



Leading Energy Transition through ESG Integration

Corp. Sustainable Development

Jan, 2022

Discussion Outline

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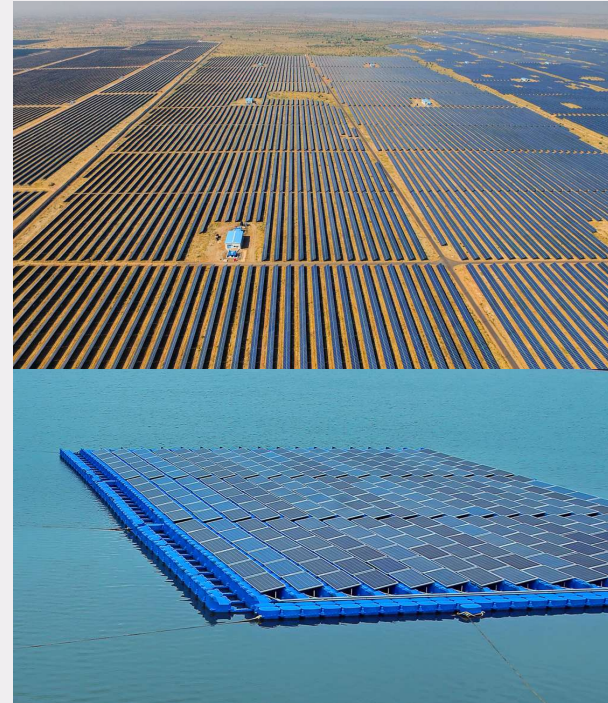
- NTPC Overview

2

- Key Business Growth Drivers

3

- ESG Roadmap



NTPC Overview



1

Our Vision, Mission and Core Values



Vision

To be the World's Leading Power Company, Energizing India's Growth



Mission

Provide Reliable Power and Related Solutions in an Economical, Efficient and Environment friendly manner, driven by Innovation and Agility



Core Values

Integrity, Customer Focus, Organisational Pride, Mutual Respect & Trust, Innovation & Learning, Total Quality & Safety

Performance Highlights



Group installed capacity of 67,907 MW; generation of 314 BUs in FY'21



Generating 24% of India's power with 17% Installed Capacity



Total income crossed ₹ 1 Lac Cr mark in FY'21



Added 3824 MW of commercial capacity in FY'21



7.68 % of generation fleet is carbon free, target to achieve 60 GW of RE by 2032



Implementing "The Brighter Plan 2032" to improve ESG performance



1st Energy company across globe to declare Energy Compacts at UN



Co-founded "Global Alliance for Sustainable Energy" with 16 global energy players

Key Business Growth Drivers



2

Key Business Growth Drivers



Present Capacity

Fuel Mix	Capacity (MW)
Coal	54224
Gas	6511
Hydro	3725
Small Hydro	32
Solar	1292.5
Wind	163
Total	67907.5

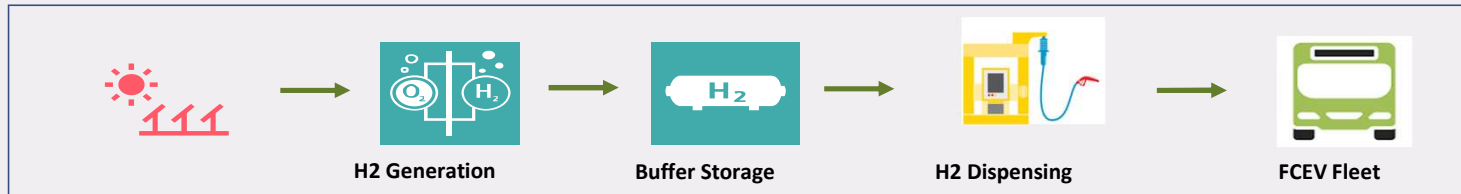
Renewables

Description	EPC Projects (MW)	Developer Mode (MW)	Total (MW)
Commissioned	1,557.4	4,783	6340.4
<u>Under Implementation</u>	2,999.6	<u>790</u>	3,789.6
Under tendering	4,160	<u>1,170</u>	5,330
Total	8,717	6,743	15,460
Bids Won, to be tendered	1,255		1255
<u>UMREPPs</u> (Proposed)			18,940

