Annual Energy Audit Report

of

Brihanmumbai Electric Supply & Transport Undertaking(BEST) for Period FY: 2020-21

Submitted to:

Bureau of Energy Efficiency, New Delhi

in compliance of the Bureau of Energy Efficiency (Manner and Intervals for Conduct of Energy Audit in electricity distribution companies) Regulations, 2021

Accredited Energy Auditor
Dr. Ravi Deshmukh(AEA-0243)

PPS Energy Solutions

THE POWER OF ENERGY

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Submitted By

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January - 2023

Document Submission

Action	By	Date	Version
Submitted	PPS Energy Solutions	08-02-2023	R0

Designation	Name	Signature
Accredited Energy Auditor	Dr. Ravi Deshmukh (AEA – 0243)	

Acknowledgement

We express our sincere gratitude to the authorities of Brihanmumbai Electricity Supply and Transport Undertaking for entrusting and offering the opportunity of energy performance assignment.

We are thankful to Brihanmumbai Electricity Supply and Transport Undertaking officials for timely guidance and for their positive support in undertaking the task of system mapping and energy efficiency assessment of sampled electrical distribution system. The field studies would not have been completed on time without their interaction and guidance. We admire their cooperation during field studies and providing necessary data for the study.

Table of Contents

List of Tables

List of Figures

Abbreviations

Abbreviations	Explanations
BEST	Brihanmumbai Electric Supply & Transport Undertaking
PPSES	PPS Energy Solutions
BEE	Bureau of Energy Efficiency
RSS	Receiving Substation
DSS	Distribution Sub station

Electrical Terms

- V (Volt) - Unit of voltage.
- kV (kilovolt) - 1,000 volts.
- W (Watt) - Unit of active power.
- kW (kilowatt) - 1,000 watts.
- MW (Megawatt) - 1,000 kW.
- Wh (watt-hour) - Unit of Energy.
- kWh (kilowatt-hour) - 1,000 Wh.
- MWh (Megawatt-hour) - 1,000 kWh.
- MUs (Million Units)-1kWh x 10^6.
- VA (Volt-ampere) - Unit of apparent power.
- kVA (kilovolt-ampere) - 1,000 VA.
- MVA (Megavolt-ampere) - 1,000 kVA.
- VAr (volt-ampere reactive) - Unit of reactive power.
- Load Factor - Ratio of average power demand to maximum power demand Electrical Losses - Difference between energy delivered and energy sent out.
- PF – Power Factor

1 Executive Summary

The executive summary part covers in brief, the introduction of the BEST, about the assignement, study team with methodlogy and overall loss of the BEST. The Annual Energy Audit of the BEST was conducted in the month of Jan 2023 for the FY 2020-21. This report is prepared based on the data provided by the BEST team and the verification done for the data authenticity. Auditors have critically examined the various systems, schemes, devices employed as well as the associated documents at BEST for above 11kV, at 11kV and below 11kV as to ascertain its adequacy and efficacy as per the directives of the BEE and guidelines as per regulation. The gaps in the accounting and the shortcoming in energy accouting are highlited.

1.1 BEST Introduction

The Electric Supply Branch of the Undertaking distributes electricity in the island city of Mumbai from Colaba to Sion in the North-East and up to Mahim in the North-West as a distribution licensee as per the Electricity Act 2003 and also as an Undertaking of MCGM under MMC Act 1888. The electricity distribution system developed by BEST over 100 long years has several salient features for the year 2020-2021 as under,

Table 1 BEST Network Snapshot FY 2020-21

BEST Network Snapshot	
Number of circles	1
Number of divisions	1
Number of sub-divisions	1
Number of feeders	839
Number of DTs	3298
Number of consumers	1044368

Source: Infrastructure sheet, BEE forms FY 2020-21

1.2 About Assignment

Bureau of Energy Efficiency (BEE) through Ministry of Power, Government of India issued regulations namely Bureau of Energy Efficiency (Manner and Intervals for Conduct of Energy Audit in electricity distribution companies) Regulations, 2021 (hereinafter referred as 'BEE EA Regulation 2021'), for Conduct of Annual Energy Audit and Periodic Energy Accounting in DISCOMs.

As per the notification, the work of Energy Audit of BEST was awarded to PPS Energy Solutions Pvt. ltd.

1.3 Study Team

As per the directives of team given by regulation, the teams were formed by BEST and PPSES to conduct the energy accounting and energy audit.

Table 2 :BEST Team

Sr. No	Name	Designation
1	N.M.Herlekar	Assistant General Manager(Electric Supply)
2	Dr.R.D.Patsute	Chief Engineer Customer Care
3	S.P.Sontakke	Divisional Engineer (HVC Dept.)
4	S.M.Virkar	Supdt. Engineer(HVC Dept.)
5	V.M.Shinde	Deputy Engineer, Energy Manager (HVC Dept.)

Table 3 : PPSES Team

Sr. No.	Name	Designation
1	Dr. Ravi Deshmukh	Team Leader. Accredited Energy Auditor (AEA-0243)
2	Mr. Dinesh Baharate	Team member - Electrical Engg. (EA 24237) (Certified Energy Auditor)
3	Mr. Shashikant Puranic	Sector Expert - Electrical Engg.
4	Mr. Prasad Bhosale	Team member- (Certified Energy Manager)
5	Mr. Hemant Kadu	Team Member – Electrical Engg 2

1.4 Methodology

The methodology adopted,

1. Kick of meeting with BEST team to finalize the sample size
2. Survey of the Distribution network
3. Collection of the Primary Data and finalization of the sample size check
4. Site visit and Energy Meter data collection
5. Collection of the Metered Energy Data for the respective voltage level as per the sample size
6. Scrutiny of collected data and Data gaps of the submitted data
7. Loss calculation for the network segment then if required normalization
8. Compilation of the Draft report
9. Presentation on Draft report
10. Final report with incorporation of comments

As per the methodology, after collection of the data, site visit carried out at R.S.Nimakar Marg, Receiving substations in month of January 2023, along with BEST Team and consultant team.

1.5 The overall loss of the BEST for 2020-21 year

The below table shows the overall loss of BEST for FY 2020-21.The billing efficiency has increased which has led to reduction in loss of the BEST.

During the FY 2020-2021, BEST has received total power of 4050.12 MUs at G<>T Interface which includes 4050.12 MUs (G<>T Interface) from TPC(G), Bilateral purchase, Power Exchange, Renewable Power Sources, Standby power support from MSEDCL. Surplus Power of Quantum 30.85 MUs is incremented in the Maharashtra State pool .As per the SLDC Certificate, the Net input Energy of the Best for FY 2020-21 was 3931.42 MU.

Table 4 Overall Loss of BEST

Performance Summary of Electricity Distribution Companies			
1	Period of Information Year of (FY) information including Date and Month (Start & End)	1st Apr, 2020 - 31st March, 2021	
2	**Technical Details**		
(a)	**Energy Input Details**		
(i)	Input Energy Purchase (From Generation Source)	MU	4050.12
(ii)	Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	MU	3931.42
(iii)	Total Energy billed (is the Net energy billed, adjusted for energy traded))	MU	3776.84
(b)	Distribution (D) loss Details	MU	154.58
		%	3.93%
	Collection Efficiency	%	98.09%
(c)	Aggregate Technical & Commercial Loss	%	5.76%

2 Summary of Critical Analysis

2.1 Status of Various Compliance

Sr. No.	Particulars	Status
1	Yearly Proforma for year 2020-21	Submitted to BEE

The following are observation based on the above the submission by BEST

2.5 Salient Features

1. The average restoration time was around 49 minutes in BEST for FY 2020-21. Total 21 tripping messages about Power Transformers /Feeders were received in the last year inspit of the increase in the number of the supply points. The number of supply points increased in the FY 2020-21 by BEST are enclosed below.

a) Requisitions received v/s supply provided:

Year	Requisitions received	Premises inspected	Charges intimated	Supply provided
2020-21	**24379**	**24350**	**24091**	**16961**

Total 24379 requisitions including SIMHA (hutment/slum area) were received during the year 2020-21 out of which around 16961 meters were provided to various consumers. The yearly enchancement in consumer, meters and load is enclosed below.

b) Enhancement in consumers, meters, services and connected load (2018-2021):

Year	No. of Services (excluding st.ltg) (IN THOUSANDS)	No. of Consumers	No. of Meters on installation	Connected load (in MW)
2018-19	75.92	1013.9	1036.6	4163.02
2019-20	76.44	1019.877	1039.9	4276.7
2020-2021	76.69	1025.39	1044.3	4356.8

source: Annual report of BEST FY2020-21

c) Electricity Bill payment Facility:

BEST has provided 56 Cash Collection Centers and 110 Nos. of Cash Counters for receiving payment of Electricity bills from the consumers. Besides this, several facilities have been provided as under which helped to achieve collection efficiency up to 100%.

- Electronic Clearing System (ECS)
- Debit/credit card through HDFC Bank
- Net banking.
- Bill collection centers at Nationalized/other banks.
- 60 centers at various post offices.
- RTGS/NEFT through CITI Bank.
- Through various service providers.
- IDFC Bank – BEST APP.
- ONE 97 Communication Ltd. (Paytm)

d) Consumer Grievances and Redressal:

The Undertaking has constituted Internal Grievances Redressal Cell (IGRC) in each ward of the Customer Care Department as well as in SIMHA, High Value Consumer Department and one centralized Consumer Grievance Redressal Forum (CGRF) as per the relevant MERC Regulation. In 2020-2021, CGRF received 23805 grievances by email and 119 grievances through writing without approaching to IGR Cell. These complaints after scrutiny were forwarded to IGR Cell and accordingly, applicants were advised to approach to IGR Cell of concerned wards. Whereas, 17 grievances were registered with CGR Forum in schedule 'A' format in addition to 4 nos. of carried forward grievances. Out of which, 15 grievances were heard by CGRF and orders were issued in 15 cases pertaining to grievances registered in previous year. 5 nos. of grievances were carried forward for the year 2021-2022.

e) Metering:

The Meters Department is responsible for procurement, testing, stenciling, issuing , crediting and scrapping of energy meters. The other activities such as, repairs and maintenance of various types of measuring and testing instruments carried out by the department.

Policy of the Undertaking of 100% metering for all class of consumers was continued. An action plan is under way to replace the conventional i.e. electro-mechanical meters in a time bound manner in the system according to CEA Regulations dated 17th March 2006. Therefore, procurement & repairing of electromechanical meters has been stopped. The static meters being procured have guarantee period of 5 years. The defective meters are

sent for repairs to the manufactures, if fails in the guarantee period. BEST is also purchasing Net meters for consumers having Roof Top Solar System.

Table 5: Meters issued for installation in 2020-2021

Type of meters (Static)	Quantity
Single-phase	42525
Poly-phase	31783
LVCTO Meters	974
C.T. Bank	515
Total	**75797**

Table 6 : Consumer Meters tested in 2020-2021

Type of meters	Single Phase	Poly Phase
New	30444	28990
Incoming	9081	1758
Lab	5712	4137
OT & Vigilance	425	225
Total	**45662**	**35010**

Testing of C.T. and P.T. operated H.V. Static Meters 8 Nos.

Testing of Net Meters procured & tested by BEST

Type	Nos.
20(100)A-PP	141
LVCTO	87
CTPT	5
10(60)A-SP	8
Total	241

f) High Value Consumers:

High Value Consumer Department (HVC) is established mainly to deal with reading, billing and attending complaints of high value consumers pertaining to Cycle-19, 21, 24 & 35. Last year, 21035 electronic meters were read against 20714 nos. of previous year. Further, 260 nos. of amendment cases were initiated and an amount of Rs.34 crores was recovered against amended bills. 1806 nos. of cases of Nil/Low consumption were received. In all cases, meters were tested/inspected, out of which 2 meters were found defective. During the year 2020-2021, 5 Nos. of HV consumers added in the system.

As per MERC Regulation 2015 for Net Metering for Roof Top Solar PV System, total 337 consumers had installed Net meters and are billed manually under Cycle-35.

g) Optimum Utilisation of the energy in street lights: To achieve energy savings through economical utilization of yard light in Bus Depot, the utilization period during night hours was monitored to achieve 66 % to 33%.

2.2 Critical Auditors comment

1. The operation and maintenance of the BEST are divided into 5 zone.The peak demand for the FY 2020-21 was 723 MW with PF of 99.99. The load factor of the BEST for the month of March was 70.42.
2. The metereing is at T<>D interface point and at the consumer end only. The input energy is metered at the Transmission and Distribution points at TPC-G end. The feeders emanating from RSS to 33/11kV Susbtation are not metered at DSS end. The BEST has to install the meters at the receiving end of it DSS in order to perform energy accouting efficiently. As per the data, 157 number of Power transformer shall be metered with AMR/Smart meters at the input end.
3. The monthly statements of input energy is received from the TPC-G and the same is used as the reference for further calculation and the BEST as not metering at it 33/11kV Susbtation to acertain the input energy.
4. The 11kV feeders at some 33/11kV Substation have meters but they are non-functional. The total of 839 number of feeders of respective capacity shall be metered with Smart meters /AMR meters. The details are enclosed below as per O&M zones.

O&M ZONE	O/G Feeder				33KV I/C Feeder from BEST 110 RSS
	110kV	33kV(CONS.	11kV	6.6kV	33kV
Central North	0	2	151	0	12
North West	0	6	148	0	8
Central South	0	0	176	0	12
South	1	0	159	20	6
NE	0	0	130	8	0
TOTAL	1	8	764	28	38

5. As per the pre-requisites of the energy accouting, the voltage level wise feeder metering has to be made functional on top priority. The same was communicated to the team of the BEST.
6. As it can have been from the below table, the total billed units as per the Category has reduced for FY 2020-21 when compared to FY2019-20 due weak demand. The weak demand is attribute of the covid-19.

Category	Units sold in kWh (Millions)		
	2019-20	2020-21	Rise (%)
Residential	2064.76	1927.09	-7.14
Commercial	2097.19	1600.02	-33.24
Industrial	355.23	295.21	-20.33
St. Lighting	15.98	15.92	-0.18
F.A. Charges	--	--	--
Total	4569.34	3838.24	-19.00

2.3 Management Response

The management responded to the comments raised by the auditors regarding the infrastructure improvement and metering. The below are the achievements mentioned by BEST team.

2.3.1 Achievement in 2020-21 by BEST

- Total 3 Nos. of 33 / 11 –KV, 16 / 20 MVA Power Transformers are commissioned under changeover scheme by removing 3 nos. of 12.5 MVA Power Trasnsformers of Kussara RSS TR1 and Byculla RSS TR1 & TR3. At Nepeansea RSS additional transformer no.4 commissioned and at Parel RSS faulty transformer no.2 was replaced by Voltamp make 16/20 MVA.
- During the year, 10 nos. of 33 KV AIS Panel of ABB make were commissioned at Khetwadi 110 KV RSS for 33 KV Bus Section No.1, 33 kv RMU panel of ABB make were commissioned at Avighna RSS, 2nos. of 33 KV Switchgears were commissioned at Nepeansea RSS & Worli Dairy RSS.
- Total 6 nos. of 11 KV Bus Section installed, 8 nos. of relay panel installed & 7 nos. of Battery Charger installed under additional & replacement of Switchgears, alarm and relay panel and Battery Chargers.
- During the year, earthing work was carried out at different RSS. Total 84 nos. of earth electrodes & allied work like 500sq.mm/1c laying for earthing and neutral of transformer, earthing channel fabrication, new copper strip for earthing (40 x 6), neutral CT re-arrangement, wiring & reinstallation work carried out.
- Various types of cables laid are as under:

Type of cable	Length in km
EHV	10.90
HV	34.396
Distributor	62.166
Service	29.850
Street Lighting	10.36

- During the year, total 37 new DSS commissioned 11 nos. of temporary DSS commissioned, 3 nos. of remodeling of DSS carried out, transformer replacement / higher capacity, additional transformer replaced under faults & transformer replaced ONAN by ANAN total 25 nos.
- Total 168 Nos. of Auxiliary Distribution Pillars (ADP) were installed.
- 15 NOC cases were handled for RSS cases wherein RSS was asked in 5 cases.
- 114 NOC cases were received for clearance of DSS cases including revision of old NOC cases, total 94 NOC cases cleared wherein requirement of DSS in 33 cases and non requirement of DSS in 61 cases were informed to the respective parties.
- 268 Technical Clearances were cleared and forwarded to Customer Care Department.

Year wise progress of cable length and distribution pillars (ADP) in the system					
	Underground Cables (KM)				
Year	**EHV**	**HV**	**LV**	**Other**	**ADP (Nos.)**
2018-19	509	2080	8782	227	8131
2019-20	526	2117	8924	227	8404
2020-21	537	2150	9025	227	8581

Digitization:

All underground EHV, HV & LV cable network data including RSS/DSS & consumer service cables are maintained in digitized plan by using G.Tech 9.3.2 software since 2009 under digitization project. Previously it was maintained manually which requires lot of effort, time consuming work & all data cannot be extracted at instantly.

Including substation Supporting cable network related plan such as site plan, layout plan, mains plan & service cable related information are prepared in AutoCAD software which is a part of digitization project.

This outdated software & useful life completed hardware is going to be replaced with ESRI platform for making it in line with MCGM platform, so that the purpose of 'One MCGM GIS' can be achieved. Upgraded software will make the GIS system scalable to achieve aim of proposed integration with other inter related system. In regards, to provide required GIS 10.8.1 Arc FM 10.8.1D and necessary services like geo-referencing, data integration data up-gradation, training etc, to BEST at the cost of MCGM is underway.

As per GIS software related for up gradation of digitization system, the 2 no. Dell R740 server, server Rack 600x1000, KVM switch with monitor, 50 (out of 80) Lenevo workstations, A0 Scanner already procured in 2019 for up-gradation of digitization project. The ESRI Arc GIS software will be provided by MCGM under 'One MCGM GIS'.

Development of infrastructure and quantum of work done:

Types of Jobs	2020-21
Power Transformer commissioned (New RSS)	0
Power transformers replacement under fault / additional in existing RSS.	2
33 KV sw/grs commissioned (New RSS)	0
Installation of 36 KV GIS	0
33 KV sw/grs replaced/added	8
11 KV bus sections commissioned in RSS	0
11KV bus sections replaced in RSS	6
H.V. capacitor banks commissioned	0
11 KV DSS Commissioned (including temp DSS)	48
11 KV DSS dismantled	0
11 KV DSS remodeled (including shifting DSS)	3
11 KV DSS wherein transformers replaced/upgraded/added	25
Distribution pillars installed	168
DSS where OCB replaced by VCB/SF6-RMU	9

2.3.2 Projects to be carried out for system improvement (FY 2021-22)

2.3.2.1 Automated Street Lighting Management System (ASMS):

As instructed by Hon. GM fresh Tender with revised specification is invited by M.M. Department and the ASMS project was awarded to M/s. OHM Energy Management Sys Pvt. Ltd. Chennai for supply, installation, testing and commissioning of ASMS Project for 462 SLPs alongwith comprehensive maintenance on chargeable basis for the period of 7 years after successful completion of the guarantee period.

Types of street light lamps, connected load and units consumed (2014-2021):

Types of street light lamps								Connected load		Units consumed	
Year	MV	SV	CFL	Halogen	Metal halide	LED	Total	Connected load in KW	Load per lamp in KW	Units per lamp	Units (in millions)
2019-20	0	1668	0	0	966	38789	41423	5060	--	--	16
2020-21	0	605	0	0	128	41222	41955	4950	--	--	16

To achieve energy savings through economical utilization of yard light in Bus Depot, the utilization period during night hours was monitored to achieve 66 % to 33% energy savings by operating yard lights manually after carrying out alternation in the wiring of the installations in all Bus Depots. This has ultimately achieved saving of electricity bills every year.

Electrical Works Department has been decided to all 150 W / 250 W HPSV / HPMV Lanterns provided for shade /compound lighting / yard lighting in various depots with 105 W (Max) LED Lanterns is in progress. During the year 1500 nos. lanterns were replaced at various locations. The released lamps / chokes would be utilized for R & M works.

	Quantity	wattage	Total Wattage
Initial kW	1500	150	225000
kW after replacing lamp 105 kW	1500	105	157500
Total kW saved			67500

2.3.2.2 Action Plan and Detailed Project Report(DPRs) for loss reduction works and prepaid smart metering works of BEST under RDSS scheme

a) Result Evaluation Matrix for BEST with prequalifying Criteria :

Result Evaluation Framework for BEST (Maharashtra) **Annexure A**

S No.	Result Parameter	Units	Maximum Marks	Base Year and Baseline values (FY2021)	Targets			
					FY2022	FY2023	FY2024	FY2025
A	**Financial Stability (60% weightage; 65% in 1st year)**							
1	ACS-ARR Gap – Cash basis	Rs./ kWh	30	0.94	0.30	0.20	0.10	0.00
	ACS-ARR Gap – Subsidy received basis			0.705	0.15	0.15	0.09	0.00
2	AT&C loss	%	30	8.18	8.00	7.80	7.60	7.50
3	Outstanding/ Overdue Government Dues	Rs. Crore	15	41.43	30	20	10	0
4	Progress in putting Govt. Offices on prepaid meters (Total: 7634 Nos.)	%	15	0%	0%	5%	100%	100%
5	No. of creditor days (including payment to Gencos for supply of power)	Days Payable	5	9.5	Less than 45 days			
6	No. of debtor days	Days Receivable	5	53.5	Less than 45 days			
			100					
B	**Outcomes of Infra works (20% weightage)**							
1	Hours of supply (Urban)	Avg. Hours/ Day	20	23:53	23:54	23:55	23:56	23:57
2	%age of Feeder Level Energy accounting being published - BEE	%	20	0	0%	100%	100%	100%
3	%age of DT Level Energy accounting being published	%	20	0	0%	100%	100%	100%
4	Reliability of power supply - SAIFI (System Average Interruption Frequency Index)	Nos/ Year	20	2.63	2.50	2.25	2.0	1.50
5	Data availability in the National Feeder Monitoring System / NPP	%	20	0	0%	100%	100%	100%
			100					
C	**Infrastructure Works (10% weightage)**							
	Metering							
1	Consumer Metering [Target : 10,44,000]	%	20	0%	0%	25%	99%	100%

2	DT Metering [Target : 3356]	%	20	0	0%	100%	100%	100%
3	Feeder Metering [Target : 1239]	%	20	0	0%	100%	100%	100%
4	% of Consumers with Prepaid Smart Meters (other than Govt. Dept.)	%	15	-	-	15%	55%	100%
5	Augmentation of substations (add/ replace of DT's) – (Target : 666 Nos)	Nos	15	-	-	35	400	666
6	Replacement of weak/Old UG cables (33, 11KV & 22KV) to improve the quality of supply (Target : 373 Km)	Kms	10	-	-	35	180	373
			100					
D	**Policy and Structural Reforms (10% weightage)**							
1	SCADA	No. of Towns/ %	25	-	0	0%	100%	100%
3	ERP Implementation & Billing Module (Target: 6 Modules)	Yes/ No	25	0	0	0	3	6
4	Training of Discom Officials	Mandays	20	0	0	800	800	800
5	DT Failure rate	%	15	0.54	0.54	0.50	0.45	0.45
6	Digital Payments : as a % of total revenue collected	%	15	64%	65%	67%	70%	75%
			100					

b) DPR for Prepaid Smart metering works with total Project Cost of Rs. 659.17 Cr. With Government Budgetary Support (GBS) of Rs. 146.69 Cr. Including incentive for phase-I.

Smart Metering DPR (BEST Maharashtra)		
Sl. No.	Major Component	Estimated cost in Rs. Crores
1	Consumer Metering	645.53
2	DT Metering	7.82
3	Feeder Metering	5.27
4	Boundary Metering	0.56
Total		659.17
Total GBS excluding incentive for phase-I		98.88
Incentive for Phase-I		47.82
Total GBS including incentive for phase-I		146.69

100% DT metering to be completed by December 2023.

Details are given in Annexure-11.

c) DPR for Infrastructure – Loss reduction works with total project cost of Rs. 972.88 Cr. With GBS of Rs. 583.73 Cr.

Infrastructure works under Loss Reduction(BEST Maharashtra		
SI. No.	Description	Total Cost (in Rs. Crore)
a	ERP/Billing Software and IT/OT Enamblement works	75.98
b	Implementation of SCADA & DMS	143.72
c	Replacement of old Switchgear	116.03
d	Renovation/Augmentation of Infrastructure at Power/Receiving Substations	50.23
e	Renovation/Augmentation of HV and LV lines	313.03
f	Auxillary component cost for Consumer metering	72.53
Total cost of loss Reduction in Crs(a+b+c+d+e+f)		972.88
Total GBS @ 60 %		583.73

d) Project Management Agency (PMA) Charges of Rs. 17.07 Cr. for prepaid smart metering works and Infrastructure – Loss reduction works with GBS of Rs. 10.24 Cr.

Details of PMA Charges (BEST Maharashtra)					
SI. No.	Particulars	Total Project Cost	GBS	PMA charges	GBS for PMA charges
1	Smart Metering Works	659.17	98.88	2.47	1.48
2	Infrastructure Works- Loss Reduction	972.88	583.73	14.59	8.76
	Total	1632.05	682.60	17.07	10.24

*Excluding incentive in case of Smart Metering works of phase-I

** 2.5 % of GBS for Smart Metering (excluding incentive) and 1.5 % of total project cost for Infrastruture works.

*** 60% of PMA Charges.

3 Background

About BEE

The Government of India set up Bureau of Energy Efficiency (BEE). on 1st March 2002 under the provisions of the Energy Conservation Act, 2001. The mission of the Bureau of Energy Efficiency is to assist in developing policies and strategies with a thrust on self-regulation and market principles, within the overall framework of the Energy Conservation Act, 2001 with the primary objective of reducing energy intensity of the Indian economy.

3.1 Role of BEE

Energy Accounting:

Energy Accounting means accounting of all energy inflows at various voltage levels in the distribution periphery of the network, including renewable energy generation and open access consumers, and energy consumption by the end consumers. Energy accounting and a consequent annual energy audit would help to identify areas of high loss and pilferage, and thereafter focus efforts to take corrective action.

Bureau of Energy Efficiency (BEE) through Ministry of Power, Government of India issued regulations namely Bureau of Energy Efficiency (Manner and Intervals for Conduct of Energy Audit in electricity distribution companies) Regulation 2021 under section 3 (hereinafter referred as 'BEE EA Regulation 2021'), for Conduct of Mandatory Annual Energy Audit and Periodic Energy Accounting in DISCOMs. As per the said Regulation 2021 under section 3, all Electricity Distribution Companies are mandated to conduct annual energy audit and periodic energy accounting on quarterly basis. These Regulations for Energy audit in Electricity Distribution Companies provides broad framework for conduct of Annual Energy Audit though and Quarterly Periodic Energy Accounting with necessary Pre-requisites and reporting requirements to be met.

