employees to allocate time and financial resources to attend to the needs of a newborn or recently adopted child.

Table 5.8: Parental benefit available (and availed) by NHPC employees

	Gender	2018-19	2019-20	2020-21	2021-22
Total number of employees that were entitled to parental leave, by gender.	Male	6,042	5,482	4,979	4,547
	Female	711	649	590	545
Total number of employees that took parental leave, by gender.	Male	95	87	84	71
	Female	14	15	14	10
Total number of employees that returned to work in the reporting period after parental leave ended, by gender.	Male	95	87	84	71
	Female	14	15	14	10
Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work, by gender.	Male	95	87	84	71
	Female	14	15	14	10
Return to work rate of employees that took parental leave, by gender.	Male	100	100	100	100
	Female	100	100	100	100
Retention rate of employees that took parental leave, by gender.	Male	100	100	100	100
	Female	100	100	100	100

NHPC recognises the significance of maintaining a healthy work-life balance and, as such, provides parental leave to cultivate a more favourable work atmosphere, alleviate stress for new parents, foster gender equality by encouraging equal involvement of both parents, and exhibit a steadfast dedication to the well-being of employees and family values. All permanent employees are eligible for parental leave. Female employees are entitled to avail themselves of paid childcare leave for a maximum duration of 730 days. This policy is designed to support them in fulfilling their responsibilities towards two children until they reach the age of 18 (with no age limit for children with a minimum disability of 40%).

5.1.7. Performance Reviews

NHPC places a high priority on fostering employee growth and development by conducting regular performance and career development reviews. These assessments allow employees to engage in conversations with supervisors regarding their accomplishments, areas of expertise, and opportunities for growth. It ensures employees' goals align with the company's objectives and actively explore potential advancement opportunities. NHPC's dedication to conducting these reviews demonstrates its efforts to foster a supportive work environment. All permanent employees undergo performance and career development reviews, guaranteeing they receive valuable feedback, establish career goals, and obtain necessary guidance.

NHPC has a well-defined appraisal mechanism for its cadre employees and deputationists, which is recorded at prescribed intervals. For cadre-level employees, the appraisal reports are written annually on a financial year basis, whereas for deputationists, the 12-month period is reckoned as prescribed by their parent departments.

The "Initiating Officer" typically writes the appraisal, the "Reviewing Officer" reviews it, and the "Accepting Officer" accepts it. However, in respect of the personal staff attached to General Managers/ Heads of Departments/Directors/Chairman and Managing Director, the Initiating, Reviewing and Accepting Officer are the same.

The grading in the appraisal is carried out based on an objective assessment of the capability, performance, personality, strengths, and weaknesses of the employee reported. A percentage ceiling of PAR marks or grading is defined for each category of employees, viz., workers, supervisors and executives (E1 to E5), and executives (E6 and above).

The HR Wing carefully examines each appraisal to make sure it is complete. Performance appraisals in respect of all cadre executives are forwarded by the Heads of HR Wing in the Projects to the Corporate Personnel Wing in time, after retaining a copy thereof for Project reference.

5.1.8. Other benefits for employee

Flexi-time/work-from-home

At its corporate office, NHPC has implemented a flexitime/work-from-home scheme that allows employees to arrive early or late for work, contingent on the traffic conditions along their commute. The scheme's primary goals are to mitigate traffic congestion, enhance productivity, promote a healthier work-life balance, allow employees greater autonomy, and boost employee morale. The policy grants flexi-timing to all Corporate Office employees (10 AM to 5 PM as primary working time) and work-from-home benefits to Corporate Office executives in grades E5 and above (once per week with approval from the HoD).

Crèche Facility -"Anchal"

NHPC Corporate Office started the crèche facility in 2003 to benefit NHPC employees. It has four nannies on roll, with a current enrolment of six beneficiaries. The creche has all the state-of-the-art infrastructure, including baby cots, swings, mattresses, bed sheets, blankets, dining facilities, kitchen, TV, and air conditioning. CCTV cameras have been installed for safety and security.

Figure 5.7: Anchal Crèche at Corporate Office, NHPC.

5.2. Respecting Human Rights

NHPC is committed to honouring, safeguarding, and championing the fundamental human rights of all stakeholders. The approach of NHPC is to incorporate human rights into the operations and businesses in line with internationally recognised standards, such as the Universal Declaration and the Fundamental Human Rights Conventions of the International Labour Organization. Additionally, NHPC prioritises upholding the rights enshrined in the Constitution of India. NHPC is committed to maintaining and safeguarding human rights across four pivotal domains: supply chain, labour rights, communities, and security. Human rights clauses are crucial when making strategic acquisitions, mergers, and investment decisions. NHPC proudly maintained an impeccable record throughout the reporting period, with no reported human rights violations.

5.2.1. Eliminating Discrimination and Harassment

NHPC has a zero-tolerance policy towards unlawful discrimination or harassment directed towards its employees or partners in its value chain. The Company is fully committed to ensuring protection against any form of discrimination, including but not limited to age, gender, marital status, economic status, disability, race, national or regional origin, ancestry, indigenous status, personal beliefs, religion and spiritual practice, political affiliation, sexual orientation, and HIV/AIDS. This commitment extends to all aspects of its operations. This commitment is strengthened by providing focused training and ensuring employee conduct aligns with these principles.

NHPC maintains a strict policy of zero tolerance and prohibits any form of sexual harassment in the workplace. NHPC has implemented a policy on the Prevention, Prohibition, and Redressal of Sexual Harassment of Women at the workplace, following the Sexual Harassment of Women at Workplace (Prevention, Prohibition & Redressal) Act, 2013. Internal Complaints Committees is implemented at all company locations to effectively address and manage any complaints about the unfortunate occurrence of sexual harassment against women within the workplace. The committee at the Corporate Office in Faridabad is under the leadership of a senior female officer and comprises a member from an NGO. NHPC has implemented well-defined protocols and measures to address and prevent instances of sexual harassment proactively. It has specifically included sexual harassment as a form of misconduct in the comprehensive "NHPC Conduct, Discipline and Appeal Rules" and provides comprehensive training sessions on these policies and procedures. Throughout the fiscal year 2021-22, NHPC did not receive any new complaints regarding incidents of sexual harassment.

NHPC has proactively taken measures to eradicate gender discrimination and has implemented various initiatives to empower women. Selection boards/committees for employee promotions and recruitment include the appointment of women representatives. Female employees posted at the Corporate Office are provided with the option of flexible attendance timings. A Women in Public Sector Forum (WIPS) Cell has been established at the Corporate Office. The female employees are consistently nominated for programs and seminars prioritising women's empowerment and addressing relevant topics.

5.2.2. Human Rights in Supply Chain

NHPC's Human Rights Policy guarantees adherence to essential labour principles and firmly opposes the involvement of child labour and forced/compulsory labour in its supply chain and facilities. The General Conditions of the Contract with suppliers outline the requirements for eliminating child and forced labour and compliance with relevant regulations of Government of India. The designated

project authorities oversee the implementation of these terms and conditions. Throughout the year 2021-22, there were no instances of child labour or forced/ compulsory labour that were brought to the notice of NHPC.

5.2.3. Fair Labour Practices

NHPC prioritises preserving employee dignity and extends this commitment to its workforce. NHPC holds itself responsible for the employee's entitlement to personal security, a workplace that is safe, clean, and conducive to good health, as well as freedom from any form of harassment or abuse. NHPC strives to maintain fairness and integrity in the interactions with employees and workers, ensuring that wages, benefits, and other employment conditions are handled equitably and as per the provisions of the Government of India. Furthermore, NHPC respects their fundamental right to freedom of association.

The recruitment of contract labour follows the scope outlined in the project contract and the specific skill sets required and is overseen by the contract department. The contractor awarded the bid is responsible for deploying labour according to demands. Upon completing the integration process, contract workers undergo comprehensive training covering the Company's policies, procedures, and safety protocols. The compensation, incentives, and overtime remuneration follow the Minimum Wages Act and other relevant regulations. NHPC has entered into a bipartite agreement with the workers' community, which encompasses the specific provisions regarding the notice period for consultation and negotiation about NHPC operations. Under Section 9A of the Industrial Disputes Act 1947, it is customary to provide a minimum notice period of 21 days before implementing substantial operational changes that may significantly impact employees and their representatives.

5.2.4. Community Welfare

NHPC acknowledges the challenges encountered by individuals who have been displaced as a direct consequence of the Company's diverse initiatives. The respective State Government formulates rehabilitation and resettlement plans for Project Affected Families (PAFs) as per the provisions outlined in the "Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act, 2013." This plan aims to provide Project Affected Families (PAFs) with R&R linked support economic package and livelihood support. In addition, NHPC provides preferential awards of works to PAFs and conducts various CSR activities for the communities located near to its power plants and project sites. NHPC monitors the impacts on the human rights caused by the operations, if any and takes proactive measures to prevent any breaches that may affect such individuals.

5.2.5. Grievance Redressal Mechanism

NHPC's proactive approach in establishing an Employee Grievance Redressal Cell exemplifies its unwavering dedication to efficiently tackling and resolving

employee concerns. To tackle employee concerns and complaints regarding human rights and decent labour practices effectively, NHPC Units have implemented a robust Grievance Redressal Procedure. This procedure is supported by well-defined systems and mechanisms and is in compliance with relevant policies and statutory provisions. NHPC, being a forward-thinking organisation, has established an internal grievance redressal committee at the workplace to cater specifically to the needs and concerns of individuals hailing from the scheduled caste community. In the fiscal year 2021-22, the management successfully resolved 82.75% of the complaints received in the Employee Grievance Redressal Cell.

Table 5.9: Number of complaints filed in Employee Grievance Redressal Cell.

Opening Balance on 01.04.2021	Received during the FY 2021-22	Resolved during the FY 2021-22	Closing Balance as on 31.03.2022
08	21	24	05

5.3. Safety and Working Conditions

NHPC recognises that maintaining a safe and secure workplace is essential to the continued success of its commercial operations and makes concerted efforts to this end. The unrelenting efforts of NHPC are to develop a workplace safety culture supported by the adoption of high-quality standards, persistent vigilance, continual enhancements and strengthened employee engagement through comprehensive training.

5.3.1. Occupational Health and Safety

NHPC's primary focus on Occupational Health and Safety (OHS) encompasses all facets of workplace health and safety. NHPC has a well-maintained safety management system, which includes Hazard identification, accident/ incident reporting, risk management, performance measurement, and quality assurance. Its commitment to health and safety extends to the employees, contract labour, and the communities surrounding the power stations/projects.

NHPC conducts regular preventive health check-ups for all employees and contract labourers working at Power Station/Projects and occupational health check-ups of concerned employees as per the Factories Act, 1948 and The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996. At the Power Stations/ Projects/ Corporate Office, NHPC has a dedicated team of doctors and nursing staff available to provide comprehensive medical care. The Power Station/Projects medical division is organising medical camps on regular basis.

5.3.2. Policies and Commitment

NHPC has recently unveiled its Safety Policy, which aims to reinforce a secure work environment across NHPC Projects, Power Stations, and Offices. NHPC Safety

Policy shows NHPC's commitment towards achieving the target of zero hazard potential in all NHPC workplaces and those who directly or indirectly associated with NHPC Power Station or Project sites. The provisions in this Safety Policy are binding on all NHPC employees or those who work at NHPC Sites or are in any way connected to or are governed by agreements entered by them with NHPC.

NHPC has formulated a Corporate Safety Policy, specifically for power stations and construction projects. Most operating sites hold certification under the Occupational Health and Safety Management System (ISO 45001). The certification procedure has been instrumental in enabling NHPC to identify and address systemic deficiencies promptly.

NHPC affirms its dedication and resolves to comply with all applicable legal requirements regarding Occupational Health and Safety at NHPC Power Stations/ Projects. NHPC makes every effort to implement these provisions to the best of its abilities and diligently identify, monitor, and exercise control over all hazards, aiming to achieve "Zero Injuries, Zero losses, and Environmental Protection" to the best extent possible. The Company also ensures that its contractors follow all applicable safety acts/rules/regulations/standards and requirements.

5.3.3. Safety Governance

The safety governance structure at NHPC is led by the Power Station/Project Head at the Power Station/Project Level, along with the support of the Safety Division at the corporate level. The administrative responsibility for Safety of the Power Station/Project lies with the HOP, while the functional responsibility is of the Corporate Head of the Safety Division. At the corporate level, policies, targets, and guidelines are formulated. The project-level teams are responsible for translating these into action.

Safety Committees are established at all Power Stations/Projects, ensuring an equal representation of both management and workers as per statutory requirements in which workers are given a platform to participate in resolving any safety issues/audit recommendations. Safety Committee meetings are regularly conducted monthly at Construction Projects and quarterly at Power stations. All decisions made during meetings are collectively determined under the leadership of the safety committee chairperson.

All NHPC Power Station/Projects has prepared an Emergency Plan/Emergency Action Plan (EAP), Safety Manual, Reservoir Operation Manual, O&M Manual, Crisis & Disaster Management Plan (C & DMP), Standard Operating Procedure (SOP) for downstream water release, and other necessary documentation as applicable under requirements of the Factories Act, 1948, State's Factories Rules (applicable to the location), The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and Central Rules 1998, The Central Electricity Authority (Safety Requirements for Construction Operation and Maintenance of

Electric Plants and Electric Lines) Regulations, 2011, or any other relevant legislation.

5.3.4. Hazard Analysis and Risk Management

The structured safety management system implemented by NHPC enables the organisation to identify hazards, assess risks, control risks, and review control measures. A comprehensive Job Safety Analysis (JSA) and Risk Assessment and Method Assessment (RA & MA) are formulated for every project stage. Site Hazard Communication (HazCom) Program is developed for the site, which includes an inventory monitoring system and Material Safety Data Sheet (MSDS) for every hazardous material utilised on the project site. The Material Safety Data Sheets (MSDS) adhere to the requirements of availability in local languages or languages spoken by employees who are currently present at the site.

5.3.5. Incident Management System

To make prompt reports of accidents, dangerous occurrences, and missed incidences to comply with statutory requirements/obligations under different statutes; and to inform the concerned authorities within the organisation for keeping complete information of accidents for record and analysis, which will be of help in taking remedial measures for recurrence of such accidents, this procedure for reporting of accident/ dangerous occurrence a detail set of rules are framed and mentioned in NHPC Safety Manual. Each accident is investigated in detail and depth, including the causes of accidents, the extent of loss, and the circumstances/ individuals responsible, and to obtain ways and means for preventing recurrences in similar or related nature accidents.

5.3.6. Emergency Management Plan

A comprehensive Emergency Management System is established for every Power Station to handle potential emergencies promptly and efficiently. The system's objective is to optimise preparedness, prioritise the safety of plant personnel and the public, streamline coordination efforts, determine essential resources, and expedite the return to normal operations. The Emergency Management Plan encompasses the following:

Developing an On-Site Emergency Management Plan is crucial to ensure preparedness for any unforeseen events, such as a fire in the cable gallery or transformer yard or potential flooding in the power stations. NHPC has implemented a robust strategy to ensure the regular execution of mock drills as per scenario and frequency (monthly/quarterly/half-yearly/yearly), mentioned in the Crisis and Disaster Management Plan.

Comprehensive Off-Site Emergency Management Plan is meticulously crafted to outline the strategic approach in effectively addressing unforeseen

emergencies, such as fire explosions or toxic releases, which may arise near the power generating station. Ensuring the execution of a mock drill on bimonthly basis is a fundamental aspect of the offsite emergency plan.

Crisis and Disaster Management Plan (C & DMP) addresses potential disruptions caused by natural calamities (such as earthquakes, landslides, floods, cyclones, storms, etc.) as well as man-made disasters (such as major accidents, terrorist activities, sabotage etc.) will be effectively managed. The diligent authority shall guarantee the execution of Mock Drills at the predefined frequency (monthly/quarterly/half-yearly/yearly basis.) on various scenarios as per the Crisis and Disaster Management Plan. Early warning systems are also installed/in progress at all power stations/projects to receive early warnings from upstream of the river. Hooters are installed in the dam and power stations to alert the public in the vicinity areas/downstream.

