

NTPC Limited Investor Presentation

August 2014

NTPC: VISION AND CORE VALUES

To be the world's largest and best power producer, powering India's growth



OUTLINE

About NTPC
Recent Financial Highlights
Opportunities and Sectoral Growth Drivers
Competitive Position
Risks and Mitigants
Growth and Capex Plans
Sustainability Initiatives

NTPC: SNAPSHOT



1. Power Generation	 As of July 31, 2014 total installed power generation capacity of 43,128MW* (including 6,001 MW* through other group companies) 22,414 MW of capacity, under construction 1st Hydro project to be commissioned by the end of current financial year Solar PV capacity to cross 100 MW by year end -95 MW commissioned, 15 MW under construction Global footprint in Sri Lanka and Bangladesh through JVs, contributed seed capital to both international JVs
2. Power Trading	 ✓ Subsidiary NVVN is the prominent power trader in India-traded 9.322 Bus in last fiscal ✓ Also appointed for power supply to Bangladesh and nodal agency for trading power with Bhutan
3. Mining and Oil Exploration	 10 coal mining blocks allotted by GoI, work under progress for 5 coal blocks Production potential of ~100 MTPA from coal mines, Total Geological Reserves of over 5 billion tons Awarded oil exploration blocks
4. Manufacturing Power Equipment	✓ 3 JVs for manufacturing power equipments- castings, forgings, high voltage equipment and BoP
5. Others	 Electricity distribution business through its subsidiary NESCL Consultancy services to State Electricity Boards, state generating companies and other private companies

- ✓ Incorporated as a Government company in 1975; amongst 7

 Maharatna Gol companies, empowered to make its own investment decisions
- ✓ NTPC Group accounts for 17.7% of India's total installed capacity
 and 25.9% of All India Thermal Capacity as on 31.03.2014

1835 MW capacity Commissioned during FY14 2675 MW capacity declared commercial during FY14

- ✓ NTPC (Stand-alone) generation 233.28 BU and group generation 250.626 BU in FY14
- ✓ Achieved a Coal PAF of 91.79% in FY 14 against 87.63% in FY13
- ✓ Achieved a Coal PLF of 84.29% in Q1FY 15 against 79.12% in Q1FY14
- ✓ Ranked as the No.1 IPP and Energy Trader Globally by Platts 2013
- ✓ Ranked 424th largest company in the world in the Forbes Global 2000 list
 2014
- ✓ Long term corporate plan of having 128 GW of Installed Capacity by 2032

 FY14 Key Financials

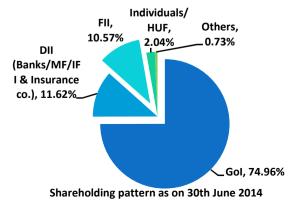
 P&L
 Consol
 Stand-alone

 Revenue
 87,003
 74,708

 EBITDA
 22,459
 20,453

 PAT
 11,403
 10,975

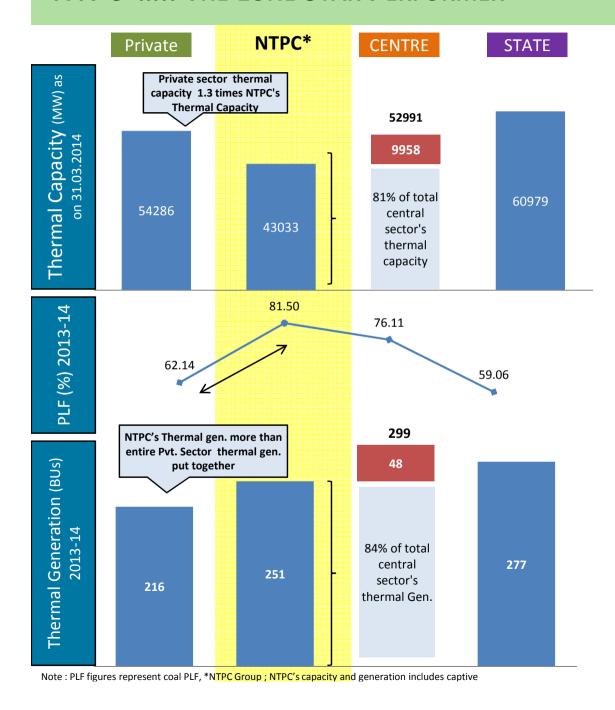
	(RS. C	rore)
Balance Sheet	Consol	Stand-alone
Total Debt	81,021	67,170
Cash & Bank Bal.	17,051	15,311
Net Debt	63,971	51,859



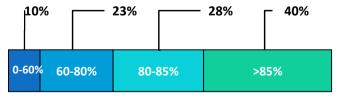
NTPC Group has 21 JVs and 4 Subsidiary Companies

^{*}capacity of gas stations based on rated operating capacity

NTPC THE LONE STAR PERFORMER



- NTPC sustains its leadership position in past 2 decades
- Contributes to 81% of central installed capacity and 84% to corresponding generation
- ●NTPC has made the single largest thermal capacity addition in the country during the first two years of 12th Plan.
- The average PLF of private sector is 19 ppt lower than NTPC's average PLF for 2013-14.
- During 2013-14, approx. 68% of NTPC's total commercial coal capacity operated at a PLF of more than 80% and only ~10% less than 60%.



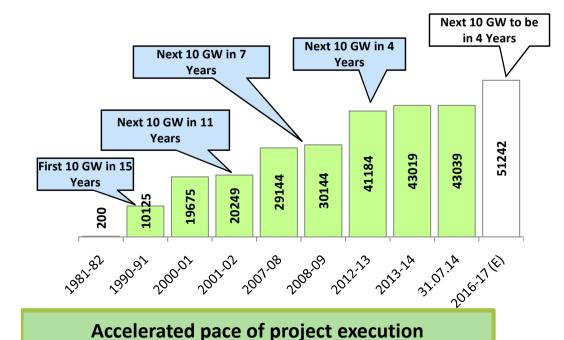
Entire private sector's generation is lower than that of NTPC's despite 1.3x capacity

MARKET **L**EADER

Financial & Physical Dominance

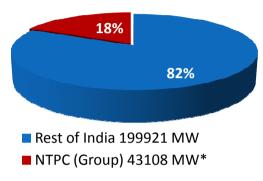
Rs Crore	एनदीपीसी NTPC	Reliance Power	Tata Power	Adani Power	JSW Energy
Market Cap as on 31.03.2014	98,863	19,664	23,036	13,958	9,717
Installed Capacity(GW) as on 31.03.2014	43.1	3.8	8.56	7.9	3.1
FY14 Assets	179554	20736	30539	38779	19244
FY14 EBITDA	20453	192	2947	4129	2268

Capacity Addition Pace

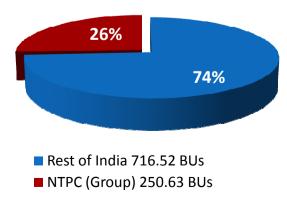


NTPC's share in all India Capacity and Generation





Share of Electricity Generated (for FY 2013-14)





WHAT WE PROMISED ... IS WHAT WE DELIVERED IN FY14

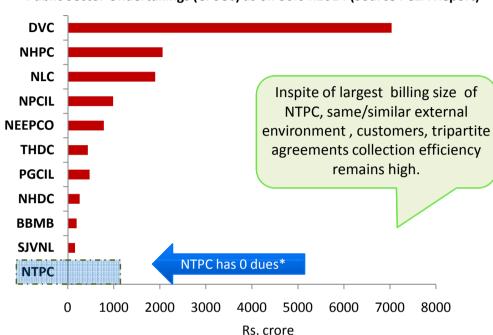
Actual Performance Against Commitments Made to Investors for FY14

