

TWELFTH REPORT
STANDING COMMITTEE ON ENERGY
(2015-2016)

(SIXTEENTH LOK SABHA)

MINISTRY OF POWER

MEASURES TO CHECK COMMERCIAL LOSSES

Presented to Lok Sabha on 11.12.2015

Laid in Rajya Sabha on 14.12.2015



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COMPOSITION OF THE STANDING COMMITTEE
ON ENERGY (2015-16)

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SECRETARIAT

1. Shri K. Vijaykrishnan — *Additional Secretary*
2. Shri N.K. Pandey — *Director*
3. Shri Manish Kumar — *Executive Assistant*

INTRODUCTION

1, the Chairperson, Standing Committee on Energy, having been authorized by the Committee to present the Report on their behalf, present this Twelfth Report on 'Measures to Check Commercial Losses' relating to the Ministry of Power.

2. The Committee had a briefing on the subject by the representatives of the Ministry of Power on 28th September, 2015. The Committee, with a view to examining the subject in detail, had evidence of the representatives of the Ministry of Power on 26th October, 2015. The Committee also got valuable inputs from the representatives of the Governments of Maharashtra and Tamil N]adu, during the study visit in the month of October, 2015. The Committee wish to express their thanks to the representatives of the Ministry of Power, Government of India, for appearing before the Committee and furnishing the desired information in connection with the issues relating to the subject.

3. The Report was considered and adopted by the Committee at their sitting held on 3rd December, 2015.

4. The Committee place on record their appreciation of the valuable assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

5. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in Part-II of the Report.

NEW DELHI;
07 December, 2015
16 Agrahayana, 1937 (Saka)

DR. KIRIT SOMAIYA,
Chairperson,
Standing Committee on Energy.

REPORT
PART I
NARRATION ANALYSIS
CHAPTER I
INTRODUCTORY

There is no need to expound the importance the electricity sector has in the overall growth of the country. It is a fact that the economic viability of the whole electricity sector hinges on the Distribution sector. Therefore, the financial health of Discoms cannot be ignored without adversely affecting the entire electricity sector. Reforms and improvements brought into the generation and transmission sector would not be of much help for the sector unless there is a radical reform in the Distribution sector to make it viable. The Distribution sector is beset with the problem of huge Aggregate Technical and Commercial (AT&C) losses, of which, commercial losses form a major chunk. These losses are the prime reason for the financial distress of Discoms. The high commercial losses, which are nothing but theft (*chori*) of electricity and inefficiencies of agencies, are neither in the interest of honest consumers nor good for the financial health of the Discoms. There is no methodology developed so far by the Government/Discoms to compute technical and commercial losses separately. The Electricity Sector is going through a period of transition; therefore, Committee felt it is high time that utmost efforts were made to reduce the unacceptably high AT&C losses in the country. Since the magnitude of technical losses is not much and can be contained by technical up-gradation of the system, the Committee took up the commercial part of the losses for examination which is a managerial issue and can be contained significantly through various managerial interventions.

1.2 The National Electricity Policy *inter-alia* aims at laying guidelines for accelerated development of the power sector, providing supply of electricity to all areas and protecting interest of consumers. The supply of reliable and quality power of specified standard in an efficient manner and reasonable rates, financial turnaround and commercial viability of electricity sector also form part of the electricity policy.

1.3 Efforts to reform the distribution and last mile connectivity to the consumers have been attempted through:

- Unbundling of the State Electricity Boards into separate generation, transmission and distribution units.

- Setting up and operationalizing State Electricity Regulatory Commissions in all States and a Joint Electricity Regulatory Commission for the Union Territories and Goa.
- Continuance of the R-APDRP scheme with a capital outlay of Rs. 51,577 crore to incentivize utilities for a sustainable reduction in national AT&C losses to below 15%, now subsumed under the Integrated Power Development Scheme (IPDS) w.e.f. 3.12.2014, covering strengthening sub-transmission and distribution networks in urban areas, metering distribution transformers/feeders/consumers in urban areas, and IT enablement of distribution.
- Notifying the financial re-structuring plan of State distribution companies to bail out the cash-strapped Discoms, with measures to be taken by them and the State Governments to achieve financial turnaround by restructuring their debt supported by a Transitional Finance Mechanism of the Union Government.
- Formulating an integrated rating methodology for State Discoms to help identify strengths and weaknesses of each and provide opportunity to address the problem.
- Establishment of the National Electricity Fund in March, 2012 to provide interest subsidy of Rs. 8,466 crore, spanning 14 years, on Rs. 25,000 crore of loans disbursed to Discoms during 2012-13 and 2013-14 for non-RGGVY and non-R-APDRP distribution projects.
- Introducing the franchisee system to improve distribution services in some States, improved billing and collection efficiencies.
- Launch of the Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) subsuming the RGGVY, the scope of works including separation of agriculture and non-agriculture feeders to facilitate rostering of supply to consumers in rural areas, strengthening and augmentation of sub-transmission and distribution infrastructure therein, metering of distribution transformers/feeders/consumers and rural electrification.

1.4 Reorganization of SEBs was an important strategy in this pursuit of reforms for encouraging competition and improving efficiency in operation. Restructuring these boards is aimed at promoting greater efficiency by streamlining operations of distribution, transmission, generation and trading, while also promoting transparency and accountability. However, all the above mentioned efforts have not yielded the desired results and the technical as well as commercial losses are still very high in the country.

CHAPTER II

REASONS OF AGGREGATE TECHNICAL AND COMMERCIAL LOSSES

1.5 Energy losses occur in the process of supplying electricity to consumers due to technical and commercial reasons. The technical losses are due to energy dissipated in the conductors and equipment used for transmission, transformation, sub-transmission and distribution of power. These losses would depend on the pattern of energy use, intensity of load demand, load density, and capability and configuration of the transmission and distribution system that vary for various system elements. These technical losses are inherent in a system and can be reduced to a certain level only.

1.6 The technical losses can be further sub-grouped, depending upon the stage of power transformation and transmission system as Transmission losses (400 kV/220 kV/132 kV/66 kV), Sub-transmission losses (33 kV/11 kV) and Distribution losses (11 kV/0.4 kV). Pilferage by hooking and bypassing meters, etc., defective meters and errors in meter reading and in estimating un-metered supply of energy cause the commercial losses. The Transmission & Distribution (T&D) losses, coupled with Commercial loss, are called Aggregate Technical & Commercial (AT&C) loss.

1.7 The Committee was informed that the losses should be measured as the difference between the units input and the units realized, wherein the units realized will be equal to the product of the units billed and the collection efficiency. Collection efficiency, in this context, is defined as the ratio of actual amount collected and amount billed. The difference between the units input and the units realized is hereinafter referred to as "AT&C Loss".

1.8 The Ministry have furnished the following information in regard to the main factors responsible for AT&C losses:

(a) Technical Losses

- **Overloading of existing lines and sub-station equipment:** The transmission lines and sub-stations are designed for optimal use. Due to high growth rate in demand for power, the lines and equipment supplying power get overloaded and require frequent upgradation, relocation of distribution

sub-stations and for provision of additional distribution transformers (DTs). Overloading of lines and equipment resulted in heavy technical losses.

- **Low HT: LT lines ratio:** Higher amount of current flow in the system results in higher losses. Higher current flows in the Low Voltage (LT) lines for the same amount of power in comparison to HT lines. Therefore, technical losses are more in LT lines. For achieving a better level of network losses, HT: LT ratio should be close to 1 or higher.
- **Poor repair and maintenance of equipment:** Due to poor financial health of State power utilities, they are not able to take up regular maintenance of T&D lines and equipment, which result in higher technical loss and frequent failure of equipment. For low failure rate and low losses, it is essential to carry out timely preventive maintenance of lines and equipment.
- **Non-installation of sufficient capacitors/reactive power equipment:** Installation of sufficient capacitors is essential in the system to maintain the power factor close to unity, so that technical losses can be kept to a minimum. However, due to non-availability of sufficient funds, utilities are not able to install sufficient capacitors/reactive power equipment.

(b) Commercial Losses:

- **Low metering/billing/collection efficiency:** The gap between Actual Cost of Supply (ACS) and Average Revenue Realization (ARR) is on account of supply of electricity to agricultural and to some other select categories of consumers, who are billed either on flat rate basis or at subsidized rates and also due to theft and pilferage of electricity. In many cases, meters are faulty and electricity bills are raised on the basis of average consumption. The accuracy of the old electro-mechanical meters is also low. Further, bills to many consumers are not raised timely. Similarly, revenue collection is not made effectively, especially from the Government Departments, agricultural and rural consumers, etc. This results in heavy losses and requires metering of every consumer with efficient meters, computerized billing and efficient revenue collection mechanism.
- **Theft, pilferage of electricity and tampering of meters:** Electricity is stolen and pilfered through bypassing and tampering of electricity meters and by direct hooking of the LT lines. Majority of commercial losses are due to this reason.

- **Low accountability of employees:** Low accountability of employees results in poor upkeep of equipment, poor metering, poor serving of bills and poor revenue realization. Fixing up of responsibility and making the employees accountable for losses and failures of network are the essential measures to reduce losses on this account.
- **Absence of Energy Accounting and Auditing:** In the absence of effective energy accounting and auditing, utilities can never know the causes and locations of the technical or commercial loss. Effective energy audit with use of Information Technology (IT) is essential for effective action against theft and avoidable technical losses.

CHAPTER III

PRESENT SCENARIO OF AT&C LOSSES IN THE COUNTRY

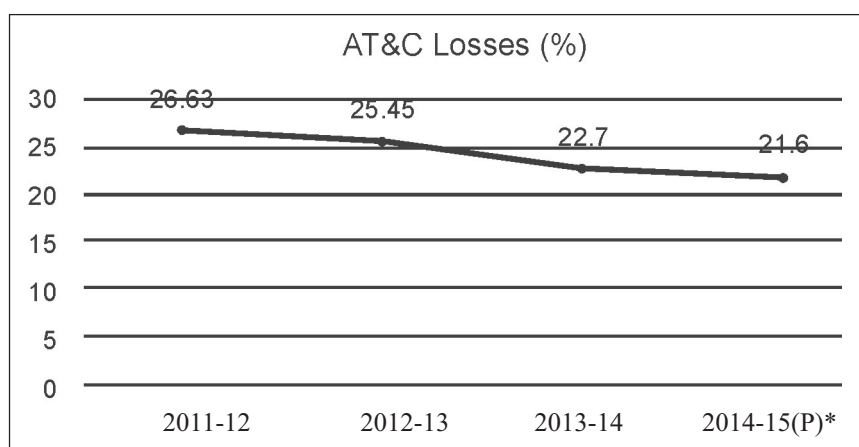
1.9 The Power Finance Corporation (PFC), a Government of India Undertaking, publishes the 'Report on Performance of State Power Utilities'. The Report covers State Power Utilities (SEBs/unbundled utilities/Power Departments) in all the States as well as Union Territory of Puducherry and private distribution Companies created as a result of reform measures (DISCOMs in Delhi). The Report is compiled on the basis of data given in the annual accounts (audited/provisional) of SEBs/unbundled utilities (including Discoms of Delhi) and Annual Resource Plans/information submitted by State Power Departments. Additional information for calculation of AT&C losses is obtained from the utilities. The Report covering the Performance of State Power Utilities for the years 2011-12 to 2013-14 has been prepared by PFC.

1.10 The overall AT&C losses for utilities selling directly to consumers for the years 2011-12 to 2014-15 as furnished by the Ministry is given below:

	2011-12	2012-13	2013-14	2014-15(P)*
AT&C Losses (%)	26.63	25.45	22.70	21.6

*Based on Provisional unaudited data of 48 Government owned Discoms.

1.11 Below is a chart showing actual AT&C loss reduction trajectory (Pan-India):



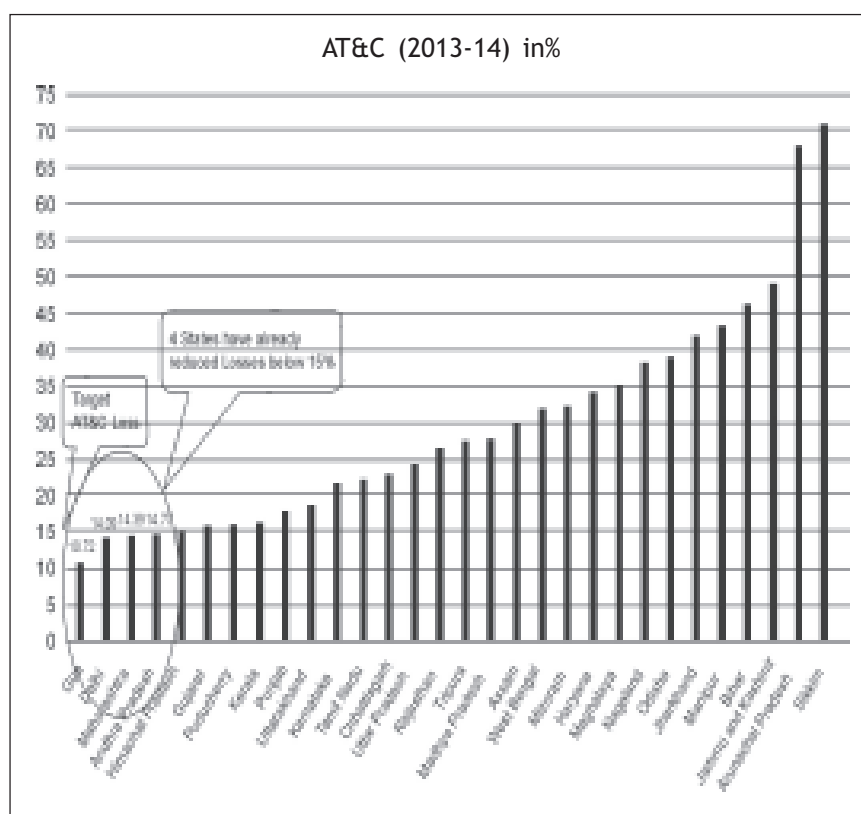
1.12 The State-wise details of AT&C losses for the period 2011-12 to 2013-14 in ascending order are indicated below:

State-wise AT&C Losses (%) in ascending order

State	2011-12	2012-13	2013-14
1	2	3	4
Goa	15.12	14.14	10.72
Delhi	18.56	15.22	14.09
Maharashtra	21.63	21.95	14.39
Andhra Pradesh	15.27	13.70	14.77
Himachal Pradesh	18.04	11.90	15.13
Gujarat	19.26	19.87	15.93
Puducherry	18.91	9.13	16.18
Kerala	12.17	12.32	16.38
Punjab	18.96	17.52	17.91
Uttarakhand	25.84	23.18	19.01
Karnataka	23.29	20.78	22.02
Tamil Nadu	21.70	20.71	22.35
Chhattisgarh	29.05	25.12	23.17
Uttar Pradesh	41.95	42.85	24.65
Rajasthan	24.81	20.00	26.76
Tripura	33.76	24.86	27.81
Madhya Pradesh	38.26	31.15	28.03
Assam	29.47	31.85	30.25
West Bengal	32.90	34.43	32.05
Mizoram	36.59	27.55	32.53
Haryana	28.27	32.55	34.33
Meghalaya	45.33	36.25	35.38
Nagaland	22.85	75.30	38.37
Odisha	44.66	42.88	39.19

1	2	3	4
Jharkhand	42.76	47.49	42.17
Manipur	44.80	85.49	43.55
Bihar	59.24	54.64	46.33
Jammu and Kashmir	71.16	60.87	49.14
Arunachal Pradesh	65.55	60.26	68.20
Sikkim	58.32	53.51	71.23

1.13 Below is a graphic showing AT&C loss comparison across States:



1.14 The Ministry have further informed that for the viability of the entire power sector, it is essential that the Distribution sector performs efficiently. High AT&C loss in the distribution sector has been a matter of concern and it is now imperative to emphasize reduction in AT&C loss. Needless to mention, this is an achievable target, as can be seen by several well performing States that have achieved AT&C losses even lesser than 15%.

1.15 When the Committee desired to know the methodology of calculating AT&C losses in the country, the Ministry of Power, in their written reply have stated as under:

“Government of India has asked PFC to publish the report on “Performance of State Power Utilities” annually. This report consists of energy and financial data of State power utilities on the basis of data given in the annual accounts (audited/provisional) and Annual Plans. Based on the energy and financial data submitted by State utilities, PFC calculates the AT&C losses as per the methodology finalized in consultation with CEA and calculated AT&C losses are also published annually along with the energy and financial data of State utilities. The methodology of calculating AT&C losses in the country as finalized in consultation with CEA is as below:

A. Input Energy (Mkwh)*	Energy Generated - Auxiliary Consumption + Energy Purchased (Gross) - Energy Traded/ Inter-State Sales
B. Transmission Losses (Mkwh)	
C. Net Input energy (Mkwh)	(A-B)
D. Energy sold (Mkwh)	(I) Energy sold to all categories of consumers, including trading in Energy/Inter-State Sales (II) Energy traded/Inter-State sale.
E. Adjusted Energy sold (Mkwh)	Energy sold to all categories of consumers, excluding Energy traded/Inter-State sales D (I-II)
F. Revenue from Sale of Energy (Rs. Cr.)	(I) Revenue from sale of Energy to all categories of consumers (excluding subsidy) including trading/Inter-State sales (II) Revenue from Trading of Energy/Inter-State sale
G. Adjusted Revenue from sale of Energy (Rs. Cr.)	Revenue from sale of Energy excluding revenue from trading of energy/Inter-state sale F (I-II)
H. Opening Debtors for Sale of Energy (Rs. Cr.)	(I) Opening debtors for sale of Energy (without deducting provision for doubtful debtors)
I. Closing Debtors for Sale of Energy (Rs. Cr.)	(I) Closing Debtors for sale of Energy (without deducting provision for doubtful debts) (II) Any amount written off directly from (I)
J. Adjusting closing Debtors for Sale of Energy (Rs. Cr.)	I (I+II)

K. Collection Efficiency (%)	$(H+G-J)/G* 100$
L. Units Realized (Mkwh)	$E*K/100$
M. Units Unrealized (Mkwh)	C-L
N. AT&C Losses (%)	$M/C* 100$

Note (I) *DISCOMs are required to give Input energy at the point of purchase, including transmission losses.

(II) Provision for unbilled energy and debtors for trading of power have not been adjusted for calculation of collection efficiency since provision for unbilled revenue is cyclical in nature and figures of debtors are verifiable from annual accounts.

(III) Figures in above table wherever available should tally with the annual accounts.

1.16 On being asked by the Committee whether there is any mechanism to verify or cross check the data relating to AT&C losses, the Ministry, in their reply, have stated that Distribution is predominantly dealt with by the State utilities at an operational and implementation level. As such, cross-verification of data is limited to the independent audit being conducted at the end of the State utilities. At the same time, the audits are more in the nature of financial audits, rather than performance audits. At the Union Government level, the Ministry of Power facilitates computation of the aggregate figures of AT&C losses through PFC on the basis of these audited annual reports of the State utilities.

1.17 When the Committee asked for separate figures for technical and commercial losses, the Ministry, in their written reply, have stated as below:

“The AT&C losses have two components: billing inefficiencies and collection inefficiencies; the Billing efficiency is primarily the combination of Technical loss, non-billing, Defective meter/ un-metered energy and theft among others. Therefore, billing efficiency consists of Technical losses and a portion of commercial losses. The collection efficiency and the billing efficiency (State-utility-wise) are enclosed at Annexure-I.

However, at present, there is no means of segregating the technical and commercial portion of the Billing efficiencies. Therefore, total commercial losses (*viz.* losses due to theft, non-billing, non-recovery of bills etc.) cannot be segregated from AT&C loss without any approximation at present.”

