

# Performance Assessment of the Electricity Distribution Franchisee of Agra



**Prepared for**

Dakshinanchal Vidyut Vitaran Nigam Limited

And

Uttar Pradesh Power Corporation Limited

## Suggested format for citation

---

TERI. 2018

Performance Assessment of the Electricity Distribution Franchisee of Agra

New Delhi: The Energy and Resources Institute

[Project Report No. 2017EF31]

## For more information

---

Project Monitoring Cell

T E R I

Darbari Seth Block

IHC Complex, Lodhi Road

New Delhi – 110 003

India

**Tel.** 2468 2100 or 2468 2111

**E-mail** [pmc@teri.res.in](mailto:pmc@teri.res.in)

**Fax** 2468 2144 or 2468 2145

**Web** [www.teriin.org](http://www.teriin.org)

India +91 • Delhi (0)11

# Contents

---

## LIST OF ABBREVIATIONS

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>1. INTRODUCTION .....</b>	<b>1</b>
1.1 Background.....	1
<b>2. ELECTRICITY DISTRIBUTION IN AGRA .....</b>	<b>3</b>
2.1 Franchisee Agreement.....	4
<b>3. APPROACH AND METHODOLOGY .....</b>	<b>7</b>
<b>4. ASSESSMENT OF TECHNICAL AND OPERATIONAL PERFORMANCE.....</b>	<b>9</b>
4.1 Baseline Scenario .....	9
4.2 Energy Input.....	9
4.3 Transmission and Distribution Losses.....	9
4.4 AT&C Losses .....	10
4.5 Availability and Reliability of Supply.....	11
4.6 Consumer Complaint Handling .....	14
4.6.1 Consumer awareness .....	16
4.7 Capital Investment.....	16
4.7.1 Billing efficiency.....	18
4.7.2 Collection efficiency.....	18
4.8 Quantification of the Benefits for the DVVNL .....	19
<b>5. CONSUMER PERCEPTION .....</b>	<b>21</b>
5.1 Electricity Supply Position.....	21
5.1.1 Quality of supply.....	21
5.1.2 Backup Power Sources.....	22
5.1.3 Complaint redressal system.....	23
5.2 Consumer Service-delivery Mechanism .....	24
5.3 Consumer Grievances-handling Mechanism.....	25
<b>6. SUMMARY AND CONCLUSION .....</b>	<b>27</b>

## Annexures

Annexure I: Focused Group Discussions (FGD).....	31
Annexure II: Initiatives and schemes by M/s TPL for promoting awareness .....	34



## List of Abbreviations

---

APL	:	Above Poverty Line
AT&C	:	Aggregate Technical and Commercial losses
BPL	:	Below Poverty Line
Capex	:	Capital Expenditure
CGRF	:	Consumer Grievance Redressal Forum
DFA	:	Distribution Franchisee Agreement
DG(s)	:	Diesel Generator(s)
DISCOM(s)	:	Distribution Company(ies)
DT(s)	:	Distribution Transformer(s)
DVVNL	:	Dakshinanchal Vidyut Vitran Nigam Limited
MVNNL	:	Madhyanchal Vidyut Vitran Nigam Limited
NPC(s)	:	No Power Complaint(s)
O&M	:	Operation and Maintenance
PuVVNL	:	Purvanchal Vidyut Vitran Nigam Limited
PVVNL	:	Paschimanchal Vidyut Vitran Nigam Limited
SAIDI	:	System average interruption duration index
SAIFI	:	System average interruption frequency index
SLDC	:	State Load Dispatch Centre
T&D	:	Transmission and Distribution
TERI	:	The Energy and Resource Institute
TPL	:	Torrent Power Limited
UPERC	:	Uttar Pradesh Electricity Regulatory Commission
UPPCL	:	Uttar Pradesh Power Corporation Limited
UPPTCL	:	Uttar Pradesh Power Transmission Corporation Limited
UPSEB	:	Uttar Pradesh State Electricity Board

## List of Figures

---

Figure 1: Franchisee area in Agra.....	3
Figure 2: A category-wise distribution of energy consumption for M/s TPL.....	3
Figure 3: Broad approach and methodology adopted for the assessment.....	7
Figure 4: T&D and AT&C losses in the TPL network .....	11
Figure 5: Power availability in hours from the source to the consumer .....	12
Figure 6: Year-wise SAIFI for M/s TPL.....	13
Figure 7: Year-wise SAIDI for M/s TPL (Source: M/s TPL).....	13
Figure 8: DT failure from 2010–17 (Source: M/s TPL).....	14
Figure 9: Complaint-handing mechanism of M/s TPL.....	14
Figure 10: Total number of complaints (Source: M/s TPL).....	15
Figure 11: Complaints attended within 10 days.....	15
Figure 12: Year-wise break up of Capex in major heads.....	17
Figure 13: Revenue realization for M/s TPL in the last 5 years.....	17
Figure 14: Meter reading efficiency of M/s TPL .....	18
Figure 15: Billing and collection efficiency of M/s TPL.....	18
Figure 16: Average duration of electricity supply.....	21
Figure 17: Consumer-wise back up power usage .....	22
Figure 18: Type of back up power source used by commercial consumers.....	22
Figure 19: Type of back up source used by residential consumers.....	23
Figure 20: Fault restoration time sector wise .....	24
Figure 21: Bill collection van.....	24
Figure 22: Time taken in address the cause of minor complaints .....	26
Figure 23: Consumer Satisfaction with a complaint redressal mechanism on a scale of 0–5.....	26

## List of Tables

---

Table 1: M/s TPL network .....	3
Table 2: Participants for focused group discussions .....	8
Table 3: Base year data as per the DFA .....	9
Table 4: Energy recived and sold by M/s TPL .....	9
Table 5: AT&C of M/s TPL.....	10
Table 6: Comparison of AT&C losses of M/s TPL and the DVVNL .....	10
Table 7: DT failure rate over the years for M/s TPL.....	14
Table 8: Capital investement made by M/s TPL.....	16
Table 9 M/s TPL's capital expenditure in Agra .....	19
Table 10 Thru rate in theDVVNL and M/s TPL.....	20
Table 11: Restoration of NPCs in less than 4 hours.....	23
Table 12: Salient performance parameters .....	27





## Executive Summary

---

Distribution continues to be the weakest link in the Indian power sector. The accumulated financial losses of distribution companies as on March 2015 were Rs 3.8 lakh crores.<sup>1</sup> In the absence of a timely revision in consumer tariffs coupled with inadequate reduction in AT&C losses, the financial losses of distribution companies have been financed largely by loans from commercial banks. This has serious implications on the sustainability of the electricity sector as a whole, including future investments in capacity addition. It is, therefore, imperative that urgent measures be taken to restore the health of the distribution segment of the power sector.

The franchisee model in electricity distribution encompasses all functions and obligations relating to the distribution of electricity in a predetermined licensee area. The concessionaire, selected through competitive bidding, is responsible for the maintenance, operation, and upgradation of the distribution network and for the supply of electricity to the regulated consumers. Reduction of AT&C losses, improvement in the quality of power supply, strengthening of the distribution network, and improved customer satisfaction are the key objectives of this model.

In Uttar Pradesh, trifurcation of the Uttar Pradesh State Electricity Board (UPSEB) led to the formation of four new distribution companies, namely:

- Dakshinanchal Vidyut Vitran Nigam Limited (DVVNL),
- Madhyanchal Vidyut Vitran Nigam Limited (MVVNL),
- Paschimanchal Vidyut Vitran Nigam Limited (PVVNL), and
- Purvanchal Vidyut Vitran Nigam Limited (PuVVNL).

In 2009, the DVVNL made a Distribution Franchisee Agreement (DFA) with Torrent Power Limited (TPL) to improve the operational efficiency of the distribution system in Agra. The TPL have carried out system strengthening and operational efficiency improvement through various initiatives, such as improved billing and collection mechanism, effective customer grievance redressal mechanisms, and so on. In this context, Uttar Pradesh Power Corporation Limited (UPPCL) has entrusted The Energy and Resource Institute (TERI) to undertake a detailed assessment of the power supply position as well as consumer satisfaction in the franchisee area.

Accordingly, TERI has undertaken a ground-level assessment of the electricity supply position and consumer service delivery in the franchisee area of Agra and consolidated the approach, methodology, analysis, findings, and conclusions into the current report. In particular, the report includes a profile of the Agra distribution system, technical and operational efficiency improvements, results and analysis of the consumer surveys undertaken, and suggested indicative measures to further strengthen the distribution system in Agra. The broad approach adopted for the assessment comprised the study and analysis of primary and secondary data with regard to the technical and operational performance of the distribution franchisee. A major source of primary data in gauging consumer perception was a questionnaire-based

---

<sup>1</sup> [http://powermin.nic.in/pdf/Power\\_Sector\\_Reforms.pdf](http://powermin.nic.in/pdf/Power_Sector_Reforms.pdf); last accessed on June 7, 2018.

survey conducted by TERI designed around a purposive sampling technique and focus group discussions.

The electricity supply position and consumer service delivery, as available from secondary research, was studied and a qualitative as well as quantitative assessment of the public perception in regards to the same brought out the following:

- Substantial improvement in electricity supply to the consumer.
- Drastic reduction in the number and duration of interruptions/faults.
- Substantial improvement in the fault restoration time.
- Significant improvement in the service delivery mechanism.
- Efficient complaint handling.

Capital expenditure (Capex) of Rs 800 crore has reportedly been made by the distribution franchisee, namely, M/s TPL during the first 7 years of operation. The augmented infrastructure, improved quantum of supply, and good operation and maintenance (O&M) practices have resulted in meeting higher peak demand of about 425 MVA in 2016–17 as compared to about 381 MVA in 2010–11. Since 2010–11, new connections ranging from 18,248 to 37,795 have been added every year; the number of new connections in slum areas reached about 1,16,486 by 2016–17 through the 'Roshan Agra Yojna - Slum Electrification'. The total consumer base in the franchisee area has increased from 2,87,697 (2010–11) to 4,24,889 (December, 2017).

While the electricity supply available to the distribution franchisee at input points by the DVVNL every year during the period 2010–11 to 2016–17 has remained around 2,100 MU, the supply available to consumers over the years of operation of the distribution franchisee, has shown substantial improvement from 1,025 MU in 2010–11 to about 1,560 MU in 2016–17 due to reduction in distribution losses from 51.5% to 25.5%.

There has been an increase in Power Transformer Capacity and Distribution Transformer (DT) capacity; in parallel, the failure rate of DTs has also reduced sharply from 24.6% to about 1.7%. The reliability indices, System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI), have shown a drastic improvement reflecting the better reliability of the system along with efficient fault handling. The total number of complaints registered have also reduced drastically—from approximately 2,06,000 to about 13,000 between 2010–11 and 2016–17. The time taken to attend to the complaints has also reduced substantially—around 85% to 90% of meter-related and bill-related complaints are now attended within 10 days as compared to 4% to 13% in 2010–11.

Further, significant improvements have been reported in meter reading efficiency, billing efficiency, and collection efficiency from the respective levels of 65.3%, 82%, and 94% in 2010–11 to 96.4%, 99%, and 97% in 2016–17. Resultant Aggregate Technical and Commercial (AT&C) losses have reduced from 61.8% to 27.2% in the seven years of operation. However, it is noted that the AT&C losses have not attained the targeted level of 15% as per the DFA for the year 2016–17.

The public perception assessed through focused group discussions and one-to-one interactions with industrial, commercial, and residential consumers through structured and unstructured

survey-questionnaires by and large corroborated the reported data with regard to the average hours of supply, complaint handling, fault restoration time, and consumer service delivery mechanism. Residential and commercial consumers not only corroborated the reported duration of supply of the order of 23 hours per day but also reported an impressive improvement from the average supply hours of about 12–13 hours prior to 2009. The improved electricity supply position is also validated by consumer response in terms of the reduction in usage of back up supply sources, namely, diesel generator (DG) sets and battery-inverter systems—about 22% of the commercial consumers reported to have done away with backup power sources and the residential consumers have almost entirely dispensed with such sources—2.6% of residential consumers still using back up supply sources have all shifted to battery-inverter systems. Further, 37% of the commercial and industrial consumers have reported to have shifted from DG sets to battery-inverter systems. Reduction in the usage of DG sets was also a notable consumer response.

As per a CRISIL report,<sup>2</sup> 87% of the total complaints were attended by M/s TPL in less than 10 days. The survey also revealed a high degree of satisfaction amongst consumers in regard to the consumer service-delivery mechanism in terms of the time taken to address ‘No power complaints’ (NPCs), ease of bill payment, efficient grievance redressal mechanism, and better fault restoration.

The sampled data with regard to the handling of NPCs showed that for the monsoon and winter months of 2017, the vast majority of complaints (over 95%) were being addressed in less than 4 hours, while in the summer months of May and June 2017, the number of complaints addressed within 4 hours were around 84%. While the consumers surveyed in residential areas reported that about 90% of the faults were restored in less than 4 hours, approximately 68% consumers in the commercial category reported a fault restoration time of less than 4 hours. The season-wise picture could not be assessed through the consumer survey. However, overall, as against the reported figure of 84%–95% by M/s TPL, consumer response with regard to the restoration of supply in than 4 hours was 68%–90%.

