Power Procurement: Planning, Regulations and Practices

Tata Power Trading Company Ltd
INTRODUCTION TO TATA POWER & TATA POWER TRADING COMPANY LIMITED
Tata Power Company – Business Overview

- Established in 1910, Tata Power is India's largest integrated power company with a significant international presence.
- The Company generates about 8747 MW of power of which 7407 MW is from Thermal Power Plant.
- Tata Power has an installed generation capacity of 1206 MW through green resources.
- One of the largest renewable energy players in India.
- It has developed India’s first 4000 MW Ultra Mega Power Project.

Tata Power – International Presence

- South Africa - 50: 50 JV with Exxaro Resources.
- Georgia - Development of three hydro projects in 2 phases of 185 MW and 215 MW.
- Indonesia – Coal Assets and Geothermal project being developed.
Tata Power Trading Company Limited (TPTCL) - Overview

- A wholly owned subsidiary of The Tata Power Company Limited
- First company to be awarded a power trading license by CERC - On 9th June 2004
- Cross Border Trading Experience – Importing power from Dagachhu Hydro Power (126MW), in Bhutan, to India
- TPTCL serves DISCOMs across all the states in India.
- TPTCL sells power of almost 30 generators and 6 State Discoms including DVC, Gujarat, Punjab, Haryana and West Bengal. Also, Authorized by Govt. of Himachal Pradesh to sell its free energy share.
- Timely payment and payment security to power suppliers
- Consistently among the top three power trader in India.
- Has increased its trading volume from 2996 MU in FY 2009 to 10500 MU in FY 2015
- Revenue of Rs. 4182 Crore(s) in FY 2015
- TPTCL is the only trading company to have zonal offices in all regions (Noida – NR; Mumbai – WR; Chennai & Hyderabad – SR; Kolkata – ER). In order to have further penetration state specific offices have been set up in Uttarakhand and Guwahati.
- 24 X 7 State of art highly automated control room manned by highly skilled professionals
Tata Power Trading Company Limited (TPTCL) – Service Portfolio

**TPTCL SERVICE PORTFOLIO**

- Bilateral Power Contracts
- Power Exchanges
- Renewable Energy Certificate (REC)
- Coal Supply Facilitation
- Advisory Services
- Short Term Contracts
- Medium/Long Term Contracts
Power Market Structure and Developments
## DEVELOPMENT OF INDIAN ELECTRICITY MARKET STRUCTURE

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Key Developments</th>
</tr>
</thead>
</table>
| **Indian Electricity Act 1910** | • Basic Framework of Electricity Market  
• License for supply of electricity by State |
| **Electricity (Supply) Act 1948** | • Creation of SEBs. |
| **Amendment in 1991:** | • Private Generating Companies to Set up plant & sell power to Grid |
| **Amendment in 1995** | • Introduction of Mega Power Project Policy  
• To Promote, monitor, purchase power & sell to identified SEBs through a Govt. Company |
| **Electricity Regulatory Commission Act 1998** | • Setting up of Independent CERC & SERC.  
• Main function to regulate tariff & promote competition, efficiency & Economy |
| **Amendment in Act-1998** | • Participation of Private sector in area of Transmission construction, operation & maintenance under control of CTU & STU. |
| **Electricity Act 2003** | • Generation De-licensed  
• Determination of tariff by bidding process |
## Salient Features of Indian Electricity Act 2003

<table>
<thead>
<tr>
<th>Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>De-licensing of generation</td>
</tr>
<tr>
<td>Development of a Multi-Buyer Multi-Seller framework in power</td>
</tr>
<tr>
<td>Introduced Tariff based Competitive Bidding for procurement of Power</td>
</tr>
<tr>
<td>Provision of Non-discriminatory Open Access</td>
</tr>
<tr>
<td>Provision of Parallel license in Distribution</td>
</tr>
<tr>
<td>Thrust to Universal Service Obligation (USO)</td>
</tr>
<tr>
<td>Setting up State Electricity Regulatory Commission (SERC) made mandatory</td>
</tr>
<tr>
<td>Development of National Electricity Policy (NEP-2005) and National Tariff Policy (NTP-2006)</td>
</tr>
</tbody>
</table>
# Installed Generation Capacity

