



NTPC Limited

(A Government of India Enterprise)
CORPORATE CENTRE

Ref. No.:01/ FA/ISD/Compliance/2022-23

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Listing Department National Stock Exchange of India Limited 'Exchange Plaza', C-1, Block G, Bandra Kurla Complex, Bandra (E), Mumbai - 400 051. Scrip Code - NTPC	Corporate Relationship Department, BSE Limited, Rotunda Building, P J Towers, Dalal Street, Fort, Mumbai - 400 001. Scrip Code - 532555
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Sub: Investor Presentation

In terms of Regulation 30 of SEBI (LODR) Regulations, 2015, we hereby submit the Investor Presentation made at the 18th Annual Analysts and Investors Meet of NTPC Limited held on 1 August 2022.

Yours faithfully,

(Sandeep Aggarwal)
Chief General Manager (Finance)

Sustaining Growth Momentum Maintaining Energy Leadership



NTPC – Vision, Mission and Core Values



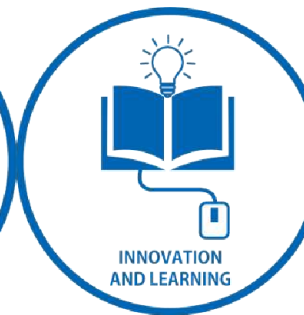
Vision

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



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Unparalleled Presence across the Nation

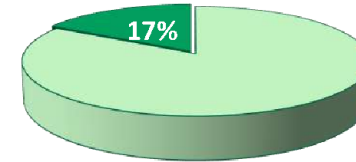


Present + Under Construction Capacity



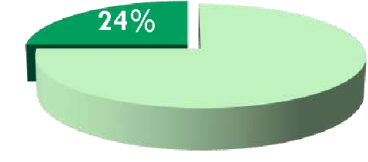
Leading Market Share

Share of Installed Capacity
(as on 31 March, 2022)



Rest of India : 3,30,535 MW
NTPC (Group) : 68,962 MW

Share of Electricity Generated
(during FY22)



Rest of India : 1132 BUs
NTPC (Group) : 360 BUs

Installed Capacity as at 1 July 2022 : 69,134 MW


NTPC Owned	Stations	in MW	Mix %
Coal	23	48,120	69.60%
Gas/Liquid Fuel	7	4,017	5.81%
Hydro	1	800	1.16%
Renewables	21	1,832	2.65%
Sub-total	52	54,769	79.22%
Owned by JVs and Subs			
Coal	9	8,754	12.66%
Gas/Liquid Fuel	4	2,494	3.61%
Hydro	8	2,925	4.23%
Renewables	5	192	0.28%
Sub-total	26	14,365	20.78%
Total	78	69,134	100.00%

Map not to scale



Outline of the Presentation



- 
- 1 Company Overview
 - 2 Spearhead Energy Transition
 - 3 Sustainability Initiatives
 - 4 Transforming Power Sector
 - 5 Key Growth Pointers
 - 6 Operational Excellence
 - 7 Robust Financials



Largest Power Generator in India

Installed capacity of 69 GW
Generating 24% with 17% Installed Capacity

Leading Energy Transition

Plan to have 60 GW Renewable Capacity by 2032
Work/MOUs on 24 GW UMREPPs in various stages

Clear Growth Visibility

More than 16 GW capacity under construction
To become 130 GW Company by 2032

O&M and PM Excellence

4,032 MW Commercial Capacity Addition in FY22
Maintaining consistent double-digit lead over All India PLF

Highest ever profit/realization

Posted highest ever profit of ₹ 16,111 crore in FY22
Highest ever realization of ₹ 1.16 Lakh crore

Leapfrogging on ESG Front

ESG Strategy with clearly defined KPIs and targets
Developing Net Zero Roadmap for NTPC with Niti Aayog



NTPC - Moving towards next orbit of Profit & Growth



Huge Capacity Addition Lined up

To add more than 15 GW capacity in next 3 years and more than 60 GW in next 10 years

Leading Energy Transition

Substantial share of GOI targets of 500 GW non-fossil capacity & 5 MMT green hydrogen production by 2030

Emission Reduction

To complete FGD implementation in entire operational and under construction capacity in next 3 years

C&I Consumer Market

Company is actively engaging to tie up Commercial & Industrial (C&I) consumers

Thermal ordering

Considering to award 2x660 MW project at Talcher (TTPS)