Early Warning Systems (EWS) play a crucial role in mitigating the impact of various hazards from natural disasters. Knowing the importance of EWS, a Master Control Room for EWS is already set up by NHPC at Faridabad in Haryana State of India for 24X7 monitoring. It is being strengthened and automated by implementing comprehensive software application named e-Aabhas. Automatic water level sensors along with telemetric data transmission are installed at sufficient upstream location of dam sites of NHPC Power Stations and projects.

5.3.7. Safety Inspections & Audits

As per NHPC Safety Policy & Safety Manual, various officials are assigned specific responsibilities to ensure employees' safety and prevent accidents, fires, and dangerous occurrences. The designated authorities conduct regular inspections to review the above duties, various processes, and safety management systems, and identify, assess and control hazards. A system for Safety inspection and audits has been developed and mentioned in the Safety manual as follows:

- Regular safety inspections are carried out at Power Station/Projects by Safety Officer.
- Internal safety audits on a predefined safety checklist are conducted annually by officers of the Corporate Safety Division.
- Annual External Safety Audits (Third Party) are conducted annually per IS: 14489 by Competent Safety Auditors.

The records of every safety inspection and audit are maintained. These records include details such as the location visited, the date of inspection, hazards identified, corrective actions required, and the target completion date for these actions. By maintaining such comprehensive records, NHPC ensures a clear overview of the safety inspections and can effectively track the progress in addressing any identified hazards.

5.3.8. Safety Awareness

NHPC has prepared a safety manual that outlines the statutory requirements, delineates the pivotal roles and responsibilities of the employees, and seamless implementation of cutting-edge safety standards across all NHPC locations. The Safety Manual is being updated to ensure compliance with the Central Electricity Authority's (CEA) Regulations for constructing, operating, and maintaining electrical plants and electric lines.

Reservoir Operation Protocols to ensure Public Safety

NHPC is very conscious of its responsibility that water releases from dams / Reservoirs are made as well-established procedures and protocols to minimise any inconvenience to downstream populace. With this in Operation Manuals formulated consisting of defined protocols for Operation of dam/spillways for various inflow and seasonal conditions. NHPC strives to adopt best practices reservoir operations based on sound judgment and worldwide experiences.

Public safety being of prime concern, safety instructions and protection measures are framed after considering inflow and sediment records at dam location including Model studies from renowned institutions and after considering feedback from the local authorities. These procedures & protocols are intended to achieve safe passage of the flood to downstream and to minimise any likely effects on the and property of population downstream of dam.

The Protocols are developed for both normal and high flood / emergency operations and includes guidelines for the following:

- Roles and responsibilities, Organization set up and manpower requirement for reservoir/ gate operation.
- Provision of red lights, alarm siren / hooters over dam top and powerhouse in restricted areas.
- System for informing local administration and public in advance, during planned reservoir operations and during high flood releases.
- System to contact local authorities / district administration during nights or odd hours in case of emergencies guidance and coordination.
- Placing of warning sign boards with danger sign in the restricted area for public movements like dam, reservoir, inspection adits, intake, or outlet channels adjacent to hydraulic structures subject to surging or rapid changes in water level during releases.

In high flow season, the reservoir is kept well below Full Reservoir level providing cushion flood absorption and adequate time for asking the administration and public before flood release from the dam.

The reservoir operation guidelines are implemented at all the NHPC projects in letter and spirit. The reservoir level is monitored continuously during flood season using Automatic Water recorders. The procedures for reservoir operations for floods adopted by NHPC for its projects ranging from a 25 m high barrage to 140 m high dam have stood the test of time well.

Figure 5.8: Flyer on public safety related to reservoir operational protocol.

Regular training sessions are conducted for employees cover various aspects of safety awareness pertinent to both power stations and projects. This comprehensive program encompasses a wide array of essential subjects, such as the efficient management of safety protocols during power station operations, strategic disaster preparedness strategies, cutting-edge fire safety management techniques, meticulous chemical safety measures, and fostering a culture of employee engagement in safety management. The training programme for empowering Safety Management for Optimal Operation & Maintenance of Power stations emphasizes the critical safety considerations associated with the efficient operation and maintenance of power stations and other subjects like general safety awareness, first aid, proper use of personal protective equipment, and utilisation of firefighting equipment. The training initiatives have been strategically developed to enhance knowledge and promote the adoption of secure practices among employees at various hierarchical levels. NHPC requires a minimum of 10 hours of training for all contract workers. This training covers multiple topics such as general safety awareness, first aid, proper use of personal protective equipment, utilisation of firefighting equipment, handling catastrophic events, and awareness of any site-specific hazards.

5.3.9. NHPC Safety Performance

Identifying and mitigating potential hazards require a comprehensive approach, which includes conducting both External and Internal Safety Audits, along with implementing Hazard Identification and Risk Assessment (HIRA) Processes. The systematic evaluation helps in the identification of potential threats and hazards, thus promoting a safer environment by recognising and mitigating risks before they escalate into actual incidents.

Table 5.10: Details regarding the contract workers who sustained injuries.

Key Performance Indicators	Measure	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Fatalities as a result of work-related injury	Number	2	0	7	7
	Rate	0.10	0	0.38	0.24
High-consequence work-related injuries (excluding fatalities)	Number	0	0	1	1
	Rate	0	0	0.05	0.03
Recordable work-related injuries	Number	1	3	3	6
	Rate	0.05	0.16	0.16	0.21
Working Hours	Number	1,85,40,339	1,84,94,457	1,85,86,220	2,91,48,288

Note: The rates have been calculated based on 10,00,000 hours.

6. POSITIVE IMPACT ON SOCIAL WELL-BEING

Vaccination drive for protection against COVID-19

6. Positive Impact on Social Well-Being

The foundation of any socially conscious company lies in its relationship with the community. NHPC plays a leading role in the domain of Corporate Social Responsibility (CSR) by actively addressing the social, economic, and environmental concerns of key stakeholders.

NHPC has implemented a comprehensive CSR program encompassing various initiatives such as healthcare and sanitation programs, education and skill development, environmental sustainability, rural development, women's empowerment, promotion of sports, protection of art and culture etc. The organization is actively engaged in community development initiatives in various locations across the country, including those near its projects and units.

To foster trust and confidence among all stakeholders, NHPC operates in an environmentally and economically sustainable manner. NHPC's unwavering dedication to the betterment of the community and fostering a strong sense of national pride serves as a shining example for others to follow.

Implementing hydropower projects in the Indian Himalayan Region presents significant challenges due to the region's rugged topography, delicate ecological conditions, and adherence to environmental regulations contingent on statutory clearances and government-allocated funds. NHPC assesses the optimal alternative sites for hydropower projects during the planning and preliminary investigation phases, considering factors such as hydraulic gradient, flow regime, minimum displacement of inhabitants, and environmental impact.

Hydropower sites situated in remote mountainous regions are devoid of adequate access roads, bridges, and other civic infrastructure facilities, these sites are difficult to reach. To facilitate prompt and economical implementation in these regions, NHPC expedites the development of infrastructural facilities such as access roads, bridges, strengthened and widened roads, telecommunication links that are dependable and efficient, hospitals, markets, and more, through the collaborative efforts of NHPC and local State Government. The development of these infrastructures also facilitates the progress of remote and previously underdeveloped hilly regions by providing access to these amenities and connectivity to neighbouring cities, thereby stimulating socio-economic activities.

Employment opportunities in construction work, self-employment in project ancillary work, and marketing channels expand at the onset of construction activities, generating a substantial number of job opportunities and corresponding demands for goods and services. Following the project's commissioning, the provision of inexpensive and environmentally friendly electricity stimulated the region's industrial growth.

In adherence to the regulations set forth by the Government of Himachal Pradesh regarding Local Area Development Activities during the construction stage of hydropower projects, NHPC provides the state government with a Local Area Development Fund (LADF), equivalent to 1.5% of the project's total estimated cost, to facilitate the implementation of local area development initiatives in gram-panchayats and adjacent areas during the construction phase of projects.

During the operation of power stations, NHPC contributes LADF to the tune of 1% of the power generated from the commissioned project. The host state government provides a matching contribution of 1% from their share of the 12% free power received from the respective project as a corpus fund for local area development during the life span, in compliance with Hydropower Policy 2008 of the Government of India. The local area development fund provides a regular stream of revenue for income generation and welfare schemes, the creation of additional infrastructure and shared facilities on a sustained and continued basis over the project's life. The management of LADF is to be done by a committee comprising the State government, a representative of the affected family, and the head of the hydroelectric power project at NHPC.

Another source of local area development on a sustained basis is the implementation of corporate social responsibility (CSR) schemes by NHPC for the development of local areas and areas around them where it operates in terms of Section 135 of the Companies Act, 2013, the Companies (Corporate Social Responsibility Policy) Rules, 2014 and the Companies (Corporate Social Responsibility Policy) Amendment Rules.

Various developmental activities in areas such as health, education, skill development, rural development, women empowerment etc. as listed in areas or subject mentioned in Schedule VII of the Companies Act, 2013, are taken up by NHPC as part of CSR initiatives.

6.1. CSR Vision & Mission

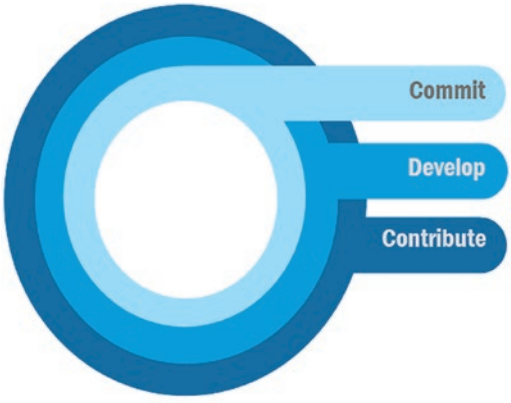
NHPC is conducting business in a socially responsible way by demonstrating concern for social welfare, adoption the best management practices and effective operational methods to win the trust and confidence of all stakeholders. It has strengthened its commitment to CSR in line with statutory provisions specified in Section 135 of the Companies Act, 2013, the Companies (Corporate Social Responsibility Policy) Rules, 2014 and the Companies (Corporate Social Responsibility Policy) Amendment Rules. NHPC also adheres to the Department of Public Enterprises (DPE) guidelines on CSR. The CSR activities undertaken by NHPC Limited align with the list of items/ activities specified in Schedule VII of the Companies Act, 2013. The CSR Policy of NHPC is a statement of its commitment to fulfilling its stakeholders' aspirations, thereby contributing to sustainable development.

NHPC Limited has been honoured with prestigious awards, including the India Pride Awards 2017-18 for Excellence in CSR/ Environment Protection and Conservation, the India Pride Awards 2016-17 for Excellence in CSR/ Environment Protection and Conservation, and Trophy and Certificate of Appreciation for 'CSR Initiatives for Sustainable Development' under PSU Category at Sarkaritel.com Excellence Awards and Felicitations 2018. District Administration, Faridabad has appreciated NHPC for its efforts towards sanitation. These accolades acknowledge NHPC Limited's outstanding commitment to corporate social responsibility.

NHPC's CSR Vision

To contribute to sustainable development and inclusive growth while taking care of People, Planet and Organizational goals/ growth.

NHPC's CSR Mission



To become socially responsible corporate entity committed to improving the quality of life of the society at large.

To create and develop facilities for the communities we engage with

To balance social, economic and environmental developmen objectives through collective and unified efforts of all stakeholders

6.2. NHPC's CSR Project Management:

6.2.1. Selection of CSR Initiatives:

NHPC's CSR initiatives are undertaken in alignment with the areas or subject outlined in Schedule VII of the Companies Act, 2013. CSR activities / Projects are evaluated for approval, prioritising necessity, and adherence to government directives.

- The proposals received are compiled and further scrutinised in accordance with Schedule VII of the Companies Act, 2013, as well as the availability of funds.
- The proposals are initially evaluated by the internal CSR Committee of the CSR & SD Division and further by the GM Level committee having an external member/ expert and then recommended for consideration by the Committee of Directors on CSR & Sustainability. The Committee of Directors on CSR & Sustainability recommends the CSR proposal to the Board of Directors for approval.
- Preference to the Local area – 80% allocation. Other locations may be chosen based on the needs and as per Govt. directives on national schemes.
- Selection is done solely on the merit of proposals.

6.2.2. Monitoring and Evaluation of CSR Initiatives:

NHPC has established an institutional framework to effectively implement, monitor, and evaluate the organisation's corporate social responsibility (CSR) and sustainability initiatives through a three-tier management structure outlined below:

- The Board level Committee on CSR is headed by an Independent Director.
- Nodal Officer of the Rank of Executive Director, assisted by his team.
- Regional ED/ Project Head/ Unit Head and his team for implementation and monitoring.

The Unit Head reports the progress of CSR schemes under implementation at each location to the Nodal Officer at the Corporate Office every month. These records are being maintained along with photographs/ videos to show the progress of work. Quarterly Reports regarding the progress of the implementation of CSR and Sustainability activities are reviewed by the CSR Committee and NHPC Board. As per statutory provisions, Impact assessment/ Evaluation studies by external agencies are undertaken after long-term schemes/ projects are completed. NHPC has been assessing the impacts of its CSR programmes through independent organisations for several years as a good governance standard.

6.3. CSR Expenditure by NHPC

NHPC publishes reports of its CSR activities on its website featuring the CSR Policy, guidelines for implementing agencies, approved plans and activities, and the annual CSR activity reports.

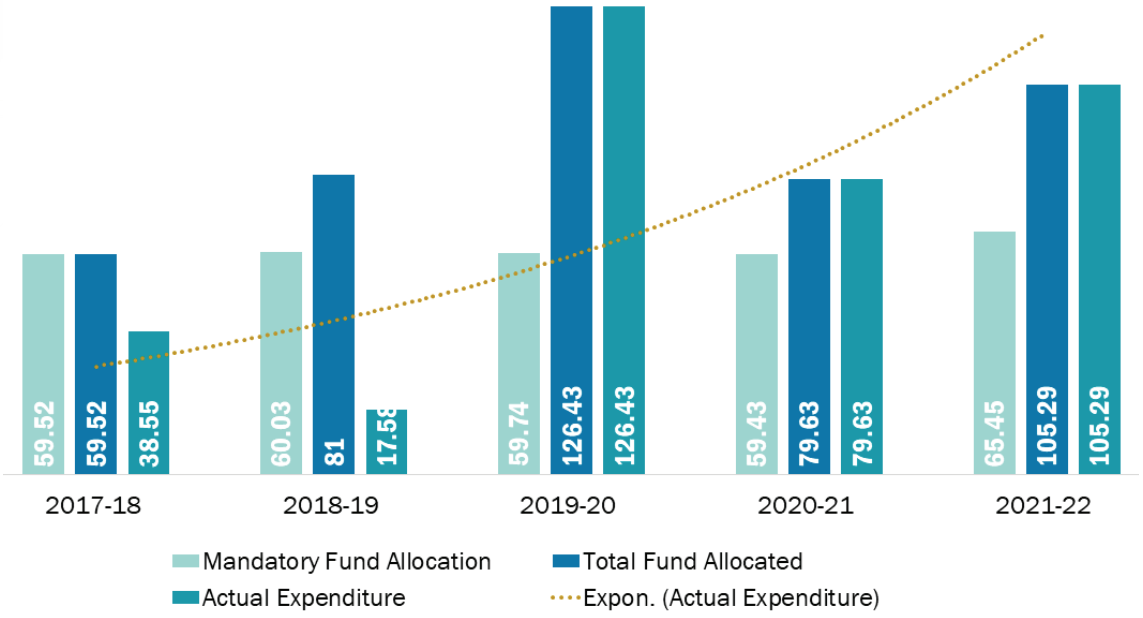


Figure 6.1: CSR expenditure by NHPC for the period 2018-2022.

In FY 2021-22, NHPC spent INR 105.29 Crore in various CSR and sustainable development initiatives across 16 states and sectors. The education and skill development sector received the highest funding, totalling nearly INR 36 Crores, among the various sectors. NHPC has spent INR 18.37 Crore as CSR projects in designated aspirational districts of India viz. Baramulla, Jammu & Kashmir (INR 3.20 Crore), Chamba, Himachal Pradesh (INR 11.67 Crore) and West Sikkim (Gyalshing), Sikkim (INR 3.40 Crore).