	Guidance	Performance
1	✓ Target PAF (Coal)(FY14): 89%+	✓ PAF (Coal) 91.79%
2	✓ Commissioning of 1875 MW capacity	✓ 1835 MW commissioned
3	✓ Capex (standalone) Target of Rs.20200 crore in FY14	✓ Capex incurred Rs. 21797 crore.
4	✓ Planned to award 5000 MW in FY14	 Investment Approval of 4150 MW (Rs.30756 crore): 500 MW Unchahar STPP (Rs. 3363 crore) 1600 MW Daralipali STPP (Rs.12532 crore) 1980 MW at North Karanpura STPP (Rs. 14367 crore) 70 MW of Solar PV (Rs.494 crore)
5	✓ Starting of mining	 Local law and order problem has become impediment but Management committed to deliver, mining to start in FY15-16
6	✓ Fuel Supply Agreement for all new capacities	FSAs signed for all commissioned capacities except for Barh II where coal to be supplied from captive mines. Pending start of mines, coal will be arranged through short term measures

Awarded investment approval to projects worth Rs. 1,16,464 crore* during FY12 to FY14

UNPARALLELED COLLECTION EFFICIENCY

Outstanding dues of power utilities (principal and surcharge) payable to Central Public Sector Undertakings (CPSUs) as on 30.04.2014 (Source: CEA Report)



DVC :Damodar Valley Corporation;

NHPC :National Hydro Power Corporation

NLC :Nyveli Lignite Corporation

NPCIL : Nuclear Power Corporation of India Ltd. **NEEPCO** :North Eastern Electric Power Corporation Ltd

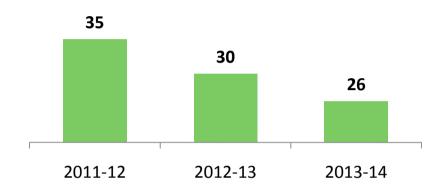
PGCIL :Power Grid Corporation of India Ltd

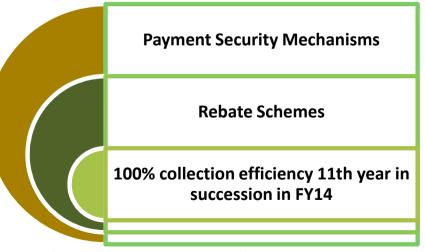
SJVNL :Satluj Jal Vidyut Nigam Ltd

THDC :Tehri Hydro Development Corporation

BBMB :Bhakra Beas Management Board

Average Debtor Days*

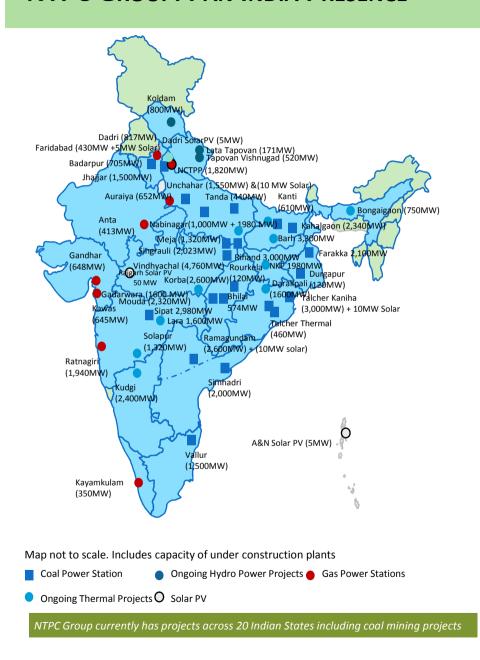




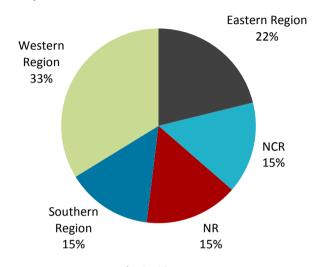
^{*}excluding unbilled revenue and net of provisions for doubtful debts



NTPC GROUP: PAN INDIA PRESENCE



Geographical Spread of NTPC Group Capacity (As on 31.07.2014)



Total: 43,128MW

Fuel Mix	No. of Plants	Capacity (MW) ¹	% Share
NTPC Owned			
Coal	17	33,015	76.55%
Gas/Liquid Fuel	7	4,017	9.31%
Solar	7	95	0.22%
Sub-total	31	37,127	86.09%
Owned by JVs and St	ubs		
Coal	6	4,034	9.35%
Gas	1	1,967	4.56%
Sub-total	7	6,001	13.91%
Total ¹	38	43,128	100.00%

1. As of July 31, 2014

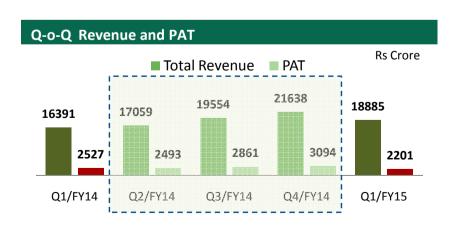


RECENT FINANCIAL HIGHLIGHTS



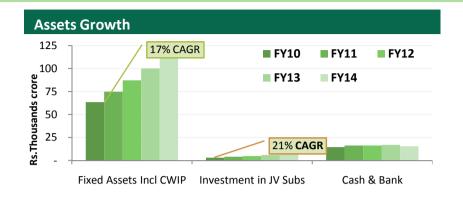
FINANCIAL HIGHLIGHTS Q1/FY15 (UNAUDITED)

Position Statement Q1FY15			
Quarter Ended	Q1/FY15	Q1FY14	% change
Key Balance Sheet Highlights			
Fixed Assets incl. CWIP	128,465.03	110,283.15	+16.49%
Investments	12,606.51	10,950.85	+15.12%
Cash & Bank Balance	13,859.72	18,622.04	-25.57%
Other Assets	27,932.63	27,127.79	+2.97%
Total Assets	182,863.89	166,983.83	+9.51%
Net Worth	88,011.06	82,914.53	+6.15%
Total Debt	68,482.71	60,139.98	+13.87%
Other Liabilities	26,370.12	23,929.32	+10.20%
Total of Liabilities	182,863.89	166,983.83	+9.51%



Income Statement Q1FY15								
Q1/FY15	Q1/FY14	% change						
18,336.75	15,694.07	+16.84%						
548.39	696.93	-21.31%						
18,885.14	16,391.00	+15.22%						
12,765.13	9,425.83	+35.43%						
934.24	948.74	-1.53%						
1,115.47	942.33	+18.37%						
1,118.75	1005.26	+11.29%						
667.91	617.41	+8.18%						
2,283.64	3,451.43	-33.83%						
82.44	924.41	-91.08%						
2,201.20	2,527.02	-12.89%						
2.67	3.06	-12.89%						
106.74	100.56	+6.15%						
	18,336.75 548.39 18,885.14 12,765.13 934.24 1,115.47 1,118.75 667.91 2,283.64 82.44 2,201.20	18,336.75 15,694.07 548.39 696.93 18,885.14 16,391.00 12,765.13 9,425.83 934.24 948.74 1,115.47 942.33 1,118.75 1005.26 667.91 617.41 2,283.64 3,451.43 82.44 924.41 2,201.20 2,527.02 2.67 3.06						

FINANCIAL HIGHLIGHTS 2013-14 (AUDITED)



Capex Growth 25000 20000 15000 10000 21,797 19,926 15,994 12,956 5000 10,467 0 FY10 FY11 FY12 FY13 FY14

PAT RoNW ---RoCE % 15000 19.73 17.72 16.92 16.88 16.35 20 10000 15.95 14.23 13.97 14.30 14.37 10 5000 9224 12619 10975 8728 9103 0 FY10 FY11 FY12 FY13 FY14

All financial figures in Rs. Crore except where specified

Margin Growth

Financial Year 2014			De croro
Year	FY14	FY13	Rs. crore
Key P&L Highlights			
Total Revenue	74,707.82	68,855.81	+8.50%
Profit Before Tax	13,904.65	16,578.63	-16.13%
Profit After Tax	10,974.74	12,619.39	-13.03%
Key Balance Sheet Highlight	S		
Total Assets	179,554.18	161,116.46	+11.44%
Capital WIP+ cap adv	53,532.61	44,036.73	+21.56%
Investments (non-current)	8,120.90	9,137.64	-11.13%
Year end Cash Balance	15,311.37	16,867.70	-9.23%
Net worth	85,815.32	80,387.51	+6.75%
Total Debt	67,170.22	58,146.30	+15.52%
Other Highlights			
Operating Cash Flows	15,732.18	15,495.17	+1.53%
Book Value Per Share (Rs.)	104.08	97.49	+6.76%
Dividend per Share (Rs.)	5.75	5.75	0.00%
EPS (Rs.)	13.31	15.3	-13.01%
Dividend yield at year end*	4.80%	4.05%	+75bps
Price/Book at year end*	1.15	1.46	- -
*Based on year end share price of Rs.119.7 respectively	'5 and Rs.141.95 as	on 31.03.2014 a	nd 31.03.2013