Captive Coal Production

14 MMT in FY22 and growth of more than 60% in Q1 FY23 with ultimate mining capacity of 71 MMT



Key Performance Highlights - Setting new records

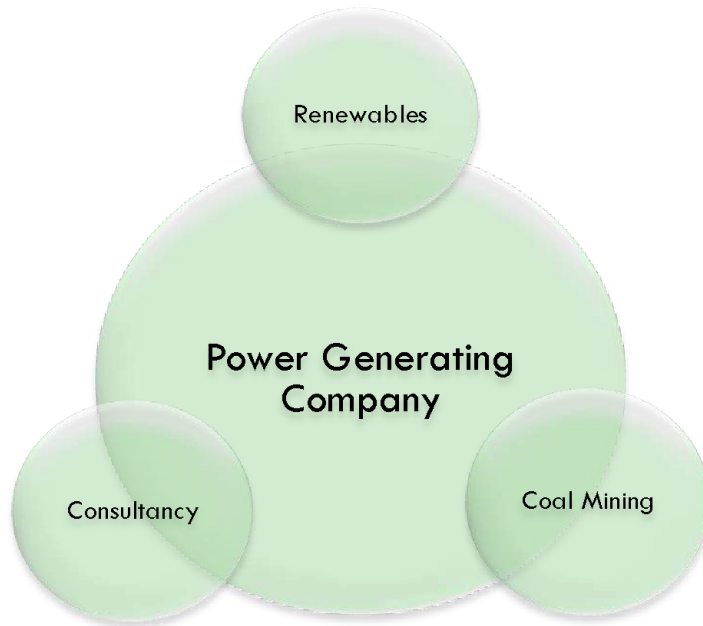


	FY 2021-22	FY 2020-21
Regulated Equity	₹ 70,890 crore	₹ 66,338 crore
Realization	₹ 116,148 crore	₹ 100,950 crore
Profit	₹ 16,111 crore	₹ 13,770 crore
Group Profit	₹ 16,960 crore	₹ 14,969 crore
Group COD	4,032 MW	3,824 MW
Group Generation	360 BU's	314 BU's





2022





2032



Supplier of Clean, Green and Affordable Power - Supplier of Choice





-  Reliable and affordable
-  Cleaner & Greener
-  Efficient
-  Renewables
-  Green Hydrogen
-  Storage
-  Coal Mining
-  Mobility
-  Distribution
-  Nuclear
-  Green Chemicals
-  Global Presence



Leading India's push towards Green Energy



NTPC RE@PRESENT	GW
Installed	2.02
Under Construction	4.09
Near Construction (Bids won)	2.21
Under tendering (Others)	3.22
Total	11.54



60 GW+
Renewable
capacity by 2032

Key Strides

- Won 3,265 MW of TBCB contracts in FY22 and 650 MW in Q1FY23
- COD of 502 MW of Solar Projects in FY22 and 172 MW in Q1FY23
- India's three largest floating solar projects of 100 MW at Ramagundam, 92 MW at Kayamkulam and 25 MW at Simhadri commissioned
- Setting up country's largest Solar Park of 4.75 GW in Gujarat
- Plan for development of another ~19 GW UMREPP in various stages
- Bids invited for 3000 MWh ESS and 500 MWh BESS
- NIT planned for 1000 MW PSP



Value Creation through NTPC Green Energy Ltd.



- NTPC Green Energy Limited (NGEL) incorporated for consolidation of the identified RE assets of NTPC along with NTPC Renewable Energy Ltd. (NREL)
- Business transfer and share purchase agreement executed in July 2022, and completion of transaction is expected within 120 days
- The transaction is being carried out on Book Value of RE assets and paid-up equity share capital of NREL as on March 31, 2022
- RE assets constitute 2861 MW capacity out of which 1492 MW is in operation and balance is near commercialization as on agreement date. NREL has won TBCB contracts of 4 GW capacity & same are under advanced stages of implementation
- Monetization is expected to be completed in current fiscal



- Building country's first pilot projects for synthesizing green Methanol
- Implementing country's first green hydrogen mobility complex at Leh, Ladakh and country's first green hydrogen based micro-grid at Simhadri
- Contract awarded for hydrogen blending in PNG at Kawas
- Agreement with IOCL for supply of ~650 MW Low carbon RE-RTC (Renewable Energy - Round the Clock) captive power to refineries
- MOU with GACL for supply of 100 MW RE-RTC power and synthesizing 75 TPD Green Methanol and 35 TPD Green Ammonia for captive use for production of various chemicals by GACL
- This would be the first commercial scale green Ammonia and Green Methanol project in the country
- MoU with NFL for supply of 90 MW RE-RTC power and synthesizing 50 TPD Green Ammonia for captive use for production of Industrial products by NFL