All figs in MW, Source: www.cea.nic.in

<table>
<thead>
<tr>
<th>As on FEB 2015</th>
<th>Thermal (MW)</th>
<th>Nuclear (MW)</th>
<th>Hydro (MW)</th>
<th>RES (MW)</th>
<th>Grand Total (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coal</td>
<td>Gas</td>
<td>Diesel</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>46775</td>
<td>7429</td>
<td>0</td>
<td>54204</td>
<td>5780</td>
</tr>
<tr>
<td>State</td>
<td>55891</td>
<td>6974</td>
<td>603</td>
<td>63468</td>
<td>0</td>
</tr>
<tr>
<td>Private</td>
<td>55830</td>
<td>8568</td>
<td>597</td>
<td>64996</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>158496</td>
<td>22971</td>
<td>1200</td>
<td>182667</td>
<td>5780</td>
</tr>
</tbody>
</table>

**Generation Mix**
- Thermal: 70%
- Nuclear: 2%
- Hydro: 16%
- RES: 12%

**Sector-Wise Generation**
- Central: 27%
- Private: 37%
- State: 36%
Power Supply Position in India

The power supply position in the country during 2009-10 to 2013-14:

<table>
<thead>
<tr>
<th>Year</th>
<th>Requirement (MU)</th>
<th>Availability (MU)</th>
<th>Surplus/Deficits (MU)</th>
<th>Peak Demand (MW)</th>
<th>Peak Met (MW)</th>
<th>Surplus/Deficits (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-10</td>
<td>830,594</td>
<td>746,644</td>
<td>-83,950</td>
<td>119,166</td>
<td>104,009</td>
<td>-15,157</td>
</tr>
<tr>
<td>2010-11</td>
<td>861,591</td>
<td>788,355</td>
<td>-73,236</td>
<td>122,287</td>
<td>110,256</td>
<td>-12,031</td>
</tr>
<tr>
<td>2011-12</td>
<td>937,199</td>
<td>857,886</td>
<td>-79,313</td>
<td>130,006</td>
<td>116,191</td>
<td>-13,815</td>
</tr>
<tr>
<td>2012-13</td>
<td>998,114</td>
<td>911,209</td>
<td>-86,905</td>
<td>135,453</td>
<td>123,294</td>
<td>-12,159</td>
</tr>
<tr>
<td>2013-14</td>
<td>1,002,045</td>
<td>959,614</td>
<td>-42,431</td>
<td>135,918</td>
<td>129,815</td>
<td>-6103</td>
</tr>
<tr>
<td>FY 15 till Feb-2015</td>
<td>984,999</td>
<td>948,640</td>
<td>-36,359</td>
<td>148,166</td>
<td>141,160</td>
<td>-7,006</td>
</tr>
</tbody>
</table>

Deficit in Energy – (MUs)/(%)  
Deficit in Peak - (MW)/(%)
## Structure of Indian Power Market

<table>
<thead>
<tr>
<th>Concurrent Policy Making</th>
<th>Central Government</th>
<th>29 State Governments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regulations</strong></td>
<td>Central Electricity Regulatory Commission</td>
<td>State Electricity Regulatory Commissions</td>
</tr>
<tr>
<td><strong>System Operators</strong></td>
<td>National Load Dispatch Center</td>
<td>Regional Load Dispatch Centers</td>
</tr>
<tr>
<td><strong>Generation</strong></td>
<td>Central Generating Stations</td>
<td>State Generating Stations</td>
</tr>
<tr>
<td><strong>Transmission</strong></td>
<td>Central Transmission Utility</td>
<td>State Transmission Utilities</td>
</tr>
<tr>
<td><strong>Distribution</strong></td>
<td>State Distribution Companies</td>
<td>Private Distribution Companies*</td>
</tr>
<tr>
<td><strong>Markets</strong></td>
<td>Power Exchanges</td>
<td>Bilateral Markets</td>
</tr>
</tbody>
</table>

* Private distribution companies are few in number. Tata Power-Mumbai and Tata Power-Delhi are amongst the best performing distribution companies
## Indian Power Market - Design