Role of BEE include:

i. Create awareness and disseminate information on energy efficiency and conservation
ii. Arrange and organize training of personnel and specialists in the techniques for efficient use of energy and its conservation
iii. Strengthen consultancy services in the field of energy conservation
iv. Promote research and development
v. Develop testing and certification procedures and promote testing facilities
vi. Formulate and facilitate implementation of pilot projects and demonstration projects
vii. Promote use of energy efficient processes, equipment, devices and systems
viii. Take steps to encourage preferential treatment for use of energy efficient equipment or appliances

ix. Promote innovative financing of energy efficiency projects
x. Give financial assistance to institutions for promoting efficient use of energy and its conservation
xi. Prepare educational curriculum on efficient use of energy and its conservation
xii. Implement international co-operation programmes relating to efficient use of energy and its conservation

3.2 Purpose of audit and accounting Report

Owing to the impact of energy auditing on the entire distribution and retail supply business and absence of an existing framework with dedicated focus on the same, it was imperative to develop a set of comprehensive guidelines that all Distribution utilities across India can follow and adhere to.

3.3 Period of Energy Auditing and Accounting

Bureau of Energy Efficiency (BEE) through Ministry of Power, Government of India issued regulations for Conduct of Mandatory Annual Energy Audit and Periodic Energy Accounting in DISCOMs. As per the regulation, all Electricity Distribution Companies are mandated to conduct annual energy audit and periodic energy accounting on quarterly basis.

Regulations on Manner and Intervals for Conduct of Energy Audit and Accounting in Electricity Distribution Companies has been framed. Energy Accounting means accounting of all energy inflows at various voltage levels in the distribution periphery of the network, including renewable energy generation and open access consumers, and energy consumption by the end consumers. Energy accounting and a consequent annual energy audit would help to identify areas of high loss and pilferage, and thereafter focus efforts to take corrective action.

These Regulations for Energy audit in Electricity Distribution Companies provides broad framework for conduct of Annual Energy Audit though and Quarterly Periodic Energy Accounting with necessary Pre-requisites and reporting requirements to be met.

4 Introduction

4.1 Name and Address of Designated Consumer

The major stake holders of this assignment are BEST and PPS Energy Solutions (PPSES).

Designated Consumer	Brihanmumbai Electric Supply & Transport Undertaking(BEST)
Address	1st Floor Electric House, BEST Marg, Colaba, Mumbai City

4.1.1 Accredited Firm

M/s PPS Energy Solutions Private Limited as have been appointed by BEST to carry out the *Energy Audit of Power Distribution Network of BEST for year 2020-21.*

4.2 Designated Officer of Client

Table 7 : BEST Team

Sr. No	Name	Designation
1	N.M.Herlekar	Assistant General Manager(Electric Supply)
2	Dr.R.D.Patsute	Chief Engineer Customer Care
3	S.P.Sontakke	Divisional Engineer (HVC Dept.)
4	S.M.Virkar	Supdt. Engineer(HVC Dept.)
5	V.M.Shinde	Deputy Engineer, Energy Manager (HVC Dept.)

Table 8 : PPSES Team

Sr. No.	Name	Designation
1	Dr. Ravi Deshmukh	Team Leader. Accredited Energy Auditor (AEA-0243)
2	Mr. Dinesh Baharate	Team member - Electrical Engg. (EA 24237) (Certified Energy Auditor)
3	Mr. Shashikant Puranic	Sector Expert - Electrical Engg.
4	Mr. Prasad Bhosale	Team member- (Certified Energy Manager)
5	Mr. Hemant Kadu	Team Member – Electrical Engg 2

4.3 Summary Profile of DCs

4.3.1 General information of BEST Distribution Network

The Electric Supply Branch of the Undertaking distributes electricity in the island city of Mumbai from Colaba to Sion in the North-East and up to Mahim in the North-West as a distribution licensee as per the Electricity Act 2003 and also as an Undertaking of MCGM under MMC Act 1888. The electricity distribution system developed by BEST over 100 long years has several salient features for the year 2020-2021 as under,

- **Geographical area of distribution:** Around 72 Sq.kms.
- **Residential population:** About 32 lacs.
- **Types of consumers:** Residential, Commercial, Industrial

The brief description of the BEST is enclosed below for the FY 2020-21

- **Geographical area of distribution:** Around 72 Sq.kms.
- **Residential population:** About 32 lacs.
- **Types of consumers:** Residential, Commercial, Industrial
- **Nos. of consumers:** 10,44,368
- **Nos. of Services:** 76,698
- **Connected load:** Total – 4,357 MW, Per consumer- 4.25 KW
- **Maximum Demand (MD) :**736 MVA/723 MW
- **MD:** Maximum demand Per Sq. Km- 10.03 MW and Maximum Demand Per consumer- 0.70 KW
- **System load factor:** 62.05 %
- **System MVAr Actual** - 138.17
- **Distribution Loss:** 3.93%
- **Receiving Sub Stations (RSS):** 64 Nos. (110/33/22 kV),
- BEST Network as upstreams 157 number of Power Transformers with an installed capacity of 3166.7 MVA.The capacitor banks are installed on HV side with 103 no. having total Capacity of 244.17 MVAr.
- **The downstream Network has installed number of Distribution Sub Stations (DSS) of** 2451 Nos. (11kv/415 volts) (source: as per Yearly report FY2020-21)
- Distribution Transformers : Total 3298 nos.
- **LV Capacitors:** Total - 3100 Nos., Capacity – 191.02 MVAr
- **Cable Length (Km):** EHV-537, HV- 2150, LV-9025 and Other-227
- **Cable length per MD(MW) load:** EHV - 0.74 km, HV - 2.98 Km and LV - 12.49 Km
- **Distribution Pillars**: 8581 Nos. (Incl. ADP, ZP, MP)
- **Unit purchased:** 4050.12 MUs
- **Unit sold:** 3776.84 MUs
- **Cost of Energy paid to TATA :** 2317.29 Cr
- **F.A. Paid to TATA's:** - 38.93 Cr ,**Numbers of Street light lamps:** 41955 numbers
- **Assets: -** 2944.48 Cr
- **Numbers of employees:** 6079

Table 9 BEST Network Snapshot FY 2020-21

BEST Network Snapshot	
Number of circles	1
Number of divisions	1
Number of sub-divisions	1
Number of feeders	839
Number of DTs	3298
Number of consumers	1044368

4.3.1.1 Assest of BEST as per Zone are enclosed below.

Number of Feeders Zonewise and Voltage levelwise given in table below

O&M ZONE	I/C FEEDER			O/G FEEDER				BEST RSS I/C FROM BEST 110KV
	110KV	33KV	22KV	110KV	33KV(CONS.	11KV	6.6KV	33KV
CN	0	17	8	0	2	151	0	12
NW	2	27	2	0	6	148	0	8
CS	2	19	0	0	0	176	0	12
S	5	17	2	1	0	159	20	6
NE	0	22	6	0	0	130	8	0
TOTAL	9	102	18	1	8	764	28	38
	129							

Zonewise Details are given below

Summary of Central North Zone :

TOTAL NO. OF RSS = 16

(33/11KV - 8NOS, 33-22KV/11KV -4NOS, 22/11KV- 1NO, 33/415 V - 2NOS, 33KV H.T.ROOM -1NO.)

I/C FEEDER 110KV	0	O/G FEEDER 110KV	0
I/C FEEDER 33KV	17	O/G FEEDER 33KV(OTHER)	4
I/C FEEDER 22KV	8	O/G FEEDER 33KV CONS	2
33KV I/C FEEDER from BEST 110 RSS	12	O/G FEEDER 11KV	151
		O/G FEEDER 6.6KV	0
TOTAL			157
I/C FEEDER	**37**	**O/G FEEDER**	**155**

Summary of North WEST Zone :

TOTAL NO. OF RSS = 15

I/C FEEDER 110KV	2	O/G FEEDER 110KV	0
I/C FEEDER 33KV	27	O/G FEEDER 33KV(OTHER)	13
I/C FEEDER 22KV	2	O/G FEEDER 33KV CONS.	6
33KV I/C FEEDER from BEST 110 RSS	8	O/G FEEDER 11KV	148
		O/G FEEDER 6.6KV	0
I/C FEEDER	**31**	**O/G FEEDER**	**154**

Summary of Central South Zone :

TOTAL NO. OF RSS = 12

I/C FEEDER 110KV	2	O/G FEEDER 110KV	0
I/C FEEDER 33KV	19	O/G FEEDER 33KV(OTHER)	13
I/C FEEDER 22KV	0	O/G FEEDER 11KV	176
33KV I/C FEEDER from BEST 110 RSS	12	O/G FEEDER 6.6KV	0
I/C FEEDER	**21**	**O/G FEEDER**	**189**

Summary of South Zone :

TOTAL NO. OF RSS = 11

I/C FEEDER 110KV	5	O/G FEEDER 110KV	1
I/C FEEDER 33KV	17	O/G FEEDER 33KV(OTHER)	8
I/C FEEDER 22KV	2	O/G FEEDER 11KV	159
33KV I/C FEEDER from BEST 110 RSS	6	O/G FEEDER 6.6KV	20
TOTAL			188
I/C FEEDER	**24**	**O/G FEEDER 110KV**	**188**

Summary of North East Zone :

TOTAL NO. OF RSS = 10

I/C FEEDER 110KV	0	O/G FEEDER 110KV	0
I/C FEEDER 33KV	22	O/G FEEDER 33KV	0
I/C FEEDER 22KV	6	O/G FEEDER 11KV	130
33KV I/C FEEDER from BEST 110 RSS	0	O/G FEEDER 6.6KV	8
I/C FEEDER	**28**	**O/G FEEDER**	**138**

4.3.1.2 Installed Capacity of Network Connected MVA Zone wise.

Zone	TOTAL MVA
NW	750.9
NE	427
CS	712
CN	512.8
S	764
MVA	**3166.7**

POWER TRANSFORMER (NORTH WEST)		TOTAL MVA
16 MVA	9	144
16/20 MVA	19	380
10/10.25 MVA	2	20.5
3.2 MVA	2	6.4
100 MVA	2	200
TOTAL	**34**	**750.9**

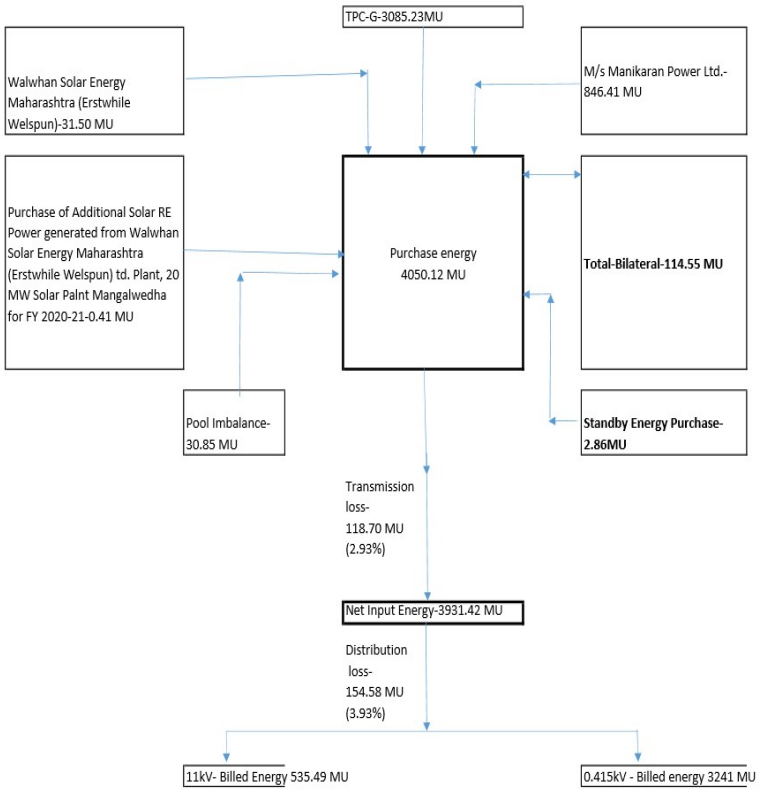
POWEER TRANSFORMER NORTH EAST		TOTAL MVA
16 MVA	17	272
16/20 MVA	4	80
10/12.5 MVA	6	75
TOTAL	**27**	**427**

POWER TRANSFORMER (CENTRAL SOUTH)		TOTAL MVA
16 MVA	22	352
16/20 MVA	8	160
100 MVA	2	200
TOTAL	**32**	**712**

POWER TRANSFORMER (CENTRAL NORTH)		TOTAL MVA
16 MVA	10	160
16/20 MVA	12	240
10/12.5 MVA	8	100
3.2 MVA	4	12.8
100 MVA	0	0
TOTAL	**34**	**512.8**

POWER TRANSFORMER (SOUTH)		TOTAL MVA
12.5	2	23
15 MVA	7	105
16 MVA	11	176
20 MVA	4	80
45 MVA	4	180
100 MVA	2	200
TOTAL	**30**	**764**

4.3.2 Energy Flow Diagram



5 Discussion and Analysis

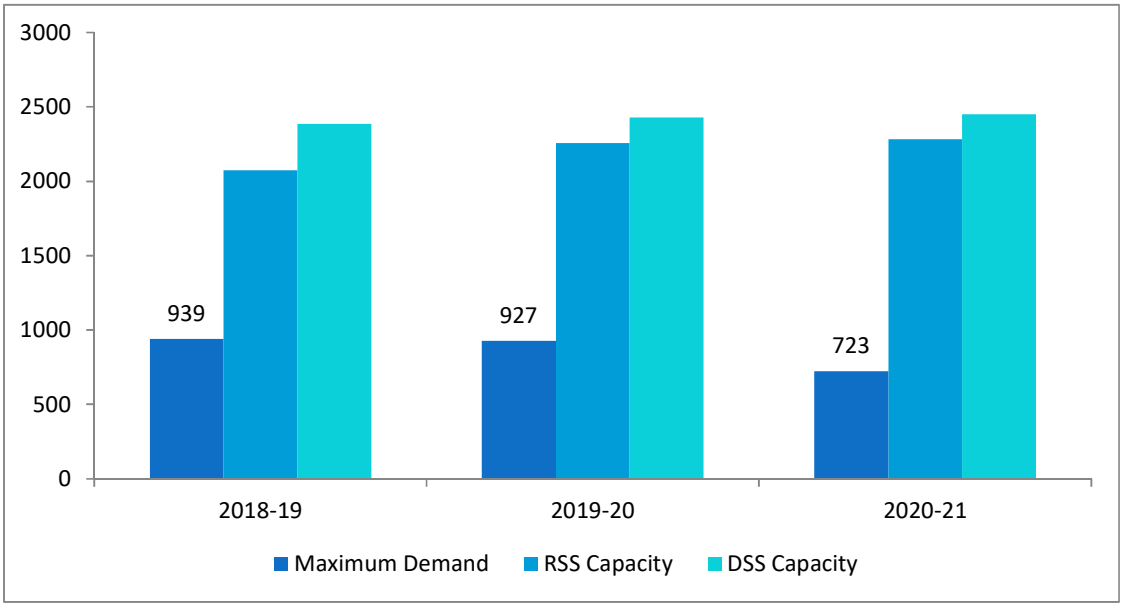
The submitted data by the BEST has been reviewed as per the guide lines of BEE regulation and comments / remarks are mentioned at respective places.

5.1 Trend Analysis of BEST

Table 10 : Maximum Demand, RSS and DSS Capacity

Year	Peak Coincident Maximum Demand		Load Factor %	No. of RSS	Total capacity of Power Trans. in MVA	System peak power factor	No. of DSS	Total capacity Of Dist Trans. in MVA	Distribution pillars
	in MVA	in MW							
2018-19	956	939	58.02	62	2074	0.9822	2385	2611	8131
2019-20	946	927	58.97	64	2255	0.9822	2428	2645	8404
2020-21	736	723	62.05	64	2283	0.9822	2451	2682	8581

Table 11 : Maximum Demand of BEST in MW and Installed Capacity of RSS (MVA) and DSS (MVA)



Maximum Demand has reduced from 927 MW in 2019-20 to 723 MW in 2020-21. Capacity of Receiving Sub station increased from 2255 in 2019-20 to 2283 MVA in 2020-21. Distribution Sub-station capacity is increased from 2645 in 2019-20 to 2682 MVA in 2020-21.

5.1.1 Energy Purchase for last two years

The total energy purchased (G<>T Interface) and average rate of purchase (including F.A. charges) for last two years are given below

Year	Units Purchased at G<>T (in MUs)	Average Rate of purchase at G<>T (R./unit)
2019-2020	4949	4.94
2020-2021	4050	5.73

Due to lower sales in BEST's distribution area arising out of lockdown and restrictions on economic activities throughout the year due to Covid-19 pandemic, the procurement of energy during FY 2020-2021 was comparatively lower. However, due to receipt of bills from MSPC towards of State Imbalance Pool Energy settlement for prior period, the total cost of power procurement for FY 2020-2021 was higher.

5.1.1.1 Category wise Units Sold and Tariff Revenue Billed

Category	**Units sold in kWh (Millions)**			**Tariff Revenue Billed (in Lacs)**		
	2019-20	2020-21	Rise (%)	2019-20	2020-21	Rise (%)
Residential	2064.76	1931.94	-6.43%	80613.64	124117.89	35.05
Commercial	2097.19	1533.78	-26.86%	119616.70	137683.33	13.12
Industrial	355.23	295.21	-16.90%	20389.82	22626.16	9.88
St. Lighting	15.98	15.92	-0.38%	680.76	1099.51	38.08
F.A. Charges	--	--	--	60.20	2872.48	97.91
Total	4569.34	3776.85	-17.34	221361.12	288399.37	23.24

ENERGY SALE

Units Purchased, Units Sold, Revenue Units Purchased, Units Sold, Revenue Earned (2018-2020)

Year	Units Purchased from Tatas (in millions)	Cost of Purchase (In crores)	Units Sold Under Different Categories (in millions)							*Revenue (Rs. in crores) including F.A. charges	Average purchase cost Paise/unit G <> T	Average Selling cost Paise Per unit
			Ind Power	Res.	Comm.	Other Cons.	St. Ltg.	Total	% Loss			
2017-18	4825	2320	320	2000	2198	74.48	25	4544	5.82	3741	465	840
2018-19	4771	2315	335	2051	2124	41.13	20	4572	4.18	3652	485	799
2019-20	4949	2445	355	2064	2097	36.17	16	4569	4.62	3464	494	776

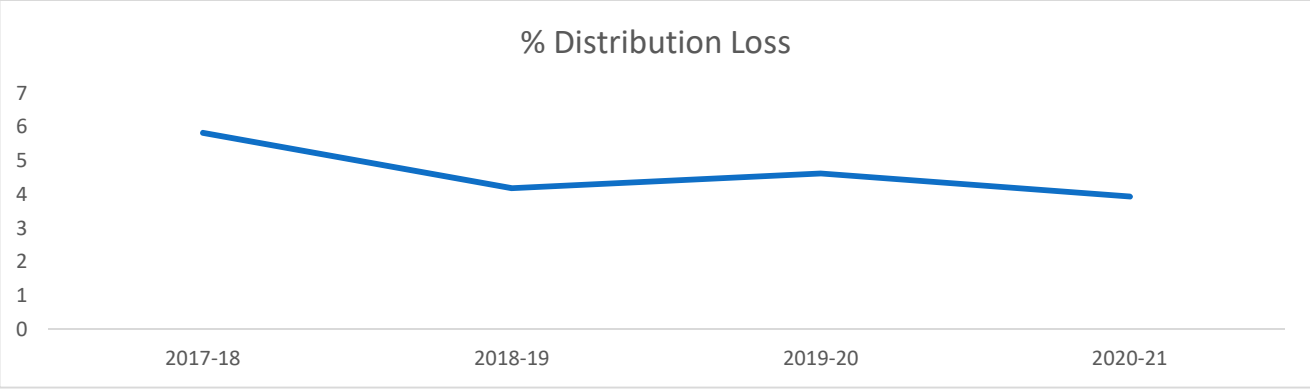


Figure 1: Distribution loss Trend

5.2 Energy Accounts and performance in the Current Year

5.2.1 Summary

Performance Summary of Electricity Distribution Companies			
1	Period of Information Year of (FY) information including Date and Month (Start & End)	1st Apr, 2020 - 31st March, 2021	
2	**Technical Details**		
(a)	**Energy Input Details**		
(i)	Input Energy Purchase (From Generation Source)	MU	4050.12
(ii)	Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	MU	3931.42
(iii)	Total Energy billed (is the Net energy billed, adjusted for energy traded))	MU	3776.84
(b)	Transmission and Distribution (T&D) loss Details	MU	154.58
		%	3.93%
	Collection Efficiency	%	98.09%
(c)	Aggregate Technical & Commercial Loss	%	5.76%

5.2.2 Voltage wise assessed loss of BEST

Voltage wise energy cann't be assessed due to unfunctional meters.

5.2.3 Category wise Assessed loss of BEST

Table 12 :T & D loss category wise

Consumer category	Input energy (MU)	Metered energy	Unmetered/ assessment energy	Total energy	T&D loss (MU)	T&D loss (%)
Residential	3931.42	1931.94	0.00	1931.94	154.58	3.93%
Agricultural		0.00	0.00	0.00		
Commercial/Industrial-LT		1321.68	0.00	1321.68		
Commercial/Industrial-HT		507.31	0.00	507.31		
Others		15.92	0.00	15.92		
TOTAL	**3931.42**	**3776.845**	**0.00**	**3776.84**	154.58	3.93%

Table 13 : Categotywise AT & C loss

Consumer category	Input energy (MU)	Billed Amount in Rs. Crore	Collected Amount in Rs. Crore	Collection Efficiency	AT & C loss (%)
Residential	3931.42	3313.91	3250.69	98.09%	
Agricultural					
Commercial/Industrial-LT					
Commercial/Industrial-HT					
Others					
TOTAL	**3931.42**	**3313.91**	**3250.69**	**98.09%**	**5.76%**

Billed and collected amount not available categorywise.

5.2.4 Division wise Assessed loss of BEST

The division wise energy is not accounted as the Meters are available at Transmission and Distribution Interface point and at the consumer end only. The strategic location meters at 11kV,22kV and 33Kv are not working.

5.2.5 Feeder wise Assessed loss of BEST

The feeder meters are not functional.

5.2.6 DTR wise Assessed loss of BEST

The DTR feeder meters are not installed .

5.3 Unit wise Performance

The unit wise performance cann't be assessed as the feeder metering is non-functional.

5.4 Energy Conservation Schemes

5.4.1 The activities performed under Energy conservation schemes during FY 2020-21.

- Total 3 Nos. of 33 / 11 –KV, 16 / 20 MVA Power Transformers are commissioned under changeover scheme by removing 3 nos. of 12.5 MVA Power Trasnsformers of Kussara RSS TR1 and Byculla RSS TR1 & TR3. At Nepeansea RSS additional transformer no.4 commissioned and at Parel RSS faulty transformer no.2 was replaced by Voltamp make 16/20 MVA.
- During the year, 10 nos. of 33 KV AIS Panel of ABB make were commissioned at Khetwadi 110 KV RSS for 33 KV Bus Section No.1, 33 kv RMU panel of ABB make were commissioned at Avighna RSS, 2nos. of 33 KV Switchgears were commissioned at Nepeansea RSS & Worli Dairy RSS.

- Total 6 nos. of 11 KV Bus Section installed, 8 nos. of relay panel installed & 7 nos. of Battery Charger installed under additional & replacement of Switchgears, alarm and relay panel and Battery Chargers.
  - During the year, earthing work was carried out at different RSS. Total 84 nos. of earth electrodes & allied work like 500sq.mm/1c cable laying for earthing and neutral of transformer, earthing channel fabrication, new copper strip for earthing (40 x 6), neutral CT re-arrangement, wiring & reinstallation work carried out.
- Various types of cables laid are as under:

Type of cable	Length in km
EHV	10.90
HV	34.396
Distributor	62.166
Service	29.850
Street Lighting	10.36

- During the year, total 37 new DSS commissioned 11 nos. of temporary DSS commissioned, 3 nos. of remodeling of DSS carried out, transformer replacement / higher capacity, additional transformer replaced under faults & transformer replaced ONAN by ANAN total 25 nos.
- Total 168 Nos. of Auxiliary Distribution Pillars (ADP) were installed.
- 15 NOC cases were handled for RSS cases wherein RSS was asked in 5 cases.
- 114 NOC cases were received for clearance of DSS cases including revision of old NOC cases, total 94 NOC cases cleared wherein requirement of DSS in 33 cases and non requirement of DSS in 61 cases were informed to the respective parties.
- 268 Technical Clearances were cleared and forwarded to Customer Care Department.

Year wise progress of cable length and distribution pillars (ADP) in the system					
	Underground Cables (KM)				
Year	EHV	HV	LV	Other	ADP(Nos.)
2018-19	509	2080	8782	227	8131
2019-20	526	2117	8924	227	8404
2020-21	537	2150	9025	227	8581

Digitization:

All underground EHV, HV & LV cable network data including RSS/DSS & consumer service cables are maintained in digitized plan by using G.Tech 9.3.2 software since 2009 under digitization project. Previously it was maintained manually which requires lot of effort, time consuming work & all data cannot be extracted at instantly.

Including substation Supporting cable network related plan such as site plan, layout plan, mains plan & service cable related information are prepared in AutoCAD software which is a part of digitization project.

This project consist hardware such as 2 servers, 50 workstation (computers), 2 scanners, 2 plotters & 4 colour printers these are connected in LAN system.

This outdated software & useful life completed hardware is going to be replaced with ESRI platform for making it in line with MCGM platform, so that the purpose of 'One MCGM GIS' can be achieved. Upgraded software will make the GIS system scalable to achieve aim of proposed integration with other inter related system. In regards, to provide required GIS 10.8.1 Arc FM 10.8.1D and necessary services like geo-referencing, data integration data up-gradation, training etc, to BEST at the cost of MCGM is underway.

As per GIS software related for up gradation of digitization system, the 2 no. Dell R740 server, server Rack 600x1000, KVM switch with monitor, 50 (out of 80) Lenevo workstations, A0 Scanner already procured in 2019 for up-gradation of digitization project. The ESRI Arc GIS software will be provided by MCGM under 'One MCGM GIS'.

Development of infrastructure and quantum of work done:

Types of Jobs	2020-21
Power Transformer commissioned (New RSS)	0
Power transformers replacement under fault / additional in existing RSS.	2
33 KV sw/grs commissioned (New RSS)	0
Installation of 36 KV GIS	0
33 KV sw/grs replaced/added	8
11 KV bus sections commissioned in RSS	0
11KV bus sections replaced in RSS	6
H.V. capacitor banks commissioned	0
11 KV DSS Commissioned (including temp DSS)	48
11 KV DSS dismantled	0
11 KV DSS remodeled (including shifting DSS)	3
11 KV DSS wherein transformers replaced/upgraded/added	25
Distribution pillars installed	168
DSS where OCB replaced by VCB/SF6-RMU	9

5.4.2 Projects to be carried out for system improvement (FY 2021-22)

5.4.2.1 Automated Street Lighting Management System (ASMS):

As instructed by Hon. GM fresh Tender with revised specification is invited by M.M. Department and the ASMS project was awarded to M/s. OHM Energy Management Sys Pvt. Ltd. Chennai for supply, installation, testing and commissioning of ASMS Project for 462 SLPs alongwith comprehensive maintenance on chargeable basis for the period of 7 years after successful completion of the guarantee period.