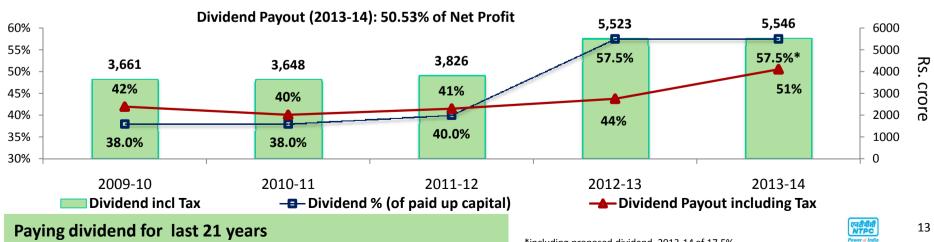


KEY 5 YEAR FINANCIAL HIGHLIGHTS

Rs. crore

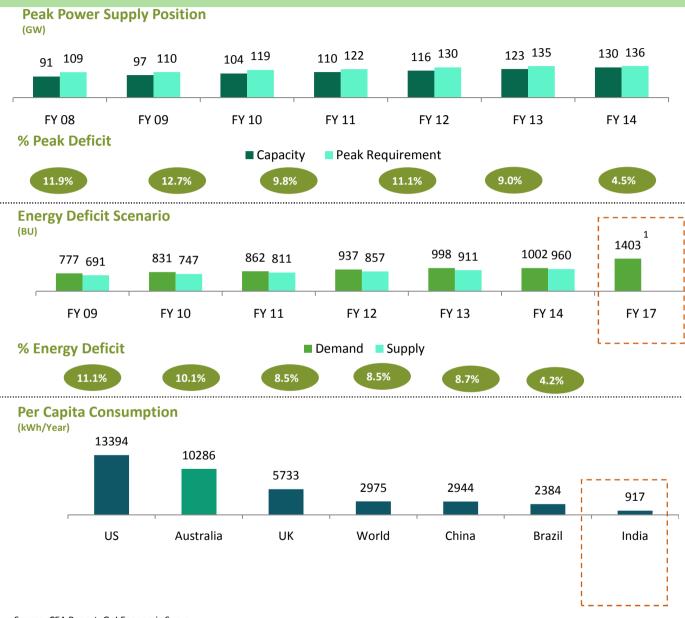
Particulars	2013-14	2012-13	2011-12	2010-11	2009-10	CAGR
EBITDA	20,453	20,216	16,830	15,956	14,641	9%
Profit before tax	13,905	16,579	12,326	12,050	10,885	6%
Profit after tax	10,975	12,619	9,224	9,103	8,728	6%
Dividend	4,741	4,741	3,298	3,133	3,133	11%
Total Fixed Assets (Net block)	117,000	100,046	87,086	74,731	63,459	17%
Investments (Non-current)	8,121	9,138	9,584	10,533	11,212	-8%
Net-worth	85,815	80,388	73,291	67,892	62,437	8%
Total Debt	67,170	58,146	50,279	43,188	37,797	15%
Value added	25,966	22,999	19,738	19,140	17,331	11%
Debt to equity(times)	0.78	0.72	0.69	0.64	0.61	

High Dividend payouts



OPPORTUNITIES AND SECTORAL GROWTH DRIVERS

POWER DEMAND SUPPLY



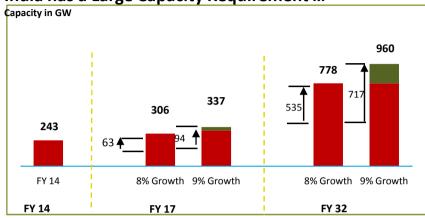
- There was sustained peak and energy deficit in past
- Although FY14 peak and energy deficit numbers are lower but this is due to weak financial positions of discoms rather than reduction in demand
- ✓ Notwithstanding sustained demand, India continues to be among the lowest per capita consumers of electricity globally, lagging Brazil and China by ~3:1
- ✓ Per capita consumption c.29% of the world average
- Massive investments of Rs.17,47,323 crore are planned in 12th plan¹

Source: CEA Report, Gol Economic Survey.

- . Report on financing of infrastructure Planning commission.
- 2. World Bank indicator EG.USE.ELEC.KH.PC (web site) except India data for 2010 and India's data as on 31.03.2014 (source CEA)

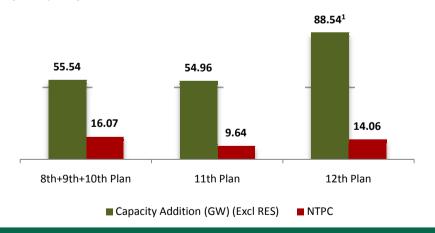
12TH PLAN

India has a Large Capacity Requirement ...



- 26% of existing capacity needs to be added by FY17 to achieve 8% GDP growth
- ✓ Average annual capacity addition of ~21 GW required till FY17

Capacity Expansion Plans (GW)



... with Significant Investments Planned in the Sector

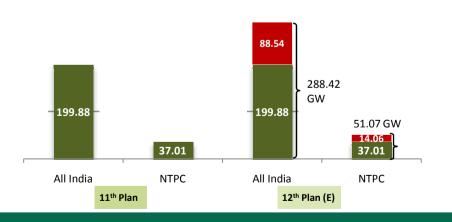
	12" Platt (2012–17)
Capacity excl. RES (MW) ¹	88,536.6
Expected Investments in Power Sector (Rs. Crore) ²	14,99,914
Expected Investments in Non-	2,47,409

19th Dlan (2019_17)

Cumulative Capacity (GW)

(Rs. Crore)²

(12th Plan capacity does not include Renewable Energy Source (RES) capacity addition)



12th Plan NTPC Own Capacity Addition: 11,168 MW, Through JVs/Subs: 2,890 MW, Total Capacity Addition: 14058 MW

Pan India Capacity Addition: 38447.81 MW, NTPC Capacity Addition 6005 MW in first two years of 12th Plan.