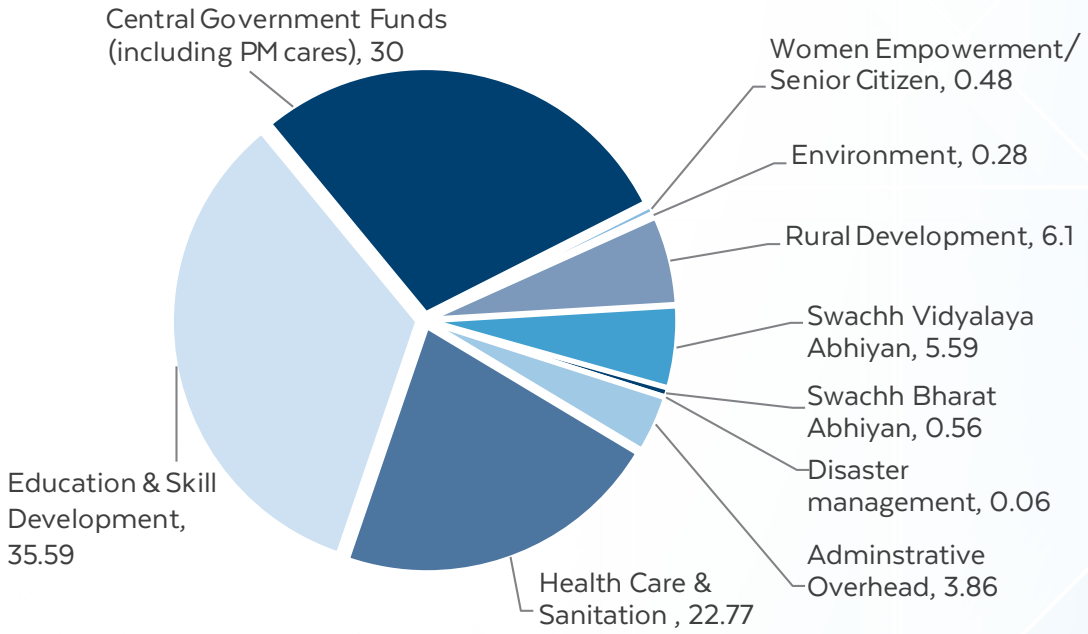


Figure 6.2: Sector wise CSR expenditure (INR, in Crore) during FY 2021-22.

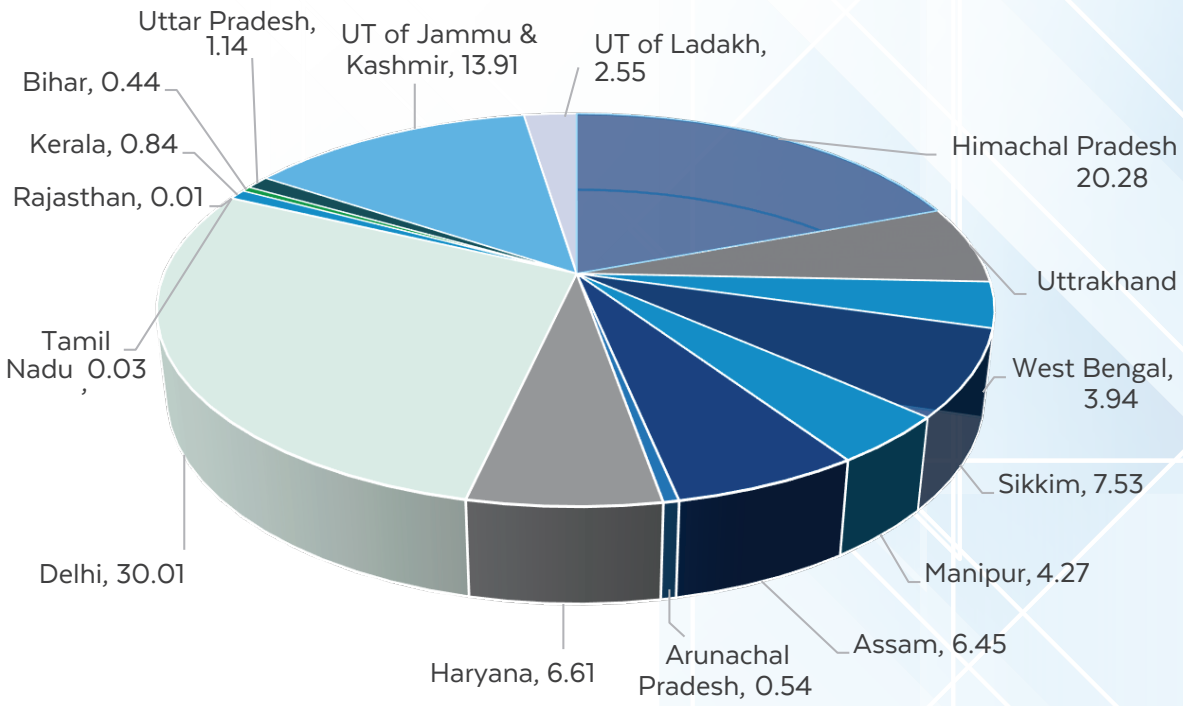


Figure 6.3: State wise CSR expenditure (INR in Crore) during FY 2021-22.

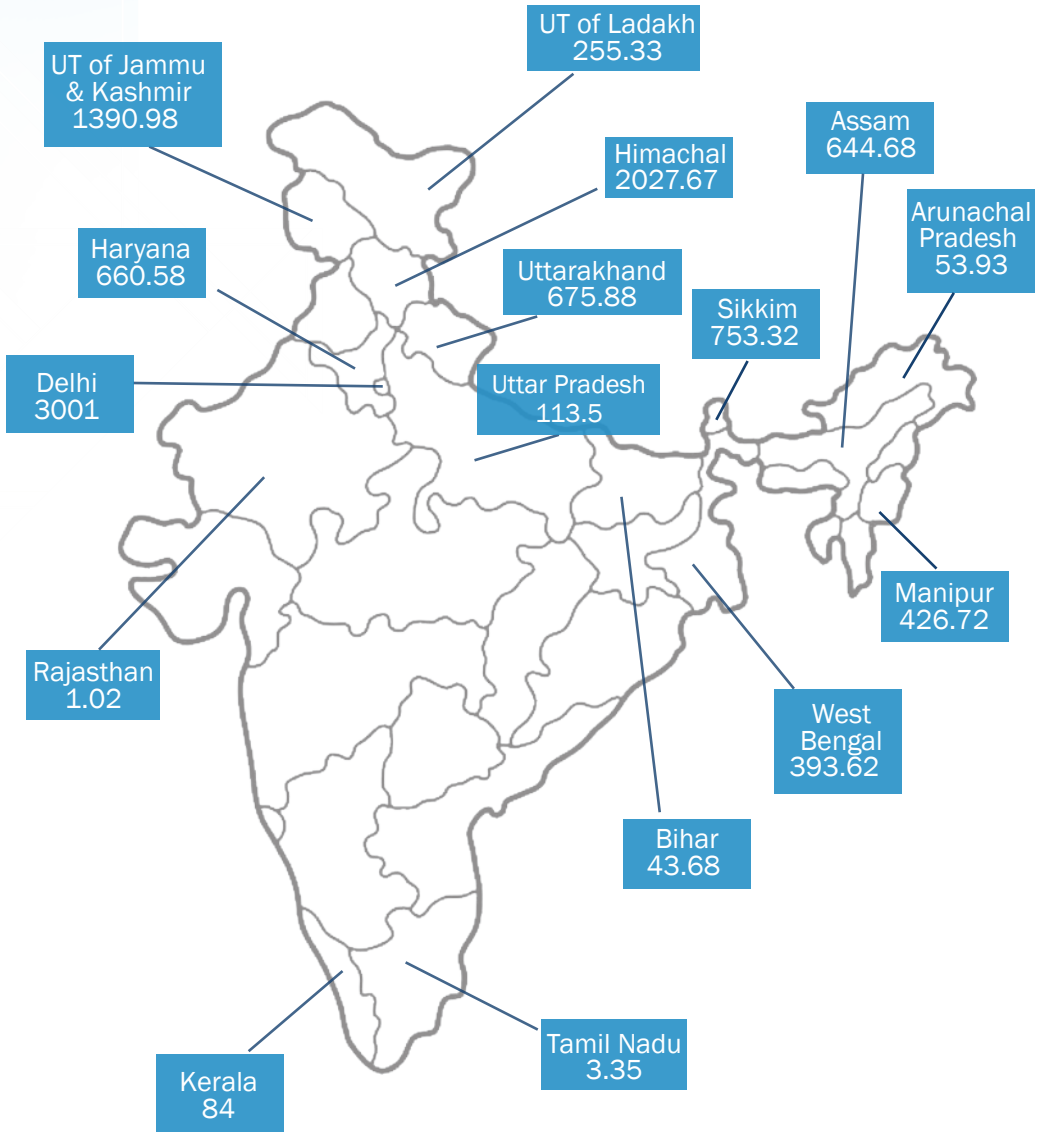


Figure 6.4: Map showing CSR expenditure (INR in lakhs) during FY 2021-22.

6.4. Key CSR Initiatives:

NHPC is committed to making significant contributions to the community, environment, and society through CSR interventions. NHPC Limited has undertaken several CSR initiatives for the community living in and around the Projects/ Power Stations / Units in the areas of Education, Health, Sanitation, Rural Development, Skill Development, Environment, Women Empowerment, Promotion of sports, Protection of art and culture etc. in areas or subject specified in Schedule VII of the Companies Act, 2013. NHPC's CSR initiatives aim to align with the Sustainable Development Goals (SDGs) set by the United Nations General Assembly in 2015. NHPC publishes a comprehensive annual report of all its CSR activities on its website. In the following sections, some of the CSR initiatives are highlighted below:

6.4.1. Health & Sanitation

NHPC is committed to enhancing community health and sanitation objectives while prioritizing its CSR activities.

Key CSR activities in Health sector undertaken during 2021-2022:

- NHPC has spent INR 4.98 Crore in FY 2021-22 to provide accessible healthcare facilities to the local populace through project dispensaries operational at NHPC's power stations and units located primarily in remote areas. The primary goals of these expenditures are to promote healthcare, including preventive healthcare, and reduce incidence of disease. A total of 75,627 individuals were beneficiaries.

- In the district of Chamba, Himachal Pradesh, at Pandit Jawahar Lal Nehru Medical College and Hospital, one 1.5 Tesla MRI Machine and one 128-slice CT scan machine were installed. A sum of INR 14.63 Crore was spent for this CSR initiative for the rural populace of Chamba District.

- NHPC set up six oxygen generation plants in district hospitals and community health with an estimated financial cost of INR 5.87 Crore (Faridabad, Haryana: one oxygen plant with a 1000 LPM capacity; Siddharthnagar, Uttar Pradesh: one oxygen plant with a 570 LPM capacity; Dharchula, Uttarakhand: one oxygen plant with a 200 LPM capacity; two oxygen plants with a 500 LPM capacity in Kargil; and one oxygen plant with a 200 LPM at Leh, (UT of Ladakh).

Figure 6.5: NHPC supported in establishing oxygen plant at Faridabad.

Contribution to PM CARES FUND

NHPC has contributed INR 70 Crore from its CSR fund of FY 2019-20, FY 2020-21 and FY 2021-22 to the Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund (PM CARES Fund).

Figure 6.6: Free health check-up camp organized by Corporate Office.

- A total of 281 pieces of cold chain equipment, including walk-in freezers, ice line refrigerators, and deep freezers (valued at INR 2.72 Crore), were provided to the state government authorities of three states / UT (Arunachal Pradesh, Himachal Pradesh, and UT of J&K) in FY 2020-21 and FY 2021-22 to support the COVID-19 vaccination campaign.
- Distribution of Aids and Assistive Devices to Persons with Disabilities: NHPC entered four MoUs with Artificial Limbs Manufacturing Corporation Limited (ALIMCO) at an estimated value of INR 2.85 Crore to assess the unique needs of Divyangjans and provide them with customised aids and assistive devices.
- About 5,200 aids and assistive devices have been provided to the Divyangjans, which include Joy Sticks, Tricycles, Wheelchairs, CP Wheelchairs, Hearing Aids, MSIED Kits, Smart Canes, Crutches, Walking Sticks, Rollators, Cervical Collars, Artificial Limbs, and Callipers etc., till March 2022.
- A fully-equipped ambulance amounting to Rs. 25 lakh was provided to Sewa Bharti, an NGO, on August 28, 2021, for providing ambulance services to ailing persons in far-flung areas of Doda, Kishtwar, and Udhampur Districts of the UT of J&K.

Figure 6.7: CSR activities in health sector.

(A) Health camps; (B) Medical supplies to respective states
(C) support by providing Advance Diagnostic Equipment; and (D) Distribution of aid devices.

Key CSR activities in sanitation sector during 2021-22

- Rectification, maintenance, and refurbishment work of the dysfunctional toilets to make them workable: During FY 2021-22, NHPC has spent INR 5.59 Crore on the rectification, maintenance, and refurbishment work of 1352 dysfunctional toilets constructed under Swachh Vidyalaya Abhiyan to enable access to adequate and equitable sanitation and hygiene. The total number of beneficiaries was 2,48,888.

- Providing Drinking Water Facility through Bore Well and Laying of Pipelines at Khaltse Village: NHPC Nimmo Bazgo Power Station has spent an amount of INR 20.00 Lakhs to provide drinking water through bore wells and pipelines, which has benefited four villages in the surrounding area of the project. This initiative was completed in FY 2021-22. The total number of beneficiaries is more than 1,000.

Figure 6.8: Rectification work of toilets at various locations under CSR activity.
(A: Munsiyari, Uttarakhand; B&C: Loktak, Manipur)

Figure 6.9: Rural potable water facility at Khaltse Village, UT of Ladakh.

6.4.2. Education & Skill Development

Some of CSR activities in Education & Skill Development Sector undertaken during 2021-2022 are:

- Expenditure on Kendriya Vidyalaya/Other School for Rural Community Children: NHPC has spent INR 33.06 Crore on 13 Kendriya Vidyalaya/other school during F.Y. 2021-22 for providing quality education to rural community children residing in the vicinity of its projects, power stations, and units. During FY 2021-22, the total number of beneficiaries was 5859.
- NHPC Teesta-V Power Station has awarded scholarships to 23 underprivileged students, who lack the means to attend formal schooling. The overall financial impact of this activity amounted to INR 10.8 lakh.

- Construction of 6 classrooms in Munderi Govt. Higher Secondary School, Kannur, Kerala: NHPC spent INR 2.10 Crore to construct six classrooms in Munderi Govt. Higher Secondary School, Kanhirode Village, Kannur, Kerala, during F.Y. 2020-21 and F.Y. 2021-22. The total number of beneficiaries of this CSR initiative is 1350.
- Up-gradation of infrastructure: Construction of a school building in Gingle High School, Baramulla, UT of J&K in place of an old building damaged in an earthquake in 2005.
- NHPC has spent INR 5.13 Crore on providing employment-oriented vocational training to 3000 unemployed youth to equip them with the skills, knowledge, and abilities so that individuals acquire the expertise needed to perform specific tasks and functions in various industries.

Figure 6.10: Skill development training of rural communities.

- NHPC Regional Office, Banikhet, has arranged vocational training courses in cutting and tailoring, beauty culture, and a certificate course in computer applications for the youth residing in rural areas in District Chamba (H.P.). The total funds utilized amounted to INR 4.5 lakhs, benefiting 108 individuals.

6.4.3. Environmental Sustainability

Various programmes aimed at improving environmental sustainability have been implemented in nearby areas of NHPC's Projects and Power Stations as part of CSR initiative.

- Development of Bandipora Nishat Garden, UT of Jammu & Kashmir: NHPC has spent over INR 2 Crore in development of the Nishat Garden, situated in Bandipora District by refurbishing the park's ageing structures and related infrastructure. The project includes installing garden illumination, constructing a glazed viewpoint, implementing a sump and open well, installing Bio toilets, etc.

