एनटीपीसी NTPC
A Maharatna Company

एन टी पी सी लिमिटेड
(भारत सरकार का उद्यम)
NTPC Limited
(A Govt. of India Enterprise)

केन्द्रीय कार्यालय / Corporate Centre

Ref. No.:01/ FA/ISD/Compliance/2018-19

Dated: 01/08/2018

Manager Listing Department National Stock Exchange of India Ltd. Exchange Plaza Bandra Kurla Complex, Bandra(E) Mumbai-400 051 Fax No: 022 -26598237/26598238/66418125/ 66418126 Email:- cmlist@nse.co.in	General Manager Department of Corporate Services BSE Limited Floor 25, Phiroze Jeejeebhoy Towers Dalal Street Mumbai-400 001 Fax No: 022 -22721072/22722037/22722039/ 22722041/22722161/22723577 Email:- corp.relations@bseindia.com

Sub: Corporate Disclosure

Dear Sir,

In terms of Regulation 30 of SEBI (LODR) Regulations, 2015, we hereby submit the Investor Presentation made at the 14th Annual Analysts and Investors Meet of NTPC Limited.

Yours faithfully,

(Aditya Dar)
General Manager (Finance)

NTPC: Vision, Mission and Core Values

A Maharatna Company

Vision	Mission
To be the World's Leading Power Company, Energizing India's Growth	Provide Reliable Power and Related Solutions in an Economical, Efficient and Environment friendly manner, driven by Innovation and Agility

Core Values

I	C	O	M	I	T

Outline of the Presentation

एनटीपीसी NTPC
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1. Company Overview
2. Financial Highlights
3. Operational Highlights
4. Transforming Power Sector in India
5. Key Competitive Differentiators
6. Sustainability Initiatives

Unparalleled Presence across the Nation

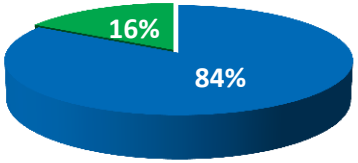
A Maharatna Company

Present + Under Construction Capacity

Map not to scale

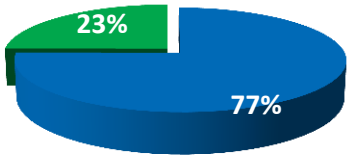
Leading Market Share

Share of Installed Capacity (as on March 31,2018)



Rest of India : 290351 MW
NTPC (Group) : 53651 MW

Share of Electricity Generated (during FY18)



Rest of India : 1014 BUs
NTPC (Group) : 294 BUs

Installed Capacity : 53651 MW

Fuel Mix	No. of Plants	Capacity (MW)	% Share
NTPC Owned			
Coal	21	40,355	75.22%
Gas/Liquid Fuel	7	4,017	7.49%
Hydro	1	800	1.49%
Renewables	13	928	1.73%
Sub-total	42	46,100	85.93%
Owned by JVs and Subsidiaries			
Coal	8	5,584	10.40%
Gas	1	1,967	3.67%
Sub-total	9	7,551	14.07%
Total	51	53,651	100.00%

Financial Highlights

Growing Revenue with Robust Margins

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Amount in Rs. Crore

Particulars	Q1FY19	Q1FY18	Chg. (in %)	FY18	FY17	Chg. (in %)
Revenue from Operations	22,704	19,879	14%	83,453	78,273	7%
Fuel & Energy Purchased	13,800	12,078	14%	49,629	47,572	4%
Gross Profit	8,904	7,801	14%	33,824	30,701	10%
Gross Margin	39%	39%	-	41%	39%	-
Other Income	136	663	-79%	1,755	1,069	64%
Operating Expenses*	2,745	2,533	8%	11,454	9,081	26%
EBITDA	6,295	5,931	6%	24,125	22,689	6%
EBITDA Margin	28%	29%	-	28%	29%	-
Depreciation	1,860	1,570	18%	7,099	5,921	20%
Finance Cost	1,220	896	36%	3,984	3,597	11%
Exceptional Items	-	-	-	-	783	-
Profit before Tax*	3,215	3,465	-7%	13,042	12,388	5%
Tax	627	847	-26%	2,699	3,003	-10%
Profit After Tax	2,588	2,618	-1%	10,343	9,385	10%
Annualized EPS	12.56	12.72	-1%	12.54	11.38	10%