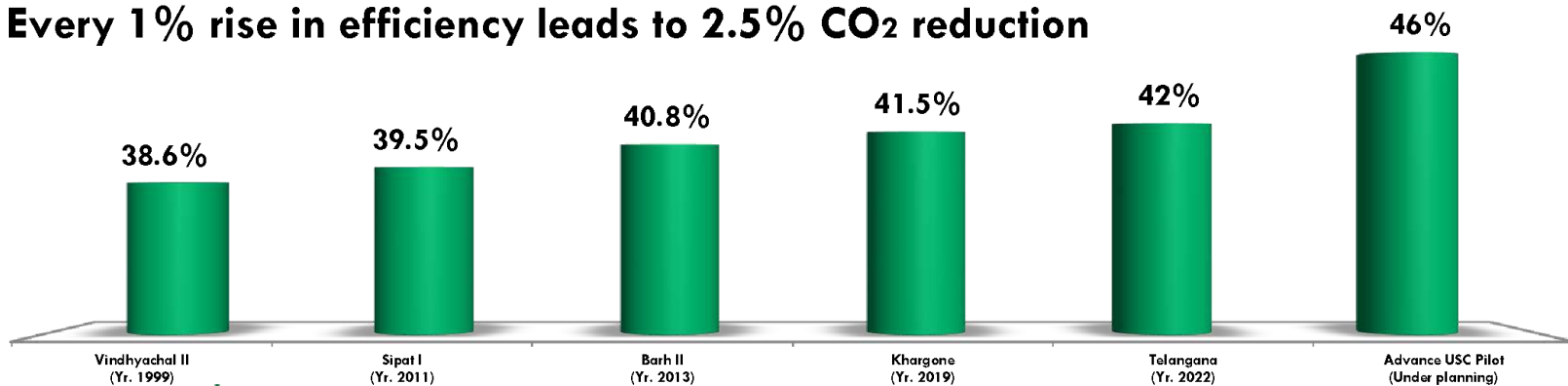


Key Sustainability initiatives



- Sustainability Strategy “Brighter Plan” with clearly defined KPIs and targets brought out
- Developing Net Zero Roadmap in collaboration with Niti Aayog
- World’s first Energy major to declare its Energy Compact goals
- Partnering in Global alliance for Sustainable Energy (GASE)
- Carbon sink - 37 million trees have been planted in and around NTPC projects
- Developing Mega Eco park at Badarpur which is bigger than New York Central park
- Regular interaction with MSCI and Sustainalytics to address contentious issues and sharing of data for improvement of ESG rating. Sustainalytics has upgraded our ESG rating by one notch recently.
- ESG profile of NTPC launched to enhance the visibility of our myriad efforts on ESG to rating agencies and to the public at large (<https://www.ntpc.co.in/en/sustainability/approach/ESGProfile/esg-profile>)
- Continuously winning the prestigious CII-ITC Sustainability Award

Every 1% rise in efficiency leads to 2.5% CO₂ reduction



Sustainability Strategy - The Brighter Plan



Aim to accelerate efforts in leading the energy transition to a decentralised, decarbonised and digitalised energy future on TBL (Triple Bottom Line) framework and setting new benchmarks in sustainability along the entire energy value chain



Focus on ensuring sustainability of business operations through co-creating innovative and sustainable solutions for better and greener energy future, leading to profitable business growth, reduced costs and mitigating risks of doing business in VUCA world



Firm Action Plan to comply with New Environment Norms

- Flue Gas Desulphurisation System (FGD) have been commissioned at ~2 GW capacity
- FGD systems are under implementation at 60 GW capacity
- FGD systems are expected to be commissioned in entire operational and under construction capacity within next 3 years
- FGD implementation is expected to give advantage to NTPC plants in comparison with non-compliant plants in merit order

Blue Sky Initiatives of NTPC

Farm to Fuel

- Air quality improvement due to avoidance of farm fires
- This will result in significant reduction in CO₂ emissions annually

Bio-Mass Co-firing

- Policy advocacy by NTPC has resulted in mandate to fire bio-mass pellets in power plants
- Awarded 12.35 LMT of Biomass pellets for 20 NTPC stations in FY22

Circular Economy

- Plans to establish facilities where Bio-Waste will be used to produce Bio-CNG, C&D waste to construction material and combustible fraction will be used for energy recovery

Waste to Wealth

- Developing WtW plants supporting in improving people's health & welfare
- Being developed in association with Municipal Corporations



R&D wing of NTPC - Technology Focus Areas

Carbon Capture & Utilization

- 10 TPD 'CO₂ to Methanol' Demo Plant at NTPC Vindhyachal
- Development of Indigenous Catalyst & Reactor for CO₂ to Methanol Synthesis

Green Hydrogen

- 25 kW High Temperature 'Solid Oxide' based Steam Electrolyser System
- Green Hydrogen based Micro Grid
- Development of Sea Water Electrolyser
- Development of 'Metal Hydride' based Static Hydrogen Storage & Compression

Agri-waste & Municipal Solid Waste

- 400 KWe MSW-RDF enhanced Steam Gasification Plant
- Development of 'Torrefied Pellet Manufacturing Plant for Agri-Waste' with Indian START-Ups

Water & Ash Technologies

- 240 TPD Non-Thermal Forward Osmosis Plant
- 24 TPD 'Electro Dialysis Reversal' Plant
- 3600 TPD Electrocoagulation Plant
- 4 MLD Activated Filter Media Plant
- 50,000 M₃/Yr. Light Weight Aggregate Plant
- 33,000 M₃/Yr. Fly ash aggregate based on FALG technology



NTPC CSR Initiatives - Touching Lives of People



₹ 357 crore spent on CSR activities during FY22

Key CSR Activities

- Contribution of ₹ 410 Crore since FY21 to PM Cares Fund to support GOI's efforts to fight COVID
- NTPC hospitals provide quality care to more than 3,00,000 patients from the community every year
- Schools in NTPC Townships provide subsidized education to about 20,000 rural community children
- GEM program has benefited ~5000 girls with objective to make them self-reliant and confident
- Adopted 18 Industrial Training Institutes (ITIs) and is setting up 8 new ones
- MoU with NSDC to develop more than 30,000 youth including 8000 youth from Ladakh and J&K
- Support to Archery Association of India for promotion of Archery
- CSR initiatives have touched lives of ~18 lakh people in one or the other way, at remote locations





