

# **NTPC**

## **Welcomes you**

### **to**

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**6<sup>th</sup> Analysts and Investors' Meet**

**August 2, 2010**  
**Mumbai**

# Presentation outline

**NTPC Overview**

**Performance Highlights**

**Opportunities**

**Challenges**

**Sustainability initiatives**

# **VISION 2032**

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

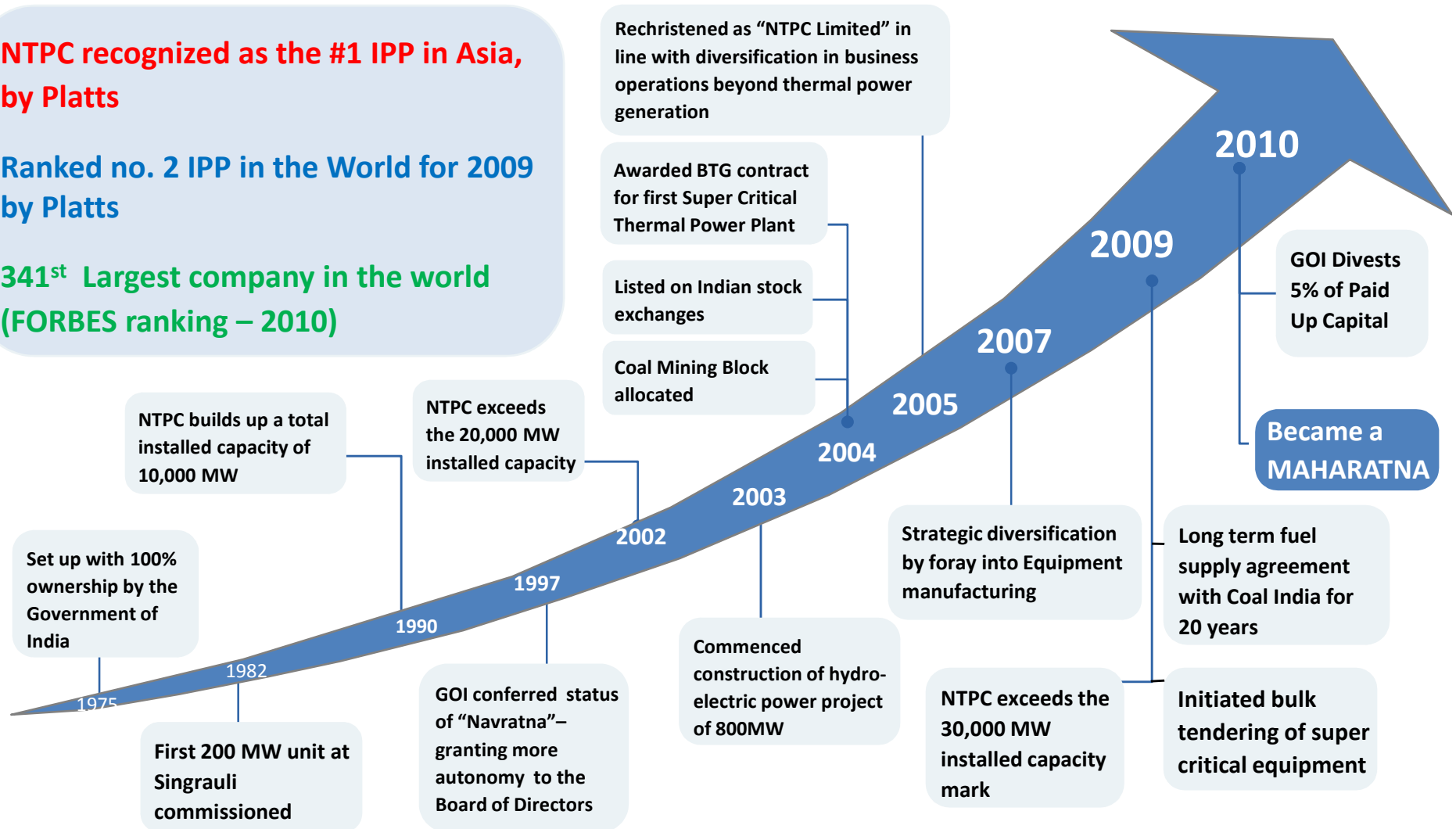
# Growth so far



**NTPC recognized as the #1 IPP in Asia, by Platts**

**Ranked no. 2 IPP in the World for 2009 by Platts**

**341<sup>st</sup> Largest company in the world (FORBES ranking – 2010)**



**MAHARATNA STATUS : Another 'JOULE' in the Crown**

# Maharatna Status ....

*More power to empower*



## Fuelling Growth

Under JV/SPV Route



Current cap of Rs 1000 crore equity investment in JV/SPV restricts project size to around 1000-1200 MW



Increase in Cap to Rs 5000 crore per project shall enable setting up of large size projects

## Enhancing Fuel Security

Under JV/SPV route



Owning a coal mine / stake in coal mine would help ensuring availability of coal on long term basis



Enhanced delegation of power facilitates decision making since the size of investment can be upto Rs 5000 crore per acquisition

**Empowered to create and to wind up all below board level posts**

# Stature of NTPC

Benchmarking NTPC with a short-list of ~25 global peers



- #1 in capacity utilization
- # 2 in market capitalization among power generators in Asia
- #3 in average plant size
- #3 in plant availability
- #10 in electricity output, # 3 in Asia

NTPC's capacity utilization is highest amongst the comparison set

Among the 25 peers, NTPC has the 7<sup>th</sup> largest market cap; largest in Asia

NTPC has 3<sup>rd</sup> highest average plant size

NTPC has the 3<sup>rd</sup> highest plant availability in our consideration set

NTPC has the 10<sup>th</sup> largest electricity output in our consideration set; 3<sup>rd</sup> in Asia

Rank	Company	Output 8 KWh	Total capacity, GW
1	Electricité de France	610	124.80
2	Korea Electric Power	421	72.49
3	E.ON AG	333	74.37
4	RWE AG	324	45.00
5	Tokyo Electric Power	289	76.85
6	GDF Suez	276	68.44
7	Enel SpA	253	95.00
8	Comision Federal De Electricidad	231	49.97
9	Edison Holdings	224	43.04
10	<b>NTPC</b>	<b>207</b>	<b>30.64</b>
11	Taiwan Power	202	38.08
12	Southern Company	200	42.00
13	American Electric	194	40.20
14	Huaineng Power	185	37.11
15	Duke Energy	179	39.10
16	Vattenfall AB	163	34.57
17	Tennessee Valley	158	33.93
18	Entergy Corp	148	28.43
19	Kansai Electric	145	39.55
20	Iberdrola SA	141	43.30
21	Chubu Electric Power	130	32.47
22	Datang International	127	25.10
23	FPL Group	105	39.02
24	Husidian Power	97	22.99
25	The AES Corporation	77	38.38

Note: All output figures are for 2008 (FY09 for NTPC and Japanese players), Taiwan Power is 2007. Source: Company annual reports and filings. Company websites. Analyst presentation. All information is confidential and is provided to you as a company code for the use of our software. It should not be relied upon, and should not be used for any other purpose.

# 35 Years since Inception and 'Energizing India'

*Powering Million Smiles*



3<sup>rd</sup> Largest in Asia

Pan India Presence

10<sup>th</sup> Largest Generator in the World

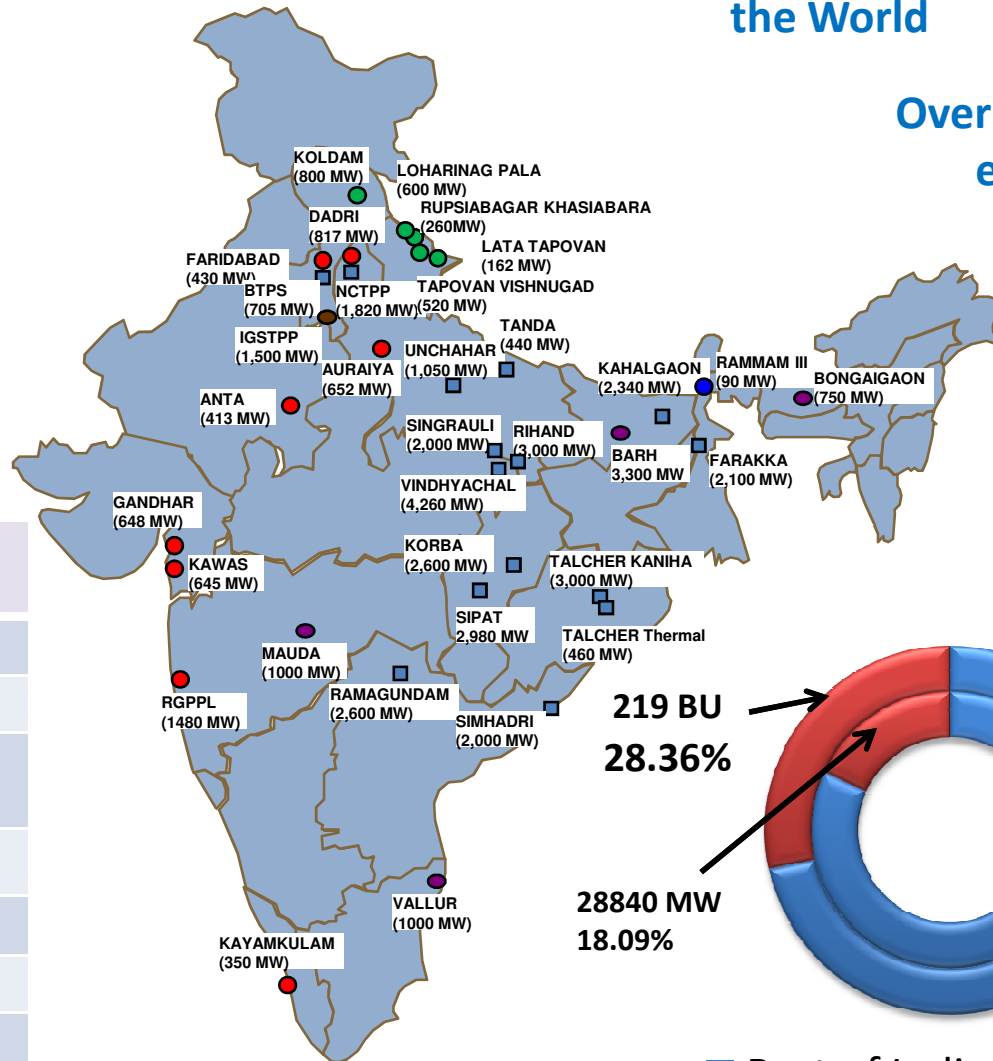
Lighting 1 out of every 4 bulbs

Over 8000 villages electrified

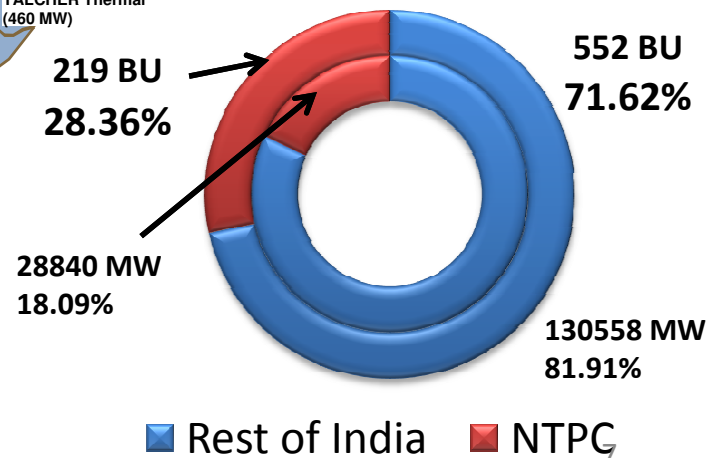
NVVN 2<sup>nd</sup> Largest Power Trader in India