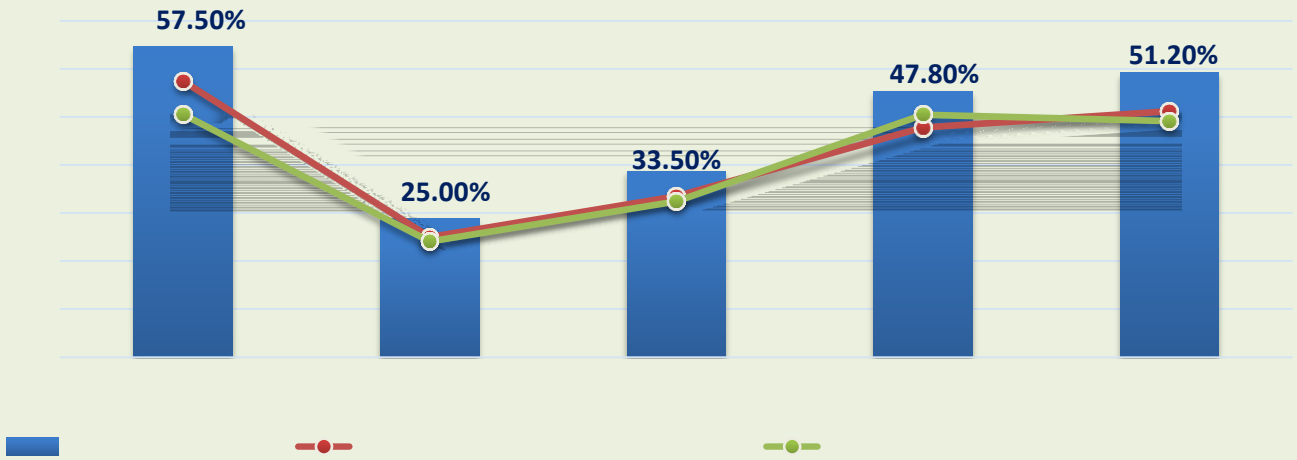
* Including movements in regulatory deferral account balances

Strong Financials with Consistent Dividend Payouts

Amount in Rs. Crore

Particulars (Stand alone)	As on 31.03.2018	As on 31.03.2017	Absolute Change	Remarks
Gross Fixed Assets	1,40,739	1,11,415	29,324	✓ Capitalization > CAPEX
CAPEX (for the year)	24,134	28,252	-4,118	
Capital Work-in-Progress	77,313	80,302	-2,989	✓ Addition of standalone commercial capacity of 3978 MW in FY18.
Debt	1,15,104	1,03,840	11,264	
Net Worth	1,01,777	96,231	5,546	
Book Value per Share (in Rs.)	123.43	116.71	6.72	

Consistent & High Dividend Payouts



- ✓ Committed to deliver sustainable value to all our stakeholders
- ✓ Balancing payout with deployment for sustenance and growth plans

Paying Dividend continuously for last 25 years

Operational Highlights

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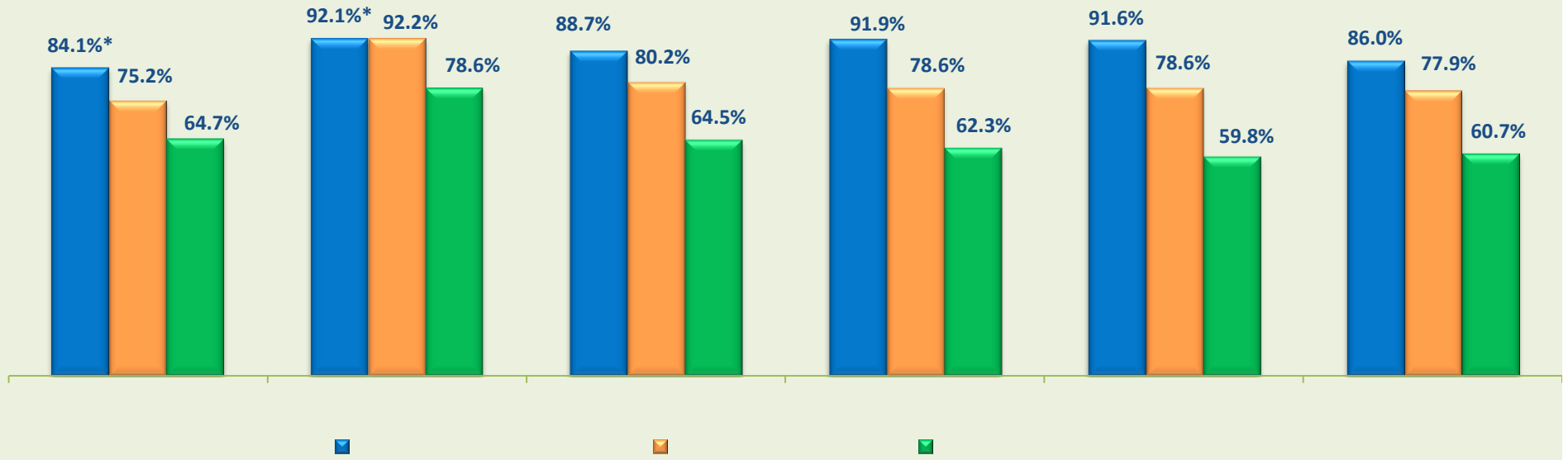
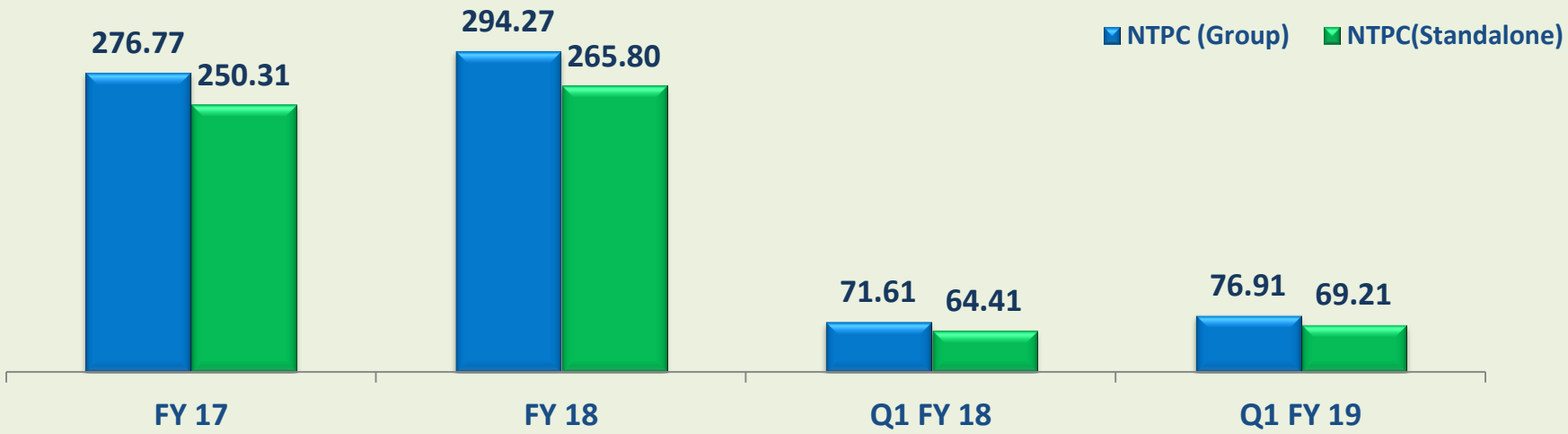
Proven Operational Excellence