Types of street light lamps, connected load and units consumed (2014-2021):

Types of street light lamps								Connected load		Units consumed	
Year	MV	SV	CFL	Halogen	Metal halide	LED	Total	Connected load in KW	Load per lamp in KW	Units per lamp	Units (in millions)
2019-20	0	1668	0	0	966	38789	41423	5060	--	--	16
2020-21	0	605	0	0	128	41222	41955	4950	--	--	16

To achieve energy savings through economical utilization of yard light in Bus Depot, the utilization period during night hours was monitored to achieve 66 % to 33% energy savings by operating yard lights manually after carrying out alternation in the wiring of the installations in all Bus Depots. This has ultimately achieved saving of electricity bills every year.

Electrical Works Department has been decided to all 150 W / 250 W HPSV / HPMV Lanterns provided for shade /compound lighting / yard lighting in various depots with 105 W (Max) LED Lanterns is in progress. During the year 1500 nos. lanterns were replaced at various locations. The released lamps / chokes would be utilized for R & M works.

	Quantity	wattage	Total Wattage
Initial kW	1500	150	225000
kW after replacing lamp 105 kW	1500	105	157500
Total kW saved			67500

5.4.2.2 Action Plan and Detailed Project Report(DPRs) for loss reduction works and prepaid smart metering works of BEST under RDSS scheme

Energy conservation scheme is to be implemented, DPR Preparation work is in last Stage.

a) Result Evaluation Matrix for BEST with prequalifying Criteria :

Result Evaluation Framework for BEST (Maharashtra) **Annexure A**

S No.	Result Parameter	Units	Maximum Marks	Base Year and Baseline values (FY2021)	Targets			
					FY2022	FY2023	FY2024	FY2025
A	**Financial Stability (60% weightage; 65% in 1st year)**							
1	ACS-ARR Gap – Cash basis	Rs./ kWh	30	0.94	0.30	0.20	0.10	0.00
	ACS-ARR Gap – Subsidy received basis			0.705	0.15	0.15	0.09	0.00
2	AT&C loss	%	30	8.18	8.00	7.80	7.60	7.50
3	Outstanding/ Overdue Government Dues	Rs. Crore	15	41.43	30	20	10	0
4	Progress in putting Govt. Offices on prepaid meters (Total: 7634 Nos.)	%	15	0%	0%	5%	100%	100%
5	No. of creditor days (including payment to Gencos for supply of power)	Days Payable	5	9.5	Less than 45 days			
6	No. of debtor days	Days Receivable	5	53.5	Less than 45 days			
			100					
B	**Outcomes of Infra works (20% weightage)**							
1	Hours of supply (Urban)	Avg. Hours/ Day	20	23:53	23:54	23:55	23:56	23:57
2	%age of Feeder Level Energy accounting being published - BEE	%	20	0	0%	100%	100%	100%
3	%age of DT Level Energy accounting being published	%	20	0	0%	100%	100%	100%
4	Reliability of power supply - SAIFI (System Average Interruption Frequency Index)	Nos/ Year	20	2.63	2.50	2.25	2.0	1.50
5	Data availability in the National Feeder Monitoring System / NPP	%	20	0	0%	100%	100%	100%
			100					
C	**Infrastructure Works (10% weightage)**							
	Metering							
1	Consumer Metering [Target : 10,44,000]	%	20	0%	0%	25%	99%	100%

2	DT Metering [Target : 3356]	%	20	0	0%	100%	100%	100%
3	Feeder Metering [Target : 1239]	%	20	0	0%	100%	100%	100%
4	% of Consumers with Prepaid Smart Meters (other than Govt. Dept.)	%	15	-	-	15%	55%	100%
5	Augmentation of substations (add/ replace of DT's) – (Target : 666 Nos)	Nos	15	-	-	35	400	666
6	Replacement of weak/Old UG cables (33, 11KV & 22KV) to improve the quality of supply (Target : 373 Km)	Kms	10	-	-	35	180	373
			100					
D	**Policy and Structural Reforms (10% weightage)**							
1	SCADA	No. of Towns/ %	25	-	0	0%	100%	100%
3	ERP Implementation & Billing Module (Target: 6 Modules)	Yes/ No	25	0	0	0	3	6
4	Training of Discom Officials	Mandays	20	0	0	800	800	800
5	DT Failure rate	%	15	0.54	0.54	0.50	0.45	0.45
6	Digital Payments : as a % of total revenue collected	%	15	64%	65%	67%	70%	75%
			100					

b) DPR for Prepaid Smart metering works with total Project Cost of Rs. 659.17 Cr. With Government Budgetary Support (GBS) of Rs. 146.69 Cr. Including incentive for phase-I.

Smart Metering DPR (BEST Maharashtra)		
Sl. No.	Major Component	Estimated cost in Rs. Crores
1	Consumer Metering	645.53
2	DT Metering	7.82
3	Feeder Metering	5.27
4	Boundary Metering	0.56
Total		659.17
Total GBS excluding incentive for phase-I		98.88
Incentive for Phase-I		47.82
Total GBS including incentive for phase-I		146.69

100% DT metering to be completed by December 2023.

Details are given in Annexure-11.

c) DPR for Infrastructure – Loss reduction works with total project cost of Rs. 972.88 Cr. With GBS of Rs. 583.73 Cr.

Infrastructure works under Loss Reduction(BEST Maharashtra		
Sl. No.	Description	Total Cost (in Rs. Crore)
a	ERP/Billing Software and IT/OT Enamblement works	75.98
b	Implementation of SCADA & DMS	143.72
c	Replacement of old Switchgear	116.03
d	Renovation/Augmentation of Infrastructure at Power/Receiving Substations	50.23
e	Renovation/Augmentation of HV and LV lines	313.03
f	Auxillary component cost for Consumer metering	72.53
Total cost of loss Reduction in Crs(a+b+c+d+e+f)		972.88
Total GBS @ 60 %		583.73

d) Project Management Agency (PMA) Charges of Rs. 17.07 Cr. for prepaid smart metering works and Infrastructure – Loss reduction works with GBS of Rs. 10.24 Cr.

Details of PMA Charges (BEST Maharashtra)					
Sl. No.	Particulars	Total Project Cost	GBS	PMA charges	GBS for PMA charges
1	Smart Metering Works	659.17	98.88	2.47	1.48
2	Infrastructure Works- Loss Reduction	972.88	583.73	14.59	8.76
	Total	1632.05	682.60	17.07	10.24

*Excluding incentive in case of Smart Metering works of phase-I

** 2.5 % of GBS for Smart Metering (excluding incentive) and 1.5 % of total project cost for Infrastruture works.

*** 60% of PMA Charges.

5.5 Critical Network Analysis

1. The metereing is at T<>D interface point and at the consumer end only. The input energy is metered at the Transmission and Distribution points at TPC-G end. The feeders emanating from RSS to 33/11kV Susbtation are not metered at DSS end. The BEST has to install the meters at the receiving end of it DSS in order to perform energy accouting efficiently. As per the data, 157 number of Power transformer shall be metered with AMR/Smart meters at the input end.
2. The monthly statements of input energy is received from the TPC-G and the same is used as the reference for further calculation and the BEST as not metering at 33/11kV Susbtation to acertain the input energy.
3. The 11kV feeders at some 33/11kV Substation have meters but they are non-functional. The total of 839 number of feeders of respective capacity shall be metered with Smart meters /AMR meters.

5.5.1 Purchased Energy for 2020-21

The purchased energy for FY 2020-21 is show below.

Table 14 Purchased Energy FY 2020-21

DC	Type	Purchased Energy (MU)	Remarks
BEST	DISCOM	4050.12	Total Energy purchased by BEST .

5.5.2 Input Energy

The energy recorded at the Interface point of transmission and BEST Distribution network is **3931.42** MU for FY 2020-21.

All metering points are metered by AMR meter at TPC-G.

These Feeders are under the scope of TPC-G and There feeder ID as per TPC-G.

- The operation and maintenance of the BEST are divided into 5 zone.The peak demand for the FY 2020-21 was 723 MW with PF of 99.99. The load factor of the BEST for the month of March was 70.42.
- For the FY 2020-21, The average purchase rate was 590.10 pasie/Unit and the sales generated income of 2792.74 Cr.

5.5.3 Billed energy 2020-21

Table 15 Billed energy FY 2020-21

Sr. No	Billed Energy (MU)	Data Source
1	3776.84	As per the submitted data by the BEST team

Out of 3931.42 MU, 3776.84 MU energy is metered.

Average rate of unit sold was 727.58 piasse per unit.The revenue Surplus per Unit Purchase was 121.07 paisa /unit.Electricity Duty Paid to Govt. of Maharashtra: 444.76 Cr The distribution loss for the FY 2020-21 of BEST are only 3.93% with AT&C loss of 5.76%.

5.5.4 Energy Distribution Verification

The consumer billed energy as per the voltage when analysed, it was found that,

Voltage Level	Consumer	Consumption(MU)
0.415 kV	1044171	3241
11 kV	197	535.49
Grand Total	**1044368**	**3776.49**

There are no open access consumers in the network of the BEST Discom.

5.5.5 Verification of Yearly Reports

5.5.5.1 Yearly energy consumption data of the consumers

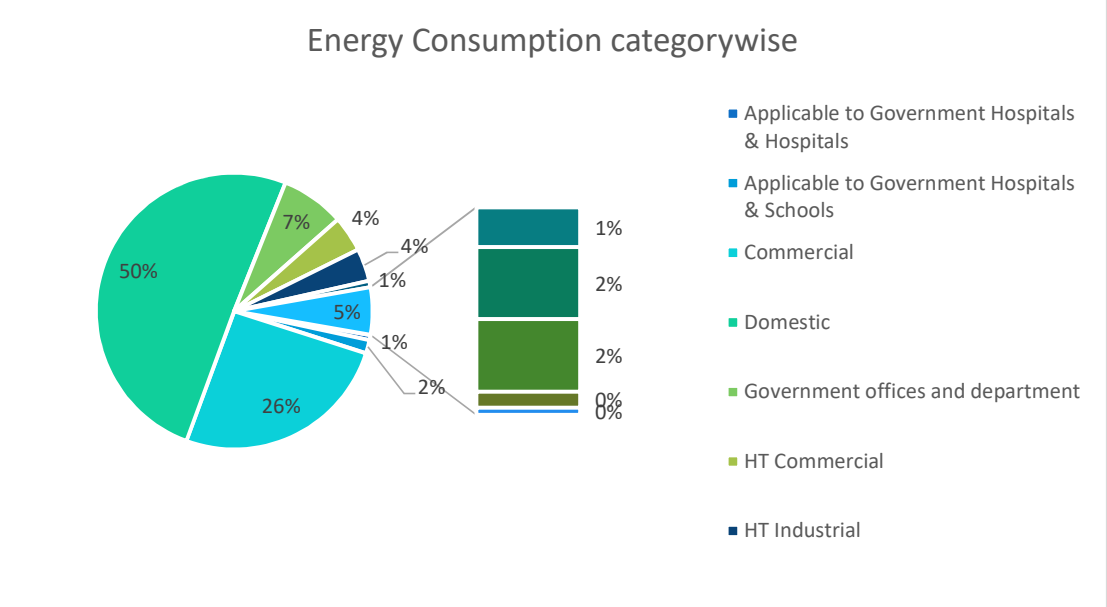


Figure 2 Energy Consumption Consumer Category wise

5.5.5.2 Power Purchase Details of BEST

Sr.No.	Particulars	FY 2020-21 Actuals (Apr-2020 to Mar-2021)		
		Quantum (MU)	Total Cost (Rs.Crore)	Avg. Rate Rs./kWh
	Long term / Medium term Sources			
1	TPC-G	**3,085.23**	**1,205.64**	**3.91**
	TPC-G Past Period		**68.92**	
2	Walwhan Solar Energy Maharashtra (Erstwhile Welspun)	**31.50**	**26.96**	**8.56**
2A	Purchase of Additional Solar RE Power generated from Walwhan Solar Energy Maharashtra (Erstwhile Welspun) td. Plant, 20 MW Solar Palnt Mangalwedha for FY 2020-21	**0.41**		
3	M/s Manikaran Power Ltd.	**846.41**	**330.92**	**3.91**
	Short term Sources			
4	Bilateral Power Purchase			
4.1	Trader	-	-	-
4.2	IEX (Purchase)	*133.99*	*49.01*	***3.66***
4.3	IEX (Sale)	*(19.43)*	*(5.67)*	***2.92***
4.4	STOA Application processing Fee of MSLDC	-	*0.01*	
	Total-Bilateral	**114.55**	**43.35**	**3.78**
5	Short Term Non-Solar Purchase	-	-	
6	**REC Procurement**			
6.1	REC Procurement-Solar	-	-	
6.2	REC Procurement-Non-Solar	-	-	
	Total-REC Procurement	-	-	
7	**Standby Energy Purchase**	**2.86**	-	
8	**Pool Imbalance**	**(30.85)**	-	
9	Stand-by Charges		**100.28**	
10	Transmission Charges		**258.48**	
11	MSLDC Charges		**1.29**	

Sr.No.	Particulars	FY 2020-21		
		Actuals (Apr-2020 to Mar-2021)		
		Quantum (MU)	Total Cost (Rs.Crore)	Avg. Rate Rs./kWh
12	Bilateral Rebate		-	
13	RPS Rebate		**(0.84)**	
14	Rebat 1% Trans. Ch.Excluding TDS Amt.		**(2.58)**	
15	Rebat 1% Monthly SLDC. Ch. Amt.		**(0.01)**	
16	DPC & Intrest, (1315)			
	Sub Total_FY 2020-21	**4,050.12**	**2,032.41**	**5.02**
	Prior Period Payments			
17	**Payment for stand-by energy purchase in FY 2016-17 & FY 2017-18**		**1.27**	
18	**Prior period payments for pool imbalances of FY 2017-18 & FY 2018-19**		**256.54**	
18.1	MSLDC pool imbalnce cost DSM/WRPC PAYMENT (1307) for FY 2017-18.		*11.27*	
18.2	MSLDC pool imbalnce cost for FY 2018-19 and FY 2019-20. A/C. No. (1307)		*178.50*	
18.3	MS/MSPC/FCRbill//00071 dtd.06.01.2021.Fixed Cost Reconciliation and Carrying Cost bills for FY 208-19. 100/1307		*39.82*	
18.4	MSLDC veriable ch..as per MERC Order 297 of 2018 dtd.03.10.2019 and 90 of 2020 dtd.20.07. 2020 FY 2011-12 to 2017-18		*26.95*	
19	**Prior Period Payment of RE Power**		**0.64**	
19.1	Prior Period (RPS)_Additional Power of March-2020 from M/s.Walwhan		*0.64*	
	Sub Total		**258.45**	
	Total Power Purchase for FY 2020-21	**4,050.12**	**2,290.87**	**5.66**

5.5.6 Distribution Loss calculation

Particulars	Energy (MU)
Input Energy Purchase (From Generation Source)	4050.12
Transmission Loss	118.70
Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	3931.42
Total Energy billed (is the Net energy billed, adjusted for energy traded))	3776.84
Distribution loss Details	154.58
	3.93%

Net Input Energy = Input Energy Purchase – Transmission loss

Billed Energy =Net input Energy- Distribution loss.

5.5.7 AT&C Losses Computation in BEST

Total unit received is computed from the actual meter readings of the interface meter installed at various locations in the system. The units billed are calculated as actual billed to various categories of the consumers.

Determination of Aggregate Technical and Commercial losses (AT&C) involve calculation of Distribution Loss (%) as difference between input energy and units billed.

Where D loss: $(UI–UB)/\ UI\ \%$

UI: Units Input (excluding units traded)

UB: Units Billed (to consumers in its licensed area)

- Billing Efficiency = 1- D Loss
- Collection efficiency as the ratio of amount collected to amount billed.
- AT&C loss as difference between units input and units realized.

AT & C Loss: [1- Billing Efficiency X Collection Efficiency] X 100%

5.5.7.1 Total A T&C Loss of BEST

Table 16 Total AT&C Loss of BEST

Performance Summary of Electricity Distribution Companies			
1	Period of Information Year of (FY) information including Date and Month (Start & End)	1st April 2020 to 31st March 2021	
2	**Technical Details**		
(a)	**Energy Input Details**		
(i)	Input Energy Purchase (From Generation Source)	Million kwh	4050.12
(ii)	Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	Million kwh	3931.42
(iii)	Total Energy billed (is the Net energy billed, adjusted for energy traded))	Million kwh	3776.84
(b)	Transmission and Distribution (T&D) loss Details	Million kwh	154.58
		%	3.93%
	Collection Efficiency	%	98.09%
(c)	Aggregate Technical & Commercial Loss	%	5.76%

The Total AT&C loss of the BEST is 5.76 % for the year 2020-21.

5.5.8 Operational Performance

Reliability Indices:

The undertaking maintained its trend of high reliability of electric supply in the last year as well. Same is indicated by the statistics of the performance parameters like SAIDI, SAIFI & CAIDI in the following table.

Year	SAIDI in Minutes	SAIFI	CAIDI in Minutes
2018-19	73.97	2.91	25.42
2019-20	71.86	2.88	24.94
2020-21	62.99	2.63	23.92

SAIDI = Total OFF supply time /Total Consumers SAIFI= Affected Consumers/ Total Consumers

MONTH	BEST		
	SAIDI	SAIFI	CAIDI
	in minute		in minute
Apr-20	5.31	0.23	22.76
May-20	4.15	0.19	22.33
Jun-20	4.31	0.20	21.05
Jul-20	6.15	0.24	25.54
Aug-20	7.80	0.29	26.56
Sep-20	7.04	0.28	25.35
Oct-20	7.45	0.28	27.06
Nov-20	2.62	0.12	22.30
Dec-20	3.14	0.13	23.85
Jan-21	4.05	0.18	22.28
Feb-21	4.55	0.22	20.41
Mar-21	6.42	0.27	23.96
YTD	62.99	2.63	23.92

Occasions of supply interruption and restoration time:

During the year 2020-2021, the Undertaking has restored interrupted electric supply within the time stipulated by the commission. Failure of transformer was very low as (18 out of 3298) due to the periodic preventive maintenance and optimum loading.

The average restoration time of the same was around 49 minutes. Total 21 tripping messages about Power Transformers /Feeders were received in the last year.

Supply of	Interruptions		Occasions	Restoration Time (Avg. in min.)
TATA	Under Frequency Tripping of TATAs feeder		1	400 (Grid failure in Oct.2020)
BEST	Failure	Power Transformer	0	0
		Distribution Transformer	18	35
		Switchgear	70	35
		Pillar/LV Board Damages	0	0
	Fault	EHV Cable	80	13
		HV Cable	968	34
		Distributor Cable	2859	131
		Service	3492	138
	Tripping	EHV Feeder & Power Transformer	15	11

Supply of	Interruptions		Occasions	Restoration Time (Avg. in min.)
		Dist. Transformers	738	35
		HV Feeder	405	33
		Fuse Blown	5031	66
		Service Cutout	2807	68

5.5.9 Recommendations

1. As per the pre-requisites of the energy accouting, the voltage level wise feeder metering has to be made functional on top priority
2. 11kV feeder metering shall be carried out on top priority.
3. DTR metering shall be implemented in order to identify the high loss areas /segements
4. The smart metering shall be implemented to the High Value Customer, so that the load management can be carried out.

6 Notes of the EA/EM along with queries and replies to data gaps

6.1 Schedule of the work

Initial kick of meeting was arranged between the BEST official and the PPSES Team on 27th January 2023. In the kick of meeting the various data, PPSES team raised gaps.

BEST officials responded to the data gaps and the plan for the site visit with Accredited Energy Auditor was prepared.

The field visits were conducted on 27th January.The schedule of the visits is as follows. Details along with Photo are enclosed in annexure-

Table 17 Schedule of the Work

Date	Places Visited	Information validated	Remarks
27th January 2023	R. S. Nimkar Marg Substation	Meter installation Transformation Connection Lines connections. Feeder metering status Panel meters used for SCADA and T & D inter phase meters working	33/11 kV Receiving Substation, R S Nimkar Marg, the 11 kV Feeder Metering is found un-functional and the panel meters are working which are used for the SCADA and T & D inter Phase meters are at M/s TPC end.
27th January 2023	Meeting at BEST Office	The data review of the yearly forms and the purchase records validation. Sales records checked with BEST team	BEST Submitted the Energy Audit data which was submitted to BEE FY 2020-21. SLDC statement of BEST Discom and STU data FY 2020-21 is submitted.

6.2 Check list Prepared by EmAEA

List of Documents

Sr. No	Description
1	Energy Purchase Documents- Power Purchase report from all sources
2	Consumers Category wise details
3	Billed energy for different category of the consumer
4	Annual Calculation of transmission Loss
5	Annual EHT Sales Report-
6	Sample 33kV input and billed energy
7	DTR and consumer mapping for the LT loss calculation
8	Average Billing Rate for consumer category
9	Feeder wise injected energy into the network
10	Open access consumers and their consumption details
11	Infrastructure details
12	Approach for Energy Consumption of Disconnected and unmetered consumers
13	Subsidy units billed for unmetered agriculture category and other applicable categories and Rationality check.
14	Annual abstract back billing on meter defects and cases of pilferage detected
15	Field Visit observation

6.3 DATA GAPS RAISED BY AEA

Table 18 Data Gaps

Sr. No	Data Gaps in the Data provided by BEST for Annual Energy Audit as per BEE regulation 6th Oct 2021	Remarks
1	Kindly provide the identification and mapping of all of the electrical network assets;	Division Wise schematic were shown one Complete Map of 33kV Substation is available at BEST. They prepared it for this projects after the data gaps was send to them.
2	Kindly provide the identification and mapping of high tension and low-tension consumers	Schematic maps for 11kV feeder were shown.33Kv Substation wise maps is provided by BEST
3	Kindly provide the details of the energy accounting data - generated from a metering system or till such time the metering system is not in place, by an agreed method of assumption as may be prescribed by the State Commission	Metering is provided and home grown software is used as per tariff category
4	Energy (Electrical) Purchase report for the year 2020-21	Data provided by BEST
5	Open access consumer and their details	Data provided by BEST
6	Peak Demand of the system	Peak demand of BEST is provided and it is 723 MW However, Energy drawl are provided for sample days per season.
7	High loss Network segments	The Division with high loss is considered to be focused area.
8	Energy Conservational Schemes implemented	Data provided by BEST
9	Power Distribution Transformer	Data provided by BEST
10	SAIDI SAIFI Data for 2020-21	Data provided by BEST
11	Maintenance practices - Power Substation , HT lines LT lines ,DTR	Data provided by BEST
12	Average Billing Rate for 2020-2021	Category wise consumer and total billed energy of those consumer is provided by BEST
13	Power Distribution Transformer	Data provided by BEST

7 List of Annexures attached with the Report

Annexure-

Annexure No	Annexure Description
1	Introduction of Verification Firm
2	Minutes of Meeting with the DISCOM team
3	Check List prepared by auditing Firm.
4	Brief Approach, Scope & Methodology for audit
5	Infrastructure Details
6	Electrical Distribution System
7	Power Purchase Details
8	Line Diagram(SLD)
9	Category of service details (With Consumer and Voltage wise)
10	Detailed formats
11	List of documents verified with each parameter
12	Brief Description of Unit
13	List of Parameters Arrived through calculation or Formula with list of documents as source of data

General Information					
1	**Name of the DISCOM**	BEST Undertaking			
2	**i) Year of Establishment**	1905			
	ii) Government/Public/Private	Public Undertaking			
3	**DISCOM's Contact details & Address**				
i	City/Town/Village	Mumbai			
ii	District	Mumbai City			
iii	State	Maharashtra		Pin	400 001
iv	Telephone	022 22799583		Fax	
4	**Registered Office**				
i	Company's Chief Executive Name	N.M.Herlekar			
ii	Designation	Assitant General Manager (Electric Supply)			
iii	Address	1st Floor, Electric House, BEST Marg, Colaba			
iv	City/Town/Village	Mumbai		P.O.	
v	District	Mumbai			
vi	State	Maharashtra		Pin	400 001
vii	Telephone	022 22799510		Fax	
5	**Nodal Officer Details***				
i	Nodal Officer Name (Designated at DISCOM's)	Dr. R.D. Patsute			
ii	Designation	Chief Engineer Customer Care			
iii	Address	3rd Floor, Multi Storyed. Bldg. Annex, BEST Bhawan, BEST Marg, Colaba			
iv	City/Town/Village	Mumbai		P.O.	
v	District	Mumbai			
vi	State	Maharashtra		Pin	400 001
vii	Telephone	022 22799510		Fax	
6	**Energy Manager Details***				
i	Name	V.M.Shinde			
ii	Designation	Deputy Engineer		Whether EA or EM	EM
iii	EA/EM Registration No.	EM1900			
iv	Telephone	9967435376		Fax	
v	Mobile		E-mail ID	dyehv3@gmail.com	
7	**Period of Information**				
	Year of (FY) information including Date and Month (Start & End)	1st April 2020 to 31st March 2021			

Minutes of Meeting

Client	Brihan Mumbai Electric Supply & Transport Undertaking (BEST)
Consultant Company	PPS Energy Solutions Pvt Ltd
Date & Time of Meeting	27 /01/2023
Subject	Annual Energy Accounting Report- FY 2020-21 and FY- 2021-22 of BEST Discom
Place	BEST, HVC Department, Tardeo – MUMBAI
Recorded by	PPS Energy Solutions Pvt Ltd (PPSES)
Project Name	The Bureau of Energy Efficiency (Manner and Intervals for conduct of Energy Audit in Electricity Distribution Companies – BEST of FY 2020-21 and FY 2021-22
Work Order No	CWO NO NC/09/46945/171

Sr. No	Name BEST	Designation
1	S.P. Sontakke	Divisional Engineer, HVC Department (Electrical Supply)
2	S.M. Virkar	Supdt. Engineer, HVC Department (Electrical Supply)
3	P.M. Walavalkar	Dy. Engineer, HVC Department (Electrical Supply)
4	V.M. Shinde –	Dy Engineer, HVC Department (Electrical Supply) (Energy Manager)

Sr. No.	Name(PPSES)	Designation
1	Mr. Prasad Bhosale	Team member- Electrical Engineer Energy Manager

Sr. Nos.	Minutes of Meeting
1	During Meeting the work scope and the action plan was discussed.
2	BEST submitted the Energy Audit data as per the BEE Regulation which was submitted to BEE for FY 2020-21 and FY 2021-22.
3	BEST Receiving Sub-Station, R S Nimkar Marg is visited on 27.1.2023.
4	BEST SCADA Systems discussed at HVC Department.
5	33/11 kV Receiving substation, R S Nimkar Marg, the 11kV Feeder metering is found un-functional and the panel meters are working which are used for the SCADA and T&D inter phase meters are at M/s TPC end.
6	SLDC statement of BEST Discom and STU data for FY2020-21 and FY 2021-22 is submitted by BEST.
7	The data records of Billed energy consumer w.r.t to Voltage level for FY 2020-21 and FY 2021-22 will be submitted on 28.1.2023.
8	RDSS Scheme data will be submitted by the BEST team.
9	Reply of Query of BEE on Quarterly reports for the period July to September 2021 and Oct to Dec 2021 is already submitted by BEST Team to PPS(Energy Auditor)
10	The feeder details along with the connected capacity of the receiving substation is submitted by BEST Discom.
11	HV Line diagram of Apollo RSS is provided by BEST Team.
12	Peak load of the FY 2020-21 and FY 2021-22 along with consumption is provided by BEST Discom.
13	The data gaps are submitted to BEST Discom which are required for the preparation of the Energy Accounting report for FY 2020-21 and FY 2021-22 as per the regulation format

Prasad Bhosale - - PPS Energy Solution Pvt ltd	PBhosale
S.P. Sontakke - Divisional Engineer , HVC Department (Electrical Supply)	
S.M. Virkar Supdt.Engineer – BEST, HVC Department (Electrical Supply)	
P.M. Walavalkar Dy. Engineer – BEST, HVC Department (Electrical Supply)	
V.M. Shinde – Dy Engineer - BEST, HVC Department (Electrical Supply)	Dy Engr 27/1/23

Check list Prepared by EmAEA

Sr. No	Description
1	Energy Purchase Documents- Power Purchase report from all sources
2	Consumers Category wise details
3	Billed energy for different category of the consumer
4	Annual Calculation of transmission Loss
5	Annual EHT Sales Report-
6	Sample 33kV input and billed energy
7	DTR and consumer mapping for the LT loss calculation
8	Average Billing Rate for consumer category
9	Feeder wise injected energy into the network
10	Open access consumers and their consumption details
11	Infrastructure details
12	Approach for Energy Consumption of Disconnected and unmetered consumers
13	Subsidy units billed for unmetered agriculture category and other applicable categories and Rationality check.
14	Annual abstract back billing on meter defects and cases of pilferage detected
15	Field Visit observation

Objective

BEST has engaged PPSES to carry out the Energy Audit in BEST license area FY 2020-21. The objective of this assignment is to carry out the Annual Energy Audit as per the prescribed formats of BEE EA Regulation 2021 under section 3 to conduct Energy Audit in BEST issued by Bureau of Energy Efficiency, Ministry of Power Government of India.