A number of avenues available for payment (‘easy-pay’, online portals, mobile apps. Mobile vans, and so on) were found to improve convenience for consumers. The sampled consumers were appreciative of a multilayered complaint redressal mechanism through facilities such as 24x7 customer service helplines, customer service centres as well as weekly and monthly *janta darbars*, wherein 72% of the consumers reported that the complaints were attended to within 1 hour of their reporting. None of the sampled consumers reported to have had any issues regarding the billing or power quality. Largely speaking, almost all of the sampled consumers gave 100% marks to the complaint redressal mechanism of M/s TPL in contrast to the 40% satisfaction level prior to 2009.

---

<sup>2</sup> CRISIL report on ‘Performance of Distribution Franchisee in Urban Areas of Agra’, for the DVVNL, 2016.



# 1. Introduction

---

## 1.1 Background

The UPSEB was unbundled on January 14, 2000 under the first reforms transfer scheme into three separate entities, namely, the Uttar Pradesh Power Corporation Limited, Uttar Pradesh Rajya Vidyut Utpadan Nigam Limited, and Uttar Pradesh Jal Vidyut Nigam Limited, vested with the respective functions of transmission and distribution, thermal generation, and hydro generation within the state. Trifurcation of the UPSEB was accompanied by the financial restructuring of the state's power sector utilities. Four new distribution companies, namely, the DVVNL, MVVNL, PVVNL, and PuVVNL were incorporated vide the Uttar Pradesh Transfer of Distribution Undertaking Scheme, 2003. On June 10, 2003, the Electricity Act, 2003, came into effect. In August 2003, the state government notified U.P. Transfer of Distribution Undertaking Scheme, 2003, for the purpose of providing and giving effect for the transfer of distribution undertakings of the UPPCL to the aforementioned distribution companies. In pursuance of the said transfer scheme, the DVVNL became a distribution licensee under the provision of Electricity Act, 2003. The DVVNL is responsible for power distribution in 21 districts of Uttar Pradesh, Agra being one of them. Under the provisions of the Electricity Act, 2003, the DVVNL is entitled to distribute electricity to a specified area within its area of supply through another person referred to as a franchisee. For the purpose of sale and supply of electricity in the Agra Urban Distribution Divisions of the DVVNL, it selected TPL through an open competitive bidding process. On May 18, 2009, a Distribution Franchisee Agreement (DFA) was signed between the DVVNL and TPL.

The UPPCL, vide its letter no. UPPCL/18 dated February 9, 2018, intended to commission an independent study to assess the power supply as well as consumer satisfaction in the franchisee area and sought an offer from TERI for the same. An offer for carrying out the study was made by TERI on February 10, 2018. The Letter of Intent was issued by the DVVNL on February 15, 2018, with partial modification on February 16, 2018.

The terms of reference of the study assigned to TERI are as follows:

- Assessment of the performance of franchisee through secondary research.
- Assessment of public perception regarding consumer service delivery mechanism through focused group discussions using structured and unstructured questionnaire.

The study specifically called for gathering public perception data with regard to the power supply position, fault restoration time, consumer service delivery mechanism, complaint handling, and so on. Accordingly, TERI carried out an assessment of the distribution franchisee's performance in Agra city. Secondary research was done to assess the technical and operational performance of the franchisee. Interactions were held with M/s TPL and DVVNL to solicit data/facts as well as views with respect to various technical- and operational performance-related issues.

Consumer survey in the form of focused group discussions and one-to-one interaction was done in Agra city to assess the public perception with regard to the availability and reliability of electricity supply and service delivery in the franchisee area.



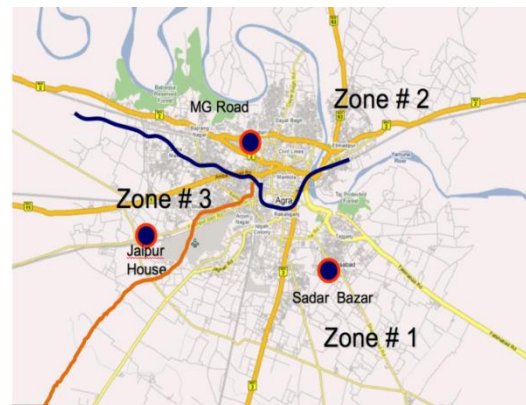
## 2. Electricity Distribution in Agra

Agra is an electricity distribution circle falling under the DVVNL, the south DISCOM of the UPPCL. The DVVNL made a DFA with M/s TPL on May 18, 2009. The TPL is a company incorporated under the Companies Act, 1956, and is an integrated power utility.

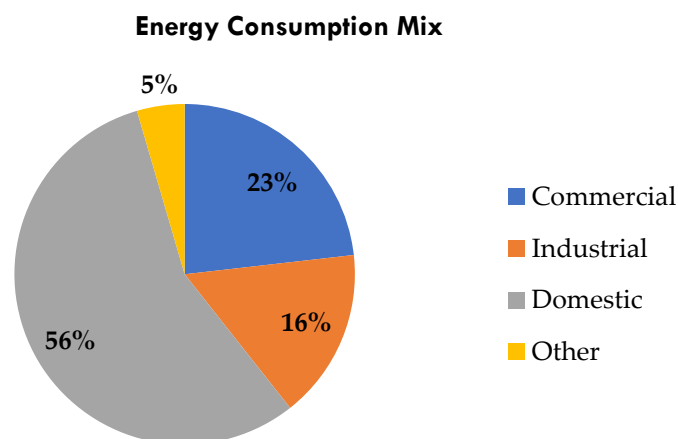
The city of Agra is spread across 221 sq. km and has a population of 24 lakh with 100% electrification as of 2017. M/s TPL operates in the urban areas of Agra which includes about 40 villages as shown in Figure 1. M/s TPL has a consumer base of 4.22 lakh in the city, served through 41 substations of 33/11kV and 3,801 DTs. An overview of M/s TPL network is given in Table 1. Operating in an international tourist place and an industry hub, its consumer mix comprises primarily of industrial, commercial, and residential consumers with an almost negligible presence of agricultural consumers (Figure 2).

**Table 1:** M/s TPL network

M/s TPL network (2017)	
Customer base	4.22 lakh
Peak demand	452 MVA
Energy input	2,103 MU
DTs	3,801
33 kV lines	363.16 km
11 kV lines	927.5 km
33/11 kV substations	41
11 HT consumers	474
33 kV HT consumers	17



**Figure 1:** Franchisee area in Agra



**Figure 2:** A category-wise distribution of energy consumption for M/s TPL (Source: M/s TPL)

## 2.1 Franchisee Agreement

The salient Features of the DFA, agreed upon by the DVVNL and M/s TPL, in the context of present study are as follows:

### Grant of Franchise:

- The DVVNL agrees to sell/supply to the distribution franchisee at annual input energy rates for further distribution in the franchise area and M/s TPL agrees to perform all the obligations and accept all the liabilities of the DVVNL as the distribution license for the Franchisee area.
- As a distribution franchisee, M/s TPL is entitled to use the DVVNL distribution assets to perform its obligation. However, the DVVNL continues to be the owner of the assets.

### 'Right of use' of the DVVNL assets:

- M/s TPL shall use and maintain these assets at its own cost to keep them in a good working condition as per the prudent utility practices.

### New capital expenditure:

- M/s TPL shall plan and implement Capex to improve efficiencies, upgrade infrastructure, and so on, as it deems necessary. M/s TPL shall make a minimum investment of Rs 200 crore, out of which at least Rs 150 crore shall be invested in the first 5 years and the remaining Rs 50 crore in next 5 years. Such capital investment would include the replacement of the distribution assets.

### Supply of energy:

- The DVVNL shall supply a minimum of 1,905 MUs energy at input points to M/s TPL which may, however, vary subject to the SLDC's directions on load shedding. M/s TPL may procure power from other sources for the expected shortfall in supply with the concurrence of the DVVNL and UPERC and subject to regulatory provisions.

### Operation, repair, and maintenance and upgradation:

- M/s TPL shall at its own cost perform the following:
  - Operation and maintenance of distribution assets from the start of input feeders of the franchisee area.
  - Operation and maintenance of substation and transformer stations.
  - Installation of metering devices and carry out meter reading, monitoring all feeders, and distribution transformers.
  - Repair, maintain, and replace failed distribution transformers as per the UPERC supply code and standards of performance.
  - Maintain a minimum level of rolling stock of transformers and other necessary material.
  - Upgrade, renovate, and maintain the existing distribution network/ systems/ IT assets and systems as per the prudent utility practices and the standards that may be prescribed by the UPERC.
- Maintain the minimum power factor of 0.85 at the input points.



**Consumer service and complaint handling:**

- M/s TPL shall comply with electricity supply code as approved by the UPERC.
- M/s TPL shall comply with the following:
  - Complaint-handling procedure approved by the UPERC.
  - Establish within a period of one year from the effective date at least one consumer-service centre as per the minimum specification placed for a system of consumer complaint and redressal.
  - Redress commercial and billing complaints.

**Obligation to connect consumers:**

- M/s TPL shall, on the application of owner or occupier of any premises, give supply of electricity of such premises as per the distribution code issued by the UPERC.

**Performance improvement target:**

- Distribution franchisee shall achieve a level of 15% AT&C losses within 7 years from the effective date.

**Duties and Responsibilities****DVVNL**

- Ensure supply of power to the distribution franchisee of acceptable quality standards as specified in the DFA.
- Communicate to the distribution franchisee any shortfall or inability to supply power requirements of the distribution franchisee.
- Carry out a monthly meter reading jointly with the distribution franchisee.
- Support the distribution franchisee initiatives to adopt innovative practices to bring about effectiveness and efficiency.
- Recommend the setting up of special courts and facilitate administrative and police support for a smooth functioning of the distribution franchisee.

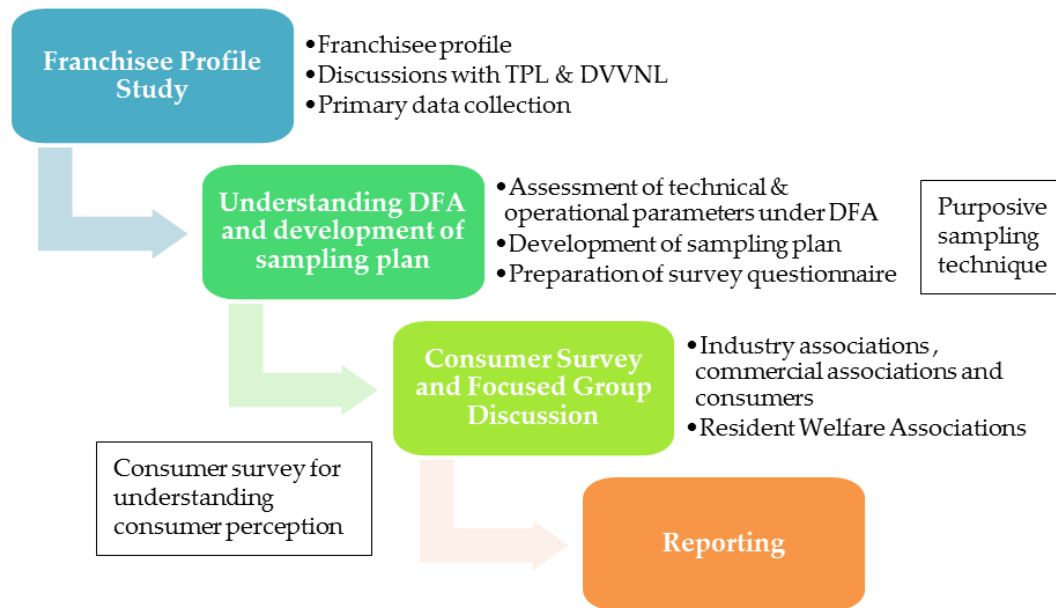
**M/s TPL**

- Network related:
  - Network analysis and improvement planning
  - Capital investment for renovation/up-gradation
  - Distribution asset maintenance
- Consumer related:
  - Metering, meter reading, and billing
  - New connections, handling consumer grievances
  - Adherence to the UPERC regulations (supply code, SOP)
  - Arrear collection from live and Permanently Disconnected consumers
- Performance improvement targets:
  - AT&C Losses of 15% within 7 years
  - Minimum Capital Investment of Rs 200 Crores in first 10 years
  - Minimum Power Factor of 0.85 at Input Points



### 3. Approach and Methodology

The broad approach followed for carrying out this study is as follows below:



**Figure 3:** Broad approach and methodology adopted for the assessment

The methodology adopted for the study comprised the following:

1. **Study of the utility profile:** The baseline scenario and the scenario post M/s TPL taking over as a distribution franchisee in Agra Urban area was taken as mentioned in the DFA, orders issued by the UPERC and other source<sup>3</sup> for understanding the technical and operational parameters of the distribution system in terms of the following parameters:
  - T&D loss
  - AT&C loss
  - SAIFI & SAIDI
  - Availability of power
  - Consumer complaints
  - Investment in augmentation
2. **Primary survey:** As a part of the primary research, quantitative as well as qualitative information was collected during exhaustive detailed discussions with M/s TPL. Consumer perception with regard to the power supply position, consumer service delivery system, consumer complaint handling, and so on was captured through focused group discussions with representatives from the respective consumer categories. Industrial and commercial consumers were represented by the National Chamber of Industries and Commerce which included presidents of the foundry industry, silver industry, and commercial market

<sup>3</sup> CRISIL report on 'Performance of Distribution Franchisee in Urban Areas of Agra', for the DVVNL, 2016, presentation made by M/s TPL.

associations. One-to-one discussions were also carried out with shopkeepers, hotels, and tourism association of the Johari Bazar, Kirani Market, and Sindhi Bazar of Agra. A survey of the residential consumers was carried out at the resident welfare associations followed by one-to-one interactions with consumers who were present at the customer care centres, easy pay shops, and mobile vans to pay their electricity bills, thereby representing a random sample.