COMPETITIVE POSITION



Key Competitive Strengths



Leadership Position in the Indian Power Sector

Long-term Fuel Security

High Operational Efficiency

Ability to Turn Around Underperforming Power Stations

Low Cost Power Producer

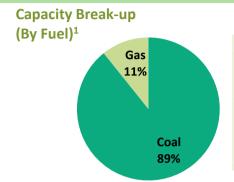
Prudent Off-take Policy

Strong Balance Sheet

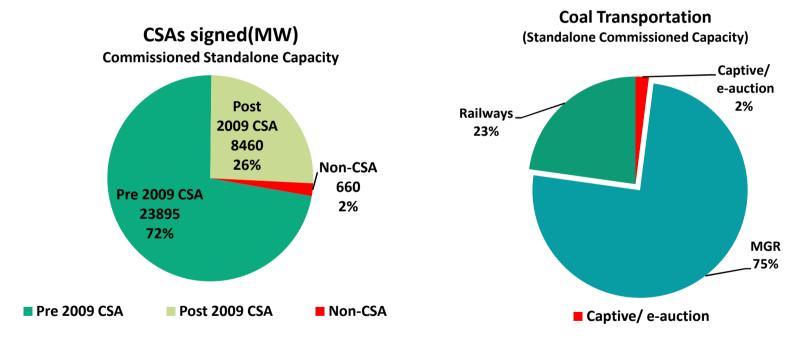
Competent and Committed Workforce

Integrated Business Model - de-risks main business

LONG-TERM FUEL SECURITY

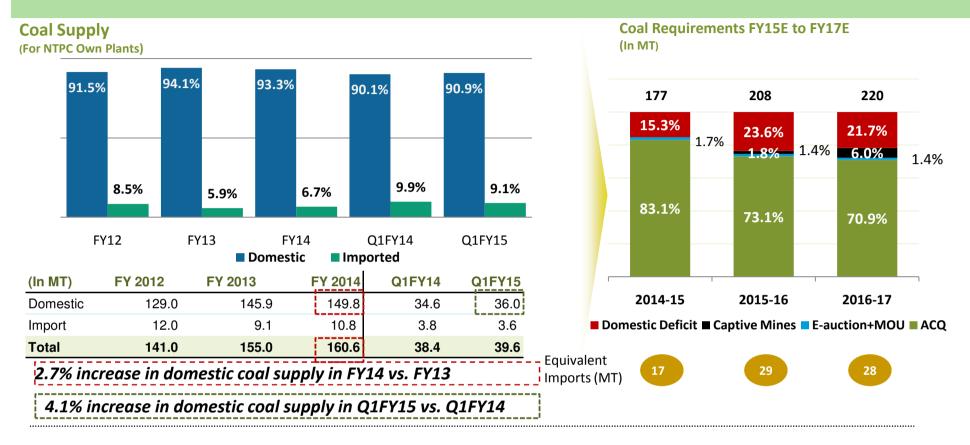


- *N***TPC** implements projects only upon establishing availability of fuel
- "'Maharatna' status provides very high level of autonomy with regards to investments in backward integration and new fuel sources
- **№** By 2032, NTPC will substantially reduce dependence on fossil fuels



- ■Standalone Capacity of 32,355 MW is covered by long term Coal Supply Agreements (CSA) which have been signed with CIL & SCCL.
- Additionally, CSA for 1160 MW yet to be commissioned projects have been signed.
- •75% of coal capacity is linked by own merry go round rail system/belt conveyor system to coal mines representing 10 out of 17 coal plants.
- ■For group companies, CSAs for 4,390MW have been signed in

LONG-TERM FUEL SUPPLY (CONT'D)



- ✓ 96% materialisation under ACQs during 2013-14, 85.6% materialisation in Q1 FY14-15
- ✓ Imported coal receipts during FY13-14 10.63 MT accounting for 6.7% of total coal supply during FY 2014.
- ✓ NTPC Board awarded approval for import upto 17 MT of imported coal during 2014-15
- ✓ Coal transport through inland waterways on east cost already started for Farakka STPS.
- ✓ Total Coal stock at NTPC stations as on 31.03.2014 is 6.02 MT as compared to 4.22 MT as on 31.03.2013.
- ✓ Coal linkage from CCL for North Karanpura STPP (1980 MW) has been restored.

CAPTIVE COAL BLOCKS FOR LONG-TERM FUEL SECURITY (CONT'D)

✗ 6 coal mining blocks allocated to NTPC

- Pakri Barwadih, Talaipalli, Dulanga, Kerandari, Chatti Bariatu and Chatti Bariatu (South)
- Estimated geological reserves of over **3.7BT**
- Incurred cumulative Capex of Rs.2174 crore till FY14
- Peak production capacity of these mines is 53 MT, end use of coal mines will depend upon requirements of projects

	Geological	Mining		S	tatus			Pro	duction	Plans	
	Reserves (MT)	Capacity	EC	FC	Acquisition Notice	MDO	FY16	FY17	FY18	FY19	FY20
Pakri Barwadi	1436	15	Yes	Yes	Yes	in process	2.3	5.2	8.5	9.5	10.0
Chatti Bariatu	194+354	7	Yes	Yes	Yes	Yes		1.0	3.0	5.0	7.0
Kerandari	285	6	Yes	1st Stage	Yes	in process		2.0	4.0	6.0	6.0
Talaipalli	1267	18	Yes	Yes	Yes	in process		1.0	2.5	4.5	7.0
Dulanga	196	7	Yes	1st Stage	Yes	in process	1.5	4.0	8.0	13.0	18.0
Total	3732	53					3.8	13.2	26.0	38.0	48.0

✓ 4 new coal mining blocks allocated to NTPC

- Banai (Chhatisgarh), Bhalmuda (Chattisgarh), Chanrabila (Odisha), Kudanali-Laburi (Odisha)
- Estimated geological reserves of ~ 2BT
- Estimated Capacity: 39.9 MTPA

	Geological Reserves (MT)	Mining Capacity	End use*	
Banai	629	12.6	Barethi-I (2640 MW)	
Bhalmuda	550	11	Kudgi-I (2400 MW)	
Chandrabila	550	11	Gadarwara-I (1600 MW) Unchahar–IV, (500 MW) Bilhaur-I (1320 MW)	
Kudanali- Laburi	266	5.3	3Bilhaur-I (1320 MW)(Also partly to J&K Govt.)	
Total	1995	39.9		

LONG-TERM FUEL SECURITY (CONT'D)

Gas: Long-term Fuel Security

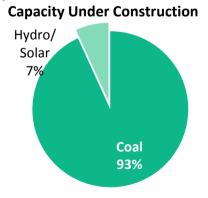
- ✓ Long-term gas supply agreements with GAIL under APM for supply of gas to all directly-owned gas power stations at regulated pricing under Government orders
- ✓ Domestic natural gas (KG-D6) supply agreements on a long-term basis at prices approved by GoI for four plants
- ✓ Gas and R-LNG from public and private sector companies on a spot, short and/or long-term basis
- All owned gas plants strategically located along major gas pipelines

Details of Gas/RLNG tie ups for NTPC Existing Gas

Gas Type	Source/ Supplier	Contracted Quantity (MMSCMD)	Contract Valid Till
APM / PMT Gas	ONGC / GAIL	14.48	2021/2019
AFW/FWI Gas	ONGO / GAIL	14.40	2021/2013
Non-APM Gas	ONGC / GAIL	0.82	2016
KGD6 Gas	RIL / Niko / BPEAL	2.30	2014
RLNG-Long- term	GAIL	2.0	Dec 2019
Spot/Fallback RLNG	Domestic suppliers	Based on demand from time to time	On reasonable endeavour basis

Diversifying Fuel Mix

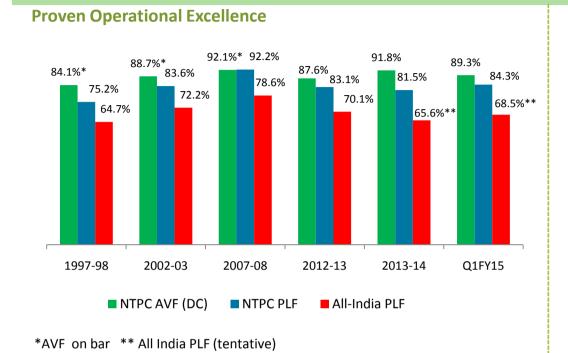
Under-construction Capacity Breakup (by Fuel)¹



Total: 22,434 MW

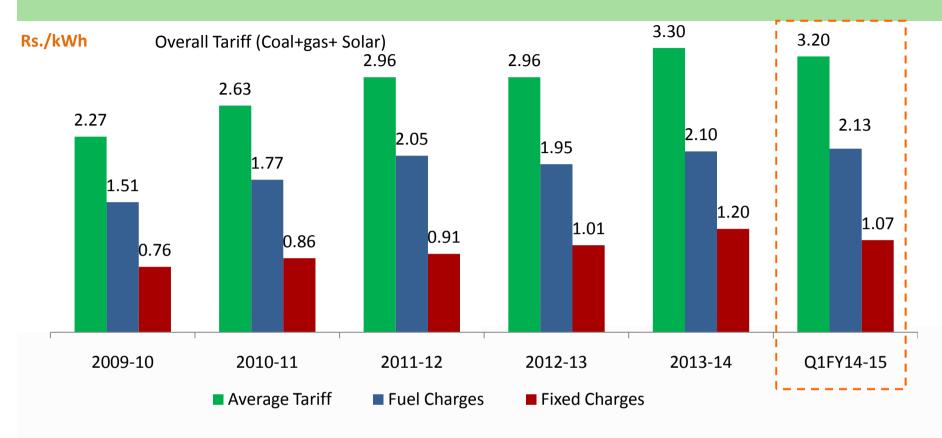
- Planning to reduce its carbon footprint and reduce dependence on existing fuel sources
- ✓ 95 MW Solar PV projects under operation
- ✓ 1,499 MW hydroelectric and 15MW Solar PV projects under construction
- ✓ 120 MW of hydro capacity currently under bidding.
- ✓ Formed JV with Nuclear Power Corporation of India in January 2011 with the objective of setting up a nuclear power project -Planning to set-up 1,400MW PWHR nuclear power plant