Scope of work

1 To carry out Energy Audit in line with the BEE EA Regulation 2021 under section 3 to Conduct Energy Audit in BEST.

- Preparation of checklist/action plan for Energy Audit.
- Pro-forma of Energy Audit will be shared with selected agency after the issuance of Work Award.
- DISCOM visit should be carried out by all team members of the agency as per the team declaration in technical proposal. BEE EA Regulation 2021 under section 3, proforma (formats) will be used for this audit.
- Collection and Review of the energy related data of last Financial Year (FY 2020-21) in the Pro-forma by visiting the DISCOM physically.
- Verification of existing pattern of energy distribution across periphery of electricity distribution Company
- Collection and verification of energy flow data of electricity distribution company at all applicable voltage level of distribution network Collection of data on energy received and distributed by DISCOM and verify the accuracy of data

2 Collection & analysis the data and prepare the same with report;

I. Input energy details:

a. Collection of input energy from recorded system meter reading

b. All the inputs points of transmission system

c. Details provided by transmission unit

d. Recorded meter reading at all export points (where energy sent outside the State (interstate as well as intrastate) is from the distribution system);

e. System loading and Captures infrastructure details (i.e. no of circle, division, sub-division, feeders, DTs, & Consumers)

II. Parameters for computation of distribution losses:

a) Details of open access, EHT sale, HT sale, LT sale and transmission losses

b) Number of consumer's category wise in each circle

c) Consumers connected load category wise in each circle and division

d) Details of billed and un-billed energy category wise of each circle and division

e) Metered and un-metered details.

f) Division and Circle wise losses of all circles under DISCOM periphery

g) Boundary meter details

h) Energy Cost and Tariff data

i) Source of energy Supply (e.g. electricity from grid or self-generation), including generation from renewables;

j) Energy supplied to Open Access Consumers, which is directly purchased by Open Access Consumers from any supplier other than electricity Distribution Company

III. Monitoring and verifications of input energy and consumption pattern at various voltage levels

IV. Identify the areas of energy leakage, wastage or inefficient use;

V. Identify high loss-making areas/networks, for initiating target based corrective action.

VI. Identify overloaded segments of the network for necessary capacity additions.

VII. Computation of agriculture consumption

VIII. Methodology for loss computation various losses.

IX. Computation of Average Billing Rate (ABR)

a) Total revenue billed category wise.

b) Category wise ABR with tariff subsidy.

c) Category wise ABR without tariff subsidy.

X. Collection Efficiency (Category wise) and computation of AT&C loss.

3 Observe and compile various Energy Conservation (ENCON) options implemented by the DISCOM and prepared report containing details of expenditure made by DC along with saving and payback period.

4 Study the details of loss/gain of BEST, analysis of Average Cost of Supply (ACS) and Average Revenue realized (ARR) gap, details of energy charges/Power purchase cost along with the financial analysis.

- Current System Metering Status at various voltage level of DISCOM
- Status of Functional meters for all consumers, transformers and feeders.
- Status of default meters (non-functional meters) for all consumers, transformers and feeders
- Current status of pre-requisites mentioned in regulations (Please refer energy accounting regulation).

- Copies of relevant authentic and certified documents should support the report. Each document should be sealed and signed by DISCOM authorized representative as well as by agency's AEA.

5 Prepare final report of BEST as per the scope of work and as per the BEE Energy Audit Regulation 2021 under section 3, in a standard format duly indexed, covering profile of the unit and its details of energy related data w.r.t BEST analytical & Statistical details and any other relevant information.

Deliverables

- Preparation of report as per BEE EA Regulation 2021 under section 3
- Verify & submit the duly signed annual energy audit report

Approach

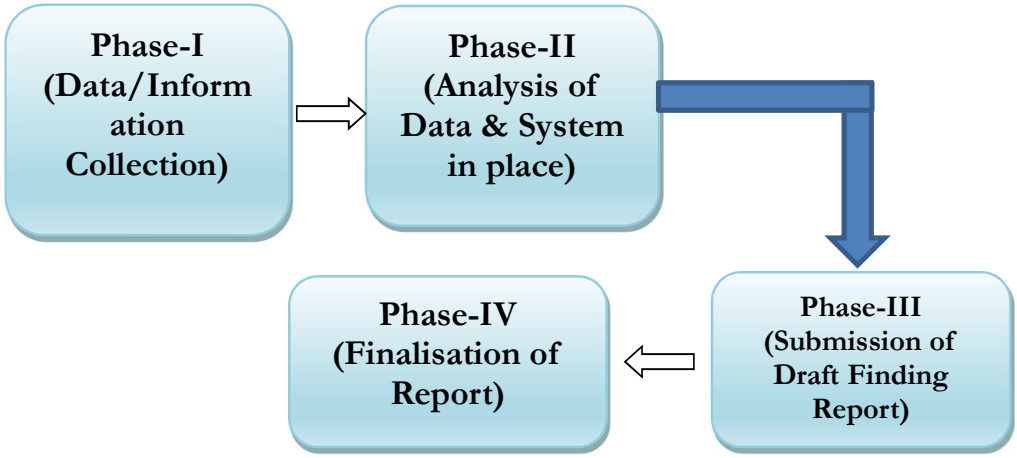
Approach for the assignment, which was scheduled for 1 month, is guided by following points

- **Kick of Meeting:** Offline meeting with BEST personnel's and Energy Audit team will be conducted
  1. Communication to the selected the data points like input energy, out energy, renewable open access etc. were pointed out.
  2. Different measures included to account the energy were discussed
- **Site Visit:**

  Site visits were carried out in order to ascertain the meter numbers, boundary location meters, 11kV meters and LT distribution connection.
- **Data analysis and Data Gaps:**

  Data Scrutiny was carried out and the data gaps were raised. The data validation was performed.
- **Deliverable submission**: The Report submission to the BEE will be executed as specified by BEE regulations.

Methodology



Phase I: Data Collection and Analysis & Approach and methodology document 1 week from work order

(a) Deal with identification of information and data requirement to carry out the Work/Job

(b) Meeting and Discussion with BEST to propose a detailed work plan.

Phase II: Data Analysis

(a) Data mining and procedural analysis of system in place for record of sales data.

(b) Meter reading data collection

The team members of Field Team did meter reading and data collection of field.

(c) Analysis of the Meter reading

Our team member with input from the respective experts analyzed the collected data.

(d) Based on the outcomes of the data analysis, a preliminary fact-finding report was submitted highlighting various issues at various sub-division levels.

Phase III: Detailed Analysis and Submission of Draft Report 1 month from work order

(a) Detailed analysis and preparation a draft report highlighting the validity, basis, consistency and objectivity of the approach adopted.

(b) Analysis of Specific Issues such as:

- Analysis of assessed sales in terms of load factor and specific consumption and its comparison with the sales based on actual meter reading.
- Reasons for exceptional high or low-metered sales as reported.

- Consistency in approach for assessed consumption.
- Methodology of assessing consumption and comparison of assessed sales with actual meter reading wherever meter readings are available.
- Comparison of Actual Category-wise Average Billing Rate (ABR) with ABR approved in Order

(b) Assessment of AT&C losses for HT, LT and Total Sales and comparison vis-à-vis as reported in the MIS of BEST and Recommendations for reducing AT&C Losses by BEST.

Phase IV: Detailed Analysis and Submission of Draft Report

Incorporation of the suggestions received and carry out any further analysis as required and incorporate the same in the Final Report with Recommendations to reduce the AT&C losses of BEST

Report Submissions

The report submitted as per the deliverables of this assignment.

Form-Details of Input Infrastructure					
1	**Parameters**	**Total**	**Covered during in audit**	**Verified by Auditor in Sample Check**	**Remarks (Source of data)**
i	Number of circles	1	1		
ii	Number of divisions	1	1		
iii	Number of sub-divisions	1	1		
iv	Number of feeders	839	839		
v	Number of DTs	3298	3298		
vi	Number of consumers	1044368	1044368		
2	**Parameters**	**66kV and above**	**33kV**	**11/22kV**	**LT**
a. i.	Number of conventional metered consumers	0	0	0	1044171
ii	Number of consumers with 'smart' meters	0	0	0	0
iii	Number of consumers with 'smart prepaid' meters	0	0	0	0
iv	Number of consumers with 'AMR' meters	0	0	197	0
v	Number of consumers with 'non-smart prepaid' meters	0	0	0	0
vi	Number of unmetered consumers	0	0	0	0
vii	**Number of total consumers**		0	197	1044171
b.i.	Number of conventionally metered Distribution Transformers	0	0	0	0
ii	Number of DTs with communicable meters	0	0	0	0
iii	Number of unmetered DTs	0	0	3334	0
iv	**Number of total Transformers**	0	0	3334	0
c.i.	Number of metered feeders	0	0	0	0
ii	Number of feeders with communicable meters	0	0	0	0
iii	Number of unmetered feeders	0			0
iv	**Number of total feeders**		0	0	0
d.	Line length (ct km)		0		
e.	Length of Aerial Bunched Cables		0		
f.	Length of Underground Cables		11705.58		

3	**Voltage level**	**Particulars**	**MU**	**Reference**	**Remarks (Source of data)**
i	66kV and above	Long-Term Conventional	0.00	Includes input energy for franchisees	
		Medium Conventional	0.00		
		Short Term Conventional	0.00		
		Banking	0.00		
		Long-Term Renewable energy	0.00		
		Medium and Short-Term RE	0.00	Includes power from bilateral/ PX/ DEEP	
		Captive, open access input	0.00	Any power wheeled for any purchase other than sale to DISCOM. Does not include input for franchisee.	

		Sale of surplus power	0.00		
		Quantum of inter-state transmission loss	0.00	As confirmed by SLDC, RLDC etc	
		Power procured from inter-state sources	0.00	Based on data from Form 5	
		Power at state transmission boundary	0.00		
ii	33kV	Long-Term Conventional	3,085.23		The power is accounted at InSTS periphery
		Medium Conventional	846.41		
		Short Term Conventional	106.00		
		Banking	0.00		
		Long-Term Renewable energy	31.91		
		Medium and Short-Term RE	0.00		
		Captive, open access input	0.00		
		Sale of surplus power	-19.43		
		Quantum of intra-state transmission loss	118.70		
		Power procured from intra-state sources	4,050.12		
iii		**Input in DISCOM wires network**	3,931.42		
iv	33 kV	Renewable Energy Procurement	0.00		
		Small capacity conventional/ biomass/ hydro plants Procurement	0.00		
		Captive, open access input	0.00		
v	11 kV	Renewable Energy Procurement	0.00		
		Small capacity conventional/ biomass/ hydro plants Procurement	0.00		
		Sales Migration Input	0.00		
vi	LT	Renewable Energy Procurement	0.00		
		Sales Migration Input	0.00		
vii		**Energy Embedded within DISCOM wires network**	0.00		
viii		**Total Energy Available/ Input**	3,931.42		
4	**Voltage level**	**Energy Sales Particulars**	**MU**	**Reference**	
i	LT Level	DISCOM' consumers	3,270	Include sales to consumers in franchisee areas, unmetered consumers	
		Demand from open access, captive	0	Non DISCOM's sales	
		Embedded generation used at LT level	0	Demand from embedded generation at LT level	
		Sale at LT level	0		
		Quantum of LT level losses	0		
		Energy Input at LT level	0		
ii	11 kV Level	DISCOM' consumers	507	Include sales to consumers in franchisee areas, unmetered consumers	
		Demand from open access, captive	0	Non DISCOM's sales	
		Embedded generation at 11 kV level used	0	Demand from embedded generation at 11kV level	
		Sales at 11 kV level	0		
		Quantum of Losses at 11 kV	507.306664		
		Energy input at 11 kV level	-507.306664		

iii	33 kV Level	DISCOM' consumers	0.00	Include sales to consumers in franchisee areas, unmetered consumers	
		Demand from open access, captive	0	Non DISCOM's sales	
		Embedded generation at 33 kV or below level	0	This is DISCOM and OA demand met via energy generated at same voltage level	
		Sales at 33 kV level	0		
		Quantum of Losses at 33 kV	0		
		Energy input at 33kV Level	0		
iv	> 33 kV	DISCOM' consumers	0.00	Include sales to consumers in franchisee areas, unmetered consumers	
		Demand from open access, captive	0	Non DISCOM's sales	
		Cross border sale of energy	0		
		Sale to other DISCOMs	0		
		Banking	0		
		Energy input at > 33kV Level	0		
		Sales at 66kV and above (EHV)	0		
		Total Energy Requirement	4,050.12		
		Total Energy Sales	**3,777**		

Energy Accounting Summary

5	DISCOM	Input (in MU)	Sale (in MU)	Loss (in MU)	Loss %
i	LT	3,931.42	3,776.84	154.58	3.93%
ii	11 Kv				
iii	33 kv				
iv	> 33 kv				

6	Open Access, Captive	Input (in MU)	Sale (in MU)	Loss (in MU)	
i	LT	na	na	na	
ii	11 Kv				
iii	33 kv				
iv	> 33 kv				

Loss Estimation for DISCOM	
T&D loss	273
D loss	155
T&D loss (%)	6.75%
D loss (%)	3.93%

General information of BEST Distribution Network

The Electric Supply Branch of the Undertaking distributes electricity in the island city of Mumbai from Colaba to Sion in the North-East and up to Mahim in the North-West as a distribution licensee as per the Electricity Act 2003 and also as an Undertaking of MCGM under MMC Act 1888. The electricity distribution system developed by BEST over 100 long years has several salient features for the year 2020-2021 as under,

- **Geographical area of distribution:** Around 72 Sq.kms.
- **Residential population:** About 32 lacs.
- **Types of consumers:** Residential, Commercial, Industrial

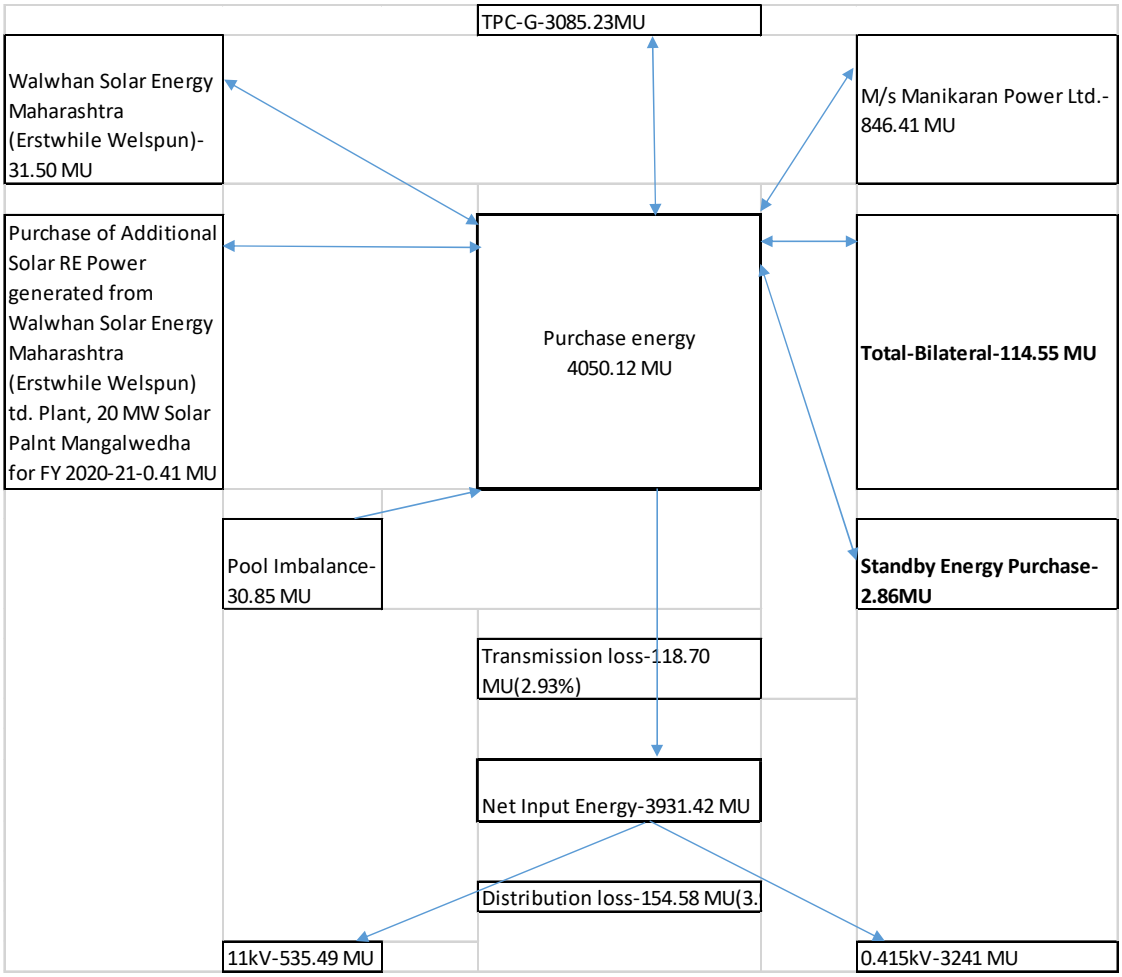
The brief description of the BEST is enclosed below for the FY 2020-21

- **Geographical area of distribution:** Around 72 Sq.kms.
- **Residential population:** About 32 lacs.
- **Types of consumers:** Residential, Commercial, Industrial
- **Nos. of consumers:** 10,44,368
- **Nos. of Services:** 76,698
- **Connected load:** Total – 4,357 MW, Per consumer- 4.25 KW
- **Maximum Demand (MD) :**736 MVA/723 MW
- **MD:** Maximum demand Per Sq. Km- 10.03 MW and Maximum Demand Per consumer- 0.70 KW
- **System load factor:** 62.05 %
- **System MVAr Actual** - 138.17
- **Distribution Loss:** 3.93%
- **Receiving Sub Stations (RSS):** 64 Nos. (110/33/22 kV),
- BEST Network as upstreams 157 number of Power Transformers with an installed capacity of 3166.7 MVA.The capacitor banks are installed on HV side with 103 no. having total Capacity of 244.17 MVAr.
- **The downstream Network has installed number of Distribution Sub Stations (DSS) of** 2451 Nos. (11kv/415 volts) (source: as per Yearly report FY2020-21)
- Distribution Transformers : Total 3298 nos.
- **LV Capacitors:** Total - 3100 Nos., Capacity – 191.02 MVAr
- **Cable Length (Km):** EHV-537, HV- 2150, LV-9025 and Other-227
- **Cable length per MD(MW) load:** EHV - 0.74 km, HV - 2.98 Km and LV - 12.49 Km
- **Distribution Pillars**: 8581 Nos. (Incl. ADP, ZP, MP)
- **Unit purchased:** 4050.12 MUs
- **Unit sold:** 3776.84 MUs
- **Cost of Energy paid to TATA :** 2317.29 Cr
- **F.A. Paid to TATA's:** - 38.93 Cr ,**Numbers of Street light lamps:** 41955 numbers
- **Assets: -** 2944.48 Cr
- **Numbers of employees:** 6079

Table 1 BEST Network Snapshot FY 2020-21

AVVNL Network Snapshot	
Number of circles	1
Number of divisions	1
Number of sub-divisions	1
Number of feeders	839
Number of DTs	3298
Number of consumers	1044368

Energy Flow Diagram



Number of Feeders Zonewise and Voltage levelwise given in table below

O&M ZONE	I/C FEEDER			O/G FEEDER				BEST RSS I/C FROM BEST 110KV
	110KV	33KV	22KV	110KV	33KV(CONS.	11KV	6.6KV	33KV
CN	0	17	8	0	2	151	0	12
NW	2	27	2	0	6	148	0	8
CS	2	19	0	0	0	176	0	12
S	5	17	2	1	0	159	20	6
NE	0	22	6	0	0	130	8	0
TOTAL	9	102	18	1	8	764	28	38
	129							

Zonewise Details are given below

Summary of Central North Zone :

TOTAL NO. OF RSS = 16

(33/11KV - 8NOS, 33-22KV/11KV -4NOS, 22/11KV- 1NO, 33/415 V - 2NOS, 33KV H.T.ROOM - 1NO.)

I/C FEEDER 110KV	0	O/G FEEDER 110KV	0
I/C FEEDER 33KV	17	O/G FEEDER 33KV(OTHER)	4
I/C FEEDER 22KV	8	O/G FEEDER 33KV CONS	2
33KV I/C FEEDER from BEST 110 RSS	12	O/G FEEDER 11KV	151
		O/G FEEDER 6.6KV	0
TOTAL			157
I/C FEEDER	**37**	**O/G FEEDER**	**155**

Summary of North WEST Zone :

TOTAL NO. OF RSS = 15

I/C FEEDER 110KV	2	O/G FEEDER 110KV	0
I/C FEEDER 33KV	27	O/G FEEDER 33KV(OTHER)	13
I/C FEEDER 22KV	2	O/G FEEDER 33KV CONS.	6
33KV I/C FEEDER from BEST 110 RSS	8	O/G FEEDER 11KV	148
		O/G FEEDER 6.6KV	0
TOTAL			
I/C FEEDER	**31**	**O/G FEEDER**	**154**

Summary of Central South Zone :

TOTAL NO. OF RSS = 12

I/C FEEDER 110KV	2	O/G FEEDER 110KV	0
I/C FEEDER 33KV	19	O/G FEEDER 33KV(OTHER)	13
I/C FEEDER 22KV	0	O/G FEEDER 11KV	176
33KV I/C FEEDER from BEST 110 RSS	12	O/G FEEDER 6.6KV	0
I/C FEEDER	**21**	**O/G FEEDER**	**189**

Summary of South Zone :

TOTAL NO. OF RSS = 11

I/C FEEDER 110KV	5	O/G FEEDER 110KV	1
I/C FEEDER 33KV	17	O/G FEEDER 33KV(OTHER)	8
I/C FEEDER 22KV	2	O/G FEEDER 11KV	159
33KV I/C FEEDER from BEST 110 RSS	6	O/G FEEDER 6.6KV	20
TOTAL			188
I/C FEEDER	**24**	**O/G FEEDER 110KV**	**188**

Summary of North East Zone :

TOTAL NO. OF RSS = 10

I/C FEEDER 110KV	0	O/G FEEDER 110KV	0
I/C FEEDER 33KV	22	O/G FEEDER 33KV	0
I/C FEEDER 22KV	6	O/G FEEDER 11KV	130
33KV I/C FEEDER from BEST 110 RSS	0	O/G FEEDER 6.6KV	8
I/C FEEDER	**28**	**O/G FEEDER**	**138**

Installed Capacity of Network

Zone	TOTAL MVA
NW	750.9
NE	427
CS	712
CN	512.8
S	764
MVA	**3166.7**

POWER TRANSFORMER (NORTH WEST)		TOTAL MVA
16 MVA	9	144
16/20 MVA	19	380
10/10.25 MVA	2	20.5
3.2 MVA	2	6.4
100 MVA	2	200
TOTAL	**34**	**750.9**