An overview of FGDs and one-to-one interaction with consumers is as follows:

**Table 2:** Participants for focused group discussions

<b>A. Focused Group Discussion</b>	
1. National Chamber of Industries and Commerce, Agra	22 attendees
2. Silver products shop owners association (commercial)	Representative of a 250-members association
3. Silver products manufacturer association	4 representatives of a 150-members association
4. Hotel and tourism industry association	2 representatives of a 168-members association
5. Foundry cluster associations	4 representatives of a 100-members association
6. Stone carving cluster	4 representatives of a 70-members association
<b>B. One-to-one interactions</b>	
1. Residents welfare association	Presidents of two societies representing 75 and 55 families resp.
2. Consumers present at mobile vans	20
3. Consumers at customer care centres	8
4. Consumers paying via Easy pay	2
5. Individual shop owners	35

Details of representative/consumers with whom discussions were held as a part of field survey are given in Annexure I.

3. Analysis and reporting: The quantitative and qualitative information gathered through primary research and secondary research were analysed to evaluate the performance of the distribution franchisee. The secondary data on technical and operational performance of the franchisee was assessed based on its baseline data/data in the first year of operation of the franchisee and the present situation.

The data provided by M/s TPL related to the supply position, consumer service delivery mechanism, complaint handling, and so on was, whenever possible, compared with the primary data from field survey in order to assess the consumer perception vis-à-vis the performance reported by the distribution franchisee.

## 4. Assessment of Technical and Operational Performance

### 4.1 Baseline Scenario

The DFA dated May 18, 2009 specifies the base year as 2008–9; the franchisee business is reported to be handed over to M/s TPL on April 1, 2010. The year 2008–9 has, therefore, been taken as the base year for the purpose of this study; no data with respect to FY 2009–10 was available from M/s TPL.

The key parameters for the base year as per the DFA are as follows:

**Table 3:** Base year data as per the DFA

Parameter	2008–9	Target <sup>4</sup>
Collection efficiency	73.31%	90% within 5 years and continue for 20 years <sup>3</sup>
Distribution losses	43.52%	14% within 5 years and 11% by the end of 20 yeras <sup>3</sup>
AT&C losses	58.59%	15% in 7 years

### 4.2 Energy Input

The DVVNL was obligated to supply a minimum of 1,905 MU at the input points. It is noted that the DVVNL has supplied energy at input points, ranging between 2,103 MU to about 2,208 MU during 2010–11 to 2016–17.

### 4.3 Transmission and Distribution Losses

As per the data provided by M/s TPL, while the energy input to M/s TPL has over the years (2010–11 to 2016–17) remained in the range of 2,103 MU to 2,208 MU, the energy sold by M/s TPL during these years has increased from about 1,000 MU to about 1,560 MU, an increase of about 52%. While the T&D losses in the base year of 2008–9, as per the ODFA, were 43.5%, the loss trajectory data furnished by M/s TPL shows a higher loss figure of 51.51% for 2010–11. The losses have, however, shown a decline to 25.88% in 2016–17 and further to 18.86% in 2017–18 (till December 2017).

**Table 4:** Energy recived and sold by M/s TPL (Source: M/s TPL)

Year	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17	2017–18 upto Dec.
Energy received (MU)	2,114	2,207.6	2,207.9	2,206.4	2,148.5	2,143.9	2,103.1	1,747.3
Energy sold (MU)	1,025	1,047.9	1,109.8	1,258.8	1,331.1	1,482.1	1,558.9	1,417.7
T&D losses (%)	51.51%	52.53%	49.74%	42.95%	38.04%	30.87%	25.88%	18.86%

<sup>4</sup> CAG, 'Audit Report on Public Sector Undertakings for the Year Ended 31 March 2012' based on the data of the Commercial Statement (CS 3 /4) for the year 2008–9.

## 4.4 AT&C Losses

AT&C loss figures received from M/s TPL are as follows:

**Table 5:** AT&C of M/s TPL (Source: M/s TPL)

Year	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17	2017–18 upto Dec.
AT&C losses	61.77%	55.39%	52.56%	44.47%	38.15%	31.67%	27.18%	21.56%

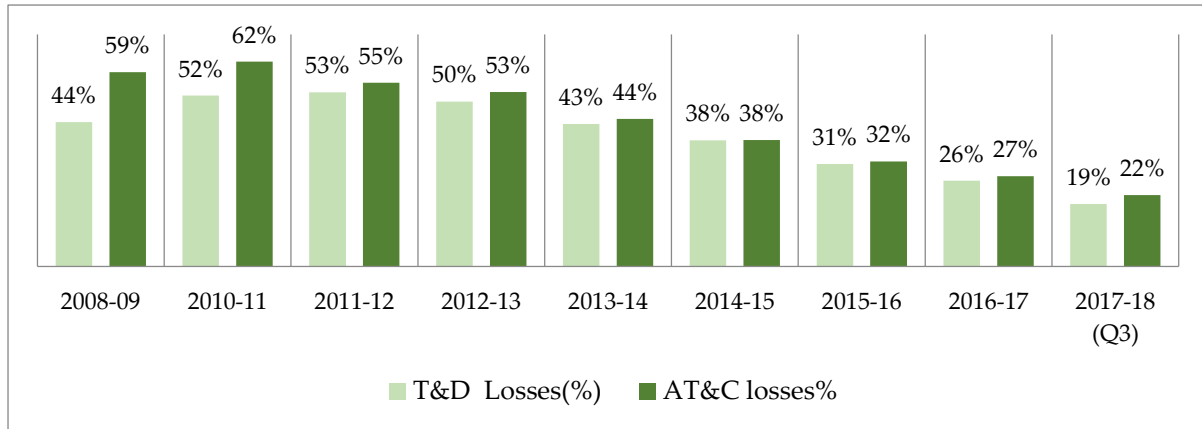
The AT&C losses in the base year of 2008–9, as per the DFA, were 58.6%, the loss trajectory presented by M/s TPL shows a higher loss figure of 61.77% for 2010–11. The losses have, however, shown a declining trend and have attained a level of 27.18% in 2016–17 and has gone down further to 21.56% in 2017–18 (till December 2017). As per the report of the Expert Committee in Petition No. 816 of 2012 before the UPERC, the AT&C loss figures for FY 2010–11 and 2014–15 reported by KPMG, who was engaged by the UPPTCL for verification, validation, and audit of the pre-takeover period, are similar to the figures reported by M/s TPL.

A comparison of AT&C losses of M/s TPL with the overall AT&C losses for the DVVNL for the year 2013–14, 2014–15, and 2015–16, as available in the 'UPERC, Suo-moto proceedings on review of performance of the distribution licencees' dated November 30, 2016, was also made and is presented in Table 6. It is noticed that the losses with respect to M/s TPL in 2013–14 and 2014–15 were higher than the overall loss in the DVVNL; the AT&C losses of M/s TPL in 2015–16, however, came down to a level lower than the overall loss level of the DVVNL.

**Table 6:** Comparison of AT&C losses of M/s TPL and the DVVNL

FY	M/s TPL (%)	DVVNL (%)
2013–14	44.47	42.09
2014–15	38.15	37.09
2015–16	31.67	38.22

While the AT&C losses have been reported by M/s TPL to have declined to 25.56% and 21.56% in 2016–17 and 2017–18 (till November 2017), respectively; it did not reach the target level of 15% by 2017 as per the DFA for which a penalty is leviable on M/s TPL in accordance with the provisions in the DFA.



**Figure 4:** T&D and AT&C losses in the TPL network (Source: M/s TPL)

The key challenges stated by M/S TPL in achieving the target level of AT&C losses are as follows:

- **Consumer resistance leading to a delay in the project:**

Resistance faced from the consumers in high-theft and fault-prone areas, such as Mantola, Pakki Sarai, Kazipur, Loha mandi, and many more, for undergrounding and vigilance have led to delays in projects.

- **Low-billing efficiency in villages:**

Out of 40 villages which come under the franchisee area of M/s TPL, the billing efficiency in 30–32 villages is very low because of the resistance by the consumers during mass meter replacement, undergrounding, and DT cleaning. These projects were, therefore, delayed. The current loss level of about 250 DTs in some of the villages is as high as 75.2%.

- **Delayed payments:**

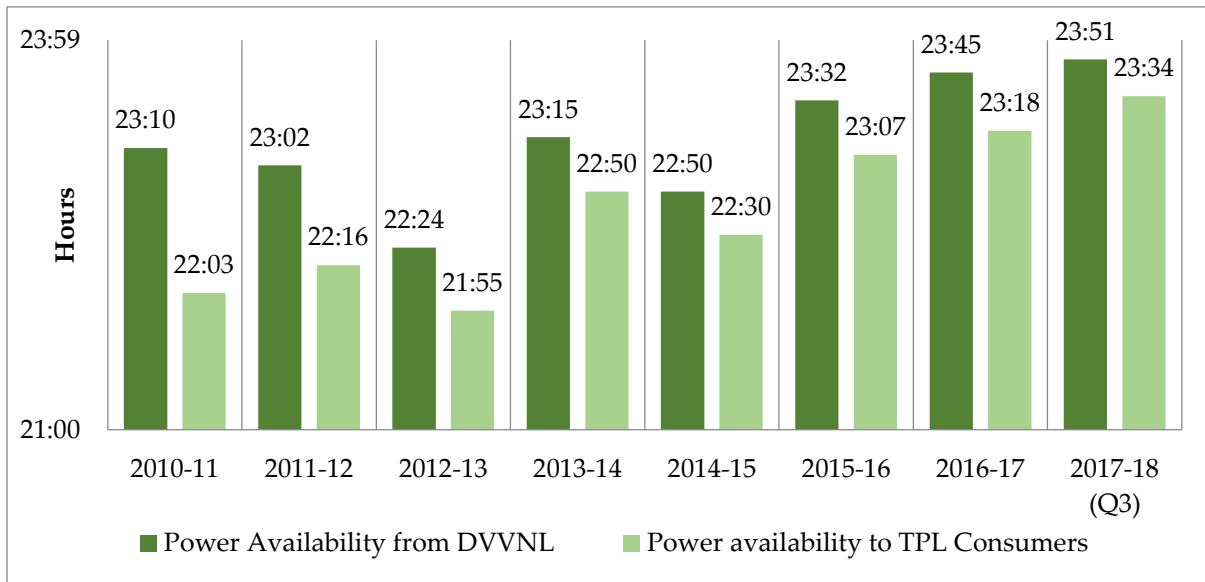
Dues amounting to Rs 130 crore are pending from the U P government bodies, which have led to a reduction in the collection efficiency and are reflected in the AT&C losses.

The time available for the study being very short, the project team had no opportunity to verify these facts.

## 4.5 Availability and Reliability of Supply

The average power supply by M/s TPL to consumers has increased from approximately 22:03 hrs/day in 2010–11 to 23:34 hrs/day in 2017–18 (upto November 2017). The difference between the average daily supply from the DVVNL to M/s TPL and from M/s TPL to consumers has decreased from 1.01 hours in 2010–11 to about 17 minutes by 2017–18; the gap is attributed to planned maintenance, unplanned outage or faults, and switch or feeder maintenance. This implies that the franchisee has been able to do good upkeep of the distribution system in the franchisee area.

The availability of supply was also cross-checked through a the field survey of consumers in the franchisee area and this has been presented in Section 5 of the report.