114 Units operational

~25000 employees



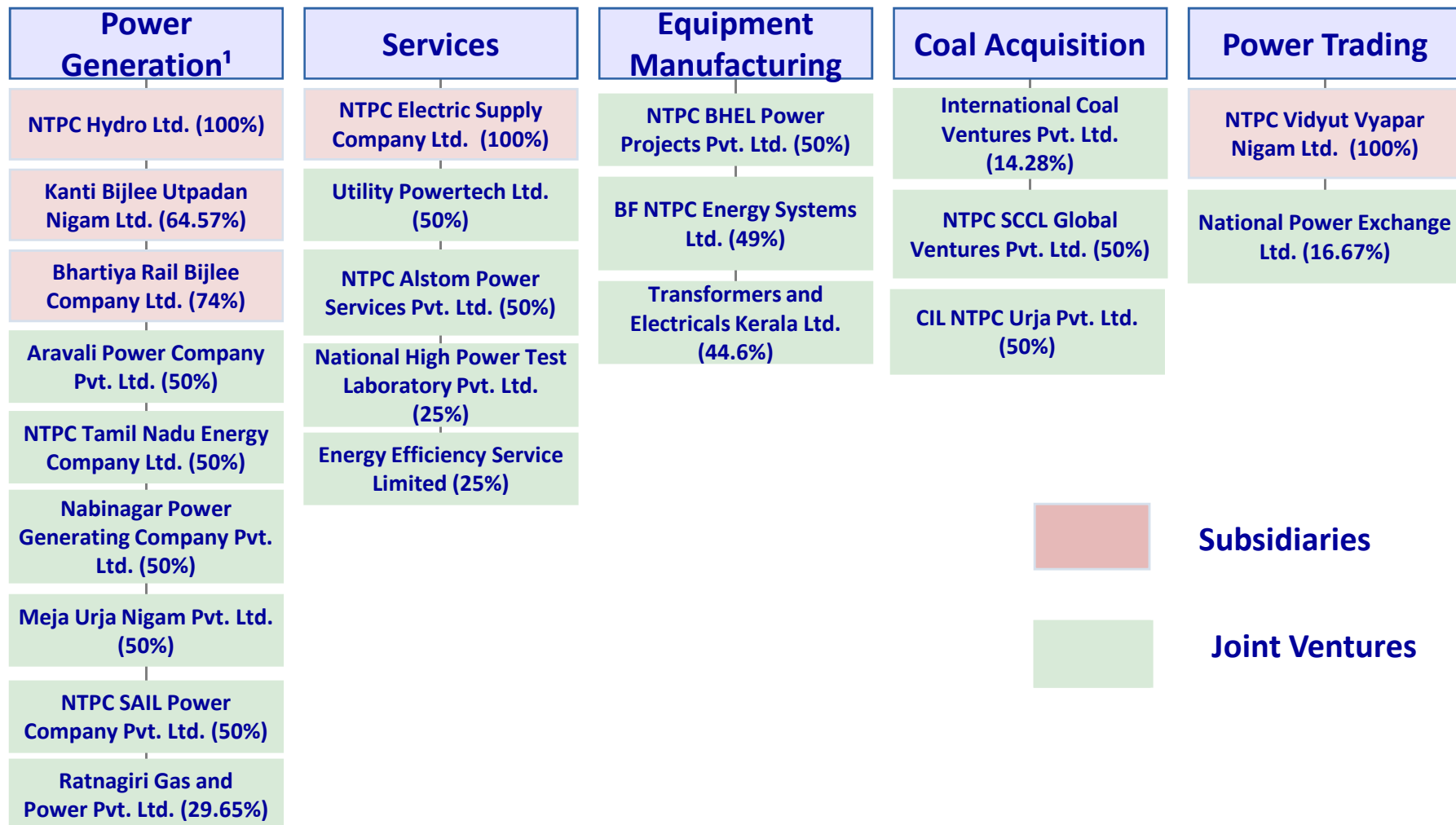
As on 31.03.2010	No. of Plants	Capacity MW
<b>NTPC Owned</b>		
Coal	15	24885
Gas/Liquid Fuel	7	3955
<b>Total</b>	<b>22</b>	<b>28840</b>
<b>Owned by JVs</b>		
Coal & Gas	5	2864
<b>Total</b>	<b>27</b>	<b>31704*</b>



\* 490 MW coal based unit commissioned at NCTPP in July 2010

# Group NTPC

## 5 Subsidiaries and 17 Joint Ventures



**Synergy fuelling growth**

Figures in brackets indicate holding of NTPC;

<sup>1</sup> Pipavav Power Development Co Ltd (100%) Under winding up



# Presentation outline

**NTPC Overview**

**Performance Highlights**

**Opportunities**

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**Sustainability initiatives**

# Performance Highlights - Operational

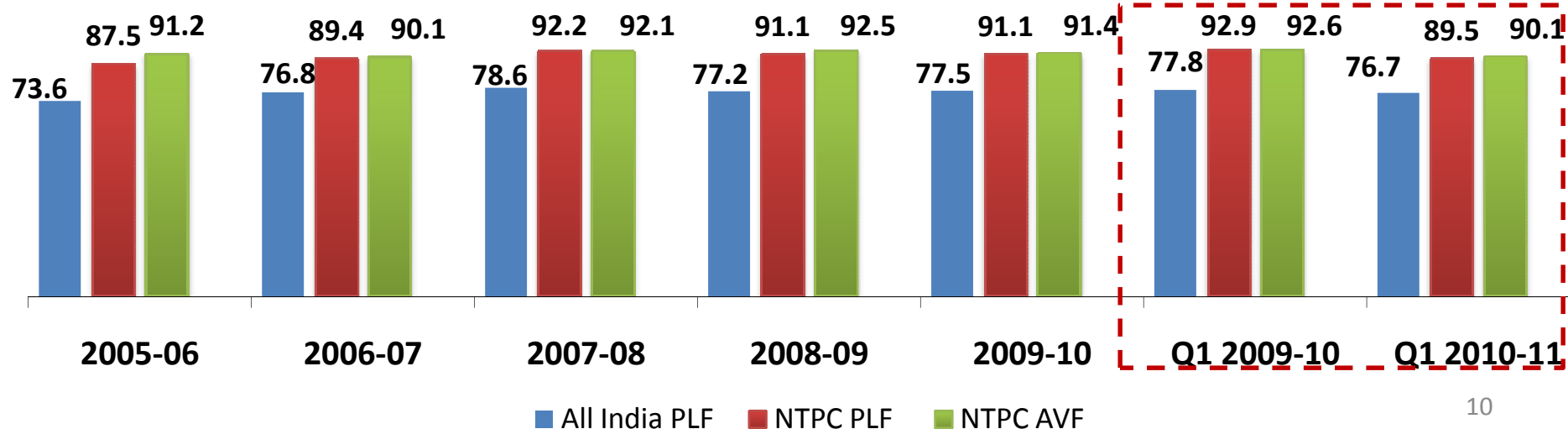
*Consistently Delivering*

## 2009-10

- Exceeded MoU “Excellent target” of **217** BUs
- More than **90 %** PLF for coal Stations for **3** consecutive years
- **7** Coal Stations among the Top 10 in terms of PLF
- **16** coal units achieved PLF > **100%**
- **6** National Awards for Meritorious Performance 2008-09 won by **NTPC** stations

## Q1 2010-11

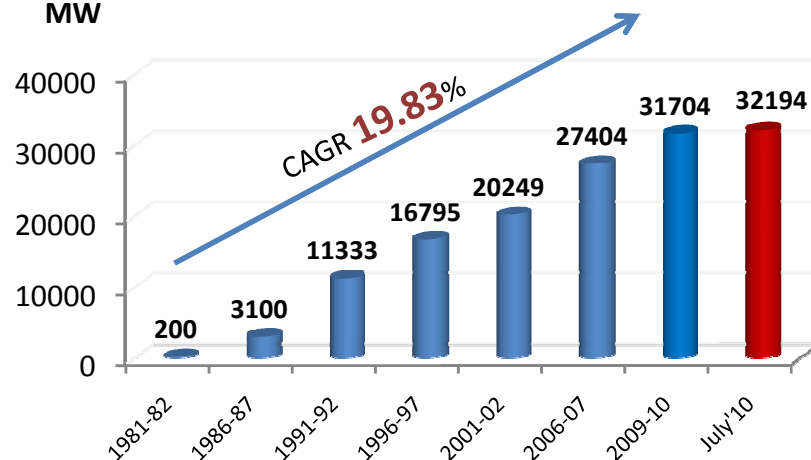
- Highest ever PLF of gas stations at **80.48%** in Q1 /2011



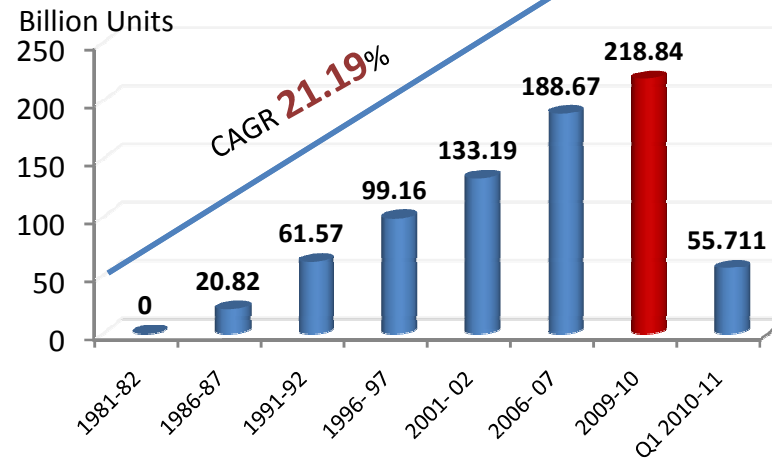
# Performance Highlights...growth story

## Astounding CAGR

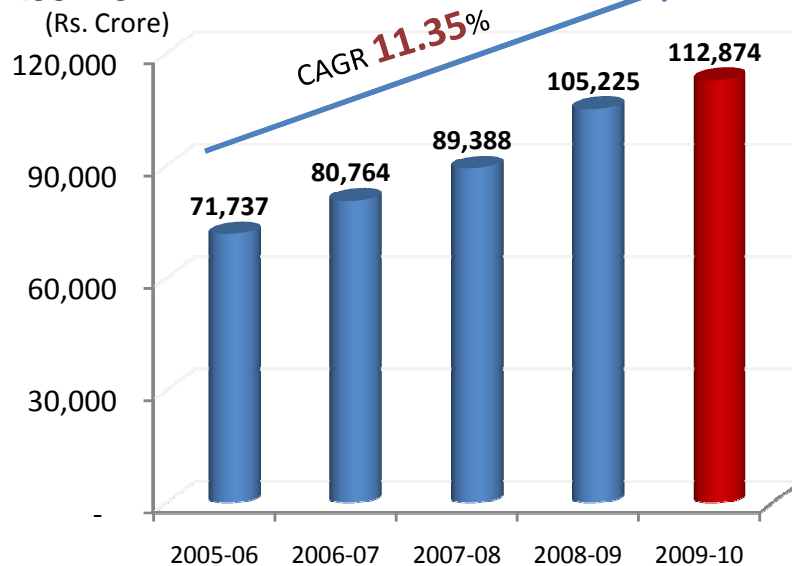
### CAPACITY MW



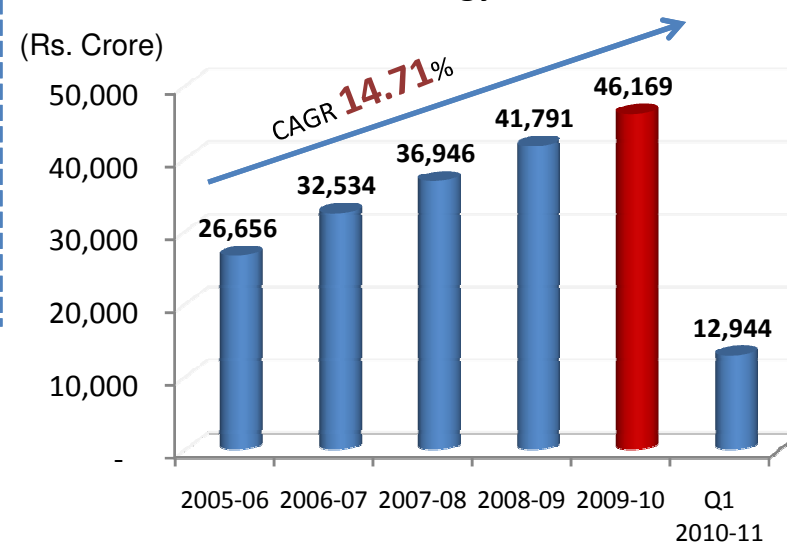
### GENERATION Billion Units



### ASSETS (Rs. Crore)



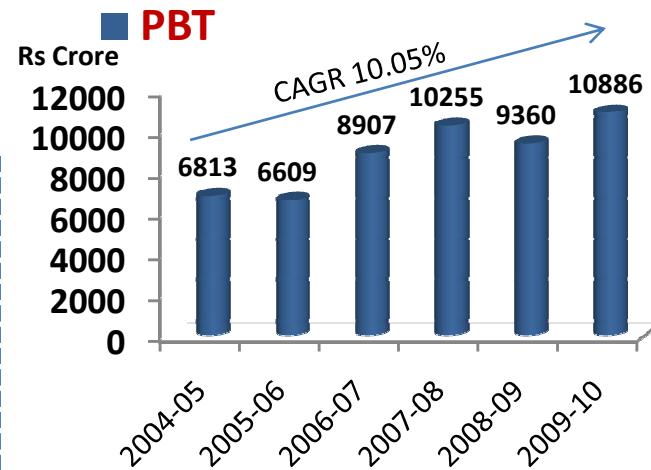
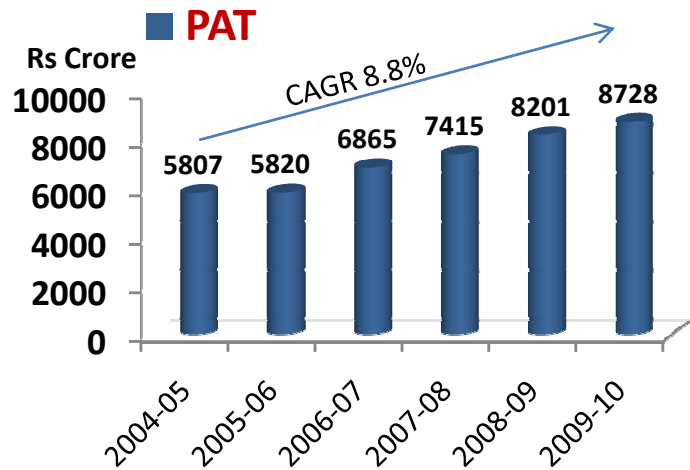
### REVENUE - Sale of Energy (Rs. Crore)