POWEER TRANSFORMER NORTH EAST		TOTAL MVA
16 MVA	17	272
16/20 MVA	4	80
10/12.5 MVA	6	75
TOTAL	**27**	**427**

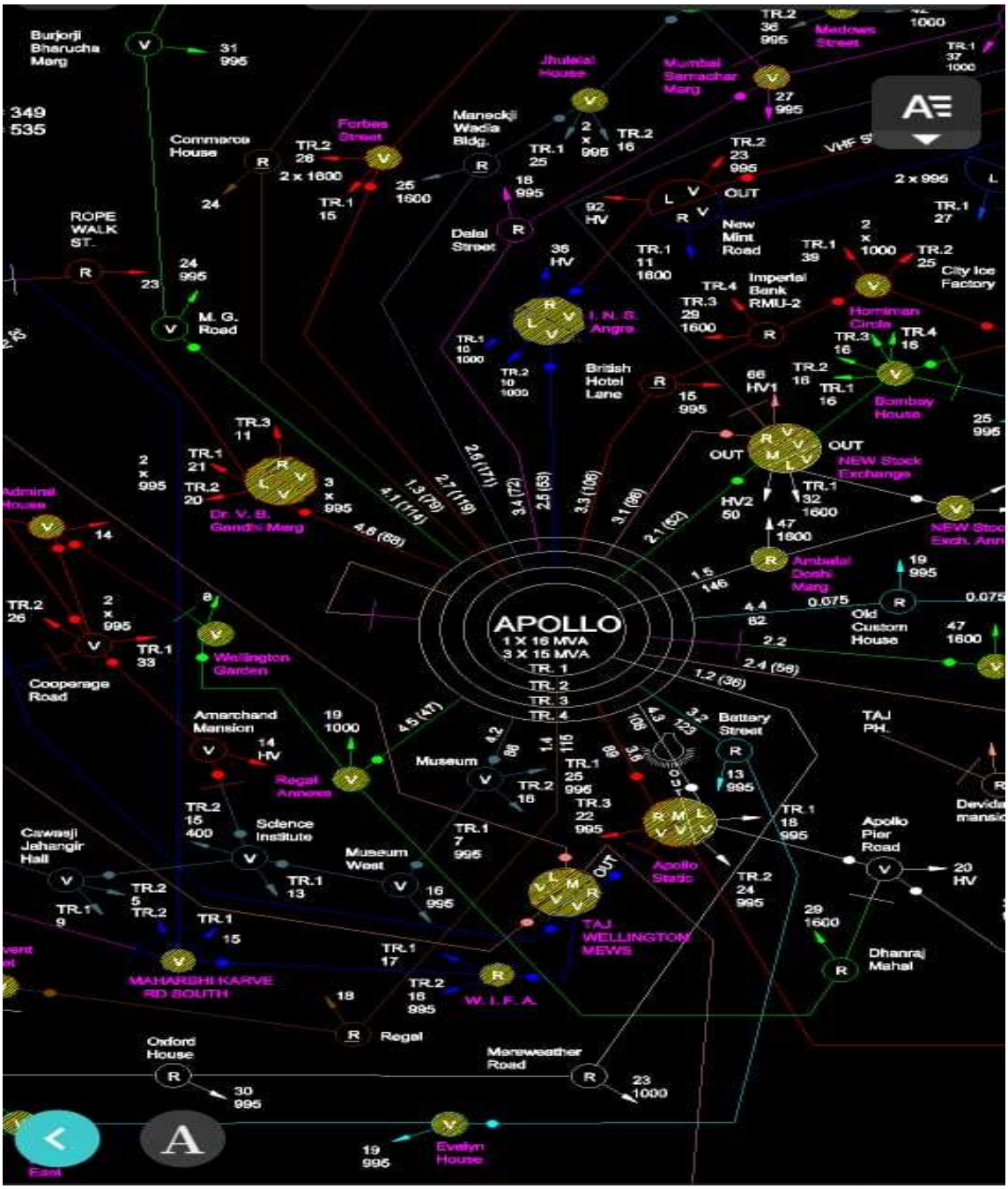
POWER TRANSFORMER (CENTRAL SOUTH)		TOTAL MVA
16 MVA	22	352
16/20 MVA	8	160
100 MVA	2	200
TOTAL	**32**	**712**

POWER TRANSFORMER (CENTRAL NORTH)		TOTAL MVA
16 MVA	10	160
16/20 MVA	12	240
10/12.5 MVA	8	100
3.2 MVA	4	12.8
100 MVA	0	0
TOTAL	**34**	**512.8**

POWER TRANSFORMER (SOUTH)		TOTAL MVA
12.5	2	23
15 MVA	7	105
16 MVA	11	176
20 MVA	4	80
45 MVA	4	180
100 MVA	2	200
TOTAL	**30**	**764**

Sr. No.	Bill Month	Bill Type	Bill No.	Bill Date	Thermal / Hydro	Energy Quantum	Enrgy Charges	FAC Charges	Monthly Fixed/ Capacity Charges			Thermal Incentive	Monthly Hydro Incentive	Total Charges	Avg. Rate
									Fixed Charges (Peak Hours) 20%	Fixed Charges (Off Peak Hours) 80%	Net Fixed / Capcity Charges				
						MU	Rs.Crore	Rs.Crore	Rs.Crore	Rs.Crore	Rs.Crore	Rs.Crore	Rs.Crore	Rs.Crore	Rs./kWh
1	Apr-20	Provisional	96000112803	01-May-2020	Thermal	193.4302190	66.428701139		6.102068550	24.408274200	30.510342750	0.000323458		96.939367347	5.01
					Hydro	65.3801480	9.896747244				6.150207583			16.046954827	2.45
		Supplementary (S1)	94000113015	03-May-2020	Thermal			(9.432923449)			-			(9.432923449)	
		Sub Total (Apr-2020)				**258.8103670**	**76.325448383**	**(9.432923449)**	6.102068550	24.408274200	**36.660550333**	**0.000323458**		**103.553398725**	**4.00**
2	May-20	Provisional	91000115206	01-Jun-2020	Thermal	173.0592668	57.8505331		6.102068550	24.408274200	30.51034275	0.3195519		88.6804278	
					Hydro	81.3868890	12.2733444				6.1502076			18.4235520	
		Supplementary (S1)	97000114315	02-Jun-2020	Thermal			(7.1621620)			-			(7.1621620)	
		Sub Total (May-2020)				**254.4461558**	70.1238775	(7.1621620)	6.1020685	24.4082742	36.6605503	0.3195519		**99.941817765**	**3.93**
3	Jun-20	Provisional	94000116423	01-Jul-2020	Thermal	184.8908550	62.4582023		6.102068550	24.408274200	30.510342750	0.3116397		93.2801847	5.05
					Hydro	70.6553560	10.5398503				6.1502076			16.6900579	2.36
		Supplementary (S1)	97000116015	03-Jul-2020	Thermal			(8.6764645)						(8.6764645)	
		Supplementary (S2)	96000117302	16-Jul-2020	Thermal			(2.3863748)			-			(2.3863748)	
		Sub Total (Jun-2020)				**255.5462110**	72.9980526	(11.0628393)	6.1020685	24.4082742	36.6605503	0.3116397	-	**98.907403339**	**3.87**
4	Jul-20	Provisional	97000117111	01-Aug-2020	Thermal	175.2592016	59.6087322		6.102068520	24.408274170	30.510342689	0.0449607		90.1640356	5.14
					Hydro	55.9846490	7.6313701				6.150207583		0.8148939	14.5964716	2.61
		Supplementary (S1)	95000117639	02-Aug-2020	Thermal			(6.1295516)			-			(6.1295516)	
		Sub Total (Jul-2020)				**231.2438506**	**67.2401023**	**(6.1295516)**	**6.1020685**	**24.4082742**	**36.660550272**	**0.0449607**	**0.8148939**	**98.6309556**	**4.27**
5	Aug-20	Provisional	97000117290	01-Sept-2020	Thermal	170.4891758	58.2095156		6.102068565	24.408274215	30.510342780	(0.0832905)		88.6365678	5.20
					Hydro	69.7887760	9.4596606				6.150207583		0.8148939	16.4247621	2.35
		Supplementary (S1)	97000117078	02-Sept-2020	Thermal			(9.1465556)			-			(9.1465556)	
		Sub Total (Aug-2020)				**240.2779518**	**67.6691761**	**(9.1465556)**	**6.1020686**	**24.4082742**	**36.6605504**	**(0.0832905)**	**0.8148939**	**95.91477436**	**3.99**
6	Sep-20	Provisional	97000119506	01-Oct-2020	Thermal	176.4240208	59.7200017		6.102068565	24.408274215	30.510342780	0.1622890		90.3926334	5.12
					Hydro	60.5931203	6.6153026				6.1502076		0.5902132	13.3557235	2.20
		Supplementary (S1)	95000118916	02-Oct-2020	Thermal			(9.9279640)			-			(9.9279640)	
		Supplementary (S2)	95000120536	14-Oct-2020	Thermal			(0.3367149)						(0.3367149)	
		Sub Total (Sept-2020)				**237.0171411**	**66.3353043**	**(10.2646789)**	**6.1020686**	**24.4082742**	**36.6605504**	**0.1622890**	**0.5902132**	**93.48367795**	**3.94**
7	Oct-20	Provisional	97000120719	01-Nov-2020	Thermal	240.8520722	82.8136933		6.102068565	24.408274215	30.510342780	0.2761339	0.8148939	114.4150639	4.75
					Hydro	65.6332260	8.0454020				6.1502076			14.1956095	2.16
		Supplementary (S1)	96000121133	03-Nov-2020	Thermal			(20.0097894)			-			(20.0097894)	
		Sub Total (Oct-2020)				**306.4852982**	**90.8590953**	**(20.0097894)**	**6.1020686**	**24.4082742**	**36.6605504**	**0.2761339**	**0.8148939**	**108.6008840**	**3.54**
8	Nov-20	Provisional	97000119868	01-Dec-2020	Thermal	245.4094543	85.2047205		6.102068520	24.408274170	30.510342689	0.1128038		115.8278670	
					Hydro	40.1789720	5.2764853				6.1502076		0.5077913	11.9344842	
		Supplementary (S1)	91000121193	02-Dec-2020	Thermal			(16.6082227)			-			(16.6082227)	
		Supplementary (Hydro)	97000120750	03-Dec-2020	Hydro		0.0979827							0.0979827	
		Sub Total (Nov-2020)				**285.5884263**	**90.5791885**	**(16.6082227)**	**6.1020685**	**24.4082742**	**36.6605503**	**0.1128038**	**0.5077913**	**111.2521112**	**3.90**
9	Dec-20	Provisional	97000123458	01-Jan-2020	Thermal	236.9763830	82.7226523		6.102068565	24.408274215	30.510342780	(0.1332781)		113.0997170	4.77
					Hydro	50.1640990	4.7281104				6.1502076		0.5893893	11.4677072	2.29
		Supplementary (S1)	95000123388	02-Jan-2020	Thermal			(16.3598273)			-			(16.3598273)	
		Supplementary (S2)	97000124303	13-Jan-2020	Thermal			(1.0518428)						(1.0518428)	
		Sub Total (Dec-2020)				**287.1404820**	**87.4507627**	**(17.4116700)**	**6.1020686**	**24.4082742**	**36.6605504**	**(0.1332781)**	**0.5893893**	**107.1557542**	**3.73**
10	Jan-21	Provisional	97000124954	01-Feb-2021	Thermal	192.5996546	67.1987257		6.102068565	24.408274215	30.510342780	(0.3904915)		97.3185770	5.05
					Hydro	63.8993500	5.7326520				6.1502076		0.6103580	12.4932177	1.96
		Supplementary (S1)	91000125721	02-Feb-2021	Thermal			(11.0573964)			-			(11.0573964)	
		Sub Total (Jan-2021)				**256.4990046**	**72.9313777**	**(11.0573964)**	**6.1020686**	**24.4082742**	**36.6605504**	**(0.3904915)**	**0.6103580**	**98.7543982**	**3.85**
11	Feb-21	Provisional	97000126387	01-Mar-2021	Thermal	135.4195784	44.6970184		6.102068520	24.408274170	30.510342689	0.0984754		75.3058365	5.56
					Hydro	72.5093690	6.5455961				6.150207583		0.0843667	12.7801704	1.76
		Supplementary (S1)	96000128070	02-Mar-2021	Thermal			(6.1669157)			-			(6.1669157)	
		Sub Total (Feb-2021)				**207.9289474**	**51.2426145**	**(6.1669157)**	**6.1020685**	**24.4082742**	**36.6605503**	**0.0984754**	**0.0843667**	**81.9190911**	**3.94**
12	Mar-21	Provisional	95000131446	01-Apr-2021	Thermal	193.8553763	66.6734001		5.848275737	22.894684923	28.742960660	(0.1089272)		95.3074336	

					Hydro	70.3901070	6.7105398				6.150207583		0.7452570	13.6060044	
		Supplementary (S1)	97000131307	02-Apr-2021	Thermal			(2.7981499)			-			(2.7981499)	
		Supplementary (S2)	94000130574	16-Apr-2021	Thermal			(0.1279396)			-			(0.1279396)	
		Sub Total (Mar-2021)				**264.2454833**	**73.3839399**	**(2.9260896)**	**5.8482757**	**22.8946849**	**34.8931682**	**(0.1089272)**	**0.7452570**	**105.9873484**	**4.01**
Grand Total_TPC-G_FY 2020-21						**3,085.2293191**	**887.1389399**	**(127.3787947)**	72.9710298	291.3857011	**438.1592219**	**0.6101905**	**5.5720572**	**1,204.1016149**	**3.90**


APOLLO
1 X 15 MVA
3 X 15 MVA
TR. 1
TR. 2
TR. 3
TR. 4
Burjorji Bharucha Marg
Commerce House
Forbes Street
Manekji Wadia Bldg.
Jhulelal House
Mumbai Samachar Marg
Meadows Street
ROPE WALK ST.
M. G. Road
Dalal Street
New Mint Road
Imperial Bank RMU-2
Horniman Circle
City Ice Factory
I. N. S. Angre
British Hotel Lane
Bombay House
NEW Stock Exchange
Dr. V. B. Gandhi Marg
Ambalal Doshi Marg
Old Custom House
Wellington Garden
Cooperage Road
Amarchand Mansion
Regal Annexe
Museum
Battery Street
TAJ PH.
Cawasji Jahangir Hall
Science Institute
Museum West
Apollo Static
Apollo Pier Road
TAJ WELLINGTON MEWS
MAHARSHI KARVE RD SOUTH
W. I. F. A.
Regal
Dhanraj Mahal
Oxford House
Mereweather Road
Evelyn House
East

(Details of Consumers)						
Summary of Energy						
Period From April 2020 To March 2021						
S.No	Type of Consumers	Category of Consumers (EHT/HT/LT/Others)	Voltage Level (In Voltage)	No of Consumers	Total Consumption (In MU)	Remarks (Source of data)
1	Domestic	LT	0.415 kV	764324	1903.00	
2	Commercial	LT	0.415 kV	262696	969.00	
3	IP Sets	-	-	-	-	
4	Hor. & Nur. & Coffee/Tea & Rubber (Metered)	-	-	-	-	
5	Hor. & Nur. & Coffee/Tea & Rubber (Flat)	-	-	-	-	
6	Heating and Motive Power	-	-	-	-	
7	Water Supply	LT	0.415 kV	63	7.00	
8	Public Lighting	LT	0.415 kV	497	16.00	
9	HT Water Supply	HT	11 kV	12	40.00	
10	HT Industrial	HT	11 kV	39	144.00	
11	Industrial (Small)	LT	0.415 kV	7921	73.00	
12	Industrial (Medium)	LT	0.415 kV	1102	72.00	
13	HT Commercial	HT	11 kV	95	158.00	
14	Applicable to Government Hospitals & Schools	LT	0.415 kV	648	59.00	
15	Lift Irrigation Schemes/Lift Irrigation Societies	-	-	-	-	
16	HT Res. Apartments Applicable to all areas	HT	11 kV	12	28.49	
17	Mixed Load	-	-	0	0.00	
18	Government offices and department	LT	0.415 kV	6911	140.00	
19	Others-1 (iRailways)	HT	11 kV	3	2.00	
20	Others-2 (EV Charging)	LT	0.415 kV	9	2.00	
21	Others-3 (if any , specify in remarks)	-	-	-	-	
22	Others-4 (if any , specify in remarks)	-	-	-	-	
23	Others-5 (if any , specify in remarks)	-	-	-	-	
24	Applicable to Government Hospitals & Hospitals	HT	11 kV	4	23.00	
25	Government offices and department	HT	11 kV	32	140.00	
			Total	1044368	3776.49	

Performance Summary of Electricity Distribution Companies			
1	Period of Information Year of (FY) information including Date and Month (Start & End)	1st April 2020 to 31st March 2021	
2	**Technical Details**		
(a)	**Energy Input Details**		
(i)	Input Energy Purchase (From Generation Source)	Million kwh	4050.12
(ii)	Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	Million kwh	3931.42
(iii)	Total Energy billed (is the Net energy billed, adjusted for energy traded))	Million kwh	3776.84
(b)	Transmission and Distribution (T&D) loss Details	Million kwh	154.58
		%	3.93%
	Collection Efficiency	%	98.09%
(c)	Aggregate Technical & Commercial Loss	%	5.76%

I/We undertake that the information supplied in this Document and Pro-forma is accurate to the best of my knowledge and if any of the information supplied is found to be incorrect and such information result into loss to the Central Government or State Government or any of the authority under them or any other person affected, I/we undertake to indemnify such loss.

Authorised Signatory and Seal

Signature:-

Name of Energy Manager*:

Name of Authorised Signatory

Registration Number:

Name of the DISCOM:

Full Address:-

Seal

Details of Division Wise Losses (See note below**)

Division Wise Losses

Period From

S.No	Name of circle	Circle code	Name of Division	Consumer profile: Consumer category	No of connection metered (Nos)	No of connection Un-metered (Nos)	Total Number of connections (Nos)	% of number of connections	Connected Load metered (MW)	Connected Load Un-metered (MW)	Total Connected Load (MW)	% of connected load	Energy parameters: Input energy (MU)	Billed energy (MU): Metered energy	Billed energy (MU): Unmetered/ assessment energy	Billed energy (MU): Total energy	% of energy consumption	Losses: T&D loss (MU)	Losses: T&D loss (%)	Commercial Parameter: Billed Amount in Rs. Crore ++	Commercial Parameter: Collected Amount in Rs. Crore ++	Commercial Parameter: Collection Efficiency	AT & C loss (%)
	Mumbai City	-	-	Residential	764336	0	764336	73%	2374.64	0.00	2374.64	55%	3931.42	1931.94	0.00	1931.94	51%	154.58	3.93%	3313.91	3250.69	98.09%	
				Agricultural	0	0	0	0%	0.00	0.00	0.00	0%		0.00	0.00	0.00	0%						
				Commercial/Industrial-LT	279350	0	279350	27%	1568.47	0.00	1568.47	36%		1321.68	0.00	1321.68	35%						
				Commercial/Industrial-HT	185	0	185	0.02%	408.82	0.00	408.82	9%		507.31	0.00	507.31	13%						
				Others	497	0	497	0.05%	5.04	0.00	5.04	0.12%		15.92	0.00	15.92	0.4%						
	At company level				**1044368**	**0**	**1044368**	**100%**	**4356.9687**	**0.00**	**4356.97**	**100%**	**3931.42**	**3776.845**	**0.00**	**3776.84**	**100%**	**154.58**	**3.93%**	**3313.91**	**3250.69**	**98.09%**	**5.76%**

** Note - It shall be mandatory to record the energy supplied separately for each category of consumers which is being provided a separate rate of subsidy in the tariff, by the state government, so that the subsidy due for the electricity distribution company is quarterly calculated by multiplying the energy supplied to each of such ++

Color code	Parameter
	Please enter name of circle
	Please enter circle code
0	Please enter numeric value or 0
	Formula protected

I/We undertake that the information supplied in this Document and Pro-forma is accurate to the best of my knowledge and if any of the information supplied is found to be incorrect and such information result into loss to the Central Government or State Government or any of the authority under them or any other person affected, I/we undertake to indemnify such loss.

Authorised Signatory and Seal

Signature:-
Name of Energy Manager:
Registration Number:

Name of Authorised Signatory:

Name of the DISCOM:
Full Address:-

Seal

Form-Input energy(Details of Input energy & Infrastructure)

A. Summary of energy input & Infrastructure

S.No	Parameters	FY 2020-21	Remarks (Source of data)
A.1	Input Energy purchased (MU)	4050.12	
A.2	Transmission loss (%)	2.93%	
A.3	Transmission loss (MU)	118.70	
A.4	Energy sold outside the periphery(MU)	0	
A.5	Open access sale (MU)	0	
A.6	EHT sale	0	
A.7	Net input energy (received at DISCOM periphery or at distribution point)-(MU)	3931.42	Net Input Energy fig matched
A.8	Is 100% metering available at 66/33 kV (Select yes or no from list)	No	
A.9	Is 100% metering available at 11 kV (Select yes or no from list)	No	
A.10	% of metering available at DT	0%	
A.11	% of metering available at consumer end	100%	
A.12	No of feeders at 66kV voltage level		
A.13	No of feeders at 33kV voltage level		
A.14	No of feeders at 11kV voltage level		
A.15	No of LT feeders level		
A.16	Line length (ckt. km) at 66kV voltage level		
A.17	**Line length (ckt. km) at 33kV voltage level (UG cable)**	536.8486	
A.18	**Line length (ckt. km) at 11kV voltage level (UG cable)**	2148.566	
A.19	**Line length (km) at LT level (UG cable)**	9020.1616	
A.20	Length of Aerial Bunched Cables	0	
A.21	Length of Underground Cables	11705.5762	
A.22	HT/LT ratio	0.297712471	

B. Meter reading of Input energy at injection points

S.No	Zone	Circle	Voltge Level (KVA)	Division (KVA)	Sub-Division (KVA)	Feeder ID	Feeder Name	Feeder Metering Status (Metered/ unmetered/ AMI/AMR)	Status of Meter (Functional/Non-functional)	Metering Date	Feeder Type (Agri/ Industrial/ Mixed)	Status of Communication			Period From				Sales	Remarks (Source of data)
										Date of last actual meter reading/ communication		% data received through automatically if feeder AMR/AMI	Number of hours when meter was unable to communi	Total Number of hours in the period	Meter S.No	CT/PT ratio	Import (MU)	Export (MU)		
B.1			110KV	1	1		BACKBAY_BACKBAY_1								Y0319208	1200/1A	153.59	0.00		Existing Feeder Metering System is discontinued from May 2017 and is not in a working condition as some of the meters installed on intermittent feeders are found defective and some equipment are not functioning. All metering points are metered by AMR meter at TPC-G. These Feeders are under the scope of TPC-G and There feeder ID as per TPC-G
B.2			110KV	1	1		BACKBAY_BACKBAY_2								Y0319213	1200/1A	111.06	0.00		
B.3			110KV	1	1		BACKBAY_BACKBAY_3								Y0319209	600/1A	115.84	0.00		
B.4			110KV	1	1		CARNAC_BACKBAY_1								Y0319217	600/1A	0.25	45.84		
B.5			110KV	1	1		BACKBAY_NARIMAN_POINT_2								Y0319237	300/1A	44.12	0.00		
B.6			33KV	1	1		BACKBAY_COLABA_3								Y0222001	800/1A	27.89	0.00		
B.7			33KV	1	1		BACKBAY_NAVYNAGAR_1								Y0221994	800/1A	43.45	0.00		
B.8			33KV	1	1		BACKBAY_ESPLANADE_4								Y0118345	400/1A	21.69	0.00		
B.9			33KV	1	1		BACKBAY_ WANKHEDE_1								Y0578139	400/1A	12.46	0.00		
B.10			33KV	1	1		APOLLO_2								Y0222040	800/1A	13.24	0.00		
B.11			33KV	1	1		APOLLO_3								Y0319255	400/1A	23.81	0.00		
B.12			33KV	1	1		BALLARD_ESTATE_1								Y0222038	800/1A	17.54	0.00		
B.13			33KV	1	1		BALLARD_ESTATE_3								Y0578092	400/1A	26.22	0.00		
B.14			33KV	1	1		COLABA_2 B/B MASJID 3								Y0319236	800/1A	31.11	0.00		
B.15			33KV	1	1		ESPLANADE_1								Y0221993	400/1A	14.98	0.00		
B.16			33KV	1	1		ESPLANADE_2								Y0222041	800/1A	19.62	0.00		
B.17			33KV	1	1		ESPLANADE_3								Y0578082	400/1A	17.21	0.00		
B.18			33KV	1	1		GIRGAON_1								Y0578095	800/1A	26.52	0.00		
B.19			33KV	1	1		GIRGAUM_2								Y0578081	400/1A	0.00	0.00		
B.20			33KV	1	1		GRANT ROAD_2								Y0578090	400/1A	29.99	0.00		
B.21			33KV	1	1		GT_HOSPITAL_1								Y0578142	400/1A	15.78	0.00		
B.22			33KV	1	1		HUTATMA_CHOWK_1								Y0222042	800/1A	13.59	0.00		
B.23			33KV	1	1		HUTATMA_CHOWK_3								Y0578083	400/1A	18.41	0.00		
B.24			33KV	1	1		JJ_HOSPITAL_2								Y0221992	400/1A	43.02	0.00		
B.25			33KV	1	1		KASARA_1								Y0578166	800/1A	8.94	0.00		
B.26			22KV	1	1		KASARA_2								Y0578104	800/1A	31.36	0.00		
B.27			33KV	1	1		MALBAR_HILL_2								Y0319214	400/1A	38.02	0.00		
B.28			33KV	1	1		MALBAR_HILL_3								Y0578084	400/1A	5.38	0.00		
B.29			33KV	1	1		MARINE_DRIVE_1								Y0221996	400/1A	17.53	0.00		
B.30			33KV	1	1		MASJID_1								Y0578094	800/1A	43.44	0.00		
B.31			33KV	1	1		MASJID_2								Y0578091	400/1A	37.51	0.00		
B.32			22KV	1	1		MAZGAON_DOCK_2								Y0578106	800/1A	33.89	0.00		
B.33			33KV	1	1		MAZGAON SHIPYARD_1								Y0319241	400/1A	6.87	0.00		
B.34			33KV	1	1		MUMBADEVI_1								Y0319253	400/1A	21.85	0.00		