**Figure 5:** Power availability in hours from the source to the consumer (Source: M/s TPL)

### 4.5.1 Reliability indices

#### Interruptions

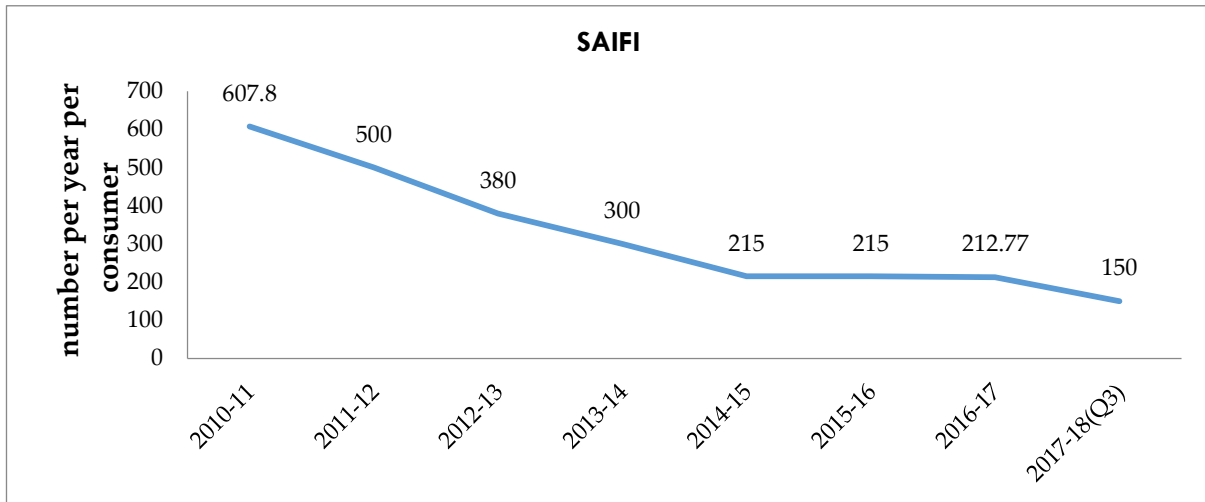
SAIFI and SAIDI, are two reliability indices for representing the reliability of the system.

$SAIFI = \frac{\sum(N_i)}{N_T}$ SAIFI = System average interruption frequency index $\Sigma$ = Summation function $N_i$ = Total number of customers interupped $N_T$ = Total number of customers served	$SAIDI = \frac{\sum(r_i * N_i)}{N_T}$ SAIDI = System average interruption duration index $\Sigma$ = Summation function $r_i$ = Restoration time, minutes $N_i$ = Total number of customers interupped $N_T$ = Total number of customers served
--	--

In simple words, SAIFI represents the average number of supply interruptions experienced by the consumers and SAIDI represents the average time taken to restore the supply.

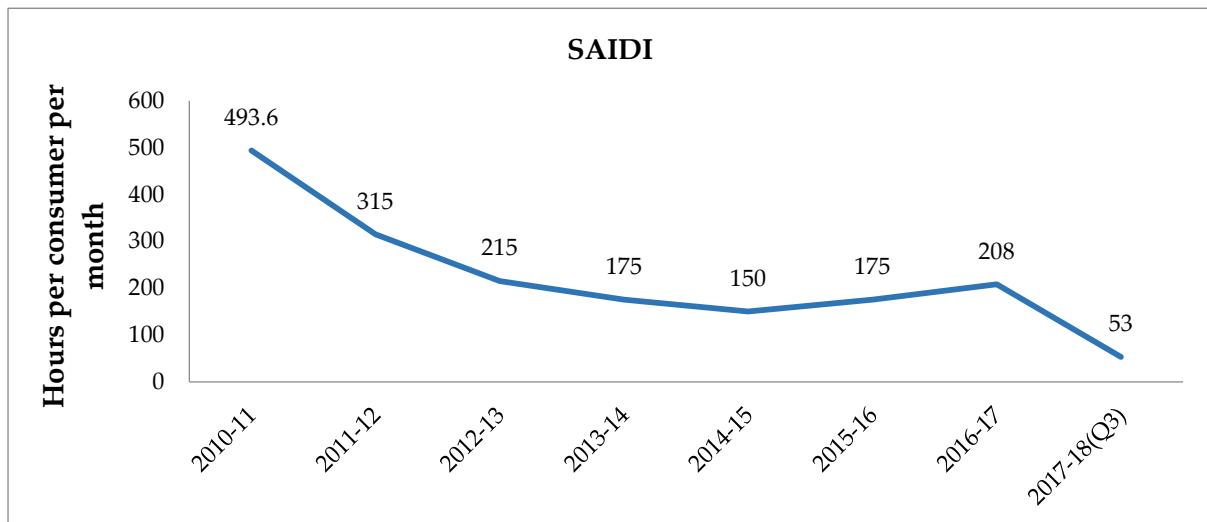
SAIFI for M/s TPL system has reportedly reduced from about 608 hours per consumer per year in 2010–11 to 213 and, in the year 2016–17, representing an improvement of about 65%.





**Figure 6:** Year-wise SAIFI for M/s TPL (Source: M/s TPL)

The average interruption duration for the M/s TPL system, which is represented by SAIDI, has also shown a declining trend from about 494 hours in 2010–11 to 208 hours in 2017–18, and further upto 53 hours upto Q3 of 2017–18.



**Figure 7:** Year-wise SAIDI for M/s TPL (Source: M/s TPL)

Thus the average duration of interruptions has also shown a significant improvement of about 90%.

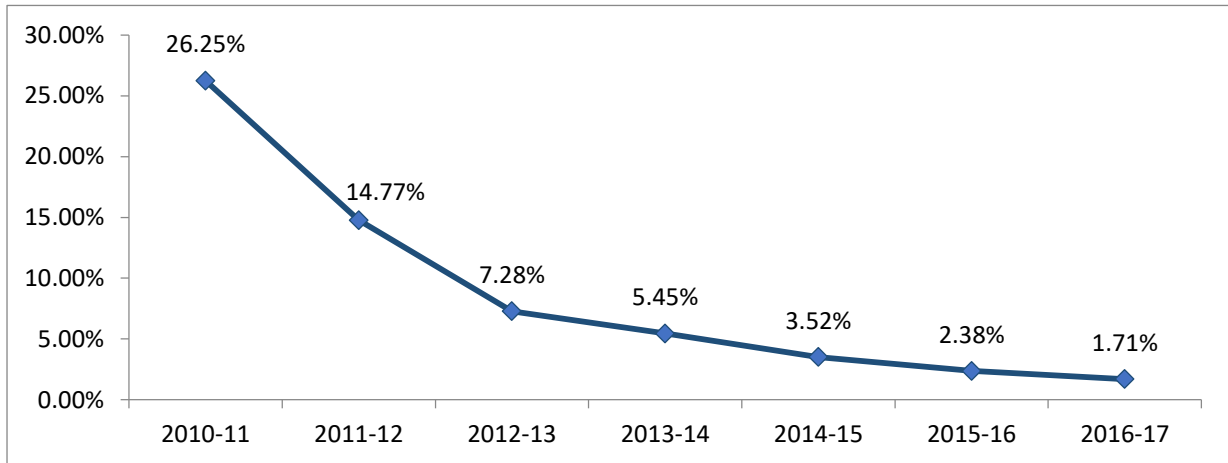
The degree of improvement in an average number of interruptions and average interruption duration reflect a substantial improvement in the reliability of the supply of electricity to the consumers and fault handling by M/s TPL.

### Distribution Transformer Failure Rate

From the DT failure data available from M/s TPL, it is noted that the number of DT failures have sharply declined from 869 in 2010–11 to 64 in 2016–17, representing a respective failure rate of 26.25% and 1.71% and a massive reduction of the order 92% in 7 years.

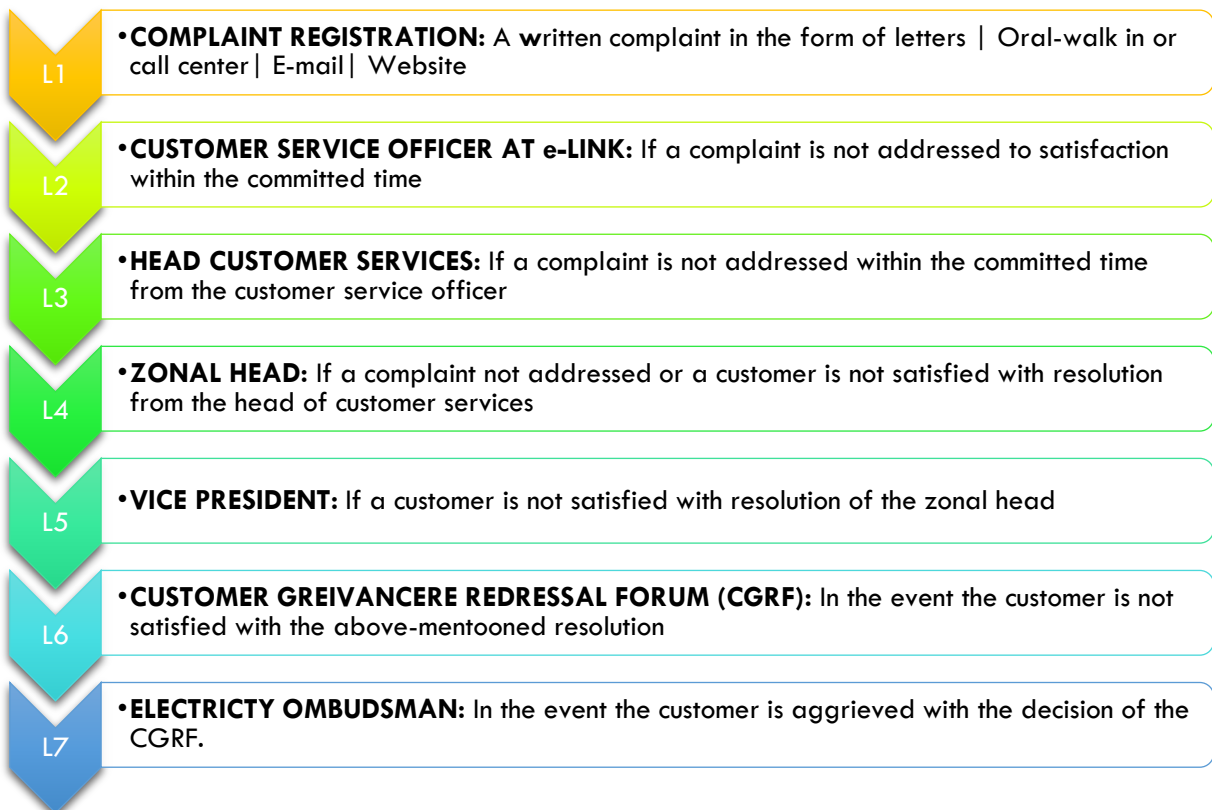
**Table 7:** DT failure rate over the years for M/s TPL

Description	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16	2016–17
DTs in the system (Nos)	3,311	3,392	3,460	3,434	3,492	3,656	3,741
Failure (Nos)	869	501	252	187	123	87	64

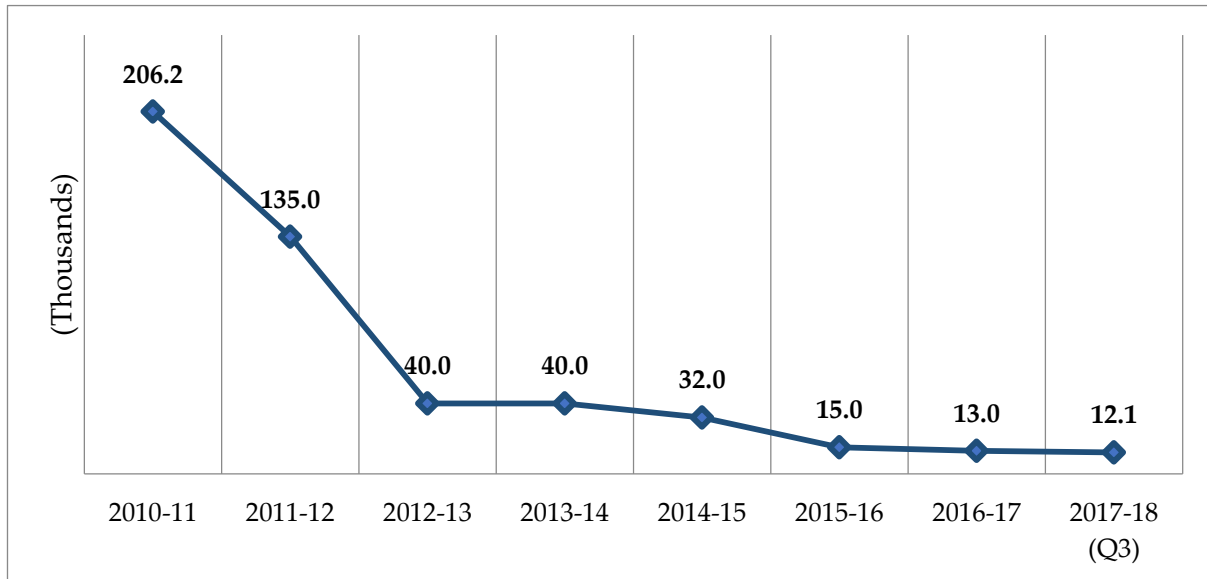
**Figure 8:** DT failure from 2010–17 (Source: M/s TPL)