1.18 The Committee asked the reasons which prompted calculation of Aggregated Technical and Commercial losses instead of calculating it

separately and also who has benefited from this method of calculation—Discoms or Consumers, the Ministry replied as under:

“Before the concept of AT&C loss, Transmission and Distribution (T&D) loss was being calculated. T&D loss is the difference in input energy and energy billed. There is no accounting for losses because of low collection. AT&C loss is the difference in input energy and energy for which revenue has been collected. Hence AT&C loss concept captures both billing & collection efficiency while T&D captures only billing efficiency.

Discoms are benefited directly with the concept of AT&C losses as their performance can be judged more accurately by taking care of collection of revenue aspect also in addition to billing aspect.”

1.19 On being asked by the Committee whether it is not high time to segregate these data, the Ministry, in their written reply, have stated as under:

“The suggestion of segregating technical and commercial losses from the aggregate values of AT&C losses is welcome. Some indirect calculations of modeling has been done by CEA and others but a lot of study needs to be done to develop some applicable methods. Based on estimation, CEA indicates that the technical losses could be in the range of 5-6%. The technical losses will depend on the quality of Electrical architecture, HT/LT Ratio, heat loss, PF, wastage through unbalanced reactive power, repairs and maintenance.”

1.20 The Secretary, Power, further elaborated on the issue of segregation of losses before the Committee:

“There is no separate way of measuring actual technical losses. You can estimate it. There is a methodology available whereby we can estimate it. If we separate technical losses from the total technical and commercial losses which we have estimated that is what we have to address. So far commercial losses are concerned, there are two factors which determine the extent of commercial losses and they are billing efficiency and collection efficiency. If we concentrate on billing and collection efficiency, this will largely address the issue. This is basically a managerial issue whatever technical issues we raise. We start metering the feeders, we start monitoring the real time data, which can only enable me to know where the problem is and what I should do. Finally, it is a managerial action.

If we are incurring 50% loss and action has to be taken to check the loss it would be managerial action to find out as to why the loss is incurring. The technology can only inform me there is loss in this feeder, so, ultimately it boils down to a managerial and administrative decision which means it is a governance issue and people should be committed and take action to improve it. The technology, what we are doing through IPDS or other things, will only enable you and facilitate you to take those decisions.”

1.21 The Secretary, Power, added:

“It is more of a managerial issue in the sense that whether you can use the technology to get the information. How the DISCOMS have reduced, if you look at some DISCOMS and the measures they have taken to reduce the commercial losses is that they have managed to get all the consumers on the metering. Almost on the real time basis they are able to find out the quantum of energy going into feeder and being metered and they have taken steps both by giving incentives and by asking people to comply so the collection efficiency also increased. So, there are various ways of doing it in the sense that this is how it is. It is not only happening in the Government sector, it is also happening in the private sectors. Some of the Government sectors also are doing well. So, learning broadly that we will take from all these DISCOMS are that first we have to insist for metering and then for billing and recovery how each of these activities will be done, there are some generic things on which you can follow, there are some State specific things and some DISCOM specific things which you can follow. These are very broad issues. I agree with you saying that we have to learn from these DISCOMS specially those ones who have done well.”

1.22 When the Committee raised the issue of AT&C losses in the area of DISCOMS owned by the Private Players and the DISCOMS run by the Government, it was stated by the Ministry as under:

“If we are comparing it, then we should compare not ownership but managerial concepts. Ownership does not matter so far as the reduction of commercial or technical losses is concerned. The management does matter. How do we manage our utilities? If Gujarat has reduced its loss from 30 per cent to 14 per cent, this is not because ownership has changed. Ownership is still with the Government. But the management has changed... Some of the private utilities are doing much better than other private utilities. It depends on the management.”

1.23 On being asked by the Committee, the monetization of AT&C losses was provided by the Ministry which is as under:

Financial Year	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Monetary value of 1% AT&C Loss (in crore Rs.)	1600	1776	1924	2178	2529	2964	3527	3992

1.24 When the Committee desired to know whether commercial losses are the prime reason for economical unviability of the distribution sector and whether there is any correlation is between high commercial losses and the financial distress of DISCOMS, the Ministry have stated as under:

“Yes, AT&C losses are one of the prime reasons for economical unviability of the distribution sector. In general, there indeed is a correlation between the commercial losses and financial distress of DISCOMS, albeit with exceptions; the details are available as *Annexure-II*. One of the exceptions is the State of West Bengal where the AT&C Losses are high (32%) but there are profits of Rs. 19 crore. Reduction in AT&C losses will result in generation of additional revenue. The estimated monetized value corresponding to 1% AT&C loss of each State for the period 2006-07 to 2013-14 based on the net energy sold, net revenue billed and Average Billing Rate (ABR) is indicated in *Annexure-III*.”

1.25 In regard to the bearing of AT&C losses on the financial health of the DISCOMS, the Secretary, Power, during evidence on the subject deposited before the Committee as under:

“Generally billing and collection efficiency in those DISCOMS where the AT&C losses are high is pretty low. There is a need definitely felt to improve it. In the past also, these concerns have been expressed. In 2012, when the financial restructuring plan was introduced, there was a trajectory which was given to the DISCOMS to achieve those AT&C losses reduction. Unfortunately, that has not worked out for several reasons. It has direct bearing on the financial health of the DISCOMS. Today financial health of many state DISCOMS is directly related to AT&C losses. It has directly bearing on the improvement also. As an estimate one can do for each DISCOM, if there is even one percent reduction in losses; its revenue implication is much higher. It ranges from Rs. 250 crore to Rs. 300 crore. So, there is a need and rightly the Committee has picked up the topic is very important in the present context. When we talks about

financial condition of DISCOMS. It is one of the major issues. There are technical and managerial solutions available. There is a need to introduce both.”

1.26 In regard to other reasons, apart from AT&C losses, that are responsible for poor financial health of the utilities/DISCOMS, the Ministry have enumerated the following reasons:

- a. Under pricing (average billed tariffs below cost-recovery tariff levels),
- b. Delayed tariff finalization
- c. High cost of power procurement
- d. High interest burden on debts
- e. Lack of accountability and transparency, etc.

1.27 When the Committee asked for the details of commercial losses incurred by private distribution companies during the last five years and its comparison with commercial losses of State Distribution Companies, the Ministry have stated as under:

“Combined data for Aggregate Technical and Commercial losses (AT&C losses) are only available. No separate data for commercial losses is available. As per the PFC report, Aggregate Technical and Commercial losses (AT&C losses) data for five years for national level *vis-a-vis* private utilities of Delhi and Odisha are as follows:

AT & C Losses (%)	2009-10	2010-11	2011-12	2012-13	2013-14
National Level	26.99	26.35	26.63	25.45	22.70
Private Utilities-Delhi					
BSES Rajdhani	19.83	15.80	16.65	15.16	16.19
BSES Yamuna	28.63	18.13	25.54	17.94	15.51
TPDDL	15.68	13.75	15.67	13.12	9.75
	20.78	15.76	18.56	15.22	14.09
Private Utilities-Odisha					
NESCO	36.70	38.47	39.54	39.61	
SESCO	51.00	54.12	52.60	49.36	
WESCO	37.58	43.84	43.46	41.87	
	39.57	43.76	43.89	42.60	
Govt. Utility-Odisha					
CESU	39.98	49.30	46.15		

1.28 It was further stated:

“At the same time, for the year 2013-14, AT&C losses for 5 private Distribution licensees in comparison to their State counterparts in the same State are as follows:

Name of Utility	2013-14
West Bengal	
Private Utilities	
Calcutta Electricity Supply Company	9.15
India Power Corporation Ltd.	5.71
Government Utilities	
WBSEDCL	32.05
Uttar Pradesh	
Private Utilities	
Noida Power Corporation Ltd.	10.62
Government Utilities	
DVVN	36.47
KESCO	34.29
MVVN	14.32
Pash VVN	23.49
Poorv VVN	20.09
Total (for Government utilities)	24.65
Gujarat	
Private Utilities	
Torrent Ahmedabad	7.54
Torrent Surat	4.47
Government Utilities	
DGVCL	10.83
MGVCL	14.77
PGVCL	24.12
UGVCL	9.10
Total (for Government utilities)	15.93

Maharashtra

Private Utilities	Billing Efficiency
Reliance Infrastructure Ltd.	91.15*
Tata Power Company Ltd.	98.87*
Government Utilities	
MSEDCL	86.00 [#]

*Note: For private utilities of Maharashtra, billing efficiency is calculated since AT&C losses could not be calculated due to non-availability of information regarding collection efficiency.

[#]For MSEDCL, billing efficiency is indicated so as to enable comparison. AT&C loss for MSEDCL is 14.39%.

1.29 When the Committee asked as to how these private companies are made accountable to contain their commercial losses, the Ministry in their written reply have stated as under:

“Section 61 of the Electricity Act, 2003 provides for guiding principles for terms and conditions for determination of tariff by the Appropriate Commission. As per these provisions, the State Commissions while specifying the terms and conditions of tariff, shall be guided *inter alia* by the factors “which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments”. The SERCs/JERCs are also mandated to factor in the principles of rewarding efficiency in performance.

As per these provisions of the Act, most of the State Commissions have framed tariff regulations, which provide *inter alia* for incentive/dis-incentive linked to reduction of transmission and distribution losses, which also include reduction of commercial losses. The State Commissions usually draw up a trajectory for reduction of transmission and distribution losses or aggregate technical and commercial losses and performance of the distribution utilities, including private distribution utilities, on this account is reflected in the tariff allowed by the Commission.”

1.30 On being asked by the Committee whether the steps taken by the regulators have proved to be successful in reducing commercial losses, the Ministry have stated as under:

“The CERC/FOR Secretariat had commissioned studies on “Loss Reduction Strategies”. Subsequently, study on “Assessment of component-wise AT&C losses” in respect of six States was commissioned.

The Forum of Regulators (FoR) has been discussing this issue of loss reduction at regular intervals. The FoR has commissioned a study on “Best Practices on and Strategies for Distribution Loss Reduction” in the recent past. The study is not yet completed.”

CHAPTER IV

LOSS REDUCTION PROGRAMMES OF THE UNION GOVERNMENT

1.31 The Government have initiated various programmes which are aimed towards reduction of AT&C losses in the country.

(A) Accelerated Power Development and Reforms Programme (APDRP)

1.32 APDRP was launched in 2002-03 as additional central assistance to the States for strengthening and upgradation of sub-transmission and distribution systems with the main objectives of reduction in AT&C and commercial losses and improving quality and reliability of supply of power.

1.33 Investment component: Union Government provided assistance to the tune of 25% and 90% of the project cost in the form of grant to Non-special category and Special Category States respectively. Balance amount to be arranged from Financial Institutions/own resources.

1.34 Earlier, Government was providing 10% loan to special category and 25% to Non-special category States in addition to the grant as mentioned above. However, as recommended by the 12th Finance Commission, the loan component has been discontinued by the Ministry of Finance w.e.f. 2005-06.

- No of projects sanctioned : 574
- Total project cost : Rs. 17,329.07 crore
- Revised project cost after short closing : Rs. 14,506.43 crore
- Total fund released by GOI : Rs. 7,777.19 crore
- Counter Part Fund drawn from FIs : Rs. 6711.80 crore
- Total fund utilized : Rs. 14,077.86 crore

1.35 All the States have completed the exercise of closure of the ongoing projects of X Plan APDRP.

1.36 Incentive component: This component was to incentivize the SEBs/utilities to reduce their financial losses. Funds were released to the SEBs for actual cash loss reduction, for every Rs. 2 of cash loss

reduction Rs.1 was given as grant. Ten States showed reduction of cash loss amounting to Rs. 5809.89 crore and became eligible for APDRP incentive of Rs. 2904.95 crore, which has been released to the States.

1.37 Details of year-wise release of funds since inception:

(Rs. in Crore)

Year	BE	RE	Actual Releases		
			Investment	Incentive	Total
2002-03	3500.00	2029.27	1755.52	379.28	2134.80
2003-04	3500.00	3300.00	2356.51	503.30	2859.81
2004-05	3500.00	1700.00	1428.74	73.00	1501.73
2005-06	1172.00	1172.00	590.94	581.06	1172.00
2006-07	650.00	1021.70	809.31	212.39	1021.70
2007-08	800.00	1400.00	269.30	1130.70	1400.00
2008-09	800.00	436.03	436.03		436.03
2009-10	350.00	156.06	130.84	25.22	156.06
TOTAL	14272.00	11215.06	7777.19	2904.95	10682.13

1.38 Improvements:

- AT&C loss at national level reduced from 38.86% in 2001-02 to 27.34% during 2008-09.
- AT&C losses have been reported below 20 percent in 215 APDRP towns in the country of which 163 towns have brought AT&C losses below 15 percent.

1.39 The X Plan APDRP had limited success in achieving its objectives. Some of the components like investment in IT related energy audit and accounting works were not taken up. It has been observed that very few States have taken up piecemeal standalone IT solutions during the X Plan APDRP and full benefits of these IT solutions could not be derived as the integration of all the IT solutions was not adopted.

1.40 Based on the experience of the X Plan APDRP and consultation with the States through Conference of Chief Secretaries and Power Secretaries of States/Union Territories, the Ministry of Power formulated the re-structured APDRP for XI Plan.

(B) Restructured Accelerated Power Development and Reforms Programme (RAPDRP)

1.41 R-APDRP was launched in 2008 with the objective of reduction in AT&C loss in urban areas – towns and cities with population more than 30,000 (10,000 for special category States). Private distribution utilities are not covered under the programme.

1.42 Projects under the scheme are taken up in two parts. Part-A aims to establish IT enabled system with Data Centre, Customer Care Centre, etc. for energy accounting/auditing and SCADA for bigger towns (population: 4 lakh and Annual Energy Input: 350MU) whereas Part-B is for upgradation & strengthening of electrical networks in these towns.

1.43 Initially, funds for projects under both the parts are provided through loan [Part-A: 100% Gol loan; Part-B: 25% (90% for special category States) Gol loan & balance from Financial Institutions]. The entire amount of loan for Part-A projects would be converted into grant on completion of Part-A project. For Part-B, up-to 50% (90% for special category States) of project cost would be converted into grant in five years in five annual tranches on 3 conditions being met: (1) reducing AT&C losses to a 15% level in the project areas on a sustainable basis; (2) achieving the prescribed loss reduction trajectory at the DISCOM level; and (3) the timely completion of the project.

1.44 Projects worth Rs. 39,197.72 crore (Part-A: Rs. 6,983.53 crore covering 1409 towns and 72 SCADA projects; Part-B: Rs. 32,214.19 crore covering 1258 towns) are under implementation. So far, 19 out of 21 Data Centres have been commissioned and 1058 towns have been declared “Go-Live” under Part-A of the programme. Part-B projects have been completed in 282 towns.

1.45 Go-Live town are towns where IT work is completed and town energy data has started flowing to Data Centre for energy accounting and auditing. Utilities have started using this data for energy accounting/auditing and to take administrative measures for controlling AT&C losses. Reduction in AT&C loss is reported in 543 towns.

1.46 So far, Rs. 8338.80 crore has been released as loan to State utilities under the programme against Part-A and Part-B projects. Summary of physical progress (as on 30.09.2015):

	Towns covered	Work awarded	Towns ‘Go-live’ / Completed	Remarks
	Nos	Nos	Nos	
Part-A (IT)	1409	1397	1058	Odisha-12 towns to be awarded
Part-A (SCADA)	72	70	-	Odisha-2 towns to be awarded
Part-B	1258	1142	282	116 towns to be awarded.

1.47 Details of year-wise progress achieved:

(Rs. in Crores)

Year	Projects sanctioned (Rs. crore)	Budget Allocation (Rs. crore)			Actual Releases (Rs. crore)		
		Loan	Grant	Total	Loan	Grant	Total
2008-09	1948.51	325	25	350	325.00	25.00	350.00
2009-10	6260.46	1364	66	1430	1331.46	1.26	1332.72
2010-11	13739.07	2471	100	2571	2246.42	100.00	2346.42
2011-12	9595.47	1600	68	1668	1600.00	67.87	1667.87
2012-13	2288.70	1383	117	1500	1217.45	17.04	1234.49
2013-14	4257.17	640	60	700	640.00	8.70	648.70
2014-15	1154.51	1117	144	1261	578.47	16.78	595.25
2015-16	-46.16	400	0	400	400.00	0.00	400.00
TOTAL	39197.73	9300	580	9880	8338.80	236.65	8575.45

(C) Integrated Power Development Scheme (IPDS)

1.48 CCEA, in its meeting held on 20.11.2014, approved the “Integrated Power Development Scheme” (IPDS) with a total outlay of Rs. 32,612 crore which includes a budgetary support of Rs. 25,354 crore from Government of India. The objectives of the scheme are:

- (i) Strengthening of sub-transmission and distribution networks in the urban areas;
- (ii) Metering of distribution transformers/feeders/consumers in the urban areas;
- (iii) IT enablement of distribution sector and strengthening of distribution network being undertaken under R-APDRP.

1.49 The component of IT enablement of distribution sector and strengthening of distribution network approved by CCEA in June, 2013 in the form of RAPDRP for the 12th and 13th Plans stands subsumed in this scheme and the CCEA-approved scheme outlay of Rs. 44,011 crore, including a budgetary support of Rs. 22,727 crore, carried forward to the new scheme of IPDS.

1.50 The scheme to also help in reduction in AT&C losses, establishment of IT enabled energy accounting/auditing system, improvement in billed energy based on metered consumption and improvement in collection efficiency.

1.51 The projects under the scheme are being formulated for urban areas (Statutory Towns) only and to cover works relating to strengthening of sub-transmission & distribution network, including provisioning of solar panels on Government buildings including Net-metering, metering of feeders/distribution transformers/consumers and IT enablement of distribution sector.

1.52 Funding Pattern:

Government of India	: 60% (85% for special category States)
Discoms	: 10% (5% for special category States)
Loan from Financial Institutions	: 30% (10% for special category States)

1.53 Additional grant equivalent to 50% of loan component (*i.e.* 15%, 5% for special category States) also to be provided, subject to achievement of the following milestones:

- (i) Timely completion of the scheme as per laid down milestones.
- (ii) Reduction in AT&C losses as per trajectory finalized by MOP in consultation with State Governments (Discom-wise).
- (iii) Upfront release of admissible revenue subsidy, if any, by State Government, based on metered consumption.

1.54 Salient features of the Scheme:

- (i) Power Finance Corporation (PFC) is the Nodal Agency for operationalisation of the scheme.
- (ii) All Discoms including private sector Discoms and State Power Departments, are eligible for financial assistance under the scheme.
- (iii) Total Gross Budgetary Support (GBS) available for IPDS and R-APDRP at the time of IPDS approval is Rs. 45,816 crore.
- (iv) Projects worth Rs. 24,203.71 (including PMA Cost) crore covering 3406 towns have been sanctioned.
- (v) Rs. 196.79 crore has been released to PFC for further disbursement to Utilities against sanctioned projects.

(D) Deendayal Upadhyay Gramin Jyoti Yojana (DDUGJY)

1.55 CCEA, in its meeting held on 20.11.2014, approved the “Deendayal Upadhyay Gramin Jyoti Yojana” (DDUGJY) with a total outlay of Rs. 43,0332 crore which includes a budgetary support of Rs. 33,453 crore from Government of India.

1.56 The objectives of the scheme are:

- (i) To separate agriculture and non-agriculture;
- (ii) To strengthen and augment sub-transmission & distribution infrastructure, including metering; and
- (iii) Rural Electrification—To connect unconnected villages and households in the country.

1.57 The component of Rural Electrification approved by CCEA in August 2013 in the form of RGGVY for 12th and 13th Plans stands subsumed in this scheme and CCEA-approved scheme outlay of Rs. 39,275 crore, including a budgetary support of Rs. 34,447 crore carried forward to the new scheme of IPDS.