EV Ecosystem

- 250 charging stations across the cities and highways, 142 chargers installed
- Complete e-bus solutions to STUs through its subsidiary NVVN; 40 e-buses in A&N; 90 in Bangalore

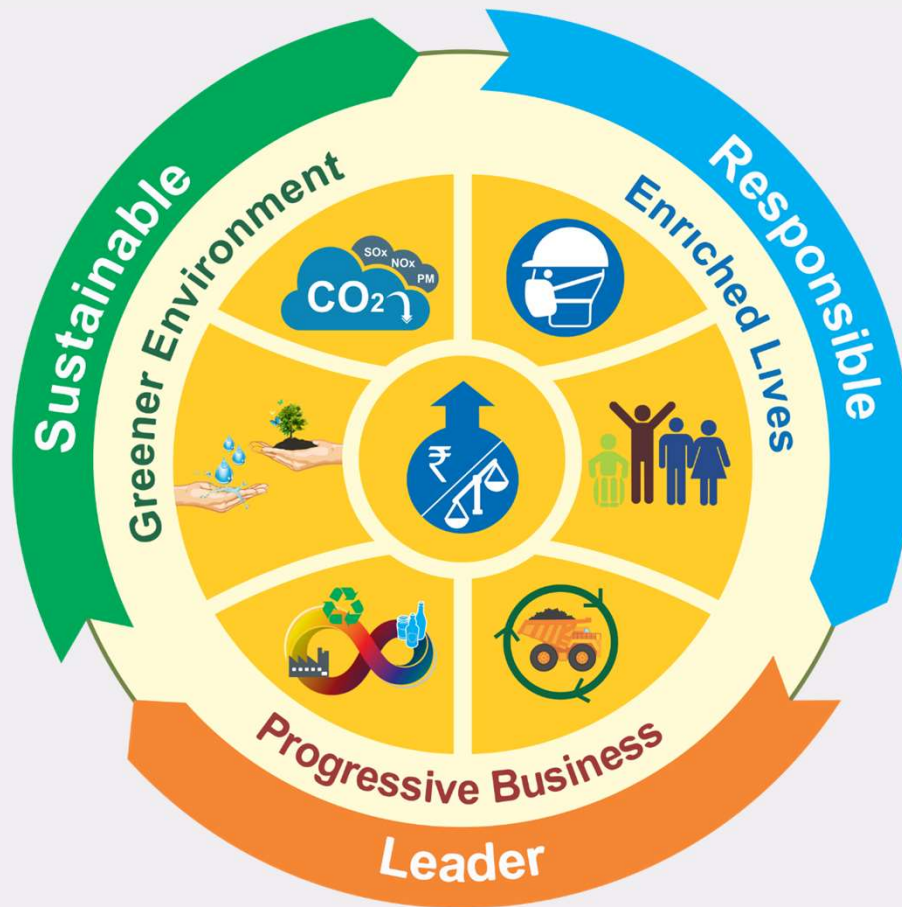
Green Hydrogen



- H₂ for mobility
- H₂ Blending in Natural Gas



Green Methanol Pilot at MP



The Brighter Plan 2032

ESG Roadmap

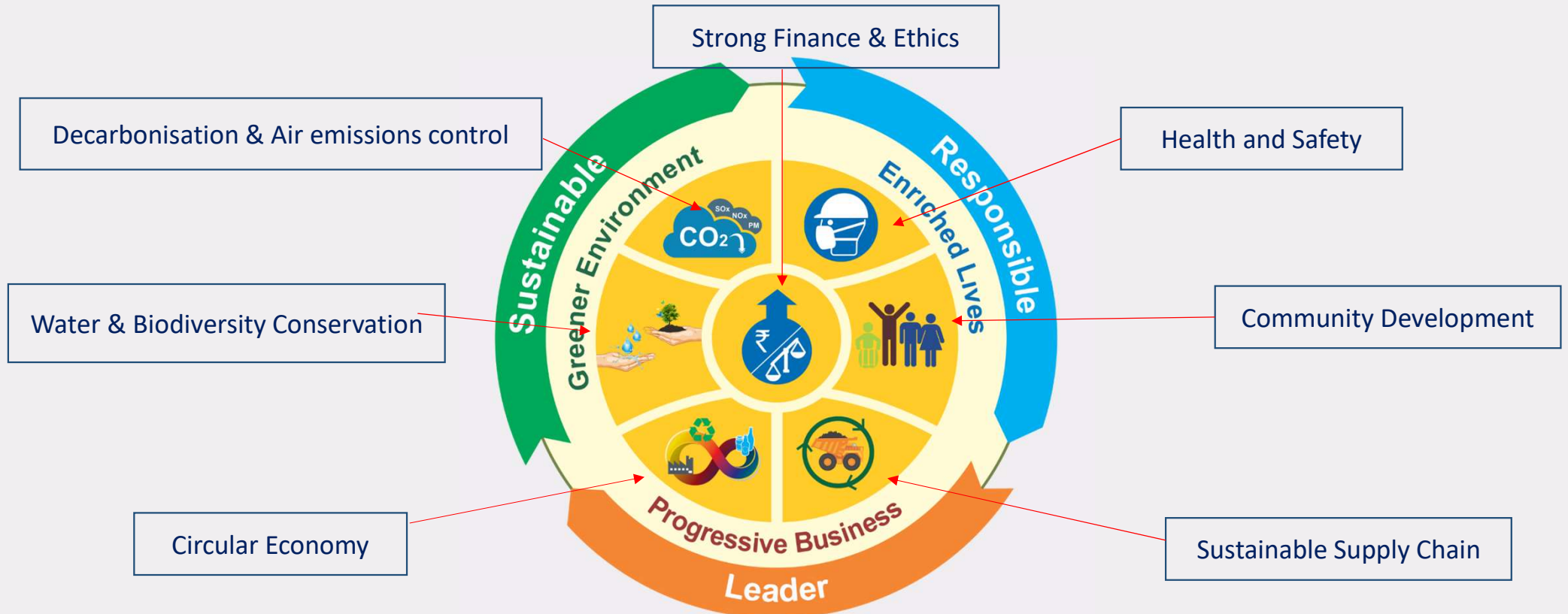
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ESG: Disclosures & Engagements

- ❑ Publishing Sustainability Reports as per the latest GRI frameworks since FY2012
- ❑ 2nd Integrated Annual Report published in FY' 21 as per IIRC & GRI framework
- ❑ Expanded the boundary of reporting with inclusion of all JVs & Subsidiaries since FY2020
- ❑ Conducted Materiality Assessment at 20 NTPC locations with internal and external stakeholders
- ❑ Timely responding to DJSI, CDP questionnaires and other queries of concerned stakeholders