## 4.6 Consumer Complaint Handling

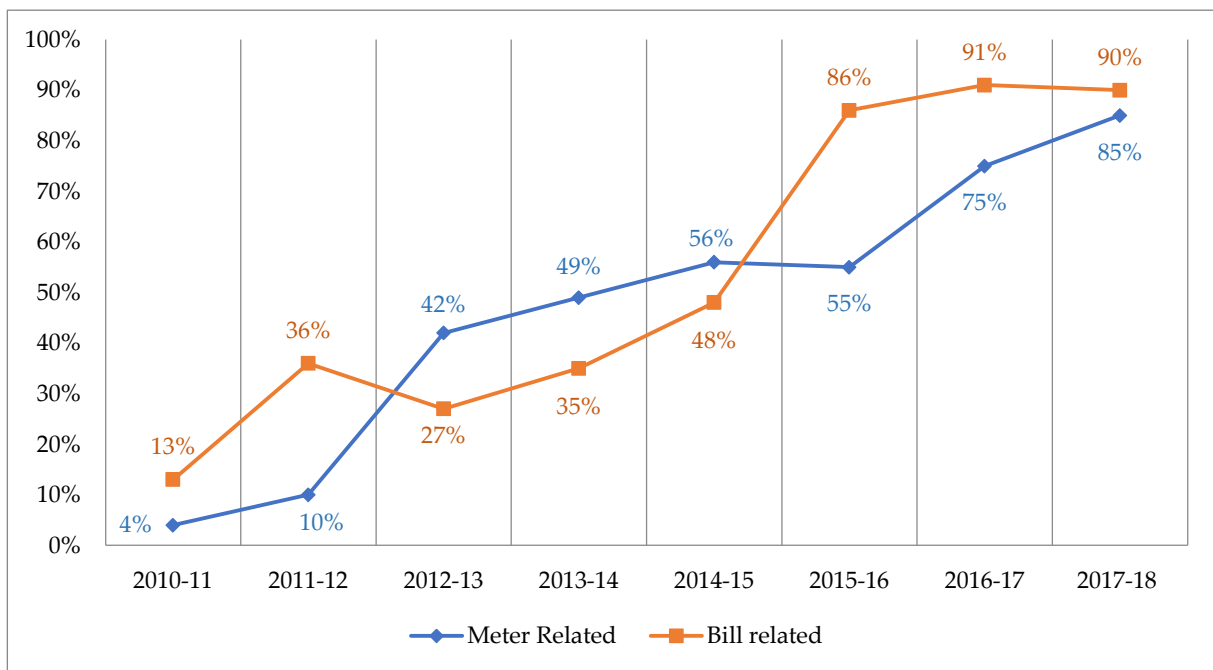
A consumer complaint redressal mechanism adopted by M/s TPL is depicted in Figure 8.

**Figure 9:** Complaint-handing mechanism of M/s TPL

The number of complaints registered with M/s TPL have shown a marked reduction in the first two years itself, and thereafter the declining trend continues where the average number of complaints in the year 2016–17 was 36 complaints per day on a total consumer base of about 4.22 lakh. Further, the response time of M/s TPL to attend to meter-related and bill-related complaints have also shown a marked improvement as has been shown in Figure 10.



**Figure 10:** Total number of complaints (Source: M/s TPL)



**Figure 11:** Complaints attended within 10 days (Source: M/s TPL)

From the above it is evident that there is:

- A drastic reduction in the total number of complaints received every year, from 2,06,177 in 2010–11 to about 12,118 in the year 2017–18 (upto Q3).
- Substantial improvement in rectifying the consumer complaint, be it meter related or billing related.

- While only 4% of the meter-related complaints were attended to within 10 days in 2010–11, 85% of the complaints could be attended to in less than 10 days 2017–18
- No less than 90% of the billing-related complaints were attended within 10 days in 2017–18 as compared to only 13% in 2010–11, showing an improvement of 77% over a period of 8 years of operation.

#### 4.6.1 Consumer awareness

In addition, M/S TPL has also taken a number of initiatives for propagating awareness with regard to saving energy, avoiding theft, availing new connections for the APL as well as BPL consumers, which can be seen from the images provided Annexure II.

### 4.7 Capital Investment

In terms of the DFA, M/s TPL is obligated to make a minimum investment of Rs 200 crore, out of which at least Rs 150 crore was to be invested in the first 5 years and Rs 50 crore in next 5 years. Such a capital investment was to include the replacement of distribution assets.

As per the information provided by M/s TPL (Table 8), they have made an investment of Rs 627.10 crore in the first 5 years (2010–11 to 2014–15) and Rs 215.90 crore in the next 3 years (2015–16 to 2017–18 upto Q3). Thus the distribution franchisee has not limited the capital investment to the minimum investment requirement but has given importance to improving the electricity distribution system in the franchisee area.

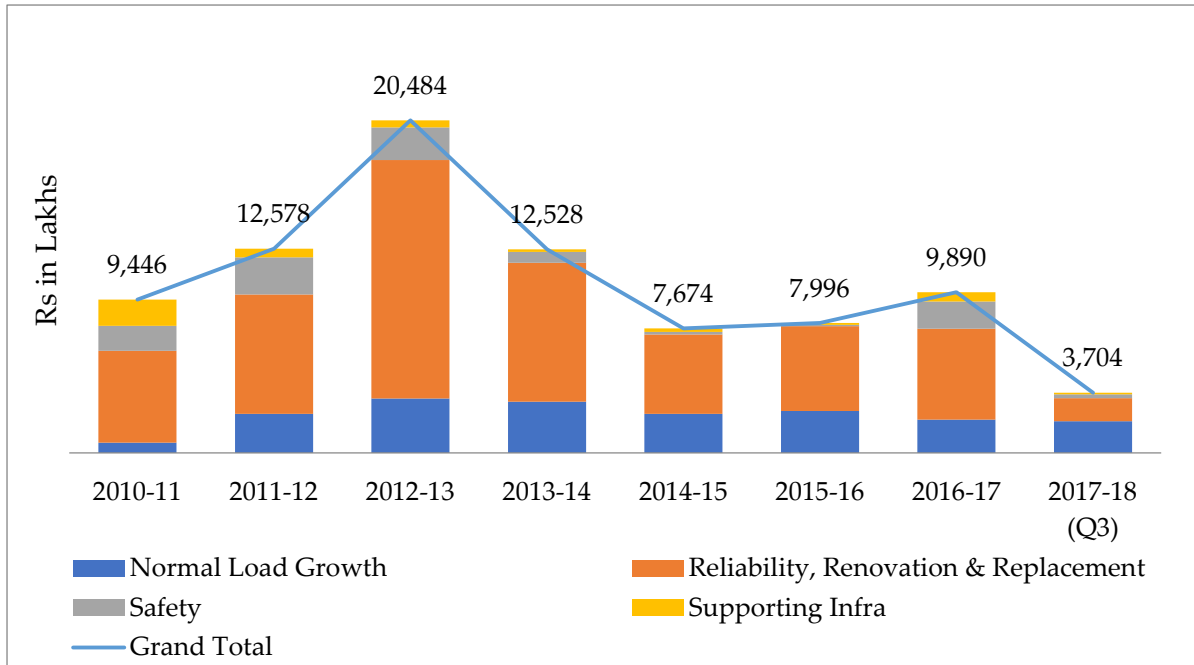
**Table 8:** Capital investment made by M/s TPL

Department	FY 10–11	FY 11–12	FY 12–13	FY 13–14	FY 14–15	FY 15–16	FY 16–17	FY Q3 17–18	Total
Normal load growth	622	2,408	3,358	3,153	2,409	2,583	2,040	1,957	<b>18,530</b>
Reliability, renovation, and replacement	5,656	7,344	14,675	8,562	4,881	5,227	5,610	1,413	<b>53,368</b>
Safety	1,541	2,287	2,014	668	166	69	1,673	244	<b>8,662</b>
Supporting infra.	1,626	539	437	145	217	116	568	91	<b>3,739</b>
<b>Grand Total</b>	<b>9,446</b>	<b>12,578</b>	<b>20,484</b>	<b>12,528</b>	<b>7,674</b>	<b>7,996</b>	<b>9,890</b>	<b>3,704</b>	<b>84,300</b>

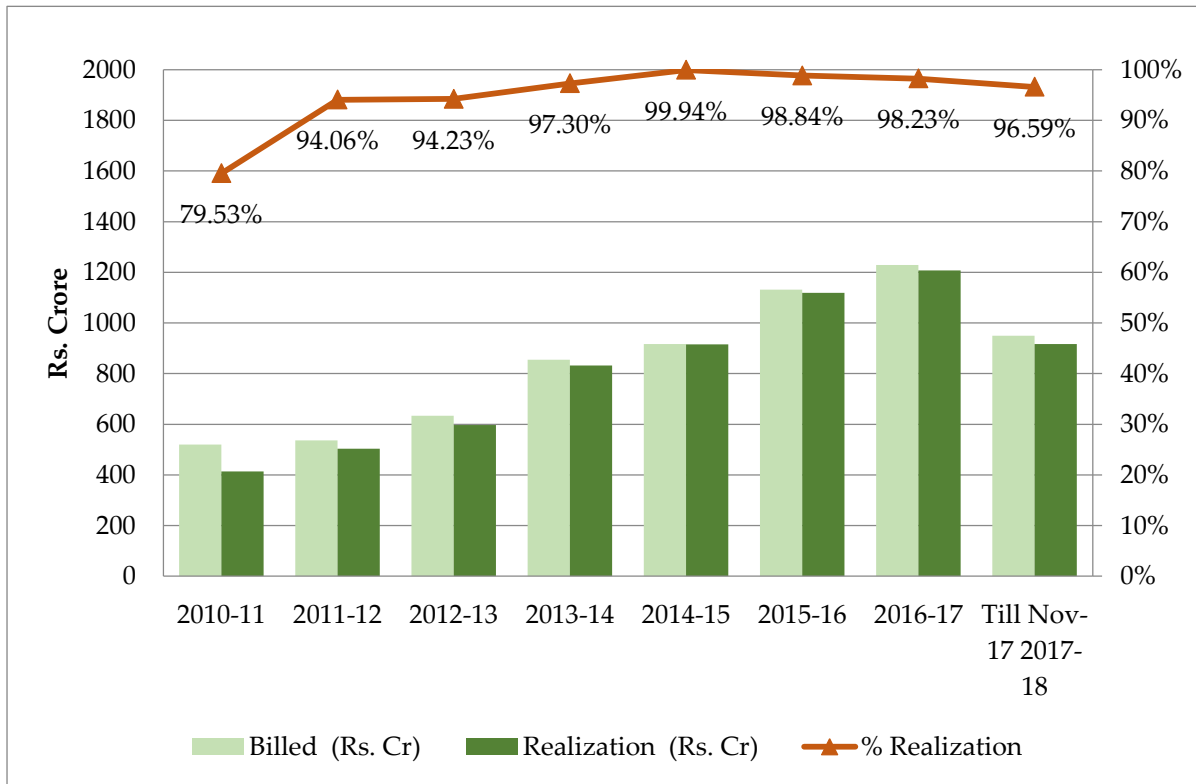
The Capex as reported by M/s TPL to the expert committee appointed by the UPERC under the petition No. 8116 of 2012 is also by and large the same.

It is noted that the UPERC has, in its order on an application filed by M/s TPL in the matter of seeking approval of the Infrastructure Roll Out Plan for the Franchisee Area during FY 2010–11 to FY 2012–13, against the claim of Rs 425.07 crore, approved Rs 420.82 crore. Thus, the capital expenditure approved by the UPERC in the first 3 years of operation far exceeds the minimum investment requirement of Rs 200 crore in the first 10 years of its operation.

The year-wise details of the capital investments made by M/s TPL in order to meet the demand in the franchisee area and its break-up in a few major heads is presented in Figure 12.

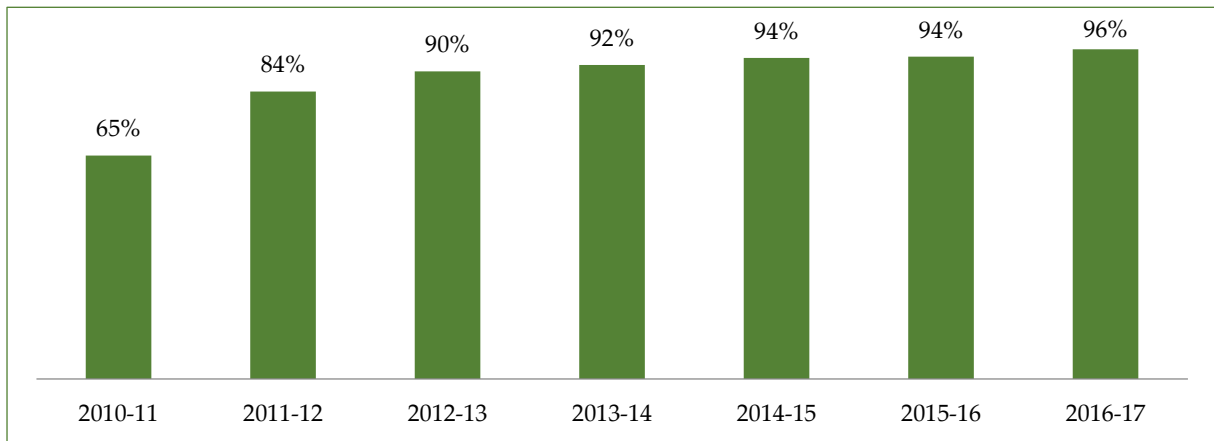


**Figure 12:** Year-wise break up of Capex in major heads (Source: M/s TPL)



**Figure 13:** Revenue realization for M/s TPL in the last 5 years (Source: M/s TPL)

Investment in network upgradation and the upkeep along with high metering, billing, and collection efficiency have largely impacted the decline of the AT&C losses. The reduced AT&C losses have translated in increased revenue realization over the period of 2010–11 to 2017–18 from 79.53% to 96.59%.