HIGHLY EFFICIENT PLANT OPERATIONS



- Successful in growing and achieving high PLF despite fuel shortage concerns in India
- ✓ On forefront of adopting latest and most efficient technology—commissioned its first super-critical project at Sipat in 2011
- Market leader in terms of setting up of projects based on super-critical technology
- Maintenance practices and real-time monitoring system ensure high availability and efficient operations
- ✓ Implementing Perform Achieve Trade (PAT)
 Scheme under National Mission on Enhanced
 Energy Efficiency at 22 power stations.
- ✓ Talcher Thermal (440 MW) station was highest ranked station in the country in terms of PLF (95.02%) during 2013-14
- ✓ 12 out of 25 top performing stations of the country belong to NTPC Group.
- ✓ In FY14, 7 coal based stations out of 16 achieved PLF of more than 85%.
- ✓ Opportunity loss due to coal shortage has fallen down from 4.811 BUs in Q1FY14 to 0.813 BUs in Q1FY15
- ✓ Through in-depth engineering, renovation and management capabilities has turned around sick plants across India
- Experience of operating and managing power plants with varied fuel sources and technologies

Sustaining its Status of Competitive Cost Power Producer



Average Coal Based Power Cost (Rs./kWh)						
	2010-11	2011-12	2012-13	2013-14	Q1FY14-15	
Fixed Charges	0.85	0.89	0.98	1.14	1.04	
Variable Charges	1.61	1.89	1.73	1.99	2.01	
Average Coal tariff	2.46	2.78	2.71	3.13	3.05	

Coal Based Plants Close to Pit Head Stations Ensure Competitive Variable Cost of Generation

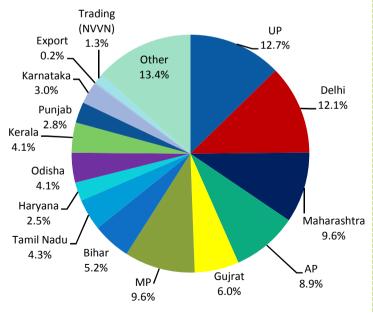
^{1.} Based on NTPC stand-alone data.

PRUDENT OFF-TAKE POLICY

Secured Off-take

- PPAs have been signed for all operating and under construction projects
- ✓ Policy of securing PPAs for all new plants before approval is given for investment
- Entire power output of NTPC power stations has been contracted under PPAs
- NTPC does not presently sell any power in the merchant market- revenues are immune to volatile merchant power prices

Geographically Diversified Customers¹



1. Based on billing for FY14.

Regulated Pricing Mechanism

- ✓ Tariffs based on Regulations notified by CERC. Regulatory mechanism assures Returns balancing Risk -reward Ratio.
- ✓ Regulations for the period 2014–2019 notified. No uncertainty on Return on Equity.

... and Coupled with High Collection Efficiency

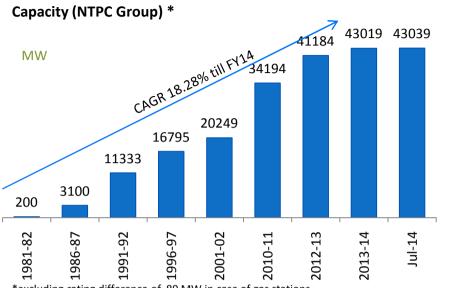


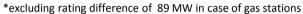
- ✓ 100% collection efficiency 11th year in succession in FY14- collected ~Rs.71000 crore during 2013-14
- Payment Security Mechanisms
 - LC coverage from SEBs adequate to cover monthly billing
 - Tripartite Agreements between Government, RBI and each state in terms of the Scheme for One Time Settlement of SEB dues valid till October 31, 2016
 - Recourse to Reserve Bank of India (RBI) in case of default in making payment
 - Supplementary agreements signed with all discoms for first charge over
 State utilities' receivables after 2016

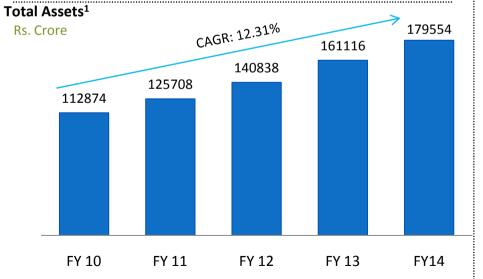
CERC Tariff Regulations 2014-19

	Description	Tariff Regulations 2014-19	Tariff Regulations 2009-14
1	NAPAF (Normative Annual PAF)	Recovery of Fixed Charges allowed at NAPAF of 83% for all thermal plants till 01.04.2017. The provision shall be reviewed thereafter.	NAPAF for Thermal Plants at 85% except of TTPS and BTPS for which NAPAF was fixed at 82%.
2	Incentive	Incentive on Scheduled Generation at the rate of Rs. 0.50 per unit for excess energy delivered beyond the normative annual PLF of 85%.	Incentive linked to Availability (DC). Fixed charges increase/decrease in proportion to actual Availability compared to NAPAF
3	Income Tax Recoverable from Customers	Recovery of Income Tax on Return on Equity grossed up at actual effective tax rate. Effective tax rate considered on the basis of actual tax paid	Recovery of Income Tax on Return on Equity grossed up at applicable tax rate for the company.
4	Special Allowance	Special Allowance in lieu of R&M increased to 7.5 Lakh/MW/year for 2014-15, thereafter escalated at 6.35%.	Special Allowance in lieu of R&M @ Rs. 5 lakh/MW/year in 2009-10 and thereafter escalated @ 5.72% p.a
5	Water charges and capital spares	Water charges and capital spares excluded from the O&M expenses and allowed separately.	Water Charges and Capital Spares not allowed separately.
6	Sharing of Financial Gains due to Controllable parameters with the Beneficiaries	Sharing between generating company and beneficiaries in the ratio of 60:40 on monthly basis with annual reconciliation. (Controllable Parameters: Heat Rate, Sec Fuel Oil Cons, Auxiliary Power Consumption (APC)).	The savings only on account of secondary fuel oil consumption to be shared with beneficiaries in the ratio of 50:50.
7	Energy charges	To be calculated on the GCV on "as received basis".	To be calculated on the GCV on "as fired basis".

ROBUST FINANCIALS- PROVEN ALL ROUND TRACK RECORD

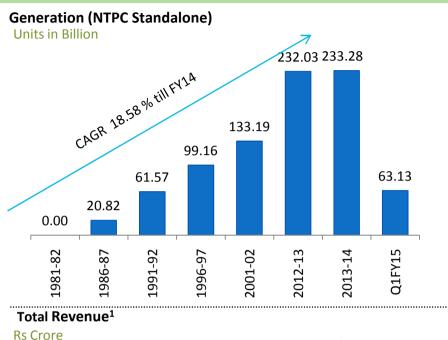


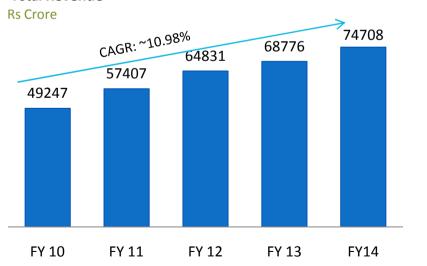




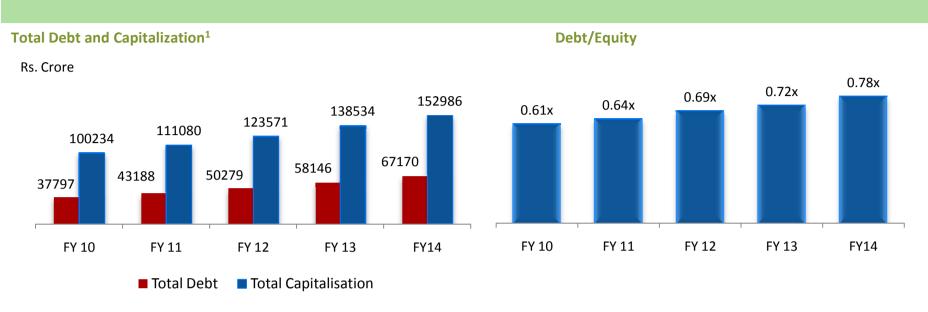
Note:.