<table>
<thead>
<tr>
<th>Nature of Contract</th>
<th>Duration of Contract</th>
<th>Transmission Open access availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Term</td>
<td>20 years or more</td>
<td>Long term open access is available for a period of 12 years to 25 years</td>
</tr>
<tr>
<td>Medium Term</td>
<td>&gt;1 years to 5 years</td>
<td>Medium term open access is available for a period of 3 months to 3 years</td>
</tr>
<tr>
<td>Short Term</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short Term – Bilateral</td>
<td>Up to 1 year</td>
<td>For a period of up to 3 months</td>
</tr>
<tr>
<td>Short Term – Power Exchange</td>
<td>Day Ahead Market (1 day)</td>
<td>1 day (corridor left after short term bilateral)</td>
</tr>
<tr>
<td></td>
<td>Term Ahead Market (Week Ahead)</td>
<td>Weekly basis (FCFS/Day Ahead)</td>
</tr>
<tr>
<td>Deviation Settlement Mechanism</td>
<td>Real time balancing mechanism for settling deviation from schedule</td>
<td></td>
</tr>
</tbody>
</table>
Power Procurement Planning
Need for Planning

Inefficient power procurement planning adversely impacts the finances of the discoms in several ways

- Shortage of power leads to higher power purchase cost
- Indirect consequences of shortage of power
ISSUES FACED BY DISCOMS IN PLANNING

➢ In the past, Discoms failed to procure power as per the plan due to reasons such as:

✓ Fuel shortages (Gas and Coal)

✓ Transmission congestion at different levels:
  ❖ Inter regional (e.g. WR to NR, Rest of India to SR)
  ❖ Intra regional (e.g. S1 to S2, N3 Import, W3 Export) and
  ❖ Intra state (e.g. Gurgaon Import in Haryana, NPCL Import in UP, PGVCL to UGVCL in Gujarat, Etc.)

✓ Delay in commissioning of power projects

✓ Lower level of hydro generation

➢ Discoms should conduct sensitivity analysis or probabilistic analysis and ascertain more realistic power procurement requirements in the future.

➢ Competitive bidding for power procurement should be conducted in a timely manner.
TRANSMISSION CORRIDOR PRIORITY

Discoms must keep in mind the priority for transmission corridor related to various options available for power procurement.
POWER PROCUREMENT ROUTES

Power Procurement

MoU route
- PPA
- Banking

Competitive route
- Competitive bidding guidelines (DBFOO and DBFOT)
- Markets – OTC & PXs

DBFOO - Design Build Finance Own and Operate
DBFOT - Design Build Finance Operate Transfer
POWER PROCUREMENT - CONSUMERS

- Reliability of supply and competitive rates are the two primary reasons why consumers use the open access route to procure electricity.

- The Electricity Act 2003 has created this option for sourcing of power to create a market driven regime opposed to supply of electricity through state monopolies.

- The Act provides that industries in need of more than 1 MW electricity can procure power from electricity exchanges or directly from generators and distribution companies or traders of power.

- Many state governments and utilities have stopped giving out permissions for open access by imposing restrictions on movement of power from sellers to users.
INDIAN POWER MARKET - PROCUREMENT BREAKUP

- Largely tied-up through PPAs
- Short term bilateral market dominated by few players (TPTCL, PTC, NVVNL & JSW) accounting for over 85% volume of ST Market.
- Low liquidity in short term market due to Insufficient power available for short term trade
- Fuel availability only for long term PPAs
- UI volume is progressively declining because of tightening of frequency band by CERC and emergence of PX.
Procurement of Power Exchanges/Traders Procurer can select a capacity from multiple resources for varying capacities and for varying contracts.
OPERATIONAL ISSUES IN PORTFOLIO MANAGEMENT

➢ Procurers of complex portfolios would ideally need to update the contracting strategy for procurement of power on an annual basis.

➢ Market conditions in terms of demand-supply gap, electricity prices and regulatory conditions would determine the risks and costs.

➢ The risks and costs would determine the selection of the combination of contracts:
  - Short term/Medium term/Long term
  - Bilateral/Power Exchange
SCHEMATIC APPROACH TO POWER PROCUREMENT OPTIMIZATION

Due to the combination of long term, medium and short term supplies, differing fuels, base and peaking contracts and power procurements, optimization has to be done for (a) long term planning and (b) short term procurement and sale.
LONG TERM / MEDIUM TERM POWER PROCUREMENT

- Demand Projection
  - As per 18th Electric Power Survey (EPS) by CEA
  - CAGR

- Estimated availability from Long Term Supply
  - Latest Information Available from Various Sources like CEA, Meetings, Seminars, Site Visits etc.

