

## Foreword by the Chairman

Of the many bottlenecks that have plagued the Indian Power Sector, Distribution Reforms have been occupying centre stage. Massive commercial losses of State Electricity Boards have driven the sector to financial sickness. This has greatly contributed to holding back fresh investment in Generation and led the country to suffer severe power shortages and blackouts. While reforms were talked about since the early 1990s not enough has been done on the ground. The Capital City of Delhi was also a sufferer with frequent power cuts and outages disrupting civic life. It was only in mid 2002 that the Delhi Government took a very bold and pragmatic stand to re-structure the power distribution on the lines of Public Private Partnerships or PPPs as they are popularly known. One of the three entities in the PPP restructuring was NDPL (North Delhi Power Ltd.), a joint venture between Tata Power Co. Ltd and the Government of Delhi. The company was later re-named Tata Power Delhi Distribution Ltd.

This volume chronicles the turnaround story of NDPL. And the various initiatives that led to a very successful transformation of a sick utility into a vibrant and financially viable enterprise. The challenges in effecting this turnaround were very daunting, as deeply entrenched malpractices supported by vested interests in a politically charged scenario had to be overcome. Lots of innovation, persistence, and management skills had to be simultaneously employed to make the turnaround happen. The glimmer of hope created by unrelenting efforts of a dedicated team over the first three years led to a very positive cycle of improvements. As public recognition of the success came forth and the good results were for all to see, recognition and accolades were heaped on the company with prestigious awards. It was felt that the multi faceted initiatives adopted and lessons learnt were too valuable to be left unrecorded. We trust that all interested in the improvement of Power distribution in urban areas will find this volume very interesting and helpful.

A power distribution utility with more than a million consumers has to engage with the public at large. It must be said that the constant and active co-operation of the Delhi Government was greatly instrumental in sustaining the success of the Public Private Partnership. Our sincere thanks to them as also all officers, staff, employees, business associates , and the Resident Welfare Organizations of citizens, politicians, and all who contributed to making this



Adi Engineer

**Chairman**  
**(2002-2012)**

## Introduction

The Delhi Model of Public Private Partnership (PPP) in Distribution is probably one of the very few PPP successes in the Indian infrastructure space, and definitely the only one so far as the Power Distribution is concerned.

It is in July 2002 that the Government of Delhi, after unbundling and corporatization of the erstwhile Delhi Vidyut Board (State owned vertically integrated Electricity Board) constituents (Generation, Transmission, Distribution), formed a 49%:51% Joint Venture Company, Tata Power Delhi Distribution Limited (TPDDL) (then known as North North West Delhi Distribution Company Limited which was subsequently renamed as North Delhi Power Limited), with the objective of improving quality of service to its consumers, making electricity available at competitive prices and improving operational efficiencies – in short, making the Sector self-sustainable , which had hitherto be making large losses.

TPDDL supplies electricity in its Licensed Area of North Delhi spread over 510 square kilometers to over 1.3 million consumers, thereby serving a population of around 5 million.

The journey of Distribution Sector Reforms, which commenced in 2002 on the GoNCTD handing over the majority ownership, management and control of the Distribution Companies (Discoms) to Private Players, completed ten years in July 2012.

While completion of initial ten years in the lifecycle of an Organization may not be a very significant achievement, the context and the transformation brought about by TPDDL in its Licensed Area is a story worth recording for posterity, both from archival reasons as well as sharing of learnings, experiences, etc. which can be replicated and adopted across the country in various states which, despite the success of Delhi Reforms, are still looking for appropriate Distribution reform models to emulate.

It is hoped that this Case Study on TPDDL's transformation of the moribund Utility in its Licensed Area into a vibrant, consumer-centric, and a profitable Organization, shall of interest and use to various stakeholders, viz. Policy Makers, Power professionals, Management practitioners, and to general readers at large.

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## **Public Private Partnership (PPP) – Delhi Distribution Reforms Model**



The Delhi Model of Public Private Partnership (PPP) in Distribution (TPDDL – JV of Tata Power (51%) and Govt. of Delhi (49%)) is probably one of the very few PPP successes in the Indian infrastructure space, and definitely the only one so far as the Power Distribution is concerned.

The Delhi Distribution PPP Model, while giving full functional autonomy to the Private Investors to manage the Business, provides complete Government Oversight through its representation in the Board of the Discom. Additionally, by virtue of being a Distribution Licensee, the Delhi Discoms are also fully regulated by the State Regulator (Delhi Electricity Regulatory Commission), be it in terms of tariff determination, approval of capital schemes, conditions of supply and consumer service delivery, etc. The PPP Framework of Delhi Discoms has worked exceedingly well with both JV partners playing an equally critical role in the smooth functioning of the distribution companies.

The Shareholders Agreement between Tata Power, Govt. Holding Co. – DPCL and TPDDL, allows for a maximum of 12 Directors on the Board of TPDDL with Tata Power (majority shareholder) having the right to appoint at-least one Director more than DPCL. Right to appoint Chairman and MD/ CEO and all Executive Directors lie with Tata Power.

In addition to the above, the Agreement fully protects the interest of the Government and citizens/consumers through provisions on Constitution of the Board, Quorum for Meetings, Specific consent of Holding Co. Directors required on critical issues, etc.

The salient features of Shareholders Agreement are as follows:

- i) Majority shareholder shall be entitled to appoint Managing Director/ Chief Executive Officer and all other Executive Directors of the Company.
- ii) Govt. Nominees on Discoms' Board of Directors – One less than the Majority Shareholder
- iii) Quorums for Board Meetings – at least one Govt. Nominee Director to be present
- iv) Certain issues such as Alteration in Charter, Restructuring – Merger, Amalgamation, Liquidation, Winding-up etc., Investment in other businesses, etc. not without Govt. Director approval
- v) Approval of Govt. Nominee Director essential in following critical matters till Holding Company holds 10% or more of the Equity of Discom
  - Any amendment to the Memorandum or Article of Association
  - Dissolution, liquidation or winding up
  - Merger or amalgamation with any other Company or split/division internally
  - Closure of business or activities or sale or transfer of any of its undertaking
  - Subscription for or acquisition of any shares, debentures or securities or interest in any other entity except to the extent of short term investment upto Rs, 5.0 Cr.
  - Material change in any significant accounting policy
  - Write-off or cancellation of any investment/money deposit exceeding Rs. 5.0 Crore, and
  - Giving Corporates Guarantee for any other person or business
- vi) Holding Company entitled to examine Discom's books and accounts and to be supplied with all relevant information including quarterly management account and operating statistics.
- vii) Prior intimation to Holding Company for transfer of shares in excess of 26 percent of total equity share capital of Company.
- viii) First Right of Refusal on Sale of Shares with both Shareholders

While Tata Power is providing, amongst others, Leadership and management expertise, Governance, assistance in raising finances, strategic inputs, etc., the Delhi Govt.'s role as a JV Partner in facilitating resolution of day to day operational and other local level issues, etc. which has been and continues to be critical for successful running of the company. Some of the key areas where its influence/ intervention has been of significant assistance to TPDDL are enumerated below:

#### **AT&C Loss Reduction:**

***Theft Control and Prosecution:*** Special Courts for facilitating faster disposal of Theft related cases set up by the Delhi Govt.; it also facilitated availability of Central Security forces and Delhi Police to assist in theft control; the Government's pro-active and positive stance on controlling electricity theft has played a significant role in ensuring loss reduction to the current sub 10% loss levels. With losses reaching these low levels, the balance loss reduction would largely depend upon increased surveillance, enforcement and quick disposal of cases, which would make the Delhi Government and its administrative machinery's full support even more critical.

***Assistance in shoring up realizations of past dues:*** The Delhi Govt. cleared up its past departmental dues thereby helping in loss reduction; it also wrote off its past dues (pre takeover period), thereby encouraging consumers to start on a clean slate and start paying current dues.

#### **Equitable Power Allocation from Central Quota:**

The Delhi Govt. has played a key role in ensuring optimal allocation from the Central Quota

#### **Land & Clearances for Power Station(s):**

NDPL's single largest differentiator vis-à-vis BSES (Captive Power Plant at Rithala), has been facilitated by the Delhi Govt. by pursuing TPDDL's case for change in Land Use; Statutory environmental clearances were also accorded by the Delhi Govt.'s environmental panel.

#### **Road Cutting / Right of Way Clearances:**

All such clearances, which are mandatorily required for any development/ maintenance work, are granted by the State Govt. machinery

**The salient features of the Delhi Distribution PPP Model are elucidated below:**

### **Background to Reforms**

The Delhi Government initiated Power Sector Reforms in Delhi with a view to improving quality of service to the consumers, making electricity available at competitive prices, improving operational efficiencies through reduction in AT&C losses, attracting investment in all areas through private participation and making the sector self-sustained, thereby reducing need for Government funding/ subsidy in the electricity sector, and lastly, providing employees better opportunities for career development and higher rewards for performance.

### **Regulatory Framework**

The key principles that had been kept in mind while building the framework were as follows:

- i) Past Liabilities and Post Losses of DVB not to be passed on to the successor entities
- ii) The restructured entities should start with clean opening balance sheets
- iii) No retail tariff shocks to the consumers
- iv) Govt. to provide transition support in initial years till Discoms becomes self-sustainable
- v) Mitigation of uncertainty, regulatory or other-wise to the extent possible
- vi) Consumers to get maximum benefit from the privatization exercise
- vii) Incentives and profit sharing mechanism, related to performance, provided to Discoms

The following Laws/ Rules / Policy Directions governed the Delhi Power Reforms process:

- i) The Delhi Electricity Reform Act, 2000
- ii) The Delhi Electricity Reforms Transfer Scheme Rules, 2001
- iii) Policy Directions by the Government of National Capital Territory of Delhi

### **The Delhi Electricity Reform Act, 2000**

The Delhi Electricity Reform Act, 2000 provided the basic framework for unbundling DVB into smaller companies and the terms on which DVB employees would be transferred to such companies.

### **Delhi Electricity Reforms (Transfer Scheme) Rules, 2001**

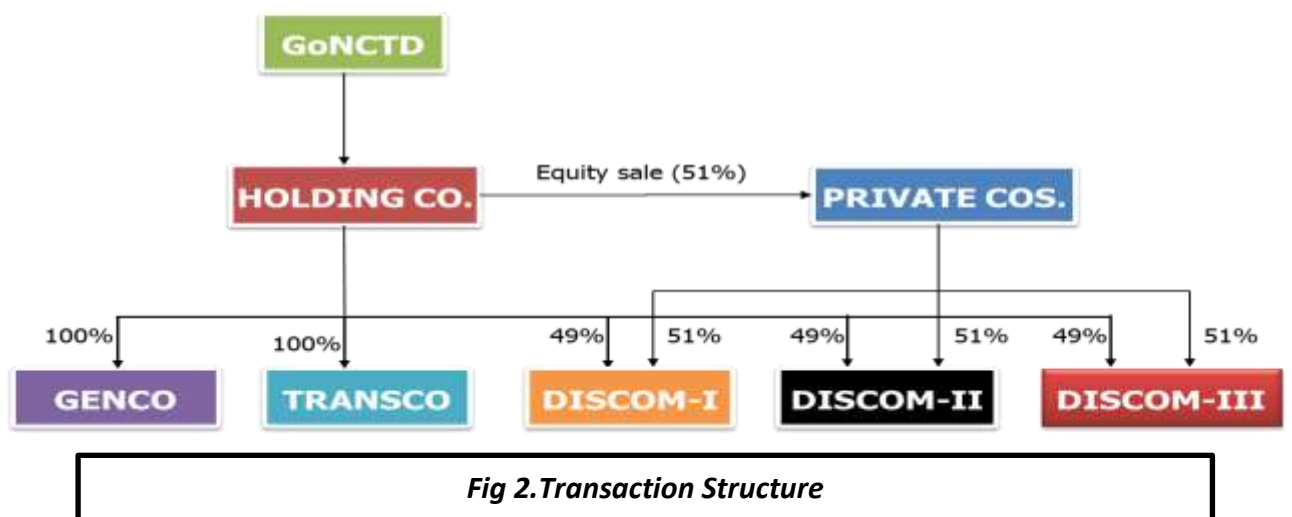
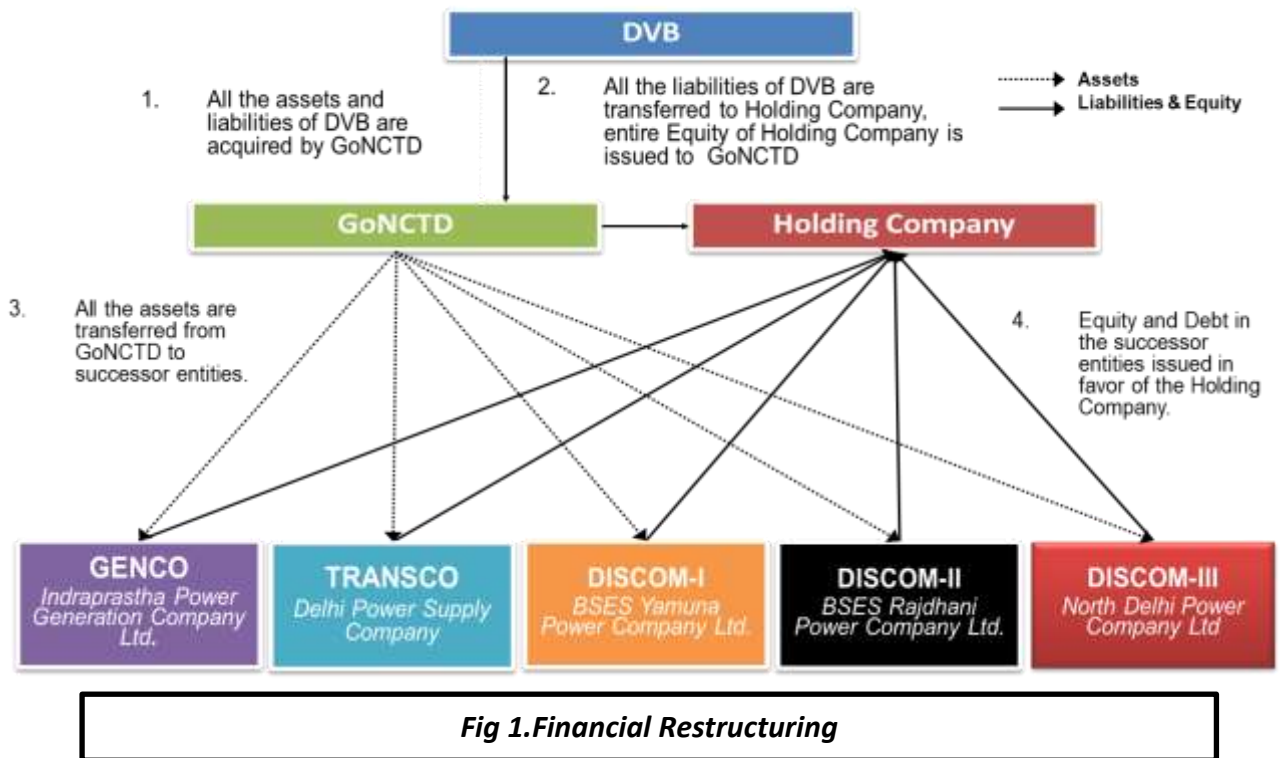
The Transfer Scheme provided the rules relating to the transfer and vesting of assets, liabilities, proceedings and personnel of DVB in the successor entities and for determining the terms and conditions on which such transfer or vesting would take effect.

The Salient Features of the Transfer Scheme as notified by the State Government are as follows:

- ***Unbundling of DVB and transfer of assets/liabilities to Successor Entities***

DVB was unbundled into the following six entities, viz. one Genco, One Transco, Three Discoms and one Residuary Holding Company which held the State Government's Equity interest in the other five Companies as well as all contingent and all such liabilities that were not transferred to these five successor entities. On the Effective Date, the Holding Company divested at par, 51% of its Equity stake in the Discoms to the Private successful bidders, who paid for this Equity in cash.

Figures 1 and 2 below depict the Financial Restructuring and Transaction Structure for the transfer.



- Transfer of Personnel :** The transfer of personnel to the Transferee Companies was subject to (a) Terms and conditions of the service applicable to them in the transferee company would in not any way be less favourable than or inferior to those applicable to them immediately before transfer (b) The personnel would have continuity of service in all respects, and (c) the benefits of service accrued before the transfer would be fully recognized and taken in account for all purposes including the payment of any and all terminal benefits.



- Liabilities arising out of litigation, suits, claims, etc. pending on the date of transfer and/ or arising due to events prior to the date of transfer to be borne by the relevant Discoms respectively, subject to a maximum of Rs. 1 Cr. per annum. Any amount above this would be to the account of the Holding Company in the event for any reason the DERC did not allow the amount to be included in the Revenue Requirement of the Discom.

*(The above clause was provided to ensure that the privatized Discoms were not subsequently burdened with any contingent or other liabilities other than those specified in their respective Opening Balance Sheets)*

- The Govt. owned Transco was permitted to procure and make Bulk Supply to Discoms for first five years of privatization (upto FY 2007).
- **Opening Balance Sheets Of Discoms As on Date of Transfer (July 1, 2002)**

The salient features of the Opening Balance Sheets vested in the Discoms on Transfer Date, viz. July 1, 2002 are enumerated below:

- I) Clean Balance Sheets with Fixed Assets being valued as per Business Valuation methodology
- II) Only certain pre-defined serviceable liabilities transferred to Discoms (Explained below)
- iii) Land given only on “license to use” basis @ Re. 1/- year, coterminous with license – 25 years
- iv) Past liabilities, contingent liabilities, contingent assets/ past receivables taken over by govt.
- v) All receivables other than to the extent specifically included in successor entities Opening Balance Sheets shared between the holding company and the Discoms in the ratio of 80:20

### **Valuation of Assets**

Business Valuation methodology was adopted for valuation of assets on a going concern basis and involved determination of the asset value based on the revenue earning potential of the business.

### **Policy Directions by the Government**

Statutorily Binding (on all Stakeholders including Regulator) Policy Directions were issued by the Govt. under provisions of the DERA 2000 to provide certainty to the Private Investors on various factors crucial for making investment decisions, viz. Bidding Criteria, Availability of Assured Returns, Incentive / disincentive allowance, tariff fixation criteria for the period 2002-03 to 2006-07, etc.

Salient Features of Policy Directions are listed below:

- i) Commitment for reduction of AT&C Losses in the first five years would be the Sole Bid Evaluation Criteria for disinvestment of 51% equity.
- ii) Assured 16% post tax return on Equity invested in business (as approved by the Regulator) subject to achievement of the committed Loss Reduction Targets.
- iii) While additional Revenues generated due to over-achievement of Loss Reduction Targets would be shared between the Consumers (through Tariffs) and Distribution Licensee, entire loss of Revenues due to under-achievement of Loss Reduction Targets would be to the account of the Distribution Licensee.

- iv) Transition support of Rs. 3,450 Cr. to Transco to avoid Tariff Shocks to Consumers (which would occur in case retail tariffs were to be ascertained based on full cost recovery), and to ensure full recovery of costs and assured RoE to the Discoms.
- v) Normative Tariff Order (Bulk Supply Tariff - BST Order) would be issued by DERC prior to bidding so as to facilitate investors to have a full idea of various elements (revenues, expenses) in fixation of tariffs and determination of Bulk Supply Tariff payable to Transco.
- vi) Retail tariffs for the three distribution licensees would be identical till the end of 2006-07,
- vii) **Lastly, Policy Directions would be binding on all Stakeholders including the Commission and other authorities from the date of issuance thereof till the end of year 2006- 07.**

### **Bulk Supply (Normative) Tariff Order**

The BST Order issued prior to privatization elaborated the process to be followed for the next five years in determining the Power Purchase Cost (i.e. the Bulk Supply Tariff) to be paid by each of the Discoms to Transco, which was the sole supplier of power to the Discoms till FY 2006-07. In order to keep the retail tariffs of Discoms identical during the control period fixed till end of 2006-07 as was required by the binding Policy Directions, Bulk Supply Tariffs (BST) of individual Discoms were determined based on their respective **capacities to pay** which were the residual amounts available with them after meeting all of their legitimate costs (other than Power Purchase Cost) and assured post tax RoE. Any shortfall in the Power Purchase cost paid by the Discoms to Transco and Transco's own ARR (i.e. its Power Purchase cost plus own costs), were made good by the Govt. through the budgeted Transition Support.

### **Critical Transaction Document - *Agreement with Employees on Reorganization and Disinvestment***

Agreements with various employee Unions and Associations guaranteeing continuation of service as per prevailing Govt. Terms and Conditions, prior to privatization, was critical for ensuring successful transition.

The salient features of the agreements are as under:

- i) No retrenchment of existing employees; their status/service conditions will not change.
- ii) T&C of service upon transfer shall continue to be regulated by existing Govt. regulations / service rules e.g FR/SR
- iii) The Government shall create a Pension Fund in the form of a trust and the Pensionary benefits of the absorbed employees shall be paid out of such pension fund.
- iv) The period of the service of the employees under the Board and under the Corporate entity shall be treated as continuous service for the purposes of all service benefits and terminal benefits payable to the personnel.

**Leadership**



Visionary and Committed leadership has played a key role in bringing about the transformation of an ailing Govt. owned utility into a profitable consumer centric service utility. TP-DDL has achieved the distinction of being the first success story of Public Private Partnership in Power Distribution Reforms in India and won recognition by way of prestigious national and international awards.