B.35		33KV	1	1		MUMBADEVI_2								Y0222036	800/1A	34.44	0.00	
B.36		33KV	1	1		GT HOSP._2								Y0222035	800/1A	29.76	0.00	
B.37		33KV	1	1		MUMBADEVI_3								Y0578093	400/1A	33.13	0.00	
B.38		22KV	1	1		NAVALDOCK_1								Y0578101	800/1A	11.59	0.00	
B.39		22KV	1	1		NAVALDOCK_2								Y0578105	800/1A	4.87	0.00	
B.40		22KV	1	1		NAVALDOCK_3								Y0578100	800/1A	0.00	0.00	
B.41		33KV	1	1		DHARAVI_1								Y0118308	400/1A	49.85	0.00	
B.42		33KV	1	1		DHARAVI_2								Y0222032	400/1A	59.88	0.00	
B.43		33KV	1	1		DHARAVI_3								Y0221998	400/1A	36.25	0.00	
B.44		33KV	1	1		KINGSWAY_1								Y0511172	400/1A	43.44	0.00	
B.45		33KV	1	1		KINGSWAY_2								Y0319210	400/1A	53.25	0.00	
B.46		33KV	1	1		KINGSWAY_3								Y0319243	800/1A	47.04	0.00	
B.47		33KV	1	1		KINGSWAY_4								Y0578088	800/1A	0.00	0.00	
B.48		33KV	1	1		LODHA CROWN _1								Y0319230	400/1A	32.55	0.00	
B.49		33KV	1	1		LODHA CROWN _2								Y0319227	400/1A	0.00	0.00	
B.50		33KV	1	1		MAHIM_1								Y0222030	400/1A	36.27	0.00	
B.51		33KV	1	1		MAHIM_2								Y0118307	400/1A	45.78	0.00	
B.52		22KV	1	1		MAHIM_CAUSWAY_1								Y0578109	300/5A	11.29	0.00	
B.53		22KV	1	1		MAHIM_CAUSWAY_2								Y0118314	400/1A	12.82	0.00	
B.54		22KV	1	1		MAHIM_CAUSWAY_3								Y0221990	400/1A	18.50	0.00	
B.55		22KV	1	1		MAHIM_CAUSWAY_4								Y0578108	300/5A	21.17	0.00	
B.56		33KV	1	1		PMGP_1								Y0222044	400/1A	55.25	0.00	
B.57		33KV	1	1		PMGP_2								Y0118311	400/1A	39.98	0.00	
B.58		33KV	1	1		PMGP_3								Y0578141	400/1A	31.16	0.00	
B.59		33KV	1	1		PRATIKSHA NAGAR_1								Y0578140	400/1A	28.34	0.00	
B.60		33KV	1	1		RAWALI_HILL_I								Y0221989	400/1A	30.04	0.00	
B.61		33KV	1	1		RAWALI_HILL_2								Y0222034	800/1A	34.83	0.00	
B.62		33KV	1	1		SION FORT_1								Y0511169	400/1A	36.54	0.00	
B.63		33KV	1	1		SION FORT_2								Y0222033	400/1A	19.25	0.00	
B.64		22KV	1	1		SITALADEVI_1								Y0319228	400/1A	21.75	0.00	
B.65		33KV	1	1		SITALADEVI_2								Y0511170	400/1A	34.49	0.00	
B.66	Mumbai City	33KV	1	1		SITALADEVI_3								Y0118313	400/1A	33.64	0.00	
B.67		22KV	1	1		SITALADEVI_4								Y0118312	400/1A	26.37	0.00	
B.68		33KV	1	1		VSNL_1								Y0222031	400/1A	18.72	0.00	
B.69		33KV	1	1		VSNL_2								Y0118309	400/1A	44.97	0.00	
B.70		33KV	1	1		WADALA_1								Y0221997	400/1A	53.65	0.00	
B.71		33KV	1	1		WADALA_2								Y0511171	400/1A	49.06	0.00	
B.72		33KV	1	1		WADALA_3								Y0118310	400/1A	39.53	0.00	
B.73		110KV	1	1		PAREL_KHETWADI_1								Y0319242	600/1A	174.75	0.00	
B.74		110KV	1	1		CARNAC_KHETWADI_2								Y0319252	600/1A	220.00	0.00	
B.75		33KV	1	1		CUMBALLA_1								Y0578136	800/1A	50.99	0.00	
B.76		33KV	1	1		CUMBALLA_2								Y0578168	800/1A	36.73	0.00	
B.77		33KV	1	1		CUMBALLA HILL_4								Y0578148	800/1A	4.04	0.00	
B.78		33KV	1	1		LOVE_GROOVE_1								Y0578150	800/1A	24.40	0.00	
B.79		33KV	1	1		LOVE_GROOVE_2								Y0578167	800/1A	23.75	0.00	
B.80		33KV	1	1		LOVE_GROOVE_3								Y0578137	800/1A	13.22	0.00	
B.81		33KV	1	1		NESTLE_1								Y0578160	800/1A	83.55	0.00	
B.82		33KV	1	1		NESTLE_2								Y0578169	800/1A	9.38	0.00	
B.83		33KV	1	1		NESTLE_3								Y0578157	800/1A	3.15	0.00	
B.84		33KV	1	1		WORLI_1								Y0578149	800/1A	15.54	0.00	
B.85		33KV	1	1		WORLI_2								Y0511165	800/1A	12.47	0.00	
B.86		33KV	1	1		WORLI_3								Y0578192	800/1A	18.26	0.00	
B.87		33KV	1	1		WORLI_DAIRY_1								Y0578138	800/1A	27.30	0.00	
B.88		33KV	1	1		WORLI_DAIRY_2								Y0578156	800/1A	4.63	0.00	
B.89		33KV	1	1		PRABHADEVI_1 B/B CUMBALLA_4								Y0578185	800/1A	23.28	0.00	
B.90		33KV	1	1		PRABHADEVI_2								Y0578186	800/1A	25.01	0.00	
B.91		33KV	1	1		PRABHADEVI_3 B/B CUMBALLA_1								Y0511158	800/1A	16.64	0.00	
B.92		33KV	1	1		AVIGHNA PARK								Y0319256	800/1A	29.45	0.00	
B.93		33KV	1	1		BYCULLA_1 B/B WORLI_3								Y0221927	800/1A	20.69	0.00	
B.94		33KV	1	1		BYCULLA_2								Y0319215	800/1A	18.42	0.00	
B.95		33KV	1	1		BYCULLA_3								Y0221930	800/1A	17.19	0.00	
B.96		33KV	1	1		KEM_1								Y0221944	800/1A	12.38	0.00	
B.97		22KV	1	1		KEM_2								Y0511239	600/5A	28.32	0.00	
B.98		33KV	1	1		LALBAUG_I								Y0319254	800/1A	25.20	0.00	
B.99		33KV	1	1		LALBAUG_II								Y0319216	800/1A	16.60	0.00	
B.100		22KV	1	1		MAHALAMI_1								Y0221943	400/5A	31.28	0.00	
B.101		33KV	1	1		MAHALAMI_2								Y0511167	800/1A	25.89	0.00	

B.102		33KV	1	1		MAHALAXMI_3								Y0221929	800/1A	27.94	0.00	
B.103		33KV	1	1		MAZGAON DOCK_1 (22 KV)								Y0319164	800/1A	20.31	0.00	
B.104		22KV	1	1		MAZGAON SHIPYARD_2 (33 KV)								Y0511166	400/5A	25.88	0.00	
B.105		33KV	1	1		MORARJI_MILL_I								Y0511241	800/1A	17.31	0.00	
B.106		22KV	1	1		NAMAN MIDTOWN_2								Y0221941	300/5A	18.47	0.00	
B.107		22KV	1	1		PAREL_1								Y0578089	400/5A	34.40	0.00	
B.108		33KV	1	1		PAREL_2								Y0511164	800/1A	8.06	0.00	
B.109		33KV	1	1		PAREL_3								Y0511168	800/1A	2.74	0.00	
B.110		22KV	1	1		SEWRI_1								Y0221926	600/5A	5.92	0.00	
B.111		33KV	1	1		SEWRI_2								Y0511240	800/1A	30.40	0.00	
B.112		33KV	1	1		SEWRI_3								Y0221945	800/1A	0.00	0.00	
B.113		33KV	1	1		SWAN_MILL_1								Y0511238	800/1A	22.58	0.00	
B.114		22KV	1	1		SBM_SBM_1								Y0319239	600/5A	10.30	0.00	
B.115		33KV	1	1		SBM_SBM_2								Y0319240	800/1A	39.25	0.00	
B.116		22KV	1	1		ELPHINSTON_MILL_3								Y0578111	400/5A	32.69	0.00	
B.117		33KV	1	1		INTERCONNECTOR_1_DBA_15								Y0319275	800/1A	34.04	0.00	
B.118		110KV	1	1		LOVE_GROVE_4								Y0221862	600/1A	189.09	0.00	
B.119		110KV	1	1		INTERCONNECTOR_2_DBA_14								Y0221869	600/1A	15.75	0.00	
B.120		33KV	1	1		STANDARD_MILL_1								Y0319295	800/1A	25.28	0.00	
B.121		33KV	1	1		BOMBAY CENTRAL_2								Y0221867	800/1A	34.58	0.00	
B.122		33KV	1	1		TARDEO_3								Y0221860	800/1A	29.43	0.00	
B.123		33KV	1	1		ELPHINSTON ROAD_1								Y0221856	800/1A	24.07	0.00	
B.124		33KV	1	1		NAIR HOSPITAL_2								Y0319298	800/1A	22.19	0.00	
B.125		33KV	1	1		POCHKHANWALA_1								Y0221868	800/1A	23.95	0.00	
B.126																		
B.127																		
B.128																		
B.129																		
		Total (MU)														**3972.80**	**45.84**	
		Net input energy at DISCOM periphery (MU)															**3931.42**	

Color code			Parameter
			Please enter voltage level or leave blank
			Please enter feeder id and name or leave blank
			Enter meter no or leave blank
			Enter CT/PT ratio or leave blank
0			Please enter numeric value or 0
			Please select yes or no from list
			Formula protected

I/We undertake that the information supplied in this Document and Pro-forma is accurate to the best of my knowledge and if any of the information supplied is found to be incorrect and such information result into loss to the Central Government or State Government or any of the authority under them or any other person affected, I/we undertake to indemnify such loss.

Authorised Signatory and Seal

Signature:-
Name of Energy Manager*:
Registration Number:

Name of Authorised Signatory
Name of the DISCOM:
Full Address:-

Seal

Details of Input Energy Sources

FY 2020-21

A. Generation at Transmission Periphery (Details)

S.No.	Name of Generation Station	Generation Capacity (In MW)	Type of Station Generation (Based- Solid (Coal ,Lignite)/Liquid/Gas/Renewable (biomass-bagasse)/Others)	Type of Contract (in years/months /days)	Type of Grid (Intra-state/Inter-state)	Point of Connection (POC) Loss MU	Voltage Level (At input)	Remarks (Source of data)
1	Tata Power Co LTD Unit-5	500 MW	COAL	5 YEARS	INTRA-STATE	0	InSTS	
2	Tata Power Co LTD Unit-7	180 MW	GAS	5 YEARS	INTRA-STATE	0	InSTS	
3	Tata Power Co LTD Unit-8	250 MW	COAL	5 YEARS	INTRA-STATE	0	InSTS	
4	Tata Power Co LTD Hydro	447 MW	HYDRO	5 YEARS	INTRA-STATE	0	InSTS	
5	Sai Wardha Power Gen LTD	540 MW	COAL	5 YEARS	INTRA-STATE	0	InSTS	
6	WALWHAN SOLAR MH LTD	20 MW	SOLAR	25 YEARS	INTRA-STATE	0	InSTS	

B. Embedded Generation in DISCOM Area

S.No	Name of Generation Station	Generation Capacity (In MW)	Tytpe of Station (Generation Based-Solid/Liquid/Gas/Renewable/Others)	Type of Contract	Type of Grid	Voltage Level (KVA)	Circle Load (MW)	Received at Circle (KVA)	Received at Circle (In MU)	Division Level Load (MW)	Received at Division Level (KVA)	Received at Division Level (In MU)	Sub-Division Level Load (MW)	Received at Sub-Division Level (KVA)	Received at Sub-Division Level (In MU)	Remarks (Source of data)
	Nil															
	Nil															
	Nil															
	Nil															
	Nil															
	Nil															

(Details of Feeder-wise losses)

Period From

Sl No.	Zone	Received at Circle (In MU)	Received at Division (In MU)	Received at Sub-division (In MU)	Name of the Station	Feeder Code/ID	Feeder Name	Type of Feeder (Urban/Mixed/Industrial/Agricultural/Rural)	Type of feeder meter (AMI/AMR/Other)	Received at Feeder (Final in MU)	Feeder Consumption (In MU)	Final Net Export at Feeder Level (In MU)	T&D losses	AT&C losses	% Data Received through Automatically (if feeder AMR/AMI)	Remarks
1				33kV	APOLLO		TPC CAP2				na	na	na	na	na	Existing Feeder Metering System is discontinued from May 2017 and is not in a working condition as some of the meters installed on intermittent feeders are found defective and some equipment are not functioning.
2				33kV	APOLLO		TPC CAP3				na	na	na	na	na	
3				33kV	APOLLO		TPC H04 (TPC BB)				na	na	na	na	na	
4				33kV	BALLARD		TPC CBE1				na	na	na	na	na	
5				33kV	BALLARD		TPC CBE3				na	na	na	na	na	
6				33kV	COLABA		TPC CC2				na	na	na	na	na	
7				33kV	COLABA		Tata's BB				na	na	na	na	na	
8				33kV	G.T.		TPC CGT-1				na	na	na	na	na	
9				33kV	G.T.		TPC CGT2				na	na	na	na	na	
10				33kV	HUTATMA		TPC CHC1				na	na	na	na	na	
11				33kV	HUTATMA		TPC H10 (TPC BB)				na	na	na	na	na	
12				33kV	HUTATMA		TPC CHC3				na	na	na	na	na	
13				33kV	MARINE DRIVE		TPC CMD1				na	na	na	na	na	
14				33kV	MARINE DRIVE		TATA BACKBAY-H11				na	na	na	na	na	
15				33KV	NAVAL DOCK		TPC C-ND-4				na	na	na	na	na	
16				33KV	NAVYNAGAR		TBB				na	na	na	na	na	
17				33KV	WANKHEDE		TATA"S BACKBAYRSS				na	na	na	na	na	
18				33KV	B.CENTRAL		TATA'S H30				na	na	na	na	na	
19				33KV	BYCULLA		TATA'S H14				na	na	na	na	na	
20				33KV	BYCULLA		TATA'S H01				na	na	na	na	na	
21				33KV	BYCULLA		TPC OG7				na	na	na	na	na	
22				33KV	KUSSARA		TPC OG13				na	na	na	na	na	
23				33KV	KEM		TATA'S H04				na	na	na	na	na	
24				33KV	LALBAUG		TATA'S H07				na	na	na	na	na	
25				33KV	LALBAUG		TATA'S H17				na	na	na	na	na	
26				33KV	NAIR		TATA'S MAHALAXMI H48				na	na	na	na	na	
27				33KV	PAREL		TATA'S OG3				na	na	na	na	na	
28				33KV	PAREL		TATA'S H16				na	na	na	na	na	
29				33KV	PAREL		TATA'S H02				na	na	na	na	na	
30				33KV	SWAN MILL		TATA'S H03				na	na	na	na	na	
31				33KV	SEWARI		TATA'S H05				na	na	na	na	na	
32				33KV	AVIGHNA		TATA'S H22				na	na	na	na	na	
33				33KV	THON FUTUREX HT ROOM		TATA'S H20				na	na	na	na	na	
34				33KV	MORARJI MILL		TATA'S H06				na	na	na	na	na	
35				33KV	KINGSWAY		**TPC GIS (OG 4) BS-1**				na	na	na	na	na	
36				33KV	KINGSWAY		**TPC BS-2(OG 4) TPC Antop Hill**				na	na	na	na	na	
37				33KV	KINGSWAY		**TPC H 21 BS-2 Parel**				na	na	na	na	na	
38				33KV	KINGSWAY		**TPC BS-3(OG 4) Parel**				na	na	na	na	na	
39				33KV	WADALA		**TPC BS-1 TPC ANTOP HILL**				na	na	na	na	na	
40				33KV	WADALA		**TPC H 08(OG 3) Dharavi**				na	na	na	na	na	
41				33KV	WADALA		**TPC BS-2(OG 3) TPC ANTOP HILL**				na	na	na	na	na	
42				33KV	SION FORT		**TPC H 06(OG 1) Dharavi**				na	na	na	na	na	
43				33KV	SION FORT		**TPC BS 1 (OG 7) TPC ANTOP HILL**				na	na	na	na	na	
44				33KV	RAOLI HILL		**TPC H09 (OG 4) Dharavi**				na	na	na	na	na	
45				33KV	RAOLI HILL		**TPC BS-1(OG 1) TPC ANTOP HILL**				na	na	na	na	na	
46				33KV	LODHA CROWN		**TPC H07(OG 6) BS-5 TPC ANTOP HILL**				na	na	na	na	na	
47				33KV	LODHA CROWN		**TPC OG-09 (BS-1) TPC ANTOP HILL**				na	na	na	na	na	
48				33KV	PRATIKSHA		**TPC BS-2(OG 6) TPC ANTOP HILL**				na	na	na	na	na	
49				33KV	DHARAVI		**TPC H 16 (OG 8) Dharavi**				na	na	na	na	na	
50				33KV	DHARAVI		**TPC H 10 (OG 3) Dharavi**				na	na	na	na	na	
51				33KV	DHARAVI		**TPC H 11 (OG 2) Dharavi**				na	na	na	na	na	
52				33KV	SITALADEVI		**TPC H 08 (OG-2) GIS(BS-6) Dharavi**				na	na	na	na	na	
53				33KV	SITALADEVI		**TPC H21 OG12 (BS-4) Dharavi**				na	na	na	na	na	
54				33KV	PMGP		**TPC H 28 (OG 11) Dharavi**				na	na	na	na	na	

55	Mumbai City			33KV	PMGP	**TPC H 03 (OG 2) Dharavi**			na	na	na	na	na	
56				33KV	PMGP	**TPC H 12 (BS-4) Dharavi**			na	na	na	na	na	
57				33 kV	WORLI	TPCM H34 (M20)			na	na	na	na	na	
58				33 kV	WORLI	TPCM H46 M28			na	na	na	na	na	
59				33 kV	WORLI DAIRY	TPCM H31			na	na	na	na	na	
60				33 kV	WORLI DAIRY	TPCM H25 OG 15			na	na	na	na	na	
61				33 kV	NESTLE	TPCM H22 OG 13			na	na	na	na	na	
62				33 kV	NESTLE	TPCM H07 OG 5			na	na	na	na	na	
63				33 kV	NESTLE	TPCM H43			na	na	na	na	na	
64				33 kV	LOVE GROOVE	TPCM H40 M23			na	na	na	na	na	
65				33 Kv	LOVE GROOVE	TPCM H08 OG6			na	na	na	na	na	
66				33 kV	LOVE GROOVE	TPCM H21 OG12			na	na	na	na	na	
67				33 Kv	LOVE GROOVE	TPCM H35			na	na	na	na	na	
68				33 Kv	POCHKHANWALA	TPCM H49			na	na	na	na	na	
69				33 kV	POCHKHANWALA	TPCM H06 OG4			na	na	na	na	na	
70				33 Kv	TRADEO	TPCM H32			na	na	na	na	na	
71				33 kV	PRABHADEVI	TPCM H28 M14			na	na	na	na	na	
72				33 Kv	PRABHADEVI	TPCM H16 OG10			na	na	na	na	na	
73				33 kV	PRABHADEVI	TPCM H45 M27			na	na	na	na	na	
74				33 Kv	VSNL	TPCD H19 OG 10			na	na	na	na	na	
75				33 kV	VSNL	TPCD H15 OG 6			na	na	na	na	na	
76				33 kV	ELPH.MILL	TPCM H38 -- Elfinston Mill 33 kv Bus section			na	na	na	na	na	
77				33 kV	ELPH.MILL	TPCM H33			na	na	na	na	na	
78				33 kV	ELPH.MILL	TPCM H38 -- Elfinston Mill 33 kv Bus section			na	na	na	na	na	
79				33 Kv	STAND MILL	TPCM H29			na	na	na	na	na	
80				33 kV	MAHIM	TPCM H11 OG 4			na	na	na	na	na	
81				33 kV	MAHIM	TPCM H02 OG 1			na	na	na	na	na	
82				33 KV	SPARE DBA 14	TPCM H41			na	na	na	na	na	
83				33 KV	SPARE DBA15	TPCM H18			na	na	na	na	na	
84				33kV	CUMBALLAHILL	TPC-Mahalakshmi(H17) CH1			na	na	na	na	na	
85				33kV	CUMBALLAHILL	TPC-Mahalakshmi(H24) CH2			na	na	na	na	na	
86				33kV	ESPLANADE	TPC-Carnac ES1			na	na	na	na	na	
87				33kV	ESPLANADE	TPC-Carnac(H19) ES2			na	na	na	na	na	
88				33kV	ESPLANADE	TPC-Carnac ES3			na	na	na	na	na	
89				33kV	ESPLANADE	TPC-Backbay(OG4) ES4			na	na	na	na	na	
90				33kV	GRANT ROAD	TPC-Carnac GR2			na	na	na	na	na	
91				33kV	GIRGAUM	TPC-Carnac(H12) GM1			na	na	na	na	na	
92				33kv	J.J.HOSPITAL	TPC-Carnac JJ2			na	na	na	na	na	
93				33KV	MALBAR HILL	TPC-Carnac MH2			na	na	na	na	na	
94				33KV	MASJID	TPC-Carnac(H13) MS1			na	na	na	na	na	
95				33KV	MASJID	TPC-Carnac MS2			na	na	na	na	na	
96				33KV	MASJID	TPC-Carnac MS3			na	na	na	na	na	
97				33KV	MAZGAON SHIPYARD	TPC-Parel(H19) MSY			na	na	na	na	na	
98				33KV	MAZGAON SHIPYARD	TPC-Carnac MSY1			na	na	na	na	na	
99				33KV	MUMBADEVI	TPC-Carnac MU1			na	na	na	na	na	
100				33KV	MUMBADEVI	TPC-Carnac(H28) MU2			na	na	na	na	na	
101				33KV	MUMBADEVI	TPC-Carnac MU3			na	na	na	na	na	
102				33KV	NEPEAN SEA	TPC-Mahalaxmi(H42) NS4			na	na	na	na	na	
103				33kV	APOLLO	BEST BACKBAY F-5 AP 1			na	na	na	na	na	
104				33kV	BALLARD	BEST BACKBAY F-4 BE 2			na	na	na	na	na	
105				33kV	COLABA	BEST BACKBAY F-7 COLABA 1			na	na	na	na	na	
106				33kV	MD	BEST BACKBAY F12 MD3			na	na	na	na	na	
107				33KV	NAVAL	BEST BACKBAY-F1-ND3			na	na	na	na	na	
108				33KV	N NAGAR	BEST BACKBAY-F3-NN2			na	na	na	na	na	
109				33KV	APOLMILL	BEST MARATHON FUTUREX LHS APOLOMILL TR 1			na	na	na	na	na	
110				33KV	APOLMILL	BEST DBA 18 B/B APOLOMILL TR.2			na	na	na	na	na	
111				33KV	B CENTRAL	BEST KHETWADI KW 2.5, B CENTRAL TR 1			na	na	na	na	na	
112				33KV	B CENTRAL	BEST DBA 25 B CENTRAL TR3			na	na	na	na	na	
113				33KV	M LAXMI	BEST DBA18 B/B AM TR NO.2			na	na	na	na	na	
114				33KV	NAIR	BEST KW1.7 NAIR TR 1			na	na	na	na	na	
115				33KV	SIMPLEX	BEST DBA 24 SIMPLEX TR 1			na	na	na	na	na	
116				33KV	SIMPLEX	BEST DBA 19 SIMPLEX TR2			na	na	na	na	na	
117				33KV	AVIGHNA	BEST MORARJI MILL, AVIGNA RDSS TR2			na	na	na	na	na	
118				33KV	MARATHON FUTUREX HT ROOM	BEST DBA 1 LHS			na	na	na	na	na	
119				33KV	MARATHON FUTUREX HT ROOM	BEST DBA 2 RHS			na	na	na	na	na	
120				33KV	MORARJI MILL	BEST AVRDSS MORARJI MILL TR2			na	na	na	na	na	
121				33 kV	DBA	BEST DBA 16 UGM TR 1 REMOVED			na	na	na	na	na	
122				33 kV	DBA	BEST DBA 23 UGM TR 2			na	na	na	na	na	

123				33 kV	WORLI		BEST DBA 7 WORLI TR2			na	na	na	na	na
124				33 kV	TARDEO		BEST DBA 05 TARDEO1			na	na	na	na	na
125				33 kV	ELPH.MILL		BEST DBA 8-- Elfinston Mill 33 kv BS EM2			na	na	na	na	na
126				33 kV	ELPH.MILL		BEST DBA 8-- Elfinston Mill 33 kv BS NAMAN MIDTOWN1			na	na	na	na	na
127				33 kV	URMI ESTATE		BEST DBA 3 URMI EATATE CON 1&2, PENNINSULA CONS 1			na	na	na	na	na
128				33 kV	PENINSULA		BEST DBA 6_PENNINSULA CON2			na	na	na	na	na
129				33kV	CUMBALLAHILL		BEST-Khetwadi (KW1.8) CH3			na	na	na	na	na
				33kV	GRANT ROAD		BEST-Khetwadi (KW1.3) GR1			na	na	na	na	na
				33kV	GRANT ROAD		BEST-Khetwadi (KW1.4) GR3			na	na	na	na	na
				33kV	GRANT ROAD		BEST-Khetwadi (KW2.4) GR4			na	na	na	na	na
				33kV	GIRGAUM		BEST Backbay (F11) GM2			na	na	na	na	na
				33kv	J.J. HOSPITAL		BEST-Khetwadi (KW2.8) JJ1			na	na	na	na	na
				33KV	MALBAR HILL		BEST-Backbay (F8) MH1,			na	na	na	na	na
				33KV	MALBAR HILL		BEST-Khetwadi (KW2.6) MH3			na	na	na	na	na
				33KV	NIMKAR MARG		BEST-Khetwadi (KW1.2) NM1			na	na	na	na	na
				33KV	NIMKAR MARG		BEST-Khetwadi (KW2.2) NM2			na	na	na	na	na
				33KV	NEPEAN SEA		BEST-Khetwadi (KW1.6) NS1			na	na	na	na	na
				33KV	NEPEAN SEA		BEST-Khetwadi (KW2.7) NS2			na	na	na	na	na
				22 kV	NAVAL DOCK		TPC C-ND-1			na	na	na	na	na
				22 kV	NAVAL DOCK		TPC C-ND-2			na	na	na	na	na
				22 kV	KUSSARA		TPC OG10			na	na	na	na	na
				22 kV	KEM		TPC 47P			na	na	na	na	na
				22 kV	MAHALAXMI		TATA'S 55P			na	na	na	na	na
				22 kV	MAHALAXMI		TATA'S 70P			na	na	na	na	na
				22 kV	MAZGAON		TATA'S 49P			na	na	na	na	na
				22 kV	MAZGAON		TATA'S OG11			na	na	na	na	na
				22 kV	SEWARI		TATA'S 61P			na	na	na	na	na
				22 kV	SEWARI		TATA'S 50P			na	na	na	na	na
				22 kV	MAHIM C'WAY		**TPC GIS(BS-4) H-28) Dharavi**			na	na	na	na	na
				22 kV	MAHIM C'WAY		**TPC H 11(OG 9)Dharavi**			na	na	na	na	na
				22 kV	MAHIM C'WAY		**TPC H 28 (OG 20) Dharavi**			na	na	na	na	na
				22 kV	MAHIM C'WAY		**TPC GIS(BS-3)(H-7) Dharavi**			na	na	na	na	na
				22 kV	SITALADEVI		**TPC H25 (OG17) Dharavi**			na	na	na	na	na
				22 kV	SITALADEVI		**TPC H 03 (OG 2) Dharavi**			na	na	na	na	na
				22 kV	MAHALAXMI		TPCM 55P			na	na	na	na	na
				22 kV	MAHALAXMI		TPCM 70 P			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 1.2	CH 1.2-PEDDER MID			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 1.3	CH 1.3-OLYMPUS			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 1.4	CH 1.4-CUMBALLA HILL TEL. EXCHANGE			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 1.5	CH 1.5-RAJAB ALI ROAD (NORTH)			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 1.6	CH 1.6-GOPALRAO DESHMUKH MARG			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 2.2	CH 2.2-BOMANJI PETIT (S)			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 2.3	CH 2.3-ANAND NIKETAN			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 2.4	CH 2.4-CUMBALLA HILL HOSPITAL			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 2.5	CH 2.5-ANTILIA (LHS)			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 2.6	CH 2.6-CARMICHAEL ROAD (E)			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 3.2	CH 3.2-ANTILIA (RHS)			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 3.3	CH 3.3-CARMICHEL..ROAD			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 3.5	CH 3.5-BHARAT CO-OP			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 3.6	CH 3.6-RAYMOND			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 3.7	CH 3.7-GOVIND NIWAS			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 4.2	CH 4.2-LODHA ALTAMOUNT			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 4.3	CH 4.3-SPENTA TOWER			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 4.4	CH 4.4-GAMADIA ROAD			na	na	na	na	na
				11KV	CUMBALLA HILL	CH 4.5	CH 4.5-MAZDA APARTMENT			na	na	na	na	na
				11KV	ESPLANADE	ES 1.1	ES 1.1-KAKAD MARKET			na	na	na	na	na
				11KV	ESPLANADE	ES 1.3	ES 1.3-SHAIKH MEMON STREET (SOUTH)			na	na	na	na	na
				11KV	ESPLANADE	ES 1.4	ES 1.4-ESPLANADE STATIC			na	na	na	na	na
				11KV	ESPLANADE	ES 1.5	ES 1.5-PICKET ROAD			na	na	na	na	na
				11KV	ESPLANADE	ES 1.6	ES 1.6-TELWADI (RHS)			na	na	na	na	na