- ❑ Regular follow-ups and discussions with leading ESG Analysts and rating agencies
- ❑ ESG Profile for specific ESG disclosure as per prominent platforms such as SASB, CDP etc.



ESG: Strategy & Internal Controls



The Brighter Plan 2032

Aligned to core business strategy, 26 KPIs of 7 focus areas on Economic, Social and Environmental fronts



Decarbonisation & Air emissions control



Fuel Diversification

- 60 GW of RE by 2032; To avoid 100 Mn Tonnes of CO2
- Current RE portfolio of 10 GW
- 1385 MW of coal plants decommissioned
- Upto 10% blending of Biomass for co-firing
- 5000 TPD of WtE plants under various stages



Efficiency

- 10.11 MJ/kWh of Group Net Energy Intensity in FY'21
- 1643 TJ of eq. heat and electrical energy saved in FY'21
- 170653 of cum. Ecerts earned in PAT scheme



CCUS

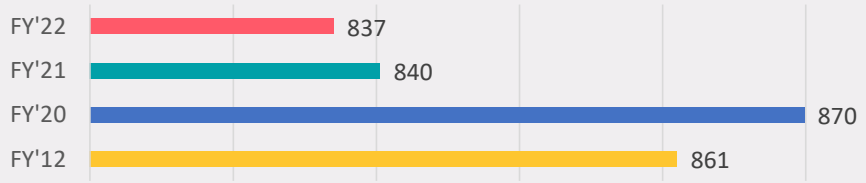
- 20 TPD of CO2 to Methanol projects at NTPC Vindhyachal & Ramagundam
- Plantation of 36+ million trees till date