At the very top, the responsibility for leadership rests between the JV partners, that is, the Government of Delhi and Tata Power. We can record with great satisfaction that both partners have throughout these ten years, sustained a very positive and constructive relationship always keeping the interest of all stake holders and mainly the consumers in mind. From the government side we were indeed fortunate in having the sustained leadership of the Hon Chief Minister of the National Capital Territory of Delhi, Smt. Sheila Dixit throughout these crucial years, ably supported by the concerned Secretaries of the Government, who were members of our Board of Directors. Without their positive contribution it would not have been possible to obtain the desired results.

The onus of management rested squarely with Tata Power. Mr. Adi Engineer who was the Managing Director of Tata Power at the time of inception took over Chairmanship of the company and has



**Management Team**

provided leadership at the Board level ably supported by Directors nominated by Tata Power Co. Ltd. throughout these eventful ten years. An Operations Committee of the Board was constituted to provide oversight and lend support to the leadership team on all crucial matters.

After taking over the business in July 2002, the leadership encountered daunting challenges, including the public having

very high expectations from a TATA Company and expectations of overnight improvements in service. This challenge had to be met while operating through an ageing and inadequately trained workforce of 5300 employees affiliated to five different trade unions. Further, there existed a challenge of inculcating an effective and ethical work culture amongst the inherited workforce which had for decades, been working in a non-accountable, highly bureaucratic, and non-transparent manner. Moreover the employees were in a somewhat despondent state of mind with the change in management and apprehensive of their future.

The above Challenges were in addition to the business challenges of reducing losses, revamping the old and ailing network, and dealing with immense pressures from public, media and politicians who were all overly critical of the privatization process.



**Management Team receiving “National Award for Meritorious Performance”**

In such a turbulent scenario, the journey towards reforms had to be carefully strategized with sensitivity and also needed to be executed with great agility as progress was to be achieved simultaneously on multiple fronts. Tata Power chose a handpicked team of dedicated and highly competent professionals with outstanding experience and

track record to lead the transformation. Mr. Anil Sardana was appointed as the Chief Executive Officer to lead this team under the guidance of the Board. Mr. Sunil Wadhwa was appointed the CFO, and a

team of some 30 professionals was brought in to function as departmental heads/specialists to infuse the change. The Management team was provided full empowerment by the Board with the mandate to make the reforms process a success and bring about a transformational change in the company. While regular reviews were held with a committee of the Board, adequate freedom was given to all functional heads to enable them achieve results. Care was taken to include some of the officers from the earlier work force into this leadership team so that from the very beginning there would not be any sense of alienation between these groups. It took some time to weld these members into a cohesive team but the results were ultimately very satisfying.

## Distributed Leadership

Since inception, TPDDL has believed in the concept of “Distributed Leadership”. The entire operational area is divided into 5 circles, 12 districts and 46 zones and senior officers have been appointed and empowered to run these as individual business units. Competition amongst them has been institutionalized through creation of Performance Scorecards and its regular review and monitoring. Both Reward & Recognition as well as knowledge sharing platforms have been established to recognize the best performers and to replicate the best practices with agility across the remaining work units.

In order to address the apprehensions and expectations of all concerned stakeholders and to mitigate the operational and human challenges that it faced at the time of takeover, the senior leadership team adopted a three pronged strategy.

1. **Co creating a Vision & Mission** with its stakeholders which gave a statement and purpose to the organization and aligned all towards the organizational objectives; the **vision was then parameterized** which enabled the organization to track its progress on the reforms path. The Vision was cascaded through the Balanced Scorecard<sup>1</sup> approach to the last individual in the organization to make him or her aware of their role and contribution to organizational objectives and to make them accountable for their performance.
2. **Inclusive Social Engineering approach** was used to engage with the consumers, society and employees at large; primarily to assess their needs and expectations, so as to involve them as a collaborative partner to the reforms process. Separate satisfaction surveys for consumers and employees through reputed third parties were initiated right from the inception so that the leadership could gauge its success of delivering value to its stakeholders which was promised at the time of privatization. The continuous improvement in these indices over the past ten years’ stand testimony that the leadership has not only met the expectations of these stakeholders but have surpassed them in several cases.
3. The Leadership team had to build bridges of understanding with all connected groups be they Employees representatives, Trade unions, Resident Welfare Associations, Political leaders etc. We are thankful to the leadership of these connected groups for supporting our efforts.

**Above all, the concept of leadership as practiced in TATA POWER-DDL has been all about TEAMWORK.**



**Sr. Leadership Team**

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<sup>1</sup> Refer Strategy Formulation and cascade section

The leadership team at TPDDL personally drive and monitor critical aspects such as Safety, Ethics, Governance, Innovation, Climate Change and Community Care.

### **a) Safety**

Safety of the workforce and public is of paramount importance to the leadership team at TPDDL. A



**Safety Oath**

special BA& Legal Cell has been set up which performs competency assessment of BA employees particularly in the areas of safety. Safety trainings have been made mandatory for the entire workforce and massive “Suraksha Abhiyan” has been launched by the leadership team to create awareness on safety aspects. The leadership team personally undertakes safety visits; participate in safety weeks across all

location to reinforce safety culture amongst the workforce. Further, Suraksha portal and Safety Call Centre has been deployed, wherein stakeholders can register safety concerns. Circulation of Safety CAPA’s take place through Sandesh (Mass)



**Safety Oath**

mails and investigations are shared in MEGA SEEKH (Knowledge Sharing) sessions. A 3 tier safety structure comprising of Apex Safety Council, Safety Management Cell and Local Safety Committees have been established to review safety on a regular basis.

### **b) Ethics**

The leadership team has formulated the Company’s Code of Conduct and the entire workforce has been introduced to the Tata way of serving its consumers, society, vendors, and employees while observing a completely ethical and transparent approach. A three tier ethics structure comprising of Apex Management Team, Ethics Officers and Ethics Champions has been established to inculcate and reinforce ethical culture across the organization Further, Whistle Blower policy was introduced under which any ethical concerns can be raised to the Chairman or Audit Committee level. Leadership team actively participate in Ethics Week celebrations and personally reward exceptional ethical conduct demonstrated by workforce.

### **c) Governance**

The leadership team at TPDDL since inception has promoted transparency in operations and has voluntarily adopted the disclosures guidelines issued by SEBI for listed companies, even while TPDDL is unlisted. Several policies such as the Company’s Code of Conduct, Whistle Blower Policy and Sexual Harassment Policy have been formulated to foster an ethical and transparent work environment.



#### **d) Innovation**

A culture of innovation and continuous improvement has been created by implementing platforms like TPDDL Innoverse and SHINE through which the entire workforce is encouraged to provide suggestions and break through ideas which are then analysed by distributed leadership team for implementation. TPDDL has been among the top companies in Tata Innovista for providing many improvement ideas and suggestions for the group.

#### **e) Climate Change and Community Care**

Equal strategic focus has been maintained on environmental and social aspects. TPDDL is the first Indian utility to map its Carbon Footprints. To make TPDDL a carbon shaper among utilities, TPDDL has created the Combat Climate Change Group which has been mandated to ensure a continuous reduction of TPDDL Carbon Footprints by undertaking initiatives such as Energy Conservation, Renewable Energy



**Earth Day Celebration with TERI**

Projects (TPDDL has established the first operation 1 MW Solar project in the Capital in addition to other smaller projects aggregating to approx. 500 Kwp). Water Harvesting is another area which is encouraged and supported by TPDDL.

A dedicated Demand Side Management group has also been established to ensure the consumption of energy is done in the most efficient way by consumers and the group has successfully undertaken appliance replacement programs and incandescent bulb replacement programs in TPDDL area.

On the social front, TPDDL is one of the leading utilities which have taken up Community Welfare as a focus area and a dedicated Corporate Sustainability Group has been created for the same. The CS Group along with team TPDDL focuses on empowering and uplifting the community in which they operate through Vocational Trainings, Drug De Addiction Camps, Financial Support, Health Camps etc. A unique innovative business model approach has been instituted wherein “Capacity to Pay” is created/enhanced for the consumers at the bottom of the pyramid through the above mentioned initiatives thereby empowering them to pay for the power consumption. This approach has been recognized nationally as well as internationally and has helped the company in reducing its losses in slum clusters.

#### **f) Policy Advocacy**

In addition to the above, TPDDL has proactively engaged with the Ministry of Finance, Ministry of Power, Planning Commission, Bureau of Energy Efficiency and Regulators ( at central and state level) to ensure that equitable regulations for the Sector are formulated and has played a key role in shaping several policies such as National Tariff Policy, PPP Model for Distribution Reforms etc. TPDDL has been recognized by the Edison Electric Institute, USA “Policy Advocacy Award 2009” for its active role in facilitating several policy recommendations beneficial to the overall development of the Power sector.

## **Growth**

Having substantially improved the operational and consumer service delivery to benchmark levels as was the main mandate for this Public Private initiative started in 2002, the leadership team at TPDDL recognized the need to foray out of the licensed area, to leverage its domain expertise and enhancing the brand image of TPDDL and be strategically positioned to exploit any upcoming business opportunities in other geographies. With the above strategy in mind, TPDDL has forayed into Power distribution related consultancy, both nationally as well as internationally. In addition to this, TPDDL is also working towards expanding its consumer base in remaining Delhi and NCR under Open Access framework as well as acquiring/ running other Distribution Businesses, both nationally and internationally<sup>2</sup>.

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<sup>2</sup> Refer Section on Growth and Way Forward



## Investments For Up Gradation and Financial Impact



The electricity distribution system inherited by TPDDL from the erstwhile Delhi Vidyut Board was in an extremely dilapidated condition resulting in unreliable power supply to consumers due to frequent breakdowns. Further, the entire distribution infrastructure was prone to theft, meters were old and could be easily tampered with, bare overhead network allowed people to hook in and steal electricity etc. Further, due to inadequate network planning, the network was heavily overloaded which was a major reason for transformers failures now and then. A total revamping of the system was required for providing quality power supply to the consumers and bringing about AT&C loss reduction. Therefore, during the initial phase (2003-07) the focus of investment was on reducing AT&C losses, improving reliability and augmenting the system to support continuous load growth. Further, a need was also felt to improve the existing facilities and infrastructure to provide for a better consumer experience and a work environment conducive for employees.

### **Areas requiring Massive Investment**

Capital investments were made under the following benefit centers:

1. AT&C loss reduction
2. System Reliability Improvement
3. Growth development plan for meeting the load growth
4. Creation of infrastructure facilities including administration buildings

### **AT&C loss reduction:**

Major initiatives taken by TPDDL for reducing AT&C losses are mentioned below:

- **Metering systems:** TPDDL replaced the existing electro-mechanical meters with static meters which were tamper proof with almost no accuracy change with passage of time as these do not have moving parts. Approx. 8 lakh electromechanical meters have been replaced in these last ten years.
- **High Voltage Distribution Systems (HVDS):** Under HVDS, the existing LT network in theft prone areas was replaced by HT network and new small capacity transformers are installed, which are nearer to the load centers and cover reduced number of consumers. HVDS also enhanced reliability by localizing faults and contributed to better quality of supply by eliminating the need for long low-tension lines. The system reduced systems technical losses, and has thus helped TPDDL to meet the AT&C loss reduction targets.
- **Replacement of LT bare conductor with LT AB Cable:** The same resulted in reduced direct 'hooking' done on bare LT conductor lines thereby reducing commercial losses drastically in theft prone areas.

## System Reliability Improvement

Major initiatives taken by TPDDL for improving reliability are mentioned below:

- **Supervisory Control and Data Acquisition system (SCADA):** It has enabled TPDDL to control all connected grids from a SCADA Master Control Center at Pitampura - III. SCADA system is designed with the concept of main control center and backup control center is part of disaster management.
- **Grid Substation Automation:** 66/11 and 33/11 kV grids of TPDDL have been automated with latest technology for remote connectivity to SCADA center. These grids are remotely monitored. Grid station automation include change of 66/33 KV /11 control and relay panel replacement with new panels fitted with state of Art Intelligent Electronic Devices and data concentrator. These stations are equipped with devices to make all control, monitoring and protection signal available at remote control center for efficient control and monitoring of Electrical network
- **Communication Backbone establishment:** All the Grids and major commercial offices were also connected through a strong optical fiber backbone with capacity of 2.4 Gbps in core ring and 644 Mbps in sub rings. The Communication backbone is used for both operational (SCADA) and enterprise requirement like System Application Product (SAP), Geographical Information Systems (GIS) etc and other data requirement such as internet, mail, video conferencing etc. This backbone has availability of more than 99.9%. Last mile connectivity to all zones is extended through radio frequency and optical fiber with min. bandwidth of 2 Mbps.
- **Geographical Information System (GIS):** TPDDL also implemented GIS system for complete TPDDL area. All Assets such as transformers, Buildings, Poles, Cables etc have been mapped in GIS and helps TPDDL in various processes such as Capital Expenditure Management, Asset Management and Revenue Management.
- **Automatic Meter Reading (AMR):** TPDDL also established the first of its kind Automatic Meter Reading (AMR) system for all of its high end consumers which have the capability to read meters of any make and it is first of its kind in India. This system has completely eliminated manual intervention in the process of meter reading to the final printing of the bill.
- **RMU installation by replacement of old HT panels:** TPDDL conducted the technical audits of all the grids and distribution sub-stations. Based on the findings of the technical audit it was decided to replace the old 11 kV switchgear with state of art SF6 panels which were SCADA compatible.
- **Replacement of Sick Cables:** Old 11kV underground cables with history of frequent and a number of faults were also replaced to ensure reliable and continuous power supply.

## Load Growth

Peak demand at TPDDL has been increasing at the rate of 6% annually. To meet this growing demand new grid-substations have been established. Existing overloaded grid sub-stations have also been augmented.

During the next phase ie Multi Year Tariff (MYT) period from 2007-11 the focus of investment was more on reducing AT&C loss reduction and meet load growth requirements. Major new technology initiatives taken by TPDDL for improving reliability during this period are mentioned below:

- Distribution Management System
- Distribution Automation
- Outage Management System (OMS)

After having achieved the performance levels as planned/targeted in terms of AT&C losses and reliability improvement, the focus now is mainly to meet the load growth requirements.

The Capital Expenditure undertaken by the company during from 2002-2011 is highlighted in the Table below:

											<b>Rs. Crs.</b>
<b>S No.</b>	<b>Description</b>	<b>FY03</b>	<b>FY04</b>	<b>FY05</b>	<b>FY06</b>	<b>FY07</b>	<b>FY08</b>	<b>FY09</b>	<b>FY10</b>	<b>FY11</b>	<b>Total</b>
<b>1</b>	AT&C Loss Reduction	8	74	99	142	93	111	148	128	103	<b>906</b>
<b>2</b>	Reliability Improvement	10	146	102	101	32	41	24	94	118	<b>668</b>
<b>3</b>	Load Growth	25	52	115	158	128	78	101	120	223	<b>1000</b>
<b>4</b>	Infrastructure Development	6	9	22	30	18	15	16	32	21	<b>169</b>
	<b>Total</b>	<b>49</b>	<b>281</b>	<b>338</b>	<b>431</b>	<b>271</b>	<b>245</b>	<b>289</b>	<b>374</b>	<b>465</b>	<b>2743</b>

The above Capital Expenditure has helped TPDDL to achieve an unprecedented reduction in AT&C losses from an opening level of 53.1% in 2002 to 11% in 2012, improving system reliability and availability manifold with Average System Availability Index (ASAI) increasing from 70 to 99.2, providing a world class experience to consumers and enhancing their overall satisfaction levels over the years.

## Financing of Capex

The funding for the capital expenditure has been through:

- Consumer Contribution towards capital costs
- Internal Accruals – Depreciation to the extent there were no loan repayments
- Retained Earnings – Undistributed Profit
- Debt from Financial Institutions and Commercial Banks



The industry norms for funding have been that Capital expenditure (net of Consumer Contribution and Excess Depreciation over loan repayment) was funded in Debt: Equity of 70:30.

In the initial years the funding has been more through internal accruals as the management consciously decided that there would be no dividend payout till the AT&C Loss are brought down to acceptable levels. The capital expenditure loans outstanding as on 31st March 2012 is Rs. 1,411 Crore. These loans are primarily having a tenure 10 years loan with a 1-3 year interest reset clause and secured by assets.

Y-o-Y Financing of Capex is given below (inclusive of Capex incurred on generation projects of TPDDL - Rithala Combined Cycle Power Plant of capacity 94.8 MW and Distributed Solar projects aggregating to capacity of 1.65 MW):

Particulars	<b>Rs. Crs</b>									
	FY 03	FY 04	FY 05	FY06	FY07	FY08	FY09	FY10	FY11	Total
<b>Consumer Contribution</b>	12	49	108	36	35	91	41	53	147	573
<b>Loan</b>	-	117	40	-	-	85	190	419	400	1252
<b>Internal Accruals</b>	37	115	190	395	236	123	110	-5	41	1241
<b>Total Capex (Including Generation)</b>	<b>49</b>	<b>281</b>	<b>338</b>	<b>431</b>	<b>271</b>	<b>299</b>	<b>341</b>	<b>467</b>	<b>589</b>	<b>3065</b>

Repayment of loans is allowed in tariff by considering depreciation of fixed assets. Further Advance against Depreciation is allowed by the Commission in the year the cumulative loan repayment is higher than the cumulative depreciation considered in the tariff.

## Financing of Working Capital/Revenue Gap:

### Working Capital Limits

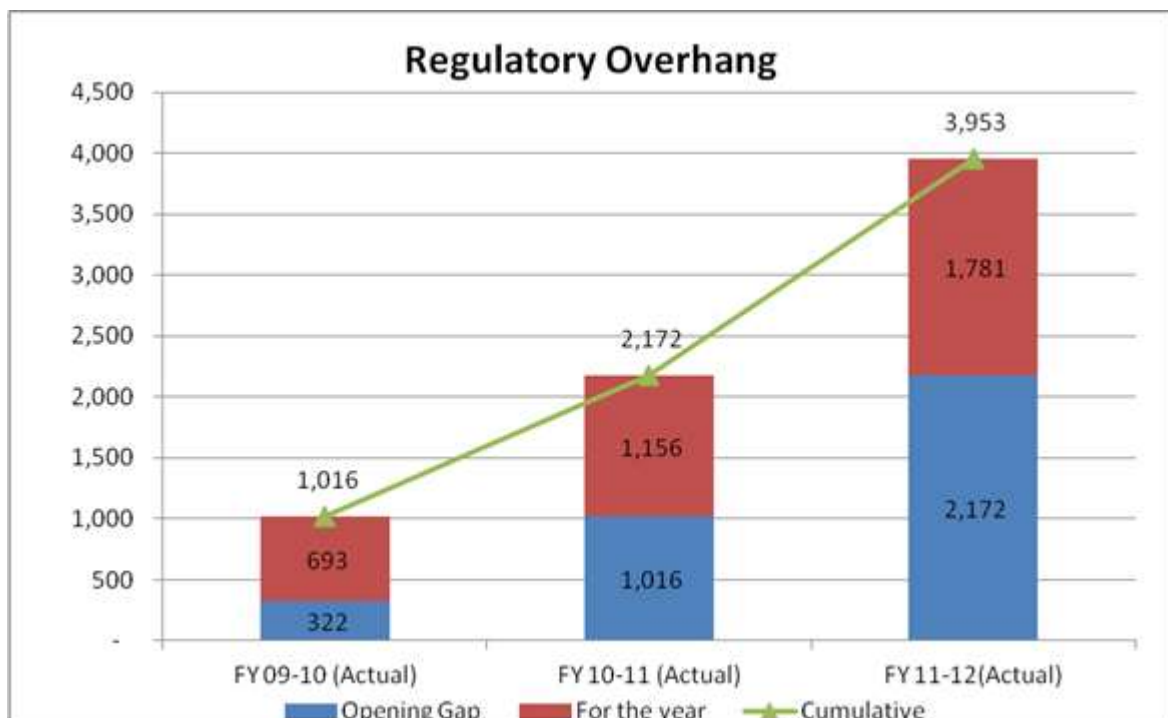
TPDDL has a consortium of four banks led by SBI which takes care of Working Capital Requirements; Fund Based and Non Fund Based.

Recovery from receivables is spread over different cycle period whereas major payments which consists of power purchase has a different cycle period; hence to care of mismatch, TPDDL has tied up for fund based limits with the consortium banks.

Stand by SBLCs are given to power suppliers as a security mechanism. Some of the lenders also take SBLC to equivalent to one quarter payment of debt servicing as a security. Besides this, Bank Guarantees are required to be submitted to various authorities like PWD/MCD etc.

### Revenue Gap

Till FY 2008-09, tariff was more or less was cost reflective. Since FY 2009-10, cost of power purchase has increased drastically i.e Rs 2.86/unit in FY 2008-09 to Rs 5.29/unit in FY 11-12 whereas tariff has just increased from Rs 4.64/unit in FY 2008-09 to Rs 5.66/unit (effective from Sept 2011) resulting in huge revenue gap.



Earlier, TPDDL had financed the revenue gap through Short term/medium term loans but as the revenue gap has increased up to Rs 4000 Cr, TPDDL has converted most of its Short term loans into long term loans ranging a period of 7-10 years. Given the fact that Tata Power has 51% shareholding in TPDDL, lenders drew significant comfort and TPDDL has been successful in meeting all its financial obligations by securing adequate loans despite the accumulating revenue gaps.

TPDDL also intends raising up to Rs. 500 Cr. through issuance of 12% Cumulative Redeemable Preference Equity Shares, subject to Regulatory Approvals.