1. Based on stand-alone NTPC numbers.

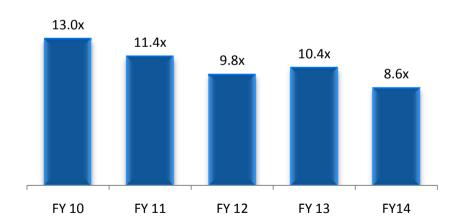




ROBUST FINANCIALS CONTD...



Interest Service Coverage Ratio¹



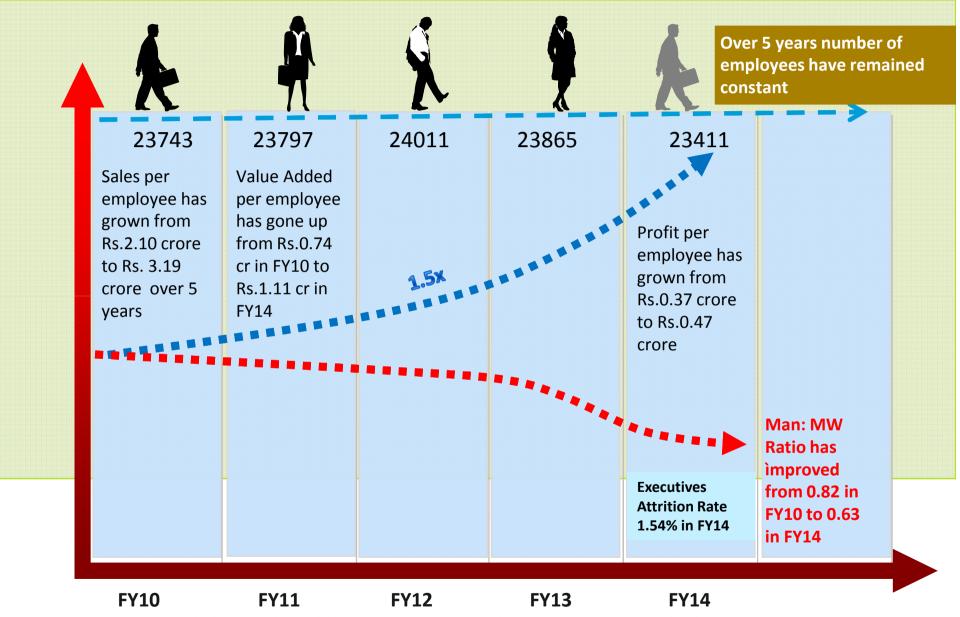
Current Ratio¹



Strong Credit Metrics Ensure Debt at Optimal Cost

1. Based on stand-alone NTPC numbers.

HUMAN RESOURCE METRICS



Awarded 1st in the Public Sector Category and 1st in Energy Gas and Oil Sector at the India's Best Companies to Work for 2014 by Great Place to Work Institute

PRESENCE ACROSS THE POWER VALUE CHAIN

Integrated Business Model - Within the Business and Across the Value Chain

Coal Mining & Exploration

- ✓ 10 coal mining blocks awarded directly to NTPC by GoI with GR of over 5 BT
- ✓ Aim to meet ~ 6% of its coal requirement from its captive mines by 2017
- Awarded 1 oil exploration block by Gol with a 100% interest and 3 oil exploration blocks to separate consortiums in which NTPC holds a 10% interest

Equipment Manufacturing

- NTPC has formed JVs with BHEL and Bharat Forge Ltd.
- ✓ JVs for manufacturing power equipment, castings, for gings, high voltage equipment and Balance of Plant (BoP) equipment for Indian and international markets
- Also acquired a stake in Transformers and Electricals Kerala Ltd. (TELK) for manufacturing and repair of transformers

Power Generation

- ✓ Total installed power generation capacity of 43,128MW
- ✓ 22,414MW of capacity under construction
- ✓ 1st Hydro project to be commissioned by the current fiscal year end
- Also developing other renewable energy projects, such as wind and solar, as well as nuclear power projects
- ✓ Global footprint in Sri Lanka and Bangladesh through JVs

Power Distribution/ Consultancy Services

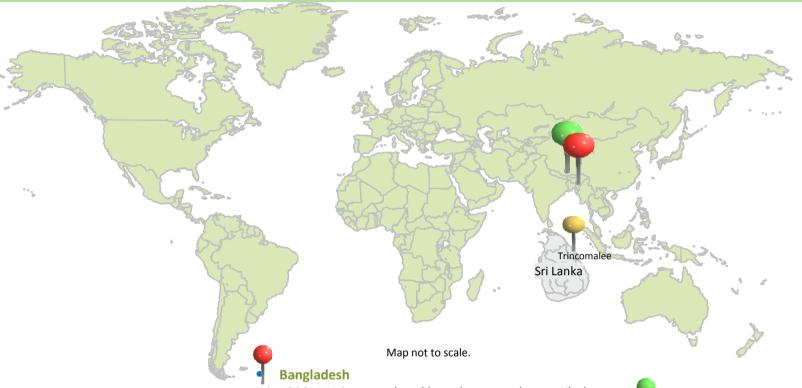
- NTPC has forayed into the power distribution business through its subsidiary NESCL
- NESCL actively engaged in rural electrification
- NTPC also offers consultancy services to State Electricity Boards, State generating companies and other private companies both in India and abroad

Power Trading

- NTPC's wholly owned subsidiary 'NTPC Vidyut Vyapar Nigam Ltd.' (NVVN) is prominent power trading company in India. It traded over 9.322 BU of electricity in FY14 as against 8.382 BU in FY13, an increase of 11% over previous year
- NVVN has also been appointed as nodal agency for trading power with Bangladesh and Bhutan



GLOBAL FOOTPRINT





- 2x250MW coal based power project in Trincomalee through a JV Co. "Trincomalee Power Co. Ltd." with Ceylon Electricity Board (CEB)
- Sampur site in Trincomalee region is identified for the project. All agreements have been signed and project is on fast track mode.

- ✓ 1320MW imported coal based power plant at Khulna
- M Being Developed through a 50:50 JV Co. with BPDB on BOO basis. A JV Co. 'Bangladesh-India Friendship Power Company (Pvt.) Limited' incorporated. PPA signed for the same. Work started on site. Land filling has been completed. Target schedule of commissioning in 2018
- Consultancy Agreement with EGCB for providing O&M services for 2x120MW Gas based power plant. This is the largest single international order received by NTPC
- NVVN appointed for supplying 250 MW Power to Bangladesh, power supply from NVVN commenced w.e.f. 05.10.2013. From Oct13- March14, 861MUs supplied to Bangladesh



Bhutan

- Agreement with Royal
 Govt. of Bhutan for
 preparing
 DPR for 620MW Amochhu
 Reservoir based HEP
- NVVN appointed as the nodal agency for trading power from Bhutan