- Demand Supply Gap Estimated

- Planning for Shortfall / Surplus Arrangements

- Types of Arrangements
  - Allocated
  - Contracted (Competitive Bidding)
SHORT TERM POWER PROCUREMENT

- Estimated Demand Projection – One year Ahead (Reviewed Monthly or Earlier – As required – Max./ Avg. Probability)
  - Scenario Building on Parameters such as weather, festivals, public elections etc.,.

- Estimated supply from Long Term Supply based on Load Generation Balance Report (LGBR), planned plant outages, contingency, fuel availability etc.,.

- Estimated Demand Supply Gap.

- Planning for Shortfall / Surplus Arrangements

- Types of Arrangements
  - Bilateral
  - Banking
  - Power Exchanges
DECISION MATRIX FOR SHORT TERM SALE / PURCHASE

START

Identification of Shortage / Surplus (Monthly/Fortnightly/Hourly)

Surplus / Shortage

Surplus

Banking / Sale

Banking

Banking / Sale

Sale

Tender/Bilateral

Shortage

Banking / Purchase

Banking

Banking / Purchase

Purchase

Tender/Bilateral

Tender/Bilateral

Tender/Bilateral
Power Procurement Regulations
REGULATORY PROVISIONS

✓ Section 62 of the Electricity Act 2003 states that “The Appropriate Commission shall determine the tariff in accordance with provisions of this Act for –

(a) supply of electricity by a generating company to a distribution licensee:

Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating company and a licensee or between licensees, for a period not exceeding one year to ensure reasonable prices of electricity;”

✓ Section 63. (Determination of tariff by bidding process):
“Notwithstanding anything contained in section 62, the Appropriate Commission shall adopt the tariff if such tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government”
Power Procurement Regulations

- The Electricity Act 2003 Dated 2nd June 2003
- National Electricity Policy Dated 12th February 2005
- National Tariff policy 31st March 2008
- Guidelines for short term procurement of power by distribution licensees through tariff based bidding process dated 15th May 2012
- Guidelines for procurement of Electricity from Thermal Power Stations set up on Design, Build, Finance, Operate and Transfer (DBFOT) basis dated 21st September, 2013
- Guidelines for procurement of Electricity from Thermal Power Stations set up on Design, Build, Finance, Own and Operate (DBFOO) basis Dated 9th November, 2013
- Guidelines for procurement of electricity for medium term from power stations set up on Finance, Own & Operate (FOO) basis dated 10th February 2014
- Guidelines for procurement of peaking power for medium term dated 24th February 2014
MOP GUIDELINES FOR PROCUREMENT OF SHORT TERM POWER

Guidelines dated 15th May 2012 shall be used for short term procurement of power by distribution licensees through tariff based bidding process.

Exception: i) Power procured for less than 15 days

   ii) Banking Mechanism

   iii) Power exchanges

Single Tariff at delivery point up to three decimal places. (No escalation)

Option of Supply from alternate source.

Single stage process

RFP to be published in at least two National Newspaper.

RFP to include: i) Requirements (Quantum, timeslot, duration)

   ii) Delivery point

   iii) Procedure and Criteria to be used to evaluate bids to be given

   iv) Earnest Money Deposit (EMD), Bank Guarantee,

   v) Contract Performance Guarantee
MOP GUIDELINES FOR PROCUREMENT OF SHORT TERM POWER

- Validity of Bid for 10 days.
- Draft PPA to be part of RFP
- Important provisions for PPA i.e. Force Majeure Events, Billing Cycle, Compensation clause, Payment terms and Payment security mechanism.
- Requirement of at least two bidders.
- Procuring entity to constitute a standing committee for evaluation of bid with one external member.
- No deviations from this guidelines allowed except with prior approval of regulatory commission.
- Provides for dispute settlement through arbitration under the Indian arbitration and Conciliation act 1996
- Timeline for Process: RFP issued – Zero Date
  - Submission of RFP Bid – 6 Days
  - Evaluation of bids and signing of PPA – 10 Days
ISSUES IN MOP GUIDELINES FOR SHORT TERM