**Operational Excellence – Improving Reliability**





After taking over the electricity distribution business from erstwhile Delhi Vidyut Board, one of the major operational challenges in front of TPDDL was to improve the reliability of power supply. The entire inherited network was in an extremely dilapidated condition resulting in frequent blackouts and brownouts. The reliability indices of July'2002 stood at an all-time high with System Average Interruption Frequency Index (SAIFI) close to 55 Nos. and System Average Interruption Duration Index (SAIDI) close to 110 hours as against 4.38 Nos. and 5.92 hours as on Mar 2012. The major reasons for poor reliability conditions were:-

- Inadequate network capacity
- Old switchgears prone to frequent failures
- Absence of maintenance practices / schedules in place
- Overloaded transformers and bypassed protection systems
- Large number of cable faults due to excessively high joints and poor jointing techniques used.
- Nonfunctional Street lights; at the time of takeover, functionality of street lights was only 40%.
- Non availability of breakdown vans, O&M inventory/ spares.

The above situation called for an immediate network revamp and institutionalization of maintenance practices to ensure that reliability of supply to consumers can be maintained. TPDDL set on its journey of operational excellence with a Run-Repair-Replace policy and systematically introducing distribution automation. Various initiatives undertaken by TPDDL to improve the reliability situation in its area of operations are highlighted below:

- **CAPEX Program of Approx. Rs. 3000 Crores** in Load Growth, Loss Reduction, System Improvement & Infrastructure Development areas has helped in reduction of infrastructure constraints & bringing redundancy in the network. All **Substations have been revamped** & strategic locations automated. **State of the art Package Sub-stations have been** introduced where manual intervention is minimal, resulting in spare savings, better aesthetics & improved public safety. **Low Tension Aerial Bunched Conductors (LT ABC) & High Voltage Distribution Systems (HVDS)** has been introduced in densely populated areas.



- **Decentralization of O&M** (zones / districts / circles) has helped in bringing more manpower / more focus in local geographies. **24x7 Mobile Maintenance & Breakdown crew with dedicated vehicles** has ensured availability of manpower round the clock with reduction in travel time from one location to the other resulting in quicker response to faults restoration.

- **Introduction of Outsourcing (Annual Maintenance Contract) Concept in labor intensive activities i.e. zonal works, cable repairing works etc.** has helped in bringing better quality of workmanship through involvement of man-power of OEMs & reducing dependence on front-



line ageing man-power of erstwhile period. Penalties are imposed for failures of joints prematurely. Availability of proper tools & plants with field staff has also been ensured.

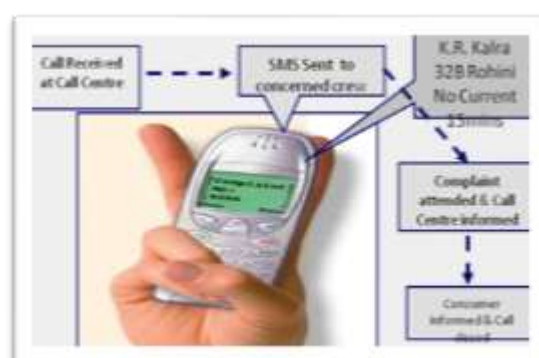
- Network & Process Automation interventions** such as Supervisory Control and Data Acquisition Systems (SCADA), Grid Substation Automation Systems (GSAS), Geographical Information Systems (GIS), Distribution Management System (DMS), Outage Management System (OMS) etc. into our network has helped in better network management through remote operations & transparency in network alterations. Future load requirements are also being considered during network planning process with the help of sophisticated load flow analysis tools. **State of the Art Power System Control** set up has helped in controlling network operations through one central location thus minimizing chances of any accident. Technology intervention for **Fault diagnosis and Residual Life Assessment through signature analysis** has helped in carrying-out age profiling of network assets.



- State of the Art Ring Main Units** have been installed for moving the trippings out of the Grid stations for integrated protection & isolation to lower level; same has helped in faster restoration of power supply and limiting the supply switch off to local fault areas only. Use of faster & **more reliable breakers** have helped in bringing down transformer damage rate. **Auto-reclosures & sectionalizers** in semi-urban / rural areas have helped in isolation of faulty portions thus reducing no. of affected consumers during an interruption. TPDDL has also installed Modern Gas Insulated Switchgears which are currently State of the Art Distribution Infrastructure.



- Call center has been strengthened** with man-power & technological areas to ensure 100% complaints answering with minimum waiting time to consumers. **SMS based system** for quicker Fault Management / escalation has helped in conveying in interruption details to respective field crew on real time basis. This has helped in reducing MTTR of no-current complaints for improving reliability to even individual consumers & improving CSAT.



- Dedicated Infrastructure for each of the Zones and Grids & maintenance planning** through System Application Product-Enterprise Resource Planning (SAP-ERP) has helped in centralized & coordinated planning on either frequency based or condition based maintenance.

- **Introduction of thermo vision cameras** at filed level has helped in identification of hot-spots thus providing advance intimation about prospective breakdown areas. **Wedge connectors** have helped in reducing hot-spots. This activity has also helped in reducing technical losses and damage to transformer & other equipment. **Polymer insulators, DD Fuse units** have replaced old conventional equipment which were prone to more breakdowns.
- **Creation of specification of major network equipment, creation of test plans, stage & final inspection of inward material, Inspection & quality assurance of WIP jobs** has ensured that material is delivered & installed as per laid-down procedures. Development of vendors & enhanced focus on quality has improved material reliability delivered to our stores & sites.
- **Project Last mile initiative** has ensured proper connection of consumer service connections in desired manner thus reducing chances of breakdowns.

The above interventions have significantly improved the operational performance of the network and enhanced consumer satisfaction meeting their expectations of reliable and quality supply. The improvements in the operational parameters over the past 10 years stand as a testimony of our interventions.

Parameter	UoM	Jul-02 (On takeover)	2011-12	% change
<b>System Reliability – ASAI</b>	%	70	99.2	42%
<b>Transformer Failure Rate</b>	%	11	0.8	93%
<b>Peak Load</b>	MW	930	1401.43	51%
<b>Length of Network</b>	Ckt. Km	6750	10179	51%
<b>Power Transformation Capacity</b>	MVA	1730	3299	91%
<b>Distribution Transformation Capacity</b>	MVA	1926	4522	135%
<b>Street Light Functionality</b>	%	40	99.3	148%
<b>Consumer Satisfaction Index</b>	%	-	88	-

## Journey of Innovative Operational & Information Technology Interventions



TPDDL as a leading Distribution Utility in the country has successfully pioneered various technology initiatives such as development of a robust communication network backbone (Optical Ground Wire & Optical Fibre Cable), Integrated Geographical Information System (all assets across Licensed Area including consumer meter details incorporated), Grid Substation Automation Systems (GSAS) and Supervisory Control and Data Acquisition (SCADA), Outage Management System (OMS) and GSM modem based Automatic Meter Reading on a mass scale. TPDDL has, over the years developed innovative solutions to enhance consumer convenience such as:

1. Faster fault location and restoration,
2. New connections in 24 hours, numerous payment options, etc.
3. Improve internal processes (Integration of GIS, FAR & SAP for Asset Identification)
4. Integration of Geographical Information System and Customer Relationship Management for faster no-dues verification,
5. Signature analysis,
6. SAP notification for day ahead trading.



**Anytime Payment Machines**



**SAP-FAR-GIS Integration**



**Outage Management Monitoring**

Our Business Model Innovation, based on empowerment of consumers at the bottom of the pyramid, has been recognized both nationally as well as internationally. Mr. Gordon Brown, Former Prime Minister, United Kingdom, had appreciated this model as a true innovation during his visit to India in 2010.

In 2002, when the privatization of erstwhile Delhi Vidyut Board was effected, TPDDL inherited just two personal computers in terms of Information Technology (IT) for serving 8 lakh consumers! And that too with no real network infrastructure, no email system, no management information system and only fictional integration. This was a major challenge for TPDDL, being a utility operating in a National Capital in this information age. Even the billing and collection systems were grossly inadequate with extensive revenue leakages. Added to this was the fact that implementation of a new billing system had just been initiated and a herculean task lay ahead with many operational hassles. Moreover, TPDDL's face to the society – the Customer Care systems were in shambles with untrained manpower and absence of systematic supervision and tracking.

As regards the Operational Technology (OT), the network supply was in a pathetic condition with the consumers facing frequent power outages. The operations were being carried out manually at different network levels, i.e., Sub transmission (66/33 KV), Primary Distribution (11 KV) and Secondary Distribution (0.415KV) by the respective teams and maintenance was being done on an ad-hoc basis. In Sub-Transmission network, 280 operators were manning 38 Grid Substations for operation purpose alone. Similarly, for Primary Distribution, over 500 employees were carrying out the operational activities in 36 Zones covering an area of 510 sq kms.

TPDDL's Automation journey started when corporate strategic objectives for the period 2003-2008 were being viewed as part of an overall plan to achieve the target levels of loss reduction and service reliability while accommodating new customers and a 6% load growth per year. A comprehensive roadmap for implementation of various technological solutions was prepared with the objective of improvement in supply reliability and resource optimization. The journey of Information Technology and Automation interventions is detailed below:

### **FY 2002-03**

As a first step, the company fully implemented a homegrown online **Decentralized Energy Billing System (DEBS)** connected from its central server to all its Consumer Care and Cash Collection Centers. This system was the backbone for Reading, Billing & Payments till Mar, 2011.

Company also undertook the exercise of office automation, setting up the e-mailing system, LAN & WAN. To ensure transparency, the company developed its **own Web site ( [www.tatapower-ddl.com](http://www.tatapower-ddl.com) )** and started uploading billing and consumption data of all its consumers on its website.

### **FY 2003-06**

During this period, the **Grid Substation Automation System (GSAS)** for 66/33/11 KV Grid stations was implemented to make them compatible for **SCADA** system. As a part of the GSAS Automation project, all 33/66 kV control and relay panels in existing grids were replaced. All new grid substations constructed during and after this period have been designed with same technical specifications.

Alongside, the **Communication Network** was deployed using our own private optical networks making use of an important asset already available, i.e., existing fiber network of Tata Tele Services Limited (TTSL) & Videsh Sanchar Nigam Limited (VSNL) in TPDDL licensed area and the right of way along TPDDL power transmission lines. This project is now a success story of how the joint effort of two group companies' has resulted in bringing down the project cost from INR 50 crore to INR 18 crore together with a reduction in project schedule from three years to one and half year, thus, providing a highly reliable communication network, that an electrical utility can achieve, in the most cost effective and timely manner.



Simultaneously, the implementation of **Geographical Information System (GIS)** was initiated for Sub-Transmission Network in the first phase. Mapping of the entire asset base of TPDDL was ensured for improved asset management.

On the other front, DEBS was modified to develop the **Bulk Billing Software (BBS)** and **Automatic Meter Reading (AMR)** was implemented for higher end consumers having load > 100 KW (on HT Network). The analysis of the data downloaded through the AMR was also done through in house developed software – **AMRDA**.

To automate business functions with proper information security, **Primary Data Centre** was established where all the servers, routers and other equipment's were installed. For smooth functioning at the back office and strengthening the revenue management system, software applications **SAKSHAT** and **RMS** were rolled out along with offline collection modules at cash collection centres.



**AMRDA Snapshot**

Also, **SAP ERP** system was implemented for other business functions:

- ✓ Finance and Controlling (**FICO**)
- ✓ Material Management (**MM**)
- ✓ Plant Maintenance (**PM**)
- ✓ Project System (**PS**)
- ✓ Human Capital Management (**HCM**) for payroll

## **FY 2006-09**

The year 2007 marked the achievement of a major milestone in the history of TPDDL with the implementation of **Supervisory Control and Data Acquisition (SCADA)** across all grid stations. TPDDL is the first utility in India to combine SCADA, EMS, DMS, training simulator and program development system. The project became a bench mark in India in terms of execution in shortest period (17 Months) for controlling grid stations. By Feb 2007, the control of all grids was centralized and remote monitoring on a real time basis was being done from the SCADA Building - **Centre for Network Management (CENNET)**. As a part of the next phase, GIS was implemented for the Distribution network which was also a prerequisite for making the system ready for the **Distribution Management System (DMS)**. GIS provided a platform to the engineering and planning team to enhance their efficacy by getting an accurate view of the geography and network. Moreover, it also facilitated effective maintenance management by the way of integration with SAP.

In Dec 2007, based on Business process reengineering and with the challenge to integrate all modules/commercial processes, a home grown work flow based CRM application **SAMBANDH (Building Relationship)** was implemented. Along with features of auto escalation and performance assurance, it was also integrated with all major applications such as DEBS, Geographical Information System (GIS), SAP-R/3 and SAP BW having following modules:

- ✓ **Customer Care Module (CCM)** for Complaint/Request registering / tracking and closing mechanism with intimation to customer through SMS/ call centre / IVRS / website
- ✓ **Connection Management Module (CMM)** for New connection, Attribute Change, reconnection / Disconnection Requests
- ✓ **Meter Management Module (MMM)** for Meter Installation / Removal/ Replacement/ shifting/ Testing and Meter and material reconciliation
- ✓ **Revenue Collection Module (RCM)** for Payment related complaints handling and Payment Collection –for services and enforcement bill
- ✓ **Revenue Recovery Module (RRM)** for Meter disconnection advices for payment Defaulters
- ✓ **Revenue Discipline Module (RDM)** for Enforcement cases (Electricity theft bill processing), Misuse (of electricity ) cases, Legal cases and compliance to court orders
- ✓ **Record Management** – stores documents and images during processing of request.

### **FY 2009 till Date**

Automation of the last mile of the distribution network has been the major focus area during this period. The implementation of the first phase of **Distribution Management System (DMS)** and **Distribution Automation (DA)** has been completed and that for **Outage Management System (OMS)** is under progress. These have also been integrated with GIS for better and effective network management.

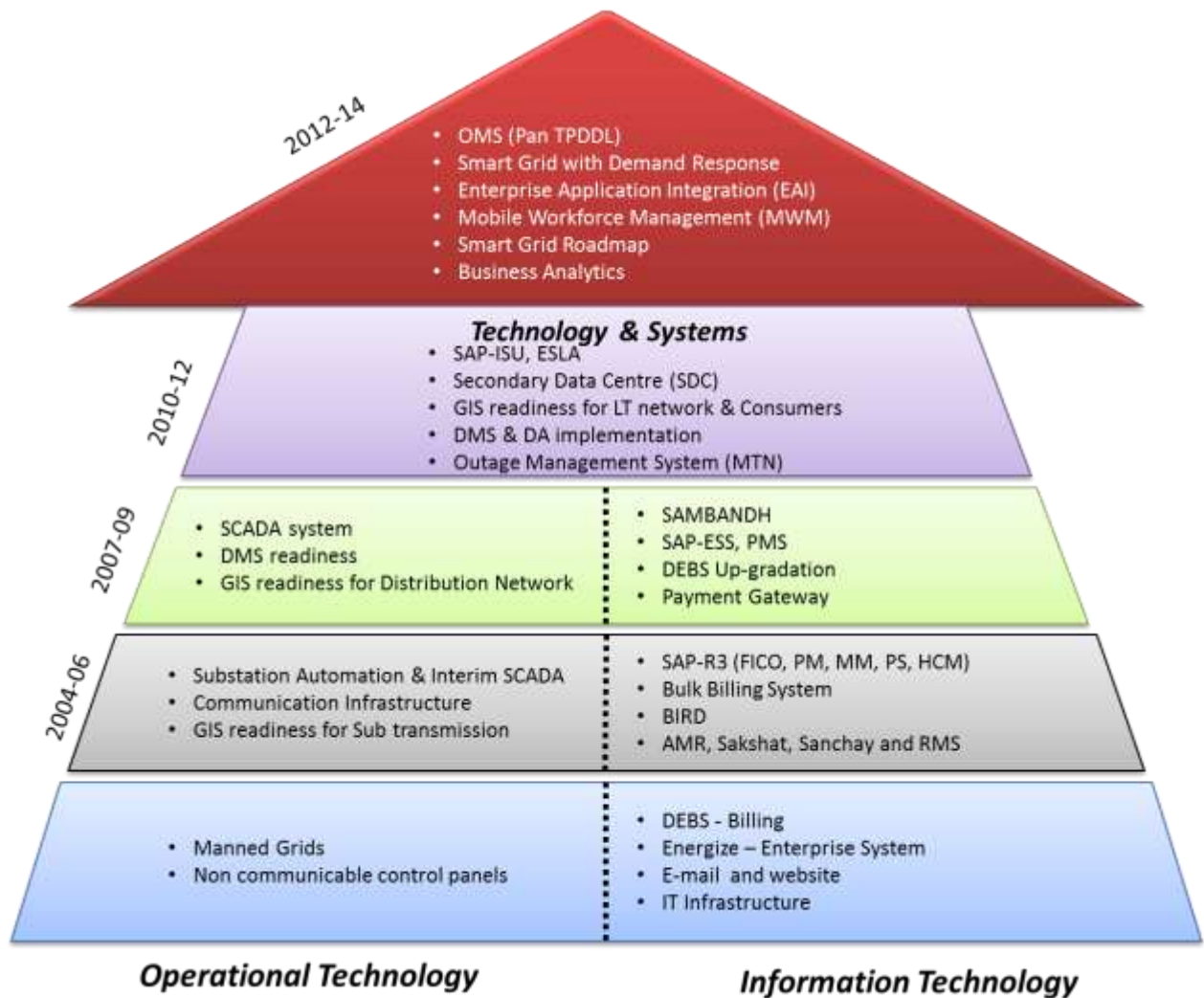
Main objective of the DMS project was to establish Centralized monitoring system for entire 11 KV networks of TPDDL for coordination with all zones for faster restoration of Network. Prior to deployment of **DMS**, the distribution network was being managed manually by the zonal engineers and real-time network data was not available. Presently, in districts where DMS has been implemented the network decisions are taken by control center executives with all information to suggest optimal way of handling any network contingency.

As a part of **DA**, selected strategically located RMUs were automated for control from **SCADA** system. Main objective of implementing **DA** was to identify & isolate the faulty section, and, restore the network from the **SCADA** centre in minimum possible time. Currently DMS has been implemented in 9 out of 12 districts wherein all 700 points have been automated.

**OMS** is an automation solution interfaced with various systems in utility so as to ensure prompt restoration of the outages affecting customers, facilitate utility with accurate historical data on outages for improving work processes related to operations and maintenance.

In Apr 2011, as an integrated solution for commercial processes, **SAP ISU (Industry Solution for Utilities)** was implemented. This has facilitated online accounting of sales and collection without any manual intervention. The application has been seamlessly integrated with other applications like OMS, GIS, AMR, HHD, Spot Billing, IVRS, Payment Gateway, Lab testing M/c, etc. and with other ERP module like PS/MM/PM/FI. In addition, TPDDL now has a **Unified Call Centre** for attending to 'No Supply' & 'Commercial Complaints'. This has meant the sun-set of thirteen in house applications like BBS, DEBS, SAMBANDH, etc.

With the deployment of latest technology on a large scale, the dependency on IT has increased manifold. Therefore, to ensure 100% system availability, a **Secondary Data Centre (SDC)** has been established to ensure smooth operation of business critical applications in case of any hardware failure.



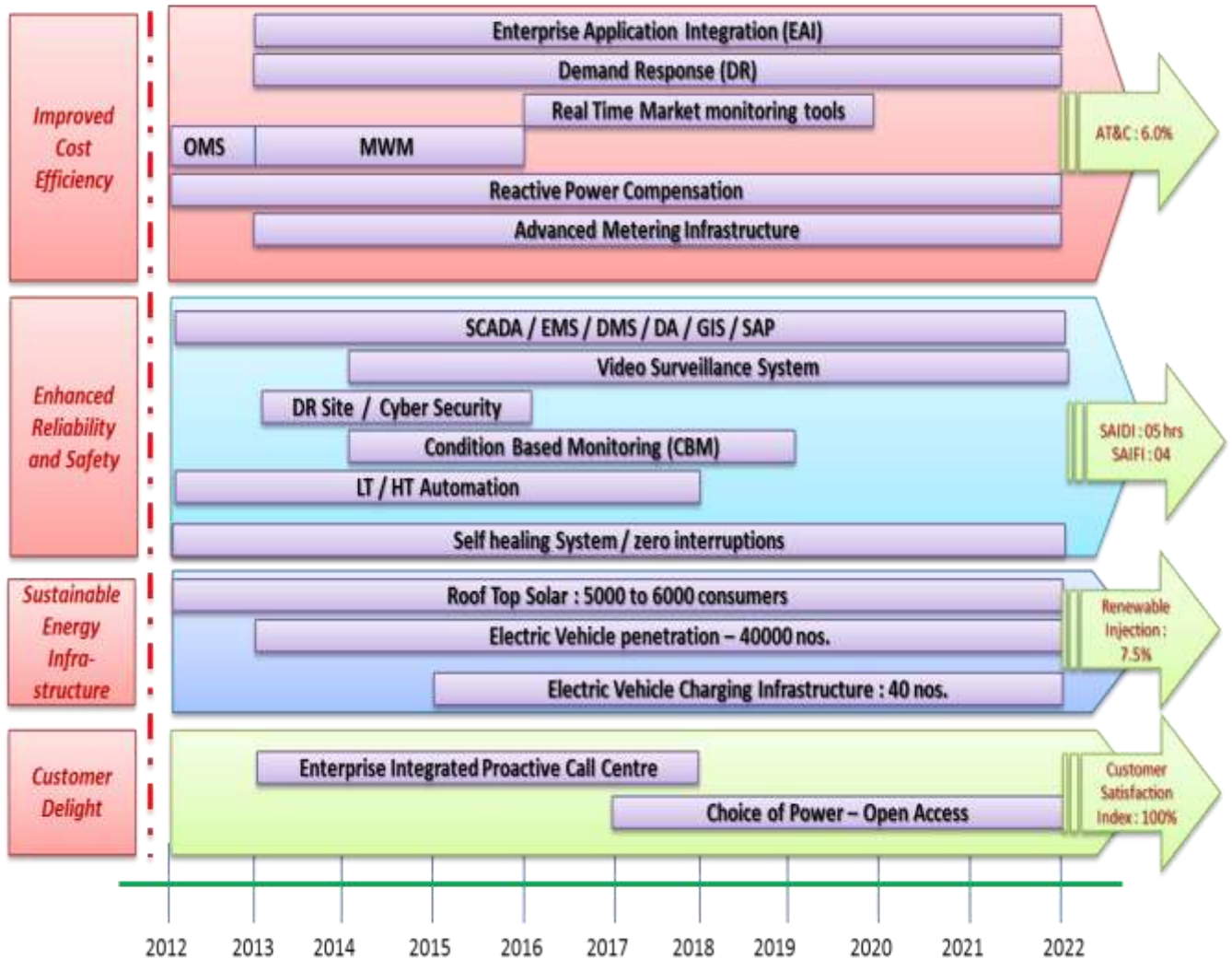
***Marrying the Operational & Information Technology***

**Future Roadmap**

With implementation of all major technology initiatives defined in the initial roadmap, TPDDL is now well prepared for advancing to the next level which requires a major orbit shift. Evolution of Smart Grid technologies is the latest development in the power sector and shall be a major focus area for time to come. Our aspirations for the next ten years have already been identified and a consultant has been appointed by the US Trade and Development Agency (USTDA) to formulate a roadmap for TPDDL for the next ten years. The major initiatives would be implementation of Demand Response, Enterprise Application Integration, Mobile Workforce Management, employment of Business Analytics and many more. The extensive use of IT and the innovative applications to meet the challenge of modernizing a power distribution utility have been richly rewarding for the company and also recognized internationally by earning prestigious awards for these efforts.