RISKS AND MITIGATION



KEY RISKS AND MITIGATION

Risk	Mitigation
Coal and Gas Supply Constraints	 Long term Fuel Supply Agreements signed with CIL for supply of coal for a period of 20 years for stations set up prior to March 2009 – ACQ supply tied up ~124.9MT, FSA of 39.67 MT signed for post 2009 stations for 9.6 GW capacity 6 captive coal blocks with reserves of ~3.7BT, target production of ~13MT by FY17, 4 new blocks allotted Long Term APM/PMT Gas Supply Agreement with GAIL for supply of 14.48 MMSCMD gas upto 2021/2019 Long term Agreement with GAIL for supply of 2.5 MMSCMD of RLNG till 2019 Fallback agreements with GAIL BPCL,IOC and GSPL for supply of gas on Reasonable Endeavour basis Govt. allocated 4.46MMSCMD from KG-D6 for NCR projects
SEB Financial Distress	 Tripartite agreement in place with RBI SEB's required to issue LCs covering 105% of the average monthly billing Realized 100% payment of bills from customers for 10 years in succession FRP Implementation and tariff revision by majority SEB's during 2012–2013 & 2013-14
Land Acquisition Uncertainty	 Progressive R&R Policy, focus on consultation and participation, negotiated settlement Institutional mechanisms like Village Development Advisory Committees and Public Information Centers Project head in place at site well in advance to expedite land acquisition Appointed Chief Forest Officer for expeditious forest clearance Land acquisition cell created at corporate centre to support the activities at site
Accelerated Capacity Addition	 Multi-pronged strategy developed and enhanced delegation of power for quick decision making Total 22,414 MW already under construction.
Consistent RoE	 Capex intensive model delivering consistent earnings and dividends Upsides from PLF incentives Supplementary agreements signed for first charge over state utilities' receivables after 2016
Competition from Private Players	 Relatively robust business model with regulated returns Gol ownership Strong management expertise and high standards of corporate governance
Funding Requirements for New Projects	 Strong balance sheet and healthy leverage ratios Easy access to domestic and overseas debt market; mobilized debt on most optimal rates from both domestic and international markets due to low gearing and healthy coverage ratios 12th Plan outlay Rs.1,52,341 crore to be funded by debt equivalent of Rs.1,01,406 crore. Debt of Rs. 23,888 crore already deployed during FY13 & FY14, Debt of Rs.11,670 Crore already tied up and yet to be drawn as on 31.03.14
Environmental Laws and Regulations	 ✓ Excellent track record ✓ Environmental clearances for all under construction projects received ✓ Strong focus on sustainability and fuel diversification- 95 MW solar plants commercialized, 15MW under construction

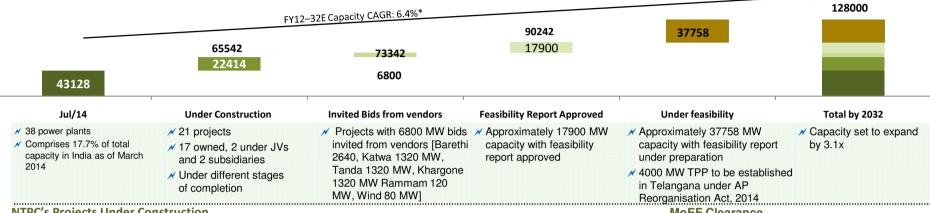
GROWTH AND CAPEX PLANS



GROWTH VISIBILITY

NTPC takes the decision to proceed with a new project only once it is satisfied on the availability of land, water, fuel, off-take arrangements and environmental clearances.

Vision to maintain leadership position in India...Current development pipeline of ~ 47GW (In MW)



NTPC's Projects Under Cons	truction					MoEF Clea	rance	
		Capacity	Expected			Environmental	Forest	
Projects	Fuel	(MW)	Commissioning	Technology	Land	Clearance	Clearance	NTPC/JV
Koldam	Hydro	800	FY15, FY16	_	Yes	Yes	Yes	NTPC
Barh I	Coal	1,980	FY16, FY17	Super-Critical	Yes	Yes	Yes	NTPC
Tapovan Vishnugad	Hydro	520	FY17+	_	Yes	Yes	Yes	NTPC
Bongaigaon	Coal	750	FY15,FY16,FY17	Sub-Critical	Yes	Yes	Yes	NTPC
Barh II	Coal	660	FY15	Super-Critical	Yes	Yes	Yes	NTPC
Singrauli Hydro	Hydro	8	FY15	_	Yes	Yes	Yes	NTPC
Solapur	Coal	1,320	~FY17	Super-Critical	Yes	Yes	Yes	NTPC
Mouda II	Coal	1,320	~FY16, FY17	Super-Critical	Yes	Yes	Yes	NTPC
Vindhyachal V	Coal	500	FY16	Sub-Critical	Yes	Yes	Yes	NTPC
Kudgi	Coal	2,400	FY17, FY17+	Super-Critical	Yes	Yes	Yes	NTPC
Unchahar	Coal	500	FY17	_	Yes	Yes	Yes	NTPC
Singrauli Solar	Solar PV	15	FY15	_	Yes	Yes	Yes	NTPC
Lara	Coal	1,600	FY17+	Super-Critical	Yes	Yes	Yes	NTPC
Gadarwara	Coal	1,600	FY17+	Super-Critical	Yes	Yes	Yes	NTPC
Daralipali	Coal	1,600	FY17+	Super-Critical	Yes	Yes	Yes	NTPC
North Karanpura	Coal	1,980	FY17+	Super-Critical	Yes	Yes	Yes	NTPC
Lata Tapovan	Hydro	171	FY17+	_	Yes	Yes	Yes	NTPC
Nabinagar (BRBCL)	Coal	1,000	FY16,FY17	Sub-Critical	Yes	Yes	Yes	Sub
Nabinagar (JV with BSEB)	Coal	1,980	FY17+	Super-Critical	Yes	Yes	Yes	JV
Kanti	Coal	390	FY15, FY16	Sub-Critical	Yes	Yes	Yes	Sub
Meja	Coal	1,320	FY17+	Super-Critical	Yes	Yes	Yes	JV
Total		22,414						

CAPACITY ADDITION SCHEDULED IN 12TH PLAN (FY13 TO FY17)

Commissioned

Year	Project	Target MW
FY13	Sipat	660
	Indira Gandhi STPP JV	500
	Mouda – I, Unit - 1	500
	Vindhyachal – Unit 11	500
	Rihand – III	500
	Vindhyachal – Unit 12	500
	Mouda – I, Unit- 2	500
	Vallur – I JV	500
	Solar PV (A&N, Dadri)	10
	Total FY 13	4,170
FY14	Rihand – III	500
	Barh-II	660
	Solar PVs	65
	Vallur – I JV	500
	Kanti- Subsidiary (195 MW spilled over to FY15)	110*
	Total FY 14	1,835
	Total (FY12-14)	6,005

Target –FY15-17

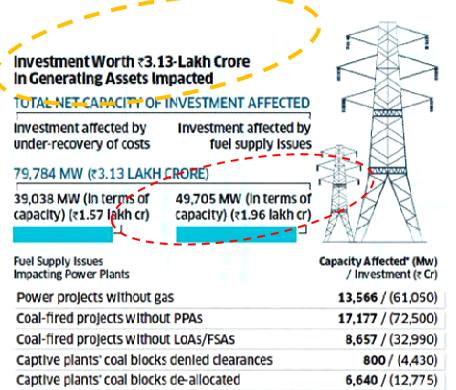
Year	Project	Target MW
FY15	FY15 Rajgarh (Solar PV)	
	Bongaigaon (Unit#1)	
	Barh-II (Unit#5)	660
	Koldam- Hydro (U#1 &2)	400
	Singrauli Hydro	8
	Nabinagar (BRBCL) (Unit#1)	250
	Kanti – Subsidiary (Unit #3)	195
	Singrauli (Solar PV	15
	Total FY 15	1798
FY16	Barh- I (Unit#1)	660
	Vindhyachal (Unit #3)	500
	Koldam (Unit #3&4)	400
	Bongaigaon (Unit #2)	250
	Nabinagar (BRBCL) (Unit#2)	250
	Kanti – Subsidiary (Unit #4)	195
	Total FY 16	2255
FY 17	Barh I (Unit#2&3)	1320
	Bongaigaon (Unit #3)	250
	Nabinagar (BRBCL) (Unit#3)	250
	Kudgi (Unit#1 &2)	1600
	Unchahar (Unit#6)	500
	Total FY17	4170
	Total capacity to be commissioned in FY15-17	8223
	Capacity Commissioned in FY13 &14	6005
	Total Capacity Target FY13-17	14228