Figure 6.11: Development of Bandipora Nishat Garden, UT of J&K

6.4.4. Rural Development

NHPC has played a crucial role in bringing about a remarkable change in the vicinity of its operations, in rural development.

- Modernisation of Horticulture Nurseries: NHPC Uri-I Power Station signed MoU with the Baramulla District Administration Authority of Jammu and Kashmir for rural development, outlining proposed project valued at INR. 172.00 Lakh. NHPC is undertaking activity related to the modernisation of horticulture nurseries within the Baramulla District at Khawaja Bagh, Baramulla, and Baghi Sundri Sopore to enhance the capacity.

- Construction of a community hall at Deorali in Teesta Valley by NHPC Teesta Low Dam-III Power Station, Sikkim.
- Thirty high-mast solar lights were successfully installed at the panchayats of Sarojini Nagar Assembly constituency in Uttar Pradesh, benefiting approx. 2500 individuals.
- At several places in Kanpur District, Uttar Pradesh, NHPC has installed solar streetlights (420 nos.) and High mast Lights (188 nos.) as part of corporate social responsibility (CSR) initiative.

6.4.5. Women Empowerment

NHPC demonstrates steadfast dedication to women's empowerment, with several women empowerment programs implemented across many of NHPC's projects, power stations, and units as part of CSR initiative. Training assistance has been provided to women in various courses to promote self-employment.

- As part of the Corporate Social Responsibility (CSR) initiative, NHPC has contributed five patrol vehicles (Maruti Suzuki Ertiga VXI) to the Commissioner of Police in Faridabad, Haryana. An expenditure of INR 46.21 lakh has been incurred for this activity. Vehicles were allocated for Law-and-order patrols and maintenance to enhance surveillance and ensure the safety of society's most vulnerable individuals, such as women, children, and older citizens.

Figure 6.12: Contribution of Patrolling Vehicles to Haryana Police, Haryana.

6.4.6. Art, Culture and Sports

NHPC has undertaken CSR initiatives toward the promotion of sports. Additionally, NHPC has also taken CSR initiatives to protect art and culture.

- Construction of Civic Amenity Building, at Badrinath Dham: An MoU was signed on 18.10.2021 for a period of 33 months for Construction of Civic Amenity Building, at Badrinath Dham through Shri Kedarnath Utthan Charitable Trust (SKUCT). Project cost is INR 18.58 Crores.
- Protection and restoration work for Historical Chogan: Chamera-II Power Station completed the restoration work of the historical Chogan, which is located close to the Zonal Hospital, District Chamba in the years 2019-20 & 2020-21. Construction of a pathway, enhancement of a platform, restoration of Chogan's entry gate, colouring, and painting of Chogan's boundary, and installation of a garden bench for Chamba inhabitants were all performed at a cost of INR 12.02 Lakh.
- Strengthening by way of providing training and material for promotion of sports: During FY 2020-21 & 2021-22, NHPC Kishanganga Power Station has undertaken initiative towards promotion of sports by providing training and material for sports in collaboration with District Administration. A sum of INR 2.54 Lakh was released to District Administration for the above CSR initiative.

6.4.7. Disaster Management

NHPC has been integrating CSR provisions into disaster management efforts to enhance the overall impact and effectiveness of response and recovery initiatives. NHPC is leveraging its resources to provide assistance during the response phase of disasters, which involves offering relief materials to help communities return to a state of normalcy.

- Kishanganga Power Station provided aid to the underprivileged households affected by the fire in Gurez, Bandipora District, UT of Jammu and Kashmir. As part of a CSR initiative, Kishanganga Power Station provided CGI sheets worth INR 2.86 lakh to fire affected families in the month of December 2021.

- CSR Support of INR 1.00 Cr for re construction of Govt. Schools and Health centres damaged during unprecedented rainfall in the Uttarakhand state in FY 2021-22.

Figure 6.13: CSR support for reconstruction and restoration work, Uttarakhand

7 ETHICS & GOVERNANCE

Nimmo Bazgo, Power Station (45 MW)
UT of Ladakh

7. Ethics &Governance

7.1. NHPC Governance

NHPC is a firm believer in the importance of sensible corporate governance procedures in establishing a solid foundation for the efficient operation of a business entity. The organisation's approach to corporate governance emphasises the importance of transparency, accountability, ethical behaviour, and fairness towards a wide range of stakeholders, including regulators, employees, consumers, vendors, investors, and the public. NHPC has standardised its governance structure by instituting a comprehensive set of policies and guidelines regulating its overall operations and stakeholder interactions. It has adopted key policies such as the Code of Business Conduct & Ethics, Whistle-blower Policy, Dividend Distribution Policy, and Policy on Stakeholder Engagement to promote sound governance practices.

NHPC implements best corporate governance practices by ensuring compliance with all regulatory provisions applicable to the Company, such as the Companies Act, 2013, Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015 (SEBI LODR), Guidelines on Corporate Governance for Central Public Sector Enterprises (CPSEs) issued by the Department of Public Enterprises (DPE) of the Government of India, and other directives/guidelines issued by the Government of India. NHPC remains dedicated to providing an adequate risk supervision and management system to ensure good corporate governance practices adherence. The Company has established a business strategy emphasising environmental, social, and governance-related stewardship activities. The corporate governance system of NHPC ensures integrity and transparency in business interactions, makes fair and timely disclosures, and fosters a culture that benefits stakeholders and regulators.

NHPC remains committed to providing an efficient risk supervision and management system to guarantee adherence to sound corporate governance practices. The Company has established a business strategy emphasising stewardship activities while considering Environmental, Social, and Governance (ESG) aspects. Ensuring integrity and transparency in business interactions, making fair and prompt disclosures, and developing a culture that benefits stakeholders and regulators are all goals of a sound corporate governance system.

7.1.1. Board Composition

The Board of Directors (BODs) is the governing body established by shareholders to supervise the overall affairs of the Company. The Board of Directors provides the management team strategic guidance, leadership, and direction while

adhering to the Code of Conduct for Board Members and Senior Management Personnel, prominently displayed on the Company's website. Consequently, this has bolstered the management's capacity to implement effective governance practices and enabled the board to exercise diligence, as required.

Board composition in governance refers to the form and makeup of an organization's Board of Directors. It revolves around the selection, diversity, credentials, and functions of Board Members. The Directors on the Board of NHPC Limited (Mini Ratna Category-I CPSE) being a Govt. Company are appointed by the President of India as per Articles of Association of the Company. The Administrative Ministry, namely the Ministry of Power (MoP), Government of India, is regularly consulted for this topic. Consequent upon order of MoP, four independent directors including one-woman independent director were appointed on the Board of NHPC in November/December 2021 and accordingly the company had reconstituted its Mandatory Committees in compliance with SEBI LODR and the Companies Act, 2013 w.e.f. 07.12.2021. Board composition is critical to achieving good governance and improving organizational success. As of March 31, 2022, the Board comprised of nine directors out of which four were Executive Directors (including Chairman & Managing Director), one was Government Nominee Director and four were Independent Directors.

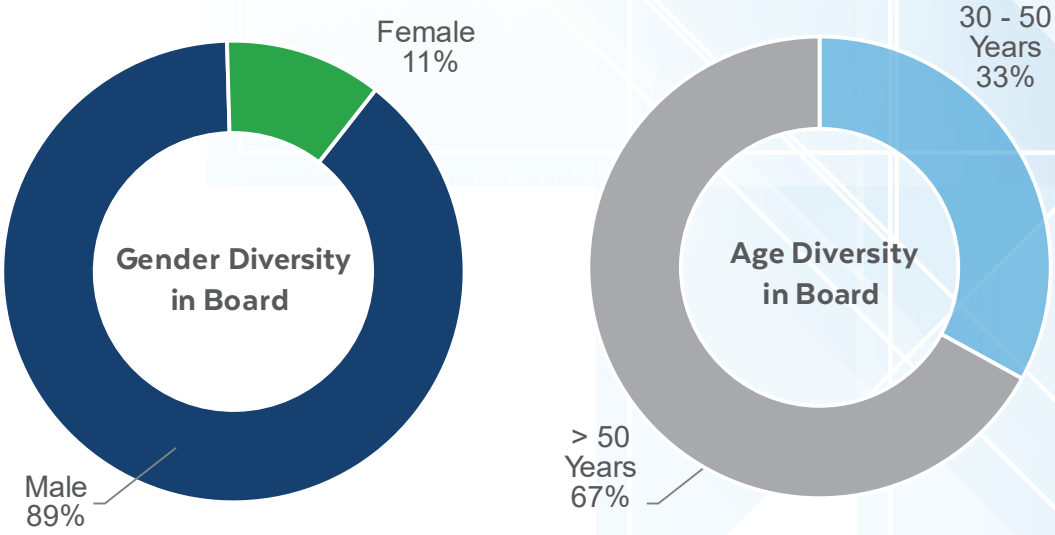


Figure 7.1: Board diversity at NHPC

The Board of Directors met ten times during the FY 2021-22. The details of meetings of Board of Directors and attendance of Director therein are given in the Report on Corporate Governance, which forms part of the Annual Report.

Table 7.1: NHPC Board Structure (as on 31st March, 2022).

Shri Abhay Kumar Singh Chairman & Managing Director	
Shri Yamuna Kumar Chaubey Director (Technical)	Shri Rajendra Prasad Goyal Director (Finance)
Shri Biswajit Basu Director (Projects)	Shri Raghuraj Madhav Rajendran Government Nominee Director
Dr. Uday Sakharam Nirgudkar Independent Director	Prof.(Dr.) Amit Kansal Independent Director
Dr. Rashmi Sharma Rawal Independent Director	Shri Jiji Joseph Independent Director

7.1.2 Board Committees

At NHPC, Board Committees ensure good corporate governance practices. Each committee is assigned specific tasks to enable the timely settlement of various issues. As part of good governance practices, the Board Committees are formed with the formal consent of the Board to fulfil clearly defined tasks by the Board members. The Board oversees and is accountable for the committee's performance in carrying out the obligations.

Senior officials of the Company are invited to provide necessary information/ clarification on matters placed before the Committees whenever required by the Committees. The Board accept all recommendation(s) of the committee(s) of the Board, which are mandatorily required to be recommended by the committee(s) for its approval.

To comply with the requirements prescribed under the Companies Act, 2013, SEBI LODR and DPE Guidelines on Corporate Governance, the mandatory Committees (except the Nomination & Remuneration Committee) were re-constituted by the Board of Directors with available Non-Independent Directors for part of the year due to non-availability of Independent Directors.

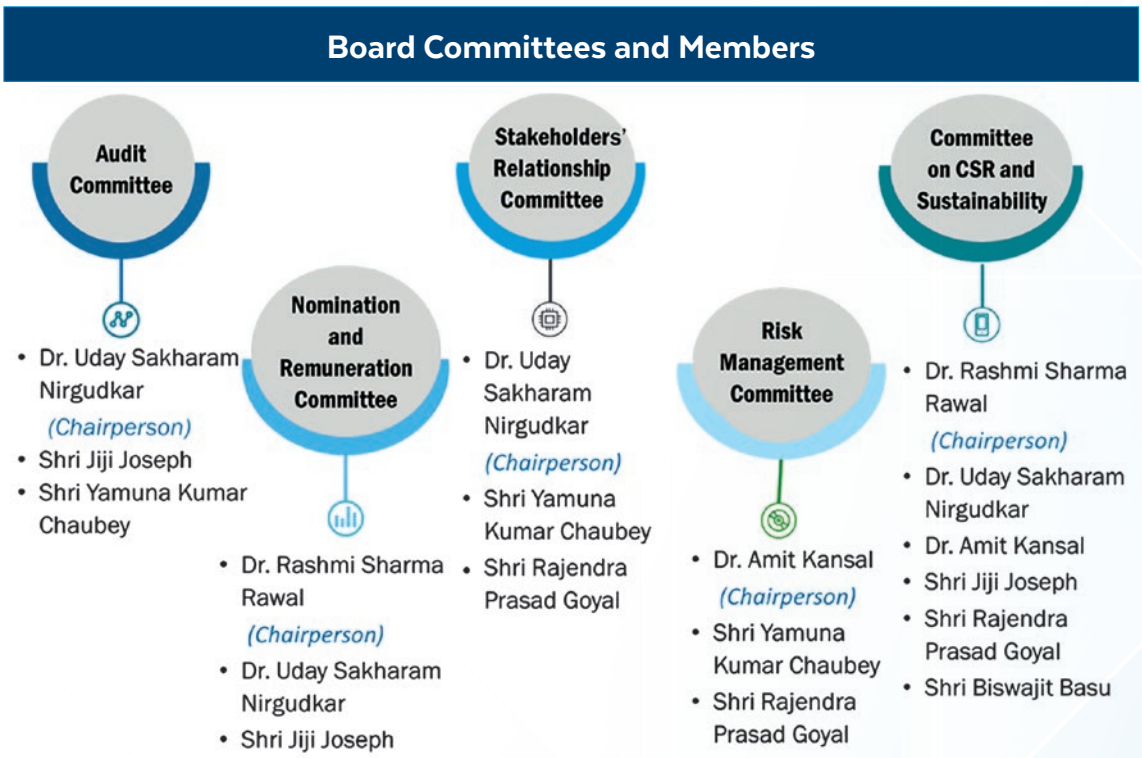


Figure 7.2: Board committees at NHPC and its members (As on 31st March, 2022).

7.1.3. Board Independence

NHPC's Independent Directors are appointed/nominated by the President of India working via the administrative ministry, namely the Ministry of Power, Government of India. As a result, the appointing authority examines the individual's integrity, knowledge, and experience as an Independent Director on the Company's Board of Directors. During FY 2021-22, all Independent Directors on the Company's Board satisfied the independence standards required by law and were registered in the databank of Independent Directors maintained by the Indian Institute of Corporate Affairs (IICA). No independent director has resigned from his post before the expiration of his tenure.

7.1.4. Board Compensation

NHPC is a central public sector enterprise (CPSE), and the Government of India decides the appointment, tenure, and remuneration of the Chairman & Managing Director, and whole-time Directors. The Independent Directors are paid sitting fees for attending the Board and Committee meetings. The Company does not provide the Government Nominee Director any remuneration/sitting fee.

The remuneration of the highest-paid individual (Director- Projects) in FY 2021-22 was INR 1,74,07,665 (Salary, Benefits & Performance Related Pay). More details are provided in NHPC's Annual Report for FY 2021-22. The Policy on remuneration, pay structure, allowances, and other benefits of employees of the Company are governed by relevant Department of Public Enterprises (DPE) Guidelines. Stakeholder's opinions are not taken into account when determining Director's remuneration.

7.1.5. Board Evaluation

The Ministry of Corporate Affairs (MCA) exempted Government Companies from providing information in the Directors' Report about the way the annual performance evaluation of the Board, its committees, and individual directors is carried out if the performance of the Director is being evaluated by the Administrative Ministry, in its notification dated June 5, 2015. The Administrative Ministry, i.e., MoP, in compliance with the DPE-specified methodology for appraisal of the performance of top management incumbents of CPSEs, evaluates the performance of each functional Director of the Company. The nominating authority evaluates the performance of the Nominee Director of the Company. There were no Independent Directors on the Board of the Company from September 8, 2020, to November 14, 2021. Accordingly, the annual performance evaluation of the Board, Board level Committees and Independent Director of the Company for the FY 2020-21 was not carried out as there was no Independent Director on the Board of the Company as on March 31, 2021.

NHPC has framed a policy on performance evaluation of the board, board-level committees, and directors in line with the provisions of Companies Act, 2013 and SEBI LODR. The Board of Directors has approved the revised Policy on 'Performance Evaluation of Board, Board level Committees and Directors' on the recommendation of the Nomination & Remuneration Committee and the Performance Evaluation of Board, Board Level Committees and Director for the FY 2021-22 was carried out by following the policy guidelines.

7.1.6. Capacity Building of Board Member

NHPC has adopted a policy on board member training that includes the CMD and all other Directors on the Company's Board. The Company's directors are nominated from time to time to attend different conferences/programs on Corporate Governance, Roles and Responsibilities of Director, and other industry-related subjects, organised in-house and by the Department of Public Enterprises, SCOPE, or other reputable institutions. This allows individuals to improve their knowledge and abilities to perform the roles more effectively and efficiently.