# Smart Grid Roadmap – 2012 to 2022



## Recognitions

TPDDL has been recognized in various national and international fora for the innovative adaptation of latest technologies for the development of the distribution sector. Some of the key recognitions include



***"National Award for Meritorious Performance"***  
(2004-05, 05-06, 07-08, 08-09)



***"Innovative Technology"***  
India Power Awards  
(2009 – 2011)



***"Geospatial Awards"***  
(2009)

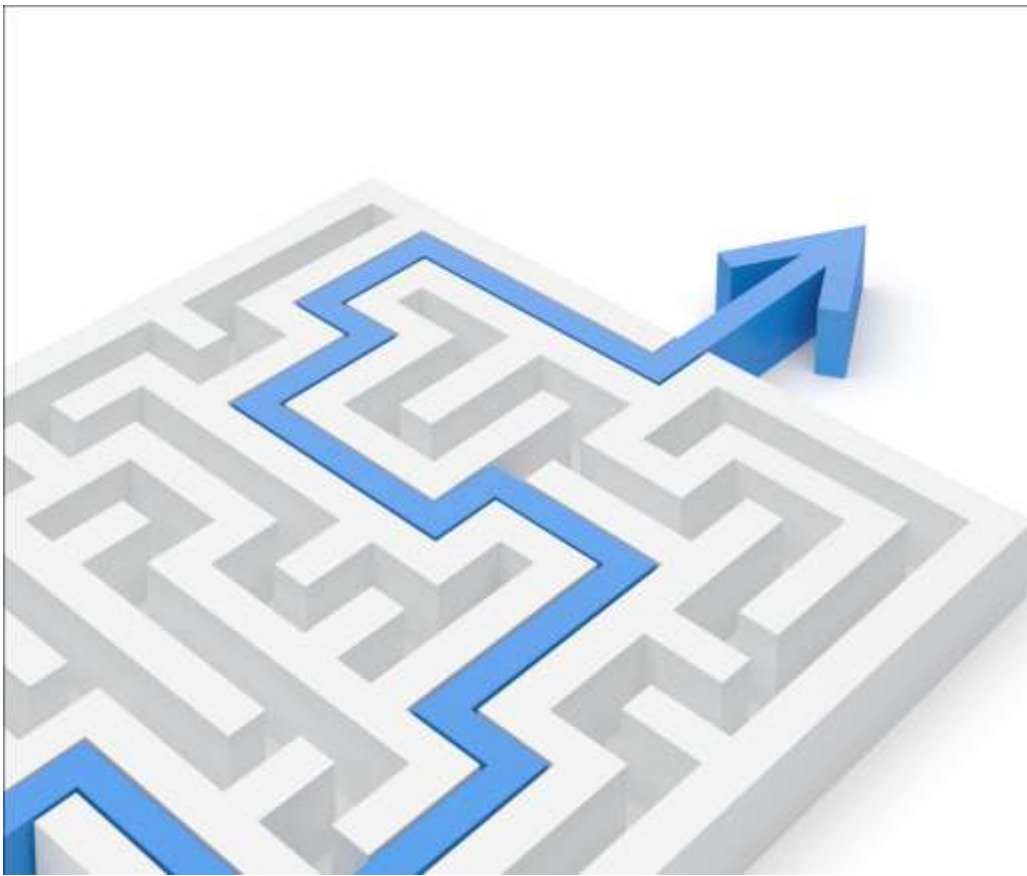


***"Innovative Implementation of GIS"***  
Edison Electric Institute, USA  
(2008)



***"SAP ACE Award"***  
(2008)

## Strategy Formulation and Deployment



The turnaround Strategy for TPDDL was actually a combination of various strategies that addressed the diverse challenges. To start with the reduction of the AT&C losses dominated all else, but this could not be done unless we had simultaneous strategies for Technical modernisation, Process improvements, Re-training of manpower, Enforcement, Communication etc. Care was taken to bring in the changes in a steady manner, obtaining the co-operation of the parties involved to the extent possible. It is not in the scope of this document to delve in these diverse strategies in detail. Rather the approach adopted to make all these activities converge and deliver tangible results is summarised hereunder.

TPDDL, as a part of the takeover process inherited approx. 5300 employees from the erstwhile DVB and it was not surprising that a deep rooted bureaucratic public sector culture was found to prevail across the organization. Performance Management Systems hardly existed in spirit and there was hardly any concept of accountability and responsibility. Further, due to the absence of a dedicated Corporate Planning function which could identify the key organizational objectives and required performance measures, there was hardly any alignment across the workforce and different departments/ functions were working in silos rather than towards common organizational goals. Planning was more for day to day operational activities rather than on strategic level for setting long term goal and consequently working upon defined action plans to achieve those goals. The leadership team at TPDDL realized that in order to make the reforms process a success and to revolutionise the distribution sector in Delhi, there was an immediate need to align the entire organization towards common objectives of Reducing the Aggregate Technical and Commercial Losses, Improving customer satisfaction levels, network reliability etc. along with institutionalizing a performance orientation culture in the inherited workforce.

As a first step, TPDDL co created a Vision involving all stakeholders which gave a statement and purpose to the organization. The Vision was then parameterized to track the performance of the organization on its reforms path. Once the Vision parameters were identified, there was a need to cascade them to all sections of the workforce so that they could clearly identify how their actions were contributing in fulfilment of the identified Vision of the organization and thus create a sense of belonging. The Balanced Scorecard was identified as an appropriate and comprehensive tool to cascade the organizational objectives to the workforce and then monitor the performance against the targets set. It was also found that the four perspectives of Financial, Customer, Internal Processes and Learning & Growth of a standard BSC gelled well with the TPDDL need of balancing and meeting the expectations of all its stakeholders.

TPDDL established a dedicated Corporate Strategy Planning and Performance Management Group which was mandated to analyse the external environmental changes including anticipated Regulatory changes that can impact TPDDL in the short and long term, undertake stakeholder expectations assessment, conduct workshops internally with key functions and process owners to arrive at the organizational SWOT and identify the strategic challenges and consequently objectives for Short Term and Long Term. These were then validated in the Annual Strategy Workshops by the leadership team and detailed actions plans to meet the finalized objectives were drawn. The bottom up approach ensured the inclusiveness and buy-in across all levels to the long term and short term targets and action plans. With process maturity and improvement in the performance parameters witnessed with time, the planning process also incorporated benchmarking with national and international leaders as an integral part and setting targets to become an acknowledged distribution leader. The short term and long term strategies and action plans were presented to the Board for approval and once the same was obtained, they were cascaded throughout the organization.

A three tier performance management system was institutionalized to align the workforce to the organizational objectives and make them accountable. The Vision parameters were dovetailed into the Corporate BSC (Tier 1 – Organization Performance Management System). Strategic Objectives identified in Corporate Balanced Scorecard were then cascaded into Functional Scorecards which set the target areas, priorities and initiatives for different functions such as Operations, Commercial, Planning and Technology, etc to support the Corporate Objectives. Using the functional objectives, departments/groups/districts/zones within the function defined their annual Functional Quality Improvement Plans (Tier 2 – Departmental Performance Management System) which were then further cascaded down to individual goals/KRA (Tier 3 – Individual Performance Management System). Effectiveness of initiatives, action plans were reviewed at various review forums at defined frequency which ensured alignment / adequacy of action plans with the organizational objectives. SLT maintained focus on action plans and planned deliverables through Corrective and Prevention Actions (CAPA) against deviations identified during periodic reviews. Any inadequacy/deviation in action plan identified in reviews was addressed through revision/ updating of Initiatives across the organization. Any policy matter or work practices that acted as bottlenecks for the deployment of the action plan were identified and addressed through MTM/ SAMIKSHA meetings and in critical cases Cross Functional Teams were made to address these issues. TPDDL was awarded with Hall Of Fame Award 2008 for the Balanced Scorecard as a tool for Executing Strategy, Inculcating Performance Driven Culture & achieving breakthrough results. TPDDL became the fourth Indian Company to win this prestigious award.



***"Balanced Scorecard Hall of Fame 2008"***

Palladium Institute





It is well known that, regrettably, Safety is given very little importance in our environment, and the Indian public at large has a very casual approach to risks affecting life and limb.

In this scenario, despite TPDDL's over-bearing concern, Safety of the workforce and the community has been a constant challenge. Being a power distribution company, TPDDL faced a major challenge in maintaining a widely spread and initially dilapidated electrical distribution system in highly congested areas. Unauthorized construction, rampant theft of electricity, tampering with electrical equipment in rural and low income areas, Illegal hooking through bare network etc. created a risk prone environment. General disregard to safety procedures and guidelines by the workforce that was earlier so habituated was also a major challenge to start with.

With sustained efforts detailed hereunder considerable improvement in safety practices has been achieved although more needs to be done on a continuing basis.

**Fig 1: Public Apathy to Safety: Unauthorized Extension of Houses**



**Fig 2: Illegal hooking from the network**



A complete change in mindset was required to be instilled in the workforce and community towards safety. The company has untiringly undertaken various initiatives to inculcate safety culture amongst its workforce and consumers. Further, sensitization of public through street plays, films, posters and safety audits has also been initiated. Various initiatives related to safety areas are mentioned below:

## Initiatives taken by the organization at Community Level to ensure Safety

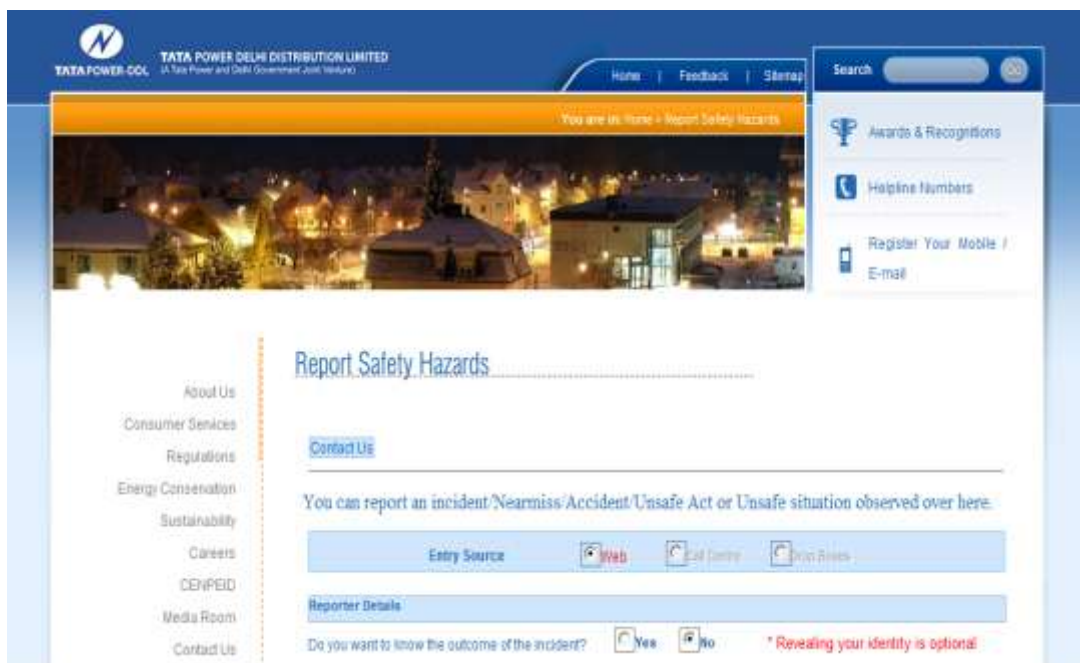
- Safety Audit of public places i.e. Cinema halls, Hospitals, Schools etc., serving notices & reminder to consumers for unauthorized construction / extension has helped in sensitization of safety issues. Policy advocacy with Govt. and Land / Road owning agencies has helped in bringing-up the matter at government level.
- Initiatives like Street plays in safety in slum areas, regular interaction with RWA / IWAs, Safety Boards (Dos & Don'ts) at customer intensive locations in TPDDL buildings has been introduced. Additionally, concept of concertina wiring at all the Distribution sub-stations near schools has been introduced. It prohibits children from entering by scaling the sub-station fencing.

**Fig 3: Safety initiatives for Consumers/Community**



- Safety Portal **Suraksha** has been created on TPDDL website [tatapower-dddl.com](http://tatapower-dddl.com) through which Safety hazards / near misses can be reported by general public

**Fig 4: Suraksha Portal on [www.tatapower-ddl.com](http://www.tatapower-ddl.com)**

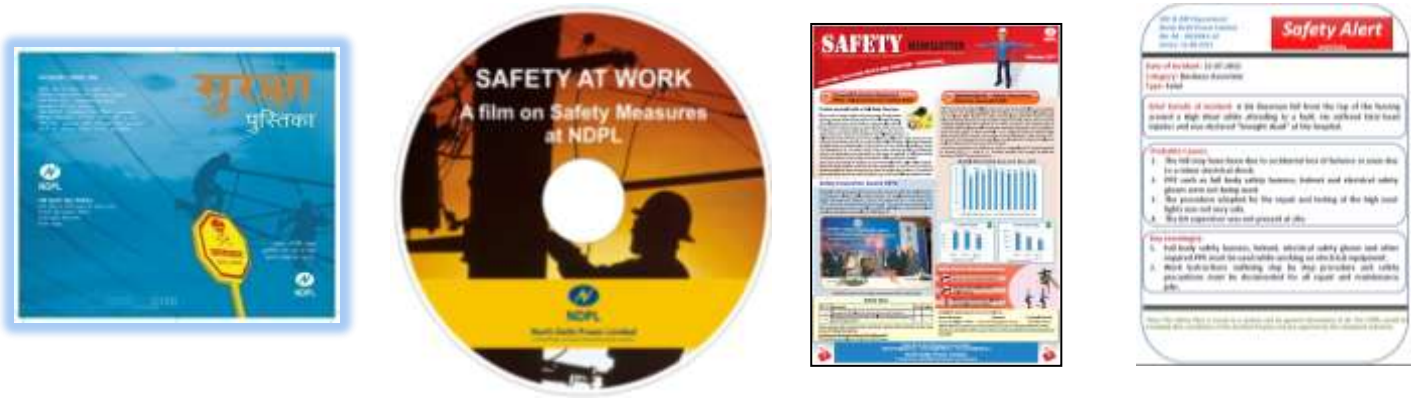




## Initiatives at Workforce Level

- **Three tier safety structure** has been established in the form of APEX Safety Council (ASC), Safety Management Cell (SMC) & Local Safety Committee (LSC). Senior leadership team personally review safety incidents and has mandated reporting of unsafe situation, acts and near misses by all employees.
- **Safety Tagging and Permit to Work (PTW) guidelines** has been released which has helped in issuing work permit only to one & authorized person. Authorization concept has been enlarged to cover all BA's. **Transfer of PTW of BA employees** introduced to bring clarity in responsibility center. **Dry type transformers** have been installed at nearly 200 locations which substantially reduces chances of a DT catching fire.
- Mandatory safety training of one day for all BA employees to enhance the awareness and sensitize the unskilled workforce on the importance of safety. Customized training modules have been developed for Technical and non-Technical employees.
- Introduction of detailed **Disaster Management Plan (DMP)** for all Departments & Groups with clear responsibility centers to ensure the preparedness for any exigency. Periodic mock drills are conducted with the help of civic agencies to assess the state of preparedness and take necessary corrective action wherever required. Automatic Fire Detection systems have been installed at all Grid Sub stations and major office locations.
- Introduction of **Nodal Safety Officers / Safety Coordinators/ Area Safety Officers** at field level has helped in identification & bringing more focus on local issues. **Safety Audit** of own establishment & processes is being carried-out to identify improvement areas. **Safety Help Desk at the Call Centre** introduced to record safety observations. Release of standard **Safety Manual and development of pocket size Safety booklet** for quick reference of employees. Ten (10) **Safety movies** prepared in house on various O&M aspects covering safety processes to be followed in each area. Comprehensive program to lock all the S/Stns, replace defective insulators, HT / LT pole earthing, latest switchgears with protection equipments is in place.
- Regular Safety talk with all the employees in the morning, Safety Oath, multilingual Safety Manuals has been introduced. ZERO Accident Incentive schemes introduced to incentivize employees in locations which adhere to safety norms is observed & no accidents are reported. Safety has been made an integral part of the Performance Management System through Safety Scorecards. Theme based safety drives conducted on bi monthly basis for enhancing the safety of network & electrical installations
- **Contractor Safety Management** introduced wherein Education & skill level of BA employees, their duty timings, specifications of PPEs etc. has been included. Additionally, **BA legal cell** has been established to promote & ensure that BA follows statutory requirements and are mandatorily provided safety trainings. **BA employees' competency assessment** has been carried out to understand their skill level and necessary changes made in the workforce as per outcome of the assessment. Safety trainings have also been provided by the organization on a regular basis to ensure that safety culture gets gradually inculcated into the workforce.

**Figure 5: Safety initiatives for Workforce**



**Social Engineering – Bringing Slum Cluster Consumers in Billing Net on Sustained Basis**



In 2002, when TPDDL took over the distribution business in North and North West Delhi, the AT&C losses were to the tune of 53.1%. Majority of these losses were attributed to theft of electricity by consumers both large and small. On analyzing the situation, TPDDL observed that there were two distinct categories of consumers indulging in theft of electricity; those who belonged to the affluent and rich strata of the society and were stealing out of greed and those who lived in slums and were stealing out of dire need due to their inability to pay for the power that they consume. While for the former, punitive methods were necessary to arrest the theft and the company initiated measures such as Automated Meter Reading, Aggressive Enforcement etc, for the latter a completely different approach required to be worked out. Keeping up with the Tata Ethos of giving back to the society, the company decided first to “Create capacity to pay” in the consumers living in the slums before asking them to pay for their consumption. TPDDL also had a unique socio-economic business case wherein its community was also its direct consumer.



An elaborate Social Engineering exercise was undertaken by the company to understand the demographic and psychographic profile of these consumers and a dedicated Special Consumer Group was created to engage with these consumers and identify means of enriching their quality of life and empowering them in a sustainable manner so that they are able to pay for the electricity they consume. This was also very important from a business viewpoint as TPDDLs licensed area had over 220 slums with 1.5 lakh consumers contributing substantial portion of the Aggregate Technical & Commercial (AT&C) losses (Rs 140-150 Cr plus).

In the initial phase, the company identified the following issues pertaining to this consumer segment which was named as Special Consumer Segment:

- a) Applicable New Connection Charges were too high for them
- b) Filling of application forms and applying for new connections was a cumbersome process for this segment, especially given their literacy levels
- c) Drugs/ Alcohol was a major addiction on which considerable money was being wasted
- d) The segment was largely unskilled and hence employability was a major issue.
- e) No awareness regarding ills of electricity theft

A holistic strategy was then put into place to mitigate all the above issues and develop a sustainable model which on one hand would ensure that the quality of life for this segment improved and on the other hand would drastically bring down the losses arising out of theft.

In order to enhance the payment capability of these consumers and to and make them employable, many interventions were introduced by the company. To fight the menace of drugs, de-addiction camps were organized across the slums. Further, health camps were initiated to provide medical facilities and medicines to the consumers. In order to improve the education levels, Adult Literacy programs were launched; further vocational skill training such as Electrician, Plumbing for men, Beauty culture, Tailoring etc. for women were introduced to make the consumers employable and increase their overall household income. In addition to the above, Scholarships have been provided to the children for education.

Through Advocacy with the Delhi State Regulator, DERC, cost of New Service connection was reduced from Rs3600 to Rs 1550 with upfront payment of only Rs 350, getting special subsidy for low consuming consumers. Also incentive of Insurance policy of Rs 1 Lac with every new metered connection was initiated to encourage the consumers to regularize their connections coupled with the condition that the same shall be continued till they remained regular payers of electricity bills. Further, instant connection camps were introduced to simplify the process of obtaining new connections by these consumers; connections were released on the same day of payment and meters were installed. In addition to the same, company assured that electricity bill was delivered with due date matching with wage dates of these consumers.