**Figure 14:** Meter reading efficiency of M/s TPL (Source: M/s TPL)

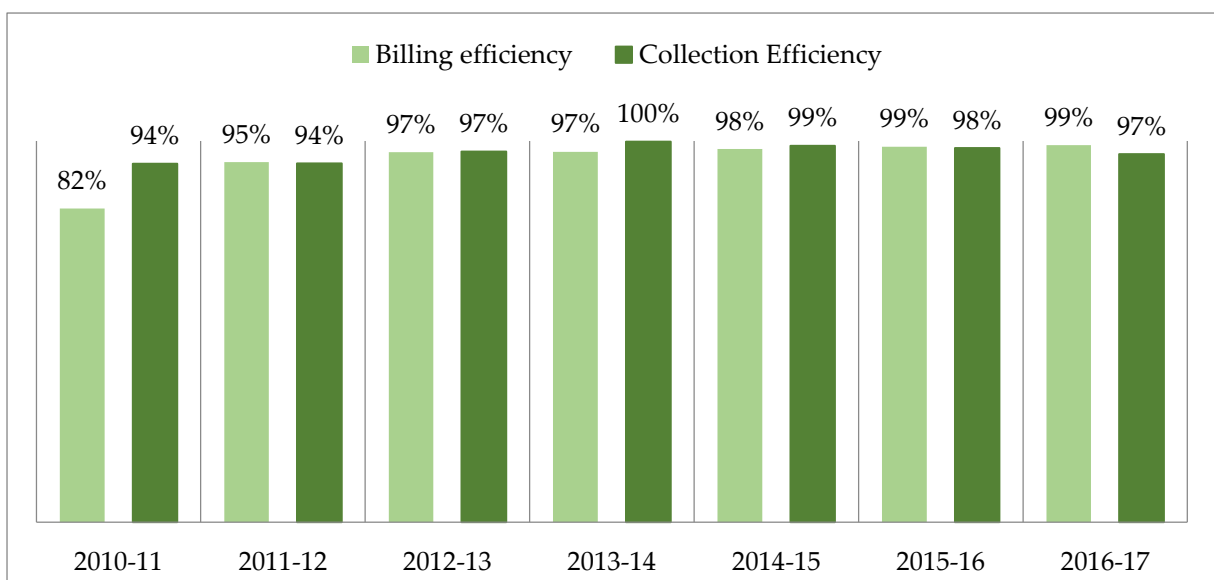
#### 4.7.1 Billing efficiency

The billing efficiency, as per the TPL, is about 98.9% at the present. The remaining 1.1% is primarily due to the fact that about 22,000 meters are still indoors and cannot be read due to the unavailability of the consumer at site. The TPL is working towards a 100% billing efficiency and has made plans to shift these meters outside for better accessibility.

#### 4.7.2 Collection efficiency

During the period of M/s TPL functioning as a distribution franchise, the collection efficiency has improved substantially, gradually increasing from 80% in its first year of operation to 95%–100% and, presently, it is at 96%(2017–18) despite the fact that the number of consumers in the system are also increasing.

The reason for the collection efficiency being less (97%) in FY 2016–17 was sought from M/s TPL. They mentioned that the realization from government bodies is expected to follow in the remaining months of the year.



**Figure 15:** Billing and collection efficiency of M/s TPL (Source: M/s TPL)

## 4.8 Quantification of the Benefits for the DVVNL

### 1. Deferral in capital investment

As per the DFA, M/s TPL had to incur a minimum capital investment Rs 200 crore in its first 10 years of Operation; Rs 150 crore in its first 5 years of its operation and Rs 50 crore in the next 5 years. M/s TPL invested over Rs 220 crore in the first 2 years alone and about Rs 585 crore within next 5 years and investment upto Rs. 843 crore in Q3 of FY 18 (see Table 9).

**Table 9:** M/s TPL's capital expenditure in Agra

Financial Year	Actual Capex invested by TPL (INR Cr)
2010–11	94.46
2011–12	125.78
2012–13	204.84
2013–14	125.28
2014–15	76.74
2015–16	79.96
2016–17	98.90
2017–18 (upto Q3)	37.04
<b>Total</b>	<b>843.00</b>

By appointing the distribution franchisee, the DVVNL not only saved the minimum Capex required for Agra City, that is Rs 200 crore, but was also able allow a substantial capital investment to improve the reliability of the distribution system, improve the electricity supply to meet the normal load growth, and renovate and replace the aging infrastructure due to access to private funds through the distribution franchisee.

Apart from the Rs 843 crore spent in distribution system as mentioned above, the distribution franchisee also borne the O&M as well the other administrative and general expenditure since it began its operation in Agra city, which would have otherwise been borne by the DVVNL.

Hence, the capital investment as well as the cost of operating and maintaining the distribution network in Agra was avoided by the DVVNL by bringing in the distribution franchisee and is one of the major benefits for the DVVNL.

### 2. Higher Thru rate from Input Energy:

In comparison to the thru rate achieved by the overall DVVNL, the input rate of TPL in Agra City has shown better performance in terms of higher revenue realized per unit of input energy as well as the growth achieved over its period of operation in Agra. The Thru rate has gone up by 167.8% in 2016–17 since 2010–11.<sup>5</sup> The data confirming the status for the last five years are tabulated in Table 10. Hence it can be ascertained that appointing M/s TPL in Agra city has resulted in a better performance for the DVVNL in the city of Agra.

<sup>5</sup> As per the data provided by M/s TPL, the Thru rate for 2010–11 was calculated as Rs 1.96/unit.

**Table 10:** Thru rate in the DVVNL and M/s TPL

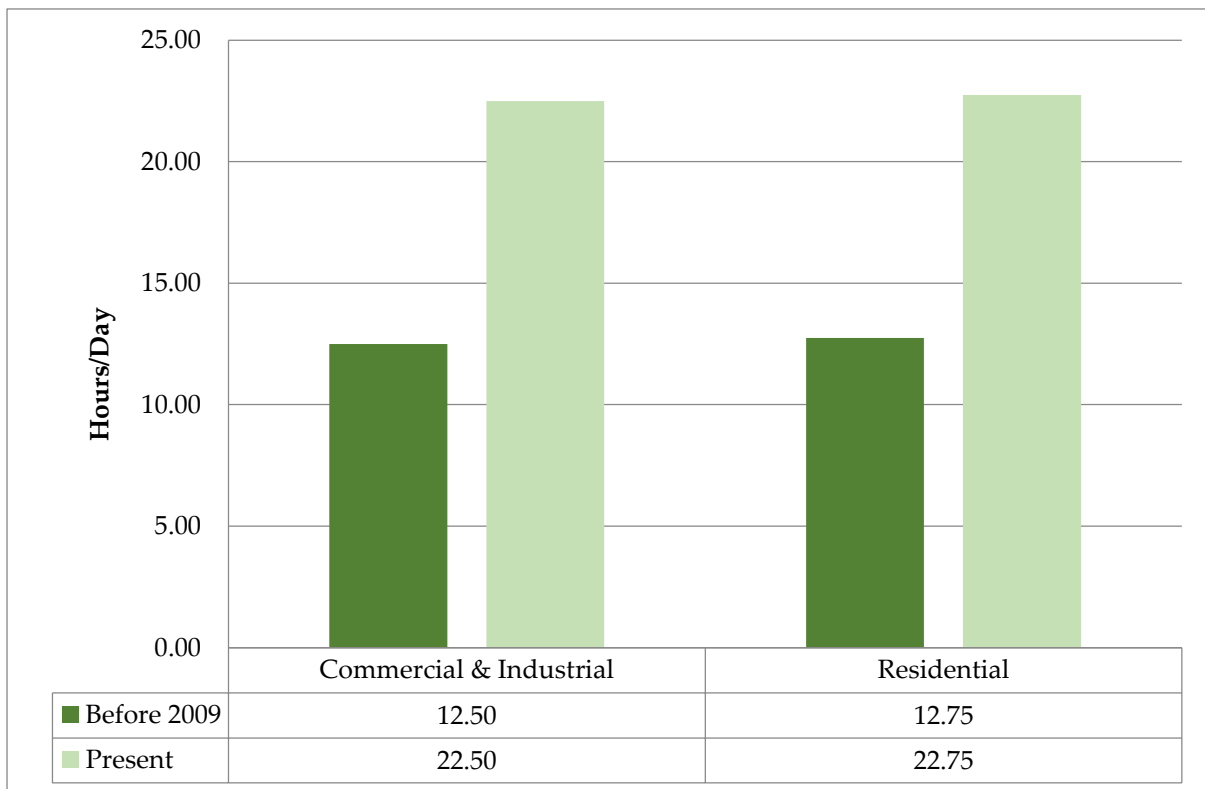
Particulars	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018 (upto Q3)	CAGR (from FY 12 to FY 18)	CAGR (from FY 13 to FY 18)
<b>Torrent – Agra</b>	2.28	2.71	3.77	4.26	5.22	5.74	5.25	14.87%	14.15%
<b>DVVNL Discom</b>	1.70	1.87	2.23	2.44	2.62	3.56	2.85	8.99%	8.87%



## 5. Consumer Perception

### 5.1 Electricity Supply Position

The focused group discussions, with representatives of select commercial associations, the resident welfare associations and individual customers brought out that there is considerable improvement with regard to the quantum and duration of electricity supply. In the commercial and industrial categories, the average duration of electricity supply was now said to be of the order of 22–23 hours per day as compared to 12–13 hours per day prior to 2009. In the residential category, consumers reported an increase in electricity supply from 12.5 to 13 hours in a day prior to 2009 to 22.5 to 23 hours per day in the recent years.



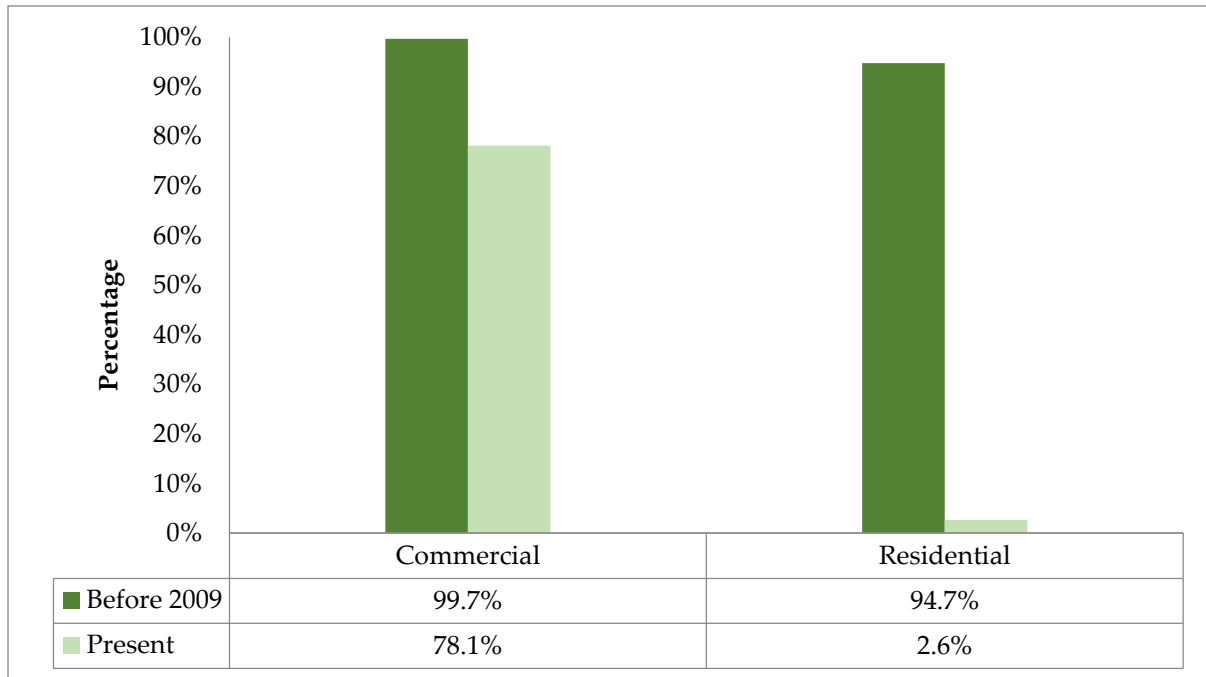
**Figure 16:** Average duration of electricity supply

#### 5.1.1 Quality of supply

Apart from an increase in the number of hours of supply, consumers were also appreciative of the improvement in the quality of supply provided by M/s TPL in terms of the number of interruptions and duration of interruptions.