1.58 Funding Pattern:

Government of India	: 60% (85% for special category States)
Discoms	: 10% (5% for special category States)
Loan from Financial Institutions	: 30% (10% for special category States)

1.59 Additional grant equivalent to 50% of loan component (*i.e.* 15%, 5% for special category States) also to be provided, subject to achievement of the following milestones:

- (i) Timely completion of the scheme as per laid down milestones.
- (ii) Reduction in AT&C losses as per trajectory finalized by MoP in consultation with State Governments (Discom-wise).
- (iii) Upfront release of admissible revenue subsidy, if any, by State Government, based on metered consumption.

1.60 Salient features of the Scheme:

- (i) Rural Electrification Corporation (REC) is the Nodal Agency for operationalisation of the scheme.
- (ii) All Discoms, including private sector Discoms and State Power Departments, are eligible for financial assistance under the scheme.
- (iii) Total Gross Budgetary Support (GBS) available for DDUGJY and RGGVY at the time of DDUGJY approval is Rs. 67,027 crore.

- (iv) Projects worth Rs. 40,204 crore (including PMA cost) have been sanctioned.
- (v) Rs. 1708.27 crore has been released to REC for further disbursement to Utilities against sanctioned projects.

(E) Rating of Discoms

1.61 The Integrated Rating methodology for State Power Distribution Utilities was carried out by professional agencies. The methodology was developed by MoP keeping in view the poor financial health of State Distribution Utilities and the need to base future funding exposures on an objective rating mechanism.

1.62 The main objectives of developing the integrated rating methodology for the State Distribution Utilities are:

- To devise a mechanism for incentivising/disincentivising the entities in order to improve their operational & financial performance.
- To facilitate realistic assessment by Banks/FIs of the risks associated with lending exposures to various distribution utilities and enable funding with appropriate loan covenants for bringing improvement in operational, financial and managerial performance.
- May serve as a basis for Government assistance to the State power sector through various schemes like R-APDRP, NEF, etc.

1.63 The Third Integrated Rating exercise is based on the rating year FY 2014 and covers 40 State Distribution Utilities. Professional Agencies like ICRA & CARE have carried out rating for 21 Utilities and 19 Utilities, respectively.

(F) Quarterly Review of AT&C Losses

1.64 The State-wise AT&C loss trajectory to a level of 15% by 2019-20 is appended as Table 3 below. Further consultations with States are underway to reduce the timeline of achieving the target by 2017-18.

1.65 MoP has also started taking a quarterly review of AT&C losses, since Q1 of FY 2014-15, of all the Government owned distribution Utilities based on the provisional unaudited data submitted by the Utilities. The aim behind the exercise of monitoring quarterly AT&C losses is to sensitize the Utilities to take mid-course correction in the AT&C loss trajectory. The quarterly performance of the Utilities is discussed by MoP regularly in the Review Planning and Monitoring meetings.

1.66 The trajectory for reduction of losses set by the Ministry:

AT&C loss (%) Trajectory up to 2019-20

State	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
1	2	3	4	5	6	7
Andhra Pradesh	9.66	9.66	9.66	9.66	9.66	9.66
Arunachal Pradesh	51.26	46.76	42.26	37.76	33.26	30.00
Assam	27.00	25.00	23.00	21.00	19.00	17.00
Bihar	42.13	37.13	32.13	28.13	24.13	21.00
Chhattisgarh	22.50	21.00	19.50	18.00	16.50	14.00
Delhi	13.50	13.00	13.00	12.00	12.00	12.00
Goa	13.64	13.39	13.14	12.64	12.00	12.00
Gujarat	15.00	14.50	13.50	13.00	12.50	12.00
Haryana	27.55	24.55	21.55	19.05	16.50	15.00
Himachal Pradesh	13.50	12.50	11.50	10.50	10.00	10.00
Jammu and Kashmir	49.87	44.87	39.87	34.87	30.00	25.00
Jharkhand	39.49	34.49	29.49	25.49	22.00	18.00
Karnataka	17.25	16.25	15.50	15.00	14.50	14.00
Kerala	10.80	10.50	10.25	10.00	10.00	10.00
Madhya Pradesh	25.15	22.65	20.15	18.15	16.00	15.00
Maharashtra	14.39	14.39	14.39	14.00	14.00	14.00
Manipur	69.49	60.49	51.49	42.00	33.00	25.00
Meghalaya	30.79	28.79	26.79	24.79	22.79	20.79
Mizoram	26.14	25.27	23.59	21.99	20.13	18.62
Nagaland	61.71	54.21	46.71	39.21	31.71	24.21
Odisha	37.00	34.00	31.00	27.50	24.00	20.50
Puducherry	18.00	16.50	15.00	13.50	12.00	11.00
Punjab	16.66	16.16	15.41	14.66	14.25	14.00
Rajasthan	18.00	17.00	16.00	15.50	15.00	15.00
Sikkim	44.51	39.51	34.51	29.51	24.00	20.00

1	2	3	4	5	6	7
Tamil Nadu	19.72	19.22	18.97	18.72	18.47	18.00
Telangana	13.13	12.88	12.58	12.28	12.00	12.00
Tripura	26.35	24.85	21.85	19.85	18.50	16.00
Uttar Pradesh	28.70	24.70	22.50	19.50	17.10	15.10
Uttarakhand	20.18	18.68	17.43	16.18	15.25	14.00
West Bengal	29.00	28.00	25.75	23.50	22.50	21.00
	22.05	20.42	18.86	17.41	16.14	15.00

*Extra efforts are being taken to reduce the AT&C losses to 15% by 2017-18 in consultation with the States.

(G) Concept of Feeder Manager & Profit Center approach

1.67 The Ministry of Power informed the Committee that on their initiative, the concept of Feeder Managers and adopting a Profit Center based approach at 11 KV feeders level is being undertaken by the States. The State Discoms have been advised to identify Feeder Managers for all the 11KV feeders and monitor the AT&C losses at 11KV feeder levels with a provision of performance based incentive/disincentive mechanism.

1.68 When the Committee asked the Ministry to elaborate the concept of Feeder Managers and Profit Centre based approach and as to how this concept will be helpful in containing Commercial, it was replied as under:

“Under the concept of Feeder Managers and Profit Centre based approach, 11 KV feeders should be treated as the basic unit of monitoring. Distribution utility and State distribution utilities have been advised to assign Feeders to Junior Engineers (known as Feeder Managers). 11 KV Feeders are to be operated as business units—accounted for metering, billing, collection. The same is possible since a JE/AE is required to deal with one/two feeders on an average and full responsibility can be assigned to him. Feeder Managers will have all the necessary data/information of metering, billing, collections, etc. and will be assigned targets to improve metering, billing and collection by taking measures such as Vigilance, New connection drive, etc. which will reduce the AT&C losses of the Feeders.”

1.69 When the Committee further inquired if this concept is foolproof, the Ministry, in their reply, have stated as below:

“It is not a foolproof mechanism to contain AT&C losses, but it is definitely useful in AT&C loss reduction coupled with other technical measures (like load balancing, replacement of overloaded conductors, etc.) because of responsibility fixing and monitoring by senior officials. IT interventions under R-APDRP can provide data regarding Feeder’s losses & loading and shall provide vital input to Feeder Managers.”

1.70 When the Committee desired to know whether the performance of various schemes of the Government aimed at checking commercial losses has been evaluated, the Ministry replied as under:

“The schemes namely R-APDRP & IPDS are still under implementation & as such, no evaluation study has been conducted till date for review of the scheme. However, on the completion of R-APDRP and IPDS it is envisaged that utilities will achieve the desired AT&C loss reduction of 15% and below. MoP has initiated the impact assessments study in the States where R-APDRP Part-A towns have been completed and system verification work is under progress. The outcome of this study is expected shortly and will show the desired benefits of IT system established under R-APDRP to consumers and utility.”

1.71 When the Committee asked for the existing target for reduction of AT&C losses and whether the targetted AT&C losses level is the lowest possible and at par with the developed countries, the Ministry of Power, in their written reply, have stated as under:

“Government of India has finalized the AT&C loss reduction trajectory in consultation with States with the objective of achieving the AT&C loss to 15% by year 2019-20. Further consultations with States are underway to reduce the timeline of achieving the target by 2017-18.

The targetted AT&C losses are not at par with the losses in developed countries. The T&D losses as percentage of output (published in World Development Indicators by the World Bank) in few developed countries are in single digits. Considering trend of AT&C losses for last 8 years indicated in the Answer of Question 1 (ii) above, target of achieving 15% AT&C loss at national level by year 2019-20 has been kept. However, consultations with States are underway to reduce the timeline of achieving the target by 2017-18. Further attempts to reduce the target would be made after the existing targets are achieved.”

1.72 On being asked by the Committee about the hindrances being faced in containing the commercial losses, the Ministry of Power have enumerated the following factors:

- **“Low metering/billing/collection efficiency:** The gap between Actual Cost of Supply (ACS) and Average Revenue Realization (ARR) is on account of supply of electricity to agricultural and to some other select categories of consumers, who are billed either on flat rate basis or at subsidized rates and also due to theft and pilferage of electricity. In many cases meters are faulty and electricity bills are raised on the basis of average consumption. The accuracy of the old electro-mechanical meters is also low. Further, bills to many consumers are not raised timely. Similarly, revenue collection is not done effectively. This results in heavy losses and requires metering of every consumer with efficient meters, computerized billing and efficient revenue collection mechanism.
- **Theft, pilferage of electricity and tampering of meters:** Electricity is stolen and pilfered through bypassing and tampering of electricity meters and by direct hooking of the LT lines. Majority of commercial losses are due to this reason.
- **Absence of effective Energy Accounting and Auditing:** In the absence of effective energy accounting and auditing, utilities can never know the causes and locations of the technical or commercial loss. Effective energy audit with use of Information Technology (IT) is essential for effective action against theft and avoidable technical losses in place of Energy auditing attempted manually earlier.
- **Low accountability of employees:** Low accountability of employees results in poor up keep of equipment, poor metering, poor serving of bills and poor revenue realization. Fixing up of responsibility and making the employees accountable for losses and failures of network are the essential measures to reduce losses on this account.”

1.73 When the Committee further asked whether the non-cooperation, lack of interest of State Governments/DISCOMS are also responsible for slow progress in regard to containment of losses, the Ministry of Power have stated as below:

“All States and their State power utilities have actively participated in central Government schemes like APDRP, R-APDRP, IPDS etc. aimed at reduction of AT&C losses. However, administrative interventions beyond the scheme for reduction of commercial losses are the responsibility of concerned State DISCOMS.

State Discoms need to be sensitized about the same at the highest level. Theft Control measures cannot be undertaken without support at State Government level. Regular monitoring, monthly reviews and ranking of State Utilities on various parameters would help create a healthy competitive spirit amongst the Utilities duly incentivizing them to better their performance.”

1.74 When the Committee enquired as to what steps could be taken so that the consumers bear the cost of only technical losses and not the commercial losses, the Ministry have replied as under:

“The billing inefficiencies are primarily the combination of Technical loss, non-billing, Defective meter/unmetered energy and theft among others. Therefore, billing efficiency consists of Technical losses and a portion of commercial losses and presently it is not possible to segregate the commercial and technical losses in the current system. 100% metering and measurement from a top down approach (Feeder separation/Feeder to DT to consumer level) is the way forward by which measurement efficiency can be increased – this will improve the billing efficiency; collection efficiency is already measured and as such can be improved with management intervention.

As per the Electricity Act, 2003, the cost of electricity/tariff is finalized by the independent agencies, *i.e.* the State electricity regulators; Government of India constrained by the role envisaged for it through the Electricity Act, 2003 to be making an intervention in the same.

However, metering and measurement 100% up-to the consumer level/ DT level is a must to ensure that the extent and sources of commercial leakages are identified. Correct and accurate identification of the problem is a must before the mitigative measures are put into place.”

CHAPTER V

FINANCIAL ASSISTANCE TO DISCOMS TO IMPROVE THEIR PERFORMANCE

A. Financial Restructuring Plan (FRP)

1.75 The Ministry have informed that in the year 2001, based on the resolution passed in the Chief Minister's Conference, an Expert Group constituted for the purpose of restructuring of finances of State Electricity Boards recommended a one-time settlement scheme of outstanding dues and recommended a programme for medium term capital restructuring and reform of the State Electricity Boards. The report of this group also paved the way of clearing accumulated dues of Rs. 41,473 crore consisting of Rs. 25,727 crore of principal and Rs. 15,746 crore of interest/surcharge. Under the scheme, Arrears of Rs. 37,400 crore were securitized by issue of Bonds and 60% of interest/surcharge (Rs. 8,300 crore) payable by SEBs was waived off.

1.76 It has been further stated that due to the continued debts and losses in the vertically unbundled utilities as a consequence of the previous restructuring to a level of Rs. 92,845 crore in 2011-12, Gol announced Financial Restructuring Plan (FRP) in October, 2012. Benefits provided in the FRP were capital reimbursement support equal to 25% of principal repayment on the liability taken over by the State Governments and grant equal to the value of additional energy saved by way of reduction in AT&C loss beyond RAPDRP loss reduction trajectory. These benefits under the scheme were payable only if the mandatory conditions envisaged were duly complied with by the participating States. Mandatory conditions contained measures such as Financial Restructuring, Tariff Setting and Revenue Realization, Subsidy, Metering, Audit & Accounts and Monitoring, etc. required to be taken in a time bound manner by the DISCOMs and State Governments.

1.77 The Committee were apprised that the FRP scheme was in addition to the other Centrally sponsored schemes such as APDRP, RAPDRP, IPDS and DDUGJY, which, by way of assistance through infrastructure creation and replacement, helps in reducing the exposure of State Governments to CAPEX requirements as well as bringing about operational improvements. These schemes are outlined in *Annexure IV*.

1.78 In regard to the outcome of the FRP, the Ministry have stated that the FRP schemes have not produced the desired results. The FRP

scheme of 2012 was operationalized only in June 2013 by when losses further increased by about Rs. 0.75 lakh crore. The scheme allowed financing of operational losses and interest by banks and financial institutions for the first three years on a diminishing scale, which further worsened the debt position of the DISCOMs. The prescribed actions to improve operational performance could not be achieved by the DISCOMs due to various constraints. In fact, the operational parameters in participating States worsened and no State could claim any grant from Government of India due to non-achievement of milestones.

1.79 The Ministry have added that in respect to the FRP scheme, the State DISCOMs could not improve upon their performances due to operational inefficiencies such as higher AT&C losses, higher cost of Power and financial issues, such as High Rate of Interest, inability to pass interest on accumulated losses in tariff and non-compensation of revenue foregone by timely release and adequate release of agricultural subsidy. Having a liability to take over the DISCOM debts, the States compulsorily have to necessitate borrowings for other pressing needs. The problem was exacerbated due to inadequate monitoring.

B. National Electricity Fund

1.80 The Ministry of Power, in their written reply have stated that the Government of India launched the National Electricity Fund (Interest Subsidy Scheme) in July, 2012 to provide Interest Subsidy on loans raised by both public and private Distribution Companies (DISCOMs), for capital works sanctioned by financial institutions to improve the infrastructure in distribution sector during the financial year 2012-13 and 2013-14. Under the National Electricity Fund, interest subsidy aggregating to Rs. 8,466 crore spread over 14 years is available. Projects sanctioned are worth Rs. 26,000 crore approximately. The pre-conditions for eligibility are linked to reform measures taken by the States and the amount of Interest Subsidy is linked to the progress achieved in reforms linked parameters.

1.81 When the Committee asked for the details of the function and achievement of National Electricity Fund so far, the Ministry, in their reply, have furnished the following details:

“Under the scheme, loan amounting to Rs. 25,000 crore sanctioned by lenders during FY 2012-13 & FY 2013-14 for projects in distribution sector have been covered. The pre-conditions for eligibility are linked to certain reform measures taken by the States and the amount of interest subsidy is linked to the progress achieved in performance linked parameters. The nodal agency for NEF is Rural

Electrification Corporation Ltd. (REC). The States are categorized as – Special category and focused States and States other than special category and focused States (including UTs).

Pre-eligibility conditions are:

- (a) Operationalization of State Electricity Regulatory Commission,
- (b) Formulation of business plan,
- (c) Reorganization of State Electricity Boards (SEB),
- (d) Release of Subsidy by State Government,
- (e) Audited Annual Accounts, and
- (f) Timely filing of tariff petition.

Eligible power utility would be assigned marks on the basis of following Eligibility Criteria: The Utilities shall be evaluated for the eligibility parameters and score shall be awarded. The parameters are:

- (a) Reduction in AT&C losses (Max. 50 marks for normal and 75 for Special and focused States),
- (b) Reduction in gap–subsidy received basis (Max. 40 marks for normal and 25 for Special and focused States),
- (c) Return on equity allowed by regulator in tariff (5 marks), and
- (d) Multi Year Tariff (MYT) notification (5 marks).

Based on the evaluation the utility shall be eligible for interest rebate of 3-5% (5-7% for Special category and focused States) with the approval of Steering Committee, headed by Secretary (Power), MoP.

Achievement:

- During FY 2012-13 and FY 2013-14 (3rd, 4th and 5th Steering Committee Meeting) proposals worth Rs. 26,406.77 crore of 25 DISCOMs of 15 States have been approved for coverage under NEF.
- The implementation has been expedited during FY 2014-15. Till 31st March 2015, 21 DISCOMs availed cumulative disbursements of Rs. 7355 crore.
- Work commenced on 689 Nos. projects with total disbursement of loan of Rs. 9,423 crore (As on 30.09.2015).

- Against 320 projects (with loan component of about Rs. 6,954 crore), disbursement is yet to be availed by the discoms from the lenders.
- Interest Subsidy proposal amounting to Rs. 7.51 crore has been approved by Steering Committee during March 2015 and the same has been released by MoP.”

1.82 When the Committee asked for the details of the beneficiaries along with the funds allocated, year and State-wise, the Ministry have furnished the following details:

“NEF Steering Committee in its meeting held on 31.03.2015 has approved interest subsidy in favour of 3 discoms for FY 2012-13 and in favour of 4 discoms for FY 2013-14 based on the performance criterion evaluated by Independent Evaluators and REC as per NEF guidelines.

Particulars	Amount (Rs. in lakh)
	Interest Subsidy Amount as approved by Steering Committee in 6th Meeting
Name of UTILITY	
Interest Subsidy for : FY 2012-13	
UPCL (Uttarakhand)	3.82
MPMKVVCL (Madhya Pradesh)	3.33
UHBVNL (Haryana)	0.32
SUB-TOTAL	7.47
Interest Subsidy for : FY 2013-14	
MPPoKVCL (Madhya Pradesh)	74.82
JdVVNL (Rajasthan)	227.18
UPCL (Uttarakhand)	263.26
UHBVNL (Haryana)	178.59
SUB-TOTAL	743.85
GRAND TOTAL	751.32

CHAPTER VI

ROLE OF REGULATORS IN REDUCTION OF LOSSES

1.83 Section 61 of the Electricity Act, 2003 provides for guiding principles for terms and conditions for determination of tariff by the Appropriate Commission. As per these provisions, the State Commissions while specifying the terms and conditions of tariff, shall be guided *inter alia* by the factors “which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments”. The SERCs/JERCs are also mandated to factor in the principles of rewarding efficiency in performance.

1.84 The Committee were given to understand that as per these provisions of the Act, most of the State Commissions have framed tariff regulations, which provide *inter alia* for incentive/disincentive linked to reduction of transmission and distribution losses, which also include reduction of commercial losses. The State Commissions usually draw up a trajectory for reduction of transmission and distribution losses or aggregate technical and commercial losses and performance of the distribution utilities on this account is reflected in the tariff allowed by the Commission.