A snapshot of the initiatives undertaken, beneficiaries and impact of the Social engineering exercise undertaken is provided below:

#### **Health:**

Adequate health facility has been a major need identified in slum clusters. TPDDL started regular health camps and subsequently medical mobile dispensary “*Sanjeevani*” to address their essential medical needs. Communities wholeheartedly welcomed this initiative as a key benefit for the improvements in health and well-being of their family. This initiative has created a deep rooted compassionate space for the company in the hearts of these underprivileged who are also the company’s consumers and the change in their mindset helped to curb theft and loss of electricity for the organization. Approx. 30000 cluster residents have been benefitted so far from the above initiative.

#### **Drug De-Addiction Camps:**

Alcoholism, drugs and several other addictions amongst the members of the poverty ridden sections of the society has been the root cause of major social evils. Ill effects of addiction have



been causing destruction of physical, mental & financial capabilities. Drug de-addiction camps therefore were started as an intense CSR drive by the organization. The de-addiction initiatives were driven across aggressively through counseling sessions, de-addict medicines and holding constant follow up camps to ensure effective results and create better lives. The organization could witness the transformation in lives of the beneficiaries and could also improve paying capacity of cured patients & their families.

**Today the organization feels proud to have directly touched around 13500 beneficiaries and positively impacted lives of over 65000 family members.**

**Vocational Training:**

TPDDL has created vocational training centers to engage school dropouts, unemployed youths and imparted them skills in trades like Electrician, Mobile repairing and Plumbing. For women, beauty culture, cutting and tailoring and computer training courses have been launched. These interventions have made visible social transformations in the quality of life of the beneficiaries and their families. It has not merely brought about economic prosperity but has enabled personal and inclusive growth but also enhanced their competitiveness and brought about social equity. Approx. 1796 consumers have been benefitted under this scheme.



**Education:**

Various initiatives like Adult literacy, coaching classes to children & scholarships to school going children have been undertaken to educate the needy Juggi Jhopdi residents & their children to improve their economic condition in association with various NGO's. Approx. 1960 women and 3743 residents have been benefitted under this scheme.



The above initiatives have borne fruit and the company has witnessed a large number of connections in these clusters getting regularized over the years and the losses coming down progressively. The cumulative financial benefit is though incidental and not the primary intent of our CSR initiatives. The driving force behind our CSR was to eliminate illegal connections that were fraught with safety hazards and improve the quality of life of the weaker sections of society. The training of hutment dwellers in vocational skills has helped them earn lively hood and regain dignity which has been hallmark of Tata culture. Special Consumer Group in coordination with Corporate Sustainability group has brought a change in mindset of slum dwellers by developing an affinity for TPDDL as a well-wisher, and instilling in them a desire to pay and moving them away from theft.



**Power Theft, Enforcement, and Final Settlement Strategy**



## Power Theft

The issue of controlling power theft and enforcement of the relevant legal process is central to transforming a distribution utility that is plagued by mal-practices. The reasons for the heavy commercial losses in Delhi power distribution was largely due to subverting the normal operating processes by errant employees conniving with miscreants in tampering with meter readings and also blatant theft by illegally hooking on to the over-head distribution conductors to draw power. All sections of society had over time got contaminated by this malpractice including industrial consumers, unauthorized hutment colonies, and even upper class residences utilizing a large number of air-conditioners etc.

To start with it was necessary to replace all defective and tampered meters to obtain correct data on the quantum of power being delivered .This was a mammoth task involving replacement of some 800,000 meters in phases, and is dealt with in more detail in the section of 'Metering'. The billing process was another avenue for commercial losses as shortfalls in billing and collection were contributing to increasing the gap in the amounts to be realized. This is also dealt with in detail in the appropriate section on 'Billing'.

In addition to the technical and administrative overhaul to control leakages due to metering and billing deficiencies the challenge was to tackle the blatant drawing of power by illegally tapping the overhead wires and other mal-practices. The process of confronting the miscreants and physically disconnecting the illegal tapings and bringing the guilty to book was fraught with serious law and order issues. Further, TPDDL also identified that the consumers who were indulging into theft came from two distinct categories; those who were stealing out of greed and largely represented the strata of society which could easily afford to pay for its consumption and those who were stealing out of need as they did not have the wherewithal to pay for their consumption. While curbing theft was a common agenda, both the above category of consumers required totally different approaches; for the former ones, technological interventions and punitive methods were necessary but for the latter ones, innovative approaches were required.



*Snapshot of illegal hooking from the network*

The enforcement department assisted by a suitable force was engaged with this challenging task of curbing theft of electricity in the TPDDL area.

## Organization and restructuring of Enforcement Department

To curtail T&D losses inherited from erstwhile Delhi Vidyut Board, a separate Enforcement wing was reconstituted. The Enforcement Department was made responsible for checking direct theft of electricity from overhead wires, theft through tampering of meters, as also other more ingenious methods like theft by application of electrostatic discharge, induction of high voltage, magnets, remote devices etc.

Initially, the raids were conducted by joint teams of Enforcement (for detection of theft and capturing the load), MTD (Meter Testing Department – for verification of genuineness of meter / seals) & Zonal staff (for site location, coordination etc.), as per previous practice. This was a cumbersome exercise and could not retain the secrecy and swiftness needed in such sensitive operations. Thereafter, Enforcement Department was made self-sufficient, renamed as Corporate Enforcement Group (CEG) which started conducting inspections independently. Initially provisional bills were raised by the inspecting teams at the site itself. Later, this practice was changed and theft cases and the bills were finalized from the office.

With gradual evolution of the regulations of the Delhi Electricity Regulatory Commission, it became mandatory to issue show cause notice, seek reply, hear the consumer and issue speaking orders, to finalize the cases of theft involving tampering of meters. Initially, there were two inspection teams each for North area and North-West area. With emphasis on faster reduction of losses, the number of inspection teams, were gradually augmented. Currently, there are 32 Teams at the disposal of CEG.

**Enforcement Activity by Meter Management Group (MMG):** During drives conducted for replacement of electro-mechanical meters and while attending complaints of burning or other meter related complaints, many meters were suspected to be tampered. Meter Management Group (MMG) started conducting inspections, initially on such meters suspected to be tampered but after gaining more experience, they could widen the scope of their work by undertaking inspections even on unauthorized use and direct theft. This activity was formalized into a separate Enforcement Cell within MMG and now has 14 teams. Further, there is a separate Enforcement Wing, having 4 inspection teams with District Moti Nagar.

#### **Enforcement Strategy from 2002 till date:**

Though enforcement activity was undertaken generally throughout the license area of the company, Special raids on certain categories were given focused attention as under:-

- a. **2002-03:** Conducted day and night raids to detect theft by industries. The intent was to catch the 'Big fish' first and educate the small consumers to comply.
- b. **2003-04:** Conducted raids in coordination with Meter Management Group during the latter's meter replacement drives to book meter tampering cases, since proper metering was key to curtailment of losses.
- c. **2004-05:** Conducted raids in Jhuggi Jhopari (JJ) Clusters (hutment dwellers) where there were a number of small industries, for booking of industrial theft. Started analysis of Common Meter Reading Instrument (CMRI) data of suspected industries to identify cases of theft and tamper.
- d. **2006-07:** Conducted mass raids in posh residential colonies for suspected theft. The high end consumers involved in power theft needed to be curbed.
- e. **2007-08:** Conducted mass raids in JJ Colonies for booking of domestic theft and theft by small industries. Repeated drives were needed to stamp out power theft in these ghettos.
- f. **2009-10:** Conducted morning raids in village / rural areas. This was to take the message further into the fringes in our licensed area.
- g. **2010-11:**
  - (i) Morning raids as mentioned above.
  - (ii) Special drive for checking theft of electricity at temporary tents installed during marriage season, Ram Lila, Mela Etc.

- h. **2011-12:** Currently, special emphasis is being laid for booking of theft in rural / unapproved colonies. Besides, a special drive has been launched for booking unauthorized use of electricity.

### **R&D to counter theft**

The modus Operandi adopted by the unscrupulous consumers has been changing from time to time. Initially, consumers used to steal electricity by means which could be physically detected such as damaging the meter, slowing and stopping the meters by inserting thin plastic films, burning the meters to avoid billing, installing shunts and resistances etc. To gain access to meters, seals would often be tampered or fictitious seals would be affixed. With the installation of electronic meters use of remote devices, magnets, jammers, injecting high voltage and frequency etc. are being detected. These devices do not require tampering of seals, do not leave any physical evidence and complaints of malfunctioning of meters can be easily used to counter allegations of theft.

In order to detect the effect of electronic devices and waves on electronic meters and to study the behavior of meters under influence of tamper mechanisms, a special R&D laboratory has been established which has significantly contributed in understanding these aspects. This laboratory shares its findings with meter manufacturers and subsequently work procedures for design, installation, inspection and analysis of meters, are devised based on findings of this laboratory. The laboratory reports directly to Chief Technical Officer.

To meet regulatory requirement of validation of theft cases by an independent agency, an arrangement was made with the Electrical Research and Development Agency (ERDA) Baroda in 2010 to validate cases of suspected theft based on study of Common Meter Reading Instrument (CMRI) data. This arrangement has helped process cases of theft involving use of sophisticated devices mentioned above.

### **Processing and settlement of Enforcement cases**

To maintain fairness and ensuring unbiased decisions in cases of theft and unauthorized use of electricity, it was necessary that the person taking final decision is different from the person carrying out inspection. For that purpose, the activity of studying replies of the consumers, hearing, issuing speaking orders and bills, settling and closing the cases and redressing the enforcement related grievances of the consumers was assigned to a new group called Enforcement Assessment Cell (EAC).

### **Settlement of theft cases**

To boost recoveries, expedite mutually acceptable settlements, close larger number of cases of theft which have not yet reached courts or which are pending before courts and to provide relief to the affected consumers, amicable settlement has always been the most favored method. Amicable settlement was promoted through the following machinery and methods. It is remarkable that some 83000 cases were settled without recourse to court cases.

### **Constitution of Enforcement Settlement Committee (ESC)**

There had to be a machinery to consider grievances of the persons booked for theft, to take decisions on waiver of penalties and expediting settlements without resorting of lengthy process of courts and allowing relief to the consumers. ESC was constituted for taking decisions on such issues. ESC has cross functional representation from technical, finance and revenue functions. Where decision is to be taken on higher amounts, progressive involvement of Advisor to MD, Head (Commercial), Chief Financial Officer, Chief

Technical Officer and Chief Executive Office is also ensured. All settlements, waivers and reliefs in theft cases are finalized with the approval of the settlement committee.

### **Rebates in theft bills**

To incentivize mutual settlements and avoid lengthy process of courts, a waiver of 25% of the billed amount is allowed for consumers opting for settlements. This has proved to be very cost effective as it leads to prompt resolution and obviates the expense and uncertainty of the outcome of lengthy legal process.

To give a further incentive to early settlements, new settlement policy is on the anvil wherein consumers opting for settlement and payment at the earliest stages after inspection will get higher rebates and those delaying it will progressively lose the benefit.

### **Settlement through Judicial / Quasi-Judicial Forums and Personal Hearing Forums (PHF)**

In addition to settlements taking place regularly in office, settlements have been promoted in all forums including Special Electricity Courts, Civil Courts, Permanent Lok Adalats, continuous Lok Adalats in the High Court, public grievances commission etc. Besides, Special Lok Adalats have been organized every year under aegis of the High Court and the Delhi Legal Services Authority. Large numbers of theft cases have been settled in these Lok Adalats.

Also, Personal Hearing Forums (PHF) are regularly organized in the District offices of the company. PHFs were also organized in Police Stations during 2010-11.

### **Electricity Courts for prosecution in theft cases**

Special Electricity Courts were constituted in 2004 and all cases of theft of electricity were transferred to these courts. These courts have functioned effectively and have helped create deterrence against theft of electricity. FIRs are lodged in cases of direct theft involving higher loads, criminal complaints are filed in other cases directly before the Special Electricity Courts.

Upto 2004, most of the criminal complaints were filed by the panel lawyers. Since 2006, all such cases are being handled in-house by legal department under guidance from a senior criminal lawyer. There is a special legal group working for Enforcement cases.

To avoid wrongful prosecutions, cases are subjected to scrutiny before filing, additional evidence is gathered and addresses of the accused are verified through special site visit, electoral roll, phone number etc. Most of the criminal cases filed before the special electricity courts, have been settled. Success rate in cases where final judgments have been delivered by the courts is also high.

### **Voluntary disclosure / Amnesty Scheme and special settlement schemes**

As a proactive consumer friendly measure as well as to offer an Amnesty window, several schemes were introduced in 2003, 2004 and 2008 with the approval of the Hon'ble Commission. The schemes promoted replacement of electro-mechanical meters without penalty, replacement of tampered electro-mechanical meters at nominal penalty, allowed liberal rebates for settlement of theft cases and invited residents of JJ Clusters (hutment dwellers) to seek metered connections without penalty of theft.

Similar schemes were launched almost every year thereafter to promote settlements and recoveries from theft and misuse cases. These schemes have been immensely successful in promoting settlements.

The approach adopted by TPDDL was to tackle the miscreants in the creamy layer of the consumers first. The industries and richer commercial and residential establishments were the first to be raided. Encouraging mutual settlement by admission of the offense and waiving a smaller part of the outstanding dues brought a large number of defaulters into the paying consumer's category.

The certainty of punishment rather than the severity was established to send a clear message for compliance. The net effect of all these measures is that the specter of power theft in the capital city has been successfully tackled and the multi-pronged corrective actions have greatly contributed to a steady reduction of the AT&C losses from around 53% in 2002 down to around 11 % in 2012. Considering that technical losses which are unavoidable are to the tune of 8% this has been quite an achievement.



***Raid party in action***



***Removal of illegal hooks from network***



***Meter body tampering***

A brief summary of total cases booked and the amount recovered is attached below:

Period	Total cases booked	Total Billed Amt. (Rs. Crs)	Total Recovery (Rs. Crs)
July-02 to March 03	2484	23	12
April-03 to March 04	2979	30	15
April-04 to March 05	4669	40	16
April-05 to March 06	6214	77	19
April-06 to March 07	10091	145	21
April-07 to March 08	7134	51	17

Period	Total cases booked	Total Billed Amt. (Rs. Crs)	Total Recovery (Rs. Crs)
April-08 to March 09	9053	62	25
April-09 to March 10	10797	49	26
April-10 to March 11	12935	52	30
April-11 to March 12	11095	45	22
April-12 to Nov 12	5671	25	8
<b>Total</b>	<b>83122</b>	<b>598</b>	<b>211</b>



**Communication and Relationship Building**



At the time of privatization of power distribution in Delhi, there were significant apprehensions in the minds of every stakeholder, be it Government, Employees, Consumers, Business Associates or Regulators. This was so, as the earlier privatization effort in Orissa had been largely unsuccessful, and with Delhi being the Capital city, all eyes, both nationally and internationally, were on this effort. A failure of this initiative in the Capital city would have meant a total set-back for the entire Distribution reforms process across the country. The leadership team realized, right at the beginning, that in such a challenging situation, it was imperative to establish open and transparent communication channels with all stakeholders to win over their trust and support. The Company has been assiduously following this philosophy since inception.

### ***Communicating with Consumers***

To transform the erstwhile monopolistic utility into a consumer friendly organization and to revamp the consumer experience was one of the priorities of TPDDL. To achieve this, it was essential that the needs and expectations of consumers were captured and organizational and process restructuring done in a manner that would meet/ exceed those expectations. There was a need to listen to consumers, provide them with open channels of communication, understand their segmented needs and establish a transparent culture, thus, making them partners to the reforms process.



With this in mind, TPDDL initiated periodic engagement meets with Resident Welfare Associations RWA/IWAs within its area on the first Friday of every month wherein consumers could freely express their needs and requirements to the distributed leadership team of the company. The initiative was later extended to “Udhaym – Humara Prayas Apka Vishwas” (- Our efforts to win your confidence - a concept of ‘town hall’ meetings by going to consumers’ (RWA) own community centres and arranging open sessions with management representatives). . These meetings also became effective platforms to sensitize the consumers on various social factors such as Climate Change, Energy Conservation, Safety, Electricity Theft etc. Consumers through RWAs/IWAs were also encouraged to participate in the Community Social initiatives of TPDDL such as

Blood Donation camps, Tree Plantation, Energy fairs, Earth Hour etc. ‘E Sampark’ newsletter was introduced to communicate all key initiatives, new services to RWAs/ IWAs which in turn helped them to sensitize their community members. In addition to the above, TPDDL engaged Eminent Citizens who were opinion makers in the society as “Brand Ambassadors” to act as bridge between the consumers and TPDDL. The main function of these Brand Ambassadors was to represent public concerns to TPDDL and at the same time spread the change message to the masses regarding the new initiatives and innovative services launched by TPDDL. A climate of active engagement and rapport was painstakingly built up with consumers over time.

TPDDL also institutionalized segmented relationship approaches for its consumers through Client Managers (for Xpresss and Key Consumers > 100 KW load and G&I consumers), Account Managers (for High Revenue consumers > 10 KW load), CROs (for consumers <10 kW load) to provide dedicated services. Special Consumer Group was created in 2009 to cater to the Juggi Jhopdi (JJ) Clusters (hutment dwellings) consumers. In addition, consumer satisfaction surveys through independent market research agencies were initiated from 2004 to understand expectations of the consumers and to assess the company's performance on those expectations. In-order to directly engage with Consumers to understand and address their grievances, the entire Top Management started meeting with Consumers in various



Engagement Meets which were organised periodically with different consumer segments. Annual Meets with High end Consumers (KCG, Xpresss, G&I) & periodic meets with different demographic and consumer segments such as Yuva (Youth Segment), Yugantar (Sr. Citizen meet) and Ujjwala (Women Meet) were initiated.

Engaging with consumers at various forums has provided useful insights to launch new initiatives/ services for enhancing consumer satisfaction eg. SMS based services, video conferencing etc. TPDDL was the first utility to announce Performance Assurance to its consumers in terms of service delivery within stipulated timelines without any regulatory obligation. The company also made effective use of media to reach out to its consumers and provide information regarding new initiatives, planned outages, high profile power thefts, energy conservation, safety etc. In addition to the above, several Nukkad Nataks (street plays) were organized to make consumers aware of the hazards of theft of electricity.

***Communicating with Government representatives***

In addition to engaging with the consumers and community at large, TPDDL also engaged proactively with public representatives such as MLAs and MPs to understand their needs and those of the people whom they serve. A special dedicated Govt. Affairs group was set up to continuously engage with these policy makers and influencers to partner and garner their support in our community centric initiatives. TPDDL

quarterly newsletter “Navodyaya” is also regularly shared with them to keep them abreast on the latest initiatives undertaken by TPDDL. Further, TPDDL also participates in the Bhagidari ( Partnership) meetings organized by Govt. of Delhi which act as a platform to capture the inputs from consumer representatives and shape initiatives for improvements accordingly. TPDDL, over the years has worked closely with the Govt. to ensure that Special Courts are set up in its area for faster disposal of theft cases and that all past Govt. dues are recovered.

### ***Communicating with Workforce***

While developing and designing communication and relationship channels for external stakeholders, TPDDL was equally aware of the importance of creating an open communication and transparent culture within the organization which would be fundamental in creating a dedicated and motivated workforce which was the backbone of transformation process.



In order to alleviate the fear and apprehension of the inherited workforce many initiatives were undertaken by the organization such as SAMVAAD (where the Top Management meets every level of the organization to understand their concerns), Town Hall Meetings for all segments of the workforce. Joint Interaction Forums on a periodic basis across all work locations where people can discuss the work environment related issues etc. SARTHI – the employee grievance redressal mechanism was instituted so that all employees could register their grievances which are resolved within stipulated timeframes. In addition to the above, bilingual monthly newsletter “Surkhiyan” and quarterly magazine “Navodyaya” were launched where key organizational initiatives and achievements were incorporated and shared with all. In addition, HR Nodal officers were appointed at all locations to ensure that the workforce needs and requirements are attended to on a continuous basis. TPDDL also institutionalized Workforce satisfaction surveys through reputed third parties to assess its performance on human front and identify the areas that required further improvement. Further, key aspects such as safety, ethics etc are reinforced through special weekly drives. The latest initiative towards workforce communication has been launch of “AAP Tak” wherein views and message of the Top Management and the key achievements and success stories of TPDDL are communicated through videos uploaded at our knowledge portal “Sanchay”. All the above initiatives have helped TPDDL to leapfrog to being placed among the Top 100 companies in the ‘Great Places to Work’ survey and bond together as a close knit family.



## Communicating with Business Associates

TPDDL has laid an equal emphasis on communicating and developing relationship with its key Business Associates who are broadly categorized into Bulk Power Suppliers, Service providers and Equipment Suppliers. For the former i.e. Bulk Power Suppliers, a regular communication is maintained through the Northern Region Power Committee and one to one interactions with suppliers such as NTPC, NHPC etc is undertaken to ensure that TPDDL consumers have sufficient power availability at all times; for the latter, i.e. service providers and equipment suppliers, Annual Meets as well as quarterly JIF meets are held to elucidate them on their importance in driving innovation and quality in our services to the end consumers. BA satisfaction surveys are also undertaken to assess their satisfaction levels and identify areas of further improvement and engagement. TPDDL has recently launched an innovation council with its key Business Associates to explore areas regarding new technology enhancements and their possible adaptation in improving the consumer service delivery.