7.2. Sustainability Governance Structure

NHPC's sustainability governance structure ensures that sustainability matters are seamlessly incorporated into the organisation's fundamental values, strategy, and regular operations. A Board level Committee on Corporate Social Responsibility (CSR) and Sustainability is formed by NHPC, which consists of a mix of full-time Directors and Independent Directors, with an independent director serving as the committee's chair, overseeing strategy and keeping an eye on how strategic sustainability initiatives are being carried out. In FY 2021-22, the Board committee met five times to monitor the CSR & Sustainability policy and discuss the Annual action plan for implementing CSR and Sustainability projects undertaken by the Company.

Table 7.2: List of policies on Sustainable Governances at NHPC.

Policies of NHPC	
1	Code of Business Conduct and Ethics
2	Related Party Transaction Policy
3	Whistle Blower Policy
4	Fraud Prevention and Detection Policy
5	Integrity Pact
6	Guidelines on Banning of Business Dealings
7	Corporate Environment Policy
8	Grievance Policy and Procedures
9	Safety Policy
10	CSR and Sustainable Development Policy
11	Code of Business Conduct & Ethics (for board members and senior management personnel)
12	IT & Cyber Security Policy

In financial year 2022-2023, many other policies have been formulated by NHPC (Annexure 1) in alignment with ESG and BRSR reporting landscape.

7.3. Ethics and Integrity

Ethics and integrity are critical foundations of NHPC as they foster trust, reputation, and mutually beneficial connections with stakeholders for governance. NHPC has established specific protocols, processes, and systems in place, which involve the "Code of Conduct to Regulate, Monitor, and Report Insider Trading" and the "Code of Business Conduct and Ethics-For Board Members and Senior Management Personnel", have been adopted. All management, non-management, and contract personnel abide by all relevant policies covered under the code of conduct that NHPC has developed.

NHPC's Code of Business Conduct and Ethics states that Board Member and Senior Management Personnel shall act within the authority conferred upon by the Company and under applicable law, keeping the best interests of the Company in view and shall act fairly and transparently and not participate in any decision-making process on a subject matter in which a conflict of interest exists or is likely to exist such that an independent judgement of the Company's best interest cannot be exercised.

NHPC devised a system through its 'Whistle-blower Policy' that applies to all employees, Directors, and contractors of the organization, as well as vendors engaging with NHPC Limited. The Company has also implemented a Fraud Prevention and detection Policy that aims to prevent and address any fraud or suspected fraudulent activities involving its employees, vendors, suppliers, contractors, consultants, service providers, or external agencies. 100% of the operations have been assessed for corruption-related risks, and it was reported that the Company entered no transactions during the current reporting period which are fraudulent, illegal, or violative of the Company's code of conduct.

NHPC employs a robust grievance mechanism for communicating concerns with the various stakeholders. The attempt is to settle the grievances at the lowest level of the organization in the interest of its expeditious disposal. However, if the grievance remains unresolved, the grievance authority (also functions as Public Grievances Redressal Machinery) takes up such critical issues.

NHPC is taking regular feedback from its beneficiaries, which helps serve better and more effectively. NHPC relates to beneficiary States through Regional Power Committees (RPCs), a statutory body under the Electricity Act 2003. This is a common forum for regular interaction of beneficiary DISCOMs and for resolving outstanding issues. NHPC also conducts periodic customer meets for its beneficiary DISCOMs for interaction and to resolve any issues. It is to be noted that no cases were filed against the Company for unfair trade practices, irresponsible advertising, and anti-competitive behaviour in the past five years.

7.4. Vigilance Mechanism

The objective of the vigilance function is to ensure the maintenance of the highest level of integrity throughout the Company. NHPC has a Vigilance Department headed by the Chief Vigilance Officer, an independent authority from outside NHPC, to ensure transparency, objectivity, and quality of decision-making. All the procedures are documented to monitor and handle vigilance complaints and disciplinary cases. The Vigilance Department coordinates with the Ministry of Power, Central Bureau of Investigation (CBI), Central Vigilance Commission (CVC) and other concerned departments of the Government. One misconduct-related

vigilance case was disposed of during FY 2021-22. Two vigilance cases, i.e., one related to the offence of accepting illegal gratification and the other related to disproportionate assets, are under disciplinary proceedings as of March 31, 2022.

Table 7.3: Complaints as available with Employee Grievance Redressal Cell.

Opening Balance on 01.04.2021	Received during 2021-22	Resolved during Year 2021-22	Closing Balance as on 31.03.2022
08	21	24	05

82.75% complaints received in Employee Grievance Redressal Cell in FY 2021-22 were satisfactorily resolved by the management.

Table 7.4: Public Grievances on Centralised Public Grievance Redressal & Monitoring System.

Opening Balance on 01.04.2021	Received during 2021-22	Resolved during 2021-22	Closing Balance as on 31.03.2022
07	71	75	03

NHPC has resolved 96.15% Public Grievances received in FY 2021-22 as per "Centralised Public Grievance Redressal & Monitoring System" linked with Ministry of Power. As a part of preventive vigilance, circulars and guidelines are being issued regularly based on various inspections/intensive examinations carried out from time to time. Vigilance awareness week and other vigilance awareness programmes are also being organised by the Company to promote transparency and ethics in working system.

Figure 7.3: Vigilance awareness programme organized by NHPC.

7.5. Risks Management

NHPC operates in intricate and highly regulated business landscapes, impacting different operations and strategic decisions. NHPC strives to maintain a delicate balance between delivering efficient and sustainable energy solutions while adhering to legal requirements and ensuring environmental stewardship through environmental considerations and technological advancements. NHPC recognises its exposure to different risks inherent in the power business, which directly influence financial and non-financial outcomes. The risk management framework at NHPC identifies, assesses, and reduces potential risks to projects, operations, and financial stability. NHPC intends to make informed decisions, allocate resources efficiently, and establish contingency plans to prevent adverse outcomes using a structured risk identification and assessment approach. This includes the Enterprise Risk Management Policy, the Risk Management Committee, and an Enterprise Risk Management Framework, NHPC conducts proactive risk identification, mitigation, monitoring, and reporting.

7.5.1. Risk Identification

Through a systematic strategy that coincides with internal discussions with stakeholders and deliberations with the Senior Management team, NHPC has identified significant business risks. NHPC has developed a Risk Management Policy to boost trust in the attainment of the organization's and shareholders' goals, as well as to remain a competitive and sustainable entity while improving operational effectiveness. The Enterprise Risk Management system aims to identify risks that are inherent in all corporate operations and gives principles for defining, measuring, reporting, controlling, and mitigating such risks. NHPC has divided risks into four categories: operational risks, financial risks, strategic risks, and compliance risks.

1) Strategic - Risk of loss resulting from business factors. These risks adversely affect the achievement of strategic objectives and may impair overall value.

2) Financial - Risk directly impacting the balance sheet and access to capital.

3) Operational - Risk of loss resulting from inadequate or failed processes, and information systems.

4) Compliance - Risk arising out of non-compliance with/ non-fulfilment of legal, regulatory, and statutory requirements.

Risk identification sets out to identify NHPC's exposure to uncertainty, through an in depth assessment of the business and operation, the market in which it operates, the Economic, Legal, Regulatory, Social, Political, Technological and Cultural environment in which it exists, as well as it strategic and operational objectives, including factors critical to its success and the threats and opportunities related to the achievement of these objectives. Risk identification at NHPC is approached in a methodical way to ensure that all significant activities within NHPC have been identified and all the risks flowing from these activities defined. Brainstorming, surveys /interviews/working groups experiential or documented knowledge, risk lists - lessons learned and historical risk event information are used to identify and assess the risks. NHPC has a well-defined risk reporting structure with three level of reporting .

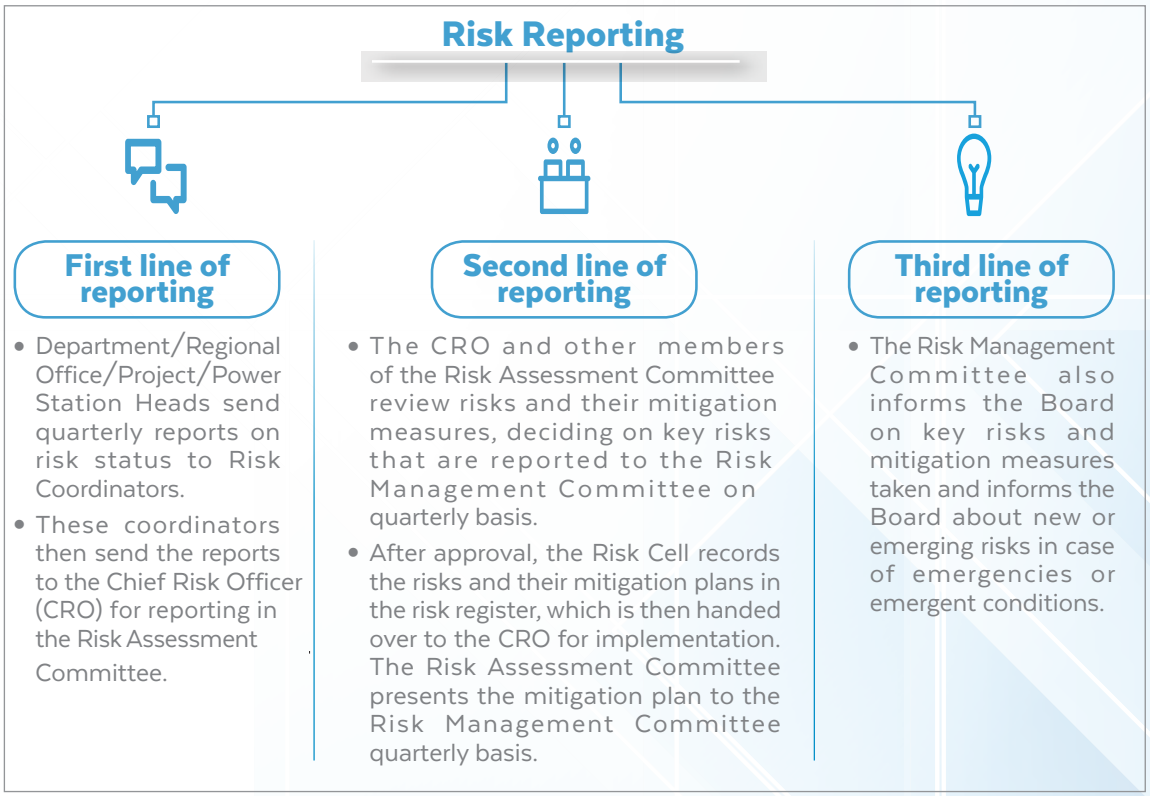


Figure 7.4: Risk Reporting Structure at NHPC

7.5.2. Risk Governance Framework

NHPC has a well-defined risk governance framework and has constituted a Risk Management Committee, a Risk Assessment Committee, and a Risk Cell has been constituted.

Risk Management Committee

The Risk Management Committee is formed as per the provision of SEBI (LODR), 2021 and any subsequent amendment. The committee assists

the Board in fulfilling its corporate governance responsibilities regarding identifying, evaluating, and mitigating operational, strategic, financial, compliance, and external risks. It monitors, approves, and reviews the company's risk policies/ plans and associated practices and presents to the Board. The Risk Management Committee reviews the Risk Assessment Committee's reports and takes remedial action.

Risk Assessment Committee

The Risk Assessment Committee at NHPC consists of The Chief Risk Officer (CRO), the Department Head (R&D) and Regional Heads/HoD (Finance, O&M, Planning, Strategy Business Development and Consultancy, PMSG, Others). The Risk Assessment Committee identifies the key risks, suggests mitigation measures, and monitors and supervises the implementation of Risk Management while ensuring Policy compliance and maintaining the enterprise-wide view of the key risks NHPC faces. The committee ensures that effective Risk Mitigation Plans are in place and that the results are evaluated and acted upon. It reports the key risks/ new/emerging risks the organisation faces, and their mitigation plans to the Risk Management Committee. The Risk Assessment Committee prioritises the reported risks according to their risk ratings and assists the risk management committee in decision making for risk management responses for identified key risks.

Chief Risk Officer

The Department Head (R&D) is given the charge of The Chief Risk Officer (CRO), who works with the Risk Coordinators to ensure the effective implementation of the enterprise-wide risk management process and Risk Management Policy according to NHPC's Risk Management vision. The CRO designs and reviews processes for Risk Management, communicates with the Risk Management Committee regarding the status of risk management, reports the key risks faced by the organisation and coordinates with all the Risk Coordinators to compile the level of risks and mitigation measures taken. It also convenes the Risk Assessment Committee meetings and facilitates discussions.

Risk Cell

The Risk Cell is located at NHPC Corporate Office and is comprised of one General Manager/Deputy General Manager, one Senior Manager/Manager, and one Deputy/Assistant Manager/Engineer who shall report directly to the CRO. The cell assists the CRO in risk assessment and mitigation measures taken as reported by Risk Coordinators.

Table 7.5: Risk Management Process at NHPC.

1. Risk Identification NHPC shall identify and record in the Risk Register, enabling the top management to take a comprehensive view of the same. Risks are identified in several ways, viz: Brainstorming sessions, Surveys/ Interviews/ Working groups, Experiential or Documented Knowledge, Risk Lists - Lessons Learned, Historical risk event information.
2. Risk Assessment Qualitative screening of risks and opportunities(R&O), followed by a quantitative treatment of the most significant R&O, as not all risks are quantifiable, using descriptive scales for each risk and opportunity. The combination of likelihood of occurrence and the magnitude of impact provides the inherent risk level to NHPC.
3. Risk Treatment Risk treatment entails finding and evaluating risk treatment options, as well as developing and implementing risk treatment plans. Risk strategies followed by NHPC: (1) Risk avoidance/termination; (2) Risk Reduction or Mitigation. (3) Risk acceptance and Tolerance; (4) Risk Transfer.

Risk Coordinators

The Risk Coordinators are the heads of respective departments of Contracts, Design and Engineering, Security, PMSG, Geology, Finance, O&M, HR, IT&C, Commercial, Planning, Strategy Business Development and consultancy, Company Secretary as mentioned in the responsibility column of the Risk Register. They review and assess the risks identified by the associated Department/Regional/ Project/Power Station Heads and develop and monitor the mitigation measures for the identified risks.

7.5.3. Impact Likelihood Framework

The goal of conducting a risk assessment is to protect human health, assets, and the environment and to allocate the necessary resources in a prioritised and defensible manner to ensure that any unacceptable risks identified are reduced to acceptable levels. The Risk Impact/Likelihood Chart is a management tool that assists in determining which risks need immediate attention. It is built on two primary dimensions: likelihood, which reflects the possibility of a risk occurring, and impact, which represents the risk's negative impact. The graphic assists in rating potential risks based on these dimensions, with the chance of a risk occurring on one axis and the effect of a risk if it appears on the other. This indicates the risk's priority, allowing management to deploy resources accordingly. The risk is plotted on the chart after being rated on a 5-point scale, and resources are assigned based on the risk rating.

NHPC has identified risks and opportunities with mitigation strategies, and a detailed Risk Identification and Risk Assessment approach has been prepared and documented for both the corporate and site levels. Periodic workshops are part of the risk assessment and mitigation planning process. During the workshops, brainstorming sessions are conducted to identify, evaluate and review risks based on their impact and likelihood, and mitigation plans are developed for each identified risk.