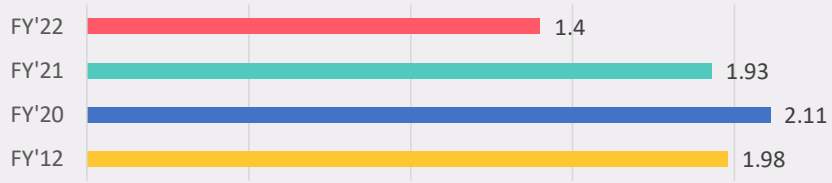
Sox, Nox, PM

- FGD/DSI: Comp at 1.79 GW, WIP for 63+ GW
- De Nox: Comp at 12+ GW, WIP for 8+ GW
- PM control: ESP modified for 10+/15 GW

Sp. CO2 (SCOPE 1) Emission (gm/ kWh)



Specific NOx emissions (gm/ kWh)



2012: Base Year

2022: Target Year

* 30 % of reduction in sp. CO2 Emission by 2032 vs 2012 due to increased RE target. 13 % more reduction as envisaged in TBP 2032





Water & Biodiversity Conservation



Water Accounting

- Developed Water Dashboard for strict monitoring
- Signatory of CEO Water Mandate
- Regular third party water audit



Process Innovations

- Air Cooled Condenser in Water stressed regions
- Higher Cycle of Concentration (COC >5)
- Zero Liquid Discharge
- High Concentration Slurry Disposal
- Sea Water Desalination at Simhadri & Vallur



Alternate Sources

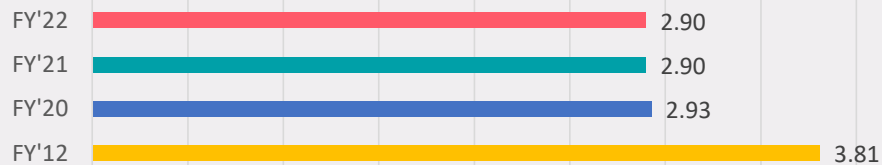
- 12 MCM of Rain Water conserved in FY'21
- 176 MCM of waste water recycled



Biodiversity

- 14 ongoing biodiversity projects
- Conservation of Olive Ridley Turtles, Gangetic Dolphins
- Jointly executing NLRP biodiversity project with US-AID

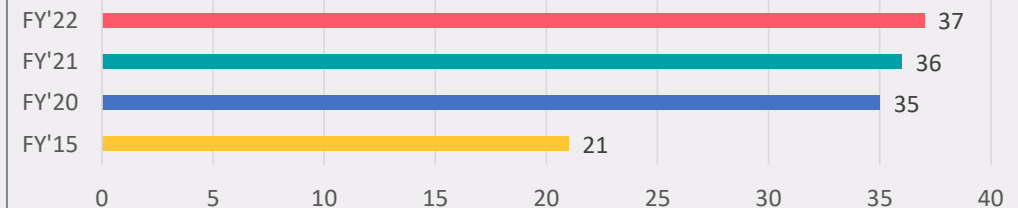
Specific water consumption (l/kwh)



2012: Base Year

2022: Target Year

Tree plantation (Million)





Circular Economy



Fly Ash Utilisation

- 100% Ash Utilization at 15 plants
- Being used in Land, development, Cement, rail/ road projects, Brick manufacturing
- New avenues such as geopolymer roads, LW aggregate, sand etc.



Biomass Use

- 58,000+ MT of Biomass pellets fired till date
- 10.41 MMT of Biomass pellets for 17 NTPC stations being procured
- WIP in progress for Long term supply for 23 projects



Waste Recycling

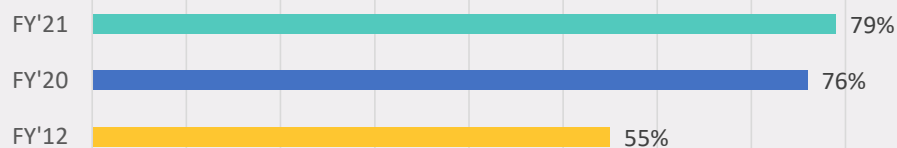
- 100 % NTPC plants are recycling waste
- Standard guidelines and SOPs for Waste management at all sites