1.85 When asked by the Committee about the specific efforts made by the regulators, the Ministry have stated that the CERC/FoR Secretariat had commissioned studies on “Loss Reduction Strategies”. The salient features of the recommendations of the study are enclosed as *Annexure V*. Subsequently, study on “Assessment of component-wise AT&C losses” in respect of six States was commissioned. The salient features of the recommendations of the study are enclosed as *Annexure VI*.

1.86 It was further stated that the Forum of Regulators (FoR) has been discussing this issue of loss reduction at regular intervals. Some of the best practices on reduction of distribution losses, including reduction of commercial losses, as compiled by the FoR Secretariat are enclosed as *Annexure VII*. The FoR had commissioned a study on “Best Practices on and Strategies for Distribution Loss Reduction” in the recent past.

PART II

OBSERVATIONS/RECOMMENDATIONS OF THE COMMITTEE

Segregation of Commercial Losses from AT&C losses

2.1 The Committee note that energy losses occur in the process of supplying electricity to the consumers due to both technical and commercial reasons. The technical losses, which are inherent in a system, are due to energy dissipated in the conductors and equipment used for transmission, transformation, sub-transmission and distribution of power. Commercial losses are caused by pilferage by hooking bypassing meters, defective meters, errors in meter reading and in estimating un-metered supply of energy. These technical and commercial losses, along with the shortage due to non-realization of total billed amount, constitute Aggregate Technical & Commercial (AT&C) losses. The Committee further note that before the concept of AT&C loss was worked out, Transmission and Distribution (T&D) loss was being calculated. T&D loss is the difference in input energy and energy billed and in this method, there is no accounting for losses because of low collection. On the other hand AT&C loss is the difference in input energy and energy for which revenue has been collected. Hence, AT&C loss concept was introduced as it captures both billing and collection efficiency while T&D captures only billing efficiency. The Committee were given to understand that Discoms are benefited directly with the introduction of the concept of AT&C losses as their performance can be judged more accurately by taking care of the collection of revenue aspect also in addition to the billing aspect. The Committee, however, find that this concept has not been followed religiously. Rather, the concept of AT&C losses is concentrated on transmission losses. Knowingly, the aspect of commercial losses has been ignored which has resulted into further deterioration of the financial health of DISCOMs. It had also obfuscated the concept of losses inasmuch that the biggest component of the losses, *i.e.* pilferage or theft of electricity could never comes to the centre stage.

With a view to addressing the need for elimination of pilferage or theft of electricity, the Committee took up this subject for detailed examination. During the examination of subject, the Committee was apprised that at present there is no means to segregate the technical

and commercial losses. However, it was also stated the some study done by the Central Electricity Authority (CEA) indicates:

- The losses in Distribution Sector has been brought down from 40+% to 20+%.
- Presently AT&C losses in the country is around 22%.
- AT&C losses means
 - (a) Transmission loss
 - (b) Commercial loss
- According to CEA, present figure of technical losses, *i.e.* losses occurring during the process of bringing the power to the outskirts of city/villages is around 6 to 8%.
- The figure for commercial losses, *i.e.* last point distribution losses is around 16 to 18% as per CEA/Expert.

The Committee therefore, recommend that

- (i) First and foremost, segregation of technical and commercial losses should be done, even if it is in approximation. The Committee are of the firm belief that this will not only help in having a clear picture of different components of the losses but will also be instrumental in containing the overall loss level by pinpointing the efforts to the specific areas. Further, segregated values will never prevent anyone from aggregating them to use it for the required purposes.
- (ii) Henceforth, Commercial losses should be calculated separately and be brought to the public domain by all the Discoms/Agencies.

(Recommendation Sl. No. 1, Para No. 1)

Problem of AT&C losses in the Country

2.2 The Committee note that the electricity sector has been facing many problems since long. The sector has expanded reaching out to the remote areas of the country; however, the financial health of the sector is a cause of utmost concern. With a view to reforming the sector, The Electricity (Amendment) Act, 2003 was enacted; one of the main features of the Act was to bring in reforms by unbundling the State Electricity Boards into generation, transmission and

distribution units. Financial restructuring plan was also notified to bail out State distribution companies to achieve financial turnaround by restructuring their debt. An integrated rating methodology for State Discoms to help in identifying their strengths and weaknesses was also formulated. The National Electricity Policy provided for the accelerated development of the power sector by supplying electricity to all areas, protecting the interests of the consumers, quality power of specified standard and ensuring commercial viability of the electricity sector.

However, the reforms brought into the sector have not been of much help as the sector is beset with problems of huge aggregated technical and commercial losses which have not been properly addressed. Of this, commercial losses constitute a major chunk. The electricity sector is going through a period of transition and unless the reasons responsible for the ill-health of the sector are identified and fixed, no improvement can take place. The Committee, therefore, recommend that:

- (i) The percentage of Electricity losses, irrespective of the nature of losses *i.e.* whether technical or commercial should be capped at an acceptable level and time-bound remedial measures should urgently be implemented.
- (ii) No agency has taken note of commercial losses and efforts are made only to cover them up under the garb of comprehensive AT&C losses. The involved agencies should be made answerable and accountable.
- (iii) High losses in the electricity sector have led to the poor economic health of the State Distribution Companies; this need to be remedied.
- (iv) The reforms introduced to improve the sector and its financial/commercial viability, need to be reviewed essentially to ascertain why they failed in achieving the intended target.
- (v) To improve the functioning of the sector, such high/heavy commercial losses, cannot be allowed any longer.

(Recommendation Sl. No. 2, Para No. 2)

2.3 The Committee note that the current status of AT&C losses in the country is extremely worrisome, although a gradual decrease can be noted in the loss since the year 2011-12 to 2014-15. Whereas

it was 26.63% in 2011-12, it has been brought down to 21.6% in the year 2014-15. However, there are still about 20 States wherein the losses varies from 22% to 71.23%; in 4 States, it varies from 16.18% to 19%. That going so, the average losses at 21.6% raises serious concern. While the Committee do not want to belittle the efforts made to address the problem areas, they are of the considered view that there is an apparent lack of will and to achieve the objective. The Committee, noting also the pace at which things are moving, feel that a time-bound action plan is the need of the hour to tackle the problem. Although the issue relates to the States and the degree of the problem may differ from State to State, yet it cannot be left unattended. In this regard, the Committee are clear that State specific action plan should be drawn up with near uniformity to address the issue of commercial losses.

- (i) Action plan in three months duration may be prepared based on the circumstances of the States with a specific target of bringing down commercial losses.
- (ii) The loss prone areas be identified, their data analysed and remedial measures taken in these zones.
- (iii) There should be no compromise on the achievement of the loss reduction targets during the period of these action plans.
- (iv) Non-fulfillment of the objective be viewed adversely and officer concerned be made accountable.
- (v) The loss reduction target should be 5% at least of the occurring losses during the period of the action plan.

(Recommendation Sl. No. 3, Para No. 3)

Loss Reduction Programmes

2.4 The Committee note that the Ministry, with the objective of reducing high AT&C losses and commercial losses in the country, had launched the Accelerated Power Development and Reforms Programme (APDRP) way back in 2002-03. The APDRP performance had limited success in achieving its objectives and some of the components like investment in IT related energy audit and accounting works were not even taken up. It has been observed that very few States have taken up standalone IT solutions under APDRP and full benefits of these IT solutions could not be derived as integration of all the IT solutions was not adopted. Based on the 10th Plan

experiences, APDRP was later modified and launched as the Restructured-APDRP in 2008. The objective of R-APDRP was of reduction in AT&C loss in urban areas – towns and cities with population of more than 30,000 (10,000 for special category States). Private distribution utilities were not covered under the programme. Projects under the scheme are taken up in two parts. Part-A aims to establish IT enabled system with Data Centre, Customer Care Centre etc. for energy accounting/auditing and Supervisory Control and Data Acquisition (SCADA) for bigger towns (population: 4 lakh and Annual Energy Input: 350MU) whereas Part-B is for upgradation & strengthening of electrical networks in these towns. Projects worth Rs. 39,197.72 crore (Part-A: Rs. 6,983.53 crore covering 1409 towns and 72 SCADA projects; Part-B: Rs. 32,214.19 crore covering 1258 towns) are under implementation. So far, 19 out of 21 Data Centres have been commissioned and 1058 towns have been declared “Go-Live” under Part-A of the programme. Part-B projects have been completed in 282 towns. The Government have now subsumed R-APDRP into the Integrated Power Development Scheme with the additional objective of strengthening of sub-transmission and distribution networks in the urban areas and metering of distribution transformers/feeders/consumers in the urban areas. The Committee believe that the implementation of these schemes will improve the Electricity Distribution Systems in the country and help in containing AT&C losses. However, the fact that distresses the Committee the most is the pace of their implementation. After the lapse of 12-13 years since the inception of programme aimed at reduction of AT&C losses, substantial parts of the country are yet to get the required infrastructure as envisaged under the various programmes and the AT&C losses are still way too high. The Ministry have stated that the effectiveness of this programme in containing losses could be evaluated only when the components are fully implemented. The Committee are deeply concerned that the Ministry do not have a definite time-frame for completion of this programme and stress that these programmes should not be allowed to continue indefinitely. The Committee, therefore, strongly recommend that:–

- (i) There should be a definite time-frame for coverage of all the cities under the scheme and consequent reduction of AT&C losses.
- (ii) The effectiveness of the programme should be evaluated during its currency and not on its completion.
- (iii) The scope and ambit of the programme should be enlarged, with special focus on the pace of its implementation.

(Recommendation Sl. No. 4, Para No. 4)

2.5 The Committee note that 1058 towns have been declared “Go-Live” under Part-A of the R-APDR programme and Part-B projects have been completed in 282 towns. Go-Live towns, are towns where IT work is completed and town energy data has started flowing to the Data Centre for energy accounting and auditing. Utilities have started using this data for energy accounting/auditing and to take administrative measures for controlling AT&C losses. Since there are several towns where electricity networks have been strengthened and upgraded under R-APDRP and live data are available for monitoring the system, the Committee recommend that the Government should select some towns for running Pilot Projects. The objective of these projects should be to reduce AT&C losses to the minimum possible level and that too in a definite time-frame. The Committee believe that such Pilot Projects will not only be a testing ground for efficiency and effectiveness of the programme being run to reduce AT&C losses and, if successful, will become role models for other towns.

(Recommendation Sl. No. 5, Para No. 5)

2.6 The Committee note that efforts had been made in the past to contain commercial losses, but without the desired results. Many reasons have been given for technical and commercial losses which are of a routine nature. Reasons like poor repair and maintenance of equipment, overload of existing lines, non-installation of sufficient capacitors, etc. for technical losses and low metering/billing, theft, tampering of meters and unaccountability of employees for commercial losses are far from satisfactory as all these reasons are not beyond technical and administrative solutions. Citing these reasons for sickness of the sector is unacceptable and betrays the lack of will of quarters concerned to conduct the sector efficiently and professionally. In that context, the Committee feel that with due diligence and appropriate technical innovation and support, these factors can easily be overcome.

The Committee note that upgradation of distribution network and the use of Information Technology as envisaged under R-APDRP/IPDS will, *per se*, not bring down AT&C losses. It will only provide information and data as to how much losses are being incurred in the system and where. On the basis of the information obtained through such technology, Discoms will have to make managerial intervention to contain the losses. Therefore, technology will only inform and facilitate taking of decisions to contain losses. The Committee have also noted that it is not the ownership, *viz.* Public

or Private, of the Discoms that determines the efficiency of the Discoms and the loss level, but the managerial styles/skills adopted by them. There are examples where Government run Discoms have been able to reduce AT&C losses significantly, whereas some private Discoms have miserably failed to contain their losses. In view of these, the Committee conclude that:

- (i) High commercial losses are purely a managerial issue and depend on the willingness and managerial skills of the Discoms rather than on their ownership.
- (ii) Appropriate and timely maintenance and installation of adequate capacity equipment will resolve the problem of technical losses, including overloading of existing lines.
- (iii) Several Discoms have been able to bring AT&C losses down to the national target of 15%; the functioning of these Discoms should be emulated.
- (iv) We need not wait for the completion of R-APDRP/IPDS for reduction of Commercial Losses. There are several managerial interventions that can be take up to do this.
- (v) Metering of each and every feeder/transformer should be implemented without any further delay. The concept of Feeder Management has great potential to reduce commercial losses; therefore, utmost efforts should be made to persuade all the Discoms to adopt it.
- (vi) The use of Geographical Information System (GIS) in the Distribution Sector should be encouraged. Based on that the use of High Voltage Direct Current (HVDC) lines and Aerial Bunched Cables should be started in the areas prone to high losses.

(Recommendation Sl. No. 6, Para No. 6)

2.7 The Committee note that there are several towns where works under R-APDRP have been completed and data related to distribution system are being captured and compiled. The Committee are of the opinion that these data are very important in containing AT&C losses and will facilitate Discoms to make the required interventions. They also believe if these data are put in the public domain, it will not only lead to greater transparency, but also compel Discoms to take needful actions. The Committee, therefore, recommend that these data should be made available online for the information of the general public as well.

(Recommendation Sl. No. 7, Para No. 7)

2.8 The Committee note that there have been several schemes and programmes of the Government that are aimed at reducing of losses. These include schemes for financial restructuring of the Discoms in addition to the IPDS. The schemes also *inter-alia* include DDUGJY, Rating of Discoms, Quarterly Review of AT&C Losses, Concept of Feeder Manager, Profit Centre Approach, etc. However, despite various initiatives, the efforts towards loss reduction are not yielding the desired results. Around 1100 towns in various States across the country have been declared 'go-live' under part-A of the R-APRDP. The data regarding use of electricity is flowing from these 'go-live' towns making it easy to identify the places and the reasons for the losses. The Committee feel that in such a scenario, the desired results will start flowing in as the ground work regarding identification of the losses has been completed these 'go-live' towns. As such, henceforth, there cannot be any *alibi* for non-performance, particularly when incentives are also being offered for certain results. The Committee, therefore, recommend that:

- (i) State-wise 'go-live' towns be selected for decided trajectory of losses within a definite time-frame.
- (ii) Various programmes and schemes aimed at reduction of losses should be linked only to these areas to produce better and definite results.
- (iii) The system of SCADA needs a reorientation as its results are yet to be analyzed for the purpose of targeting loss reduction.
- (iv) The selection criteria of population of 30,000 and above for a town to become eligible for R-APDRP programme should be relaxed and small towns should also be brought within its purview for the purpose of data collection to identify and reduce commercial losses.

(Recommendation Sl. No. 8, Para No. 8)

2.9 While examining the subject, the Committee felt that theft is being covered up under agricultural electricity supply. The Committee, therefore, recommend that all efforts should be made for metering of total electricity supply, irrespective of its use. Metering of each and every feeder/transformer will help to identify and focus on the problematic areas for taking necessary action. It will also help in securing accountability and extending incentives for Discom officials, as the case may be. The Committee also found that

there are various legal provisions that are a deterrent for electricity theft, but their strict and proper execution is required. The Committee, therefore, recommend that a system should be developed having incentives and penalties with appropriate legal deterrents; proper and strict execution of these provisions should also be ensured.

(Recommendation Sl. No. 9, Para No. 9)

Energy Audit

2.10 The Committee are dismayed to note that the concept of Energy Audit is still in a rudimentary stage in the electricity sector of the country. In the absence of effective energy accounting and auditing, utilities can never know the causes and locations of the technical or commercial loss because of which no curative measures can be taken. The Committee believe that there is immense scope of energy saving if energy audit is extensively and mandatorily undertaken. The Committee are of the firm belief that Energy Audit is a pre-requisite for reduction of AT&C losses as such Energy Audit will show the Discoms where to focus to contain the losses. Since energy audit with the use of Information Technology is essential for effective action against theft and avoidable technical losses, the Committee recommend that:

- (i) Utmost efforts should be made to make Energy Audit of Discoms in the country mandatory.
- (ii) State Regulators must ensure the energy performance audit of the Discoms, besides their financial and economic audit. Appropriate penal provisions should also be there for non-compliance of the energy audit provisions.

(Recommendation Sl. No. 10, Para No. 10)

Feeder Management

2.11 The Committee note that under the concept of Feeder Managers and the profit centre based approach, 11 KV feeders are treated as the basic unit of monitoring. Distribution utility and State distribution utilities assign feeders to Junior Engineers (known as Feeder Manager). 11 KV feeders are operated as business units, accounting for metering, billing, and collection. Since a JE/AE is required to deal with one/two feeders on an average, full responsibility can be assigned to him. Feeder managers have all the necessary data/information on metering, billing, collections, etc. and they are assigned targets to improve metering, billing and collection by taking measures such as vigilance, new connection drive etc.

which reduce the AT&C losses of the feeders. The Committee, while fully endorsing this concept, recommend that the Government should extend and expand the concept of Feeder Manager and Profit Centres all over the country and ensure its intensive implementation.

(Recommendation Sl. No. 11, Para No. 11)

AT&C losses and Financial Health of Discoms

2.12 The Committee note that AT&C losses have a direct bearing on the financial health of Discoms and, therefore, reduction of AT&C losses has become the pre-requisite for improvement of their financial health. Unless Discoms reduce AT&C losses to reasonable levels, extending bail out packages to them by the Government for improving their financial condition would never yield any positive result. The severity of this problem could be understood by the fact that 1% of AT&C loss of a Discom, if monetized, ranges from Rs.250 crore to Rs.300 crore. With the increase in the cost of electricity supply, it tends to grow in the coming years. In other words, reduction of mere 1% will provide extra revenue to the tune of Rs. 250 crore to Rs. 300 crore to a Discom to strengthen its Distribution Network and further reduce the losses. This will lead to a cycle of reforms in the Distribution Sector which the Discoms themselves would be able to finance by way of reducing AT&C losses. The Committee believe that to make it happen there is need for concerted, prompt and sincere action by the agencies involved with it, viz. the Union Government, the State Governments, CERC and SERC. The Committee also believe that in the absence of clear demarcation of responsibilities and assigning of accountability, there is every possibility of the agencies playing the blame game. The Committee, therefore, strongly recommend that:

- (i) The task of reducing AT&C losses (chiefly commercial losses) should be taken as a 'Mission' to be completed in a definite time-frame with unambiguous delineation and demarcation of responsibilities.
- (ii) The time-frame and the responsibilities so assigned should be made available in the public domain also.

(Recommendation Sl. No. 12, Para No. 12)

Pilot Project

2.13 The Committee note that the Union Government have launched a number of initiatives to contain commercial losses; however, they are not fulfilling the desired objective for whatever

reasons. This does not negate the relevance and importance of the ongoing programmes/schemes of the Government for containing the losses. The efforts in this regard require a pragmatic approach with the cooperation of all concerned. This exercise may encroach upon the established procedures, territorial jurisdiction and the prevalent practices. Despite this, the gravity of the issue cannot be ignored and we will have to look for innovative steps. To begin with, the Union Government and the State Governments may collaborate to initiate pilot projects in the areas/pockets of mutual agreement. The areas chosen for pilot projects may be dealt with by ensuring all the technical and administrative resources so as to be a role model for the other loss making areas.

In these zones of action plan metered electricity, installation of smart meters, replacement of defective meters, proper upkeep and maintenance of electrical appliances and adequate capacity transformers should form part of the methodology. Collection and processing of data, feeder-wise, and if possible, transformer-wise, will definitely add to the efforts of containing commercial losses. Installation of efficient electrical architecture and proper HT : LT ratio will help in identifying and reducing technical losses. The Committee, therefore, recommend that:

- (i) Union/State Governments should initiate pilot projects for containing commercial losses.
- (ii) The pilot projects may, *inter-alia*, dwell upon the issue of smart meters, replacement of defective meters, 100% billing, installation of adequate capacity transformers, etc.
- (iii) Feeder-wise data collection, their analysis and standardization will also help.
- (iv) Calculation of data transformer-wise may also be considered as it will leave no scope for commercial losses.