## Communicating with Media

Recognizing the fact that media plays an instrumental role in building public opinion, TPDDL since inception, has been working closely with and through the media on various community related initiatives. Virtually all communication channels such as print, radio, tv, cinema, internet, etc. are utilised by the Company to get its message across to the target audience. Various media campaigns and programs have been launched periodically for public awareness on diverse issues relating to the Distribution Sector; some of the significant issues addressed include:

- Dispelling apprehensions with respect to privatization of power
- Spreading awareness on launch of various consumer services and introduction of new technologies for consumer benefits
- Sensitizing masses on consequences of theft of electricity
- Mitigating public apprehensions with respect to accuracy of electronic meters, electricity bills etc.
- Educating consumers on the aspects of tariff, reliability, safety, energy conservation and climate change
- Communicating information on planned outages

The Corporate Communications group of the Company continuously engages with the Media and provides it information, data, supplementary material, etc. in order to facilitate proactive and transparent information sharing with the media and public at large. Periodically Media Conferences are also organized wherein plans and initiatives of the Company are shared with the members of the media and their queries / concerns are addressed. As and when required, the Senior Management of the Company also actively participate in debates / discussions on power sector to address public concerns/ perceptions, etc.



The proactive and innovative methodologies adopted at various platforms have consistently added value to the brand and contributed towards organizational excellence.



**Ensuring Energy Security**



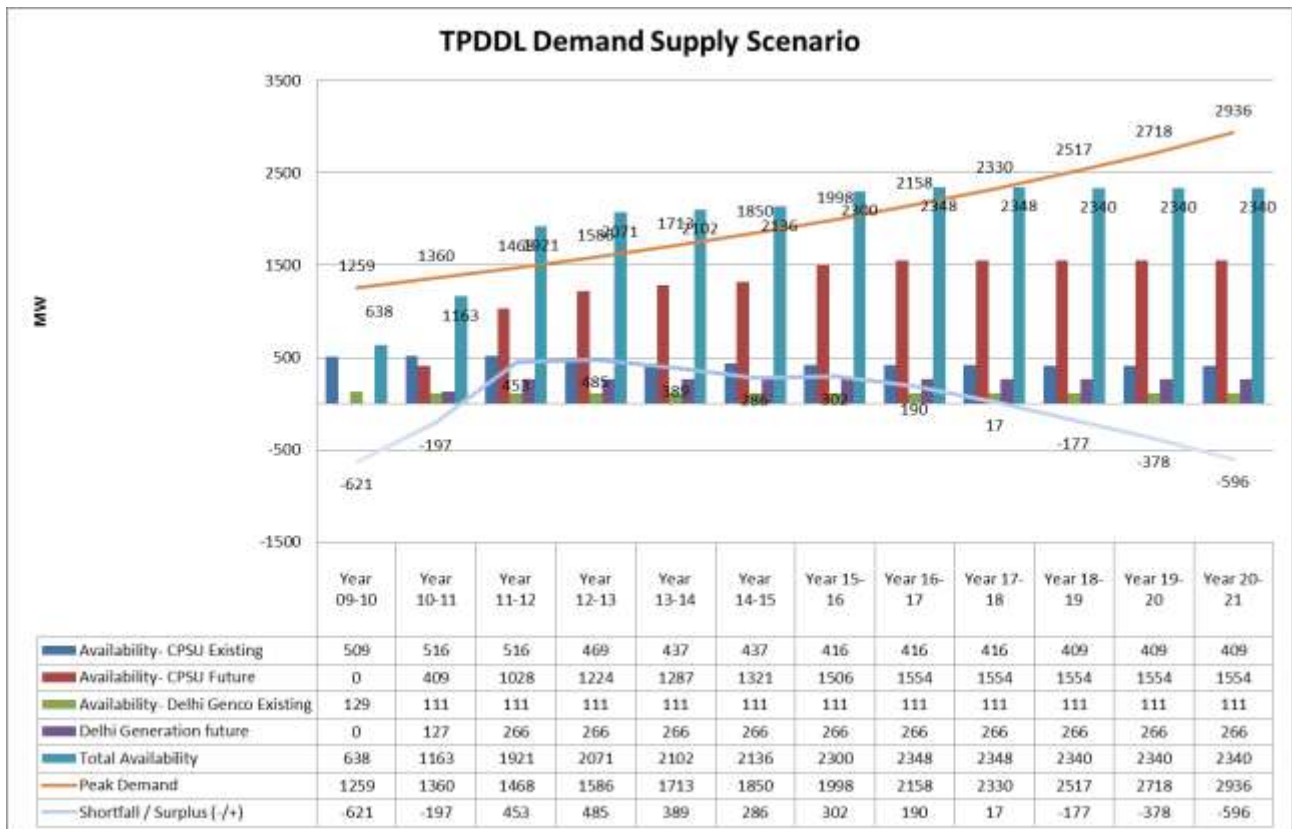
From the inception of NDPL/TPDDL till 31<sup>st</sup> Mar 2007, the responsibility of power procurement for the Discoms was vested with the Delhi Government owned Delhi Transco Limited (DTL) as per the statutory arrangement put in place by the Delhi Government prior to privatization. With effect from 1<sup>st</sup> April 2007, the long term power agreements vested with DTL were reassigned to the distribution licensees in proportion of their respective demands and TPDDL was allocated 29.18% of the available power from existing stations (NTPC, NHPC, DVC, Delhi Gencos etc.). They were further mandated to arrange all subsequent power requirements for their respective consumers. Consequently, from April 1, 2007, a Power Management Group was formed by TPDDL with the key responsibility of

- Procurement of power at the most optimal rates
- Ensuring 24X7 power availability for TPDDL through long term and short term sources and
- Sale of surplus power, if any

The Long Term Power arrangements transferred from DTL catered around 80% of the TPDDL's demand. In order to bridge the demand-supply gap TPDDL began to procure power for the immediate to short term from the bilateral market (through power traders / state utilities) under the negotiated route. Simultaneously, TPDDL started working on arranging medium term (> 1yr) and long term power procurement based on load and supply studies carried out through independent agencies and inputs from CEA Electric Power Survey etc. The longer term planning horizon was particularly important owing to the fact that TPDDL has a license for 25 years and the gestation periods for Generation Plants are normally more than 4-5 years. In 2008, power exchanges started their operations enabling discoms to trade power on day-ahead basis. To take advantage of the transparent price discovery mechanism and to efficiently manage its demand-supply, TPDDL commenced trading (buying/selling) in both the power exchanges namely Indian Energy Exchange (IEX) and Power Exchange India (PXIL). Further, based on the medium/long term demand forecasts, 150 MW power was secured for the medium term under Govt. of India's Case 1 Competitive Bidding mechanism.

TPDDL also entered into long term agreements of 1000 MW in addition to the capacity that was reassigned at the end of Mar 2007. The 1000 MW contracted capacity includes bilateral long term contracts with Maithon Power (300 MW) and China Light and Power (132 MW) at CERC determined rates. As per the long term demand supply forecasts, TPDDL has secured adequate power to meet its Licensed Area's peak requirements based on annual growth estimates of 7-8% till the year 2017-18. Year wise demand supply forecasts for TPDDL is illustrated below:





## Ensuring Energy Security through Backward Integration – Own Generation

### Combined Cycle Power Plant at Rithala

It was during 2008 that TPDDL conceptualized the idea of setting up its own generation plant within its licensed area to partially meet its peak demand and to providing uninterrupted power in islanding mode to certain critical installations such as hospitals, waterworks, metro services, fire stations etc in the event of any Grid collapse. Given the scarcity of power and the long lead time in delivery of new gas turbines, it was



#### Project Details:

ISO Rating -108 MW

Rated Capacity - 94.8 MW (2 Gas Turbines – 31.6 MW each; 1 Steam Turbine – 31.6 MW)

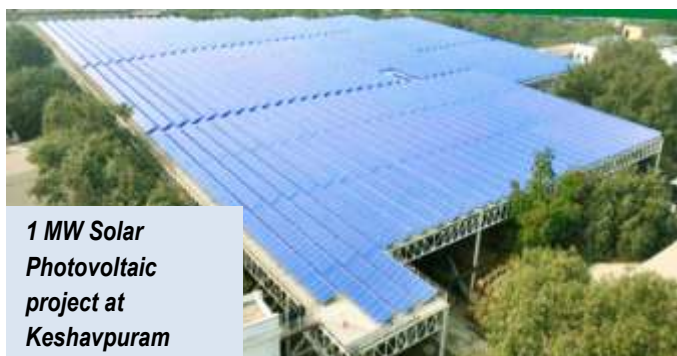
decided to procure an existing gas based power plant which could be quickly imported into India, refurbished and commissioned expeditiously. After carrying out a search for suitable machines, a 108 MW, gas based combined cycle power plant, was procured from CHONGQING, China and was relocated in TPDDL Licensed Area at Rithala, Delhi.

As committed to the Govt. of India and Govt. to Delhi, the plant was synchronized with the grid prior to commencement of Commonwealth Games in Sept 2010. Subsequently,

the plant was successfully commissioned in the Open Cycle Mode on 5<sup>th</sup> February 2011 and in Combined Cycle Mode on 4<sup>th</sup> Sept 2011. While the plant has been allocated, 0.4 MMSCMD of gas from the KG Basin (at Administered Price of USD 4.2/MMBTU), which would be sufficient to run the plant at around 70% Plant Load Factor (PLF), due to severe curtailment of gas availability which is as high as 80-85% presently, the plant is able to run at a PLF of only 12-15%. TPDDL is pursuing with the gas suppliers to increase the gas availability for the plant. The Plant has achieved peak load of 89.2 MW on 29th Oct 2012 through aggregation of gas over a period of time which reflects its inherent capability to deliver high PLF's and meet the objectives for which it has been established.

## Solar Generation

Being a responsible Corporate Organization, TPDDL is also highly concerned about the issue of Climate Change and has started developing its Renewable portfolio since 2008 even before the same has been mandated by the Delhi Electricity Regulatory Commission in the form of Renewable Purchase Obligations (which were mandated in 2012). TPDDL has set up various Solar Photovoltaic projects ranging from 4 Kwp to 1MWp in its area of operations cumulating to 1.65 MWp in 2012. Some of these projects have been set up under the aegis of Ministry of New and Renewable Energy's "***Demonstration Programme on Tail End Grid Connected Solar Power Plants***". In addition to the above, TPDDL is working closely with the Delhi Govt. to develop a Solar Policy for Delhi so that its consumers can be made partner to this Green cause through setting up of numerous roof top distributed solar projects.



## CHAPTER-12

### HR Journey



As part of the privatization agreement, TPDDL inherited the entire workforce of erstwhile Delhi Vidyut Board. There was an immediate need for management to gain the confidence of inherited employees and create an environment of trust and co-operation in order to make the reforms process a success. Some of the initial challenges were:

- To manage an anxious workforce, wary of the post privatization scenario
- To ensure smooth transition of organization structure from bureaucratic setup to professionally managed corporate structure
- To develop capability in large section of un/semi-skilled workforce
- To enhance productivity of large number of unengaged Workforce
- To improve poor working conditions and inadequate infrastructure
- To create a culture of performance orientation and strong ethical values
- To change the mindset of employees from “I am the king” to “Consumer is the King”
- To develop an effective and transparent Communication System
- To create an environment of harmonious industrial relations

The journey began with understanding and internalization of the current organizational culture and ethos of the inherited workforce, and then developing a culture for fostering value system, business ethics and high performance in a healthy competitive environment in line with the Tata way of working. For a strong employee connect LGIE (Large Group Interactive Events) workshops, town hall meetings and visits by Sr. Leaders across distributed locations of the company were initiated. The same was subsequently made more robust by introducing JIF (Joint Interaction Forum – working together), SAMVAD (for suggestions or improvement), VOE (Voice of Employee – to address individual employee grievances and manage their perception). To touch base with the employees directly at the shop floor HR Nodal Officers were placed at the field.

Organization structure was revamped and the erstwhile Personnel department was renamed as Human Resources with a larger perspective covering the entire gamut of HR activities. In 2003, a decentralized Human Resource department was created with a senior representative of HR in every district to look after employees’ needs. With strict control on attendances, all things were slowly streamlined. In 2004, HR department at TPDDL was centralized. The overall IR environment was not so congenial and at times hostile post privatization. To improve and maintain harmonious relationship, a dedicated team of IR and Welfare officers was deployed at the shop floor. As a result of their continuous interaction with the employees and the opinion makers the IR situation has gradually improved.



CENPEID

Recognizing the need for capacity building amongst the inherited workforce and those being recruited in the organization post privatization, TPDDL laid great emphasis on this aspect and started imparting training since August 2002 from HRDI operating from Rohini. In order to meet the increasing challenges in the Power distribution sector in the wake of reforms and to fully equip employees to address the changed market scenario, TPDDL started a full-fledged training center in the name of Center for Power Efficiency in Distribution (CENPEID) in January 2005 which today boasts of being a national resource center and



provides training to not only our employees but to those of other utilities (both national and international) as well.

In order to create a culture of performance orientation, Vision – Mission – Values were communicated across the organization; strategic objectives were built into the departmental scorecards and cascaded down to the individual Key Result Areas supported by performance linked incentive and reward mechanism. TPDDL has always reinforced the fact that due merit would be given for performance and had offered the inherited employees who were governed by Fundamental Rule Supplementary Rule (FRSR) structure (applicable to Government employees), the option to migrate to performance based CTC structure. Many employees opted for the same, and for the remaining TPDDL instituted additional incentives over and above Govt. guidelines to recognize their contribution towards attainment of company goals.



Amalgamation of the unique and precious heritage of the Tata Group with the existing culture of the inherited workforce was done by imbibing the values and the Tata Code of Conduct into all employees. Concurrently policies such as whistle blower, sexual harassment and gift policy were introduced. The Ethical culture was further strengthened through extensive awareness sessions and ethics week celebration. Mentoring process was introduced to mould the trainees into the organizational fabric and also improve the culture of ‘learning and sharing’ in the organization. Buddy Scheme was introduced for lateral employees.



To revamp the consumer experience, Employees (including BA employees) who were involved in customer facing jobs were imparted specialized soft skills. Today we have graduated to a Consumer Relationship Management function dedicatedly looking after all consumer interests.

In order to increase the engagement level of employees in the organization, the management took initiatives to improve the working conditions by renovating and standardizing all office buildings, providing infrastructure, hygiene and sanitation. Steps were also taken to introduce IT facilities and ergonomically

designed furniture at the workplace. Biannual Employee Satisfaction & Engagement surveys are conducted to assess the employee expectations and judge the organizational performance on those aspects.

A dedicated Business Associates & Legal Cell was also created to look after the concerns of BA employees and ensure all statutory compliances. The competency mapping and training on safety & behavioral issues by BA & Legal Cell has proved to be very effective in consumer facing jobs and reduction in rate of accident

Some of the key initiatives of the Cell are:

1. Competency checks and Training as per gaps identified for BA employees
2. Employee Engagement & Satisfaction Survey of BA employees:
3. Statutory Compliances
4. Check for unethical practices
5. Discipline Management
6. Safety of BA employees

Since inception, TPDDL has worked towards establishing an open and transparent two way communication culture in the organization and has provided several platforms for the employees to ensure that they can freely express their grievances and provide suggestions for improvement. The available platforms for employee communication include

- Joint Interaction Forum (JIF)
- Grievance Handling System (GHS)
- Sarthi – An employee Helpdesk
- Voice of Employee (VOE)
- One to One Meeting with CEO
- SAMVAD
- Whistle Blower Policy & Ethics Platforms
- HR Newsletter / JIF Newsletter

At the time of takeover the employees transferred to TPDDL were 5268. Out of those almost 1900 opted for voluntary separation and more than 1500 have separated due to superannuation and other reasons since then. Over the years, TPDDL has successfully overcome much of the problems of the DVB legacy and anxieties related to transition and change. The company has constantly focused on ethics and governance, systems, work-force capacity and capability building and performance orientation. With a view to make this Public Private Partnership a success and to align the processes with the Groups HR practices and policies, Tata Power Delhi Distribution Ltd. has consciously reorganized the structure and re-engineered its processes to achieve excellence in operations and consumer service delivery.



***“Global HR Excellence Award”***

World HRD Congress  
(2011)



***“Excellence in Training & Talent Management***

Employer Branding Institute



***“Excellence in Training & HR leadership”***

Greentech HR Awards  
(2012)



## Commercial Process Reengineering



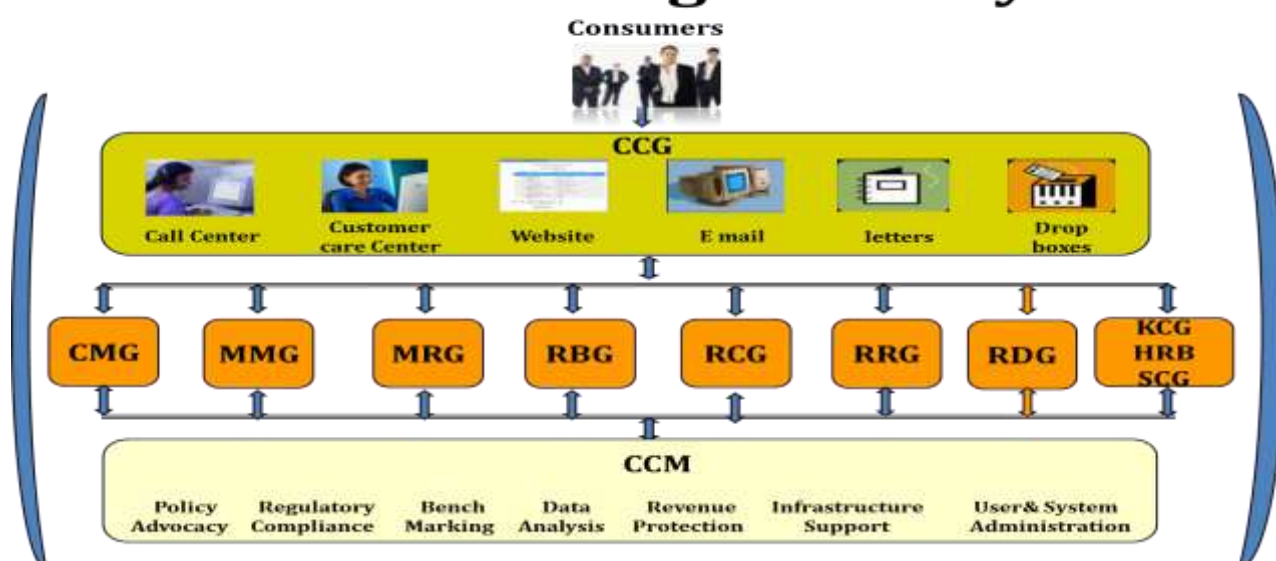
In year 2002, when TPDDL took over the electricity distribution business from Erstwhile Delhi Vidyut Board following were the main Commercial challenges before the organization:-

- AT&C losses of 53% ; largely attributed to theft, improper metering and poor collection efficiencies
- Pendency of approx. 20000 New connection Applications
- 1 Lakh metering and billing pending complaints
- Erroneous Consumer database
- Only 20 Payment Avenues for 7 lakh consumers
- Over 30% provisional billing and wrong billing
- No system of reports and MIS hence virtually no monitoring & control system.
- Image of an highly unethical organization due to rampant corruption complaints
- Lack of consumer centricity amongst employees due to monopolistic nature of the industry
- Absence of Customer Relationship Management
- No process centricity with large dependence on persons

There was an inevitable and immediate need to reengineer and standardize processes to provide unified experience to all the consumers; develop consumer centricity amongst the workforce, enhance consumer convenience and create a robust decision support, control & monitoring system for the management. High level of Automation & IT intervention was required to support the process revamp and reduce the possibility of manual manipulations.

The existing Revenue Cycle Management chain was reengineered into nine closely interlinked modules with philosophy of centralized monitoring and control and decentralized service delivery. These nine modules were linked through defined Service level Agreements (SLAs) which were built into in house developed software platform "SAMBANDH" which enabled the tracking of consumer requests and complaints from the point of inception to the point of closure. Escalation mechanisms were inbuilt into SAMBANDH to ensure that deliveries promised to the consumers are met. Recently TPDDL has migrated from SAMBANDH to SAP ISU to ensure a better integration of commercial processes with finance, procurement and project functions. Prior to privatization, the consumers were made to run from pillar to post to get their queries/ requests and complaints resolved. The same was eliminated and distinct consumer touch points were introduced under the Consumer Care Group which provided a single window solution to all consumer grievances. Further, call centers were established as a part of the process reengineering which further eliminated the need for consumer to visit TPDDL offices. The TPDDL website was opened up to consumers and facilitated them to view their information, pay their bills or register their complaints. Many convenient and innovative payment avenues such as Anytime Payment Machines, Kiosks, Drop Boxes have also been introduced by TPDDL over the last 10 years to facilitate consumers. A brief snapshot of the Reengineered process and the changes introduced is highlighted below:

# Revenue Management Cycle



BPR Initiative	Year of Formation	Earlier system	After BPR
<b>Consumer Care Group (CCG)</b>	2004-05	Ownership – Commercial Manager - Only one consumer Care in each district	- Creation of Multiple channels e.g. Call Centre, Online Self Service, E Mail etc.
<b>Connection Management Group (CMG)</b> - For all new connection and attribute change related activities.	2004-05	Ownership – Commercial Manager & Zonal Manager - Person dependent inefficient process, infested with local facilitators. This process was highly susceptible to unethical practices.	- Speedy Clearing of pendency - Doorstep service of New Connection - Implementation of FIFO - Uniform practice of processing of connection - Decision by a Group under surveillance
<b>Meter Management Group (MMG)</b> - For installation/connection, replacement of meters, meter testing.	2004-05	Ownership – Zonal Manager - Complaints of unethical practices such as tampering of meters by staff and delay in installation	- Random selection of meters - Implementation of FIFO - 100% testing of meters before installation - Faster adoption of new metering technologies
<b>Meter Reading Group (MRG)</b> - For meter reading management and bill distribution	2003-04	Ownership- MSR - Loss to company's exchequer due to unethical practices by Meter readers - Large complaints of wrong reading	- Outsourcing of meter reading - Concept of Check meter reader - Rotation of meter readers and agencies to avoid connivance - Automated Meter Reading by dialing thru GSM for high end consumers
<b>Revenue Billing Group (RBG)</b> –for billing, bill correction and quality of bills	2004-05	Ownership- AFO - No audit mechanism for bill correction - Large number of billing Complaints - Dependence on MSR for site	- logic based QC of bills before printing - Initially 100% pre-audit of correction through JE - later appropriate DOP was defined for corrections through

BPR Initiative	Year of Formation	Earlier system	After BPR
		report - Customer dissatisfaction	JE's
<b>Revenue Collection Group (RCG)</b> -for payment-related activities	2004-05	Ownership- AFO - One Cash Collection Centre in each district	- Creation of Multiple channels e.g. ATPM, Drop Boxes, and Internet etc. - Centralized monitoring and controls - Consumer Convenient timings
<b>Revenue Recovery Group (RRG)</b> -for the recovery of outstanding amounts	2003-04	Ownership- MSR& Meter Readers -No process of Disconnection Notice and disconnection advise - Delay in disconnection leads to accumulation of arrears	- List of defaulters generated through system - Auto disconnection Notice and Disconnection Advise process - Concept of Red bill to identify defaulter
<b>Revenue Discipline Group (RDG)</b> -includes the legal and enforcement sub-modules	2004-05	- No process of prioritizing for inspection - Delay in issuance of Show cause Notice etc. - No Monitoring of recovery	-On the recommendation of AMR/MRG/MMG - Focus on high value theft - Aggregation of theft inputs from public - Speedy action and compliance to the procedure laid down by regulator
<b>Corporate Commercial Management (CCM)</b> - Policy and statutory requirements	2004-05	Decision was taken by Head Office	-Work as a channel between requirement of function group and regulator. - Monitors issues related to regulatory compliance and submission of MIS.