11KV	ESPLANADE	ES 1.7	ES 1.7-JANJIKAR STREET	na	na	na	na	na	
11KV	ESPLANADE	ES 2.1	ES 2.1-VIDYUT (LHS)	na	na	na	na	na	
11KV	ESPLANADE	ES 2.3	ES 2.3-SHRI MUNJOBA CHS	na	na	na	na	na	
11KV	ESPLANADE	ES 2.4	ES 2.4-BABU GENU ROAD	na	na	na	na	na	
11KV	ESPLANADE	ES 2.5	ES 2.5-KALBADEVI TEL. EXCHANGE	na	na	na	na	na	
11KV	ESPLANADE	ES 2.6	ES 2.6-MEMONWADA (LHS)	na	na	na	na	na	
11KV	ESPLANADE	ES 2.7	ES 2.7-MANGALDAS MARKET	na	na	na	na	na	
11KV	ESPLANADE	ES 3.1	ES 3.1-MD. ALI ROAD	na	na	na	na	na	
11KV	ESPLANADE	ES 3.3	ES 3.3-SHAIKH MEMON STREET	na	na	na	na	na	
11KV	ESPLANADE	ES 3.4	ES 3.4-FISH MARKET (RMU2)	na	na	na	na	na	
11KV	ESPLANADE	ES 3.5	ES 3.5-ZAINEE MASJID	na	na	na	na	na	
11KV	ESPLANADE	ES 3.6	ES 3.6-TAKWADI	na	na	na	na	na	
11KV	ESPLANADE	ES 3.7	ES 3.7-SAMUEL STREET (SOUTH)	na	na	na	na	na	
11KV	ESPLANADE	ES 4.1	ES 4.1-QUEEN'S ROAD GARDEN	na	na	na	na	na	
11KV	ESPLANADE	ES 4.2	ES 4.2-SABOO SIDDIK	na	na	na	na	na	
11KV	ESPLANADE	ES 4.3	ES 4.3-CORPORATION DSS	na	na	na	na	na	
11KV	ESPLANADE	ES 4.4	ES 4.4-MARZBAN ROAD DSS	na	na	na	na	na	
11KV	ESPLANADE	ES 4.6	ES 4.6-NAGDEVI STREET ANNEXE	na	na	na	na	na	
11KV	ESPLANADE	ES 4.7	ES 4.7-VIDYUT B/B PINJARI STREET	na	na	na	na	na	
11KV	GRANT ROAD	GR 1.1	GR 1.1-PANCHRATNA (LHS)	na	na	na	na	na	
11KV	GRANT ROAD	GR 1.2	GR 1.2-MID KHETWADI	na	na	na	na	na	
11KV	GRANT ROAD	GR 1.3	GR 1.3-KHETWADI 10TH LANE	na	na	na	na	na	
11KV	GRANT ROAD	GR 1.5	GR 1.5-D. B. MARG POLICE STATION	na	na	na	na	na	
11KV	GRANT ROAD	GR 1.6	GR 1.6-NEW HARKISANDAS HOSPITAL (MBS)	na	na	na	na	na	
11KV	GRANT ROAD	GR 1.7	GR 1.7-SIDDESH DARSHAN	na	na	na	na	na	
11KV	GRANT ROAD	GR 2.1	GR 2.1-TRIBHUVAN ROAD	na	na	na	na	na	
11KV	GRANT ROAD	GR 2.2	GR 2.2-POT HEAD Nr.NAVJEEVAN SOCI.	na	na	na	na	na	
11KV	GRANT ROAD	GR 2.3	GR 2.3-TARDEO DEPOT (RHS)	na	na	na	na	na	
11KV	GRANT ROAD	GR 2.4	GR 2.4-DURGADEVI UDYAN(EAST)	na	na	na	na	na	
11KV	GRANT ROAD	GR 2.5	GR 2.5-SHAUKAT ALI ROAD	na	na	na	na	na	
11KV	GRANT ROAD	GR 2.6	GR 2.6-THE PLATINUM (RMU2)	na	na	na	na	na	
11KV	GRANT ROAD	GR 2.7	GR 2.7-DAULAT CINEMA	na	na	na	na	na	
11KV	GRANT ROAD	GR 3.1	GR 3.1-GRANT ROAD STATIC (LHS)	na	na	na	na	na	
11KV	GRANT ROAD	GR 3.2	GR 3.2-SUPREME HEIGHTS	na	na	na	na	na	
11KV	GRANT ROAD	GR 3.3	GR 3.3-ABHISHEK	na	na	na	na	na	
11KV	GRANT ROAD	GR 3.4	GR 3.4-EARTH GRAPHICS	na	na	na	na	na	
11KV	GRANT ROAD	GR 3.5	GR 3.5-DR. D. D. SATHYE MARG	na	na	na	na	na	
11KV	GRANT ROAD	GR 3.6	GR 3.6-SHREEPATI CASTLE RHS	na	na	na	na	na	
11KV	GRANT ROAD	GR 3.7	GR 3.7-AL SA'ADAH LHS	na	na	na	na	na	
11KV	GRANT ROAD	GR 4.1	GR 4.1-SLEATER ROAD(SOUTH)	na	na	na	na	na	
11KV	GRANT ROAD	GR 4.2	GR 4.2-NOVELTY TEMP	na	na	na	na	na	
11KV	GRANT ROAD	GR 4.3	GR 4.3-KHETWADI 12TH 'X' LANE	na	na	na	na	na	
11KV	GRANT ROAD	GR 4.4	GR 4.4-PAREKH MARKET	na	na	na	na	na	
11KV	GRANT ROAD	GR 4.5	GR 4.5-SHREEPATI CASTLE LHS	na	na	na	na	na	
11KV	GRANT ROAD	GR 4.6	GR 4.6-BABOOLA (RHS)	na	na	na	na	na	
11KV	GRANT ROAD	GR 4.7	GR 4.7-THE PLATINUM (RMU1)	na	na	na	na	na	
11KV	GIRGAUM	GM 1.2	GM 1.2-J. S. S. ROAD	na	na	na	na	na	
11KV	GIRGAUM	GM 1.3	GM 1.3-SHREEPATI TOWER	na	na	na	na	na	
11KV	GIRGAUM	GM 1.4	GM 1.4-PANCHARATNA (RHS)	na	na	na	na	na	
11KV	GIRGAUM	GM 1.5	GM 1.5-QUEEN'S ROAD LHS	na	na	na	na	na	
11KV	GIRGAUM	GM 1.6	GM 1.6-THAKURDWAR ROAD	na	na	na	na	na	
11KV	GIRGAUM	GM 1.7	GM 1.7-THAKURDWAR NAKA	na	na	na	na	na	
11KV	GIRGAUM	GM 2.2	GM 2.2-BORBHAT LANE	na	na	na	na	na	
11KV	GIRGAUM	GM 2.3	GM 2.3-DR. ATMARAM MERCHANT ROAD	na	na	na	na	na	
11KV	GIRGAUM	GM 2.4	GM 2.4-VARDHAMAN GALAXY	na	na	na	na	na	
11KV	GIRGAUM	GM 2.6	GM 2.6-RAJA RAM MOHAN ROY ROAD(WEST)	na	na	na	na	na	
11KV	GIRGAUM	GM 2.7	GM 2.7-PRAMAN HEIGHTS	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 1.1	JJ 1.1-BABOOLA X RD	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 1.2	JJ 1.2-ERSKINE ROAD RHS	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 1.3	JJ 1.3-TEMKAR STREET LHS	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 1.4	JJ 1.4-J. J. HOSPITAL(NORTH)	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 1.5	JJ 1.5-URDU MUNICIPAL SCHOOL	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 1.7	JJ 1.7-CHIMNA BUTCHER (RMU1)	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 2.1	JJ 2.1-JAIL ROAD(NORTH)	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 2.2	JJ 2.2-UMERKHADI	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 2.3	JJ 2.3-BYCULLA PRISON(C.N.Z.)	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 2.4	JJ 2.4-J. J. HOSPITAL	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 2.5	JJ 2.5-NABIULLAH NEW RMU1	na	na	na	na	na	
11KV	J.J. HOSPITAL	JJ 2.7	JJ 2.7-NAJAM BAUG	na	na	na	na	na	
11KV	MALBAR HILL	MH 1A	MH 1A- I.N.T. (RHS)	na	na	na	na	na	
11KV	MALBAR HILL	MH 1.1	MH 1.1-SAHYADRI GUEST HOUSE	na	na	na	na	na	
11KV	MALBAR HILL	MH 1.2	MH 1.2-NILIMA CHS	na	na	na	na	na	

11KV	MALBAR HILL	MH 1.3	MH 1.3-BIRLA KENDRA (RMU1)	na	na	na	na	na	
11KV	MALBAR HILL	MH 1.4	MH 1.4-PARSI HOSPITAL (RHS)	na	na	na	na	na	
11KV	MALBAR HILL	MH 1.6	MH 1.6-BABULNATH WEST	na	na	na	na	na	
11KV	MALBAR HILL	MH 1.7	MH 1.7-DIVYALOK	na	na	na	na	na	
11KV	MALBAR HILL	MH 2.1	MH 2.1-BABULNATH ROAD	na	na	na	na	na	
11KV	MALBAR HILL	MH 2.2	MH 2.2-IRANI TRUST	na	na	na	na	na	
11KV	MALBAR HILL	MH 2.3	MH 2.3-I.N.T. (LHS)	na	na	na	na	na	
11KV	MALBAR HILL	MH 2.4	MH 2.4-DEO BHAVAN	na	na	na	na	na	
11KV	MALBAR HILL	MH 2.6	MH 2.6-RARE VILLA	na	na	na	na	na	
11KV	MALBAR HILL	MH 2.7	MH 2.7-NEW SIRI ROAD	na	na	na	na	na	
11KV	MALBAR HILL	MH 3.1	MH 3.1-VACCHA GANDHI MARG	na	na	na	na	na	
11KV	MALBAR HILL	MH 3.2	MH 3.2-KEMP'S CORNER	na	na	na	na	na	
11KV	MALBAR HILL	MH 3.3	MH 3.3-CHOWPATTY BAND STAND	na	na	na	na	na	
11KV	MALBAR HILL	MH 3.4	MH 3.4-RIDGE ROAD SOUTH	na	na	na	na	na	
11KV	MALBAR HILL	MH 3.5	MH 3.5-B .G. KHER MARG	na	na	na	na	na	
11KV	MALBAR HILL	MH 3.7	MH 3.7-RIDGE ROAD	na	na	na	na	na	
11KV	MASJID	MS 1.2	MS 1.2-KHADAK STREET (LHS)	na	na	na	na	na	
11KV	MASJID	MS 1.3	MS 1.3-MANDAVI POLICE QUARTERS	na	na	na	na	na	
11KV	MASJID	MS 1.4	MS 1.4-PATNI TOWER	na	na	na	na	na	
11KV	MASJID	MS 1.5	MS 1.5-MANDAVI MAJOR(LHS)	na	na	na	na	na	
11KV	MASJID	MS 1.6	MS 1.6-KESHAVJI NAIK ROAD	na	na	na	na	na	
11KV	MASJID	MS 2.2	MS 2.2-BPCL	na	na	na	na	na	
11KV	MASJID	MS 2.3	MS 2.3-COACHING DEPOT (RHS)	na	na	na	na	na	
11KV	MASJID	MS 2.4	MS 2.4-JAIL ROAD(EAST)	na	na	na	na	na	
11KV	MASJID	MS 2.5	MS 2.5-MANDAVI MAJOR (RHS)	na	na	na	na	na	
11KV	MASJID	MS 2.6	MS 2.6-CHINCH BUNDER (RHS)	na	na	na	na	na	
11KV	MASJID	MS 3.1	MS 3.1-DECOR TOWER	na	na	na	na	na	
11KV	MASJID	MS 3.2	MS 3.2-POONA STREET	na	na	na	na	na	
11KV	MASJID	MS 3.3	MS 3.3-GARIBADAS STREET	na	na	na	na	na	
11KV	MASJID	MS 3.4	MS 3.4-CST PLATFORM NO.18	na	na	na	na	na	
11KV	MASJID	MS 3.5	MS 3.5-RAICHUR STREET	na	na	na	na	na	
11KV	MAZGAON SHIPYARD	MSY-1.5	MSY-1.5-SOUTHYARD(HV) (LHS)	na	na	na	na	na	
11KV	MAZGAON SHIPYARD	MSY 1.6	MSY 1.6-GOODS SHADE	na	na	na	na	na	
11KV	MAZGAON SHIPYARD	MSY 1.7	MSY 1.7-D'MELLO ROAD(NORTH)	na	na	na	na	na	
11KV	MUMBADEVI	MU 1.1	MU 1.1-AADITYA PEARL	na	na	na	na	na	
11KV	MUMBADEVI	MU 1.2	MU 1.2-TELWADI (LHS)	na	na	na	na	na	
11KV	MUMBADEVI	MU 1.4	MU 1.4-SHANKARSETH WADI	na	na	na	na	na	
11KV	MUMBADEVI	MU 1.5	MU 1.5-GULALWADI	na	na	na	na	na	
11KV	MUMBADEVI	MU 1.6	MU 1.6-NARAYAN DHURU STREET	na	na	na	na	na	
11KV	MUMBADEVI	MU 2.1	MU 2.1-KHADILKAR ROAD	na	na	na	na	na	
11KV	MUMBADEVI	MU 2.2	MU 2.2-MALHARRAO WADI	na	na	na	na	na	
11KV	MUMBADEVI	MU 2.3	MU 2.3-MUMBADEVI SCHOOL	na	na	na	na	na	
11KV	MUMBADEVI	MU 2.4	MU 2.4-MEMONWADA (RHS)	na	na	na	na	na	
11KV	MUMBADEVI	MU 2.5	MU 2.5-MUMBADEVI TEMPLE	na	na	na	na	na	
11KV	MUMBADEVI	MU 3.1	MU 3.1-C. P. TANK (RHS)	na	na	na	na	na	
11KV	MUMBADEVI	MU 3.2	MU 3.2-ERESKINE ROAD (LHS)	na	na	na	na	na	
11KV	MUMBADEVI	MU 3.3	MU 3.3-MUMBADEVI TANK (LHS)	na	na	na	na	na	
11KV	MUMBADEVI	MU 3.4	MU 3.4-SHREEPATI ARADHANA	na	na	na	na	na	
11KV	MUMBADEVI	MU 3.5	MU 3.5-JAIHIND	na	na	na	na	na	
11KV	MUMBADEVI	MU 3.7	MU 3.7-MUMBADEVI STATIC	na	na	na	na	na	
11KV	NIMKAR MARG	NM 1.1	NM 1.1-TARDEO DEPOT (LHS)	na	na	na	na	na	
11KV	NIMKAR MARG	NM 1.2	NM 1.2-SIDDESH JYOTI	na	na	na	na	na	
11KV	NIMKAR MARG	NM 1.4	NM 1.4-SUKHLAJI STREET(SOUTH)	na	na	na	na	na	
11KV	NIMKAR MARG	NM 1.5	NM 1.5-NEW HARKISANDAS HOSPITAL (LHS)	na	na	na	na	na	
11KV	NIMKAR MARG	NM 2.2	NM 2.2-KRISHNA CINEMA	na	na	na	na	na	
11KV	NIMKAR MARG	NM 2.5	NM 2.5-NEW HARKISANDAS HOSPITAL (RHS)	na	na	na	na	na	
11KV	NIMKAR MARG	NM 2.6	NM 2.6-BALARAM STREET	na	na	na	na	na	
11KV	NEPEAN SEA	NS 1.1	NS 1.1-RIALTO	na	na	na	na	na	
11KV	NEPEAN SEA	NS 1.2	NS 1.2-BHARAT VILLA	na	na	na	na	na	
11KV	NEPEAN SEA	NS 1.3	NS 1.3-NARAYAN DABHOLKAR MARG	na	na	na	na	na	
11KV	NEPEAN SEA	NS 1.4	NS 1.4-GODREJ BAUG	na	na	na	na	na	
11KV	NEPEAN SEA	NS 1.5	NS 1.5-RUNWAL (RMU1)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 1.7	NS 1.7-PARAG PREM	na	na	na	na	na	
11KV	NEPEAN SEA	NS 2.1	NS 2.1-DONGARSI (LHS)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 2.2	NS 2.2-PUSHPANJALI	na	na	na	na	na	
11KV	NEPEAN SEA	NS 2.3	NS 2.3-B. G. KHER MARG	na	na	na	na	na	
11KV	NEPEAN SEA	NS 2.4	NS 2.4-MALBAR HILL PUMPING	na	na	na	na	na	
11KV	NEPEAN SEA	NS 2.5	NS 2.5-BOMBAY CYCLE & MOTOR	na	na	na	na	na	
11KV	NEPEAN SEA	NS 2.7	NS 2.7-RIDGE ROAD	na	na	na	na	na	
11KV	NEPEAN SEA	NS 3.1	NS 3.1-VARSHA CO OP	na	na	na	na	na	
11KV	NEPEAN SEA	NS 3.2	NS 3.2-SONMARG	na	na	na	na	na	
11KV	NEPEAN SEA	NS 3.3	NS 3.3-NARAYAN DABHOLKAR(EAST) (LHS)	na	na	na	na	na	

11KV	NEPEAN SEA	NS 3.4	NS 3.4-PETIT APARTMENT NO. 2 (RHS)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 3.7	NS 3.7-NEPEANSEA ROAD(TEMP.)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 4.1	NS 4.1-COASTAL ROAD NO.2(TEMP.) (LHS)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 4.2	NS 4.2-COASTAL ROAD NO.2(TEMP.) (LHS)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 4.3	NS 4.3-COASTAL ROAD NO.2(TEMP.) (LHS)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 4.4	NS 4.4-COASTAL ROAD NO.2(TEMP.) (MBS)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 4.5	NS 4.5-COASTAL ROAD NO.2(TEMP.) (RHS)	na	na	na	na	na	
11KV	NEPEAN SEA	NS 4.7	NS 4.7-COASTAL ROAD NO.2(TEMP.) (RHS)	na	na	na	na	na	
11 KV	KINGSWAY	KG 1.1	Khodadad Circle	na	na	na	na	na	
11 KV	KINGSWAY	KG 1.2	Bus Garage LHS	na	na	na	na	na	
11 KV	KINGSWAY	KG 1.3	Bhavya Heights	na	na	na	na	na	
11 KV	KINGSWAY	KG 1.4	Dastoorwadi	na	na	na	na	na	
11 KV	KINGSWAY	KG 1.5	Wadala Ancillary	na	na	na	na	na	
11 KV	KINGSWAY	KG 1.7	Empire Mahal	na	na	na	na	na	
11 KV	KINGSWAY	KG 2.1	Techno Height	na	na	na	na	na	
11 KV	KINGSWAY	KG 2.2	Bus Garage RHS	na	na	na	na	na	
11 KV	KINGSWAY	KG 2.3	Family House	na	na	na	na	na	
11 KV	KINGSWAY	KG 2.4	Khareghat Road	na	na	na	na	na	
11 KV	KINGSWAY	KG 2.7	Broadway Center	na	na	na	na	na	
11 KV	KINGSWAY	KG 3.1	Ekta world	na	na	na	na	na	
11 KV	KINGSWAY	KG 3.2	Vertu DSS	na	na	na	na	na	
11 KV	KINGSWAY	KG 3.3	Land Mark Tower	na	na	na	na	na	
11 KV	KINGSWAY	KG 3.4	Desai Harmoney	na	na	na	na	na	
11 KV	KINGSWAY	KG 3.5	Ghanti Road	na	na	na	na	na	
11 KV	KINGSWAY	KG 3.7	Kingsway static (LHS)	na	na	na	na	na	
11 KV	KINGSWAY	KG 4.4	Rajaram Bhavan	na	na	na	na	na	
11 KV	WADALA	WD 1.1	Salt Pan Pumping	na	na	na	na	na	
11 KV	WADALA	WD 1.3	kikabai trust	na	na	na	na	na	
11 KV	WADALA	WD 1.4	Seva Mandal	na	na	na	na	na	
11 KV	WADALA	WD 1.5	C.G.S. Colony	na	na	na	na	na	
11 KV	WADALA	WD 1.6	Metropolitan Spring	na	na	na	na	na	
11 KV	WADALA	WD 1.7	Antop Mhada No. 1	na	na	na	na	na	
11 KV	WADALA	WD 2.1	Dosti Acres No. 1	na	na	na	na	na	
11 KV	WADALA	WD 2.3	Salt Pan No. 3	na	na	na	na	na	
11 KV	WADALA	WD 2.4	Wadala Rly. Qtrs.	na	na	na	na	na	
11 KV	WADALA	WD 2.5	Salt Pan No.2	na	na	na	na	na	
11 KV	WADALA	WD 2.6	Mehanite foundry	na	na	na	na	na	
11 KV	WADALA	WD 3.2	Kane nagar LHS	na	na	na	na	na	
11 KV	WADALA	WD 3.3	Antop Hill Prakalp No. 2	na	na	na	na	na	
11 KV	WADALA	WD 3.4	Kalpak Estate No. 1	na	na	na	na	na	
11 KV	WADALA	WD 3.6	Raj Height	na	na	na	na	na	
11 KV	SION FORT	SF 1.2	New Sion East	na	na	na	na	na	
11 KV	SION FORT	SF 1.3	Sion Circle	na	na	na	na	na	
11 KV	SION FORT	SF 1.5	Vallabhadas Marg DSS	na	na	na	na	na	
11 KV	SION FORT	SF 1.6	Sion Fort DSS	na	na	na	na	na	
11 KV	SION FORT	SF 1.7	Air Force Qtrs. DSS	na	na	na	na	na	
11 KV	SION FORT	SF 2.1	Boots Drugs	na	na	na	na	na	
11 KV	SION FORT	SF 2.2	Metal Factory S/S	na	na	na	na	na	
11 KV	SION FORT	SF 2.3	Mun.Sion Industries(New)	na	na	na	na	na	
11 KV	SION FORT	SF 2.5	Angan Aprt. S/S	na	na	na	na	na	
11 KV	SION FORT	SF 2.6	Sion Rly. Qtrs.	na	na	na	na	na	
11 KV	RAOLI HILL	RH 1.1	Summer Height	na	na	na	na	na	
11 KV	RAOLI HILL	RH 1.2	Adarsh Gharkool	na	na	na	na	na	
11 KV	RAOLI HILL	RH 1.3	Kalpak Estate No.2	na	na	na	na	na	
11 KV	RAOLI HILL	RH 1.4	Pratiksha Nagar Depot No. 2	na	na	na	na	na	
11 KV	RAOLI HILL	RH 1.5	L & T STAC DSS	na	na	na	na	na	
11 KV	RAOLI HILL	RH 1.6	Lodha Elesium No.7 DSS	na	na	na	na	na	
11 KV	RAOLI HILL	RH 1.7	Raoli Hill Static	na	na	na	na	na	
11 KV	RAOLI HILL	RH 2.1	Punjab Colony Sanatan	na	na	na	na	na	
11 KV	RAOLI HILL	RH 2.2	Bhartiya Kamala nagar	na	na	na	na	na	
11 KV	RAOLI HILL	RH 2.3	Raoli Hill Pumping	na	na	na	na	na	
11 KV	RAOLI HILL	RH 2.4	Truck Terminal No.1	na	na	na	na	na	
11 KV	RAOLI HILL	RH 2.5	Kokari Agar No. 1	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 1.1	Kokari Camp No.1 DSS	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 1.2	Enchant DSS No.6	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 1.3	Club House No. 13	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 1.4	Lodha Elesium DSS	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 1.5	Enchant DSS No.5	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 1.6	Wadala Casting Yard	na	na	na	na	na	