(Recommendation Sl. No. 13, Para No. 13)

Success Stories

2.14 The Committee note that the State of Goa has brought down its commercial losses to 10.72% in the year 2013-14. Similarly, the States of Delhi, Maharashtra and Andhra Pradesh also have below the targeted AT&C losses of 15% at the national level. These are success stories for which these States need to be complimented; as such, there is great scope for learning from the experiences of these

States. The success stories of these States should duly be recognized and discussed at the appropriate forum. The Forum of Regulators (FoR) can take note of the achievements, discuss and adopt the same for the States which are not making improvements. The Committee, therefore, recommend that:

- (i) The success stories of the States like Goa, Delhi, Maharashtra and Andhra Pradesh be sufficiently highlighted and emulated.
- (ii) However, there is no scope for complacency over this achievement as there is further scope for reduction in losses to bring it to the international level.

(Recommendation Sl. No. 14, Para No. 14)

Role of Regulators in reduction of Losses

2.15 The Committee note that Section 61 of the Electricity Act, 2003 provides for guiding principles for terms and conditions for determination of tariff by the Appropriate Commission. As per these provisions, the State Commissions while specifying the terms and conditions of tariff, shall be guided *inter alia*, by the factors which will encourage competition, efficiency, economical use of resources, good performance and optimum investments. The SERCs/JERCs are also mandated to factor in the principles of rewarding efficiency in performance. In regard to the role of SERCs in reduction of AT&C losses the Committee was informed by the Ministry that the State Commissions usually draw up a trajectory for reduction of transmission and distribution losses or aggregate technical and commercial losses, and the performance of distribution utilities on this account is reflected in the tariff allowed by the Commission. It was further stated that the Forum of Regulators (FoR) has been discussing the issue of loss reduction at regular intervals. Some of the best practices on reduction of distribution losses, including reduction of commercial losses, have been compiled by the FoR Secretariat. Analyzing the present electricity distribution scenario in the country, the Committee have found that the SERCs/FoR have made very little effort to contain high AT&C losses in the country.

While examining the subject, the Committee also felt that instead of facilitating the development of the electricity sector, especially the Distribution Sector, and safeguarding retail consumers, the State Regulators have become an instrument in the hands of the Discoms to penalize honest consumers by making them pay for the misdeeds

of dishonest consumers and the inefficiency of the Discoms by taking into consideration the unacceptably high AT&C losses as cost while determining tariff. The Committee find it is Regulators who have institutionalized the losses rather than discouraging it, and that State Regulators have miserably failed to ensure the strict compliance of the trajectory drawn for the reduction of AT&C losses by the Discoms. The Committee believe that the State Regulatory Commissions, being the regulators of the electricity sector, also have the onus to ensure reduction of AT&C losses by Discoms under their purview. The Committee, therefore, strongly recommend that:

- (i) Efforts should be made to make SERCs accountable in regard to containment of AT&C losses.
- (ii) While determining the tariff of electricity, the burden of commercial losses should not be passed on to the honest consumers.

(Recommendation Sl. No. 15, Para No. 15)

While concluding, it may be summarized as under:

1. 12 years have been completed since the adoption of the Electricity Act, 2003. The time has now come to go for the second phase of energy reforms.
2. Awareness should be spread about energy losses during transmission and distribution, losses due to *chori/theft*, playing with the meters.
3. Regulators, DISCOMs, Private Distributors, consumers and the society at large have made efforts to reduce the AT&C losses to bring down the losses of energy.
4. In the first phase, *i.e.* 12 years, efforts have been made to curtail transmission losses.
5. Knowingly/Unknowingly, all the stakeholders have avoided taking steps to bring down the commercial losses.
6. Regulators have become instrumental to systemize commercial losses, the loss to the DISCOMs/Distributor due to faulty meters, pilferage, *chori*. The same has been collected/taxed/passed on to the honest and sincere energy consumers.
7. Regulators have allowed themselves to be exploited and become instrumental to legitimize the commercial losses/*chori*.

8. All DISCOMs/Distributors know the areas which have higher commercial losses, *i.e.* pilferage.
9. DISCOMs have all the data at feeders/transformer levels, *i.e.* they know very much the areas which have 15% to 40% commercial losses, *i.e.* *chori*/pilferage.
10. There are success stories where the distributor/DISCOMs have brought down AT&C losses, commercial losses to a reasonable level, *e.g.* BEST and Reliance Energy in Mumbai.

Name of Utility	AT&C losses in % (2013-14)
Private Utilities	
Delhi	
TPDDL	9.75
West Bengal	
Calcutta Electricity Supply Company	9.15
India Power Corp Ltd.	5.71
Uttar Pradesh	
Noida Power Corporation Ltd.	10.62
Gujarat	
Torrent Ahmedabad	7.54
Torrent Surat	4.47
Govt. Utilities	
DGVCL	10.83
UGVCL	9.10

11. Tata Power have more than 6 lakh customers in Mumbai but their commercial losses is around 4%.

Action Suggested

1. It is the duty of the Regulators that separation of transmission and commercial losses is clearly reflected in their orders while passing the orders.
2. Segregation of transmission and commercial losses be made compulsory.

3. Initially, every State be asked to support the segregation and bring down the commercial losses to less than 10% in the capital, towns and corporation cities.
4. The concept of AT&C losses henceforth be stopped. Both types of losses, *i.e.* transmission losses and commercial losses, should be shown separately.
5. Losses incurred for bringing power to the outskirts of cities/villages be accounted as transmission loss.
6. The losses occurred from the distribution centers at the outskirts of cities/towns/villages till the meter/bill collection be treated as commercial losses.
7. The Government of India, with State DISCOMs and regulators, must chalk out an action plan within 3 months.
8. Adequate protection to Anti Power-Theft Squad, while conducting raids, should be provided by the State Governments.

NEW DELHI;
07 December, 2015

16 Agrahayana, 1937 (Saka)

DR. KIRIT SOMAIYA,
Chairperson,
Standing Committee on Energy.

AT&C LOSSES (%) FOR UTILITIES SELLING DIRECTLY TO CONSUMERS

Region	State	Utility	2011-12			2012-13			2013-14			
			Billing Efficiency (%)	Collection Efficiency (%)	AT&C Losses (%)	Billing Efficiency (%)	Collection Efficiency (%)	AT&C Losses (%)	Billing Efficiency (%)	Collection Efficiency (%)	AT&C Losses (%)	
1	2	3	4	5	6	7	8	9	10	11	12	
Eastern	Bihar	BSEB	51.20	79.60	59.24	52.16	77.83	59.40				
		NBPDCL				60.80	80.84	50.85	60.99	95.21	41.93	
		SBPDCL				51.81	104.66	45.77	52.94	96.90	48.70	
		Bihar Total		51.20	79.60	59.24	51.30	85.26	54.64	55.76	96.25	46.33
		Jharkhand		65.52	87.35	42.76	65.02	80.77	47.49	66.28	87.26	42.17
		Jharkhand Total		65.52	87.35	42.76	65.02	80.77	47.49	66.28	87.26	42.17
		Odisha		61.80	87.14	46.15	63.00	89.79	43.43	65.37	94.11	38.48
				65.72	92.00	39.54	65.07	92.81	39.61	66.16	96.03	36.47
				53.58	88.47	52.60	56.68	89.34	49.36	59.01	99.69	41.18
				61.11	92.53	43.46	61.73	94.18	41.87	63.32	92.81	41.24
	Odisha Total		61.44	90.08	44.66	62.25	91.74	42.88	64.12	94.84	39.19	

1	2	3	4	5	6	7	8	9	10	11	12
	Sikkim	Sikkim PD	54.77	76.10	58.32	61.01	76.20	53.51	68.33	42.09	71.23
	Sikkim Total		54.77	76.10	58.32	61.01	76.20	53.51	68.33	42.09	71.23
	West Bengal	WBSEDCL	72.54	92.50	32.90	69.51	94.33	34.43	67.64	100.47	32.05
	West Bengal Total		72.54	92.50	32.90	69.51	94.33	34.43	67.64	100.47	32.05
	Eastern Total		65.01	89.54	41.80	64.13	90.37	42.04	64.36	96.31	38.02
	North Eastern	Arunachal Pradesh	44.57	77.28	65.55	42.75	92.96	60.26	40.71	78.11	68.20
	Arunachal Pradesh Total		44.57	77.28	65.55	42.75	92.96	60.26	40.71	78.11	68.20
	Assam	APDCL	74.65	93.24	29.47	74.14	91.92	31.85	75.89	91.92	30.25
	Assam Total		74.65	93.24	29.47	74.14	91.92	31.85	75.89	91.92	30.25
	Manipur	Manipur PD	64.26	85.90	44.80	69.16	20.98	85.49	73.46	76.84	43.55
	Manipur Total		64.26	85.90	44.80	69.16	20.98	85.49	73.46	76.84	43.55
	Meghalaya	MeECL	71.25	76.74	45.33						
	Meghalaya Total	MeEPDCL				70.89	89.93	36.5	72.55	89.06	35.38
	Mizoram	Mizoram PD	64.27	98.67	36.59	70.74	102.42	27.55	69.42	97.20	32.53
	Mizoram Total		64.27	98.67	36.59	70.74	102.42	27.55	69.42	97.20	32.53

1	2	3	4	5	6	7	8	9	10	11	12
	Nagaland	Nagaland PD	61.98	124.48	22.85	62.23	39.69	75.30	69.15	89.12	38.37
	Nagaland Total		61.98	124.48	22.85	62.23	39.69	75.30	69.15	89.12	38.37
	Tripura	TSECL	74.33	89.12	33.76	82.68	90.89	24.86	72.63	99.38	27.81
	Tripura Total		74.33	89.12	33.76	82.68	90.89	24.86	72.63	99.38	27.81
	North Eastern Total		71.28	90.87	35.22	71.73	86.01	38.31	72.54	91.06	33.94
	Northern	Delhi	85.90	97.03	16.65	87.50	96.96	15.16	84.29	99.44	16.19
		BSES Rajdhani	78.08	95.37	25.54	86.54	94.82	17.94	81.40	103.80	15.51
		BSES Yamuna	86.09	97.97	15.67	88.24	98.47	13.12	89.55	100.77	9.75
		TPDDL	84.01	96.95	18.56	87.49	96.90	15.22	85.13	100.92	14.09
	Delhi Total		76.29	95.00	27.53	77.62	92.36	28.31	76.34	90.53	30.89
	Haryana	DHBVNL	78.85	89.97	29.06	68.74	91.69	36.97	67.60	90.81	38.61
		UHBVNL	77.53	92.52	28.27	73.27	92.05	32.55	72.45	90.65	34.33
	Haryana Total		88.17	92.96	18.04	86.38	101.99	11.90	88.15	96.28	15.13
	Himachal Pradesh	HPSEB Ltd.	88.17	92.96	18.04	86.38	101.99	11.90	88.15	96.28	15.13
	Himachal Pradesh Total		40.62	70.99	71.16	46.39	84.36	60.87	49.07	103.64	49.14
	Jammu & Kashmir	J&K PDD	40.62	70.99	71.16	46.39	84.36	60.87	49.07	103.64	49.14
	Jammu & Kashmir Total		40.62	70.99	71.16	46.39	84.36	60.87	49.07	103.64	49.14

1	2	3	4	5	6	7	8	9	10	11	12
	Punjab	PSPCL	83.31	97.27	18.96	83.22	99.11	17.52	83.23	98.64	17.91
	Punjab Total		83.31	97.27	18.96	83.22	99.11	17.52	83.23	98.64	17.91
	Rajasthan	AVVNL	78.25	91.86	28.12	79.35	100.95	19.90	79.31	98.30	22.04
		JDVNL	81.13	93.89	23.83	81.87	98.98	18.97	77.55	95.82	25.69
		JVVNL	81.37	94.40	23.18	80.91	97.75	20.91	72.15	95.53	31.08
	Rajasthan Total		80.40	93.53	24.81	80.77	99.05	20.00	75.95	96.44	26.76
	Uttar Pradesh	DVVN	70.62	84.26	40.50	72.57	74.84	45.69	71.31	89.09	36.47
		KESCO	67.04	103.71	30.48	68.59	90.97	37.61	69.16	95.02	34.29
		MVVN	73.64	75.48	44.42	75.16	72.08	45.83	75.15	114.02	14.32
		Pash VVN	70.75	90.53	35.95	71.84	92.72	33.39	76.92	99.47	23.49
		Poorv VVN	73.80	64.54	52.37	74.34	64.07	52.37	75.27	106.17	20.09
	Uttar Pradesh Total		71.76	80.90	41.95	73.02	78.26	42.85	74.54	101.10	24.65
	Uttarakhand	Ut PCL	80.04	92.65	25.84	79.50	96.63	23.18	82.28	98.43	19.01
	Uttarakhand Total		80.04	92.65	25.84	79.50	96.63	23.18	82.28	98.43	19.01
	Northern Total		76.94	90.54	30.34	77.28	92.01	28.89	76.62	98.07	24.86

1	2	3	4	5	6	7	8	9	10	11	12
Southern	Andhra Pradesh	APCPDCL	85.03	96.71	17.77	86.51	97.52	15.64	88.18	93.51	17.54
		APEPDCL	93.10	96.11	10.53	93.40	96.19	10.15	95.67	97.65	6.57
		APNPDCL	85.98	96.23	17.26	86.63	100.33	13.09	86.34	91.73	20.80
		APSPDCL	88.71	98.99	12.19	89.29	97.72	12.74	89.32	98.77	11.77
	Andhra Pradesh Total		87.29	97.07	15.27	88.29	97.75	13.70	89.44	95.29	14.77
	Karnataka	BESCOM	85.54	90.52	22.57	85.80	92.72	20.45	86.11	94.15	18.93
		CHESCOM	83.80	84.74	28.99	84.90	81.96	30.42	85.26	77.50	33.92
		GESCOM	78.29	97.12	23.96	81.03	100.86	18.28	82.23	84.57	30.45
		HESCOM	80.01	95.46	23.62	80.12	99.31	20.44	81.95	97.10	20.42
		MESCOM	87.67	93.61	17.94	88.12	96.95	14.57	88.07	96.71	14.83
	Karnataka Total		83.48	91.89	23.29	84.17	94.13	20.78	84.87	91.88	22.02
	Kerala	KSEB	88.65	99.07	12.17	88.46	99.12	12.32	89.19	99.29	11.45
		KSEBL							89.53	86.26	22.78
	Kerala Total		88.65	99.07	12.17	88.46	99.12	12.32	89.33	93.60	16.38
	Puducherry	Puducherry PD	86.47	93.78	18.91	87.50	103.86	9.13	86.76	96.61	16.18
	Puducherry Total		86.47	93.78	18.91	87.50	103.86	9.13	86.76	96.61	16.18

1	2	3	4	5	6	7	8	9	10	11	12
	Tamil Nadu	TANGEDCO	81.03	96.63	21.70	78.93	100.46	20.71	78.42	99.02	22.35
	Tamil Nadu Total		81.03	96.63	21.70	78.93	100.46	20.71	78.42	99.02	22.35
	Southern Total		84.59	95.88	18.89	84.43	97.83	17.40	84.75	95.49	19.08
	Western	Chhattisgarh	72.25	98.20	29.05	78.39	95.52	25.12	75.64	101.58	23.17
	Chhattisgarh Total		72.25	98.20	29.05	78.39	95.52	25.12	75.64	101.58	23.17
	Goa	Goa PD	86.55	98.07	15.12	87.49	98.14	14.14	88.00	101.46	10.72
	Goa Total		86.55	98.07	15.12	87.49	98.14	14.14	88.00	101.46	10.72
	Gujarat	DGVCL	89.79	96.74	13.14	88.44	101.31	10.40	89.72	99.39	10.83
		MGVCL	87.78	97.52	14.40	87.09	97.67	14.94	85.74	99.40	14.77
		PGVCL	74.51	96.59	28.03	70.10	99.27	30.41	76.80	98.80	24.12
		UGVCL	89.42	96.17	14.01	86.38	99.13	14.37	91.55	99.29	9.10
	Gujarat Total		83.55	96.63	19.26	80.56	99.46	19.87	84.78	99.16	15.93
	Madhya Pradesh	MP Madhya Kshetra VVCL	62.14	87.14	45.85	69.13	101.30	29.97	70.30	100.13	29.60
		MP Paschim Kshetra VVCL	70.97	92.39	34.43	73.65	97.55	28.16	77.13	102.22	21.15

1	2	3	4	5	6	7	8	9	10	11	12
		MP Purv Kshetra WVCL	70.09	92.82	34.94	73.98	85.98	36.40	76.32	85.38	34.83
	Madhya Pradesh Total		67.87	90.96	38.26	72.32	95.21	31.15	74.61	96.46	28.03
	Maharashtra	MSEDCL	83.97	93.34	21.63	85.33	91.48	21.95	86.00	99.55	14.39
	Maharashtra Total		83.97	93.34	21.63	85.33	91.48	21.95	86.00	99.55	14.39
	Western Total		79.74	94.29	24.81	80.86	94.77	23.36	82.42	99.04	18.37
	Grand Total		78.74	93.19	26.63	79.00	94.36	25.45	79.40	97.35	22.70

ANNEXURE II

STATE-WISE PROFIT/(LOSS), ACCUMULATED PROFIT/(LOSS), TOTAL
OUTSTANDING LOANS AND AT&C LOSSES

State	2013-14			
	Profit/(Loss) on subsidy received basis (Rs. in crore)	Accumulated Profit/(Loss) (Rs. in crore)	Total Outstanding Loans (Rs. in crore)	AT&C Losses (%)
1	2	3	4	5
Andhra Pradesh	(1,379)	(18,812)	23,567	14.77
Arunachal Pradesh	(428)	(2,038)	0	68.20
Assam	(693)	(2,408)	1,591	30.25
Bihar	(343)	(2,125)	3,827	46.33
Chhattisgarh	(630)	(4,017)	1,502	23.17
Delhi	353	2,242	11,038	14.09
Goa	(4)	368	97	10.72
Gujarat	95	579	2,024	15.93
Haryana	(3,113)	(24,180)	28,700	34.33
Himachal Pradesh	(75)	(1,813)	4,374	15.13
Jammu and Kashmir	(2,387)	(22,284)	152	49.14
Jharkhand	(1,511)	(13,468)	10,512	42.17
Karnataka	(534)	(2,731)	7,619	22.02
Kerala	111	(33)	5,261	16.38
Madhya Pradesh	(6,376)	(25,231)	27,916	28.03
Maharashtra	(280)	(5,947)	17,703	14.39
Manipur	(194)	(2,269)	0	43.55
Meghalaya	(26)	(573)	429	35.38
Mizoram	(192)	(1,236)	37	32.53

1	2	3	4	5
Nagaland	(191)	(1,552)	0	38.37
Puducherry	(60)	(445)	0	16.18
Punjab	256	(1,660)	19,770	17.91
Rajasthan	(15,645)	(68,938)	72,858	26.76
Sikkim	33	—	0	71.23
Tamil Nadu	(14,052)	(52,466)	66,105	22.35
Tripura	(70)	(753)	17	27.81
Uttar Pradesh	(16,724)	(60,102)	53,599	24.65
Uttarakhand	323	(1,695)	1,201	19.01
West Bengal	19	(126)	11,648	32.05
Odisha	(342)	(4,633)	3,797	39.19
Grand Total	(64,060)	(318,345)	375,344	2.70