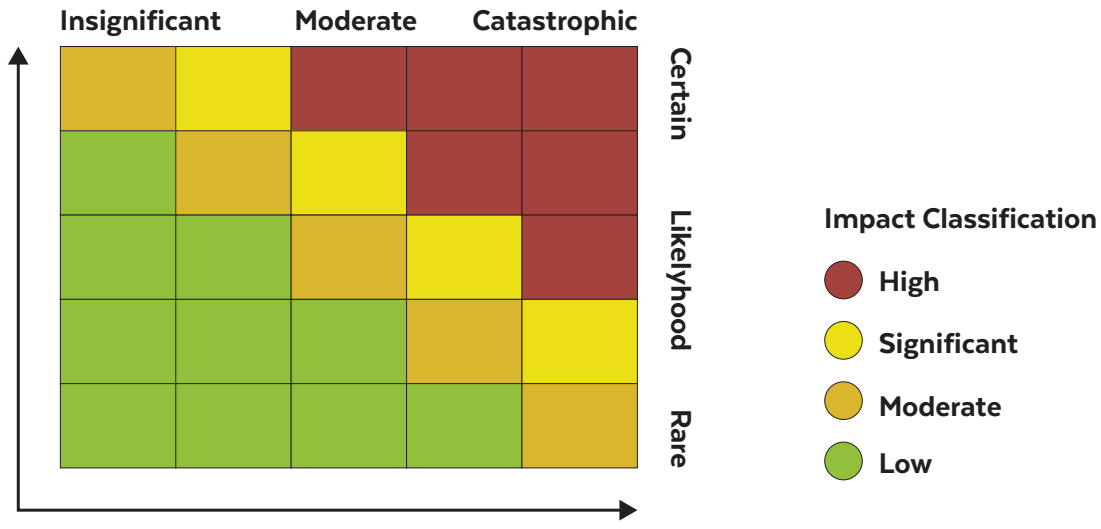


Figure 7.5: Risk Impact/Likelihood Chart for risk prioritization at NHPC.

Table 7.6: Risk Impact/Likelihood Criteria for risk prioritization at NHPC.

Score	Likelihood criteria		Impact Criteria	
5	Almost Certain	The event has occurred a few times within a year for the past 1-3 years, with a high likelihood of occurring again in the next year.	Critical	The financial impact of this project is estimated to be over INR 200 Crores per annum, potentially impacting the annual profit over 10%.
4	Likely	The event has occurred more than two times within last one year, with a high likelihood of occurring again in the next year.	Major	The financial impact is estimated to be less than INR 150-200 Crores per annum, with a potential impact on annual profit of 5-10%.
3	Moderate	The event has occurred once or twice within last 1-2 year, with a likelihood of occurring again in next 1-2 years.	Moderate	The financial impact is estimated to be between INR 75-150 Crores per annum, with a potential impact on annual profit of 4 - 5%.
2	Unlikely	The event has occurred once or twice since inception, with a low likelihood of occurring in next 3-5 years.	Minor	The financial impact is estimated to be less than INR 10-75 Crores per annum, with a potential impact on annual profit of 1-3%.
1	Rare	The event has never occurred in the past, with an extremely less likelihood of occurring within in next 5 years.	Insignificant	The financial impact is less than ₹ 10 Crores per annum, with a likely impact on annual profit of less than 1%.

7.5.4. Risk Mitigation Strategies at NHPC

S. No.	Risk Classification	Material Topics Linkage	Mitigation Strategy adopted at NHPC
Operational Risks			
1	Geological Risk	Climate Change Mitigation Energy Management Water Management Waste Management Biodiversity Protection	Comprehensive analysis is performed to identify causes of adverse geological events and their resolutions. Additional investigations, such as advance probing and Tunnel Seismic Prediction studies, are conducted to assess grey areas in geological models and define construction methodology. A Knowledge Management System is built to understand cost and time overruns due to uncertain geological conditions.
2.	Natural Calamity Risk		Implementing measures to mitigate the risk of natural disasters, including insurance, developing disaster management plans, establishing gauge and discharge sites, ensuring complete shutdown of power stations. Preventive measures such as installing flood warning systems, conducting pre- and post-monsoon inspections, conducting regular emergency response drills, and using advanced modelling techniques to model weather behaviour and seasonal patterns.
3.	Renewable Energy Operational Risk		Implementing OEM recommended maintenance practices, predictive asset management of solar and wind assets, and exploring emerging technologies to maintain the generation effectiveness of solar panels. Develop a long-term strategy for solar and wind power generation.
4	Environmental Risk		Implementing strong governance and review mechanisms to adhere to compliance requirements, conducting risk assessments. Periodic reviews to strengthen EHS and compliance capabilities and implementing interventional measures for energy and GHG emission reduction.

S. No.	Risk Classification	Material Topics Linkage	Mitigation Strategy adopted at NHPC
5.	Operational Staff Capacity Building Risk	Human Resource Development	Enhancing organizational productivity and employee creativity through a comprehensive approach. This includes implementing reward systems, using HR tools, and defining mandatory training hours. A Training Need Analysis is being conducted to design the curriculum for all roles.
			A knowledge repository is being established for easy information transfer during personnel transfers. Mandatory training hours are being defined and revised regularly. The training calendar is compared to the year's record to identify any delays and improve the curriculum accordingly.
6.	Human Resource Risk	Human Rights	Set up launched Equal Opportunity policy and Human Rights policy. Activities relating to the Welfare of employees are undertaken. Employees are encouraged to make suggestions and discuss concerns with their superiors. Labour problems if any, are obviated by negotiations and conciliation. NHPC has Internal Grievance Redressal Committee at workplace for persons belonging to scheduled castes community.
7.	Project Risk - Lack of Adequate Safety Measures	Safety & Working Conditions	Projects and power stations require all personnel to wear PPE, including helmets, safety glasses, and hearing protection. A Safety Officer is posted to ensure compliance. Emergency response measures should be available, and proper barricading should be provided in accident-prone areas. A Fire Protection Program (FPP) is implemented for fire safety, involving staff positions, training, and equipment. This program ensures fire safety, prevents loss, and minimises risk to human life.

S. No.	Risk Classification	Material Topics Linkage	Mitigation Strategy adopted at NHPC
			Implement an electronic Record Management System which shall digitize and store all documents/ records at a central location at all projects/power stations. The documents/records at the central location can then be duplicated onto tapes and kept at a storage location.
8.	Pandemic Disasters	Safety & Working Conditions	Ensure online data management of all employees from medical history perspective. Encourage employees to report symptoms especially asymptotic employees for an early testing and detection. Prepare a list of employees with critical conditions that puts them on higher risk. Prepare a pandemic response plan.
9.	Reputation Risk	Community Impact	Before partnering with local administration for CSR activities at Project sites, due diligence and a credibility check is conducted based on their reputation and previous work.
10.	Project Risk - Power Generation loss due to frequent equipment breakdowns	Business Continuity Risk Management	Annual preventive maintenance and minimum inventory plan for spares to minimise power generation breakdowns. It also suggests analysing past data to ensure maintenance schedules are effective. For remote areas, early initialization and fast approvals are recommended to mitigate generation loss risk. Operational readiness of all equipment and identifying suitable Contractors and vendors for emergency works to minimise generation loss.
11	Technology Risk		Information Security Management System (ISMS) is already implemented to eliminate or minimize the impact of various security related threats and vulnerabilities which might have on NHPC. The ISMS implementation is directly influenced by the NHPC's objectives, security requirements, processes employed, size and structure. By preventing and minimizing the impacts of security incidents, ISMS shall ensure business continuity, confidentiality, and integrity of critical information systems.

S. No.	Risk Classification	Material Topics Linkage	Mitigation Strategy adopted at NHPC
			• NHPC has been awarded ISMS ISO 27001:2013 certification in Corporate Office and some of the Power Stations which assures confidentiality, integrity, and availability of information assets. • NHPC cyber security policy and Cyber Crisis Management Plan (C-CMP) has been implemented to minimize disruption of IT services due to cyberattacks. These documents are available at intranet portal of NHPC for internal circulation among employees across all sites. These Documents are being reviewed periodically by IT&C Division of the NHPC Ltd. • Periodic review/audits are being carried out to strengthen cyber security posture of the corporation. • The organization shall determine its requirements for the continuity of IT infrastructure in adverse situations, e.g., during a crisis or disaster. A Disaster Recovery Site for critical ERP and E-office applications as part of Business Continuity Plan (BCP) has been developed at an alternate location. • Segregation of duties analysis are being performed quarterly for user authorization controls to identify vulnerabilities in the system, if any.
12.	Contractor Risk	Sustainable Procurement	The engineer-in-charge at power stations/projects is responsible for ensuring timely payment of minimum wages to labour, ensuring that payments are made between Contractors and sub-contractors.
13.	Remote Operations	Human Resource Development	Work from home & remote working is a business necessity today. NHPC employees can operate from home in an integrated manner so that they can use IT applications from anywhere after ensuring secure access and people can use collaborative conferencing tools to interact with fellow workers. The below mentioned techniques may be used -

S. No.	Risk Classification	Material Topics Linkage	Mitigation Strategy adopted at NHPC
			• SSL-VPN should be provided to enable NHPC employees for secure remote operation. • Multi factor authentications should be enabled for ensuring cyber security. • Secure Conferencing tools to be provided to employees.
Financial Risks			
14.	Liquidity Risk	Economic Performance	Encourage the availability of longer-term sources, such as Export Credit Agencies (ECAs), as well as credit enhancement mechanisms. Ensure that projects proposed for funding have been adequately prepared/planned, with a clear contractual framework and security package already in place. Liaise with international lending agencies to obtain financial assistance in the form of technical assistance and loans.
15.	Credit Risk		Systems are in place to assess customers' creditworthiness. Provision for bad and doubtful debts made to arrive at the Company's correct financial position. Appropriate recovery administration and follow-up.
16.	Financial Risk		The plan involves creating an internal mechanism for proper capital expenditure utilization, regular monitoring of the budget, review of expenditure, and addressing deviations promptly. It also includes implementing a cost review system, addressing decision-making delays, and sending alerts to personnel.
17.	Renewable Tariffs	Sustainable Financing	Gain continuous competitive intelligence by engaging in proactive industry engagement with a variety of stakeholders. Perform a thorough cost analysis on renewable projects at the time of bidding or after the bidding announcement.

S. No.	Risk Classification	Material Topics Linkage	Mitigation Strategy adopted at NHPC
18.	Fraud Risk	Ethics & Transparency	Perform quarterly Segregation of Duties analysis on financial systems, analyse user authorization, design rulebooks, resolve conflicts, and conduct IT system audits by third parties.
Strategic Risks			
19.	Political Risk	Stakeholder Engagement	Foster strong relationships with government departments and the Ministry to promote hydropower projects' benefits and minimise local agitation. A Social Responsibility Cell can be established to discuss social responsibilities and employment opportunities. Collaborate with State Government departments through the Relationship Management Committee to facilitate discussions before regulatory changes, monitor future developments, and address NHPC's concerns. Timely resolution of issues with Regulations to pass on costs to beneficiaries.
20.	Market Risk		Report foreign exchange exposures and management's measures to mitigate potential exchange rate risks to the board quarterly, aiming to maintain currency consistency in payment and expenditure.
21.	Tariff Risk		Beneficiaries must extend Power Purchase Agreements (PPAs) if their validity has expired or is nearing expiration. If beneficiaries refuse, they must request reallocation to other States. If reluctance is expressed, the Ministry of Power should be contacted for reallocation. Prospective buyer should be offered a lower tariff compared to the levelized tariff per unit for the first year or more.

S. No.	Risk Classification	Material Topics Linkage	Mitigation Strategy adopted at NHPC
22.	Competition Risk		NHPC plans to address skill gaps in competitive bidding by seeking external consultants or hiring resources with relevant knowledge and experience. It provides adequate training to existing resources to build competitive bidding competencies. It plans to create a Knowledge Management System to store all project bids by NHPC or competitor, identifying areas for improvement like cost and time reduction.
23.	Socio-Political Risk	Community Impact	A community relationship cell is formed at the project level, actively engaging with the State government and local administration for effective implementation and monitoring of the R&R scheme. The cell reviews R&R-related issues raised by Project Affected Families (PAFs) and prepares and submits quarterly reports on the scheme's implementation. Community relationship cells monitor the program's effectiveness in coordination with the State Government/District Administration.
Compliance Risks			
24.	Legal & Regulatory Risk	Ethics & Transparency Regulatory Compliances	NHPC regularly reviews and complies with national and State laws and regulations to avoid legal proceedings and non-compliance. This includes maintaining an inventory of laws, monitoring, and updating it, and conducting periodic compliance reporting. The Commercial team ensures that tariff petitions align with CERC guidelines and undergo internal reviews at different departments before finalization. The company is building an analytics-driven cognitive contract management system, standardise project contracts, and establish a robust project risk management mechanism to avoid delays.

7.6. Glacier Lake Outburst Flood (GLOF) Studies by NHPC Limited

Himalayan glaciers have thinned and receded, causing the formation of many glacial lakes, usually formed behind loosely consolidated moraine dams, which are inherently unstable. These lakes may burst due to triggering by moraine failures induced by lake area expansion rate, up-glacier and down-valley expansion rate, dead-ice melting, seepage, the degradation of permafrost, a seismic activity, a flood wave caused by a rock, snow, or ice avalanche into the lake, and an abrupt rise in water level due to heavy precipitation; consequently, a sudden release of vast reserves of water and debris, i.e., glacier lake outburst flood (GLOF), may occur. In most incidences, GLOF poses a severe hazard by transforming into flash floods, causing the loss of lives and the destruction of houses, bridges, fields, forests, hydropower, roads, etc. downstream.

The Design & Engineering Department of NHPC conducts modelling studies on the estimation of potential GLOF. The modelling study mainly consists of predicting the outflow hydrograph due to the breach of potentially hazardous lakes and routing the GLOF hydrograph through the downstream valley to get the maximum water level and discharge along with the travel time at different locations of the river downstream of the lake. The impact of the GLOF on dam is assessed and spillway capacity is kept accordingly. Thus, the estimation of GLOF provides the flood hydrograph of discharge from the dam breach and maximum water level at different locations of the river downstream of the dam due to propagation of flood waves along with their time of occurrence. This help in development of mitigation and management strategies downstream, in case of such eventualities.

In addition, NHPC has Early Warning Systems integrated with comprehensive software application named e-Aabhas. Automatic water level sensors along with telemetric data transmission are installed at sufficient upstream location of dam sites of NHPC Power Stations and Projects.

8. RESEARCH AND DEVELOPMENT

Tanakpur Power Station (94.2 MW),
Uttarakhand

8. Research and Development

NHPC has a dedicated Research and Development Division which in association with Design and Engineering, Geology, Environment and Diversity Management, and other divisions address the requirements of its projects. NHPC possesses a competitive advantage over other hydropower businesses due to the substantial expertise of its in-house design team in hydropower. NHPC communicates various outcome of the research activities in peer reviewed national and international journals, blogs and scientific forum. The Environment and Diversity Division of NHPC ensures that sustainable development principles are upheld within the realm of hydropower generation from planning to operational phases.

NHPC is India's sole hydroelectric power generation utility with specialised knowledge in several techniques, such as tunnel seismic prediction, tomography, and resistivity imaging. These techniques are employed to obtain sub-surface information cost-effectively and efficiently. It has used state-of-the-art geophysical exploration methods on the premises to analyse data and provide internal reports. The engineering capabilities encompass a broad spectrum, from the initial conceptualisation phase to the final commissioning stage of projects. NHPC has entered into a Memorandum of Agreement (MOA) with the IIT Roorkee, IIT Kanpur, IIT-ISM Dhanbad, CSIR-CSIO, Chandigarh, CWPRS, Pune, NIT Durgapur, IIT Jammu, IIT Delhi and IIT Indore to engage in collaborative research and development (R&D) endeavours in the domains of science, engineering, and technology.

NHPC and NTPC signed a Memorandum of Understanding (MoU) on August 10, 2021, for " Cooperation in the Overseas Power Sector" to collaborate on project development, capacity building, O&M, RMU, and other consultant tasks outside India. According to the MoU, the broad areas of cooperation between NHPC and NTPC include establishing collaboration for carrying out a feasibility study for new Hydro-based power stations and related infrastructure/facilities in mutual interest countries, development of hydropower projects abroad subject to techno-commercial feasibility, collaboration, and exchange of information in mutual interest countries, and collaboration in any other mutually beneficial overseas business.

The power stations operated by NHPC are well managed to mitigate the issue of sediment accumulation in the respective reservoirs. The utilisation of information technology enhances and guarantees the effectiveness of construction supervision, post-commissioning monitoring, and seamless operation. Currently, the company's power stations operate with varying degrees of automation, ranging from semi-automated to fully automated. Numerous power stations are outfitted with sophisticated distributed control systems in conjunction with

Supervisory Control and Data Acquisition (SCADA) systems. NHPC is exploring the implementation of remote operation and maintenance capabilities for its power stations.