☑ Absence of “Late Payment Surcharge” clause leading to payment risk for traders

☑ Implementation issues at state level

☑ EMD amount of Rs.30,000/MW/Month is quite high for a period of procurement less than one month

☑ LC equivalent to 100% of the weekly energy corresponding to contracted capacity at the tariff is less and same should be equivalent to the billing cycle of the contract.
ISSUES IN SHORT TERM POWER PROCUREMENT

✓ Poor Financial Health of Discoms

✓ Transmission Constraints

✓ Fuel price risk

✓ Shortfall in coal supply

✓ Lack of regulatory clarity for import of power

✓ Implementation of Open Access at state level
MOP GUIDELINES FOR PROCUREMENT OF MEDIUM TERM & LONG TERM POWER

✓ Ministry of Power first issued guidelines for competitive bidding process, to be followed by DISCOMs for long/medium term power procurement, on 19th January 2005.

✓ **Power Procurement on Long Term basis** - Fresh guidelines were issued on 21st September 2013 for Case-2 bidding process, on 9th Nov 2013 for Case-1 bidding process.

✓ **Power Procurement on Medium Term basis** - Fresh guidelines were issued on 10th February 2014 and 24th February 2014.

✓ The guidelines have been framed under the provisions of Section 63 of the Act.
LONG TERM POWER PROCUREMENT - OPTIONS

- Long Term Power Procurement
  - DBFOO (Case-1)
    - Location & Fuel not specified
  - DBFOT (Case-2)
    - Location & Fuel are specified
CERC TARIFF FRAMEWORK

• Tariff for supply of electricity from a thermal generating station shall comprise two parts:
  i. capacity charge (for recovery of annual fixed cost)
  ii. energy charge (for recovery of primary and secondary fuel cost)
• The tariff for supply of electricity from a hydro generating station shall comprise capacity charge and energy charge for recovery of annual fixed cost through the two charges
CERC TARIFF FRAMEWORK

• Capacity Charges shall be derived on the basis of Annual Fixed Cost and shall consist of the following components:
  i. Return on equity
  ii. Interest on loan capital
  iii. Depreciation
  iv. Interest on working capital
  v. Operation and maintenance expenses

• Energy charges shall be derived on the basis of the landed fuel cost (LFC) of a generating station (excluding hydro) and shall consist of the following:
  i. Landed Fuel Cost of primary fuel
  ii. Cost of secondary fuel oil consumption
KEY FEATURES FOR PROCUREMENT OF POWER FROM THERMAL POWER STATIONS SET UP ON DBFOT BASIS

- MOP published the guidelines on 21st September 2013 for procurement of electricity from thermal power stations set up on Design, Build, Finance, Operate and Transfer (DBFOT) basis
- Two stage competitive bidding process:
  - Request for Qualification (RFQ) stage
  - Request for Proposal (RFP) stage
- Term of contract shall be 20 years or more
- Utility shall pay a fixed charge determined through competitive bidding for availability of the power station and shall be revised annually to reflect 30% of the variation (annual change) in WPI and CPI. Further annual reduction of 2% so that the benefit of a depreciated asset is passed on to the consumers.
- Fuel charge is pass through subject to certain ceiling
- Normative availability shall be 90% of the Installed Capacity
- Tariff to be quoted for first year only (no levelized tariff)
- At the end of concession period, the power plant will be transferred to the utility
KEY FEATURES FOR PROCUREMENT OF POWER FROM THERMAL STATIONS UNDER DBFOO BASIS

- MOP published the guidelines on 9th November 2013 for procurement of electricity from thermal power stations set up on Design, Build, Finance, Own and Operate (DBFOO) basis
- Two stage competitive bidding process:
  - Request for Qualification (RFQ) stage
  - Request for Proposal (RFP) stage
- Term of contract is for 25 years and extendable by 5 years
- Utility shall pay a fixed charge determined through competitive bidding for availability of the power station and shall be revised annually to reflect 30% of the variation in WPI. Further annual reduction of 2% so that the benefit of a depreciated asset is passed on to the consumers.
- Fuel charge is pass through subject to certain ceiling
- Normative availability shall be 90% of the contracted capacity
- Tariff to be quoted for first year only (no levelized tariff)
KEY FEATURES FOR PROCUREMENT OF ELECTRICITY FOR MEDIUM TERM FROM POWER STATIONS SET UP ON FOO BASIS