At the time of takeover from erstwhile DVB, there was only tariff based segmentation i.e. Domestic, Commercial, Industrial and Agriculture. TPDDL's Consumer Segmentation has evolved over the years keeping in mind business focus and to cater to differentiated needs of the consumers. Following consumer segmentation based on AT&C loss reduction priority, differentiated needs of consumers, business volume and tariff evolved in last ten years:

Consumer Segment	Year of Focus/Creation	Consumer Profile	Sanctioned Load	% of TPDDL Consumer (Nos)	% of TPDDL Revenue (Rs. Crs)	Key Consumer Requirement
<b>KCG</b>	2003-04	LIP , Hospitals, Institution	> 100 KW	1649 (0.14%)	353 (11.4%)	Reliability & Quality Power Supply
						Relationship Building
						Dedicated Contact Point
<b>G &amp; I</b>	2005-06	Government & Institutional Consumers	All Load	9361 (0.79 %)	101 (3.40 %)	Uninterrupted Power Supply
						Relationship building
						Error free Billing and Payment Convenience

<b>HRB</b>	2005-06	SIP ,Towers , Street light etc.	11KW to 99 KW	34087 (2.88%)	945 (32.60%)	Reduced voltage fluctuation, Proactive communication ,Load shedding/Outages and planned outages at Convenient time
						Error free Metering and Billing (Accuracy of meter, timeliness of bill)
						Relationship building
<b>HCB</b>	2005-06	Household , Shops & Agriculture	1KW to 10 KW	1018545 (85.98%)	1120 (37.70%)	Reliability & Quality power supply (Proactive communication of Outages and faster restoration)
						Relationship building (Meeting Forums)
						Error free Metering and Billing (Accuracy of meter, timeliness of bill)
<b>Xpresss( This was part of KCG earlier was separated for open access regime)</b>	2006-07	DJB , DMRC, Malls, Large industries etc.	> 499 KW	208 (0.02%)	406 (13.7%)	Good Voltage Level, Quality of Power & Un interrupted Power supply
<b>SCG</b>	2009-10	JJ Clusters	1 KW	120779 (10.20%)	42 (1.20%)	Low Tariff, Low New Connection Charges, Simpler New Connection Process in terms of residence proof
						Social and Economic Upliftment

**\*The figures indicated above is for FY 2010-11**

TPDDL has also instituted dedicated relationship approaches for its consumer segments with Client Managers and Account Managers in place for Xpresss, KCG , G&I and HRB consumers and Consumer Representative Officers for HCB consumers. In addition, several periodic meets are held with consumer segments to understand their requirements and bring about further improvements in the processes. As a consumer centric utility, TPDDL introduced Performance Assurance Standards for its consumers even before the same was formally prescribed by the Regulatory Commission. Further, in order to ensure consumer delight, TPDDL has now adopted stretched targets for itself beyond the ones stipulated by the DERC in its Supply Code and has set up a dedicated Performance Assurance Cell to ensure adherence of the company on its stipulated timelines. The stretched internal PA guidelines adopted by TPDDL are depicted below:

Stretched Internal PA Performance			
S No	Request Type	As per DERC Supply Code	Internal Stretched PA Timeline
1	New Connection	Issue of DN - 10 Days	Issue of DN - 7 Days
		Meter Installation – 12 Days	Meter Installation – 10 Days
2	Name Change	Within 2 billing cycle	DN issued in 7 Days
3	Change of Category	Within 30 days or Billing Cycle following the Billing Cycle of Request, whichever is earlier.	DN issued in 7 Days
4	Load Reduction	Within Next billing cycle	DN issued in 7 Days
5	Load Enhancement	Within 30 days or Billing Cycle following the Billing Cycle of Request, whichever is earlier.	DN issued in 7 Days
6	Testing of Meter	15 Days	12 Days
7	Meter Faulty	30 Days	10 Days
8	Meter Reading Complaint	15 Days	5 Days
9	Billing Complaint	15 Days	10 Days
10	First Bill	Within 4 Billing cycle	Within 1 Billing cycle

In addition to the above, consumer satisfaction surveys through independent market research agencies were initiated from 2004 to understand expectations of the consumers and to assess the company's performance on those expectations. The surveys have shown manifold improvement in the consumer satisfaction levels due to the various consumer centric initiatives instituted by TPDDL.

Initial Challenge	FY 02-03	FY 11-12
AT&C losses	53%	11%
Pending New connection Applications	20000	Nil
New Connection Cycle time	51.8 Days	6 Days
Pending Metering and Billing Complaints	10000	Nil
Provisional Billing	15%	3.10%
Wrong Billing Complaints	6%	0.20%
CSI	-	88%
Payment Avenues	20	5000 +
Uniform Processes	Nil	50 + Standardized and IMS documented Processes



As a result of the above initiatives, the Commercial performance of the organization has improved dramatically and the organization has earned the distinction of being a very consumer friendly organization over the years. Some of the innovative offerings of TPDDL to consumers are as follows:



***14 Fully networked consumer care centers***

***Call Centers for No Supply and Commercial Complaints***



***The SUGAM Experience – Billing database of 100% of consumers on website***

***Door Step delivery of new connections***



***Automatic Cash/ Cheque Collection Machines***

***Video Conferencing for Consumers***



***SMS based pull services***

***Instant Connection***





**Corporate Governance**



**Corporate Governance** is a very vital function of the Board in ensuring that the company upholds its ethical standards and exercises effective controls in safeguarding the interests of all stake holders.

It specifies the distribution of rights & responsibilities among company's stakeholders (including shareowners, directors and managers) and articulates the rules & procedures for making decisions on company affairs. At Tata Power Delhi Distribution Limited (TPDDL), a JV between Tata Power and Government of Delhi, the ownership of the Company and constitution of the Board of Directors, its management structure and the operations of the Company flow from Shareholders Agreement and the Memorandum and Articles of Association of the Company. The foundation of trust among Shareowners, Directors and Management team at TPDDL consists of four corporate governance pillars viz Accountability, Transparency, Fairness and Responsibility.

The corporate governance framework at TPDDL

- Promotes transparent and efficient operations, to be consistent with the rule of law and clearly articulate the division of responsibilities among different supervisory, regulatory and enforcement authorities.
- Protects & facilitates the exercise of shareholders' rights.
- Recognizes the rights of stakeholders established by law or through mutual agreements and encourage active cooperation between organization and stakeholders in creating wealth, jobs and the sustainability of financially sound enterprises.
- Ensures timely and accurate disclosure on all material matters regarding the organization, including the financial situation, performance, ownership and governance of the company.
- Ensures strategic guidance of the company, the effective monitoring of management by the Board and the Board's accountability to the company and the shareholders.

**Accountability for Management's actions:** Complete direction and supervision of the company is with the Board.



***TPDDL Board Members: L to R (S. Padmanabhan, Anil K Sardana, Shakti Sinha, Adi J Engineer, M.M. Kutty, S. Ramakrishnan, H. S. Vachha, Praveer Sinha)***

The Board's mandate is to provide and oversee Company's strategic direction, review Corporate performance, authorize and monitor strategic investments, ensure regulatory compliance and safeguard interests of stakeholders. Day to Day operations of the company are managed by Chief Executive Officer & Executive Director (CEO&ED). Schedule of Authorities specifying Delegation of Power (DOP) at various levels for various issues and significant policies, Tata Code of Conduct etc. have been approved by the Board. Various Board Committees (Audit Committee, Operations Review Committee, Remuneration Committee, Capital Expenditure Review Committee, Business Review Committee and Long term loans & borrowings committee) with specific terms of reference have been constituted. Board and Audit Committee meet at least once a quarter to review the performance of company. Other Committees meet

on periodical basis. Action Taken Report (ATR) of Board directions are presented during Board meetings. All significant issues including Operations, Revenue, Long Term Plans, Capital Budget requirement and updates, Quarterly Financial Results and Statutory and Regulatory Compliance Card (SRCC) are also presented to & deliberated by Board.

**Fiscal accountability:** Statutory audits of financial statements, in accordance with Statutory Accounting Standards, are conducted by a reputed Independent auditor on a quarterly basis. Accounting policies and processes followed by the company are reviewed periodically by the Executive Management, the Audit Committee and the External Auditors. Cost audit is performed on an annual basis and the Cost Audit Report is approved by Audit Committee & the Board of Directors and is filed with Ministry of Corporate Affairs.

**Transparency in Operations:** Board has complete access to all information of the Company which is provided to all the Directors. Competitive bidding through open advertisements/ pre-qualified suppliers carried out for procurement of services/materials etc. with specified limits and as per the directions of the State Electricity Regulatory Commission, DERC.

**Disclosure Policies:** Disclosure of related party transactions is made in financial statements. Directors disclose their interest, if any, in a transaction, in Board meetings. They also inform the Company of any change in Directorships/ Committee positions held by them. Regulator's approval is taken for Group Company transactions above rupees1 Crore (as per Regulator's direction). Audited Financial Statement and Annual Report of the Company are given to all shareholders and form a part of the annual filing to the Regulator & Registrar of Companies thus bringing it in public domain.

#### **Independence and effectiveness in internal and external audits**

The Internal Audit head reports administratively and functionally to CEO&ED but under overall directions/supervision of the Chairman, Audit Committee. In addition to the Internal Audit team (IA&RA) of the company, TPDDL also engages a reputed Audit firms (eg M/s KPMG, E&Y etc) to carry out the Internal Audit of certain critical areas. The annual Internal Audit Plans for both the Internal Audit & Risk Appraisal (IA&RA) Department and the external Audit firm are finalized after due discussion with the Management and finally approved by the Audit Committee. **Statutory Auditors**, who in turn ascertain True & fair view of the financials, Compliance to all laws including mandatory accounting standards, maintenance of documents and registers required under Companies Act 1956, are appointed by Board of Directors, subject to approval of shareholders, on recommendations of the Audit Committee. Appointment of **Cost Auditor** is recommended by Audit Committee and approved by the Board. Approval is also obtained from Cost Audit Branch, Ministry of Corporate Affairs. A Law firm is periodically engaged for carrying out **Legal Audit** and its comments and suggestions have been incorporated in the Statutory and Regulatory Compliance Card (SRCC) and actions taken accordingly.

**Protection of stakeholder & stockholder interest:** Stockholders interest is protected by continuously reviewing the orders of the Regulator (DERC) adversely affecting the returns to the shareholders of the Company and challenging such orders in the Appellate Tribunal, and if required before the Supreme Court. The Company also pro-actively carries out policy advocacy, both with the Government as well as the Regulators (both at the State and the Central level) so as to ensure that the policies/ statutes formulated by the Govt/ Regulators are fair to both the consumer as well as investors. The Company has an elaborate Strategic Planning Process which takes into account the needs and interest of various stakeholders. The outcome of the SPP is presented to the Governance Board which approves the same.

**Ethics management** at TPDDL has been given a high priority and is institutionalized through 'Tata Code of Conduct' (TCoC) and a three Tier Ethics Management structure comprising of Ethics Champions and Ethics

Counsellors at local and group levels and Ethics Management Apex Team (EMAT) ,spearheaded by the Chief Executive Officer & Executive Director of TPDDL at the Corporate level. EMAT takes the lead role in guiding, reviewing and monitoring ethical issues and dilemmas raised while the Ethics Counsellors and Champions are entrusted with the responsibility of continuously reinforcing ethical culture and bring any ethical issues/concerns to the notice of the Management.

It is pre-requisite for each joiner to go through the TCoC and consent to the agreement prior to joining. BAs are bound by TCoC under General Conditions of Contract (GCC), which also requires compliance to other legal / statutory stipulations related to labor, environment, safety, etc. During all communications with stakeholders, Sr. leadership focuses more on the ‘why’ part of ethics apart from the ‘how’ & ‘what’ of it for ingraining ethical behavior on a sustainable basis.

Joint Interaction Forum (JIF) is another mechanism to build ethical culture and promote Values. The GCC and website have been amended to incorporate information about ethics management. TPDDL Customers, BAs and community members are sensitized on ethical matters also through interaction with the leadership members in various annual Meets and contact programs (e.g. RWA/IWA Meets, Energy Club, NGO Meets, Udyam, Srijan, Yugantar, Ujjwala, Bhagidari programs by Govt. of Delhi, seminars / conferences, etc.), and also through various on-going formal and informal interactions. While the Sr. leadership constantly promotes ethical behavior amongst all stakeholders, it also ensures that any unethical conduct is instantly penalized and published across the organization. Under the Whistle Blower Policy, any stakeholder can raise ethical concern upto the Chairman, Audit Committee level. Quarterly report of ethical concerns is also submitted to the Board.



*Snapshot of Ethics Violation Report*

**Sustainability and Risk management:**

The Company has a Business Review Committee which while providing the directions on Long Term/Short Term Strategy to be adopted by the Company, also looks into the sustainability and risk management aspect. In order to carry out a systematic enterprise-wide risk assessment, Grant Thornton (GT) was commissioned to carry out a study to identify specific risks and give recommendations to mitigate measures. The Governance Process forms a part of the Risk Management Policy. The Enterprise Risk Management at TPDDL is monitored by the Corporate Level Risk Management Committee (CLRMC) chaired by Chief Finance Officer and reviewed by Audit Committee. Disruptive impact of Climate Change has been identified as a Strategic Challenge in the deliberations of the Governance Board as it can affect the Power Procurement forecasts for the company as well as increase the overall Power Purchase Cost under envisaged Renewable Purchase Obligations thereby having an adverse impact on retail tariffs of consumers. The Governance Board reviews the actions taken by the company in this direction.

**Succession planning:**

CEO&ED shares the succession plan for Sr Leadership with Chairman and Tata Power Nominees on Board. Functional Heads and potential successors are called to attend Audit Committees, Operations Review Committee and BoD Meetings at appropriate times which allow the Board to assess their potential. Chairman also keeps in touch with the potential successors at senior level to assess their capabilities. The appointment of Senior Leadership Team (SLT) and their performance appraisal is carried out by CEO&ED and reviewed by the Chairman.

## Evolution and Achievements of Legal Function



After taking over from the erstwhile DVB in 2002, TPDDL's first challenge was to identify the list of pending cases in the courts against its licensed area. As all cases were filed against either DVB/DESU or comprised of appeals by DVB/DESU, It was virtually impossible to determine whether these cases belonged to TPDDL area or BSES area as they had not been bifurcated. Further, the problems were compounded in the inherited cases as witnesses had retired, old records were not available and in majority of cases proper procedures had not been followed.

To overcome the initial problems faced, a Legal Management Information System was created of all pending cases collating data from erstwhile Legal Staff and the Panel Lawyers. It was realized that we had inherited 4143 matters from DVB/DESU out of which approximately 2400+ matters were pending in Civil Courts of Tis Hazari. Further, there was also huge pendency of over 590 cases in Permanent Lok Adalats (PLAs). At that time settlements in Public Lok Adalats were being directly handled by District Manager(s) and other senior enforcement officers who used to attend and settle matters in PLA. District Manager(s)/Enforcement officials were also required to attend other courts. To resolve the problems faced in Districts, District Legal Nodal officers in 12 districts and in Key Consumer Group (KCG), KCG-Legal officials were posted on demand of Concerned District Manager(s)/Circle Heads and KCG. This helped in streamlining the process and saved precious time of senior officers/ technical staff that used to attend court on a daily basis.

In 2003-2004, TPDDL realized that effective Alternate Dispute Resolution Mechanisms were essential to target reduction in litigation as well as realization of blocked revenues as adjudication by courts was a time consuming process. To mitigate the huge pendency of cases, meetings were held with various civil judges and they were convinced to hold settlement/conciliation/ mediation proceedings in their respective courts. Member Secretary, Delhi Legal Services Authority was also approached to help us in organizing Special Lok Adalats for first time in 2004. These were the initial steps taken by Legal Dept towards settlements and in span of 2 ½ years we settled more than 10000 cases in all the forums. The Hon'ble Chief Justice, Delhi High Court recognized our efforts and achievements and awarded TPDDL a memento/certificate. This was followed by an appreciation letter by the then Power Secretary, Govt of India followed by a Presidential reference in a function organized by National Legal Services Authority. This was followed by several litigative as well as Pre-Litigative Lok Adalats/Mega Lok Adalats which not only ensured the reduction/containment of pending litigation but also ensured reduction of future litigation. In span of 8 ½ years TPDDL has managed to settle more than 40000 cases.

In 2004, Enforcement Assessment Cell – Legal Team was formed to advice on matters concerning the enforcement processes as well as preparing speaking orders which had become a mandatory requirement in the new regime.

In 2005, DERC notified creation of Consumer Grievance Redressal Forum & Ombudsman as mandated by Electricity Act, 2003 which got a fresh impetus after a direction of a Division bench, Hon'ble High Court of Delhi for transferring cases related to billing disputes to the said forum. This necessitated a dedicated legal unit at CGRF.

The year 2004-2006 saw creation of first designated Special Electricity Courts at Karkardooma where BSES cases were also filed along with TPDDL cases. In the meanwhile, Hon'ble Supreme court was already keeping an eye on various electricity issues through the "Power Crisis" matter pending in Hon'ble Supreme court. Our policy advocacy in "Power Crisis" matter resulted in creation of dedicated Special Electricity

Courts in TPDDL Offices of Rohini and Wazirpur. This necessitated the creation of a separate dedicated legal unit at Enforcement Assessment Cell for processing/screening and filing of Criminal complaints. This cell later also took upon the function of filing cases under Cheque Bouncing in Criminal Courts which was a major menace till then. Later Special Electricity courts were transferred to District courts at Rohini & Tis Hazari after creation of District Courts at Rohini\*.

\*After TPDDL managed to get a clarification from Delhi High Court that FIR can also be lodged under the new act, a new legal unit was created in CEG to pursue/file/facilitate and keep track filing of FIR's

At the very inception of special courts, the major problem faced was that in majority of cases the inspections were carried out by officers not authorized by the Act. This was ultimately resolved after the spate of judgments of Hon'ble High Court where either TPDDL had challenged the issue or consumers had challenged the TPDDL inspections on ground of not following the act.

Another critical issue arose on account of the fact that there was no assessment period provided in Section 135 (theft of electricity) of the act and the consumer claimed that assessment period which has been provided under 126 of Electricity Act applied to cases under Section 135 (theft of electricity) and hence all DAE bills have to be raised as per Section 126 which was much lower compared to assessment formula which had been provided in the DERC Regulations, 2002. However, TPDDL managed to convince the Hon'ble High Court on this issue where it was decided that bill is to be raised as per DERC M & B Regulations 2002 i.e. for a period of 30 months instead of 9 months. It was further clarified that ingredients of Section 135 are different from ingredients of Section 126 as far as theft of electricity are concerned.

The installation of Electronic Meters was a major issue faced by TPDDL as RWA, Political parties and along with some misplaced sympathies from certain Courts had vitiated the public sentiment against change of meters from electro mechanical to electronic ones. The State Commission went to the extent of staying all bills raised pursuant to installation of electronic meters. TPDDL not only managed to overcome the said directions quickly but subsequently also convinced the court about the correctness/desirability of electronic meters including Hon'ble Supreme Court, and the issue was adjudicated in our favour. Recently another attempt was made to raise the issue of electronic meters through Competition Commission of India (CCI) and same was also handled in a manner that CCI gave us a clean chit.

Another major issue was that many premises in Delhi had outstanding electricity dues and in many cases the supply stood disconnected. As soon as TPDDL took over from DVB, there was a spurt in demand for new connections where consumers resisted in clearing the outstanding dues against the said premises. This problem was all the more accentuated due to lack of clarity in various tariff orders. However, subsequently, the division bench of Delhi High Court decided the issue in favour of the company directing the consumers to pay/clear outstanding dues. Subsequently, GoNCTD decided to settle the matter by waiving all DVB period dues which did not involve pending litigation.