Transforming Power Sector

Strong Growth Drivers for Power Sector in India



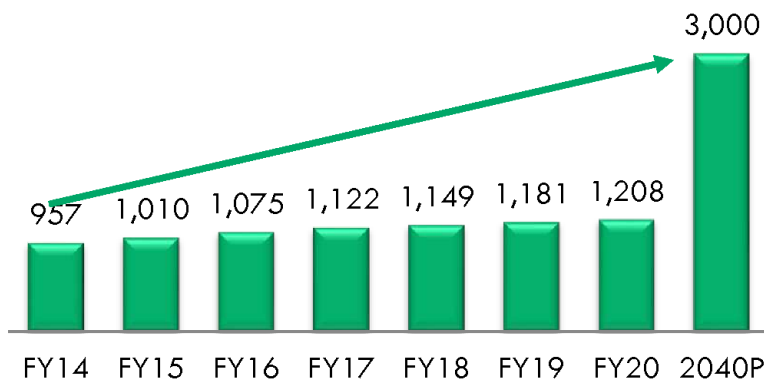
Demand

- India's GDP is expected to grow significantly over next two decades on the back of our demographic strength
- India has low per capita consumption of electricity which is expected to rise to ~3,000 kWh by 2040

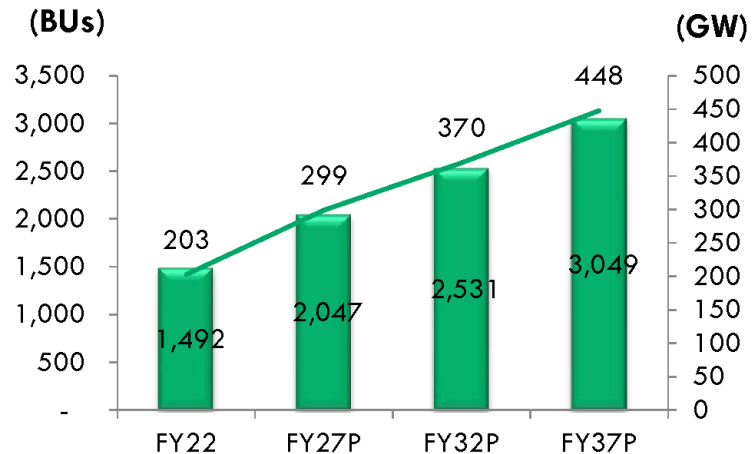
Supply

- Electricity requirement in India is expected to grow in tandem with GDP growth
- Both peak load demand and energy requirement are expected to rise at a healthy pace

Increasing Per Capita Consumption (kWh/Year)



Projected Energy requirement & Peak Load



With every Indian now having access to electricity power sector is poised for Long-term Growth



Power Sector Transformation ...



	FY22		FY30
Installed Capacity	~400 GW	➔	~817 GW
Generation (in BUs)	~1,492 BUs	➔	~2,518 BUs
Peak Load Demand	~203 GW	➔	~340 GW
Per Capita Consumption	~ 1,208 kWh	➔	~2,100 kWh
Renewable Capacity	~110 GW	➔	~500 GW
Coal Requirement	~700 MT	➔	~892 MT

A wave of new reforms - In the form of revised tariff policy & smart prepaid metering

Source: NITI Aayog, MOP, CEA, NTPC



Our Key Growth Pointers



1

**Huge
Capacity
Addition
Lined Up**

2

**Leading
India's Push
Towards
Green Energy**

3

**Captive
Coal
Production
for Fuel
Security**

4

**Acquisitions,
Diversification
and New
Avenues**



Huge Capacity Addition Lined up

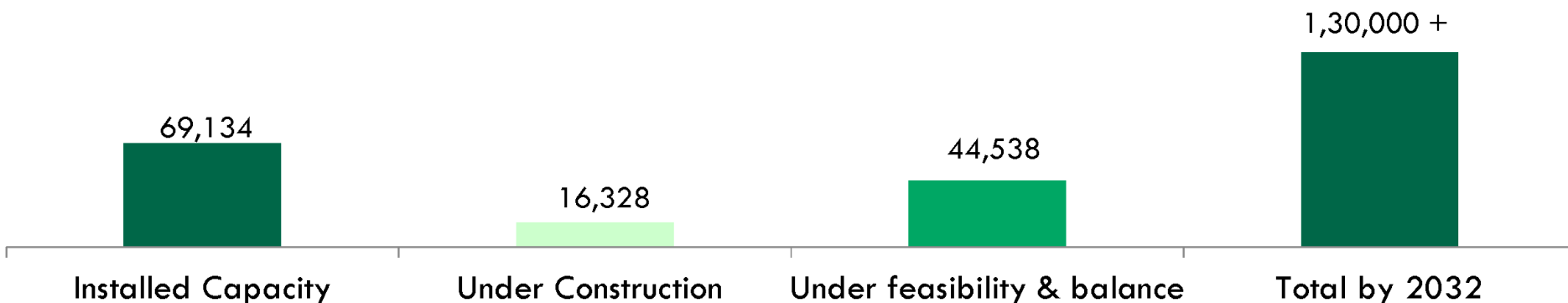


Ensuring Availability



Investment Approval

Current development pipeline (in MW)