- Consistent spread over National PLF during last 2 decades
- NTPC's Coal stations achieved PLF of 77.9% against All India PLF of 60.7% in FY18
- 6 NTPC coal stations among top 10 stations of the country in terms of PLF in FY18
- Sound Maintenance practices & real-time monitoring ensure high availability and efficient operations
- Periodic structured Technical Audits carried out for all units for identifying and correction of gaps
- Safety is integral to our working and we have renewed focus on safety
- Engaged DuPont to upscale safety standards & inculcate complete safety culture



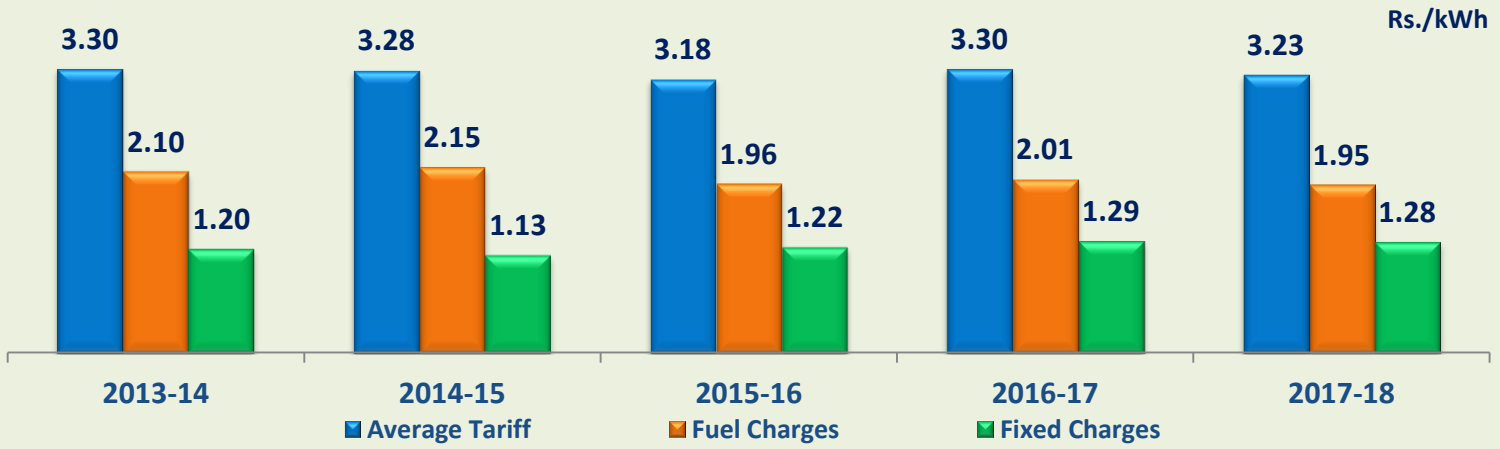
Creating Records in Generation

- NTPC has achieved highest ever generation of 265.80 BUs in FY18, a growth of 6.19% over previous year. On group basis, company has achieved highest ever generation of 294.27 BUs in FY18, a growth of 6.32%.
- NTPC has recorded highest ever standalone quarterly generation of 69.21 BUs and group generation of 76.91 BUs in Q1 FY19 exceeding previous highest achieved in Q4 FY18.
- Group NTPC achieved highest ever daily generation of 917.02 MUs on April 28, 2018. We aspire to cross 1 BUs in a day.