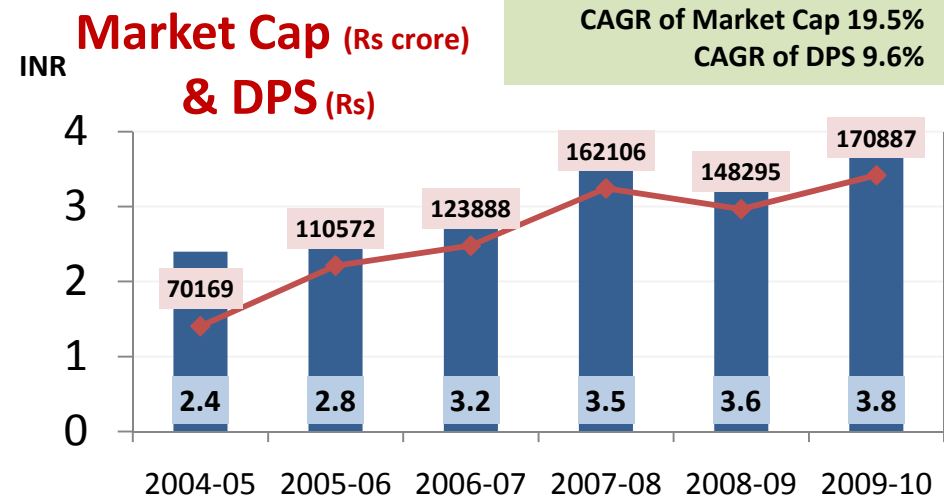
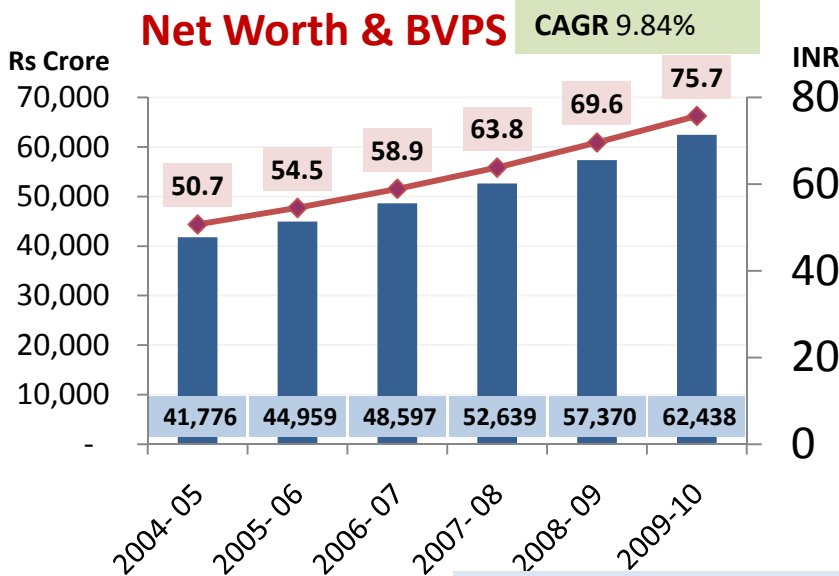
# Performance Highlights....since listing



**Consistent Improvement in PAT, PBT, Net Worth & DPS**



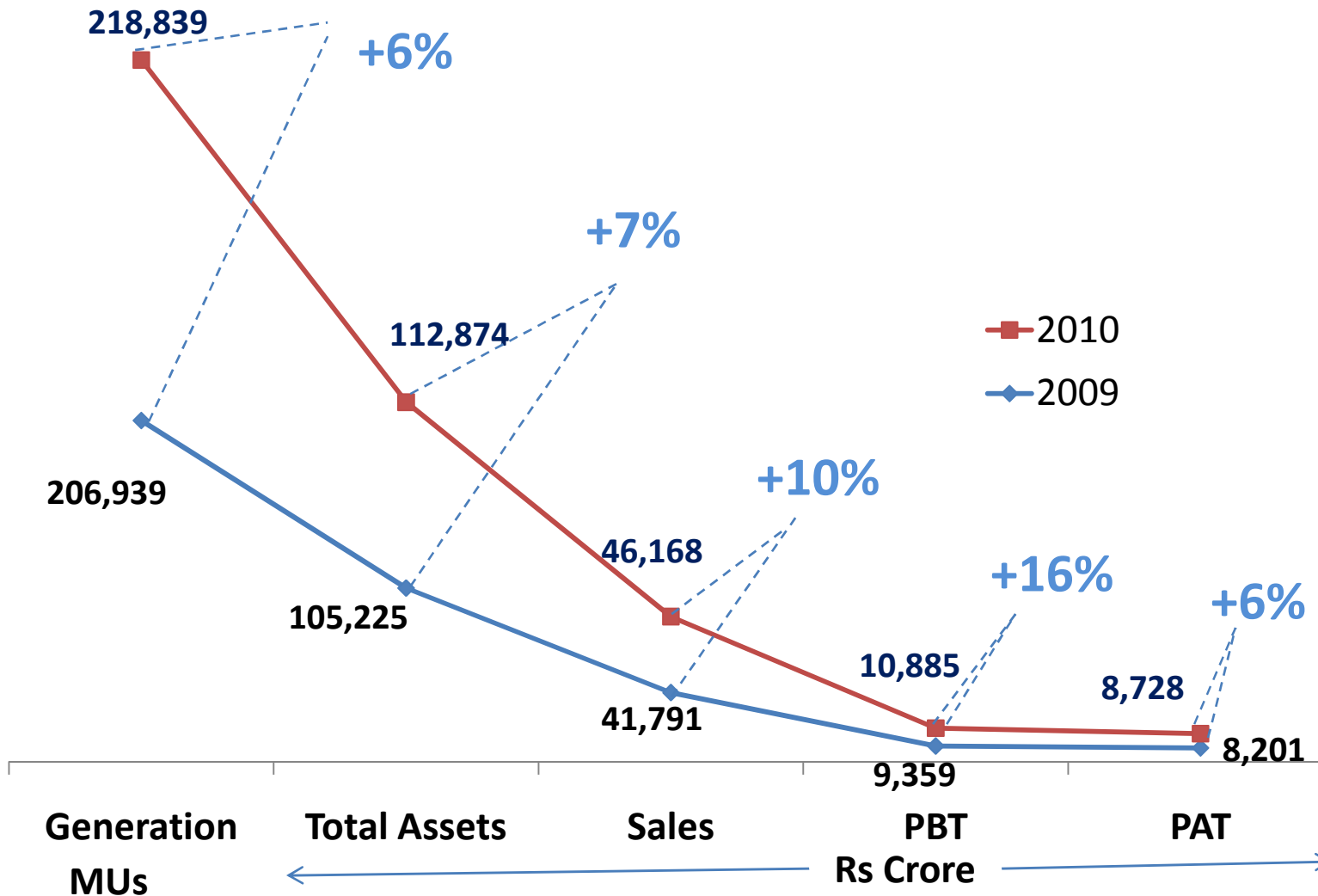
**Increase in Share Price since IPO-over 5 years**



**Added 1490 MW commercial capacity during 2009-10**

# Y-O-Y Performance – NTPC Ltd

*Units transformed to Earnings*



Over the decade

**49247**

(Rs Crore)

Income

**2.9**

times since 1999-00

**54192**

(Rs Crore)

Reserves

**3.6**

times since 1999-00

**112874**

(Rs Crore)

Total Assets

**2.8**

times since 1999-00

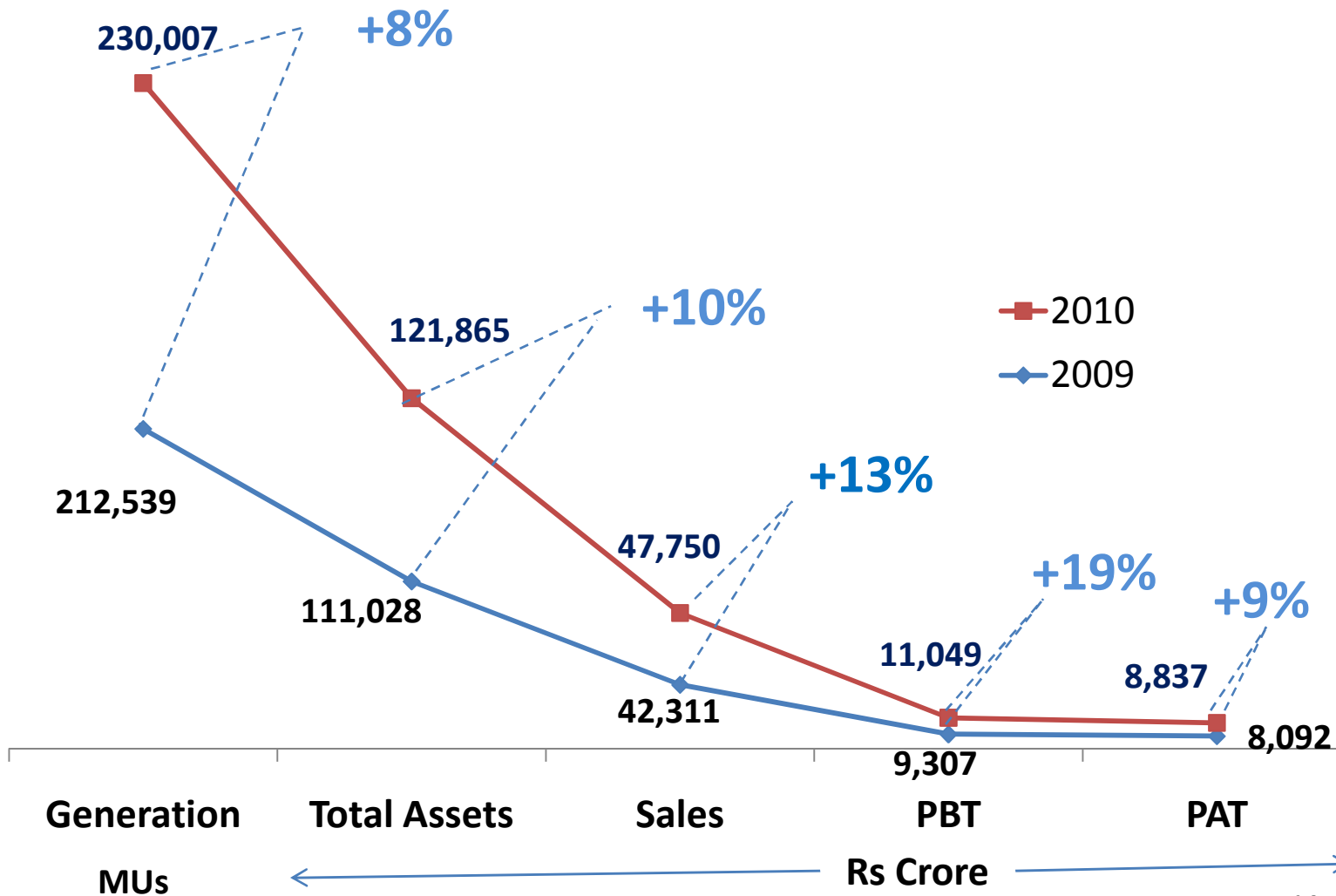
Added

**877223**

Trusted Shareholders

# Y-O-Y Performance – NTPC Group

*Units transformed to Earnings*



Over the decade  
**NVVN**  
 2<sup>nd</sup>  
 Largest Power  
 Trader in  
 India

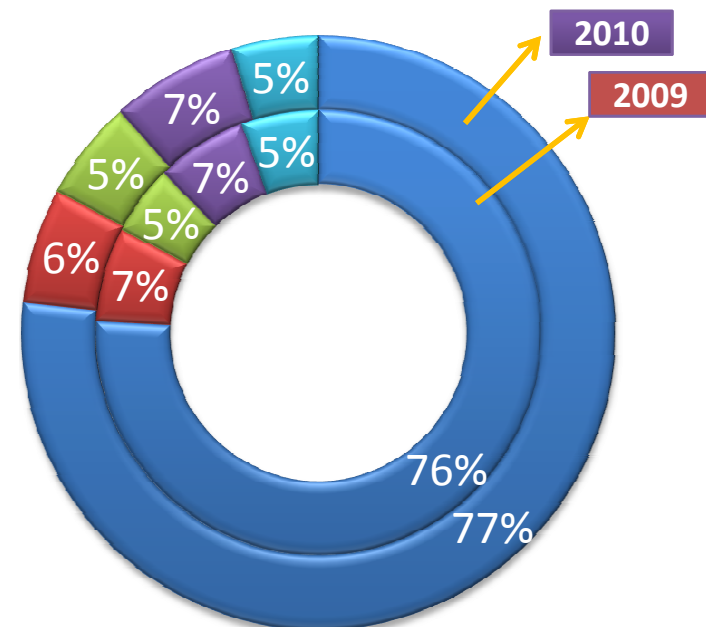
**NESCL**  
 Commenced  
 Distribution  
 with  
**KINFRA**  
**JVs**  
 Breaking  
 Ground -  
 Generated  
**11.167**  
 (BUs)  
 in 2009-10