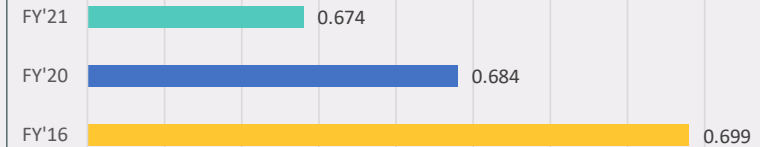
Resource Efficiency

- Optimised Coal & Gas Consumption
- Driving water efficiency

Ash utilisation (%)



Sp. Coal cons. (kg/ kWh)





Health and Safety



Monitoring System

- Suraksha 2.0 safety app for capturing all data; 10000+ users
- Implementation of CLIMS
- SAP integrated Safety framework for timely actions and compliances
- Safety audits, mock drills, regular plant inspection and review with BUHs
- Standard Safety docs such as ODs, OGNs, HIRA in place



Culture Building

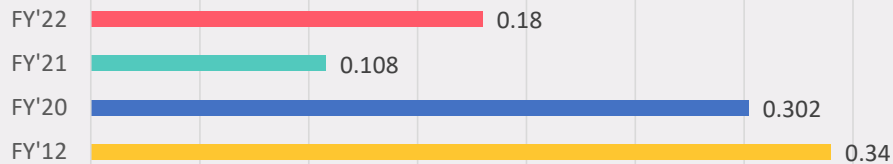
- Theme based monthly safety programmes
- Peer-to-peer coaching to address unsafe behaviours
- NTPC Zero Deviation Plans (NZDP)- Life saving Rules
- Safety weightage in Performance Appraisal
- Building safety ownership at the worker level through 'KOM' or 'Suraksha Mitra'.



Capacity Building

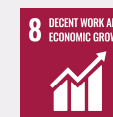
- Skill based process trainings, handholding by international consultants
- Uniform training system; specific training modules for employees and contractors
- 22 Safety training Modules for the contract workers.
- LMI for assessing training needs of the workers and their training plan is finalized regularly

Frequency Rate (No.)



2012: Base Year

2022: Target Year



Safety Mascot - 'KAWACH'



Community Development



Health

- Contributed ₹ 250 Cr. to PM Cares Fund for COVID
- 6 PSA Oxygen Plants set up in the vicinity of projects
- 108 Medical Health check-up camps; 4700 surgeries performed



Education

- GEM: 180 girl students admitted to different NTPC Schools
- Set up of Library in 10 Govt. Primary Schools of Arunachal Pradesh
- Constructing school buildings in UP, MP, Odisha



Water & Sanitation

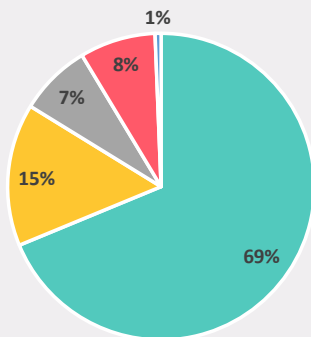
- 75 villages, 11 + lakh people benefitted
- Installed handpumps, borewells, RO plants, Water ATMs
- Installed sanitary napkin vending machines and incinerators
- Constructed individual household and community toilets



Sports

- Partnered with Archery Association of India since 2018
- Many Indian athletes represented India at Tokyo Olympic
- Creating additional facilities in Multipurpose Sports Complex at Dharwad, Karnataka

Total CSR Exp (FY'21): ₹ 461 Cr



- Hunger, Poverty, Health and Sanitation
- Education and Skill
- Rural Dev
- Environment
- Others





Sustainable Supply Chain



Policy Implementation

- Firstly, assessment of the suppliers will be based upon self certified documents and questionnaire
- Development programmes to be organized for vulnerable categories
- Finally, sustainability performance parameters will also be made part of pre-qualifying requirement subjected to govt. guidelines