Sustaining Status of Competitive Cost Power Producer

- Regulatory mechanism assures Returns balancing risks and rewards
- 29 States/UTs have signed the TPA extension agreements
- 100% realization for 15th consecutive year in FY18
- Highest ever realization of Rs.85,264 crore in FY18
- Compensation against degradation of the operational parameters
- Hon'ble SC dismissed CERC petition w.r.t. 2004-09 Regulations
- CEA has opined to allow margin on loss of GCV during transit & storage
- Cost impact on meeting environment norms - recognized by CERC
- Flexibility to use Renewable Power to meet schedule from a thermal station.
- National Merit Order Operation for reducing average cost of generation



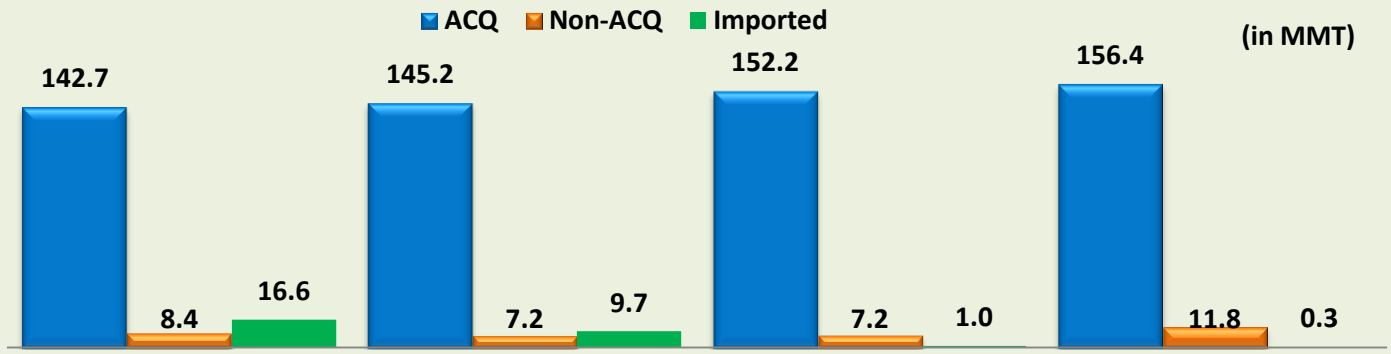
Long-term Fuel Security - Assured Fuel Supply

- NTPC through sustained policy advocacy has secured a single ACQ for all its coal stations resulting in:
  - ✓ Optimum utilization of coal leading to reduction in ECR
  - ✓ Avoidance of loss of fixed charges due to coal shortage
  - ✓ More efficient operation of power plants
  - ✓ Higher marginal contribution from operations
- Long term Fuel Supply Agreements (FSAs) have been signed with CIL and SCCL for supply of coal for a period of 20 years for total ACQ (Annual Contracted Quantity) of ~169 MTPA
- MoU with Railways for ensuring smooth coal transportation
- 67% of coal-based capacity is linked by MGR/belt conveyor system to coal mines representing 10 out of 20 of our coal plants

Assured Coal Supply

96.20%

94.04%



Competent Manpower driven by Strong Management

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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	FY16	FY17	FY18
Revenue (Rs. in crore)	3.33	3.85	4.32
EBITDA* (Rs. in crore)	0.88	1.10	1.22
Value Added (Rs. in crore)	1.27	1.42	1.58
Generation (in MUs)	11.19	12.16	13.47
MAN-MW Ratio	0.54	0.47	0.43

Recognized as laureate for being consistently featured as a great workplace for last 10 years by Great Places to Work and The Economic Times

India's Best Companies To Work For 2018
A STUDY BY THE ECONOMIC TIMES

* Including movements in regulatory deferral account balances

Transforming Power Sector

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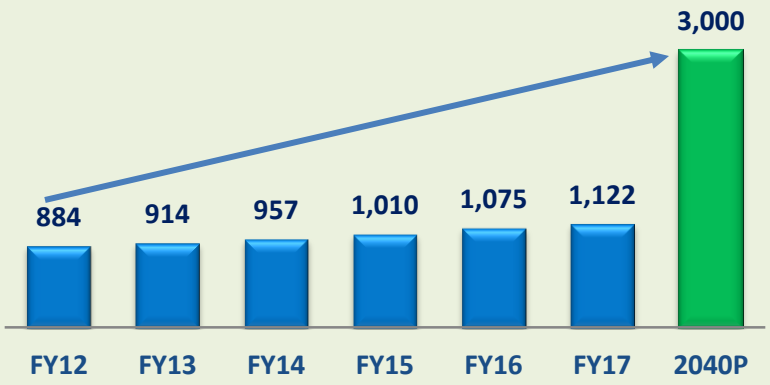
Strong Growth Drivers for Power Sector in India