# Y-o-Y Performance

## Profitability

	2009-10 (audited)	2008-09 (audited)	Rs crore GOLY*
Total Income	49,247	45,246	9%
Net Sales	46,323	41,924	10%
Other income	2,924	3,322	-12%
Total Expenditure	38,361	35,887	7%
Fuel	29,463	27,111	9%
Employee Remu.	2,412	2,463	-2%
Generation exp. etc	2,027	1,952	4%
Depreciation	2,650	2,365	12%
Int. & fin. charges	1,809	1,996	-9%
PBT	10,885	9,360	16%
Tax	2,157	1,158	86%
<b>PAT</b>	<b>8,728</b>	<b>8,201</b>	<b>6%</b>
<b>Adjusted PAT</b>	<b>9,249</b>	<b>8,072</b>	<b>15%</b>

## Expenses Analysis

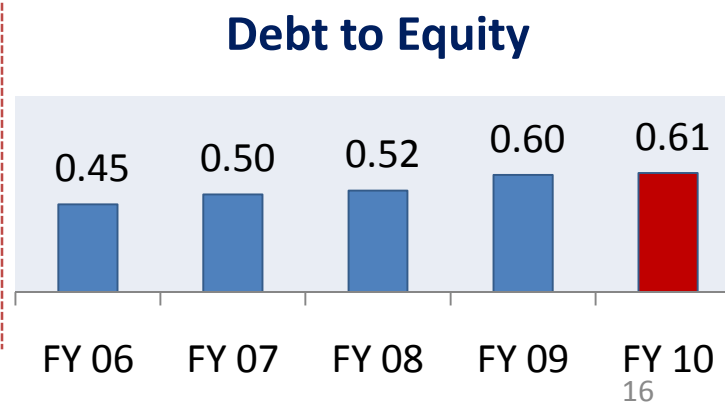
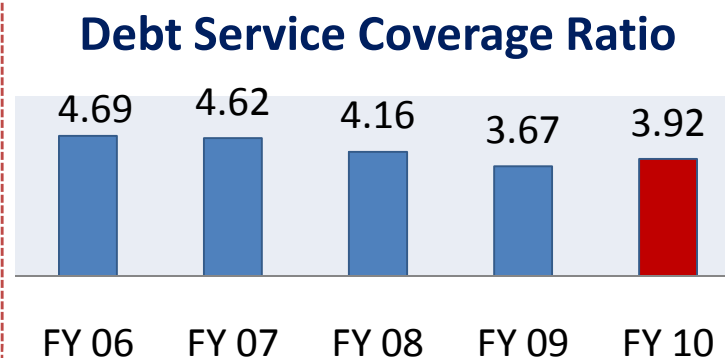
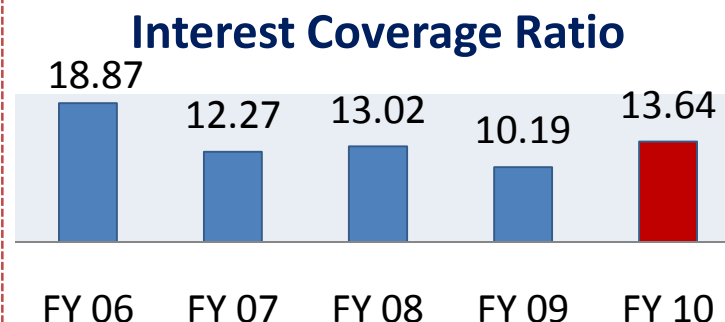


- Fuel
- Employees' Cost
- Generation, administration & other expenses
- Depreciation
- Interest and finance charges

\*Growth Over Last Year

# Robust Financials Y-o-Y

	2009-10 (Audited)	2008-09 (Audited)	Rs. Crore GOLY
Gross fixed assets	66,850	62,353	7%
<b>Net block</b>	<b>34,761</b>	<b>32,937</b>	6%
CWIP incl. stores	32,104	26,405	22%
Investments	14,807	13,983	6%
Current assets, loans and advances	30,816	30,925	0%
Deferred FE Assets/EXP	385	973	
<b>TOTAL</b>	<b>1,12,873</b>	<b>1,05,223</b>	<b>7%</b>
Equity sh. Capital	8,245	8,245	-
Reserves & Surplus	54,192	49,124	10%
<b>Net worth</b>	<b>62,437</b>	<b>57,369</b>	<b>9%</b>
Long Term Liabilities	37,797	34,568	9%
Current Liab. & Prov .	10,758	10,688	1%
Others (Deferred -AAD/ FERV liability)	1,881	2,598	-28%
<b>TOTAL</b>	<b>1,12,873</b>	<b>1,05,223</b>	<b>7%</b>

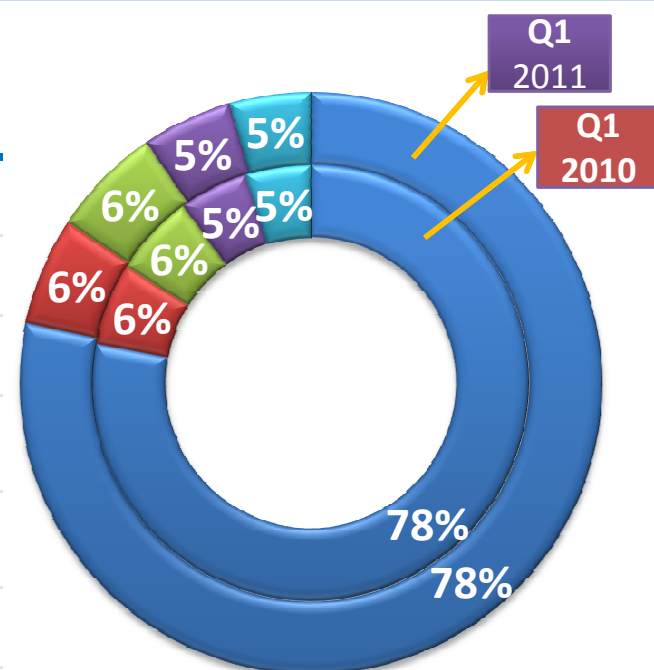




# Q-o-Q Performance

## Profitability Q1 /2010-11

	Q1* 2010-11	Q1* 2009-10	Rs Crore GOLQ
<b>Total income</b>	<b>13,529</b>	<b>12,779</b>	<b>6%</b>
Net Sales	12,944	12,003	8%
Other income	585	776	-25%
<b>Total Expenditure</b>	<b>11,176</b>	<b>9,884</b>	<b>13%</b>
Fuel	8,702	7,743	12%
Employee Remu.	684	590	16%
Generation exp. Etc	571	493	16%
Depreciation	683	613	11%
Int. & fin. charges	536	445	20%
<b>PBT</b>	<b>2,353</b>	<b>2,895</b>	<b>-19%</b>
Tax	511	701	-27%
<b>PAT</b>	<b>1,842</b>	<b>2,194</b>	<b>-16%</b>

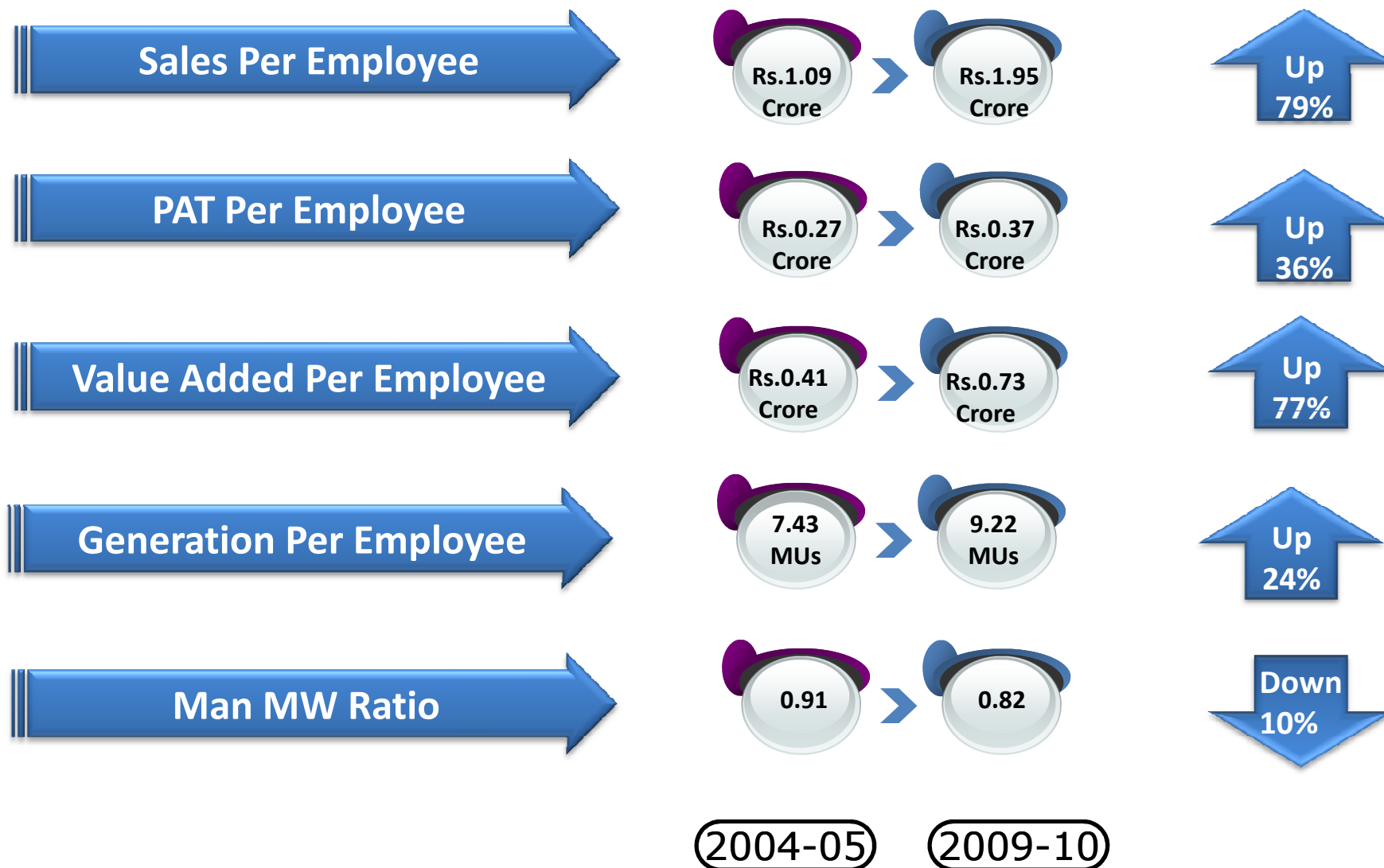


- Fuel Cost
- Employees Cost
- Depreciation
- Other Expenditure
- Interest & Finance Charges

\* Unaudited

# Performance Highlights- Human Capital

*Improving Productivity per employee....*



- Growth doesn't have a linear relationship with number of resources. Improvement in productivity helps improving bottom lines as well as sustaining competition.