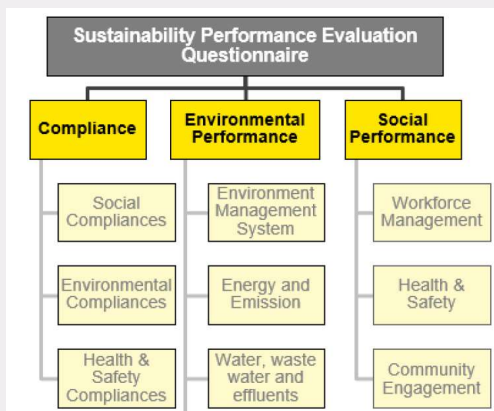
Performance Evaluation

- Supplier's sustainability performance being evaluated on Env., Social and Compliance criteria
- Baseline Sustainability performance of 30 suppliers Conducted



Capacity Building

- Capacity building programmer organized for 104 suppliers
- To be conducted every year





Strong Finance & Ethics



Profitability

- Profit of ₹ 14,969 crore (consolidated) in FY'21
- 13 % revenue from Zero-carbon emission-based businesses
- Diversified into Consultancy, Power Trading, EV Ecosystem, Renewables and Hydrogen
- 23% y-o-y increase in electricity traded by NVVN



Corp. Governance

- 6 functional Directors, 4 Independent Directors including a women director, 2 govt. Nominee Directors
- Committees of Audit, Nomination and Remuneration, Stakeholders Relationship, CSR and Risk Management
- Policies of code of conduct, Whistle Blower policy, Related party transactions etc. in place

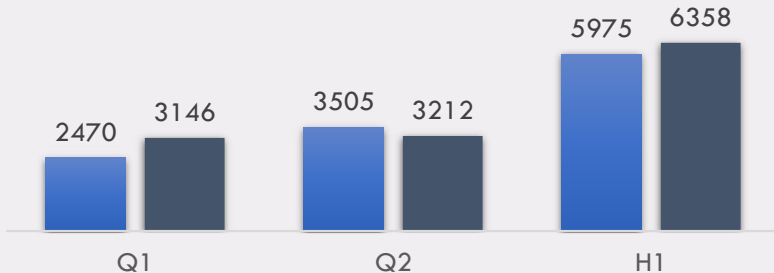


Ethics

- 40 % (y-o-y) decrease in adverse cases of business ethics
- CDA rules, Fraud Prevention Policy, complaint handling policy in place
- Vigilance Department headed by Chief Vigilance Officer
- Administration of Integrity-Pledge during Vigilance Awareness Week
- Regular training/ workshops on ethics

PAT (₹ Crores)

■ FY21 ■ FY22



NTPC's ESG in News



ET Energyworld.com
From The Economic Times

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Oil & Gas Coal Power Renewable Environment Economy Solar Power Congress Comp

Trinasolar Join our 600W+ Ultra-High-Power Online Event
Find out how to achieve greater BOS savings

Energy News / Latest Energy News / Renewable

NTPC awards India's first green hydrogen microgrid project in Andhra Pradesh

It said that the project would be a precursor to large-scale hydrogen energy storage projects

ETEnergyWorld • December 15, 2021, 13:19 IST

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NTPC won 4.32 GW capacity in renewable energy bids since FY21

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WIDEING DEDICATED TO INDIA'S FUTURE

NTPC declares its Energy Compact Goals for sustainability at UN dialogue

National Thermal Power Corporation (NTPC) has become the first energy company in the energy domain in India to declare its Energy Compact Goals as part of the UN High-level Dialogue on Energy (HLDE).

Topics
NTPC Limited | Sustainability | energy sector

the pioneer
Tuesday, 25 January 2022

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CELEBRATE YOUR RIGHTS Using your laptop as a coffee coaster

NTPC holds Girl Empowerment Mission programme

Monday, 17 June 2019 | Staff Reporter | SIPAT (BILASPUR)

SHARE nThe four week long Girl Empowerment Mission (GEM) came to an end with stage performance of 15th June 2019.

Awards & Recognitions



'Role Model' Award at 11th CII National HR Excellence Award



CII- ITC Sustainability Award-2021 to 5 NTPC stations



Excellent Rating from MOP, GoI



"Company with Best CSR Practice Award" in 8th Asia Business Responsibility Summit



NTPC among top 50 @Great Place to Work in India - Recognised as the Nation Builders 2021



Digital PSU Award to NTPC at the 8th PSU Award 2021



Thank You!

For any queries, write to
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