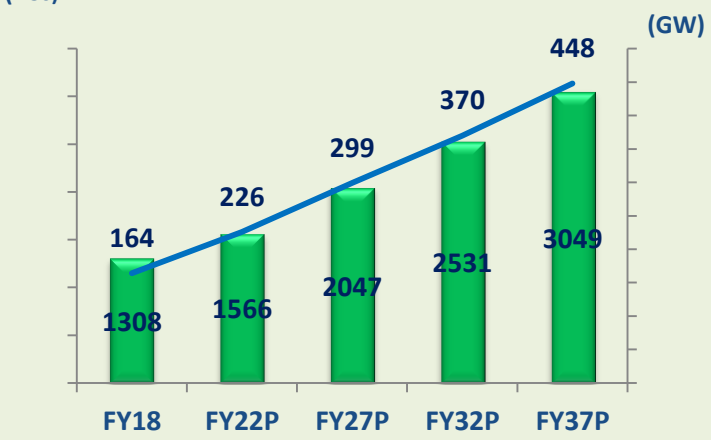
- India's GDP is expected to grow significantly over next two decades on the back of our demographic strength
- India has low per capita consumption of electricity which is expected to rise to ~3000 kWh by 2040

Increasing Per Capita Consumption (kWh/Year)



- 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

Projected Energy requirement & Peak Load



Supportive Policy Ecosystem-Energizing Power Sector

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Revised Tariff Policy

5Es

- Ensuring electricity for all
- Effective metering
- Efficiency for affordable tariffs
- Environment for sustainable future
- Ease of Doing Business

Index of ease of getting Electricity

INDIA's rank has improved from **111** in 2014 to **29** in 2018 in World Bank's ease of getting Electricity ranking, a jump of 82 places

UDAY (A new dawn for distribution sector)

- Turning around DISCOMs through Financial & Operational Efficiency Improvements
- More than Rs.20000 crore saved only on Interest costs
- Significant reduction in AT&C losses and revenue gap

Integrated approach towards making 24x7 affordable power for All

SHAKTI

Scheme for Harnessing Koyala Transparently in India

Transformational Policy for auction and allocation of coal linkages leading to :

- Affordable Power
- Access to coal
- Accountability in allocation of coal

SAUBHAGYA

- Provide energy access to all
- Last mile connectivity
- Electricity connections to all remaining un-electrified households

Coal Reforms

- Flexibility in utilization of coal
- Coal Swapping & Rationalization of Coal Linkages
- Reduction in Coal Imports
- Coal quality improvement through third party sampling , supply of crushed coal

SAUBHAGYA is expected to add 4 crore un-electrified Households as new consumers during FY19

Transforming Power Sector

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	Present	Target
Installed Capacity	~344 GW	~ 500 GW by FY22
Generation (in BUs)	~1308 BUs	~1566 BUs by FY22
Peak Load Demand	~164 GW	~226 GW by FY22
Per capita consumption	~ 1122 kWh	~ 3000 kWh by 2040
Renewable capacity	~69 GW	175 GW by FY22
Coal Requirement	~630 MT	735 MT by FY22
AT & C Losses	~19.70%	13% by FY22

Government's focus on attaining affordable "24x7 Power for All" by 2019.

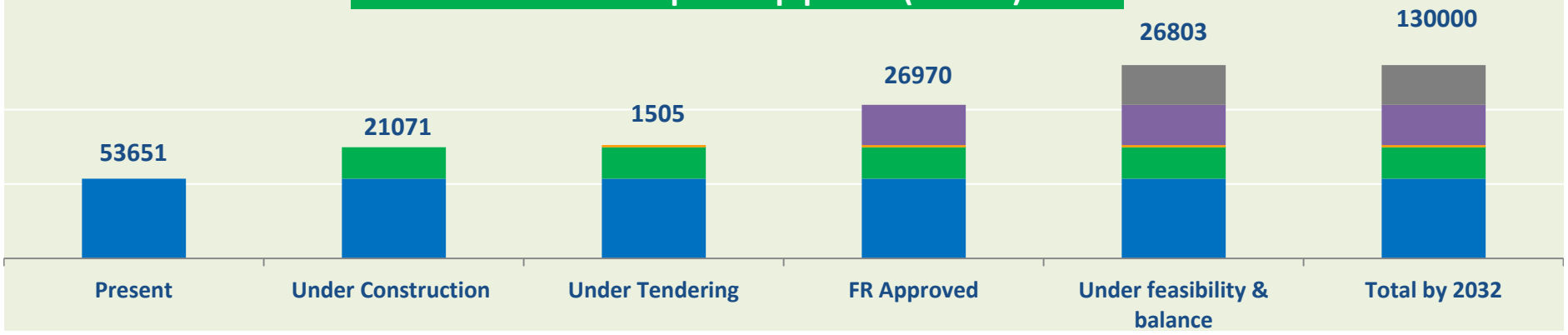
Source: NITI Aayog, MOC, MOP, CEA, UDAY,NTPC