Snapshot of Projects Under Construction

Fuel Mix	In MW
Coal	9,980
Hydro	2,255
RE	4,093
Total	16,328

Coal Technology	In MW
Ultra Super Critical	5,320
Super Critical	4,620
Sub Critical	40
Total	9,980

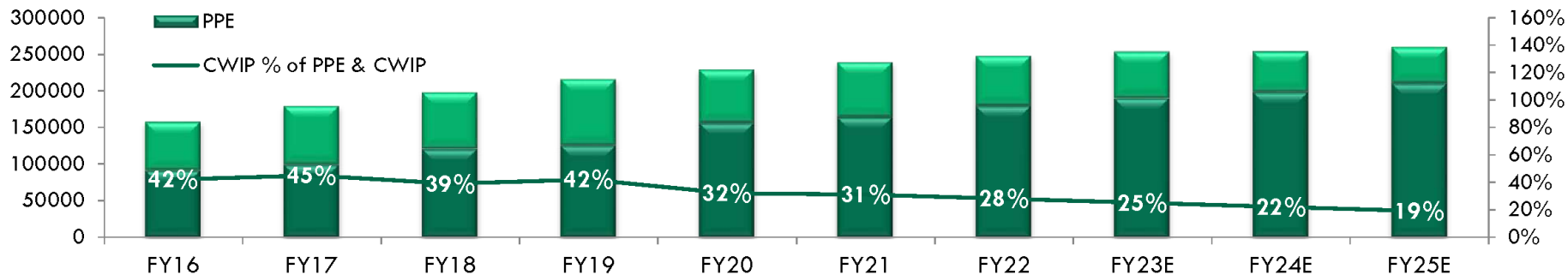
Group Mix	In MW
NTPC	8,009
Domestic JVs	6,999
International JV	1,320
Total	16,328



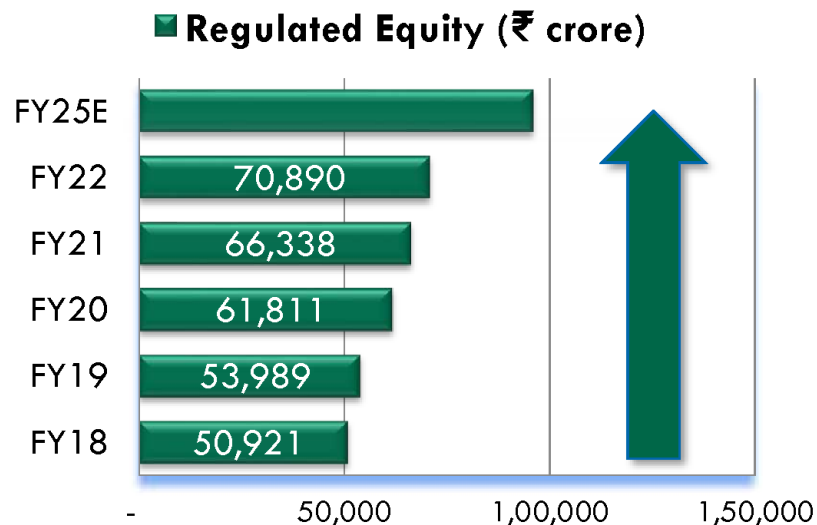
Why to Invest in NTPC



Accelerated Reversal in CWIP ratio



Expansion in Regulated Equity



All financial figures on standalone basis.

- Reversal in CWIP ratio will continue due to accelerated commercialization
- Fall in CWIP ratio will lead to ROE expansion as the equity blocked in CWIP starts earning
- Growth will continue and the turnaround from CWIP to PPE would be quicker in Renewable energy projects



NTPC Coal Mining Portfolio

- NTPC has 7 Coal blocks with combined Peak Rated Capacity of 71 MMT
- NTPC has achieved coal production of **14.02 MMT** during FY22, achieving 27% growth over FY21
- Production of 4.24 MMT in Q1FY23 (Q1FY22: 2.64 MMT), growth of 61%
- Cumulative **50.63 MMT of coal** has been produced till end of Q1FY23

Pakri Barwadih

- Mine declared commercial w.e.f. 1 April 2019
- 8.32 MMT of coal produced in FY22 (FY21 : 7.07 MMT)
- 2.57 MMT of coal produced in Q1FY23 (Q1FY22 : 1.60 MMT)

Dulanga

- Mine declared commercial w.e.f. 1 October 2020
- 5.39 MMT of coal produced in FY22 (FY21 : 3.12 MMT)
- 1.49 MMT of coal produced in Q1FY23 (Q1FY22 : 0.86 MMT)

Talaipalli

- Coal extraction commenced in Nov'19
- 0.41 MMT of coal produced in FY22 (FY21 : 0.81 MMT)
- Contract awarded for Talaipalli West Pit Mine Operator

Other Highlights

- Cumulative expenditure of ₹ 7,964 crore incurred till FY22
- Mining operations started in Chatti Bariatu mine in April 2022
- Mining operations in Kerandari and Badam coal blocks are expected to start in FY24