Following the declaration of the Green Hydrogen Policy by the Government of India, NHPC has initiated preparatory measures to establish a pilot Green Hydrogen Mobility Station as a research and development endeavour in the regions of Himachal Pradesh and the Union Territory of Ladakh. Additionally, on March 11, 2022, the Ministry of Power released guidelines about the acquisition and use of battery energy storage systems as components of generation, transmission, and distribution assets and for auxiliary services. NHPC, as a holder of a "Category-I Trading License," is currently researching the possibility of serving as an authorised intermediary procurer to expedite the advancement of storage projects. Following implementing effective strategies and streamlining operational procedures to foster sustainable development and ensure consistent performance within the electrical sector, the organisation has made substantial investments in novel and pertinent technologies related to the electro-mechanical, civil, and hydro-mechanical engineering domains.

8.1. Geophysical Research and Development

NHPC has a strong team of experienced Engineering Geologists, Geophysicists and Research officers in the Engineering Geology & Geotechnical Division for carrying out geological, geophysical and construction material survey works and providing engineering geological and geotechnical solutions at different stages of hydropower projects from inception to commissioning. This division also caters the requirement of Seismological and Remote Sensing Studies. Geophysical techniques are of great value when performed early in the field exploration program in combination with limited direct and semi-direct explorations. These

studies are to be carried out on the requirements as recommended by the geologists/designers. Seismic Refraction Technique is applied for delineation of overburden stratification, estimation of depth-to-bedrock & its disposition, delineation of zones of weaknesses, demarcation of buried channel as well as in assessment of rock mass quality/condition (IS15681,2006). Resistivity Imaging is used in detecting shear zones/cavities where the conventional seismic refraction technique has limitations (IS15736-2007,2012). Seismic Tomography is to obtain a precise two/or three-dimensional image of the subsurface in terms of seismic velocities.

During DPR stage of the project development, a detailed geophysical investigation is carried out to finalise the sites and design the diversion, power station, and other appurtenant structures of the projects for TEC and other routine obligatory clearances. Therefore, in this stage, the preferable alternative selected during the project feasibility study needs to be thoroughly investigated to generate a bankable DPR. Besides optimising the drilling program, the purpose of a geophysical survey at this stage would be a detailed study of the subsurface condition to minimise the grey areas and enhance confidence in project development.

The state-of-the-art Multichannel Analysis of Surface Waves (MASW) study is carried out at this stage to determine Vs (30) towards site-specific seismic design parameters as well as in high-resolution shear wave velocity scanning. As per the site requirement, the technique can be used to evaluate liquefaction potential assessment. Other methods specific to the site that are utilised during this stage include seismic tomography for scanning adverse underground features and critical zones.

8.2. Real Time Seismic Data Center, NHPC

NHPC is committed to the seismic safety of its projects and in line with the Dam Safety Act, Dec.2021, which has mandated seismic monitoring of all hydro project, NHPC has set up a network of 57 highly sensitive SMA (Strong Motion Accelerographs) covering all its dams & barrages. All these SMA's are connected online, and real-time centralised monitoring is done with the help of 5 servers at Real Time Seismic Data Center, NHPC, CO. Once any earthquake occurrence is observed in the vicinity of a project, specialised software like Apollo Server Antares, Stream, Scream, EQ wave, RT-Display/RT view are used for data management along with downloading, processing, and analysis of the earthquake data. Detailed report of the event is prepared and sent to the respective projects. This is one of its kind facility developed in any hydro sector of the country.

More than 900 Himalayan earthquake events have been recorded by this centre. These earthquake reports are further shared with local district authorities and local panchayat bodies, during public hearings, with officials from other various departments during their visit to the projects to spread awareness regarding NHPC's initiative to dedicated seismic monitoring as well as to assure them of safety of our structures. Presently, NHPC is undertaking a high-end Research & Development Project in collaboration with Department of Earthquake Engineering, Indian Institute of Technology- Roorkee (IITR) towards the development of a Himalayan specific attenuation relationship utilising SMA data from NHPC network. Once developed it will help in optimising the design parameters of our structures.

8.3. R&D projects completed during FY 2021-22

- Hydraulic studies, including studies related to cavitation in high head spillways by computational fluid dynamics (CFD) software FLOW3D for Subansiri Lower HE Project.
- Study & Performance evaluation of concrete spillway glacis rehabilitated with steel liner at Dhauliganga Power Station.
- Conducting trial of special shotcrete to provide initial support and stabilise the excavated portion immediately after boring to enhance the progress of TBM excavation in the Parbati-II HE Project.
- Study for Evaluation of abrasion resistance of repair mortars complying with specifications as per EN1504-3 (R4).

8.4 Promotion of Research and Development on Climate Action

NHPC has sponsored an international expedition to the Arctic region, titled 'Leadership on the Edge', organised by the 2041 Foundation in 2019, founded by polar explorer Robert Swan. The expedition, which included over 80 explorers, aimed to promote a sustainable future and create resilient communities. NHPC sponsored the participation of two explorers. The expedition aligns with NHPC's commitment to developing hydropower projects in an environmentally friendly and socially responsive manner, integrating environmental considerations into planning, execution, and operation. The expedition was an ideal platform to showcase NHPC's commitment to environmental sustainability and promote sustainable development.

9. AWARDS AND RECOGNITION

Teesta-V Power Station (510 MW),
Sikkim

9. Awards & Recognition

The efforts of NHPC have been appreciated at various levels, and it has received the following awards in FY 2021-22:

- NHPC was conferred with the "PSU Developer of the Year" Award in the Gold Category by EQ International during EQ's PV Invest-Tech India Conference & Awards in New Delhi.

- NHPC has been conferred with 'The AEOHD Occupational Health Excellence Award – Public Sector' in recognition of its exemplary contribution to the field of Environmental and Occupational Health by AEOHD (Association of Environmental & Occupational Health, Delhi).

- Gold Shield for 'Excellence in Financial Reporting' awarded by the Institute of Chartered Accountants of India (ICAI) for FY 2020-21 in the "Infrastructure & Construction Sector-Turnover equal to or more than ₹ 500 Crore" category.

- The Company also won the Certificate of Merit for the 'Best Presented Annual Report' from the South Asian Federation of Accountants (SAFA) in the "Public Sector Entities" category.

- NHPC's Rajbhasha journal 'Rajbasha Jyoti' was awarded 'First Prize' under 'Rajbhasha Kirti Puruskar (Griha Patrika)' in Region 'A' by the Ministry of Home Affairs, Govt. of India for the year 2019- 20. NHPC has also been awarded the Second Prize for commendable work implementing Rajbhasha under the Rajbasha Kirti Puruskar scheme.

- NHPC was conferred the 'Best Implementation of Dam Rehabilitation Project' award at the Water Digest 'Water Awards, 2021-2022' held in New Delhi on March 29, 2022. The award recognises the Rehabilitation of the Dam and other Components of 280 MW Dhauliganga Power Station (Uttarakhand) after it was damaged by floods in 2013.

- NHPC's Teesta-V Hydropower Station was awarded the IHA Blue Planet Prize 2021.

Blue Planet Award for Teesta-V PS

Teesta-V Power Station has been rated as an example of international good practice in hydropower sustainability, according to an independent report by the accredited assessors of the International Hydropower Association (IHA). The Hydropower Sustainability Assessment Protocol (HSAP) of the International Hydropower Association (IHA) is a tool for measuring the environmental, social, technical, financial, and economic aspects of a hydropower project's performance, which eventually promotes and guides sustainable hydropower projects. It provides a common language allowing governments, civil society, financial institutions, and the hydropower sector to discuss and evaluate sustainability issues. The Protocol benchmarks processes and performance against international expectations. It can be used at any stage of hydropower development, from the earliest planning stages to operation. It has also been designed to work on projects and facilities worldwide. It also provides an effective mechanism to continuously improve sustainability performance by identifying gaps the project proponent may address through remedial actions.

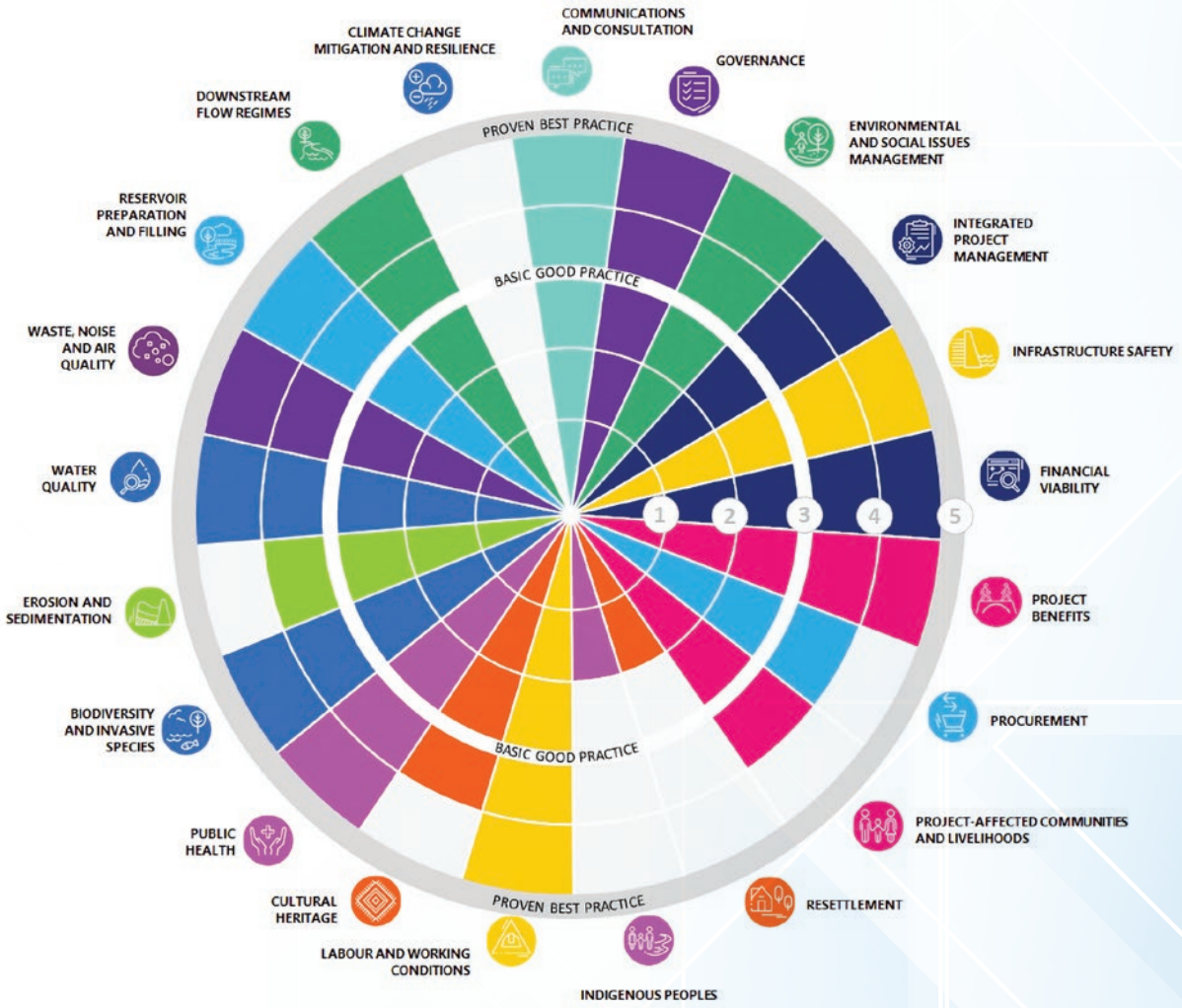
The assessment was undertaken by a team of independent assessors, accredited by IHA during January 2019 and March 2019, on 20 performance criteria viz., 1) Communications and consultations, 2) Governance, 3) Environmental & Social Issues Management, 4) Hydrological Resource, 5) Asset Reliability & Efficiency, 6) Infrastructure Safety, 7) Financial Viability, 8) Project Benefits, 9) Project Affected Communities & Livelihood, 10) Resettlement, 11) Indigenous People, 12) Labour & Working Conditions, 13) Cultural Heritage, 14) Public Health, 15) Biodiversity & Invasive Species, 16) Erosion & Sedimentation, 17) Water Quality, 18) Reservoir Management, 19) Downstream Flow Regime, 20) Climate Change Mitigation & Resilience and final report published in September 2019. As per the assessment report, Teesta V PS has met or exceeded international good practices on all 20 performance criteria. It met proven best practices in managing asset reliability and efficiency, financial viability, project benefits, cultural heritage, public health, and erosion and sedimentation.

Teesta-V Power Station exceeds essential Good Practice on nine parameters: Communications and Consultation, Governance, Environmental and Social Issues Management, Hydrological Resource, Infrastructure Safety, Indigenous Peoples, Water Quality, Reservoir Management, and Climate Change Mitigation and Resilience. Also, Teesta-V meets Basic Good Practice on five parameters: Project-affected Families and Livelihoods, Resettlement, Labour and Working Conditions, Biodiversity and Invasive Species, and Downstream Flow Regime.

The sustainability assessment of Teesta-V is not only the first of its kind in India, but it is also the first hydropower project globally to publish results against new performance criteria covering its resilience to climate change and mitigation of carbon emissions after the Hydropower Sustainability Assessment Protocol (HSAP) was expanded in scope in 2018.

In 2021, based on this assessment, Teesta-V Power Station was conferred with the prestigious Blue Planet Prize by the International Hydropower Association (IHA), a London-based non-profit membership association operating in 120 countries based on achieving good sustainability practice in an official assessment. The award for Teesta-V Power Station was announced on September 23 2021, during the World Hydropower Congress, 2021.

Sustainability Profile of Teesta-V Power Station



ANNEXURES

Powerhouse of Sewa-II Power Station (120 MW),
UT of J&K

Annexures

(1) List of policies developed in 2023.

	Policies of NHPC – Implementation year 2023
1	Stakeholder Engagement Policy
2	Sustainable Procurement/Sourcing Policy
3	Conservation of Energy Policy
4	Water Conservation Policy
5	Waste Management Policy
6	Biodiversity Policy
7	Public Policy Advocacy Policy

(2) Association & Corporate Partnership

NHPC Limited is a Central Public Sector Enterprises under the parent ministry "Ministry of Power, Government of India" and is a member of several prominent commercial and industrial organizations:

S.No	Name of the organizations
01	CIGRE (International Council on Large Electric Systems)
02	CBIP (Central Board of Irrigation & Power)
03	India Habitat Centre
04	Standing Conference of Public Enterprises (SCOPE)
05	AIMA (All India Management Association)
06	NIPM (National Institute of Personnel Management)
07	Power HR Forum
08	DELNET (Developing Library Network)
09	ISRM (International Society for Rock Mechanics & Rock Engineering)
10	SRMTT (Indian Society for Rock Mechanics & Tunnelling Technology)
11	ISEG (Indian Society of Engineering Geology)
12	TAI (Tunnelling Association of India)
13	The institute of Company Secretaries of India (ICSI)
14	CSI (Computer Society of India)
15	DSCI (Data Security Council of India)
16	INHA (Indian National Hydropower Association)
17	TII (Transparency International India)
18	The Committee for International Commission on Large Dams, (INCOLD)

(3) GRI 301-1 Materials used by weight or volume in (O&M)

	Measure	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Cement	Metric tonne (MT)	1,772.42	2,392.00	2,154.64	3,591.78
Steel	Metric tonne (MT)	92.25	67.82	59.87	359.49
Aggregates	Metric tonne (MT)	8,570.37	6,549.75	6,692.28	14,565.55
Tin Sheet	Metric tonne (MT)	4.33	4.28	6.20	4.34
Sand	Cubic metre (m^3)	3,620.22	4,052.52	3,743.64	5,895.79
Stone dust	Cubic metre (m^3)	-	-	-	383.00
Soil	Metric tonne (MT)	-	-	-	51.53
Bitumen	Metric tonne (MT)	125.03	131.12	-	167.94
Plastic	Metric tonne (MT)	-	-	-	0.78
Procured - Oil /Lubricant:	Kilo Litre (KL)	1,111.26	933.78	1,616.37	2,066.68
Procured- Foam for firefighting	Kilo Litre (KL)	0.67	0.64	0.06	0.81
Procured - DCP Powder procured for firefighting	Metric tonne (MT)	1.06	1.43	1.68	2.23

(4) GRI 301-2: Recycled input materials used

	Measure	2018-19	2019-20	2020-21	2021-22
Fly Ash	MT	0.00	0.00	0.00	65.27

(5) GRI Content Index

GRI Standard	Disclosure	Report Section/Chapter
GRI 2: General Disclosures 2021	2-1 Organizational details	About NHPC Limited
	2-2 Entities included in the organization's sustainability reporting	About the report
	2-3 Reporting period, frequency and contact point	About the report
	2-4 Restatements of information	Not Applicable This is NHPC's first Sustainability Report.