Our Key Competitive Differentiators

Huge Capacity Addition Lined up

Ensuring Availability | Land | Water | Coal | Environment Clearances | PPAs | **Investment Approval**

Current development pipeline (in MW)



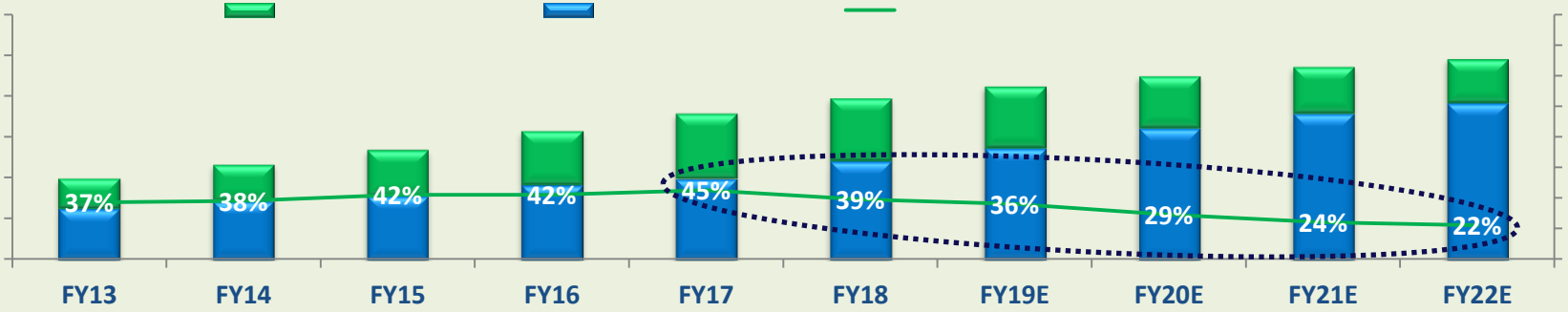
Snapshot of Projects Under Construction

Fuel Mix	In MW	Coal Technology	In MW	Group Mix	In MW	Target	In MW

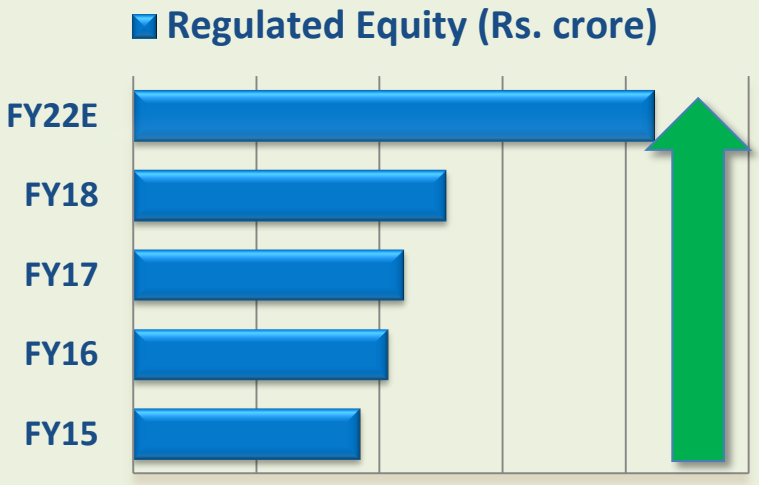
NTPC contributed 62% to country's total conventional capacity addition in FY18

Why to Invest in NTPC

FY18 marks the beginning of CAPITALIZATION exceeding CAPEX



Expansion in Regulated Equity



- FY18 marks the beginning of Reversal in CWIP ratio and this will continue due to commercialization of 4-5 GW/year.
- Fall in CWIP ratio will lead to RoE expansion as the equity blocked in CWIP would start earning.
- Growth will continue and the turnaround from CWIP to PPE would be quicker in Renewable energy projects.