Acquisition of Power Assets

- Looking for acquisition of stressed power projects with good intrinsic value
- Acquisition of Jhabua Power Plant is in advanced stage
- NEEPCO, acquired recently, allocated large Hydro Projects totaling ~6 GW

Exploring other business opportunities

- Exploring options for blending of gas-based power with Renewables for RTC power
- Exploring options for providing short-term & long-term requirement of Power Supply for Hyperscale Data Centers and other big industrial groups
- E-mobility business - EV buses already deployed in Bengaluru and Port Blair
- Setting up Energy Intensive Industries at NTPC Power Stations
- Exploring options for partnering for battery manufacturing
- Exploring options with technology providers for CO₂ to Methanol/Chemicals project
- Working group formed for execution of 1400 MW Nuclear Project with NPCIL

International Business

- Construction activities of a 1320 MW project in Bangladesh is in advanced stage
- Appointed as PMC for more than 6 GW solar projects in Latin America and Africa
- Bagged consultancy assignment in Mauritius for Setting up Floating Solar Plant





Operational Excellence

Proven Operational Excellence



Maintaining Leadership

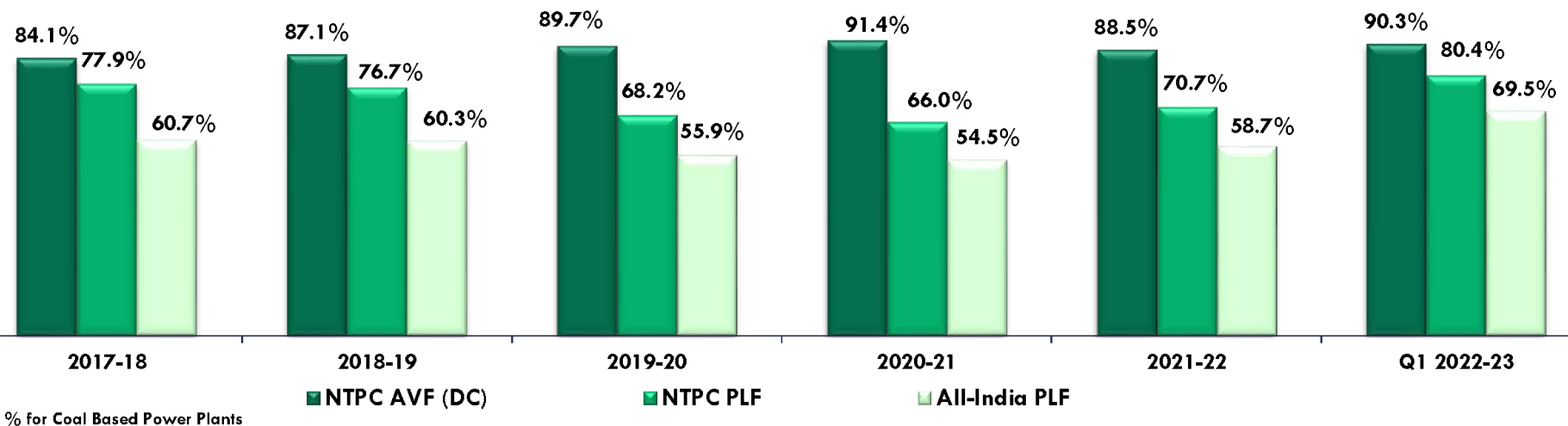
- Consistent double digit spread over National PLF during last 2 decades
- NTPC Coal Stations achieved PLF of 80.4% against All India PLF of 69.5% in Q1FY23
- Group generation grows by 15% in FY22 & 22% in Q1FY23

In-depth Monitoring

- Sound maintenance practices & real-time monitoring ensure high availability and efficient operations
- Periodic structured technical audits for identifying and correction of gaps

Safety at Forefront

- Safety is integral to our working, and we have renewed focus on safety
- We have upscaled our safety standards & inculcated complete safety culture