GRI Standard	Disclosure	Report Section/Chapter
	2-5 External assurance	About the report, Reporting with reference to the GRI Standards
	2-6 Activities, value chain and other business relationships	About NHPC Limited
	2-7 Employees	About NHPC Limited
	2-8 Workers who are not employees	Human Resource Development
	2-9 Governance structure and composition	NHPC Governance
	2-10 Nomination and selection of the highest governance body	NHPC Governance- Board Composition
	2-11 Chair of the highest governance body	NHPC Governance- Board Composition
	2-12 Role of the highest governance body in overseeing the management of impacts	NHPC Governance- Board Composition
	2-13 Delegation of responsibility for managing impacts	Board Committee
	2-14 Role of the highest governance body in sustainability reporting	Sustainability Governance Structure
	2-15 Conflicts of interest	Ethics and Integrity
	2-16 Communication of critical concerns	Ethics and Integrity
	2-17 Collective knowledge of the highest governance body	NHPC Governance-Capacity Building of Board Members
	2-18 Evaluation of the performance of the highest governance body	NHPC Governance-Board Evaluation
	2-19 Remuneration policies	NHPC Governance-Board Compensation
	2-20 Process to determine remuneration	NHPC Governance-Board Compensation
	2-21 Annual total compensation ratio	NHPC Governance-Board Compensation

GRI Standard	Disclosure	Report Section/Chapter
	2-22 Statement on sustainable development strategy	From Chairman's Desk
	2-23 Policy commitments	NHPC Vision & Mission Statements ESG Governance & Strategy
	2-24 Embedding policy commitments	ESG Governance & Strategy
	2-25 Processes to remediate negative impacts	Management Approach for Material topics
	2-26 Mechanisms for seeking advice and raising concerns	Ethics and Integrity
	2-27 Compliance with laws and regulations	Management Approach for Material topics
	2-28 Membership associations	Association & Corporate Partnership
	2-29 Approach to stakeholder engagement	Stakeholder Engagement & Materiality Assessment
	2-30 Collective bargaining agreements	Not Applicable NHPC has no established union or association.
GRI 3: Material Topics 2021	3-1 Process to determine material topics	Management Approach for Material topics
	3-2 List of material topics	Management Approach for Material topics
	3-3 Management of material topics	Management Approach for Material topics
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Economic Value Creation
	201-2 Financial implications and other risks and opportunities due to climate change	Risks and Opportunities
	201-3 Defined benefit plan obligations and other retirement plans	Human Resource Development
	201-4 Financial assistance received from government	Economic Value Creation

GRI Standard	Disclosure	Report Section/Chapter
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	Information not available. NHPC is internally deliberation on the data collection process.
	202-2 Proportion of senior management hired from the local community	
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Positive Impact on Social Well-Being
	203-2 Significant indirect economic impacts	Positive Impact on Social Well-Being
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	Ensuring Sustainability across the Supply Chain
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	Ethics and Integrity
	205-2 Communication and training about anti-corruption policies and procedures	Vigilance Mechanism
	205-3 Confirmed incidents of corruption and actions taken	Vigilance Mechanism
GRI 206: Anti-competitive Behaviour 2016	206-1 Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	Ethics and Integrity
GRI 301: Materials 2016	301-1 Materials used by weight or volume	Annexure- Material Usage break-up
	301-2 Recycled input materials used	Annexure- Material Usage break-up
	301-3 Reclaimed products and their packaging materials	Not Applicable NHPC generates electricity from non-consumptive use of renewable sources such as water (hydropower), wind and solar.
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Energy Conservation
	302-2 Energy consumption outside of the organization	NHPC is internally deliberating on the process of tracking its upstream and downstream energy consumption.
	302-3 Energy intensity	Energy Conservation

GRI Standard	Disclosure	Report Section/Chapter
	302-4 Reduction of energy consumption	Energy Conservation
	302-5 Reductions in energy requirements of products and services	Energy Conservation
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Water Conservation
	303-2 Management of water discharge-related impacts	Water Conservation
	303-3 Water withdrawal	Water Conservation
	303-4 Water discharge	Water Conservation
	303-5 Water consumption	Water Conservation
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Biodiversity Protection
	304-2 Significant impacts of activities, products, and services on biodiversity	Biodiversity Protection
	304-3 Habitats protected or restored	Biodiversity Protection
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	Biodiversity Protection
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Emissions Management
	305-2 Energy indirect (Scope 2) GHG emissions	Emissions Management
	305-3 Other indirect (Scope 3) GHG emissions	NHPC is internally deliberating on the process of tracking its Scope 3 emissions.
	305-4 GHG emissions intensity	Emissions Management

GRI Standard	Disclosure	Report Section/Chapter
	305-5 Reduction of GHG emissions	Energy Conservation- Energy and emission reduction through different NHPC initiatives
	305-6 Emissions of ozone-depleting substances (ODS)	Not measured
	305-7 Nitrogen oxides (NOx), sulphur oxides (SOx), and other significant air emissions	Ambient Air Quality
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	Waste Minimization
	306-2 Management of significant waste-related impacts	Waste Minimization
	306-3 Waste generated	Waste Minimization
	306-4 Waste diverted from disposal	Waste Minimization
	306-5 Waste directed to disposal	Waste Minimization
GRI 307: Environmental Compliance	307-1 Non-compliance with environmental laws and regulations	Our ESG Strategy
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	ESG Expectations from Suppliers
	308-2 Negative environmental impacts in the supply chain and actions taken	ESG Expectations from Suppliers
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Human Resource Development- New Employee Hires
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Human Resource Development- Employee Benefits
	401-3 Parental leave	Human Resource Development- Employee Welfare and Wellness
GRI 402: Labour/ Management Relations 2016	402-1 Minimum notice periods regarding operational changes	Respecting Human Rights- Fair Labour Practices

GRI Standard	Disclosure	Report Section/Chapter
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Safety and Working Conditions
	403-2 Hazard identification, risk assessment, and incident investigation	Hazard Analysis and Risk Management
	403-3 Occupational health services	Safety and Working Conditions- Occupational Health and Safety
	403-4 Worker participation, consultation, and communication on occupational health and safety	Safety and Working Conditions- Safety Governance
	403-5 Worker training on occupational health and safety	Safety and Working Conditions- Safety Awareness
	403-6 Promotion of worker health	NHPC Safety Performance
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Safety and Working Conditions- Emergency Management Plan
	403-8 Workers covered by an occupational health and safety management system	Safety and Working Conditions- Safety Governance
	403-9 Work-related injuries	NHPC Safety Performance
	403-10 Work-related ill health	NHPC Safety Performance
GRI 404: Training and Education 2016	404-1 Average Hours of training per year per employee	Employee Wellbeing & Workplace Safety- Learning and Development
	404-2 Programs for upgrading employee skills and transition assistance programs	Employee Wellbeing & Workplace Safety- Learning and Development
	404-3 Percentage of employees receiving regular performance and career development reviews	Employee Wellbeing & Workplace Safety- Learning and Development
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Board Composition
	405-2 Ratio of basic salary and remuneration of women to men	Information not available. NHPC is internally deliberation on the data collection process.

GRI Standard	Disclosure	Report Section/Chapter
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	Respecting Human Rights
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Not Applicable NHPC has no established union or association.
GRI 408: Child Labour 2016	408-1 Operations and suppliers at significant risk for incidents of child labour	Respecting Human Rights
GRI 409: Forced or Compulsory Labour 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labour	Respecting Human Rights
GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	Respecting Human Rights
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	Respecting Human Rights
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	Positive Impact on Social Well-Being
	413-2 Operations with significant actual and potential negative impacts on local communities	CSR Expenditure on Activities
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	Ensuring Sustainability across the Supply Chain
	414-2 Negative social impacts in the supply chain and actions taken	Ensuring Sustainability across the Supply Chain

GRI Standard	Disclosure	Report Section/Chapter
GRI 415: Public Policy 2016	415-1 Political contributions	NHPC does not make any contribution towards any political parties either financially or through in-kind contributions
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	NHPC is a power generation company and sells its power to various DISCOMs which sell it further to end consumers. It does not advertise its products and services.
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	
GRI 417: Marketing and Labelling 2016	417-1 Requirements for product and service information and labelling	Not a material topic for NHPC
	417-2 Incidents of non-compliance concerning product and service information and labelling	
	417-3 Incidents of non-compliance concerning marketing communications	
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	NHPC has a well-defined IT & Cyber Security policy in place. There is no issue relating to advertising, delivery of essential services, cyber security, and data privacy of customers. No penalty has been imposed by any regulatory authorities i.e., CERC, SERC and Appellate Tribunal for Electricity (APTEL) on safety of products/services.

(6) SASB Content Index

SASB Topic	Accounting metric	Category	Unit of measure	Code	Corresponding GRI-metric / Section/ Remarks
Greenhouse Gas Emissions	Gross global scope 1 emissions, percentage covered under emissions-limiting regulations and emissions-reporting regulations	Quantitative	Metric tons (t) CO_2e, Percentage (%)	IF-EU-110a.1	GRI 305-1: Direct Greenhouse Gas (GHG) emissions (scope 1)
	Greenhouse gas (GHG) emissions associated with power deliveries	Quantitative	Metric tons (t) CO_2e	IF-EU-110a.2	GRI 305-2 Energy indirect (Scope 2) GHG emissions
	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, missions reduction targets, and an analysis of performance against those targets	Discussion & analysis	N/A	IF-EU-110a.3	Strategic ESG Goals and Targets
Air Quality	Air emissions of the following pollutants: CO, NOx (Excluding N_2O), SOx, particulate matter (PM_{10}) Mercury (Hg) Lead (Pb) and volatile organic compounds	Quantitative	Metric tons (t), Percentage (%)	IF-EU-120a.1	GRI 305-7: NOx, SOx, and other significant air emissions.

SASB Topic	Accounting metric	Category	Unit of measure	Code	Corresponding GRI-metric / Section/ Remarks
Water management	Total fresh water withdrawn, total fresh water consumed, percentage of each in regions with high or extremely high baseline water stress	Quantitative	Thousand cubic meters, percentage	IF-EU-140a.1	GRI 303-3 Water withdrawal GRI 303-4 Water discharge GRI 303-5 Water consumption
	Number of incidents of non-compliance associated with water quantity and/or quality permits, standards, and regulations	Quantitative	Number	IF-EU-140a.2	GRI 307-1 Non-compliance with environmental laws and regulations
	Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion & analysis	N/A	IF-EU-140a.3	Water Conservation
Coal Ash Management	Amount of coal combustion residuals (CCR) generated; percentage recycled	Quantitative	Metric tons (t), Percentage (%)	IF-EU-150a.1	The topic does not directly apply to NHPC, since it's a renewable energy producer.

SASB Topic	Accounting metric	Category	Unit of measure	Code	Corresponding GRI-metric / Section/ Remarks
	Total number of coal combustion residual (CCR) impoundments, broken down by hazard potential classification and structural integrity assessment	Quantitative	Number	IF-EU-150a.2	
Energy Affordability	Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers	Quantitative	Rate	IF-EU-240a.1	NHPC is a power producing company and the produced energy is sold through Power purchase agreements to Power Grid Corporation of India (PGCIL) and State DISCOMS. The topic does not directly apply to NHPC.
	Typical monthly electric bill for residential customers for (1) 500 kWh and (2) 1,000 kWh of electricity delivered per month	Quantitative	Reporting currency	IF-EU-240a.2	
	Number of residential customer electric disconnections for non-payment, percentage reconnected within 30 days	Quantitative	Number, Percentage (%)	IF-EU-240a.3	

SASB Topic	Accounting metric	Category	Unit of measure	Code	Corresponding GRI-metric / Section/ Remarks
	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory	Discussion & analysis	N/A	IF-EU-240a.4	
Workforce Health & Safety	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR)	Quantitative	Rate	IF-EU-320a.1	GRI 403-9 Work-related injuries GRI 403-10 Work-related ill health
End-Use Efficiency & Demand	Percentage of electric utility revenues from rate structures that (1) are decoupled and (2) contain a lost revenue adjustment mechanism (LRAM)	Quantitative	Percentage (%)	IF-EU-420a.1	NHPC is a power producing company and the produced energy is sold through Power purchase agreements to Power Grid Corporation of India (PGCIL) and State DISCOMS. The topic does not directly apply to NHPC.

SASB Topic	Accounting metric	Category	Unit of measure	Code	Corresponding GRI-metric / Section/ Remarks
	Percentage of electric load served by smart grid technology	Quantitative	Percentage (%) by megawatt Hours (MWh)	IF-EU-420a.2	
	Customer electricity savings from efficiency measures, by market	Quantitative	Megawatt Hours (MWh)	IF-EU-420a.3	
Nuclear Safety & Emergency Management	Total number of nuclear power units, broken down by U.S. Nuclear Regulatory Commission (NRC) Action Matrix Column	Quantitative	Number	IF-EU-540a.1	The topic does not directly apply to NHPC, since it's a renewable energy producer.
	Description of efforts to manage nuclear safety and emergency preparedness	Discussion & analysis	N/A	IF-EU-540a.2	

SASB Topic	Accounting metric	Category	Unit of measure	Code	Corresponding GRI-metric / Section/ Remarks
Grid Resiliency	Number of incidents of non-compliance with physical and/ or cybersecurity standards or regulations	Quantitative	Number	IF-EU-550a.1	GRI 418: Customer Privacy 2016
	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days	Quantitative	Minutes, Number	IF-EU-550a.2	NHPC is a power producing company and the produced energy is sold through Power purchase agreements to Power Grid Corporation of India (PGCIL) and State DISCOMS. The topic does not directly apply to NHPC.

(7) Concept of GRI Standards

(The information has been directly sourced from GRI Website https://www.globalreporting.org/standards/

The GRI Standards comprises of three series of Standards: the GRI Universal Standards, the GRI Sector Standards, and the GRI Topic Standards. The Standards contain disclosures for an organization to report information about itself and its impacts.

The GRI Universal Standards:

- GRI 1: Foundation 2021 (GRI 1) clarifies critical concepts, and explains how to use the Standards. It lists the requirements that an organization must comply with to report in accordance with the GRI Standards. It also specifies the principles – such as accuracy, balance, and verifiability – fundamental to good-quality reporting.
- GRI 2: General Disclosures 2021 (GRI 2) contains disclosures relating to details about an organization's structure and reporting practices; activities and workers; governance; strategy; policies; practices; and stakeholder engagement.
- GRI 3: Material Topics 2021 (GRI 3) explains the steps by which an organization can determine the topics most relevant to its impacts, its material topics, and describes how the Sector Standards are used in this process. It also contains disclosures for reporting its list of material topics; the process by which the organization has determined its material topics; and how it manages each topic.
- The GRI Sector Standards intend to increase the quality, completeness, and consistency of reporting by organizations and are developed for 40 sectors, starting with those with the highest impact, such as oil and gas, agriculture, aquaculture, and fishing.
- The GRI Topic Standards contain disclosures for providing information on topics. Examples include Standards on waste, occupational health and safety, and tax. Each Standard incorporates an overview of the topic and disclosures specific to the topic and how an organization manages its associated impacts. An organization selects those Topic Standards that correspond to the material topics it has determined and uses them for reporting.

Presentation and Unveiling of Report

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