# Presentation outline

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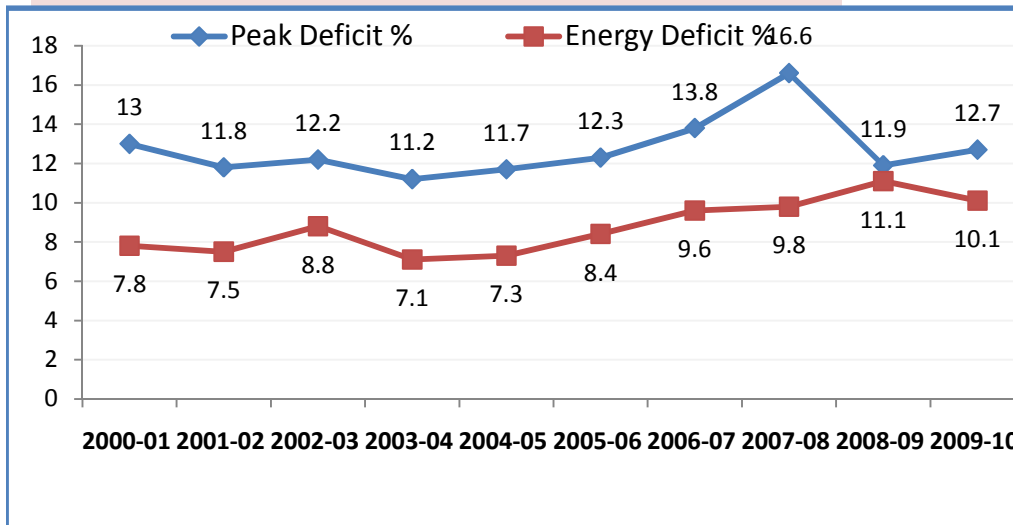
**Sustainability initiatives**

# Opportunity : Unmatched Strategic Relevance



*No demand risk*

## Existing Energy Deficit in India



**Current Installed Capacity of India  
162 GW in July 2010.**

**Double digit shortages in energy  
requirement and peak load demand and**

**Shortfall in 11<sup>th</sup> Plan capacity addition  
expected around 62,374 MW**

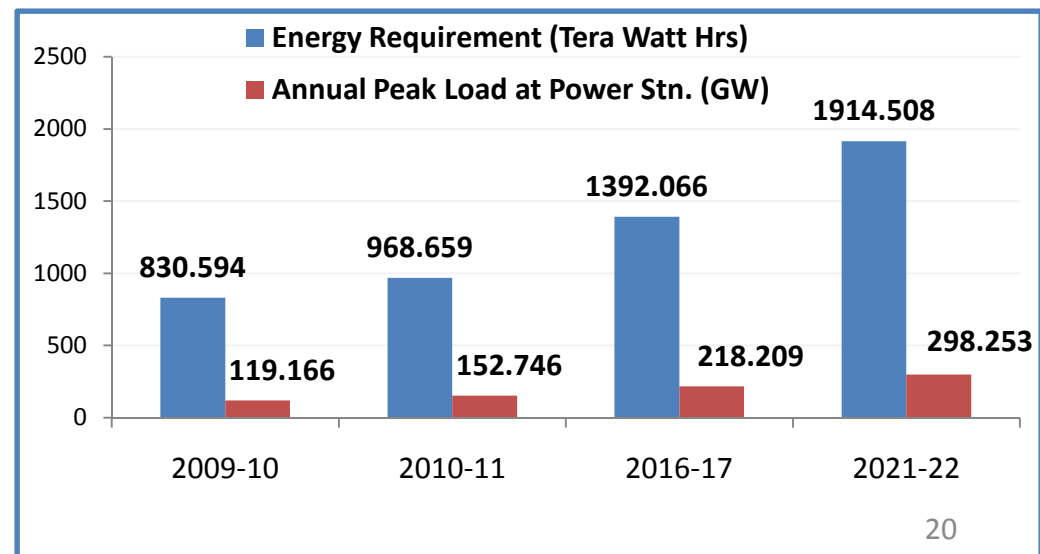
## NTPC: Positioned for growth

**Energy requirement to grow by 2.3  
times and annual peak load 2.5 times  
by 2017**

**12<sup>th</sup> Plan capacity addition expected  
around 1,00,000 MW**

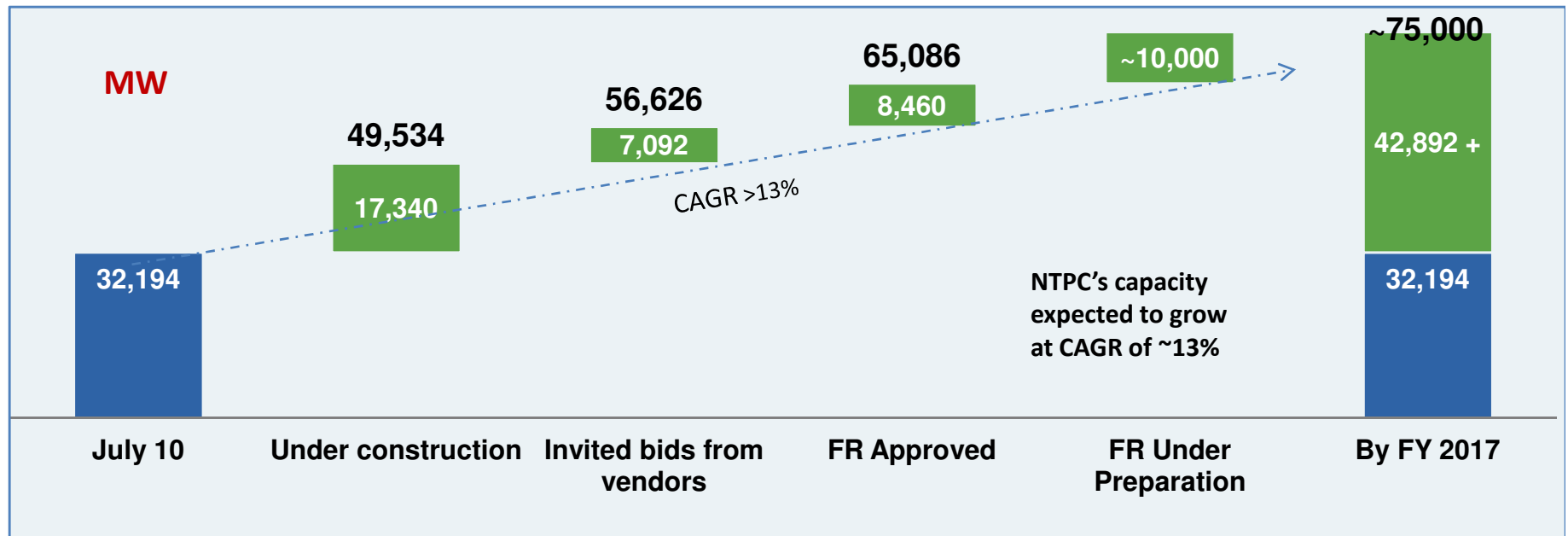
**Supply of power planned to keep pace  
With demand**

**India continues to be lowest per capita  
consumer of electricity at 733 kWh in 2010**



# Opportunity : Poised for sustained growth

*Plans afoot to be a 75000 MW + Company by 2017*



- ❑ Investment approval accorded only after availability of land, water, environment fuel linkage and off-take
- ❑ 17,340 MW under Construction, Invited bids for 7,092 MW (3,501 MW for NTPC and 3,591 MW for JV's and Subsidiaries)
- ❑ Feasibility Reports aggregating to 8,460 MW approved; TEC for 460 MW hydro power project under process
- ❑ Take over of Patratu TPS (770MW) on ownership basis by a proposed JVC of NTPC and JSEB is under consideration
- ❑ MoU signed with Govt. of Chattisgarh to set up 4000 MW regional project at Lara

## 2010-11: Plan to Add 4,150 MW

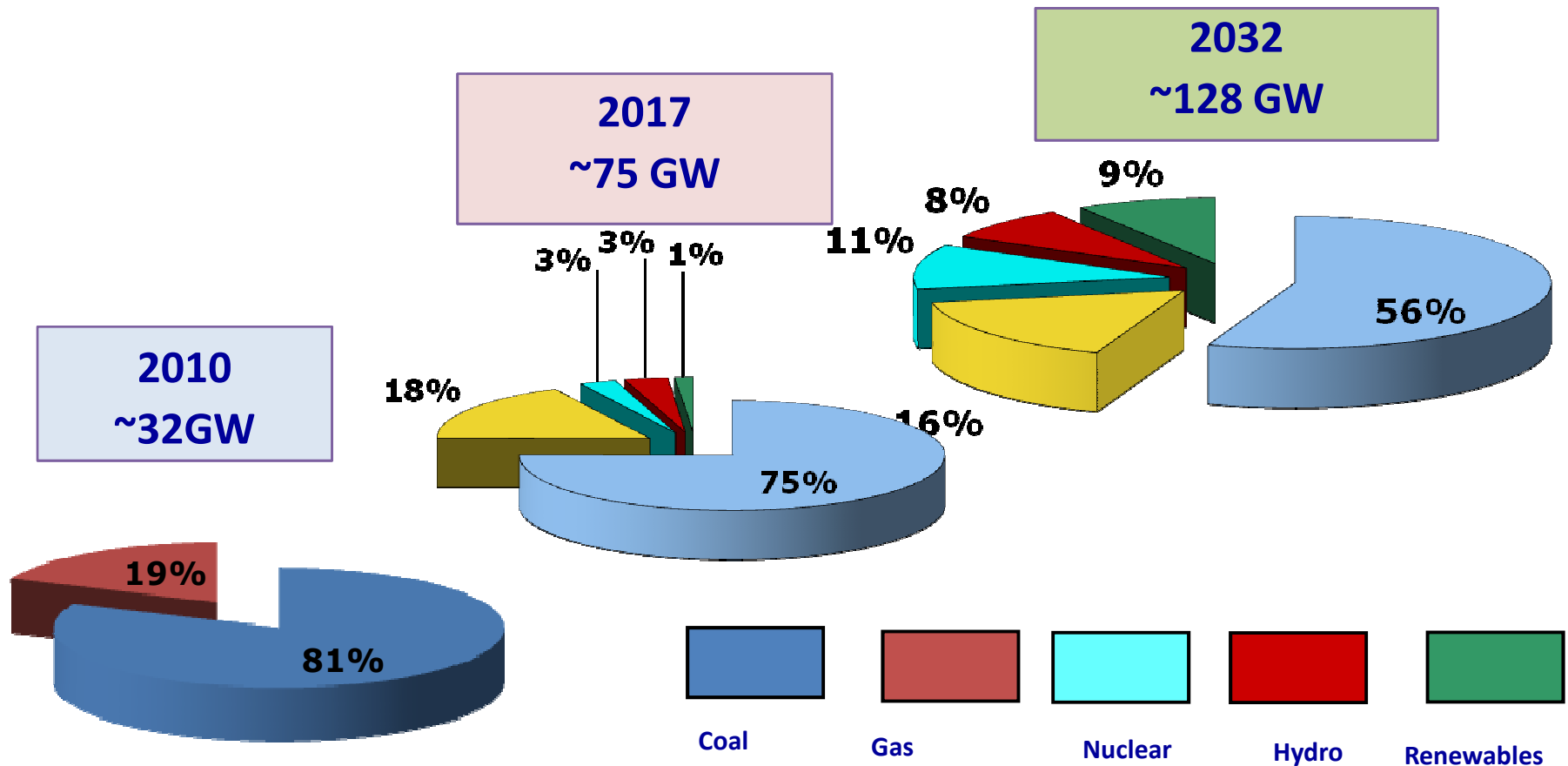
- Sipat St-I, U-1 : 660 MW
- Jhajjar, U-1 & 2 : 1000 MW
- Korba St –III, U-7 : 500 MW
- NCTPP St – II, U-6 : 490 MW\*
- Simhadri, St-II, U-3&4: 1000 MW
- Farakka, St-III, U-6 : 500 MW

\* commissioned in July, 2010

# NTPC: Poised for .....

## Planning for 2032

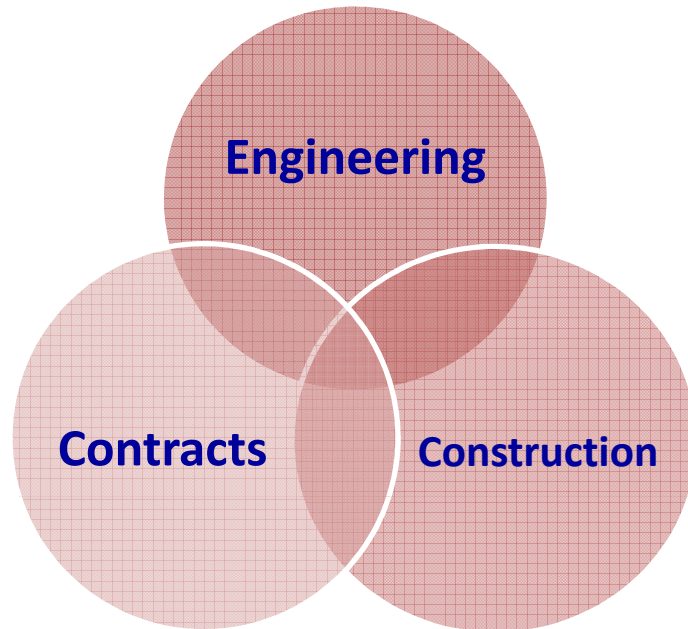
- Long Term Corporate Plan prepared for next 22 years upto 2032 to position NTPC as the world's largest and best power producer and a leader in green power



**By 2032, NTPC targets a capacity of 128 GW with 28% capacity from non-fossil sources**

# NTPC: Poised for ....

## *Recent initiatives*



### PMC

- IT based real time monitoring-thru Project Monitoring Centre, web based milestone monitoring for new & ongoing projects – accessible to MOP and MOSPI
- Live visuals through high resolution remote controlled cameras
- Single point center for quick transfer of critical information to management
- Regular review mechanism in place through video conferencing facility available at PMC