Sustaining Status of Competitive Power Producer



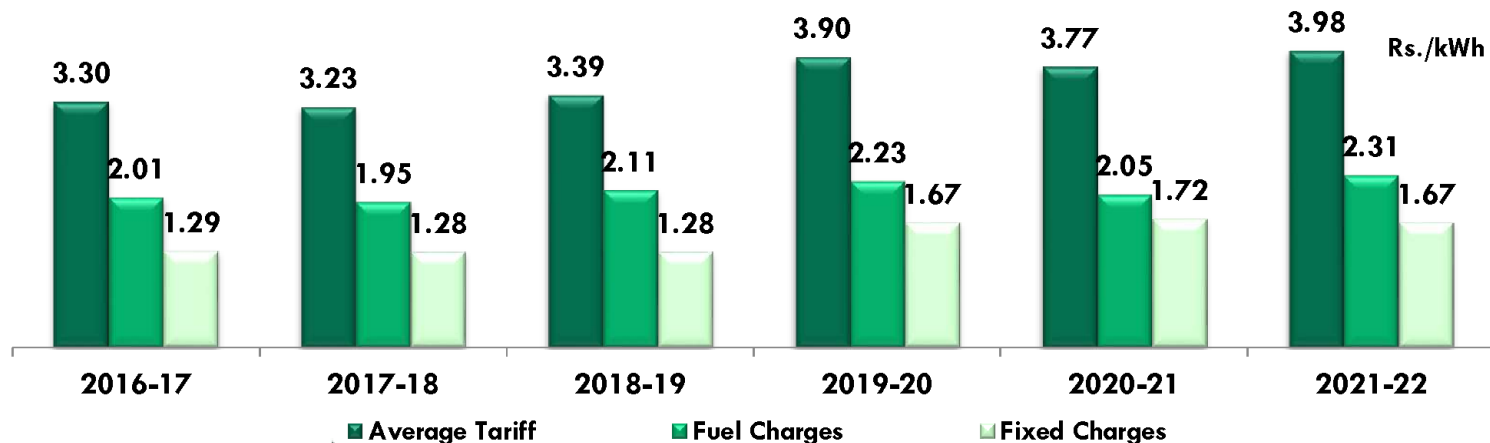
Payment Security

- Regulatory mechanism assures Returns balancing risks and rewards
- TPA agreements in addition to payment security through LC mechanism
- Highest ever realization of more than ₹ 1.16 Lakh crore during FY22

Regulations-2019-24

- ROE remains unchanged at 15.50%
- 85 kcal allowed on account of loss of coal GCV
- Security expenses excluded from normative O&M expenses
- Recognition of cost impact for meeting environment norms
- Time and cost over runs due to land acquisition classified as an “uncontrollable factor”

Sustaining Competitive Tariff



Long-term Fuel Security - Assured Coal Supply



Single ACQ

- NTPC through sustained policy advocacy has signed a Supplementary Agreement with aggregation of ACQ (Annual Contracted Quantity) on CIL subsidiary level basis resulting in:
 - ✓ Optimum utilization of coal leading to reduction in ECR
 - ✓ Avoidance of loss of fixed charges due to coal shortage
 - ✓ More efficient outage planning/stock management of power plants

Long-term FSAs

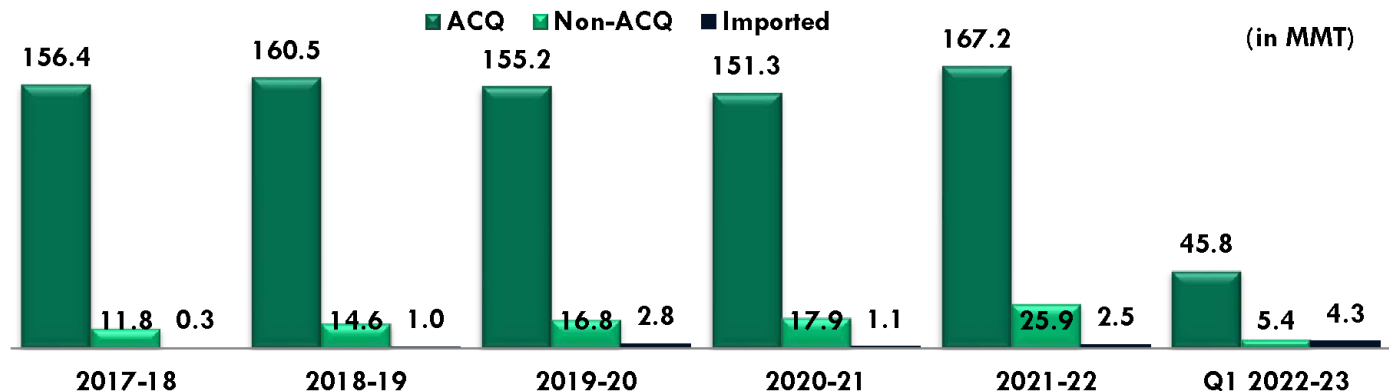
- Long term Fuel Supply Agreements (FSAs) have been signed with CIL and SCCL for supply of coal for total ACQ of ~183 MMTPA

Ensuring Logistics/ Coal Import

- ~60% of our coal-based capacity is linked by MGR/belt conveyor system to coal mines
- To mitigate the shortage of domestic coal awarded contracts of more than 16 MMT for procurement of imported coal in FY22 and Q1FY23

Assured Coal Supply

101% ACQ materialization during Q1FY23



NTPC HR Vision

To enable our people to be a family of committed world class professionals,
making NTPC a learning organization

Leading to Consistent Improvement in Productivity of Manpower

Per Employee	2021-22	2020-21	2019-20
Revenue (₹ in crore)	7.60	6.16	5.78
EBITDA (₹ in crore)	2.39	1.97	1.72
Value Added (₹ in crore)	2.91	2.56	2.16
Generation (in MUs)	18.94	16.13	14.92
MAN-MW Ratio	0.29	0.32	0.35

- Proud of Building a High-Trust, High-Performance Culture
- Only PSU to consistently feature in Top 50 Best Companies to work for in India
- Recognized as one of the “Most Preferred Workplaces of 2022”