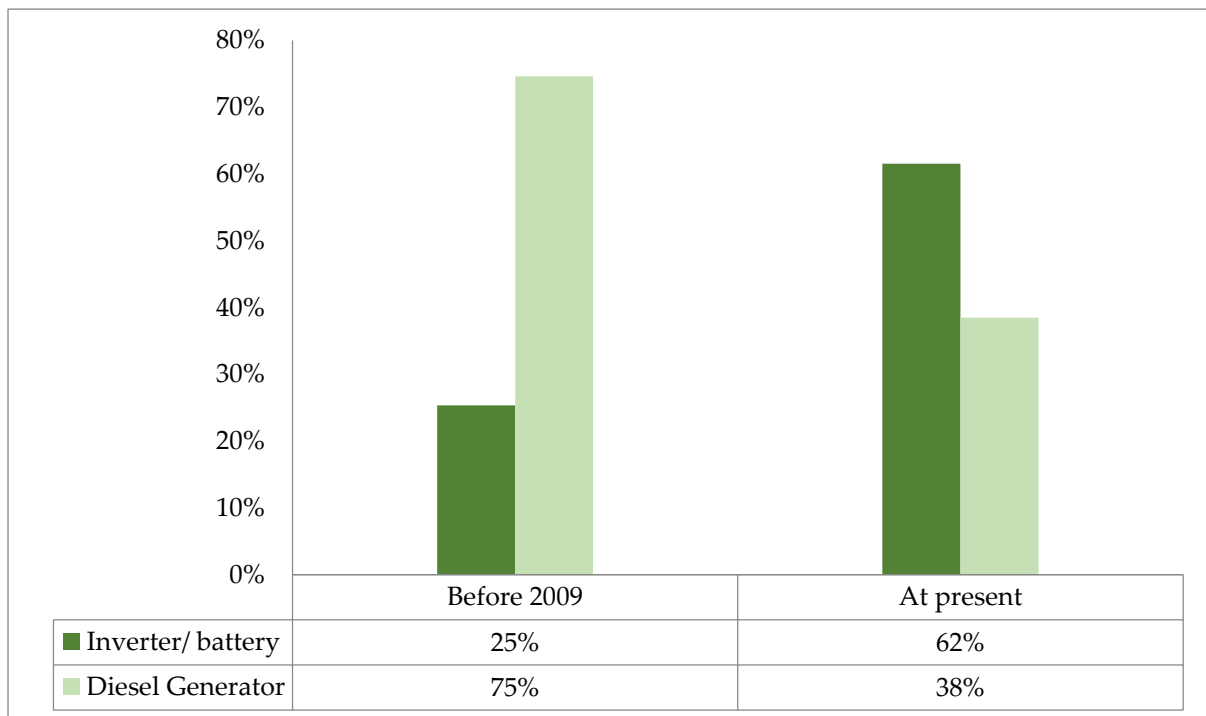
From the consumer survey it emerged that prior to M/s TPL taking over as a distribution franchisee for the urban area of Agra, the hours of electricity supply was substantially inadequate, and hence most of the commercial as well as residential consumers used back up sources of electricity supply. The consumers also mentioned that the requirement of a back up electricity source has reduced drastically in residential areas. However, commercial buildings as a precaution still keep a back up source though the duration of its use is very less catering only to short interruptions or scheduled maintenance power cuts.

### 5.1.2 Backup Power Sources



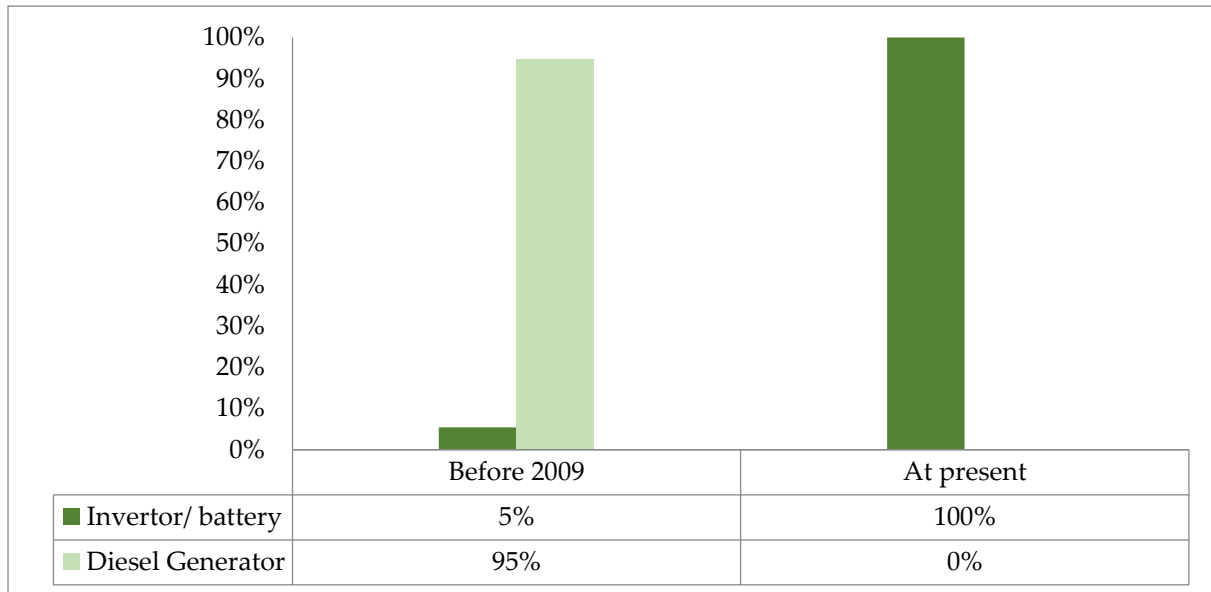
**Figure 17:** Consumer-wise back up power usage

Most of the commercial and industrial customers used DGs because of long hours of power cut, but with an increase in the hours of electricity supply, the number of/usage of DG sets has reduced. Some of the commercial consumers have started using inverters instead of DGs to cater to short interruptions and scheduled maintenance power cuts.



**Figure 18:** Type of back up power source used by commercial consumers

In the residential consumer segment, interaction was done with individual consumers and focussed discussion groups with housing societies. It was gathered that prior to 2009, 5% of the individual consumers used invertors and 95% of the residential consumers in residential societies used DG sets as a back up source. While the individual consumers continue to maintain invertors as a back up source, the housing societies surveyed reported that instead of availing supply from centralized DG sets, they now avail back up supply from the invertors as the duration of interruptions had reduced substantially. They also mentioned that the switch-over from DG sets to invertors had resulted in reducing the financial burden on them, which was hitherto extant due to the back up supply from DG sets prior to 2009.



**Figure 19:** Type of back up source used by residential consumers

### 5.1.3 Complaint redressal system

M/s TPL has developed an impressive complaint redressal system where an individual can register a complaint via the phone, mobile app, website, or by personally visiting any service centre in the region. From the consumer survey it was learnt that most of the customers prefer registering complaints through a phone call.

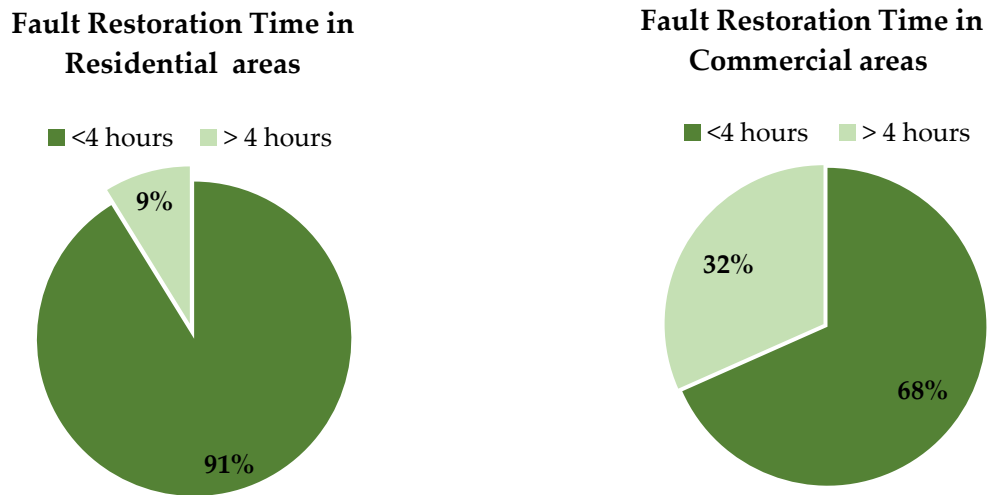
As per M/s TPL, more than 90% of NPCs received are addressed within 4 hours. A sample of the data for the month of May and June, 2017 (summer), August, 2017 (monsoon), and December, 2017 (winter) from the Duration Analysis Report developed from the M/S TPL's SAP database is presented in Table 9.

**Table 11:** Restoration of NPCs in less than 4 hours

Zone	May and June 2017	August 2017	December 2017
1	83.62%	95.13%	98.19%
2	95.74%	99.46%	99.98%
3	90.2%	94.93%	99.73%

While the feedback from residential consumers was quite close to the restoration time reported by M/s TPL, the commercial consumers, however, mentioned that still approximately 68% of NPCs take more than 4 hours to restore the supply. This could, however, be due to the fact that the commercial markets which were surveyed were very dense areas and the time

taken to resolve the NPC is generally high in such areas as compared to the time taken to restore supply in residential areas, where 91% of NPCs were reportedly restored within 4 hours.



**Figure 20:** Fault restoration time sector wise

The consumers also reported that the information with regard to a scheduled maintenance or power cuts is provided by M/s TPL two days in advance via newspapers, local news channels, mobile app, website, and SMS.

## 5.2 Consumer Service-delivery Mechanism

M/s TPL has created quite a good system for customer services. There is one customer-service centre in each of the three zones where bill payment, new connections, complaints, and various other services are provided.

M/s TPL has provided forms for new connections online as well as offline. Through discussions with a few new consumers present at the service centre at the time of the survey, it was learnt that the consumers find the online procedure cumbersome and hence prefer the offline mode for applying for a new connection. From consumers' feedback, new connections of a residential category are released within 15 to 20 days which took 4 to 6 months at the time when the electricity supply was made by the DVVNL. The TPL claims to have given new connection within 13 days.

Other than the new connection application, bill payment is also done by the majority of residential and commercial customers via cash/cheque at the service centres, while a few commercial and almost all the industrial customers are reported to be paying their bills online via the website or mobile app.



**Figure 21:** Bill collection van

Multiple initiatives have been taken by M/s TPL to make the payment process hassle-free. They have provided a mobile van service (m-links) which goes from location to location based on the payment cycle of consumers in various areas. The information about the nearest location of the availability of a mobile van and date is provided to consumers on their bill as well as website. While interacting with the consumers who were paying bills at the mobile van at the time of survey, it was learnt that the mobile vans have proved to be convenient as customers can now avoid paying for transportation charges to the service station to pay the bill. Each mobile van collects bills from 800+ customers per day. More than 90% of the respondents were found to be satisfied with the customer service management.

Another recent initiative by M/s TPL is a provision of bill payment services via a general store near their homes through 'easy pay'. Through the 'easy pay' system, customers can pay their bills through the machine as shown in the following picture, which reduces the waiting time as compared to the customer service centre.



A total of 22 machines have been installed in different locations in Agra, and M/s TPL is planning to expand its network of the 'easy pay' system to 45 more locations.

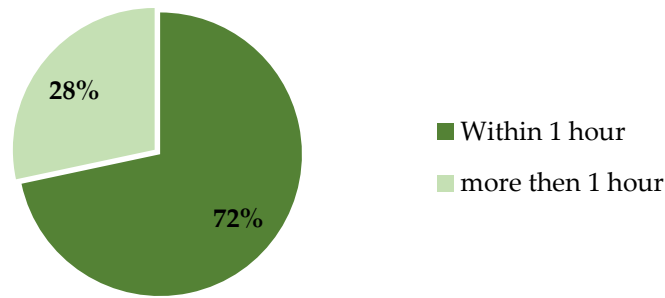
Customers were in praise of both the initiatives.

### 5.3 Consumer Grievances-handling Mechanism

M/s TPL has provided multiple options to register a complaint. Consumers can register complaints either via phone call, website, or mobile app or by visiting any service centre. However, most consumers prefer registering complaints through phone calls.

To address customers complaints a *janta darbar* is organized every Tuesday at all the service centres which is headed by the company's zonal he. If the complaint is not resolved satisfactorily by the customer service centre representative, a monthly *vishesh janta darbar* is arranged where the highest authority from M/s TPL Agra remains present; the information about the *vishesh janta darbar* is provided via the local newspaper and on the bill.

As per the consumer survey, it was found that none of the consumers out of the sample taken had any complaints related to the billing or the quality of power in the recent years of M/s TPL providing the service; this includes the present year as well. As per consumers' feedback, the time required to address the cause of the issue for which the complaint was registered is mostly within an hour.



**Figure 22:** Time taken in address the cause of minor complaints

In the sample survey, M/s TPL received about an average of 4.9 out of 5 in customer complaint handling and satisfaction, whereas customers only gave 2 out of 5 to the DVVNL services prior to 2009. This bears testimony to the initiatives taken by M/s TPL in this regard.