### Three control centers working in synchronism

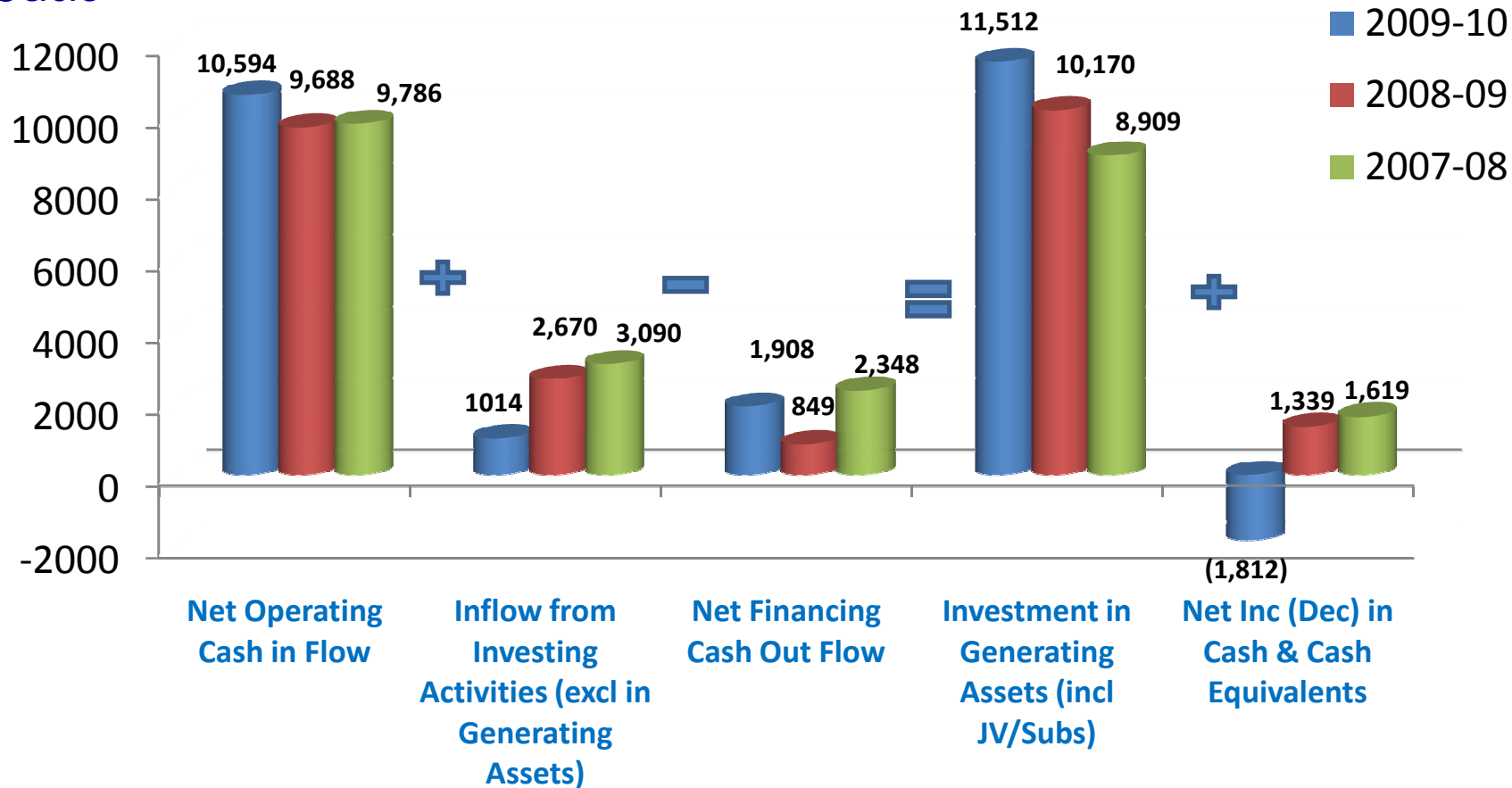
### LNTP

- Creation of Pre-Investment Monitoring cell, integrated with PMC, with clear timelines
- Regular monitoring of new projects proposals till Investment approval
- Land acquisition cell created at Corporate centre to support the activities at Site.
- Strict timelines for ordering BOP packages
- Adoption of new concepts like – Limited Notice to Proceed to enable start of Engineering activities before the award of main Plant award.

# Robust financials leading to strong Cash Flows

*Cash progressively deployed in Generating Assets*

RS Crore



**During 2009-10, a 13.20% increase in investment in Generation Assets**

### Cash & Cash Equivalents :

- +Rs.14,460 crore as on 31.03.10
- +Rs.16,272 crore as on 31.03.09
- +Rs.14,933 crore as on 31.03.08



# Opportunity : Certainty of Returns

*Stemming from supportive Regulatory Framework*



## **Conducive Regulatory Framework**

- ❑ EA, 2003 allows generators to sell to Distribution Licensees, Traders or Direct Consumers
- ❑ Open Access provides Generators and buyers non-discriminatory transmission Access to each other
- ❑ Two Power Exchanges already Operational - Day-ahead, Week-ahead & Month-ahead markets operational
- ❑ Easier and Increased access to markets for generators - significantly easier to divert power thus providing security for generators against payment defaults
- ❑ Well connected National Grid planned by 12<sup>th</sup> Plan
- ❑ Guidelines for Transmission development through Competitive Bidding already in place.
- ❑ Major thrust on Renewables in the coming years - NTPC as an established player in the power sector and can leverage its proven track record & strong balance sheet.

**Going forward, NTPC finds significant business opportunities in trading through its 100% subsidiary NVVN Ltd. Having 2<sup>nd</sup> largest market share**

# Competition

## *Emerging business opportunities*

### Merchant power plants

- Capacity is being created through 2 routes-
  - ✓ Long term PPA route
  - ✓ Competitive bidding route
- Although Govt. decides allocation of power amongst beneficiaries, a beginning has been made for selling power on merchant route by setting up MPPs (merchant Power Projects)
- By 2012, around 1-2% of capacity to be on merchant route – this option to be followed selectively in the near term.
- Long term open access tied up for selling power from MPP
- Price of power sold on merchant route showing declining trend-weighted average price declined from Rs. 7.57 per kWh in 2008 to 5.73 per kWh in 2009.
- Price is expected to decline further since energy deficits are also showing a declining trend
- Sustainability of average merchant tariff dependent on extent of deficit levels and level of regulatory intervention

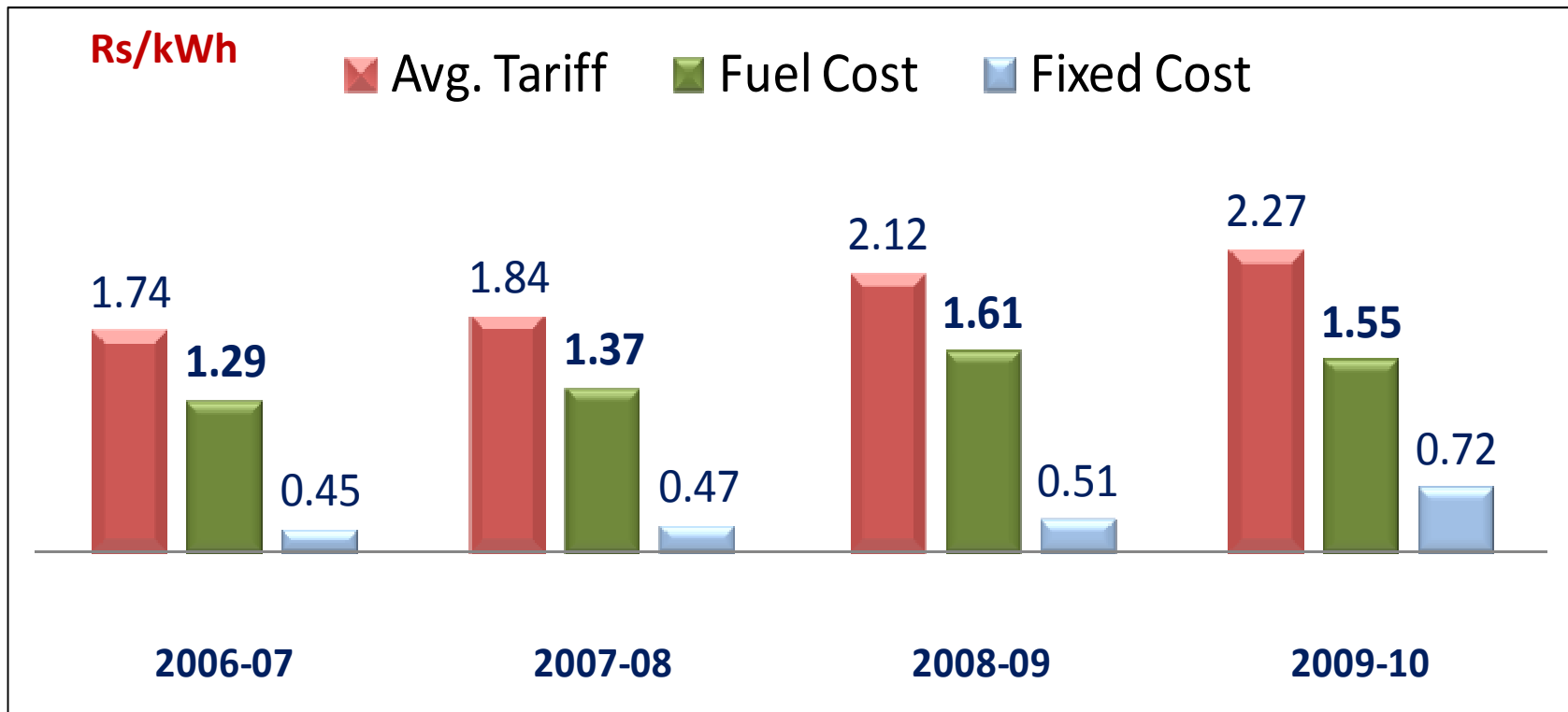
### Projects on Bidding route

- Tariff Policy mandates Future Power Procurement through Tariff Based Competitive Bidding
- Change in approach from Cost-plus to Market-minus
- Capacity addition plans will require:
  - ✓ Orienting NTPC's internal processes to meet the challenges of tariff based bidding
  - ✓ Balancing the requirements of a responsible PSU with that of competing against IPPs

**NTPC still remains as one of the lowest cost producer at Rs.2.27/kWh**

# Competition.....

*Sustaining its status of low cost power producer*



**Coal based plants close to pit head stations ensure competitive variable cost of generation**

# Globalization

## Geographical diversification fuelling growth



### Bangladesh

Bids Submitted for acting as O&M Service Provider under Siddhirganj Peaking Power Plants



### Bhutan

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



### Sri Lanka (Trincomalee)

- Site Identified for setting up of a 2x250MW coal based Power Plant in Trincomalee, through a JV with Ceylon Electricity Board
- Equity Investment in JV Co. under approval by NTPC Board



Mozambique , Indonesia , Australia  
Scouting for coal mines



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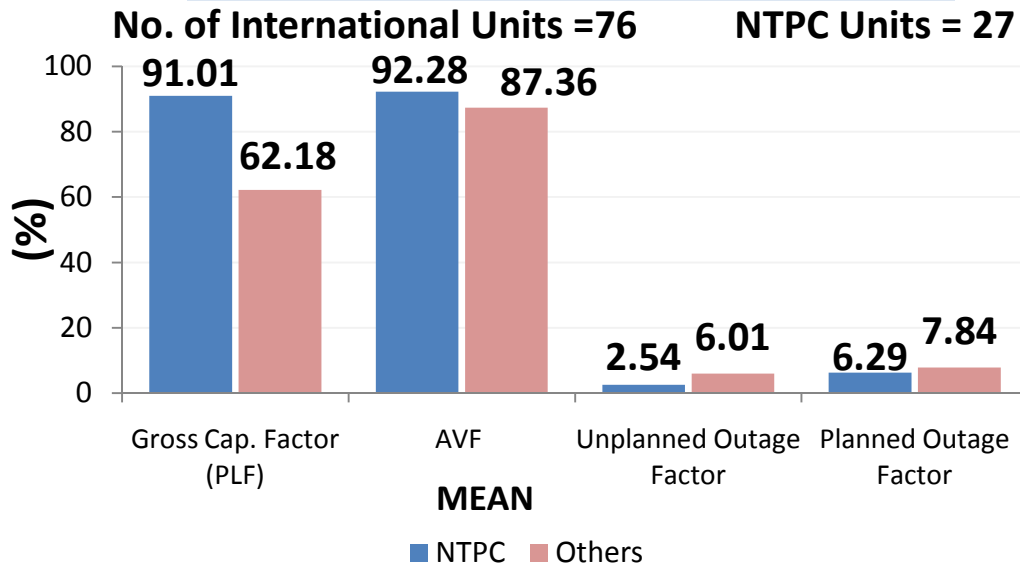
**Sustainability initiatives**

# Sustaining present operational efficiency

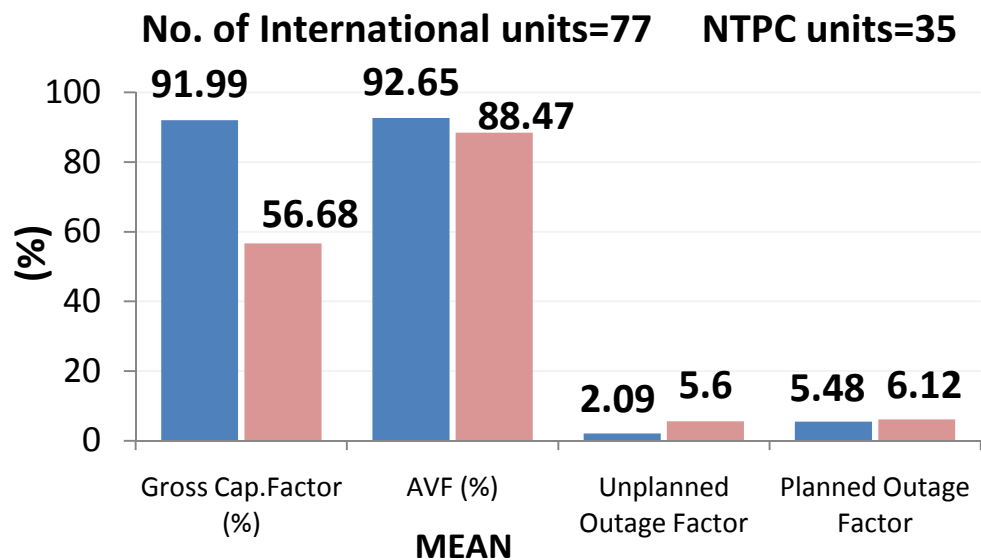


## Benchmarking with global peers

Performance Comparison ( 475 – 525 MW)



Performance Comparison (190-220 MW)



- NTPC became a member of North American Electric Reliability Corporation (NERC). NERC maintains a database of more than 5000 generating units around the world through its Generating Availability Data System (GADS)
- Obtained database of 5000 units from NERC for the period 1982-2008 for benchmarking
- Parameters selected for comparison**
- Gross Capacity Factor (PLF) for last year
- Unplanned Outage Factor (Forced Outage) for last year
- Availability Factor for last year
- Planned Outage Factor for last three years

# Sustaining Operational .....

## *Strategy –well defined operations Strategy*

### Follow up

- Periodic Regional Operations Performance Review (ROPR), Technical Audits emphasis and redefinition , PEER review, efficiency gap removal follow-up, R&M process streamline, overhaul real time guidance, real time commissioning guidance.