Robust Financials

Growing Revenue with Robust Profit



Amount in ₹ Crore

Particulars (Standalone),	2021-22	2020-21	Chg. (in %)	Q1FY23	Q1FY22	Chg. (in %)
Revenue from Operations	1,16,137	99,207	17%	38,350	26,039	47%
Fuel & Energy Purchased	67,614	55,881	21%	25,708	14,920	72%
Gross Profit	48,523	43,326	12%	12,642	11,119	14%
Gross Margin	42%	44%		33%	43%	
Other Income	3,905	4,346	-10%	853	764	12%
Operating Expenses	14,678	14,522	1%	3,560	3,680	-3%
EBITDA	37,751	33,149	14%	9,935	8,203	21%
EBITDA Margin	31%	32%		25%	31%	
Depreciation	11,234	10,412	8%	2,911	2,675	9%
Finance Cost	7,351	7,459	-1%	1,933	1,989	-3%
PBT	19,166	13,916	38%	5,091	3,539	44%
Tax	4,366	1,925	127%	1,331	1,181	13%
Movement in Reg. Def. Bal.	1,312	1,779	-26%	-83	787	-111%
Profit for the period	16,111	13,770	17%	3,676	3,146	17%
EPS (in ₹)	16.62	13.92	19%	3.79	3.24	17%



Expanding Consolidated Financials



Amount in ₹ Crore

Particulars (Group)	31.03.2022	31.03.2021	Change	Change (in %)
Profit from JVs	1,020	684	336	49%
Profit of subsidiaries	1,947	1,738	209	12%
Group Debt	2,01,025	1,93,346	7,679	4%
Group Net Worth	1,39,134	1,29,262	9,872	8%
Group Regulated Equity	91,054	84,252	6,802	8%
Group Revenue	1,34,994	1,15,547	19,447	17%
Group EBIDTA	42,605	37,990	4,615	12%
Group Profit	16,960	14,969	1,991	13%



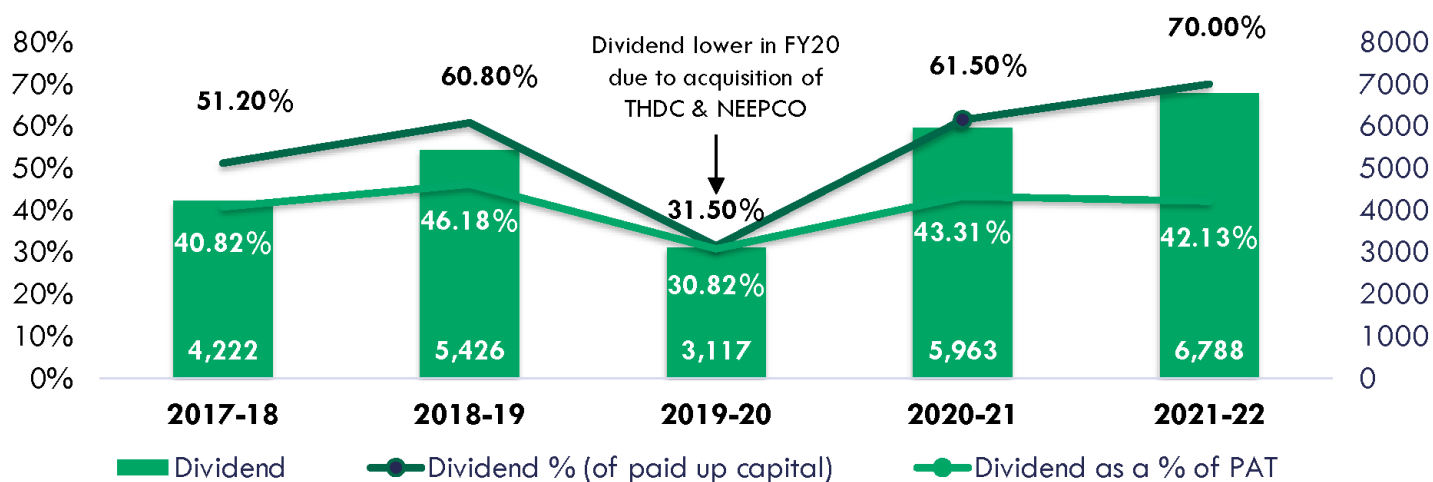
Strong Financials with Balanced Pay-outs



Amount in ₹ Crore

Particulars (Standalone)	31.03.2022	31.03.2021	Change	Remarks
Gross Fixed Assets	2,38,391	2,11,557	26,834	■ Increase in GFA while CWIP has decreased
CAPEX (for the period)	21,036	20,339	697	■ Addition of standalone commercial capacity of 2872 MW in FY22
Capital Work-in-Progress	68,599	75,344	6,745	■ Avg. cost of debt reduced to 5.94% in FY22 from 8.07% in FY15
Long-term Debt	1,64,016	1,60,756	3,260	
Net Worth	1,28,051	1,18,985	9,066	
Weighted Avg. cost of debt	5.94%	6.24%	(0.30)%	

Balanced Payouts



- Committed to deliver sustainable value to shareholders
- Balancing payout with deployment for growth plans
- Highest ever dividend on cash basis paid in FY22



NTPC - A COMPELLING INVESTMENT



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