ANNEXURE III

INCREMENTAL REVENUE IF AT & C LOSS REDUCED BY 1%

Region	State	Utility	2006-07					2007-08					2008-09					2009-10				
			Net Input Energy (Mkwh)	Average Billing Rate (Rs. per kWh)	Incr-mental revenue if AT & C loss reduces by 1% (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. cr.)	Net Input Energy (Mkwh)	Average Billing Rate (Rs. per kWh)	Incr-mental revenue if AT & C loss reduces by 1% (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. cr.)	Net Input Energy (Mkwh)	Average Billing Rate (Rs. per kWh)	Incr-mental revenue if AT & C loss reduces by 1% (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. cr.)	Net Input Energy (Mkwh)	Average Billing Rate (Rs. per kWh)	Incr-mental revenue if AT & C loss reduces by 1% (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. cr.)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19				
Eastern	Bihar	BSEB	7,288	73	2.72	20	7,504	75	2.89	27	8,234	82	2.93	24	9,281	93	2.95	27				
		NBPDCL	0	0			0	0				0				0						
		SBPDCL	0	0			0	0				0				0						
		Bihar Total	7,288	73	2.72	20	7,504	75	2.89	27	8,234	82	2.93	24	9,281	93	2.95	27				
		Jharkhand	6,661	67	3.25	22	7,082	71	3.17	22	7,831	78	3.04	24	8,396	84	2.78	23				
		Jharkhand Total	6,661	67	3.25	22	7,082	71	3.17	22	7,831	78	3.04	24	8,396	84	2.78	23				
		Odisha	4,624	46	3.08	14	5,204	52	2.94	15	5,679	57	3.04	17	6,232	62	3.14	20				
		NESCO	3,999	40	2.73	11	4,655	47	2.80	13	4,545	45	2.93	13	4,705	47	2.91	14				
		SESCO	1,827	18	2.81	5	1,977	20	2.84	6	2,176	22	2.85	6	2,286	23	2.79	6				
		WESCO	4,671	47	3.05	14	5,377	54	3.15	17	6,378	64	3.23	21	6,301	63	3.21	20				

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Odisha Total		15,120	151	2.94	44	17,213	172	2.96	51	16,778	188	3.06	57	19,524	195	3.07	60
	Sikkim	Sikkim PD	310	3	1.74	1	375	4	1.89	1	393	4	1.93	1	558	6	1.90	1
	Sikkim Total		310	3	1.74	1	375	4	1.89	1	393	4	1.93	1	558	6	1.90	1
	West Bengal	WBSEB	18,375	184	3.28	60		0				0				0		
		WBSEDCL		0			19,451	195	3.40	66	20,962	210	3.51	74	25,427	254	3.78	96
	West Bengal Total		18,375	184	3.28	60	19,451	195	3.40	66	20,962	210	3.51	74	25,427	254	3.78	96
	Eastern Total		47,754	478	9.09	148	51,624	516	3.16	163	56,199	562	3.22	181	63,185			
	North Eastern	Arunachal Pradesh	365	4	2.03	1	414	4	2.35	1	744	7	2.37	2	377	4	2.98	1
		Arunachal Pradesh Total	365	4	2.03	1	414	4	2.85	1	744	7	2.87	2	377	4	2.98	1
	Assam	CAEDCL	922	9	4.37	4	1,078	11	4.37	5	1,102	11	4.33	5		0		
		LAEDCL	1,395	14	4.39	6	1,450	14	4.84	7	1,714	17	4.45	8		0		
		UAEDCL	1,028	10	4.80	5	1,190	12	4.69	6	1,159	12	4.76	6		0		
		APDCL		0				0				0			4,392	44	4.31	19
	Assam Total		3,344	33	4.51	15	3,717	37	4.67	17	3,975	40	4.31	18	4,392	44	4.31	19
	Manipur	Manipur PD	388	4	3.14	1	456	5	3.14	1	451	5	3.08	1	452	5	3.08	1
	Manipur Total		388	4	3.14	1	456	5	3.14	1	451	5	3.08	1	452	5	3.08	1
	Meghalaya	MeSEB	1,264	13	2.71	3	1,422	14	2.84	4	1,362	14	3.49	5	1,342	13	4.27	6
		MeECL		0				0				0				0		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Himachal Pradesh Total		5,018	50	3.09	16	5,306	58	3.19	19	6,316	63	3.47	22	6,806	68	3.52	24
	Jammu & Kashmir	J&K PDD	7,564	76	1.47	11	8,274	83	2.55	21	8,655	87	2.34	20	9,813	98	2.42	24
	Jammu & Kashmir Total		7,564	76	1.47	11	8,274	83	2.55	21	8,655	87	2.34	20	9,813	98	2.42	24
	Punjab	PSEB	33,897	339	2.40	81	37,922	379	2.25	85	36,078	361	2.43	88	38,806	388	2.58	100
		PSPCL		0				0				0				0		
	Punjab Total		33,897	339	2.40	81	37,922	379	2.25	85	36,078	361	2.43	88	38,806	388	2.58	100
	Rajasthan	AVVNL	10,089	101	2.86	29	11,273	113	2.82	32	11,146	111	2.75	31	12,345	123	2.70	33
		JDWNL	9,000	90	2.70	24	10,145	101	2.53	26	11,070	111	2.41	27	12,820	128	2.27	29
		JVVNL	11,572	116	3.15	36	13,068	131	3.08	40	14,021	140	2.98	42	16,277	163	2.79	45
	Rajasthan Total		30,660	307	2.92	90	34,485	345	2.83	98	36,237	362	2.74	99	41,442	414	2.60	108
	Uttar Pradesh	DWVN	10,688	107	2.04	22	11,602	116	2.29	27	11,798	118	2.44	29	12,959	130	2.90	38
		KESCO	2,525	25	3.20	8	2,633	26	3.64	10	2,635	26	4.06	11	2,740	27	4.31	12
		MWVN	8,031	83	2.28	19	8,702	87	2.49	22	8,872	89	2.61	23	9,755	98	2.86	28
		Pash VN	15,086	151	2.57	39	16,652	167	2.74	46	17,373	174	3.12	54	18,237	182	3.46	63
		Poorv VN	10,821	108	1.94	21	11,267	113	2.46	28	11,971	120	2.32	28	12,701	127	2.91	37
	Uttar Pradesh Total		47,401	474	2.29	108	50,856	509	2.57	191	52,650	526	2.74	144	56,392	564	3.13	177
	Uttarakhand	Ut PCL	5,530	55	2.38	13	6,732	67	2.48	17	8,214	82	2.79	23	8,280	83	2.87	24
	Uttarakhand Total		5,530	55	2.38	13	6,732	67	2.48	17	8,214	82	2.79	23	8,280	83	2.87	24

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Northern Total			173,991	1,740	2.67	464	190,386	1,904	2.86	545	194,868	1,949	2.91	567	214,856			
Southern	Andhra Pradesh	APCPDCL	24,092	241	2.34	56	26,068	261	2.61	68	27,537	275	2.63	72	31,933	319	2.87	92
		APEPDCL	8,729	87	2.75	24	9,123	91	2.90	26	9,472	95	3.02	29	10,814	108	2.62	28
		APNPDCL	8,335	83	1.54	13	8,524	85	1.58	13	9,786	98	1.55	15	10,464	105	1.84	19
		APSPDCL	12,126	121	2.33	28	9,613	96	3.70	36	13,441	134	2.60	35	15,300	153	2.77	42
	Andhra Pradesh Total		53,82	533	2.28	122	53,328	533	2.67	143	60,237	602	2.51	151	68,511	685	2.65	181
	Karnataka	BESCOM	18,522	185	3.48	65	18,665	187	3.71	69	19,566	196	3.63	71	20,317	203	3.86	78
		CHESCOM	4,222	42	2.34	10	4,093	41	2.49	10	4,179	42	2.31	10	4,245	42	2.37	10
		GESCOM	5,433	54	2.14	12	5,518	55	2.27	13	5,738	57	2.39	14	5,764	58	2.81	16
		HESCOM	7,257	73	1.96	14	7,075	71	2.11	15	7,367	74	2.18	16	7,402	74	2.68	20
		MESCOM	2,895	29	2.87	8	2,900	29	2.98	9	3,138	31	3.00	9	3,274	33	3.40	11
	Karnataka Total		38,329	383	2.86	110	38,252	383	3.04	116	39,988	400	3.02	121	41,002	410	3.33	136
	Kerala	KSEB	14,077	141	3.07	43	14,622	146	3.12	46	14,695	147	3.59	53	16,129	161	3.35	43
		KSEBL		0				0			0				0			
	Kerala Total		14,077	141	3.07	43	14,622	146	3.12	46	14,695	147	3.59	53	16,129	161	3.35	43
	Puducherry	Puducherry PD	2,377	24	2.38	6	2,432	24	2.40	6	2,335	23	2.38	6	2,52	25	2.25	6
	Puducherry Total		2,377	24	2.38	6	2,432	24	2.40	6	2,335	23	2.38	6	2,52	25	2.25	6
	Tamil Nadu	TNEB	57,461	575	2.81	161	61,184	612	2.89	177	61,883	619	2.82	175	67,308	673	2.82	190

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		TANGEDCO		0				0				0				0		
	Tamil Nadu Total		57,461	575	2.81	161	61,184	612	2.89	177	61,883	619	2.82	175	67,308	673	2.82	190
Southern Total			165,526	1,655	2.66	440	169,819	1,698	2.87	487	179,138	1,791	2.81	504	195,477			
Western	Chhattisgarh	CSEB	12,840	128	3.02	39	14,214	142	2.90	41	12,282	123	2.93	36		0		
		CSPDCL		0				0			5,017	50	2.64	13	18,740	187	2.82	53
	Chhattisgarh Total		12,840	128	3.02	39	14,214	142	2.90	41	17,299	173	2.86	49	18,740	187	2.82	53
	Goa	Goa PD	2,472	25	2.85	7	2,709	27	2.90	8	2,905	29	2.96	9	2,961	30	2.95	9
	Goa Total		2,472	25	2.85	7	2,709	27	2.90	8	2,905	29	2.96	9	2,961	30	2.95	9
	Gujarat	DGVCL	9,052	91	4.07	37	9,435	94	4.09	39	9,741	97	4.91	48	10,565	106	4.82	51
		MGVCL	5,291	53	3.60	19	5,802	58	3.74	22	6,304	63	4.48	28	6,727	67	4.41	30
		PGVCL	16,156	162	3.01	49	17,432	174	3.11	54	18,003	180	3.88	70	19,858	199	3.75	74
		UGVCL	11,373	114	2.26	26	12,377	124	2.43	30	12,792	128	3.22	41	14,891	149	3.12	46
	Gujarat Total		41,872	419	3.12	131	45,046	450	3.22	145	46,840	468	4.01	188	52,041	520	3.89	202
	Madhya Pradesh	MP Madhya Kshetra WVCL	10,267	103	3.22	33	11,381	114	3.12	36	10,819	108	3.33	36	10,563	106	3.08	33
		MP Paschim Kshetra WVCL	11,845	118	2.86	34	12,808	128	2.92	37	12,510	125	3.10	39	12,705	127	3.30	42
		MP Purv Kshetra WVCL	9,062	91	3.34	30	9,829	98	3.29	32	9,604	96	3.40	33	9,632	96	3.38	37

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Madhya Pradesh Total		31,174	312	3.11	97	34,018	340	3.09	105	32,933	329	3.26	107	32,900	329	3.38	111
	Maharashtra	MSEDCL	69,813	698	3.71	259	73,400	734	3.51	258	74,560	846	3.93	293	80,526	805	4.34	341
	Maharashtra Total		69,813	698	3.71	259	73,400	734	3.51	258	74,560	846	3.93	293	80,526	805	4.34	341
	Western Total		158,171	1,582	3.36	532	169,387	1,694	3.30	558	174,538	1,745	5.73	651	187,168			
	Grand Total		551,858	5,519	2.90	1,600	588,353	5,884	3.02	1,776	612,510	6,125	3.10	1,924	668,628	6,686	3.26	2,178

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Region	State	Utility	2010-11							2011-12							2012-13							2013-14						
			Net Input Energy (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. per kWh)	Incr-mental revenue if AT &C loss reduces (Mkwh)	Net Input Energy (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. cr.)	Incr-mental revenue if AT &C loss reduces	Net Input Energy (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. cr.)	Incr-mental revenue if AT &C loss reduces	Net Input Energy (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. per kWh)	Incr-mental revenue if AT &C loss reduces	Net Input Energy (Mkwh)	Energy saved if AT&C loss reduces by 1% (Mkwh)	Average Billing Rate (Rs. per kWh)	Incr-mental revenue if AT &C loss reduces								
1	2	3	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35												
Eastern	Bihar	BSEB	9,620	96	3.83	37	10,802	108	4.86	52	6,9452	70	4.75	33		0														
		NBPDCL		0				0			1,506	15	3.91	6		4,553	46	4.04	18											
		SBPDCL		0				0			3,082	31	4.99	15		8,465	85	4.99	42											
		Bihar Total	9,620	96	3.83	37	10,802	108	4.86	51	11,541	115	4.69	54		13,018	130	4.62	60											
		Jharkhand	9,041	90	3.01	27	9,353	93	3.50	32	10,438	104	3.73	39		8,376	83	3.75	31											
		Jharkhand Total	9,041	90	3.01	27	9,253	93	3.50	31	10,438	104	3.73	39		8,276	83	3.75	31											
		Odisha	7,069	71	3.71	26	7,333	73	4.31	31	7,402	74	4.75	35		7,973	80	4.94	39											
		NESCO	5,109	51	3.61	18	5,023	50	4.62	23	5,045	50	4.93	25		5,045	50	5.12	26											
		NESCO	2,556	26	3.44	9	3,814	38	4.07	11	2,930	39	4.38	13		2,916	29	4.55	13											
		WESCO	6,511	65	3.89	25	6,178	62	4.68	39	6,391	64	5.29	34		6,635	66	5.45	36											
		Odisha Total	21,145	212	3.71	79	21,248	212	4.47	95	21,768	218	4.91	107		22,569	226	5.08	115											
	Sikkim	598	6	1.59	1	380	4	3.62	1	372	4	3.62	1		391	4	3.68	1												

1	2	3	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	Sikkim Total		598	6	1.59	1	380	4	3.62	1	372	4	3.62	1	391	4	3.68	1
	West Bengal	WBSSEB		0				0				0				0		
	West Bengal Total	WBSEDCL	28,038	280	4.40	133	29,731	297	5.40	161	29,542	295	7.38	219	30,495	305	6.57	200
	Eastern Total		28,038	280	4.40	133	29,731	297	5.40	161	29,542	295	7.38	219	30,495	305	6.57	200
			68,542	685	5.93	269	71,414	714	4.82	344	78,661	737	5.78	426	74,749	747	5.49	411
	North Eastern	Arunachal Pradesh	454	5	3.15	1	549	5	3.32	3	556	6	3.33	2	573	6	3.68	2
		Arunachal Pradesh Total	454	5	3.15	1	549	5	3.32	2	556	6	3.33	2	573	6	3.68	2
	Assam	CAEDCL		0				0				0				0		
		LAEDCL		0				0				0				0		
		UAEDCL		0				0				0				0		
	Assam Total	APDCL	4,742	47	4.48	21	5,247	52	5.07	27	5,672	57	5.41	31	6,277	63	5.55	35
			4,742	47	4.48	21	5,247	52	5.07	27	5,672	57	5.41	31	6,277	63	5.55	35
	Manipur	Manipur PD	512	5	3.09	2	506	5	3.00	3	548	5	3.05	2	565	6	3.27	2
	Manipur Total		512	5	3.09	2	506	5	3.00	3	548	5	3.05	2	565	6	3.27	2
	Meghalaya	MeSEB		0				0				0				0		
		MeECL	1,500	15	3.65	5	1,509	15	3.56	5		0			0			
		MePDCL		0				0			1,469	15	4.21	6	1,451	15	3.97	6
	Meghalaya Total		1,500	15	3.65	5	1,509	15	3.56	5	1,469	15	4.21	6	1,451	15	3.97	6

1	2	3	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	Mizoram	Mizoram PD	352	4	2.34	1	393	4	4.56	3	405	4	3.36	1	436	4	3.56	2
	Mizoram Total		352	4	2.34	1	393	4	4.56	2	405	4	3.36	1	436	4	3.56	2
	Nagaland	Nagaland PD	440	4	2.47	1	473	5	3.59	3	501	5	3.61	2	609	6	2.18	1
	Nagaland Total		440	4	2.47	1	473	5	3.59	2	501	5	3.61	3	609	6	2.18	1
	Tripura	TSECL	769	8	3.33	3	840	8	3.84	3	938	9	3.36	3	981	10	5.05	5
	Tripura Total		769	8	3.33	3	840	8	3.84	3	938	9	3.36	3	981	10	5.05	5
	North Eastern Total		8,768	88	3.95	35	9,516	95	4.47	43	10,090	101	4.56	47	10,891	109	4.86	53
	Delhi	BSES Rajdhani	11,229	112	4.16	47	10,903	109	4.81	52	11,231	112	6.29	71	11,985	120	7.07	85
		USES Yamuna	6,012	60	4.34	26	6,304	62	4.98	31	6,331	63	6.04	38	6,848	68	6.80	47
		TPDDL	7,316	73	4.42	22	7,785	78	5.09	40	7,897	79	6.78	54	8,040	80	7.51	60
	Delhi Total		24,557	246	4.28	105	24,892	249	4.94	133	25,459	255	6.38	162	26,873	269	7.14	192
	Haryana	DHBVNL	16,153	162	3.62	59	17,903	179	3.83	69	18,387	154	4.51	83	22,056	221	5.22	115
		UHBVNL	15,254	153	3.13	48	16,744	167	2.47	41	17,649	176	3.41	60	17,720	177	4.47	79
	Haryana Total		31,407	314	3.38	106	34,647	346	3.16	110	36,036	360	4.01	144	39,776	398	4.91	195
	Himachal Pradesh	HPSEB	1,365	14	3.53	5		0				0			0			
		HPSEB Ltd.	6,201	62	3.75	23	7,847	78	4.08	32	8,362	84	4.65	33	8,549	85	5.30	45
	Himachal Pradesh Total		7,566	76	3.71	28	7,847	78	4.08	32	8,362	84	4.65	39	8,549	85	5.30	45
	Jammu & Kashmir	J&K PDD	10,102	101	2.92	30	10,503	105	3.35	35	11,129	111	3.26	36	11,727	117	2.89	34