NTPC Leading India's Energy Transition

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NTPC RE Plan - Moving towards 30% Non-fossil fuel basket by 2032

- Committed to set up 10 GW Solar capacity by 2022
- 870 MW Solar, 50 MW Wind & 8 MW Small Hydro capacity already commissioned
- LOI placed for 750 MW Solar capacity under Developer Mode

Present	In GW	In %
Thermal	51.9	96.8%
RES	0.9	1.7%
Hydro	0.8	1.5%
Nuclear	-	-
Total	53.6	100%

NTPC@2032	In GW	In %
Thermal	91	70.0%
RES	32	24.6%
Hydro	5	3.8%
Nuclear	2	1.6%
Total	130	100%

Capacity under Development

- NIT issued for 2000 MW Solar & 2000 MW Wind capacity under Developer Mode
- Under EPC Mode NIT issued for 185 MW while NIT is in pipeline for 1075 MW capacity
- Additional capacities are being explored

National Solar Mission

- Entrusted to develop 15 GW Solar PV under NSM in 3 tranches
- From Tranche-1 of 3000 MW capacity 2750 MW has been commissioned
- NTPC has sold 3.34 BUs of electricity in FY18 from commissioned NSM units

NTPC to play a Pivotal Role

- Coal will remain dominant source of power generation due to intermittent nature of Renewable Energy Sources
- NTPC Coal & Gas plants will play a key role in taking care of intermittencies caused due to RE integration through Flexibilization

Widening of Growth Path with Commencement of Coal Mining

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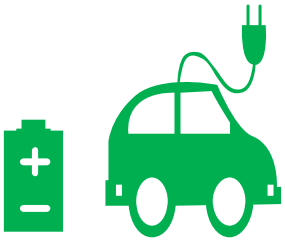
Status of Coal Mines						
Coal block	GR (MMT)	Mining Capacity MMTPA	Status			
			EC	FC	Coal Controller Permission	Mining/MDO
Pakri Barwadih	1574	18	Yes	Yes	Yes	Target to produce 6.3 MMT in FY19
Dulanga	196	7	Yes	Yes	Yes	Target to produce 1.5 MMT in FY19
Talaipalli	1267	18	Yes	Yes	Yes	Target to produce coal by Nov'19
Chatti Bariatu	548	7	Yes	Yes	Yes	
Kerandari	285	6	Yes	St-I accorded	-	
Other Five Mines with GR of ~3.42 BT and Mining Capacity of ~55 MMTPA - under various phases of development.						

2.68 MMT coal extracted from Pakri Barwadih in FY18. Coal Production commenced at Dulanga.

Acquisitions & Diversification

Acquisition of Power Assets

- Acquired JV partner's equity in KBUNL (610 MW) and NPGCL (1980 MW).
- MoU for acquisition of Barauni TPS (720 MW) enabling actions are underway.
- MoU for acquisition of Chhabra TPS (2320 MW).
- DD underway for possible acquisition of shortlisted Coal Power Assets.



EV Charging Business

- Pilots on different charging technologies are being evaluated for deployment.
- MoUs have been signed with Jabalpur city transport, Oil marketing companies, DMRC etc. for developing charging infrastructure in a synergic way.

Marketing of Desalinated water

- Technology developed for production of quality drinking water from sea water.
- For Commercialization of desalinated water, an MoU has been signed with IRCTC for setting up of packaged water facility.

Fertilizers and Chemical Plants

- JV has been established to build and operate new fertilizer and chemicals complexes at Gorakhpur, Sindri and Barauni.
- Main plant contract has been awarded and project development is underway.

Sustainability Initiatives

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Technology Progression - Increased Efficiency

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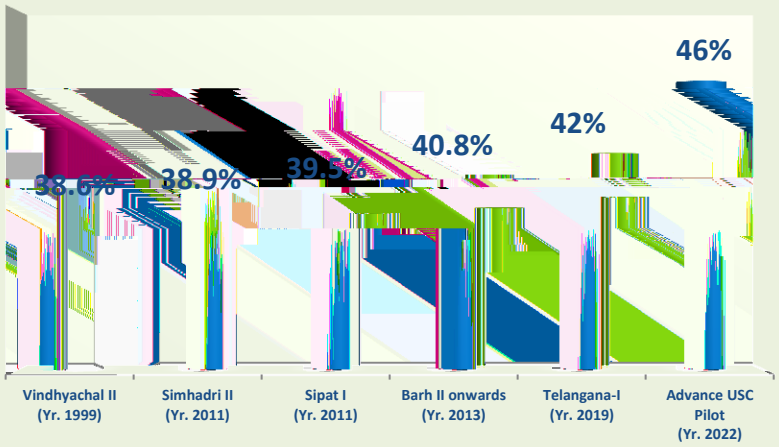
Power plant Technologies Introduced

- Adopted Ultra Super critical technology which may result in savings of 154 kcal in SHR.
- All USC units now are with steam temperature of 600°C.
- Air Cooled Condenser being introduced to save water.
- Higher Cycle of concentration (COC >5) to conserve water.
- High concentration slurry disposal system & Dry Ash extraction and disposal system.