The above though not exhaustive is a short analysis of how legal process has evolved and has reached the present shape of legal framework. We are constantly learning, improving, adapting the ever changing and challenging scenarios of regulatory and legal mechanisms as well as the dynamics of operating as a private entity with greater expectations from consumers and courts.

Some of the significant convictions are presented below for a ready reference:



- (i) **State Vs Deepak Chawla – (FIR NO 489/05)** – On basis of inspection dated 24.09.2005, a case for direct theft of electricity was booked and FIR was lodged in concerned police station. Special Court Rohini after trial of the case convicted accused Deepak Chawla U/S 135 E Act, 2003 and sentenced him to undergo 3 years rigorous imprisonment. Special Court also determined civil liability of Rs 3 Crores U/S 154(5) E Act, 2003.
- (ii) **NDPL Vs Bimdesh Kaushik etc (CC No 406/06):** Husband and wife both were convicted for direct theft of electricity. Special Court Rohini sentenced both accused persons to undergo simple imprisonment of 1.5 years and they were directed to compensate the company for loss of energy to the tune of Rs.20,00,000/- against DT bill of Rs 18.18 Lakh. Defense taken by accused persons were that they were not using the premises and they have nothing to do with the industrial units found running through DT by passing meter. They also produced some diesel bills and telephone bills to support his defense. In cross examination of accused U/S 315 of Cr Pc, diesel bills were proved to be false and further we filed a copy of duplicate bill bearing phone no. We successfully established the link of accused persons with the premises with the help of duplicate bill which we filed and telephone bills which he filed and accordingly proved our case beyond reasonable doubt. Wife being RC was convicted with husband who was found user at site. This is an exceptional case because this is only case in which civil liability determined was higher than the actual theft bill.
- (iii) **NDPL Vs Hans Nath (CCNO 189/06)** – An inspection was conducted on 16.03.2005 at N-32/7-8, Sita Saran Colony, Subzi Mandi and a case of direct theft of electricity was booked against user Sh Hansnath. Theft bill of Rs 6.26 Lakh was raised against him. Thereafter criminal complaint was filed against him before Special Court Rohini. Accused pleaded not guilty and claimed trial. After trial of the case, we successfully proved our case in the court and Court was pleased to convict the accused person and sentenced him to undergo simple imprisonment of 6 months and further ordered to pay the company a sum of Rs 3,00,000/- for the loss of energy on account of theft of electricity.
- (iv) **NDPL Vs M/S Adhunik Photo Lithog & Pawan Mittal (CCNO 183/06)** – An inspection was conducted on 12.05.2004 against Kno 33300143652 and a case of Dishonest Abstraction of Energy was booked against RC & user. DAE bill of Rs 15.37 Lakh was raised which remained unpaid due to which criminal complaint was filed before Special Court Rohini. After trial of the case, we successfully proved our case in the court and Court was pleased to convict the accused person and sentenced him to undergo simple imprisonment of 1 year and further ordered to pay the company a sum of Rs 15,00,000/- for the loss of energy on account of theft of electricity.
- (v) **NDPL Vs Satbeer Singh & Aslam (CCNO 88/06)** – An inspection was conducted on 18.01.2005 against Kno 41301122943 and a case of Dishonest Abstraction of Energy was booked against RC & user. DAE bill of Rs 6.83 Lakh was raised which remained unpaid due to which criminal complaint was filed before Special Court Rohini. After trial of the case, we successfully proved our case beyond reasonable doubt in the court and Court was pleased to convict the RC & User both the accused persons. Satibir was RC and was residing somewhere else and Aslam was user. Meter was found tilted at time of inspection and when restored it started working.

We brought on judicial record our K.no. summary to establish and prove the difference actually noticed by meter after retaining at the site. A sudden increase in consumption has led to disbelieve the defense that he has done nothing with the meter. RC and user both was sentenced to undergo imprisonment of 1.5 years and 6 moths respectively and further ordered to compensate company by paying Rs 6 Lacs & Rs 1 Lac respectively.

**(vi) State Vs Vijay Kumar (FIRNO 474/06)** – An inspection was conducted on 13.06.2006 and a case of direct theft of electricity was booked against user. Theft bill of Rs 6.72 Lakh was raised against him. Thereafter FIR was registered and user was prosecuted in Special Court Rohini. Accused pleaded not guilty and claimed trial. After trial of the case, we successfully proved our case in the court and Court was pleased to convict the accused person and sentenced him to undergo simple imprisonment of 2.5 years and further ordered to pay the company a sum of Rs. 6,50,000/- for the loss of energy on account of theft of electricity.

**(vii) NDPL Vs Mukesh & Ravi (CCNO 287/06)** – An inspection was conducted on 24.07.2004 against Kno 41100129445 and a case of Dishonest Abstraction of Energy was booked against RC & user. DAE bill of Rs 11.64 Lakh was raised which remained unpaid due to which criminal complaint was filed before Special Court Rohini. After trial of the case, we successfully proved our case in the court and Court was pleased to convict the accused persons and sentenced them to undergo rigorous imprisonment of 2 years and further ordered to pay the company a sum of Rs.11,00,000/- for the loss of energy on account of theft of electricity.

**(viii) NDPL Vs Sunil (CC No 136/08)** – An inspection was conducted on 24.05.2004 and a case of direct theft of electricity was booked against user Sunil. Theft bill of Rs 3.20 Lakh was raised against him. Thereafter criminal complaint was filed against the said user. He was then prosecuted in Special Court Rohini. After trial of the case, we successfully proved our case in the court and Court was pleased to convict the accused person and sentenced him to undergo simple imprisonment of 2 years and further ordered to pay the company a sum of Rs.3,00,000/- for the loss of energy on account of theft of electricity.

**Regulatory**



Power Distribution, being a Public Utility business which is largely monopolistic, is highly regulated. Virtually all activities of the Discom (Power Distribution Co.), right from issuance of License, determination of Conditions of Supply to determination of Bulk Purchase Tariffs as well as other input costs and fixation of Retail Tariffs chargeable to consumers, are regulated by the State Electricity Regulatory Commission, DERC (Delhi Electricity Regulatory Commission in case of Delhi). The entire Regulatory Framework is within the ambit of the Electricity Act, 2003 which lays down the powers and obligations, etc. of all stakeholders in the Sector.

Given the importance of Regulatory interventions and oversight in the Distribution Business, TPDDL, has right from inception, played a role of positive advocacy in the interests of all concerned in all spheres of Regulation formulation and implementation. The company has taken up several issues in the interest of consumers apart from matters affecting its business such as reduction in the cost of New Service connection from Rs3600 to Rs 1550 for low consuming consumers with upfront payment of only Rs 350 and remaining through instalments, provision of insurance of Rs. 1 lacs for every slum consumer regularizing his connection, waiver of DVB arrears, amortizing regulatory assets over a longer period of time to prevent tariff shock to consumers; cost of electrification of high end consumers to be borne by beneficiaries without passing of impact of the same to other consumers, reallocation of expensive power etc,

Prior to takeover of Business, the Delhi Vidyut Board used to make all its Regulatory Filings with assistance of Consultants, and consequently had not built any internal capacity for the same.

As one of the first acts after taking over, the Management established a Regulatory Affairs Group reporting directly to the Chief Finance Officer of the Company which was entrusted with the responsibility of (a) advocating for and interpreting DERC Regulations/ Orders relating to Tariff Setting, and (b) putting together and filing Company's Aggregate Revenue Requirements (ARR) and Tariff Petitions with the DERC, satisfying DERC's Requirements by way of clarifications, supplementary information, and supporting them through the Public Hearing Process. The Department was also made responsible for taking the entire Tariff Process to its logical conclusion in terms of taking up any grievance against any Tariff Order by way of Reviews with the DERC, Appeals before the Appellate Tribunal of Electricity (ATE), and if required, follow up issues right up to the Supreme Court of India.

In addition to the above Regulatory Affairs Department under the CFO which was responsible for Tariff related matters, another Regulatory Group was established as part of Corporate Commercial Group which was made responsible for day-to day interaction with DERC on other than ARR / Retail Tariff fixation issues (such as Supply Code formulation and ensuring compliance / reporting to DERC).

The clear division of responsibilities between Finance and Commercial groups with respect to Regulatory matters has held the Company in good stead as both Departments have specific competencies and expertise in their specific areas. While ARR / Tariff Filings, which is largely a financial and accounting issue, is better handled by Finance professionals with assistance and collaboration by other departments, Other than ARR / Tariff Issues (Supply Code, Power Purchase Petitions, etc.) vis-à-vis Regulator are better handled by a Commercial department having Techno-Commercial expertise.

On taking over the business in July 2002, the first Regulatory action that TPDDL was required to take was to apply to the DERC for a Distribution and Retail Supply License in its own name for its Licensed Area – North and North West Delhi, which was hitherto in the name of the erstwhile State owned Utility, viz. Delhi Vidyut Board (DVB). License was issued to TPDDL for Retail Supply and Distribution of Electricity in North and North West Delhi for a period of twenty five years in 2003 after mutual discussions on the

Terms and Conditions of the License (which lays down the Rights and Obligations of TPDDL) as well as a Public Hearing Process.

While the Company filed its initial Tariff Petition with assistance of Consultants, it dispensed with the same



Proceedings at the Delhi Electricity Regulatory Commission (Source: [www.derc.gov.in](http://www.derc.gov.in))

from the subsequent year as it decided as a policy to develop internal capability in this critical area of operations. It was decided that while the Company would be at the forefront of development of fair and equitable

Policies/ Regulations for the Sector (for Consumers, Discoms, Shareholders) by pro-actively engaging with various Regulatory Agencies such as the DERC, CERC, Government

(both State and National), it would vigorously take up at appropriate levels and forums (the highest if required, viz. Govt./ ATE/ Supreme Court), any injustice to the Company by way of an adverse Regulatory Order / Regulation / Policy.

## 2002-07

The Initial Five Year (2002-07) Control Period was governed by the Statutorily binding (on all stakeholders including the Regulator) Policy Directions issued by the Govt. of Delhi prior to Privatization pursuant to which a 16% RoE was assured to the Company subject to achievement of AT&C Loss Reduction Targets. An Incentive / Disincentive for over/under achievement of Loss Reduction Targets were also provided for. Pursuant to the Policy Directions, DERC issued a Normative Tariff Order prior to privatization stipulating Opening AT&C Losses at time of takeover of business as well as to give the potential investors full idea of allowance of costs, etc. while determining tariffs in the first five year period (FY 2002-07).

During the initial five years period, the Company was able to secure approval of entire annual expenditure incurred by it thereby protecting and preventing any erosion of RoE due to any disallowance on this account. This was done, either at the DERC level itself, or in certain cases, by pursuing the matter in the ATE, where all such issues were held in favour of the Company. Its submissions on yearly AT&C Loss Reduction achievements, which were critical from RoE perspective, were also accepted in totality without any changes whatsoever by the DERC. During the first five years, the Company had the rare distinction of securing virtually 100% positive Orders from ATE, wherever the Company approached the Tribunal against any issue that was adjudicated against it by the DERC. This was due to meticulous care in ensuring accuracy and clarity in the company's accounting documentation.

Some of the significant interventions in framing of National Laws / Policy / Regulations and against certain adverse judgements by DERC which were taken up with ATE/ Supreme Court where favourable decisions were secured are listed below:

## **Formulation of National Tariff Policy & Electricity Regulations with respect to Depreciation Rates:**

### ***a) Convergence of Accounting Return with Regulatory Return***

TPDDL, through the Federation of Electricity Utilities (FEU) a 60 year old private utilities advocacy institution, which had been defunct for a long time which TPDDL played a key role in resurrecting it, took up with the Ministry of Power, Government of India, the issue of Accounting Profits being lower than the Assured Regulatory Profits due to provision of depreciation at higher rates in Accounts (as required per Cos. Act, 1956) vis-à-vis depreciation rates allowed in tariff fixation.

This anomaly was recognized in the National Tariff Policy 2006 which provides that the rate of depreciation as allowed in tariff & to be used in preparation of accounts to be same so as to converge Accounting and Regulatory Returns.

The Central Electricity Regulatory Commission (CERC), in its FY 2009-14 Regulations, increased the Depreciation rates for purpose of tariff determination to match those statutorily prescribed for the purpose of accounting so as to ensure that Regulatory and Accounting RoE are the same. The MCA has also recently confirmed that Electricity Companies can provide depreciation in books of accounts at rates prescribed by CERC.

### ***(b) ROE for Distribution sector to be higher than Generation/ Transmission:***

Till formulation of the National Tariff Policy in FY 2006, a common Return on Equity was allowed by the regulators for all the three sectors of the electricity Value Chain viz. Generation, Transmission & Distribution. TPDDL made number of presentations and submissions to the Central Government and the Regulators, including providing detailed risk / complexity matrix, and was successful in prevailing upon the Government to recognize that Distribution business was more complex and riskier than Generation and Transmission, thereby meriting higher Return on Equity than Generation and Transmission. The above principle is recognized in the National Tariff Policy, thereby ensuring that Distribution Utilities (including TPDDL) earn a higher RoE than Generation/ Transmission.

## **Income Tax Incentives**

Till FY 2005-06, a Tax Holiday, which benefitted consumers by way of lower tax build up in tariffs, was allowed only for investment Generation, Transmission **and New Distribution**. TPDDL advocated that for reforming states where large Capital Expenditure is involved for Renovation and Modernization of **existing/ old Distribution Network**, Tax holiday also be allowed. The above amendment in Tax Laws was brought about from **FY 2006-07** thereby encouraging capital investment and benefiting consumers by way of lower tariffs across the country.



## **Creation of Regulatory Asset**

The DERC, in its FY 2004-05 Tariff Order, created a Regulatory Asset in the Books of Discoms (including TPDDL) which was vigorously opposed by TPDDL, first at DERC (in Review) and then at ATE (in Appeal). The ATE upheld TPDDL's contention that the statutorily binding Policy directions and the Normative Tariff Order did not permit DERC to create a Regulatory Asset in the books of Discoms.

## **Reduction in Depreciation Rates for Tariff Fixation**

The DERC, in its Tariff Order for FY 03-04, reduced the Depreciation Rates for Tariff determinations from 6.69% p.a. (which was assured as per the Normative Tariff Order) to 3.75% p.a. on the specious argument that allowance of higher depreciation rate was not required/ justified due to repayment of loan liabilities being lower than what higher depreciation rate (6.69% p.a.) could support.

TPDDL took up the issue with ATE which held the matter in TPDDL's favour. The DERC, feeling aggrieved with the judgement, appealed against the ATE Order in the Supreme Court. Based on TPDDL's arguments and contentions of 'promissory estoppels' once having confirmed a depreciation rate of 6.69% p.a. in the statutorily binding Normative BST Order, the issue was settled finally in TPDDL's favour resulting in a recovery of approx.. 200 Cr, which was on account of previously denied /deferred recovery of "Depreciation Allowance".

## **FY 2007-08 onwards**

### **Allocation of Existing PPAs**

From April 2007, responsibility of securing power for License Area was entrusted to individual Discoms. The existing PPAs with erstwhile DVB were assigned to the Discoms. Based on TPDDL's advocacy with the state Govt. and the DERC, allocation of generation capacity amongst the Discoms was done in the proportion of their previous five years' aggregate energy demand. The allocation of PPAs) in the proportion of energy drawn was of immense significance as it ensured a level playing field as far as the cost of power purchase from existing Long Term Power Purchase Arrangements was concerned, thus ensuring that respective efficiencies of the Discoms would eventually reflect in the Annual Revenue Requirement.

### **MYT Regulations**

The first MYT Tariff Regulations (FY 2007-08 to FY 2010-11, subsequently extended to FY 2011-12) were formulated by DERC in FY 2007-08. TPDDL actively participated in Regulations formulation. The Regulator had initially proposed making Power Purchase (Quantity / Cost) and Sales (Quantity / Mix) as Controllable parameters (for tariff determination) in the hands of the Discoms which would have resulted in significant increase in business risk for the Discoms, considering the variability in demand of power (and consequently its sale) due to various factors such as weather, etc. over which the Discoms have no control. Based on vigorous advocacy by Discoms including TPDDL, the final Regulations treat these two factors as Uncontrollable thereby mitigating a very significant potential risk.

Further, based on TPDDL's stringent advocacy with DERC, the closing AT&C Targets for all three privatized Discoms (TPDDL, BRPL, BYPL) i.e. at end of MYT Control Period i.e. FY 2010-11 were fixed by the DERC based on the Opening Loss Levels at the time of taking over of business (i.e. TPDDL and BRPL were both

given a closing loss target of 17% at end of FY 11 since their opening loss levels as at July 1, 2002 were determined by DERC at 48.1%. BRPL/ BYPL had advocated that closing loss level target for the MYT Period be based on the actual loss levels reached by respective Discoms at end of FY 07, which, if accepted would have resulted in TPDDL's loss level target being far lower than that of BRPL since TPDDL had reduced losses to significantly lower levels vis-à-vis BRPL at end of FY 07.

### **Burgeoning Revenue Gap**

The Regulator adopts an Annual Truing Up process for any variation in actual Power Purchase cost and Revenues vis-à-vis the amounts that have been factored by it while fixing tariffs for the ensuing year. However, since the True Up is done based on the audited accounts, there is generally a lag of two years before any difference on this account is trued up. Till end of FY 2008-09, such lag was not very significant with the cumulative outstanding lag (Recoverable through future tariff increases) aggregating to only Rs. 322 Cr. This gap, being small, was being financed from internal accruals as well as surplus cash flows that were there with the Company on account of over-achievement of loss reduction targets which were factored in tariff determination by the Regulators only in the subsequent year's tariff fixation exercise. During FY 2009-10, due to harsh summer and unprecedented growth in demand, TPDDL had to resort to buying costlier bilateral power to the tune of Rs. 750 Crs. This was based on an assurance from the Regulator that same would be trued up. Despite such a large Revenue Gap for the year, the Regulator refused to recognize the same (on the premise of Audited Accounts not being available), and based on certain unrealistic assumptions for future purchase and sale of power in FY 2010-11, came to the conclusion that tariffs could actually be revised downwards in FY 2010-11. Since such an action would have serious consequences on the economic viability of the Delhi Discoms (including TPDDL), the Discoms collectively took up the issue with the Regulator and the Government.

After intense advocacy coupled with providing documentary evidence to the Delhi Government, the Delhi Govt. asked DERC to keep its Tariff Order in abeyance till the issues raised by Discoms were addressed. Subsequently, a PIL was filed in the Hon'ble High Court of Delhi whereby the issuance of tariff order was stayed by the Hon'ble High Court of Delhi and tariff could not be revised during whole of FY 10-11. During the hearing before the High Court, DERC admitted that its previous forecasts and estimates of an anticipated surplus with Discoms thereby warranting a reduction in tariffs for FY 2010-11, were misplaced and that the existing tariffs were grossly inadequate to cover the increased uncontrollable (mainly power purchase) costs.

The last Tariff Order issued by DERC in May 2009 was based on a power purchase cost of Rs 2.63/unit; since then the power purchase cost had increased drastically to Rs 3.68/unit in FY 09-10 and to Rs 4.25/unit in FY 2010-11 due to increase in input costs of generators as well as purchase of costly bilateral power by TPDDL to meet the demand in its area resulting in Revenue Gap of Rs. 1,016 Crs. till the end of 31.03.2010 which increased to Rs. 2,172 Crs as at March 2011.

The Tariffs have since been revised w.e.f. September 1, 2011. The DERC has allowed a 22% increase across all consumer categories. In addition, it has introduced a Fuel Supply Adjustment (FSA) surcharge which going forward, would ensure that any generation cost variance during the year (due to fuel cost increase) is recovered from consumers by way of a FSA Surcharge during the year itself, without waiting for a year-end one time true-up. However, the total Revenue Gap at the end of FY 2011-12 is expected to be around Rs. 4,000 Cr. which is putting an immense stress on the liquidity position of the Company.

In-order to ensure that operations are not adversely impacted, and that the Company does not renege on any of its obligations to stakeholders (including employees, power suppliers and lenders) TPDDL has resorted to large borrowings from Banks. Most of the borrowings are medium/ long term in nature with repayment periods largely coinciding with the tenure over which this Revenue Gap is expected to be recovered.

### **Challenge Going Forward**

With the new MYT Period commencing from FY 2012-13, recovery of past Revenue Gaps over a reasonable time frame is a significant challenge presently before TPDDL.

### **Recognition**

Due to the various Policy Advocacies successfully undertaken by TPDDL for the development of Power Sector as a whole.

TPDDL has been conferred with the “**Policy Advocacy Award 2009**” by Edison Electric Institute, USA.



Parameter	Unit	July 02	Mar 13	% change
<b>Operational Performance</b>				
AT&C Losses	%	53.1	10.78	80%
System Reliability – ASAI -Availability Index	%	70	99.94	43%
Transformer Failure Rate	%	11	0.79	93%
Peak Load	MW	930	1573	69%
Length of Network	Ckt. Km	6750	10364	54%
Street Light Functionality	%	40	99.57	149%
<b>Consumer Related Performance</b>				
New Connection Energization Time	Days	51.8	6	88%
Meter Replacement Time	Days	25	6	76%
Provisional Billing	%	15	3	80%
Defective Bills	%	6	0.2	97%
Bill Complaint Resolution	Days	45	6	87%
Mean Time to Repair Faults	Hours	11	1.2	89%
Call Center Performance - Service Level	%	-	91	-
Payment Collection Avenues	Nos.	20	5377	26785%
Consumer Satisfaction Index	%	-	88	-
<b>Financial Performance</b>				
Capex Incurred (Cumulative)				
Distribution	Rs. Cr.	1210	4189	274%
Generation (Rithala + Solar)	Rs. Cr.	-	342	-
<b>Others</b>				