- MOP published the guidelines on 10th February 2014 for procurement of electricity from power stations set up on Finance, Own and Operate (FOO) basis
- Two stage competitive bidding process:
  - Request for Qualification (RFQ) stage
  - Request for Proposal (RFP) stage
- Term of contract shall be one to five years, with a provision for extension of this period for the lower of 25% of the initial contract period and one year, with mutual consent
- Utility shall pay a fixed charge determined through competitive bidding for availability of the power station and shall be revised annually to reflect 20% of the variation in WPI.
- Fuel charge is pass through
- Normative availability shall be 85% of the contracted capacity
Power Procurement Practices
Short Term Power Market Trends (1/4)

Financial Year

- FY-11: 37959 MU (10.08% ST as % of total Gen)
- FY-12: 28078 MU (10.81% ST as % of total Gen)
- FY-13: 53135 MU (10.90% ST as % of total Gen)
- FY-14: 30030 MU (10.87% ST as % of total Gen)

Source: CERC Market Monitoring Report
Short Term Power Market Trends (2/4)

Volume of Electricity Transacted through Trading Licensees and Power Exchanges

Source: CERC Market Monitoring Report
Short Term Power Market Trends (3/4)

Short-term Transactions of Electricity

- Total Generation (BU)
- Short-term Transactions of Electricity (BU)
- Total volume of Short-term Transactions of Electricity as % of Total Electricity...

Source: CERC Market Monitoring Report
Short Term Power Market Trends (4/4)

Price of Electricity Transacted through Traders & Power Exchanges

Source: CERC Market Monitoring Report
<table>
<thead>
<tr>
<th>Bidders</th>
<th>Generating Station, Location</th>
<th>MW</th>
<th>TC</th>
<th>FC</th>
<th>VC</th>
</tr>
</thead>
<tbody>
<tr>
<td>M/s. Jindal Power Limited, New Delhi.</td>
<td>OP Jindal, Raigadh, Chhattishgarh</td>
<td>200</td>
<td>3.6</td>
<td>2.74</td>
<td>0.86</td>
</tr>
<tr>
<td>M/s. Bharat Aluminium Co. Ltd., Chattisgarh.</td>
<td>2X300, Korba</td>
<td>115</td>
<td>4.29</td>
<td>3.25</td>
<td>1.04</td>
</tr>
<tr>
<td>M/s. Jindal India Thermal Power Limited, New Delhi.</td>
<td>Talchar</td>
<td>200</td>
<td>4.39</td>
<td>3.64</td>
<td>0.75</td>
</tr>
<tr>
<td>M/s. R. K. M. Powergen Pvt. Ltd., Chennai.</td>
<td>RKMPPL 4X360 MW, Tamil nadu from Unit-3</td>
<td>150</td>
<td>5.2</td>
<td>3.24</td>
<td>1.96</td>
</tr>
<tr>
<td>M/s. Adani Power Ltd., Gujarat.</td>
<td>Mundra</td>
<td>300</td>
<td>5.54</td>
<td>3.85</td>
<td>1.69</td>
</tr>
<tr>
<td>M/s. Lanco Power Ltd., Gurgaon.</td>
<td>Vidharbha-th</td>
<td>450</td>
<td>5.62</td>
<td>3.43</td>
<td>2.19</td>
</tr>
<tr>
<td>M/s. Vandana Vidhyut Ltd., Raipur.</td>
<td>Vandana-Chhatish</td>
<td>114</td>
<td>6.18</td>
<td>4.7</td>
<td>1.48</td>
</tr>
<tr>
<td>M/s. Thermal Powertech Corporation of India Ltd., Hyderabad.</td>
<td>Thermal power tech, Nellore</td>
<td>120</td>
<td>7</td>
<td>4.93</td>
<td>2.07</td>
</tr>
<tr>
<td>M/s. India Bulls Power Limited, Gurgaon.</td>
<td>Nashik</td>
<td>450</td>
<td>7.29</td>
<td>5.15</td>
<td>2.14</td>
</tr>
</tbody>
</table>
“Journey Continues..
We value your inputs, suggestions and critique.”

We take pride in Lighting up Lives!