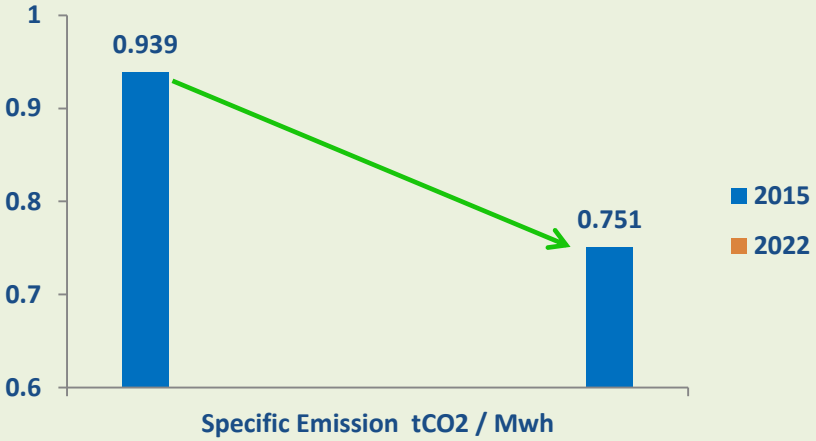
Every 1% rise in efficiency leads to 2.5% CO_2 reduction



Technologies Under Development

- Use of Treated Sewage Water in Dadri power plant, shall be adopted in other plants also
- Developing Indigenous Advanced Ultra Supercritical (AUSC) technology along with IGCAR and BHEL for steam temperature in the range of 700°C.
- Use of advanced technologies in the R&M of aging power stations

20% reduction in CO_2 emissions by 2022



Constant endeavor to reduce CO_2 emissions- steps to increase cycle efficiency

NETRA- OUR TECHNOLOGY DEVELOPMENT CENTRE

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- Focus Areas- Efficiency & Availability Improvement and Cost Reduction, Renewables and Alternate Energy, Climate Change and Environment and Scientific Support to Stations
- Spent Rs.185 crore on R&D activities during FY18

Energy Efficiency Improvement

Flue Gas Based Sea-Water Desalination Plant at Simhadri

Flue Gas based Air Conditioning System at Talcher-Kaniha

Nano Lubricant for ID Fan & Coal Mill

Renewables and Alternate Energy

Solar Thermal Hybrid at Dadri

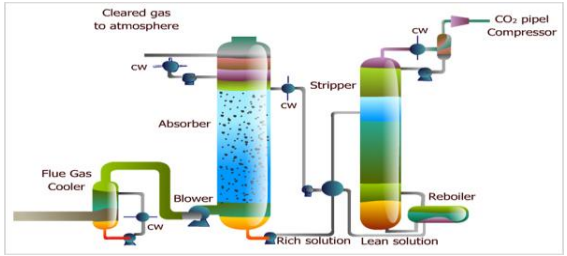
Solar Wind Hybrid at Kudgi

Floating Solar PV

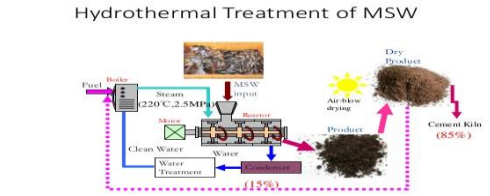
Climate Change and Environment

Geo-polymer road using fly ash

CO_2 capture from Flue Gas & conversion into Soda Ash, Urea or Methanol



Hydro Thermal based MSW to Solid Fuel Plant



Amongst select utilities globally to have a dedicated Technology Development Centre

Unwavering commitment to Environment

Firm Action Plan to comply with New Environment Norms

SOx Action Plan

-
-
-
-

0.75	4.44	2.12	38.66	17.35	63.32

De NOx Action Plan

-
-

Utilise agro residue for power generation

Up to 10% agro residue based bio-fuel co-firing with coal has been successfully demonstrated at NTPC Dadri.

NTPC CSR - Touching Lives of People

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Rs.242 crore spent on CSR activities during FY18

Clean Water & Sanitation

- Provided clean drinking water facility at more than 100 villages around NTPC stations.
- Deepening of ponds, water harvesting projects, construction of Ghats to improve water levels.
- Revival of Municipal Solid Waste Plant in Varanasi
- Mechanized Sweeping, Collection and Transportation of Municipal Solid Waste (MSW) in Varanasi
- Setting up of Biomethanation Plants.

Other Key CSR Activities

- Setting up of school with hostel facility for 200 tribal children.
- Installation of around 2000 Solar street lights and 280 solar high mast lights at various locations.
- Vocational training, skill upgradation and income generation programs benefitting about 4000 people.
- Training and handholding for improved Agri Products.
- Livestock developments to enhance income of the village community.

Conclusion - A Compelling Investment Case

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- Largest Power Generator in the Country
- Maintaining Leadership Position for last two decades
- Sustaining Status of Low Cost Power Producer
- Huge Capacity Addition Lined up
- Long-term Fuel Security & Strong Coal Mining Portfolio
- Strong support of Government of India

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