1	2	3	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	Jammu & Kashmir Total		10,102	101	2.92	30	10,503	105	3.35	35	11,129	111	3.26	36	11,727	117	2.89	34
	Punjab	PSEB		0				0				0				0		
	Punjab Total	PSPCL	39,909	399	2.77	110	41,530	415	3.17	132	43,548	435	3.66	159	45,238	452	4.06	184
	Rajasthan	AWNL	39,909	399	2.77	110	41,530	415	3.17	133	43,548	435	3.66	159	45,238	452	4.06	184
		AWNL	12,827	128	2.70	35	13,604	136	2.87	39	14,950	149	3.35	50	15,760	158	4.11	65
		JDWNL	13,616	136	2.24	31	14,821	148	2.57	38	16,631	166	3.27	54	18,809	188	4.16	78
		JVNL	17,894	179	2.73	49	18,722	187	2.98	56	20,619	206	3.52	73	21,879	219	4.30	94
	Rajasthan Total		44,337	443	2.57	114	47,147	471	2.82	133	52,200	522	3.39	177	56,447	564	4.20	237
	Uttar Pradesh	DVNL	14,296	143	2.74	39	16,052	161	3.02	49	17,331	173	3.10	54	18,437	184	3.68	68
		KESCO	2,940	29	4.85	14	3,089	31	4.73	15	3,140	31	5.22	16	3,554	36	6.24	22
		MWNL	10,880	109	3.72	40	12,537	125	3.41	43	13,147	131	3.63	48	14,253	143	4.07	58
		Pash VNL	19,640	196	3.38	78	22,649	226	3.99	90	23,674	237	4.30	102	24,099	241	4.64	112
		Poorv VNL	14,011	140	3.07	43	15,704	157	2.34	46	16,034	160	3.40	54	16,929	169	3.77	64
	Uttar Pradesh Total		61,767	618	3.46	213	70,030	700	3.46	242	73,325	733	3.73	274	77,272	773	4.19	324
	Uttarakhand	Ut PCL	9,187	92	3.37	31	10,311	103	3.39	35	10,769	108	3.79	41	11,017	110	3.92	43
	Uttarakhand Total		9,187	92	3.37	31	10,311	103	3.39	35	10,769	108	3.79	41	11,017	110	3.92	43
	Northern Total		228,632	2,288	3.239	740	246,907	2,469	5.42	844	260,849	2,608	4.00	1,043	276,899	2,769	4.58	1,267
	Southern	APCPDCL	33,703	337	3.37	114	37,161	372	3.68	137	34,779	348	4.17	145	36,717	367	4.41	162

1	2	3	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
		APEPDCL	11,146	111	3.00	33	12,595	126	3.19	40	12,207	122	4.19	51	13,772	138	4.15	57
		APNDCL	10,610	106	2.20	23	11,914	119	2.36	28	11,165	112	2.45	27	11,914	119	2.75	33
		APSPDCL	16,449	164	3.36	55	18,475	185	3.59	66	18,418	184	3.91	72	20,179	202	3.98	80
		Andhra Pradesh Total	71,908	719	3.14	226	80,144	801	3.39	271	76,568	766	3.86	296	82,582	826	4.03	333
		Karnataka	21,909	219	4.33	95	24,584	246	4.45	109	26,569	266	4.70	125	26,786	268	5.01	134
		CHESCOM	4,683	47	2.58	12	5,552	56	2.58	14	5,860	59	2.61	15	5,996	60	2.75	16
		GESCOM	5,992	60	3.72	22	6,351	70	4.36	30	7,064	71	4.59	32	7,268	73	4.66	34
		HESCOM	8,407	84	4.06	34	9,393	96	4.24	41	10,470	105	4.49	47	10,573	106	4.75	50
		MESCOM	3,600	36	4.10	15	4,072	41	4.34	18	4,280	43	4.33	19	4,585	46	4.72	22
		Karnataka Total	44,592	446	4.00	178	50,752	508	4.18	212	54,243	542	4.41	239	55,206	552	4.65	257
		Kerala	16,496	165	3.48	57	18,026	180	3.46	62	19,035	190	4.29	82	11,024	110	4.79	53
		KSEBL		0			0	0				0		8,514	85	5.15	44	
		Kerala Total	16,496	165	3.48	57	18,026	180	3.46	62	19,035	190	4.29	82	19,538	195	4.95	97
		Puducherry	2,559	26	2.65	7	2,685	27	2.90	8	2,849	28	3.12	9	2,727	27	4.26	12
		Puducherry Total	2,559	26	2.65	7	2,685	27	2.90	8	2,849	28	3.12	9	2,727	27	4.26	12
		Tamil Nadu	41,369	414	3.15	130		0				0			0			
		TANGEDCO	26,364	264	3.77	99	66,569	666	3.65	243	66,827	668	4.86	325	77,315	773	5.00	387
		Tamil Nadu Total	26,364	264	3.77	99	66,569	666	3.65	243	66,827	668	4.86	325	77,315	773	5.00	387
		Southern Total	203,288	2,033	3.43	696	218,176	2,182	5.64	795	219,522	2,195	4.31	945	237,369	2,374	4.55	1,079

1	2	3	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Western	Chhattisgarh	CSEB		0				0								0		
		CSPDCL	17,417	174	2.97	52	18,238	182	3.34	61	20,525	205	3.28	67	19,553	196	3.93	77
	Chhattisgarh Total		17,417	174	2.97	52	18,231	182	3.34	61	20,525	205	3.28	67	19,553	196	3.93	77
	Goa	Goa PD	3,158	33	2.95	9	3,180	32	234	9	3,374	34	3.26	11	3,366	34	335	13
	Goa Total		3,158	32	2.95	9	3,180	32	2.84	9	3374	34	3.28	11	3,366	34	335	13
	Gujarat	DGVCL	11,193	112	4.76	53	11,764	118	532	63	12,819	128	5.66	73	13,420	134	536	79
		MGVCL	7,414	74	4.37	32	7,772	78	4.75	37	8,074	81	5.10	41	8,111	81	5.30	43
		PGVCL	19,813	198	3.71	73	21,919	219	4.08	89	24,566	246	432	111	22,740	227	4.69	107
	Gujarat Total	UGVCL	14,206	142	3.10	44	15,670	157	3.63	57	17,736	177	330	67	15,826	158	4.15	66
			52,626	526	3.86	203	57,125	571	432	247	3,195	632	4.64	293	60,097	601	4.90	294
	Madhya Pradesh	MP Madhya Kshetra WVCL	11,467	115	3.50	40	13303	138	3.71	51	14,374	144	4.07	59	16,440	164	3.77	62
			13,615	136	3.53	48	17,226	172	3.66	63	17,824	178	4.08	73	18,122	181	4.14	75
		MP Pashcim Kshetra WVCL	10,563	106	3.83	40	11,669	117	4.13	48	13,371	134	434	61	14326	145	4.59	67
	Madhya Pradesh Total		35,645	356	3.60	128	42,698	427	3.81	163	45,569	456	4.21	192	49,087	491	4.16	204
	Maharashtra	MSEDCL	86,170	862	439	395	95,433	954	4.87	464	97,846	978	5.24	512	99,575	996	5.95	592
	Maharashtra Total		86,170	862	459	395	95,433	954	4.87	464	97,846	978	5.24	512	99,575	996	5.95	592
	Western Total		195,016	1,950	4.06	793	215,674	2,167	4.59	951	230,509	2,305	4.69	1,082	251,678	1,517	5.14	1,190
	Grand Total		704,446	7,044	3.59	2,529	762,686	7,627	3.89	2,964	794,630	7,946	4.44	3,527	831,585	8,316	4.80	3,992

ANNEXURE IV

ACCELERATED POWER DEVELOPMENT AND REFORMS PROGRAMME (APDRP)

APDRP was launched in 2002-03 as additional central assistance to the States for strengthening and upgradation of sub-transmission and distribution systems with main objectives of reduction in AT&C and commercial losses; improve quality and reliability of supply of power.

Investment component: Central Government provided assistance to the tune of 25% and 90% of the project cost in the form of grant to Non-special category and Special Category States respectively. Balance amount to be arranged from Financial Institutions/own resources.

Earlier, Government was providing 10% loan to special category and 25% to Non-special category States in addition to the grant as mentioned above. However, as recommended by the 12th Finance Commission, the loan component has been discontinued by the Ministry of Finance w.e.f. 2005-06.

- No. of projects sanctioned : 574
- Total project cost : Rs. 17,329.07 crore
- Revised project cost after short closing : Rs. 14,506.43 crore
- Total fund released by Gol : Rs. 7,777.19 crore
- Counter Part Fund drawn from FIs : Rs. 6711.80 crore
- Total fund utilized : Rs. 14,077.86 crore

All the States have completed the exercise of closure of the ongoing projects of X Plan APDRP.

Incentive component: This component was to incentivize the SEBs/ utilities to reduce their financial losses. Funds were released to the SEBs for actual cash loss reduction, for every Rs. 2 of cash loss reduction Rs.1 was given as grant. Ten States showed reduction of cash loss amounting to Rs. 5809.89 crore and became eligible for APDRP incentive of Rs. 2904.95 crore, which has been released to the states.

Details of year-wise release of funds since inception:

(Rs. in crore)

Year	BE	RE	Actual Releases		
			Investment	Incentive	Total
1	2	3	4	5	6
2002-03	3500.00	2029.27	1755.52	379.28	2134.80
2003-04	3500.00	3300.00	2356.51	503.30	2859.81

1	2	3	4	5	6
2004-05	3500.00	1700.00	1428.74	73.00	1501.73
2005-06	1172.00	1172.00	590.94	581.06	1172.00
2006-07	650.00	1021.70	809.31	212.39	1021.70
2007-08	800.00	1400.00	269.30	1130.70	1400.00
2008-09	800.00	436.03	436.03		436.03
2009-10	350.00	156.06	130.84	25.22	156.06
Total	14272.00	11215.06	7777.19	2904.95	10682.13

Improvements

- AT&C loss at national level reduced from 38.86% in 2001-02 to 27.34% during 2008-09.
- AT&C losses have been reported below 20 percent in 215 APDRP towns in the country of which 163 towns have brought AT&C losses below 15 percent.

The X Plan APDRP had limited success in achieving its objectives. Some of the components like investment in IT related energy audit and accounting works were not taken up. It has been observed that very few States have taken up piecemeal standalone IT solutions during the X Plan APDRP and full benefits of these IT solutions could not be derived as the integration of all the IT solutions was not adopted.

Based on the experience of the X Plan APDRP and consultation with the States through Conference of Chief Secretaries and Power Secretaries of States/Union Territories, Ministry of Power formulated the re-structured APDRP for XI Plan.

Restructured Accelerated Power Development and Reforms Programme (RAPDRP)

R-APDRP launched in 2008 with the objective of reduction in AT&C loss in urban areas—towns and cities with population more than 30,000 (10,000 for special category States). Private distribution utilities are not covered under the programme.

Projects under the scheme are taken up in two parts. Part-A aims to establish IT enabled system with Data Centre, Customer Care Centre etc. for energy accounting/auditing and SCADA for bigger towns (population: 4 lacs and Annual Energy Input: 350MU) whereas Part-B is for upgradation & strengthening of electrical networks in these towns.

Initially funds for projects under both the parts are provided through loan [Part-A: 100% Gol loan; Part-B: 25% (90% for special category States) Gol loan & balance from Financial Institutions]. The entire amount of loan for Part-A projects would be converted into grant on completion of Part-A project. For Part-B, upto 50% (90% for special category States) of project cost would be converted into grant in five year in five annual tranches on 3 conditions being met: (1) reducing AT&C losses to a 15% level in the project areas on a sustainable basis; (2) achieving the prescribed loss reduction trajectory at the DISCOM level; and (3) the timely completion of the project.

Projects worth Rs. 39,197.72 crore (Part-A: Rs. 6,983.53 crore covering 1409 towns and 72 SCADA projects; Part-B: Rs. 32,214.19 crore covering 1258 towns) are under implementation. So far, 19 out of 21 Data Centres have been commissioned and 1058 towns have been declared “Go-Live” under Part-A of the programme. Part-B projects have been completed in 282 towns.

Go-Live towns, are towns where IT work is completed and town energy data has start flowing to Data Centre for energy accounting and auditing. Utilities have started using this data for energy accounting/ auditing and to take administrative measures for controlling AT&C losses. Reduction in AT&C loss is reported in 543 towns.

So far Rs. 8338.80 crore has been released as loan to State Utilities under the programme against Part-A and Part-B projects.

Summary of Physical Progress (as on 30.09.2015):

	Towns covered Nos.	Work awarded Nos.	Towns ‘Go-live’/ Completed Nos.	Remarks
Part-A (IT)	1409	1397	1058	Odisha–12 towns to be awarded.
Part-A (SCADA)	72	70	-	Odisha–2 towns to be awarded.
Part-B	1258	1142	282	116 towns to be awarded.

Details of year-wise progress achieved:

(Rs. in crores)

Year	Projects sanctioned (Rs. crore)	Budget Allocation (Rs. crore)			Actual Releases (Rs. crore)		
		Loan	Grant	Total	Loan	Grant	Total
1	2	3	4	5	6	7	8
2008-09	1948.51	325	25	350	325.00	25.00	350.00
2009-10	6260.46	1364	66	1430	1331.46	1.26	1332.72

1	2	3	4	5	6	7	8
2010-11	13739.07	2471	100	2571	2246.42	100.00	2346.42
2011-12	9595.47	1600	68	1668	1600.00	67.87	1667.87
2012-13	2288.70	1383	117	1500	1217.45	17.04	1234.49
2013-14	4257.17	640	60	700	640.00	8.70	648.70
2014-15	1154.51	1117	144	1261	578.47	16.78	595.25
2015-16	-46.16	400	0	400	400.00	0.00	400.00
TOTAL	39197.73	9300	580	9880	8338.80	236.65	8575.45

Integrated Power Development Scheme (IPDS)

- CCEA in its meeting held on 20.11.2014 approved the “Integrated Power Development Scheme” (IPDS) with a total outlay of Rs. 32,612 crore which includes a budgetary support of Rs. 25,354 crore from Government of India.
- The objectives of scheme are:
 - (i) Strengthening of sub-transmission and distribution networks in the urban areas;
 - (ii) Metering of distribution transformers/feeders/consumers in the urban; and
 - (iii) IT enablement of distribution sector and strengthening of distribution network being under taken under R-APDRP.
- The component of IT enablement of distribution sector and strengthening of distribution network approved by CCEA in June, 2013 in the form of R-APDRP for 12th and 13th Plans stands subsumed in this scheme and CCEA-approved scheme outlay of Rs. 44,011 crore including a budgetary support of Rs. 22,727 crore carried forward to the new scheme of IPDS.
- The scheme to also help in reduction in AT&C losses, establishment of IT enabled energy accounting/auditing system, improvement in billed energy based on metered consumption and improvement in collection efficiency.
- The projects under the scheme are being formulated for urban areas (Statutory Towns) only and to cover works relating to strengthening of sub-transmission & distribution network,

including provisioning of solar panels on Government buildings including Net-metering, metering of feeders/distribution transformers/consumers and IT enablement of distribution sector.

- Funding Pattern:

Government of India : 60% (85% for special category States)

Discoms : 10% (5% for special category States)

Loan from Financial Institutions : 30% (10% for special category States)

- Additional grant equivalent to 50% of loan component (*i.e.* 15%, 5% for special category States) also to be provided subject to achievement of following milestones:

(a) Timely completion of the scheme as per laid down milestones.

(b) Reduction in AT&C losses as per trajectory finalized by MoP in consultation with State Governments (Discom-wise).

(c) Upfront release of admissible revenue subsidy, if any, by State Government based on metered consumption.

- Power Finance Corporation (PFC) is the Nodal Agency for operationalisation of the scheme.
- All Discoms including private sector Discoms and State Power Departments are eligible for financial assistance under the scheme.
- Total Gross Budgetary Support (GBS) available for IPDS and R-APDRP at the time of IPDS approval is Rs. 45,816 crore.
- Projects worth Rs. 24,203.71 (including PMA cost) crore covering 3406 towns have been sanctioned.
- Rs. 196.79 crore has been released to PFC for further disbursement to Utilities against sanctioned projects.

Deendayal Upadhyay Gramin Jyoti Yojana (DDUGJY)

- CCEA in its meeting held on 20.11.2014 approved the “Deendayal Upadhyay Gramin Jyoti Yojana” (DDUGJY) with a total outlay of Rs. 43,033 crore which includes a budgetary support of Rs. 33,453 crore from Government of India.

- The objectives of scheme are:
 - (i) To separate agriculture and non-agriculture;
 - (ii) To strengthen and augment sub-transmission & distribution infrastructure including metering; and
 - (iii) Rural Electrification—To connect unconnected villages and households in the country.
- The component of Rural Electrification approved by CCEA in August 2013 in the form of RGGVY for 12th and 13th Plans stands subsumed in this scheme and CCEA-approved scheme outlay of Rs. 39,275 crore including a budgetary support of Rs. 34,447 crore carried forward to the new scheme of IPDS.
- Funding Pattern:

Government of India	:	60% (85% for special category States)
Discoms	:	10% (5% for special category States)
Loan from Financial Institutions	:	30% (10% for special category States)
- Additional grant equivalent to 50% of loan component (*i.e.* 15%, 5% for special category States) also to be provided subject to achievement of following milestones:
 - (a) Timely completion of the scheme as per laid down milestones.
 - (b) Reduction in AT&C losses as per trajectory finalized by MoP in consultation with State Governments (Discom-wise).
 - (c) Upfront release of admissible revenue subsidy, if any, by State Government based on metered consumption.
- Rural Electrification Corporation (REC) is the Nodal Agency for operationalisation of the scheme.
- All Discoms including private sector Discoms and State Power Departments are eligible for financial assistance under the scheme.
- Total Gross Budgetary Support (GBS) available for DDUGJY and RGGVY at the time of DDUGJY approval is Rs. 67,027 crore.
- Projects worth Rs. 40,204 crore (including PMA cost) have been sanctioned.
- Rs. 1708.27 crore has been released to REC for further disbursement to Utilities against sanctioned projects.

SALIENT FEATURES OF RECOMMENDATIONS OF THE STUDY ON
“LOSS REDUCTION STRATEGIES”

1. Transmission losses should not be clubbed with distribution losses in order to have a clear focus on reduction of distribution losses. Therefore, the State Commissions should deal with distribution losses separately and the practice of clubbing transmission and distribution losses (T&D) needs to be immediately discontinued. Need for drawing up a roadmap by each SERC is reiterated for ensuring installation of meters at the premises of all categories of consumers in a time-bound manner.
2. While computing the AT&C loss figure, there is a need for differential analysis of technical losses, non-technical losses and collection efficiency. AT&C loss should be calculated by subtracting the energy realized from the energy input where energy realized should be equal to the product of energy billed and collection efficiency (collection efficiency being the ratio of amount collected to the amount billed). As suggested by CEA while calculating the energy input, the energy traded should be excluded. Further, it should be ensured that the methodology for computing the AT&C loss figure should exclude disputed amounts (amounts which are disputed in any forum including courts etc.) from the demand raised for calculation of collection efficiency. In accordance with para 8.2.1 (iv) of the Tariff Policy, the collection efficiency should take into account provision for bad debts as per the policies developed and subject to the approval of the State Commission.
3. For correct AT&C loss estimation, it was essential that losses were segregated into technical and non-technical (commercial) losses. To segregate the losses, the first step should be to compute the technical losses at the distribution network level. The technical losses so computed should be subtracted from the total energy loss at the distribution network (*i.e.* from AT&C loss) to derive the commercial loss. Technical losses could be computed by the bottoms up approach by computing losses—at EHV system (33 KV network of the distribution utility), at 11 KV system and at the DT level.

4. 11KV feeders having no commercial losses consistently should be identified and technical losses in such feeders may be arrived at as the difference between the sending end energy and receiving end energy at the consumer end plus energy recorded at the LV side of DTs.
5. The technical losses in the distribution network could also be estimated by computer aided system studies through simulation of the network equipment.
6. The non-technical (commercial) loss should be calculated as the difference between the total energy loss at the distribution level (AT&C loss) and the technical loss computed by following the method explained above.
7. To segregate the technical and non-technical loss, baseline data should be compiled for each electricity division. Third party verification of the technical and financial data submitted by the utility was crucial, before such data was taken into account for determination of tariff.
8. Compilation of baseline data should be the starting point for energy accounting and audit. Energy audit has to start from DTs to 11 KV feeders to 33/11 KV sub-stations of the entire area selected for auditing. Energy audit should be undertaken to calculate the difference between the distribution transformer-wise energy sent out and total of all the consumers' consumption.
9. The trajectory for loss reduction should be determined keeping in view the actual loss levels, the capital expenditure made in the past for improving the network and the future capital expenditure plans. This was very important keeping in view the Orissa experience where the loss level allowed in tariff at the beginning of the reforms process was much below the actual loss level. This completely distorted the revenue requirement and the utility went into a perennial loss. Once the actual loss level has been identified by following the methodology suggested above, a trajectory for loss reduction could be specified and followed rigorously.
10. The resolution of the Chief Ministers' Conference on Power held in May 2007 resolved to achieve and sustain drastic reduction in the overall AT&C losses through the next five years, and at least to a level of 15 percent in the APDRP project areas. It was generally agreed that, as a rule of

thumb, reduction of loss level should be at least 10 percent of the existing loss levels every year till the losses are reduced below 20 percent. The actual loss levels at the beginning of the MYT trajectory should be scientifically established on the basis of a separate study for every licensee.