### Institution Building

- Project 'BRAIN' (O&M Business Process Automation Project), SMART Catch Project (Advance equipment warning system), Knowledge teams formation, maintenance works package reduction Vendor Development focus, MRO industry initiative, RLA specifications, efficiency improvement projects, focus on replacements.

### Resources Availability

- Spares/services preparedness planning, modular spares purchase, long term overhauling planning, coal/gas imports etc.

### Information Enablement

- Plant outage/generation MIS IT enablement, Outage Preparedness Index, Station Performance Evaluation Matrix, web based MIS, SMS alerts, plant efficiency mappings, best practice inputs etc.

# Sustainability hinges on collection Efficiency

## *Certainty stemming from Regulatory Framework*



- ❑ Off-take secured for current capacity and capacity under construction (except merchant capacity) through long term PPAs
- ❑ PPAs for projects aggregating to 8442 MW signed during 2009-10
- ❑ CERC Regulation 2009 assures returns with pass through of certain costs and incentive for efficiency-no uncertainty of revenues
- ❑ Strong Payment Security Mechanism (PSM) in place :
  - State utilities required to establish LCs in NTPC's favour to cover 105% of the average monthly billing – on March end 2010, L/Cs in place for Rs. 4066 crore.
  - Supplementary agreements signed for first charge over customers' receivables after 2016
- ❑ Govt. allocates the capacity of each of stations among the station's customers
- ❑ Realized 100% payment of bills from customers for the seventh year in succession



### Health of Power Distribution Utilities

- NTPC's billing expected to increase substantially in 5 years - however there is complete regulatory certainty in the form of multi-year Tariffs etc.
- We are partnering with our customers in their Improvement Programs through sharing of best practices
- We monitor health of our customers through customer specific strategies
- AT&C losses declining during last 5 years from 34.78% (2003-04) to 29.4% in 2007-08
- Performance based R-PDRP alongwith support provided by MoP is expected to sustain the declining trended in AT&C losses

# Insulating Fuel Risk - Coal

## Strategy –Enhancing Fuel Security

- 2009-10** → Total Coal Supply received 136.2 MMT (consisting of domestic coal of 129.9 MMT + imported coal of 6.3 MMT) as against 129.7 MMT received during 2008-09.
- Q1/11** → 33.24 MMT of coal received (including imported coal of 3.28 MMT) as against 32.90MMT in Q1/10

	FY 2010-11
<b>Requirement</b>	<b>155.9 MMT</b>
<b>Availability</b>	
From CIL (ACQ)	114.7 MMT
From SCCL Linkage	10.2 MMT
Import(13.9 MMT)	~20.85 MMT
Bilateral (SCCL & ECL)	7.5 MMT
E-auction (Spot)	Balance

### Domestic Fuel Security

- Long term Fuel Supply Agreement signed with CIL for supply of coal for a period of 20 years
- Standing Linkage Committee(LT) accorded approval for long term coal linkage/issuance of LoA for all 11<sup>th</sup> Plan Projects.

### Development of Coal Mines

- Land Acquisition at advanced stage at PB, CB & KD Coal Mining Project (CMP).
- Appointment of MDO for PB CMP under process.
- Environmental Clearance received for PB, CB & KD CMP.
- 15 MTPA to be mined from PB by 2012
- Formed JV company with CIL: “CIL NTPC Urja Pvt. Ltd” for development of Brahmini & Chichro Patrisimal coal mine blocks and also acquisition of coal mines in India and abroad.

### Acquisition of Mines abroad

- ‘International Coal Ventures Ltd’ incorporated for overseas acquisition, operation of coal mines or blocks.
- Scouting opportunities for acquisition of stakes in Coal Mines in Indonesia, Mozambique & Australia.
- Maharatna Status to facilitate acquisition of mines.

# Insulating Fuel Risk - Gas

## Strategy – Sustaining and enhancing Fuel Security

### 2009-10

- ➡ APM/PMT Gas of 9.08 MMSCMD received as against 8.68 MMSCMD received last Yr.
- ➡ Purchased 2.43 MMSCMD of regassified LNG from Spot Market and 2.02 MMSCMD on Spot/Fallback/ Long term Arrangement as against 2.07MMSCMD last Year.

### Q1/11

- ➡ Total 15.12 MMSCMD received in Q1/11 as against 14.06 MMSCMD received during Q1/10
- ➡ 3.92 MMSCMD of Spot & Fallback RLNG received as against 5.12 MMSCMD during Q1/10
- ➡ Additional KG-D6 gas received during Q1/11 1.77 MMSCMD

2010-11 ➡ Gas Requirements at 90% PLF 17.35 MMSCMD,

### Long Term Supply Agreements

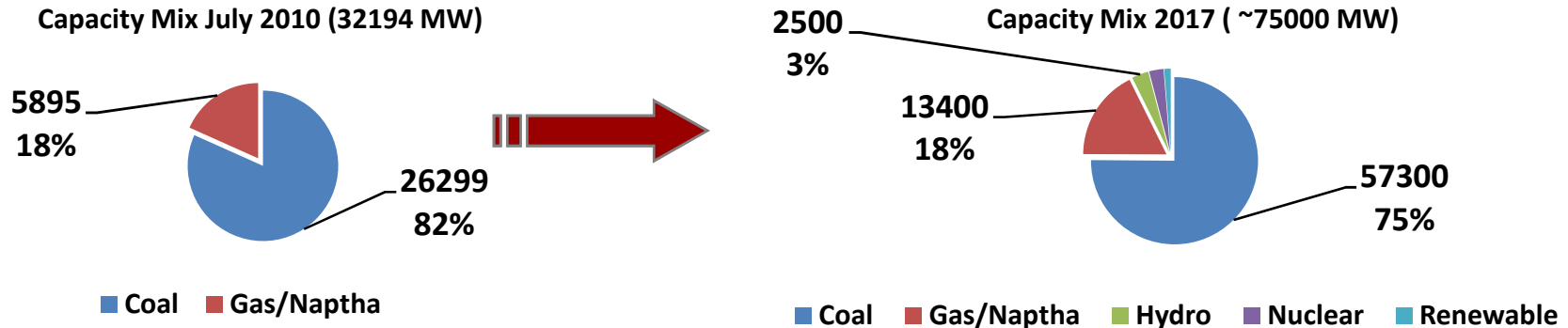
- Gas Supply agreement with GAIL in place for supply of 12.9 MMSCMD gas
- Agreement entered with GAIL for Supply of 2.5 MMSCMD of RLNG for 10 Years.
- Gas Sale Agreement with GAIL,IOC&BPCL for supply of 1.2 MT of RLNG p.a. for 20 years for RGCCPP-II.
- Govt. allocated 4.46 MMSCMD from KG-D6 for NCR projects. GSPA signed for 1.81 MMSCMD for KG D6 Gas. Remaining 2.65 MMSCMD to be tied up under in 2010-11.
- Agreements with BPCL, IOC for utilization of fall back gas at pooled price.

### Participation in Gas Value Chain

- Allotted a Block under NELP-V in Arunachal Pradesh for Exploration activities in Arunachal Pradesh in Consortium (NTPC Share 40%).
- Allotted 4 Blocks under NELP-VIII. Production sharing Contract signed with Govt. of India for NELP VIII. NTPC has 100% interest in one block and 10% each in other 3 blocks.

# Reducing reliance on fossil based fuels

*Leading to reduction in fuel uncertainties*



## Hydro

- ✓ 3 Hydro Stations Koldam (800MW), Loharinagpala (600MW) & Tapovan-Vishnugad (520MW) under construction
- ✓ Rupsiabagar- Khasiabara HEPP (261MW) - Land Acquisition in progress
- ✓ NTPC Hydro Ltd. – Lata Tapovan ( 171 MW) & Rammam – II (120MW) HEPP – TEC & Environmental Clearance available
- ✓ MOA signed for Kolodyne HEPP (460 MW)

## Wind

- ✓ MOU signed with Karnataka Power Company Ltd. for setting up 500 MW wind energy projects
- ✓ NIT issued for 100 MW Energy Project - Techno Commercial evaluation of bids under progress
- ✓ Guledagudda wind energy project (Karnataka)-NIT is expected shortly

## Solar

- ✓ 5 MW solar plant at NTPC Anta– DPR approved by sub –committee , NIT expected shortly
- ✓ 150MW Solar Project – Land identified in Jodhpur District
- ✓ 500 MW renewable energy based project in Gujarat – MoU signed with GCPL

## Nuclear

- ✓ Target of commissioning 2000 MW Nuclear Power Capacity in the 12<sup>th</sup> Plan .
- ✓ MOU signed between NPCIL and NTPC to form the JVC with 51% stake of NPCIL and 49% stake of NTPC. JV Agreement agreement has been executed.
- ✓ Site selection is in progress. Training being imparted to 30 NTPC employees in this area

15 DG Projects having capacity 300 KW commissioned so far

# Fund Mobilization



*Leveraging strong ratios to raise debt at optimal cost*

## Capital Structure

- ❑ New projects to be financed with Debt equity ratio of 70:30.
- ❑ Internal accruals sufficient to finance equity portion of scheduled investment in NTPC
- ❑ Deployment of equity in Subsidiaries/JVs selectively-preferably with control retention

## Debt Funding

NTPC has “Most Favoured Borrower” status due to:

- Low gearing and healthy coverage ratios
- Debt servicing ability to remain strong due to certainty of revenues based on cost plus regime
- ❑ Long Term debt (term loans/bonds) preferred to match project cash flows-to be raised from domestic/international markets
- ❑ Projects executed by Subsidiaries and JVs to be financed under project finance route

## 2010-2011

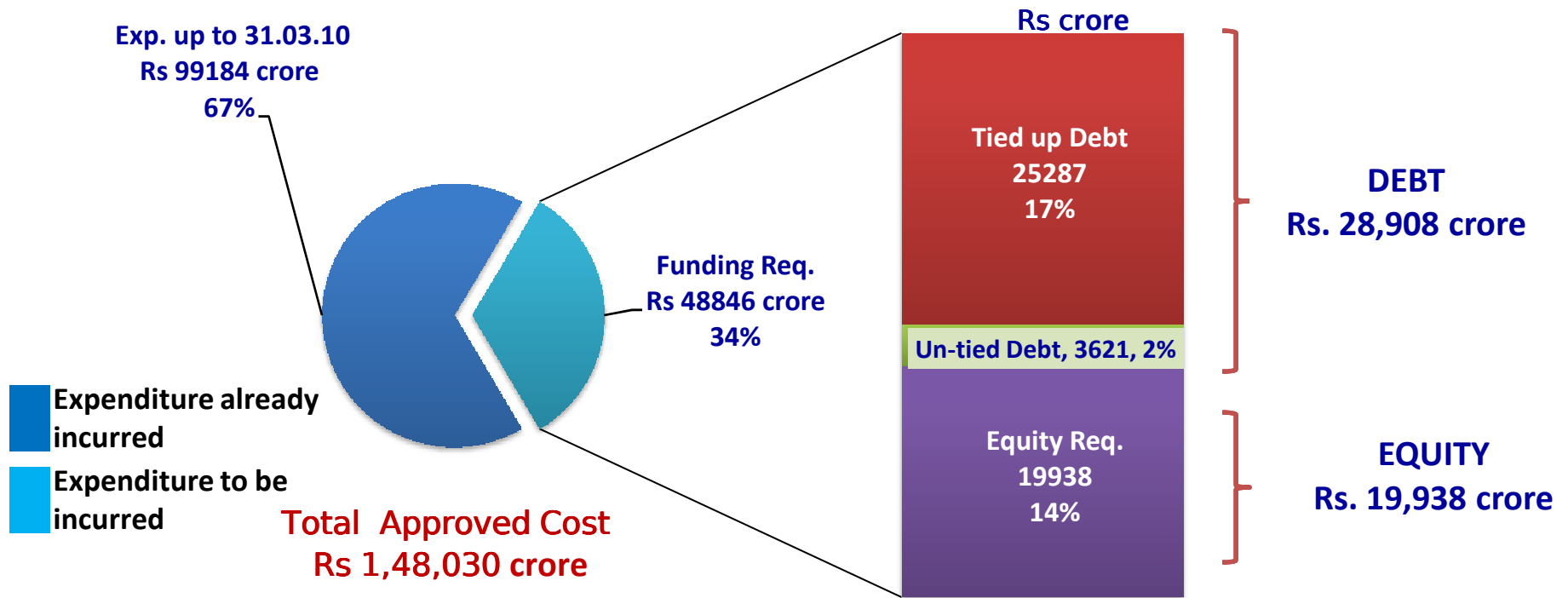
- ❑ Total outlay Rs.22,350 crore, Rs. 12,818 crore required as debt

Backed by strong debt raising capability , supported by highest credit ratings – *BBB- with Stable Outlook & Standalone rating at BBB by Standard and Poors’ and BBB- with Stable Outlook by Fitch* for raising debt from international market and highest ratings “AAA” assigned by domestic rating agencies CRISIL and ICRA, debt mobilisation is a “non issue”.