Commissioned

INORGANIC GROWTH - ENHANCING THE PACE OF CAPACITY ADDITION

2,865 / (12,690)

49,705/19,6435



*Already commissioned and due to be completed by March 2017

Source: Economic Times July 14, 2014

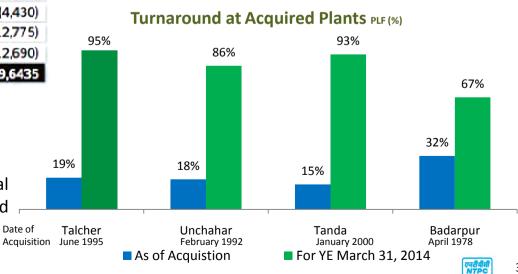
Captive plants' blocks delayed

TOTAL

Company contemplating acquisitions

Expression of Interest invited for Coal Based Thermal Power Projects in India and abroad for stranded projects. Date of

- Many of the other players in the power sector are plagued with problems of fuel and under recovery of costs.
- NTPC's entire capacity is on cost plus basis hence there is least risk of under-recovery of costs.
- Fuel Supply is secured by FSAs and off Take Secured by PPAs.
- NTPC takes the decision to proceed with a new project only once it is satisfied on the availability of land ,water , fuel, offtake arrangements and environmental clearances.



SUSTAINABILITY INITIATIVES



SUSTAINABILITY INITIATIVES

Renewable and Nuclear Energy—Reducing Carbon Footprints

Own Basket

In Partnership

JNNSM

- Basket of 1,000MW of renewable energy sources under development
- 300MW being targeted for completion by 2017
- Of this 110 MW solar capacity by 2017
- 95 MW at 7 Solar stations commissioned
- ✓ 15 MW of Solar PV under construction

- ✓ Pan-Asian Renewable Private Limited, JVC to initially develop renewable energy projects of about 500MW
- "Anushakti" formed with 51% stake of NPCIL¹ and 49% stake of NTPC for developing nuclear power projects
- NVVN² a nodal agency for JNNSM³ implementing 1,050 MW of solar capacity
- ✓ Contracts awarded for 1,028 MW
- 568 MW has already been commissioned -518MW of solar PV and 50MW Solar thermal
- Traded 4390 MU of bundled solar power in FY14

Environmental Initiatives—More Than 37 Million Tons of CO₂ has been Avoided in NTPC

Technology Choices

Monitoring Systems

Air Quality

Monitoring

System

(AAQMS)

installed in

NTPC stations

Energy Conservation Sustainability Report

- Advanced and high efficiency technologies
- NTPC's 1st Super-critical unit of 660MW is declared on commercial operation at Sipat-I Power Project
- Project

 1980 MW
 super critical
 capacity ('SCC')
 already under
 commercial
 operation, 660
 MW at barh
 commissioned
- 17,760MW SCC under construction
- Reducing reliance on fossil fuels

- CO, Online measurement energy systems being management installed at all system at NTPC stations 15 stations in the to reduce chimney auxiliary stacks power consumption 67 Ambient
 - Energy Audits
- A Sustainability Report for the year 2012-13 based on GRI indicators have been prepared and is available on Company's website

Sustainability Report 2011-12



2.3 Million Tons CO₂ Avoided in 2013-14
Created green wealth of ~21 million trees at and around stations

- 1. Nuclear Power Corporation of India.
- 2. NTPC Vidyut Vyapar Nigam.
- 3. Jawaharlal Nehru National Solar Mission.

TECHNOLOGY PROGRESSION—INCREASED EFFICIENCY AND GREATER ENVIRONMENTAL PROTECTION

Leader in introducing new technologies in the power sector.

Technologies Introduced

- ∧ Adoption of super critical parameters for higher efficiency
- ✓ Higher size units of 660 and 800MW
- ∧ Adoption of high reheat parameters for smaller units
- ★ 765KV AC switchyard
- ✓ State of art automation technologies for C&I and Electrical systems
- ✓ Tunnel Boring machines
- ✓ Flue gas desulphurisation

Technologies Under Development

- ✓ Development of IGCC suitable for Indian coal
- ✓ Development of Adv Ultra supercritical power plant along with IGCAR and BHEL for inlet steam temperature in the range of 700°C
- ✓ Use of advanced technologies in the renovation and modernization of aging power stations

Every 1% increase in efficiency yields 2.5% CO2 reduction



R&D-NETRA

Committed to invest up to 1% of distributable profit for R&D Activities and Climate Change Technologies.

Efficiency Improvement and Cost Reduction	Climate change	Renewable energy
 Waste Flue Gas based Air conditioning Waste Flue Gas based Desalination Artificial Intelligence based Plant Advisory CFD based flue gas duct modification Back Pressure Micro Turbine Organic Rankine Cycle 	 ✓ Micro Algae based CO₂ fixation ✓ Pressure Swing Adsorption based CO₂ capture technology ✓ Modified Amine based CO₂ capture ✓ Ammonia based Flue Gas Conditioning 	 15MW Solar Thermal Hybrid Plant Floating Solar PV System Innovative Solar Thermal Cooking System Solar Thermal Air Conditioning System Solar PV with battery charger Municipal Solid Waste to fuel system

- ✓ Infrastructure: 18 number of Labs in place, 2 more in offing
- ✓ Manpower: 118 Executives including 16 PhD's and 29 M.Tech's
- ✓ Networking: R&D Collaboration with 12 national and 2 international institutions
- ✓ IPR: 22 Patent Applications Filed, one patent granted, several more in pipeline
- ✓ Membership: NETRA is a member of (1) IEA GHG R&D Program, France; (2) CSLF France (3) IERE Japan (4) GCCSI Australia

NETRA: NTPC Energy Technology Research Alliance.

Extensive Engagement with Society

NTPC has committed to contribute 2% of Net Profit towards CSR from FY 2014-15 onwards.

Spent Rs. 128.35 crore on CSR & sustainable development activities during the year 2013-14

Social Inclusiveness

- Land acquisition through a participatory process
- ✓ Progressive R&R and CSR policies
- Compensation and R&R entitlement finalized through consultative process with stakeholders
- ✓ Efforts for negotiated settlements
- Focus on capacity building
- Intensive community and peripheral development activities

Stakeholder Engagement

- ✓ Information sharing through Public Information Centers ('PIC')
- Multi Stakeholder Engagement mechanisms like Village Development Advisory Committees
- Socio Economic Surveys / Audits / Evaluation through independent agency/ academic institute of repute
- ✓ Grievance redressal mechanisms
- ✓ Effective institutional set up

Skill Creation

- ✓ Adopted 17 ITIs and creating 7 new ITIs.
- ✓ Solapur Power Training Institute in Maharashtra.
- ✓ Information and Communication Technology Centre for physically and visually challenged students at Delhi University, Guwahati University and Devi Ahilya Vishwa Vidhyalaya at Indore by NTPC Foundation.
- Skill up gradation & vocational training for rural youth & women for employability

Education

- ✓ IIIT at Raipur, Engg colleges in Chhattisgarh, Jharkhand and Madhva Pradesh.
- Setting up/Supporting Medical College cum Hospitals in Odisha and Chhattisgarh.
- Two polytechnics in Uttarakhand and one Jharkhand.
- ✓ Education through 20 schools for community children.

Health & Sanitation

- ✓ Operation of Mobile Health Clinics and Free Medical Camps & surgeries during Camps
- Construction of Girl's toilets in schools, Individual & Community Toilets in villages.
- DOTS Cum DMC Centers for Tuberculosis treatment and Disability Rehabilitation Centres by NTPC Foundation.

Drinking Water

✓ Installation of hand pumps, bore wells, RO plant & piped water supply schemes for providing potable water.

Initiatives like Social Infrastructure creation, Women Empowerment, Animal Healthcare, Culture and Heritage, Promotion of sports etc.













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