11. Though the technical and commercial losses should be monitored separately, the trajectory could give a combined target for technical and commercial losses in the first control period of MYT. The MYT trajectory has to be specific to every distribution licensee and preferably the same should be specified by the SERC as part of its regulations.
12. In view of the fact the trajectory for loss reduction will be specified, *inter alia*, keeping in view the capital expenditure plans, the monitoring of capital expenditure should invariably be linked to loss reduction achieved, project-wise and division-wise.
13. Pay back period and life cycle cost analysis should be carried out for selecting the appropriate technological intervention aimed at reducing the technical losses. HVDS was expensive and required larger safety clearance. It was recommended that this system would be more appropriate for areas where LT to HT ratio was poor, rural areas and areas having low connection density. In other areas LT ABC conductors might be used for controlling theft. The load balancing of feeders had also proved useful in reducing technical losses. There was a general view that the cost of sophisticated metering should not be passed on to an individual consumer and the same should be recovered through ARR.
14. The technical interventions adopted by some States for—urban, rural and agricultural sectors were studied. Case studies of some States (Delhi, Punjab, West Bengal and Rajasthan for the urban area; Rajasthan and Gujarat for the rural area; and Andhra Pradesh and Madhya Pradesh for the agricultural area) were highlighted as models for emulation by other States.
15. A large number of agricultural consumers were still un-metered and as such assessment of load being supplied on the basis of un-metered supply needed special attention. This could be done easily in cases where agricultural feeders had been separated. In other areas, the estimation had to be on the basis of scientific sampling. Agricultural feeder

separation was emerging to be an effective method of loss reduction. Segregation of feeder for agriculture supply should be resorted to especially in States where proportion of supply to agriculture sector was substantial.

16. A multi-pronged strategy should be adopted to control theft of electricity. Theft of electricity is the biggest menace in the commercial loss component of AT&C loss and should be tackled sternly and with actions having a deterrent effect. The strong penal provisions in the Electricity Act, 2003 especially after the 2007 amendment were noted. It was recommended that the utilities should effectively use these provisions to curb theft and pilferage of electricity. Specific steps taken by the utilities in some States towards controlling theft were also noted.
17. The incentives/disincentives schemes introduced by some SERCs for inducing the utilities to improve loss reduction were reviewed. It was agreed that underachievement of the loss reduction target should be borne by the licensee, and in case of achievement over and above the targets the gain was to be shared between the licensee and the consumers in the ratio to be determined by SERCs.
18. SERCs might also encourage suitable local area based incentive and disincentive schemes for the staff of the utilities linked to reduction in losses, as stipulated in para 8.2.1 (ii) of the Tariff Policy.
19. The MERC order dated January 9, 2003 in matter of “Determination of Tariff (2001-2002) Applicable to various categories of consumers of Maharashtra State Electricity Board and, Levying of T & D Loss charges on the basis of differential (Circle/Zone) T & D Losses Evaluation” was also noted, in which MERC has determined the differential tariff for MSEB on the basis of the area-wise T&D losses which has been also upheld by the Hon’ble High Court in its order dated February 11, 2004.
20. Incentive for the staff for performance above the set targets might be operationalized taking an electricity division as the unit.

ANNEXURE VI

SALIENT FEATURES OF RECOMMENDATIONS OF THE STUDY ON “ASSESSMENT OF COMPONENT-WISE AT&C LOSSES” IN RESPECT OF SIX STATES

There are various considerations and corrective measures suggested to reduce the AT&C losses of the Distribution System are as per the following:

- a. LT Loss reduction can be achieved by considering HVDS and upgradation of existing network.
- b. Theft and pilferage of energy of Distribution System can be reduced by introducing insulating conductors, *i.e.* Aerial Bunched conductor and increasing the regular vigilance activities.
- c. Utility should conduct Energy Accounting & Audit to be carried out on regular basis for accurate measurement of the Component-wise AT&C Losses of the Distribution System.
- d. Distribution Franchisee (DF)—High loss circles are to be franchised and DF will act as an intermediary between the Licensee and its consumer.

BEST PRACTICES ON REDUCTION OF DISTRIBUTION LOSSES, INCLUDING
REDUCTION OF COMMERCIAL LOSSES' AS COMPILED BY FOR
SECRETARIAT

Measures initiated by MSEDCL, Maharashtra:

1. In order to ensure 24X7 supply to the consumers, feeder-wise cash flows commensurate with the energy input and mapping of consumers to their respective feeders are essential. Accordingly, mapping of consumers with feeders (approximately 16,000) was carried out by MSEDCL and this subsequently enabled the discom to identify the feeder-wise technical and cash losses and zero in on the target areas for initiating appropriate consumer-centric measures for reduction of such losses.
2. After mapping the consumers and establishing energy input—cash flow link, feeders were segregated into eight categories (A to G3) and a transparent methodology was adopted for carrying out load shedding in the feeder areas with loss levels of 42% and above.
3. This measure generated greater awareness among consumers and the discom attained support of the consumers.
4. In order to keep the entire system transparent, feeder-wise Billing/Metering/Energy Audit information was kept in public domain.
5. This resulted in exponential growth in loadshedding-free feeders from 1064 in January, 2012 to 7290 in July, 2014, thereby taking the loadshedding-free feeders to constitute 85% of the total distribution network.
6. As a next step, large scale automation was done by using latest technological interventions with the objective of reducing human interface.
7. IR/RF/AMR meters, based on the technology developed in-house (manufactured by a host of manufacturers) were brought into use.
8. In order to minimize inconvenience to the consumers for payment of electricity bills, facilities such as acceptance of payment through ATP machines, credit/debit cards, net banking/RTGS, collection centres, mobile kiosks etc. were started.

9. A technology driven system was put in place, whereby the official, upon receipt of an application was mandated to upload the application into the system. All activities connected to providing new connections were to be uploaded on the system thereby keeping the entire transaction transparent and open. This not only helped eliminate corrupt practices, but also gave the Head Quarters an access to the status of pending applications in respect of new connections and reasons for such pendency, thereby facilitating the competent authority to take corrective measures.
10. The consumer complaint redressal mechanism was also improved by establishing a centralized call centre for handling complaints. Any consumer in Maharashtra can dial the call centre and register his/her complaint, which will then be transmitted to an appropriate authority for taking necessary action. Once the corrective action is completed, the call centre would contact the complainant to confirm action on the complaint for closure.

Measures initiated by TPDDL, New Delhi:

1. Energy audit and checking the inaccuracies in metering/billing.
2. Measures taken through metering at DT level, installation of latest circuit breakers/ring main units, revamping substations, revamping network, GIS, new metering technology, establishing AMR architecture and in-house developed software for data analysis.
3. Adoption of consumer centric initiatives, particularly in JJ clusters, by reducing cost of new connection, offering door-step customized service, improving their socio-economic condition, building their capacity to pay thereby building a long-term relationship with them for becoming a disciplined consumer.
4. It was stated that owing to the measure adopted by the discom from July, 2002 till March, 2014, AT&C losses were reduced from 53.1% to 10.5% thereby saving USD 1.8 Billion to the Government; system reliability was substantially increased from 70% to 99.5%, transformer failure rate was reduced from 11% to 0.55% and new connection energization time reduced from 51.8 days to 6 days.
5. The discom has also paid back the USD 100 million loan to the Government.

Measures initiated by PSERC, Punjab:

1. Segregation of Agricultural Feeders
2. Steps through adoption of pillar box meter installations

ANNEXURE VIII

MINUTES OF THE THIRD SITTING OF THE STANDING COMMITTEE ON
ENERGY (2015-16) HELD ON 28TH SEPTEMBER, 2015 IN COMMITTEE
ROOM '62' PARLIAMENT HOUSE, NEW DELHI

The Committee met from 1500 hrs. to 1715 hrs.

PRESENT

Dr. Kirit Somaiya – *Chairperson*

MEMBERS

Lok Sabha

2. Shri M. Chandrakasi
3. Shri Harish Dwivedi
4. Shri Saumitra Khan
5. Shri Deepender Singh Hooda
6. Kunwar Sarvesh Kumar
7. Shri R.P. Marutharajaa
8. Dr. Pritam Gopinath Munde
9. Shri Jagdambika Pal
10. Shri Ravindra Kumar Pandey
11. Shrimati Krishna Raj
12. Shri M.B. Rajesh
13. Shri Vinayak Bhaurao Raut
14. Shri Gutha Sukender Reddy
15. Shri Bhanu Pratap Singh Verma

Rajya Sabha

16. Shri Oscar Fernandes
17. Shri Pyarimohan Mohapatra
18. Shri Javed Ali Khan
19. Dr. K.P. Ramalingam
20. Shri Ananda Bhaskar Rapolu

SECRETARIAT

1. Shri K. Vijaykrishnan – *Additional Secretary*
2. Shri N.K. Pandey – *Director*
3. Shri Arun K. Kaushik – *Director*

WITNESSES

MINISTRY OF POWER

1. Shri P.K. Pujari – Secretary
2. Shri B.N. Sharma – Additional Secretary
3. Smt. Jyoti Arora – Joint Secretary

CEA/PSUs/AUTONOMOUS BODIES/STATUTORY BODIES

4. Shri Major Singh – Chairperson, CEA
5. Shri M.K. Goel – CMD, PFC
6. Smt. Shubha Sharma – Secretary, CERC
7. Shri S.K. Soonee – CEO, POSOCO

2. At the outset, the Chairperson welcomed the Members of the Committee and the representatives of the Ministry of Power to the sitting of the Committee and apprised them of the agenda and focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. During the discussion, the representatives of the Ministry made a power-point presentation on the subject “Measures to check Commercial Losses” which *inter alia* covered ‘Main factors responsible for AT&C losses, A snapshot of AT&C losses, Policy Interventions for reduction of AT&C losses by the Government, etc. A power-point presentation was also made by the representatives of the Central Electricity Regulatory Commission on the subject ‘Role of Regulators in the Electricity Sector’ which covered topics like the evolution and responsibilities of the Commission. The Committee, however, felt that the content of the presentation were not specific to the subjects and desired that henceforth presentations should be pinpointed to the subject selected.

4. During the discussion, the Secretary, Ministry of Power apprised the Committee that technical losses are basically inherent in the system, and by using better and improved technology, it can be reduced but only to a certain extent. However, Commercial Losses are related to the management part of Discoms and depend on their billing and collection efficiencies. In a best efficient manner in urban areas,

technical losses could be 5% to 6%. Therefore, if AT&C losses are 20%, Commercial Losses could be around 14%. He further added that the Government's plan to reduce AT&C losses of Discoms has not worked in the desired manner. These losses are directly related to the poor financial health of Discoms as their 1% of AT&C losses, if monetized, range from Rs. 250 crore to Rs. 300 crore. It was further stated that the Government have introduced two programmes, viz. IPDS and DDUGAY which aim at reducing AT&C losses. Since Utilities are under the State Government, they cannot be imposed but encouraged to improve by providing incentives.

5. The Committee *inter alia* also deliberated upon the following points with the representatives of the Ministry of Power and CERC:

- (i) Need for total metering of electricity supplied by the Discoms.
- (ii) Role of Feeder separation for reduction of losses.
- (iii) Benefits of Installation of Smart Meters in urban areas by particular consumers.
- (iv) Significance of Feeder Management/Monitoring in reduction of losses.
- (v) Need for tougher law to deal with the theft of electricity.
- (vi) The concept of Energy Audit and the need for its implementation in the country.
- (vii) Need for reduction of AT&C losses in a time bound manner.
- (viii) Measures taken by the CERC during the last ten years for the transformation of the Power Sector.
- (ix) The role and work done by CERC to reduce AT&C losses.
- (x) Problems being faced by CERC—unattractive service conditions of officials of the Commission.

6. The Committee during the discussion desired that the focus should be on Non-billing or Non-metering of electricity which is theft rather than on Non-payment of bills. They also desired that the data related to electricity which is now being compiled should be made available online. The Committee further stressed the need for propagating and implementing the success stories of various Discoms which have been successful in bringing down AT&C losses in a drastic manner.

The Members sought clarifications on various issues relating to the subject and the representatives of the Ministry replied to them.

7. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

ANNEXURE IX

MINUTES OF THE FIFTH SITTING OF THE STANDING COMMITTEE ON
ENERGY (2015-16) HELD ON 26TH OCTOBER, 2015 IN COMMITTEE
ROOM '62' PARLIAMENT HOUSE, NEW DELHI

The Committee met from 1500 hrs. to 1800 hrs.

PRESENT

Dr. Kirit Somaiya – *Chairperson*

MEMBERS

Lok Sabha

2. Shri M. Chandrakasi
3. Shri Saumitra Khan
4. Shri Deepender Singh Hooda
5. Kunwar Sarvesh Kumar
6. Shri R.P. Marutharajaa
7. Shri Ravindra Kumar Pandey
8. Shrimati Krishna Raj
9. Shri M.B. Rajesh
10. Shri Gutha Sukender Reddy
11. Shri Purno Agitok Sangma
12. Shri Bhanu Pratap Singh Verma

Rajya Sabha

13. Shri Oscar Fernandes
14. Shri Pyarimohan Mohapatra
15. Shri S. Muthukaruppan
16. Shri Ananda Bhaskar Rapolu
17. Smt. Viplove Thakur

SECRETARIAT

1. Shri K. Vijaykrishnan – *Additional Secretary*
2. Shri N.K. Pandey – *Director*
3. Shri Arun K. Kaushik – *Director*

WITNESSES

MINISTRY OF POWER

1. Shri P.K. Pujari – Secretary
2. Shri B.N. Sharma – Additional Secretary
3. Smt. Jyoti Arora – Joint Secretary
4. Shri Arun Kumar Verma – Joint Secretary
5. Shri A.K. Singh – Joint Secretary

PUBLIC SECTOR UNDERTAKINGS

6. Shri A.W.K. Langstieh – Chairman, DVC
7. Shri M.K. Goel – CMD, PFC

2. At the outset, the Chairperson welcomed the Members of the Committee and the representatives of the Ministry of Power to the sitting of the Committee and apprised them of the agenda and focus area for the discussion and the provisions of Directions 55(1) and 58 of the Directions by the Speaker.

3. During the discussion, the representatives of the Ministry made a power-point presentation on the subject “Measures to check Commercial Losses” which *inter alia* covered T&D, AT&C and Commercial losses, Status of AT&C losses, Segregating Commercial losses from AT&C losses, Constraints in reduction of AT&C losses, Financial implications of AT&C losses, Comparison of Private and State owned utilities and various interventions to reduce losses.

4. During the discussion, the Secretary, Ministry of Power, apprised the Committee that Commercial Losses are basically a managerial issue; therefore, that can be addressed by managerial interventions as the technology can only identify the problem and its location. He further stated that there is no separate way of measuring commercial losses but can be estimated by deducting standard technical losses from AT&C losses. The Committee was further apprised that ownership of the Discoms does not matter so far as the reduction of commercial or technical losses is concerned but its management does. There are examples of good and bad cases in both the sectors viz. the Government and the Private. The Committee, during the discussion reiterated the need for segregation of Commercial Losses and Technical Losses.

5. The Committee *inter alia* also deliberated upon the following points with the representatives of the Ministry of Power and CERC:

- (i) Comparison of loss reduction performances of Government and Private owned Discoms.

- (ii) Need for study of the Discoms which have successfully brought down losses to the desired levels.
- (iii) Correlation between billing & collection efficiency of Discoms and their AT&C losses.
- (iv) Role of Regulators in reduction of AT&C losses.

6. The Committee, thereafter, took up the second subject 'Role of Power Sector PSUs in ensuring 24x7 Power Supply' with special reference to Damodar Valley Corporation (DVC) for discussion. A power-point presentation was made by the representatives of the Damodar Valley Corporation (DVC) on the subject 'Role of Power Sector PSUs in ensuring 24x7 Power Supply' which *inter alia* covered topics like Installed Capacity and Capacity Addition by DVC, their AT&C losses, Financial and Operational performances and issues being faced by DVC.

7. The Chairman, DVC, expressed gratitude towards the Committee for their concern and support to them during the study visit to Kolkata, as the same has helped to materialise the specific objectives in a very tangible and concrete gain for DVC in just four months. He submitted that recently the Ministry of Power has allocated 1,000 megawatts of power from DVC to the Railways.

8. The Committee, thereafter, *inter alia* deliberated upon the following points with the representatives of the Ministry of Power and DVC:

- (i) Functioning of DVC—preparedness of DVC in the wake of mission to provide 24x7 power supply.
- (ii) Capacity addition programme of DVC—present status and the problems being faced.
- (iii) Reasons responsible for having low PLF of Power Plant of DVC.
- (iv) Financial distress of DVC—its reasons and possible remedies.

The Members sought clarifications on various issues relating to both the subjects and the representatives of the Ministry replied to them.

9. The verbatim proceedings of the sitting of the Committee were kept on record.

The Committee then adjourned.

ANNEXURE X

MINUTES OF THE EIGHTH SITTING OF THE STANDING COMMITTEE ON
ENERGY (2015-16) HELD ON 3RD DECEMBER, 2015 IN COMMITTEE
ROOM 'B', PARLIAMENT HOUSE ANNEXE, NEW DELHI

The Committee met from 1800 hrs. to 1830 hrs.

PRESENT

Dr. Kirit Somaiya – *Chairperson*

MEMBERS

Lok Sabha

2. Shri M. Chandrakasi
3. Shri Harish Dwivedi
4. Shri Bhagat Singh Koshyari
5. Shri Ravindra Kumar Pandey
6. Shrimati Krishna Raj
7. Shri Vinayak Bhaurao Raut
8. Shri Malyadri Sriram
9. Shri Bhanu Pratap Singh Verma

Rajya Sabha

10. Shri Oscar Fernandes
11. Shri Pyarimohan Mohapatra
12. Shri Ananda Bhaskar Rapolu

SECRETARIAT

1. Shri K. Vijaykrishnan – *Additional Secretary*
2. Shri N.K. Pandey – *Director*
3. Smt. L. Nemjalhing Haokip – *Under Secretary*

2. At the outset, the Chairperson welcomed the Members and apprised them of the agenda for the sitting. The Committee then took up for consideration the following draft Reports:—

- (i) Measures to Check Commercial Losses.

- (ii) Action Taken by the Government on the recommendations contained in the 43rd Report (15th Lok Sabha) on 'Development of Hydro Sector'.
- (iii) Action Taken by the Government on the recommendations contained in the 2nd Report (16th Lok Sabha) on Demands for Grants of the Ministry of New and Renewable Energy for the year 2014-15.
- (iv) Action Taken by the Government on the recommendations contained in the 5th Report (16th Lok Sabha) on Demands for Grants of the Ministry of Power for the year 2014-15.

3. After discussing the contents of the Reports in detail, the Committee adopted the aforementioned draft Reports. The draft Report on 'Measures to Check Commercial Losses' was adopted with slight modification. However, the remaining draft Action Taken Reports were adopted without any change. The Committee also authorized the Chairperson to finalize the above-mentioned Reports and present the same to both the Houses of Parliament in the current Session.

4. *** *** *** ***

The Committee then adjourned.