# Fund Mobilization...

*Leveraging strong ratios to raise debt at optimal cost*

Scouting continuously for opportunities for raising debt- debt raising is an ongoing activity



- ✓ Out of Rs. 25,287 crore of committed loans, Rs. 1050 crore drawn during 2010-11 and balance Rs. 24,237 crore to be drawn over next 2 yrs
- ✓ In a recently concluded Bankers Meet, banks are willing to extend loans of Rs. 25,000 crore for longer maturities of 4+10 years etc. – funds to be utilized for projects in the pipeline.
- ✓ Rs 945 crore to be drawn against Bonds from Army Group Insurance Fund

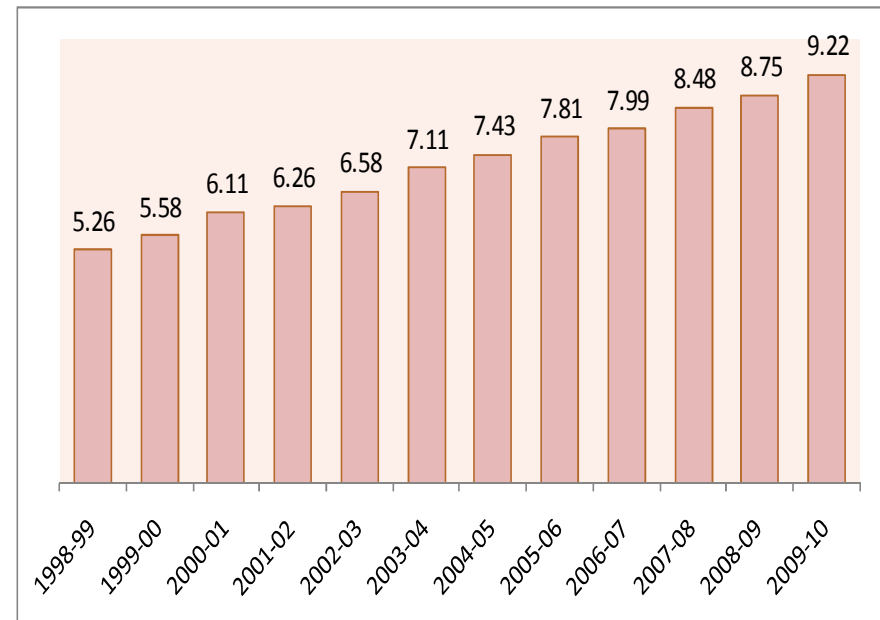
# Human Capital Management

*Motivating large pool of human resource*



- Talent pool of ~25,000 employees
- Planned interventions at various stages of career
- Systematic training ensures 7 man days training per employee per year
- Power Management Institute (PMI) plays a pivotal role in individual and organizational learning and trained 9049 participants in FY-10.
- Leadership Development Centre for formulating the process to identify and groom potential leaders.
- Commitment building through awards, benefits and incentives
- IT enabled HR Services
- Executive attrition rate reduced from 1.88% to 1% in 2009-10.

## Generation (MUs) per Employee



## Man – MW Ratio

2009-10	2011-12 (Proj.)
0.82	0.64

- ✓ Featured amongst the Great Places to work in India for consecutive last 5 years
- ✓ Man – MW ratio is 0.74 excluding manpower of taken over stations

# Presentation outline

**NTPC Overview**

**Performance Highlights**

**Opportunities**

**Challenges**

**Sustainability Initiatives**



# Investing in R&D and technology

*Maintaining leadership in technology*

## NTPC Energy Technology Research Alliance

### NETRA

#### Efficiency Improvement & Cost reduction

- ✓ Developing waste heat recovery from flue gas
- ✓ Innovative ammonia cycle for low grade heat utilization
- ✓ Waste Management

#### Climate Change

- ✓ Developing technologies CO2 fixation
- ✓ Study of CO2 capture technology (With IIT Guwahati)
- ✓ Study of CO2 storage technology (With IIT Kharagpur)
- ✓ PSA based CO2 capture technology (With IIT Mumbai, IIP Dehradun, NEERI & CSMRI Bhavnagar).

#### New & Renewable Energy

- ✓ In-house development of innovative solar thermal for power and air conditioning
- ✓ 1 MW Solar thermal plant being developed

- ECBC (Energy Conservation Building Code) compliant building
- ISO/NABL 17025 Certified Labs



***Intend to invest up to 1% of distributable profit for R&D Activities and Climate Change studies***

# Technology progression

*Clean environment –green environment*

*Leader in introducing new technologies in the power sector*

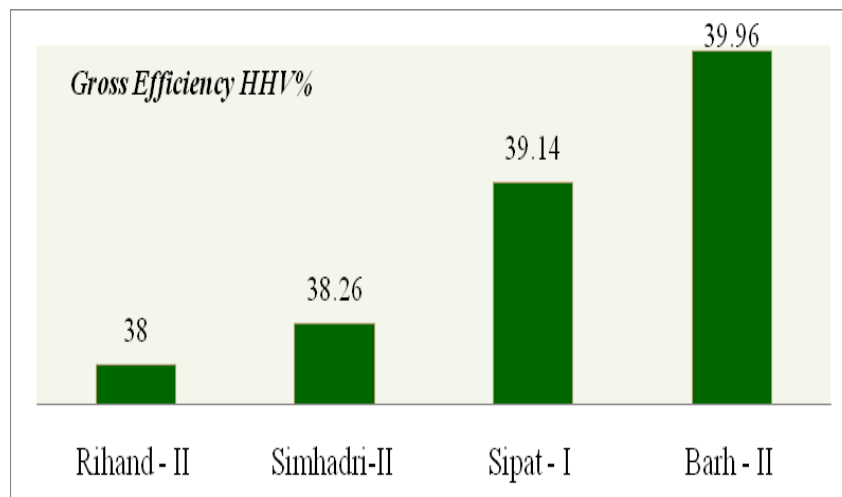
## Technologies Introduced

- High Voltage Direct Current Technology
- Distributed Digital Control – MIS
- Dry Ash extraction and disposal system
- 765 KV AC switchyard
- Tunnel Boring machines

## Technologies under development

- Development of IGCC suitable for Indian coal
- Use of advanced technologies in the renovation and modernization of aging power stations
- Induction of efficient Advanced Class gas turbines
- High concentration slurry disposal system
- Flue gas desulphurisation

*Implementing increased efficiency and greater environmental protection*



**Induction of high efficiency equipment, including supercritical and ultra-supercritical machines**

- 10 units of 500 MW with higher parameters under implementation – 1 commissioned
- 5,280MW super-critical capacity under construction
- 4,620 MW super-critical capacity under bidding
- To commission 800 MW ultra-supercritical power station by 2016

# Environmental Initiatives

*Driving sustainability*



## Technology choices

- Advanced and high efficiency technologies
- 90% of the total coal based capacities planned under 12<sup>th</sup> plan period will be based on super critical technologies

## Monitoring Systems

- CO2 measurement systems being installed at all NTPC stations in the chimney stacks
- 61 Ambient Air Quality Monitoring System(AAQMS) installed in all the NTPC stations

## Energy Conservation

- Online energy management system at 9 stations to reduce auxiliary power consumption
- Energy Audits

## Afforestation

- Creation of green wealth of more than 1.88 crore trees

# Environmental Concerns

## Waste Product to Bye-Product

10.85 million tons fly ash issued to cement & concrete industry in 2009-10.

545 million ash bricks manufactured in pilot ash brick manufacturing plants.

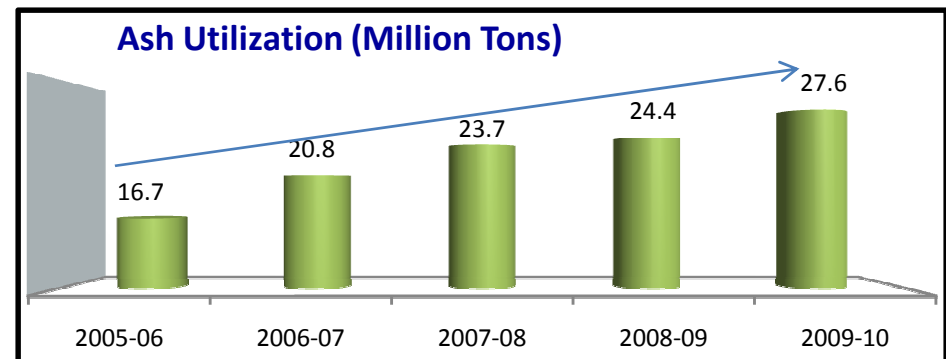
Export of Ash from Simhadri, Farakka, Talcher-Kaniha and Unchahar stations

Show case projects for use of ash in agriculture. A documentary film "Use of Fly Ash in Agriculture" been made to create awareness

MoU has been signed with Research Designs & Standard Organisation (RDSO), Lucknow to explore use of ash in Railway



**Achieved ash utilization of 59.73% during 2009-10**



# Extensive engagement with society

*Building social capital- Going beyond generation of Power*



## Reaching out to the differently-abled

- 800 Students benefitted from Information and Communication Technology (ICT) Centre for physically challenged students at Delhi University by NTPC Foundation
- ICT Centre for the visually challenged at Mysore, Trivandrum, Lucknow and Ajmer operational
- 26000 physically challenged persons benefitted at District Disability Rehabilitation Centre (DDRC) established in collaboration with National Institute for the Orthopedically Handicapped (NIOH) near NTPC-Tanda

## We believe in

“Money invested in the promotion of learning gives multiple return to the people as a seed sown in good soil returns a luxurious crop.”

## Promoting Employability

- Adopting 18 ITIs & developing 8 new ITIs at various locations to bridge the skill gap in the power sector.
- Sponsored around 750 youth from villages in the vicinity of NTPC units for ITI training .
- Setting up Solapur Power Training Institute in Maharashtra to provide skill development for power generation and transmission

**Transforming** *lives*

# Extensive engagement with society

## Building social capital- Going beyond generation of Power

### Providing Health Care

- ✓ Financial Support of Rs 2.25 Crore to Hyderabad Eye Research Foundation for 3 specialized Eye Centers at Bhubaneswar
- ✓ Directly Observable Treatment Centres (DOTS) running at 10 power stations for treatment of TB patients



### Gender Justice

- ✓ MoU signed with Govt. of Uttarakhand for setting up of Technical Polytechnic at Nainital with financial support of NTPC.
- ✓ Commitment to set up Women's Polytechnic at Gopeshwar, Chamoli District in Uttarakhand.
- ✓ Constructed a School cum Multipurpose Building for Girls in a village in UP.
- ✓ Financial Assistance to 500 tribal girls / women in 15 tribal villages of Udaipur district.



### Preserving Heritage

- ✓ Conservation of selected National Monuments in association with ASI
- ✓ Financial support of Rs 5 Crore committed

# “Can do it” culture drives excellence

Ability to attract and retain highly skilled employees

- “People First” approach
- Strong brand name
- Industry leadership position
- Wide range of growth opportunities
- Focus on long-term professional development



*Consistent Independent Recognition of NTPC’s Excellence*

Leading Power company		Corporate Excellence		Project management	Corporate Finance	Corporate Governance	Environment management	
PLATTS TOP 250 GLOBAL ENERGY COMPANY 2009	IEEMA POWER AWARD 2008	Dun & Bradstreet American Express Corporate Award	SCOPE Meritorious Award	IPMA AWARD 2005 & 2008	Best CFO ICAI AWARD	ICSI National Award For Excellence in Corporate Governance	CII - ITC SUSTAINABILITY AWARD 2008	Greentech Environment Excellence Award 2007

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