**Figure 23:** Consumer Satisfaction with a complaint redressal mechanism on a scale of 0–5

## 6. Summary and Conclusion

A review of the technical and operational performance of M/s TPL as a distribution franchisee in Agra presents a picture of significant improvement on many fronts as can be seen from the parameters presented in Table 10:

**Table 12:** Salient performance parameters

	Unit	2010-11	2016-17	2017-18 (till Nov.)
<b>Franchisee Profile and Commercial Parameters</b>				
Consumer base	No.s	2,87,697	3,96,599	4,24,889
Slum connections released	No.s	6956	81045*	95933*
Normal connections released	No.s	11,292	1,16,486*	1,33,075*
CAPEX	Rs crore	94.46	805.96*	37.04
Input energy	MU	2114	2103.1	1747.7
Energy sold by M/s TPL	MU	1025	1559	1417.7
Distribution losses	%	51.5	25.8	18.86
AT&C losses	%	61.8	27.2	21.6
Meter-reading efficiency	%	65.3	96.4	97.2
Billing efficiency	%	82	99	-
Collection efficiency	%	79.50	98.2	96.6
Billed	Rs crore	519.91	1228.61	-
Realization	Rs crore	413.47	1206.86	-
<b>Technical and Operational Parameters</b>				
Peak demand	MVA	381.3	424.6	-
Power transformer capacity	MVA	596	804	-
DTcapacity	MVA	775	988	-
DTfailure	N/A	869/3311	64/3741	-
DTFailure rate	%	24.6	1.71	-
SAIFI	per consumer per year	607.8	213	150
SAIDI	hours per consumer per year	493.6	208	53
Power availability from the DVVNL to TPL	HH:MM	23:10	23:45	-
Power availability to from M/s TPL consumers	HH:MM	22:05	23:18	-
NPC	No.s	3,66,385	2,47,848	-
<b>Consumer Perception</b>				
	Unit	Before 2009	At present (2017-18)	

	Unit	2010–11	2016–17	2017–18 (till Nov.)
Average duration of electricity supply	hours	12-13 hours	22-23 hours	-
Commercial consumers having back up	%	99.7%	78.1%	-
Residential consumer having back up	%	94.7%	2.6%	-
Fault restored within 4 hours	%	49%#	91%	-
Consumer satisfaction vis-à-vis complaint redressal mechanism	%	36%	98%	-

\* cumulative

# for 2011–12

M/s TPL is reported to have made expenditure Capex of about Rs 806 crore in the seven years of its operation as a distribution franchisee in Agra. Which, while the approval of the UPERC to the aforementioned expenditure would be available in due course, the Capex approved by the UPERC for the three years (2010–11 to 2012–13) is of the order of Rs 420 crore against a claim of about Rs 425 crore preferred by M/s TPL before the Hon'ble Commission. Thus the Capex incurred by the distribution franchisee in three years is far in excess of the minimum investment requirement of Rs 200 crore in 10 years of operation, thereby depicting a strong focus and inclination of the franchisee on the strengthening and augmentation of the distribution system.

The avoided Capex of Rs 806 crore and the recurrent employee cost as well as the expenses towards O&M also go towards the benefit of the DVVNL. While no assessment of the recurring benefits is being made, it is noted that as per the UPERC tariff order dated November 30, 2017, the net O&M expenses for the DVVNL trued up for FY 2014–15 were of the order of Rs 471.86 crore for a consumer base of over 32 lakh.

M/s TPL has during the seven years released new connections ranging over 18,000 to about 38,000 every year aggregated, and its consumer base has increased from 2.88 lakh to 4.24 lakh. With reduction in distribution losses from 51.5% in 2010–11 to 25.8% in 2016–17, the energy supplied by M/s TPL to consumers has gone up by 25.7%. There had been a significant improvement in the metering efficiency (65.3% to 96.4%), billing efficiency (82% to 99%), and collection efficiency (94% to 100%). The billing has increased by 136% and with an increase in the collection efficiency, realization has almost trebled from Rs 413.47 crore to Rs 1,206.86 crore. The revenue realized by the DVVNL has also witnessed substantial increase from about Rs 382.34 crore (2114 MU @ Rs 1.81 per unit) in 2010–11 to Rs 813.86 crore (2103 MU @ Rs. 3.87 per unit) in 2016–17.

The advantages for the consumer with regard to the electricity supply position, consumer service delivery mechanism, and consumer complaint handling mechanism has vastly improved since M/s TPL took over the Agra urban area as the distribution franchisee in 2009. Consumers have reported receiving an average of 23.15 hours of electricity supply per day as opposed to the average of 12–13 hours prior to 2009. The reliability of the system, as depicted by SAIDI and SAIFI in the following table, also signifies that consumers enjoy fewer interruptions and if any, these are for a lesser duration as compared to the trend in 2010–11. The number



of faults as well as total consumer complaints have also dropped significantly from 2, 06,200 complaints in 2010–11 to 13,000 in 2016–17. The time taken to resolve the complaints and restore faults has also reduced vastly over the period. It was gauged from the consumer survey that the sampled consumers are highly satisfied with M/s TPL's complaint redressal mechanism, rating M/s TPL an average of 4.9 out of 5. With respect to paying bills, lodging complaints, engaging with online portals, and so on, consumers also appreciated the ease transaction for M/s TPL were being done.

Summing up, the distribution franchisee performance is a win-win for the franchisee, the DISCOM as well as the consumers.



# Annexures



## Annexure I: Focused Group Discussions (FGD)

Focused Group Discussions (FGD): Meeting with the National Chamber of Industries and Commerce—

- Mr Narendra Singh, President NICIC , DG Set Supplier, BSA International Exports
- Mr Vishnu , Treasurer NICIC, Cloth market Association Head
- Mr Ashok Agrawal, Representative from the markets of the Sikandra area
- Mr Shailendra Kumar Gupta, President Johri Bazar (100+)
- Mr Sohanlal, President, Chobey ki Gali market
- Mr Shyam Sunder, Director RBA Infratech Pvt Ltd, Sunjay Palace Market
- Mr Mukesh kumar Jain, President, Kiradi Market
- Mr Ashok Arora, leather and footwear maket

In addition, there were 12–14 other members from the hotel industry, foundry cluster, and various other commercial representatives.

### 1. Commercial

- a. Mr Satish Chandra Chaturvedi, silver products manufacturers, Market President (representative of a 160-members association)
- b. President, Choubey ki Gali bazaar
- c. Mr Ashok Arora, Cloth Market Association, Rawatpada
- d. Mr Sahni Dada, Sahni Book Depot
- e. M/S Raj and Sons, Cloth Market Rawatpada
- f. Customer Executive, Zenith Food Court Johri Bazar

### 2. Industrial

Foundry Cluster (4 representatives of a 100-members association)

- a. Mr Shashi Kumar Jain, Vice President, The Institute of Indian Foundrymen
- b. Members, Foundry Association Agra
- c. Silver manufactures Sainik Press Fatak, Johri Bazar (100)

### 3. FGD with RWA

- a. President, RWA Shivam Elegant (55 families)
- b. Mr Dilip Kumar Agrawal, President RWA (75 families)

### 4. FGD with Hotel and Restaurant Association (168 members)

- a. Mr Sandeep Arora, President and General Secretary Hotel and Restaurant Association
- b. Taj Trapezium Zone Hotel owners (3 attendees)
- c. Customer Manager, Siris18 Agra


### 5. Mobile van (one-on-one interaction with 20 consumers)

### 6. Customer care visit

- a. Lok Adalat (3 consumers)
- b. Random consumers (10 consumers)

### 7. Parshad - Rakesh Kumar Jain






## कटिया से बचें...

- यह असुरक्षित है तथा पोल में या आस-पास करन्ट आ सकता है।
- यह क्षेत्र के ट्रांसफार्मर के जलने या खराब होने की वजह हो सकती है।
- यह विद्युत लाइनों के टूटने का कारण हो सकता है।
- इससे आपके प्रियजनों को जान का खतरा हो सकता है।
- इसके प्रयोग से जान-माल एवं पशुओं को खतरा हो सकता है।
- कटिया का प्रयोग दण्डनीय अपराध है।

**वैध एवं सुरक्षित विद्युत संयोजन से ही विद्युत का उपयोग करें।**



हैल्पलाइन : 2424554

## सुगम संयोजन योजना

सुगम संयोजन योजना के अन्तर्गत शहरी उपभोक्ताओं के लिये नये विद्युत संयोजन को 18 आसम किरातों में निर्गत करने की व्यवस्था प्रतिपादित की जा रही है।

**कम कीमत और 18 किरातों में घरेलू बिजली कनेक्शन**

इस योजना के अन्तर्गत आवेदन के समय प्रथम भुगतान अर्थात् लोड के अनुसार निम्न प्रकार से देय है


कनेक्शन	पहला भुगतान	ओवर हेड (वार्षिक किरात)	भूमिगत केबल (वार्षिक किरात)
1 किलोवाट	₹. 255	₹. 128	₹. 211
2 किलोवाट	₹. 335	₹. 143	₹. 226
3 किलोवाट	₹. 605	₹. 172	₹. 257
4 किलोवाट	₹. 645	₹. 192	₹. 277
5 किलोवाट	₹. 1100	₹. 570	₹. 713

नोट : उपरोक्त मासिक किरात की राशि 20 मीटर केबल के अनुसार दर्शायी गई है, वास्तविक किरात अंकलन के अनुसार बदल सकती है। केबल कम उपयोग होने पर उपयुक्त राशि बिल में समायोजित कर दी जायेगी।


**आवश्यक दस्तावेज**

- आधार कार्ड या आधार कार्ड की अनुपस्थिति में चोटर आई.डी.
- भवन स्वामित्व प्रमाण पत्र।
- सरकारी आवास हेतु सरकार या विभाग का एलोटमेंट लेटर।
- किरायेदार के लिए, परिसर के स्वामी का सहमति पत्र या किरायेदारी का प्रमाण पत्र।
- पासपोर्ट साइज फोटो।
- व्यक्तिगत बंध-पत्र।
- घोषणा पत्र।

विस्तृत जानकारी के लिए हमारे ग्राहक सेवा केंद्र या 24x7 कॉल सेंटर 0562-2424554/ 18001803124 पर सम्पर्क करें।



ऑफिस जानकारी के लिए सम्पर्क करें  
 बंगलूरु : 9962242454  
 लॉट नं. : 3003 300 3124



## निःशुल्क विद्युत संयोजन

गरीबी रेखा से नीचे जीवन यापन करने वाले उपभोक्ताओं के लिए निःशुल्क विद्युत संयोजन

**आवश्यक दस्तावेज**

- पूर्णरूप से भरा आवेदन पत्र (निःशुल्क) तथा घर के सामने खड़े होकर स्वयं का पोस्ट कार्ड साइज फोटोग्राफ।
- आधार कार्ड अथवा आधार कार्ड की अनुपलब्धता पर मतदाता पहचान पत्र की छाया प्रति।
- भूस्वामित्व से संबंधित प्रमाण पत्र की छाया प्रति
- व्यक्तिगत बंध-पत्र
- घोषणा पत्र

**पात्रता**

- राष्ट्रीय खाद्य सुरक्षा योजना के अन्तर्गत सभी ₹. 25580/- वार्षिक आय से कम वाले लाभार्थियों को अर्थात् पूर्ववर्ती अन्वेषण योजना के लाभार्थी।
- उच्चबला योजना के अन्तर्गत चयनित लाभार्थी।
- गरीबी रेखा से नीचे जीवन यापन करने वाले आवासीय योजना के आवंटित।
- तहसील अथवा जिलाधिकारी कार्यालयों द्वारा निर्गत गरीबी रेखा के नीचे जीवन-यापन का प्रमाण-पत्र धारी।

नोट : विद्युत संयोजन निःशुल्क है, मासिक बिल देय होंगे।

विस्तृत जानकारी के लिए हमारे ग्राहक सेवा केंद्र या 24x7 कॉल सेंटर 0562-2424554/ 18001803124 पर सम्पर्क करें।

**ग्राहक सेवा केंद्र -**

3, पूर्णानन्द प्लाजा चर्च रोड, रामराजु हॉस्पिटल के समीप  
 286, जयपुर हाउस, ए.डी.ए., ऑफिस रोड  
 49, सदा बाजार, शिवहरे रोड, शांतिग आर्कैड के सामने



We are an independent, multi-dimensional organization, with capabilities in research, policy, consultancy and implementation.

We are innovators and agents of change in the energy, environment, climate change and sustainability space, having pioneered conversations and action in these areas for over four decades.

We believe that resource efficiency and waste management are the keys to smart, sustainable and inclusive development. Our work across sectors is focused on

- 1.Promoting efficient use of resources
- 2.Increasing access and uptake of sustainable inputs and practices
- 3.Reducing the impact on environment and climate

Headquartered in New Delhi, we have regional centres and campuses in Gurugram, Bengaluru, Guwahati, Mumbai, Panaji , and Nainital. Our 1000-plus team of scientists, sociologists, economists and engineers delivers insightful, high quality action-oriented research and transformative solutions supported by state- of-the-art infrastructure.