11 KV	LODHA CROWN T6	LC 2.1	Car Road S/S	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 2.2	Adarsh Gharkul DSS	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 2.3	Lodha Commercial Tower DSS	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 2.4	Altia No.1	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 2.5	Lodha Commercial Tower DSS	na	na	na	na	na	
11 KV	LODHA CROWN T6	LC 2.6	Raoli Hill Static S/S	na	na	na	na	na	
11 KV	PRATIKSHA NAGAR	PN 1.1	Pratiksha Nagar Static	na	na	na	na	na	
11 KV	PRATIKSHA NAGAR	PN 1.2	Sion Praklap No.2	na	na	na	na	na	
11 KV	PRATIKSHA NAGAR	PN 1.5	Transit Camp No.3	na	na	na	na	na	
11 KV	PRATIKSHA NAGAR	PN 1.7	Sommaiya College	na	na	na	na	na	
11 KV	DHARAVI	DH 1.2	Bhartiya CHS	na	na	na	na	na	
11 KV	DHARAVI	DH 1.3	Balaji Co-Operative	na	na	na	na	na	
11 KV	DHARAVI	DH 1.4	Kumbharwada	na	na	na	na	na	
11 KV	DHARAVI	DH 1.5	Mogal lane (North)	na	na	na	na	na	
11 KV	DHARAVI	DH 1.7	Sitaladevi (East)	na	na	na	na	na	
11 KV	DHARAVI	DH 2.1	Dharavi Bridge	na	na	na	na	na	
11 KV	DHARAVI	DH 2.2	Dhorwadi	na	na	na	na	na	
11 KV	DHARAVI	DH 2.3	Sunder Kamla Nagar	na	na	na	na	na	
11 KV	DHARAVI	DH 2.4	LTMG Hostel	na	na	na	na	na	
11 KV	DHARAVI	DH 2.5	Shree Nidhi	na	na	na	na	na	
11 KV	DHARAVI	DH 2.6	Shalimar Industry	na	na	na	na	na	
11 KV	DHARAVI	DH 3.1	Sadabahar Co-Op. Housing Soc.	na	na	na	na	na	
11 KV	DHARAVI	DH 3.2	Motilal Heritage	na	na	na	na	na	
11 KV	DHARAVI	DH 3.3	Matunga Road Railway	na	na	na	na	na	
11 KV	DHARAVI	DH 3.4	Matunga Labour Camp	na	na	na	na	na	
11 KV	DHARAVI	DH 3.6	Mogal lane (East)	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 3.1	Mahim Depot RHS	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 3.2	Naya Nagar TBM Launching Shaft LHS	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 3.3	Auto Transformer no.2 (11KV)	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 3.4	Sea View	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 4.1	Auto Transformer no.1 (11KV)	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 4.4	Mahim Causeway Static	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 4.5	Kanakiya Miami	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 4.6	Naya Nagar TBM Launching Shaft Middle	na	na	na	na	na	
11 KV	MAHIM CAYSWAY	MC 4.7	Naya Nagar TBM Launching Shaft RHS	na	na	na	na	na	
11 KV	SITLADEVI	ST 1.1	New Era	na	na	na	na	na	
11 KV	SITLADEVI	ST 1.2	Manmala Tank	na	na	na	na	na	
11 KV	SITLADEVI	ST 1.3	G.M.T. Block	na	na	na	na	na	
11 KV	SITLADEVI	ST 1.4	Sophiya Height	na	na	na	na	na	
11 KV	SITLADEVI	ST 1.6	National Hospital Annex	na	na	na	na	na	
11 KV	SITLADEVI	ST 2.1	Sai Sadan	na	na	na	na	na	
11 KV	SITLADEVI	ST 2.2	Uttung Tower	na	na	na	na	na	
11 KV	SITLADEVI	ST 2.3	Anandvan Co-Operative	na	na	na	na	na	
11 KV	SITLADEVI	ST 2.4	Omkar	na	na	na	na	na	
11 KV	SITLADEVI	ST 2.5	New Dadar purification	na	na	na	na	na	
11 KV	SITLADEVI	ST 2.7	Padamabai Thakar Road	na	na	na	na	na	
11 KV	SITLADEVI	ST 3.1	Sitaladevi Road	na	na	na	na	na	
11 KV	SITLADEVI	ST 3.2	Shirish Housing	na	na	na	na	na	
11 KV	SITLADEVI	ST 3.4	Nutun Vaishali	na	na	na	na	na	
11 KV	SITLADEVI	ST 3.5	Kapad bazar Cross Lane	na	na	na	na	na	
11 KV	SITLADEVI	ST 3.6	Suraj	na	na	na	na	na	
11 KV	SITLADEVI	ST 4.1	Shreeji Height	na	na	na	na	na	
11 KV	SITLADEVI	ST 4.2	Mid Lady Hardening	na	na	na	na	na	
11 KV	SITLADEVI	ST 4.4	Sitaladevi Static	na	na	na	na	na	
11 KV	SITLADEVI	ST 4.5	Zinnia	na	na	na	na	na	
11 KV	SITLADEVI	ST 4.6	National Hospital	na	na	na	na	na	
11 KV	PMGP	PM 1.1	PMGP No. 2	na	na	na	na	na	
11 KV	PMGP	PM 1.2	ONGC Complex	na	na	na	na	na	
11 KV	PMGP	PM 1.3	Dharavi Pumping No.1	na	na	na	na	na	
11 KV	PMGP	PM 1.4	Laxmi Baug DSS	na	na	na	na	na	
11 KV	PMGP	PM 1.5	PMGP No. 3	na	na	na	na	na	
11 KV	PMGP	PM 1.7	Nagree Apartment DSS	na	na	na	na	na	
11 KV	PMGP	PM 2.1	Dharavi Purification(LHS)DSS	na	na	na	na	na	
11 KV	PMGP	PM 2.2	Kala killa DSS	na	na	na	na	na	
11 KV	PMGP	PM 2.5	Gajanan Co-Operative DSS	na	na	na	na	na	
11 KV	PMGP	PM 2.7	Dharavi Transit Camp DSS	na	na	na	na	na	

11 KV	PMGP	PM 3.1	Maharashtra Nature Park	na	na	na	na	na	
11 KV	PMGP	PM 3.4	Vaibhav (LHS) DSS	na	na	na	na	na	
11 KV	PMGP	PM 3.5	Dharavi Link Road	na	na	na	na	na	
11 KV	WORLI	WR 1.1	Hains Industrial estate	na	na	na	na	na	
11 KV	WORLI	WR 1.3	Peninsula Point LHS	na	na	na	na	na	
11 KV	WORLI	WR 1.4	Raheja Atlantis RHS	na	na	na	na	na	
11 KV	WORLI	WR 1.5	New Mahindra & Mahindra RHS	na	na	na	na	na	
11 KV	WORLI	WR 1.6	Dhanraj Estate No2	na	na	na	na	na	
11 KV	WORLI	WR 1.7	Waghmare Marg	na	na	na	na	na	
11 KV	WORLI	WR 2.1	Sanghvi Evana	na	na	na	na	na	
11 KV	WORLI	WR 2.3	New Ferguson East	na	na	na	na	na	
11 KV	WORLI	WR 2.4	Apte Industry	na	na	na	na	na	
11 KV	WORLI	WR 2.5	Peninsula Park LHS	na	na	na	na	na	
11 KV	WORLI	WR 2.6	Gandhi Nagar	na	na	na	na	na	
11 KV	WORLI	WR 2.7	Indiabulls RMU 2	na	na	na	na	na	
11 KV	WORLI	WR 3.1	Ferguson Industrial estate	na	na	na	na	na	
11 KV	WORLI	WR 3.2	Indiabulls RMU 3	na	na	na	na	na	
11 KV	WORLI	WR 3.3	New Ferguson Air Compressor LHS	na	na	na	na	na	
11 KV	WORLI	WR 3.4	Reliance industries	na	na	na	na	na	
11 KV	WORLI	WR 3.5	Ferguson Annexe	na	na	na	na	na	
11 KV	WORLI	WR 3.6	Raheja Atlantis LHS	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 1.1	Doordarshan LHS	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 1.2	Worli Tel. EXCHG	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 1.3	Kher Road	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 1.4	Worli Costal Temp. LHS	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 1.5	Sheel Marie	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 2.1	Silverine	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 2.2	Worli Dairy No 2	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 2.3	Shah House RHS	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 2.4	Sirus Land	na	na	na	na	na	
11 KV	WORLI DAIRY	WRD 2.6	Avarsekar Heights	na	na	na	na	na	
11 KV	NESTLE	NST 1.1	Nestle	na	na	na	na	na	
11 KV	NESTLE	NST 1.2	Peninsula Park MBS	na	na	na	na	na	
11 KV	NESTLE	NST 1.4	Peninsula Point RHS	na	na	na	na	na	
11 KV	NESTLE	NST 1.6	Sai Sunder No2	na	na	na	na	na	
11 KV	NESTLE	NST 1.7	Jupiter Mill HV BS 3	na	na	na	na	na	
11 KV	NESTLE	NST 2.1	Mathura Das West	na	na	na	na	na	
11 KV	NESTLE	NST 2.2	Sun Paradise	na	na	na	na	na	
11 KV	NESTLE	NST 2.3	Saraswati	na	na	na	na	na	
11 KV	NESTLE	NST 2.4	Eternia	na	na	na	na	na	
11 KV	NESTLE	NST 2.6	ELM 2.7	na	na	na	na	na	
11 KV	NESTLE	NST 2.7	PARAGON Textile	na	na	na	na	na	
11 KV	NESTLE	NST 3.1	Beau Monde	na	na	na	na	na	
11 KV	NESTLE	NST 3.2	Jupiter Mill HV BS 2	na	na	na	na	na	
11 KV	NESTLE	NST 3.3	Jupiter Mill HV BS 1	na	na	na	na	na	
11 KV	NESTLE	NST 3.4	Nugget	na	na	na	na	na	
11 KV	NESTLE	NST 3.5	Ameya	na	na	na	na	na	
11 KV	NESTLE	NST 3.6	Prabhaviniyak	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 1.2	Lady Ratan Tower	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 1.3	Shivsagar North RHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 1.4	Megus Hotel RHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 1.5	Shah House LHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 1.6	V. P. Stadium LHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 1.7	Discovery of India RHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 1.8	Auto TR 3	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 2.1	Sainath CO OP LHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 2.2	Shivsagar North LHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 2.3	Sarjan Plaza	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 2.4	Zahira Tower RHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 2.5	V. P. Stadium RHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 2.6	Natural Breeze	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 2.7	Auto TR 2	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 3.2	V. P. Stadium LHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 3.3	Science Centre	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 3.4	Vellard North	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 3.5	Discovery of India LHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 3.6	Sainath CO OP RHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 3.7	Shisagar Annexe	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 4.1	Megus Hotel LHS	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 4.2	Auto TR 1	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 4.3	Dhanraj Estate No2	na	na	na	na	na	
11 KV	LOVE GROOVE	LG 4.4	New Janta	na	na	na	na	na	

11 KV	LOVE GROOVE	LG 4.6	V. P. Stadium RHS	na	na	na	na	na	
11 KV	POCHKHANWALA	PK 1.1	Worli Govt Qtrs	na	na	na	na	na	
11 KV	POCHKHANWALA	PK 1.2	Mid Worli	na	na	na	na	na	
11 KV	POCHKHANWALA	PK 1.3	Constabulary Qtrs No 1	na	na	na	na	na	
11 KV	POCHKHANWALA	PK 1.4	Pochkhanwala Static	na	na	na	na	na	
11 KV	POCHKHANWALA	PK 1.5	Pochkhanwala North	na	na	na	na	na	
11 KV	POCHKHANWALA	PK 1.6	Bay View	na	na	na	na	na	
11 KV	TARDEO	TD 2.6	Thakkar Tower	na	na	na	na	na	
11 KV	TARDEO	TD 2.3	Imperial Tower South	na	na	na	na	na	
11 KV	TARDEO	TD 2.5	Krishna Apartment	na	na	na	na	na	
11 KV	TARDEO	TD 3.4	Cresent Aria	na	na	na	na	na	
11 KV	TARDEO	TD 3.5	Tardeo Statc	na	na	na	na	na	
11 KV	TARDEO	TD 3.6	Mahalaxmi Cross Road RHS	na	na	na	na	na	
11 KV	PRABHADEVI	PR 1.1	Anant Nagvekar Marg	na	na	na	na	na	
11 KV	PRABHADEVI	PR 1.2	Worli Bus Charging RMU 3	na	na	na	na	na	
11 KV	PRABHADEVI	PR 1.3	Worli Depot	na	na	na	na	na	
11 KV	PRABHADEVI	PR 1.4	Worli Channel	na	na	na	na	na	
11 KV	PRABHADEVI	PR 1.5	Pearl Residency	na	na	na	na	na	
11 KV	PRABHADEVI	PR 1.7	Cadell Road South LHS	na	na	na	na	na	
11 KV	PRABHADEVI	PR 2.1	Worli Bus Charging RMU 1	na	na	na	na	na	
11 KV	PRABHADEVI	PR 2.2	Satyam	na	na	na	na	na	
11 KV	PRABHADEVI	PR 2.3	Band Box	na	na	na	na	na	
11 KV	PRABHADEVI	PR 2.4	INS Trata	na	na	na	na	na	
11 KV	PRABHADEVI	PR 2.6	Glaxo RHS	na	na	na	na	na	
11 KV	PRABHADEVI	PR 2.7	Satyawadi Annexe	na	na	na	na	na	
11 KV	PRABHADEVI	PR 3.1	Worli Bus Charging RMU 2	na	na	na	na	na	
11 KV	PRABHADEVI	PR 3.2	360 West F	na	na	na	na	na	
11 KV	PRABHADEVI	PR 3.3	Annie Besant north	na	na	na	na	na	
11 KV	PRABHADEVI	PR 3.4	Crushing plant	na	na	na	na	na	
11 KV	PRABHADEVI	PR 3.5	Doordarshan RHS	na	na	na	na	na	
11 KV	PRABHADEVI	PR 3.6	Kohinoor	na	na	na	na	na	
11 KV	PRABHADEVI	PR 3.8	New Mahindra and Mahindra MBS	na	na	na	na	na	
11 KV	VSNL	VSNL 1.2	VSNL Static RHS	na	na	na	na	na	
11 KV	VSNL	VSNL 1.3	Palkhi Lane	na	na	na	na	na	
11 KV	VSNL	VSNL 1.4	Savarkar Smarak RHD	na	na	na	na	na	
11 KV	VSNL	VSNL 1.5	Ram Smriti	na	na	na	na	na	
11 KV	VSNL	VSNL 1.6	K N Dhuru Lane	na	na	na	na	na	
11 KV	VSNL	VSNL 1.7	CCIL Annexe	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 1.2	Dighe Nagar	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 1.4	Ambedkar Nagar	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 1.5	Sky Forest F	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 1.6	ELM Static	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 2.2	Swarajya Annexe	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 2.3	Jupiter Mill HV BS 2	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 2.6	Lavanya	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 2.7	NST 2.6	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 3.3	Indiabulls Tower No 4	na	na	na	na	na	
11 KV	ELPHINSTON MILL	ELM 34	Indiabulls Tower No 4	na	na	na	na	na	
11 KV	STANDERS MILL	SM 1.1	Cynergy IT Park LHS	na	na	na	na	na	
11 KV	STANDERS MILL	SM 1.2	Cynergy IT Park LHS	na	na	na	na	na	
11 KV	STANDERS MILL	SM 1.3	Siddhivinayak Metro HV Temp. LHS	na	na	na	na	na	
11 KV	STANDERS MILL	SM 1.4	Sayani Road North	na	na	na	na	na	
11 KV	STANDERS MILL	SM 1.5	Beau Monde LHS	na	na	na	na	na	
11 KV	STANDERS MILL	SM 1.6	Standard Mill Static	na	na	na	na	na	
11 KV	MAHIM	MM 1.1	Luis Wadi	na	na	na	na	na	
11 KV	MAHIM	MM 1.3	Elegant Business Park	na	na	na	na	na	
11 KV	MAHIM	MM 1.4	Pinto Villa	na	na	na	na	na	
11 KV	MAHIM	MM 1.5	CCIL Annexe	na	na	na	na	na	
11 KV	MAHIM	MM 1.6	Dayal Nivas	na	na	na	na	na	
11 KV	MAHIM	MM 1.7	Belleza Apartment	na	na	na	na	na	
11 KV	MAHIM	MM 2.1	Vision Crest	na	na	na	na	na	
11 KV	MAHIM	MM 2.3	Viniyak Apartment	na	na	na	na	na	
11 KV	MAHIM	MM 2.4	CCIL	na	na	na	na	na	
11 KV	MAHIM	MM 2.5	Commercial Press	na	na	na	na	na	
11 KV	MAHIM	MM 2.6	Mahim Static	na	na	na	na	na	
11 KV	MAHIM	MM 2.7	Grand Pallazo	na	na	na	na	na	
11 KV	MAHALAXMI	ML 1.1	SBM Static	na	na	na	na	na	
11 KV	MAHALAXMI	ML 1.2	New Famous Cine RHS	na	na	na	na	na	
11 KV	MAHALAXMI	ML 1.3	Modern Mill	na	na	na	na	na	
11 KV	MAHALAXMI	ML 1.7	Nahar Excalibur	na	na	na	na	na	
11 KV	MAHALAXMI	ML 3.4	Turf Estate	na	na	na	na	na	
11 KV	MAHALAXMI	ML 3.1	Mid Clerk	na	na	na	na	na	

11 KV	MAHALAXMI	ML 3.2	Essar Tower	na	na	na	na	na	
11 KV	DBA UGM	UG Metro 1.1	Railway Sports Ground	na	na	na	na	na	
11 KV	DBA UGM	UG Metro 1.2	Science Center Metro HV Temp. LHS	na	na	na	na	na	
11 KV	DBA UGM	UG Metro 1.4	Science Center Metro HV Temp. RHS	na	na	na	na	na	
11 KV	DBA UGM	UG Metro 2.2	Science Center Metro HV Temp. LHS	na	na	na	na	na	
11 KV	DBA UGM	UG Metro 2.4	Science Center Metro HV Temp. MBS	na	na	na	na	na	
11 KV	DBA UGM	UG Metro 2.6	Science Center Metro HV Temp. RHS	na	na	na	na	na	
11kV	APOLLO MILL	AM-1.2	LODHA PRIMOREO ANNEXE	na	na	na	na	na	
11kV	APOLLO MILL	AM-1.3	SAKHUBAI MOHITE MARG	na	na	na	na	na	
11kV	APOLLO MILL	AM-1.4	DELISLE ROAD NORTH	na	na	na	na	na	
11kV	APOLLO MILL	AM-1.5	LODHA BELLISMO LHS	na	na	na	na	na	
11kV	APOLLO MILL	AM-1.6	EXCELLUSE MICROTECH RHS	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-1.2	OSCAR TOWER	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-1.3	HALIMA APARTMENT	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-1.4	CLUB BACK ROAD NO.1	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-1.5	SANKALI STREET WEST	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-1.6	BELASIS ROAD RHS	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-1.7	UNITED AVENUE	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-2.2	CENTRAL CNG	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-2.3	AQUA PEARL TOWER	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-2.6	MOTILAL	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-2.7	NAGPADA	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-3.2	JOOTICA CO OP	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-3.3	RIPPON 'X' LANE	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-3.4	KEDDY CO OP LHS	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-3.5	BELASIS ROAD LHS	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-3.6	STATE TRANSPORT	na	na	na	na	na	
11kV	BOMBAY CENTRAL	BCT-3.7	DUNCAN ROAD NORTH	na	na	na	na	na	
11kV	BYCULLA	BY-1.1	Annabhau Sathe Auditorium	na	na	na	na	na	
11kV	BYCULLA	BY-1.3	Ghodapdeo Cross Road	na	na	na	na	na	
11kV	BYCULLA	BY-1.5	Souther Street	na	na	na	na	na	
11kV	BYCULLA	BY-1.6	Rekab Tower	na	na	na	na	na	
11kV	BYCULLA	BY-2.2	CANNAUGHT WEST	na	na	na	na	na	
11kV	BYCULLA	BY-2.3	QUMAR TOWER	na	na	na	na	na	
11kV	BYCULLA	BY-2.4	NEW ATLAS	na	na	na	na	na	
11kV	BYCULLA	BY-2.5	D.P.WADI	na	na	na	na	na	
11kV	BYCULLA	BY-2.6	COAL BUNDER ROAD	na	na	na	na	na	
11kV	BYCULLA	BY-3.1	ARANYA TOWER	na	na	na	na	na	
11kV	BYCULLA	BY-3.2	RAILWAY TELECOM	na	na	na	na	na	
11kV	BYCULLA	BY-3.3	SANSKRUTI SIDDHI	na	na	na	na	na	
11kV	BYCULLA	BY-3.5	VATSALYA	na	na	na	na	na	
11kV	BYCULLA	BY-3.6	SASOON SILK LHS	na	na	na	na	na	
11kV	KUSSARA	K-1.2	ALCOCK ASHDOWN	na	na	na	na	na	
11kV	KUSSARA	K-1.3	QUAY STREET	na	na	na	na	na	
11kV	KUSSARA	K-1.4	NEW NESBIT RHS	na	na	na	na	na	
11kV	KUSSARA	K-1.5	CRYSTAL RESIDENCY	na	na	na	na	na	
11kV	KUSSARA	K-1.6	CHAITYA TOWER	na	na	na	na	na	
11kV	KUSSARA	K-1.7	ALCOCK ASHDOWN LHS	na	na	na	na	na	
11kV	KUSSARA	K-1.8	ALCOCK ASHDOWN RHS	na	na	na	na	na	
11kV	KUSSARA	K-2.1	ASHIYANA	na	na	na	na	na	
11kV	KUSSARA	K-2.2	SHIVDAS CHAMPSI WEST	na	na	na	na	na	
11kV	KUSSARA	K-2.3	KUSSARA STATIC	na	na	na	na	na	
11kV	KUSSARA	K-2.4	MAGAZINE STREET	na	na	na	na	na	
11kV	KUSSARA	K-2.5	B.S.N.	na	na	na	na	na	
11kV	KUSSARA	K-2.7	ORDINANCE DEPOT	na	na	na	na	na	
11kV	KEM	KEM-1.1	Wadia Hospital New	na	na	na	na	na	
11kV	KEM	KEM-1.2	Landmark Tower	na	na	na	na	na	
11kV	KEM	KEM-1.3	KEM	na	na	na	na	na	
11kV	KEM	KEM-1.4	Haffkine Library	na	na	na	na	na	
11kV	KEM	KEM-1.5	Jubilee Block LHS	na	na	na	na	na	
11kV	KEM	KEM-1.7	Ashok Tower	na	na	na	na	na	
11kV	KEM	KEM-2.1	Jubilee Block RHS	na	na	na	na	na	
11kV	KEM	KEM-2.2	Supari Baug	na	na	na	na	na	
11kV	KEM	KEM-2.4	KEM Multistorey	na	na	na	na	na	
11kV	KEM	KEM-2.5	KEM No.2	na	na	na	na	na	
11kV	LALBAUG	LB-1.1	P.H. NEAR LALBAUG DSS	na	na	na	na	na	
11kV	LALBAUG	LB-1.2	LALBAUGCHA RAJA	na	na	na	na	na	
11kV	LALBAUG	LB-1.3	LALBAUG STATIC LHS	na	na	na	na	na	
11kV	LALBAUG	LB-1.4	SUKHAKARTA	na	na	na	na	na	
11kV	LALBAUG	LB-1.5	CENTRE POINT	na	na	na	na	na	
11kV	LALBAUG	LB-2.1	LALBAUG STATIC RHS	na	na	na	na	na	
11kV	LALBAUG	LB-2.2	ISLAM MILL ANNEXE	na	na	na	na	na	

11kV	LALBAUG	LB-2.4	RUPAJI ARENA	na	na	na	na	na	
11kV	LALBAUG	LB-2.5	ARHAM TOWER	na	na	na	na	na	
11kV	MAHALAXMI	ML-1.1	SENAPATI BAPAT MARG STATIC	na	na	na	na	na	
11kV	MAHALAXMI	ML-1.2	NEW FAMOUS CINE RHS	na	na	na	na	na	
11kV	MAHALAXMI	ML-1.3	MODERN MILL	na	na	na	na	na	
11kV	MAHALAXMI	ML-1.4	HINDUSTAN MILL	na	na	na	na	na	
11kV	MAHALAXMI	ML-1.5	SANE GURUJI ROAD	na	na	na	na	na	
11kV	MAHALAXMI	ML-1.7	NAHAR EXCALLIBAR	na	na	na	na	na	
11kV	MAHALAXMI	ML-2.1	NEW CIRCLE	na	na	na	na	na	
11kV	MAHALAXMI	ML-2.2	RANGWALLA COMPOUND	na	na	na	na	na	
11kV	MAHALAXMI	ML-2.3	JACOB CIRCLE RHS	na	na	na	na	na	
11kV	MAHALAXMI	ML-2.4	NEW DHOBIGHAT	na	na	na	na	na	
11kV	MAHALAXMI	ML-2.5	VANJARI BHANDARI CHAWAL	na	na	na	na	na	
11kV	MAHALAXMI	ML-2.7	BORICHA MARG ANNEXE	na	na	na	na	na	
11kV	MAHALAXMI	ML-3.1	MID CLERK	na	na	na	na	na	
11kV	MAHALAXMI	ML-3.2	ESSAR TOWER LHS	na	na	na	na	na	
11kV	MAHALAXMI	ML-3.3	HAYNES SOUTH	na	na	na	na	na	
11kV	MAHALAXMI	ML-3.4	TURF ESTATE	na	na	na	na	na	
11kV	MAHALAXMI	ML-3.5	MOOSA KILLEDAR	na	na	na	na	na	
11kV	MAHALAXMI	ML-3.7	SHRAMIK EKATA NO.1	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-1.2	DOCKYARD ROAD (EAST)	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-1.3	NEW MAZGAON CO.OP.	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-1.4	DR.MASCARENHAS ROAD	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-1.5	SOUTH YARD	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-1.7	MAZGAON HOUSING	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-2.1	GUNPOWDER ROAD	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-2.2	MAZGAON DOCK QUARTERS	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-2.3	FRAMJI PETIT (RHS)	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-2.4	D'LIMA STREET	na	na	na	na	na	
11kV	MAZGAON DOCK	MZ-2.6	RALLY OIL MILL (LHS)	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-1.1	NAIR OPD LHS	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-1.2	NAIR HOSPITAL STATIC	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-1.3	METHODIST CHURCH	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-1.4	NAIR HOSPITAL LHS	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-1.5	DENTAL COLLEGE	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-1.7	ELITE RESIDENCY	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-2.1	NEW BYCULLA TELE EXCH.	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-2.2	BELLASIS BRIDGE	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-2.3	D.B.ROAD	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-2.4	IMPERIAL TOWER NO.2	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-2.5	SANTHOSHI MATA	na	na	na	na	na	
11kV	NAIR HOSPITAL	NH-2.6	HINDUSTAN MILL ANNEX	na	na	na	na	na	
11kV	PAREL	P-1.1	LALBAUG	na	na	na	na	na	
11kV	PAREL	P-1.3	ASHOK GARDEN	na	na	na	na	na	
11kV	PAREL	P-1.4	MTNL CURRY ROAD	na	na	na	na	na	
11kV	PAREL	P-1.5	NEW MATCH FACTORY	na	na	na	na	na	
11kV	PAREL	P-1.6	WEST TOWER	na	na	na	na	na	
11kV	PAREL	P-1.7	ABHYUDAYA BANK	na	na	na	na	na	
11kV	PAREL	P-2.1	RAJKAMAL	na	na	na	na	na	
11kV	PAREL	P-2.3	TATA HOUSING	na	na	na	na	na	
11kV	PAREL	P-2.4	ASHOKA TOWER L.H.S.	na	na	na	na	na	
11kV	PAREL	P-2.5	PAREL QUARTERS	na	na	na	na	na	
11kV	PAREL	P-2.6	PAREL MINT QUARTERS	na	na	na	na	na	
11kV	PAREL	P-3.1	N.M.WADIA	na	na	na	na	na	
11kV	PAREL	P-3.2	HIRAMANI MARKET	na	na	na	na	na	
11kV	PAREL	P-3.3	WADIA CO. OP.	na	na	na	na	na	
11kV	PAREL	P-3.4	DR.E. BORGES ROAD	na	na	na	na	na	
11kV	PAREL	P-3.5	RAJKAMAL HEIGHT	na	na	na	na	na	
11kV	PAREL	P-3.6	K.E.M. MULTISTOREY	na	na	na	na	na	
11kV	PAREL	P-3.7	KINGSTON TOWER	na	na	na	na	na	
11kV	SWAN MILL	SN 1.1	Ashoka Garden DSS	na	na	na	na	na	
11kV	SWAN MILL	SN1.2	Celestia Spaces -1 DSS	na	na	na	na	na	
11kV	SWAN MILL	SN 1.3	Navyug Ind. Estate DSS	na	na	na	na	na	
11kV	SWAN MILL	SN 1.5	Swan Mill Annexe	na	na	na	na	na	
11kV	SWAN MILL	SN 1.6	Swan Mill Static	na	na	na	na	na	
11kV	SEWREE	SW 1.2	Sewree Gardan	na	na	na	na	na	
11kV	SEWREE	SW 1.3	Regal Ind. Estate	na	na	na	na	na	
11kV	SEWREE	SW 1.4	King Edward	na	na	na	na	na	
11kV	SEWREE	SW 1.5	Sewree Road	na	na	na	na	na	
11kV	SEWREE	SW 1.6	KEM X - Ray	na	na	na	na	na	
11kV	SEWREE	SW 2.3	Raman DSS	na	na	na	na	na	
11kV	SEWREE	SW 2.4	Aerna	na	na	na	na	na	

11kV	SEWREE	SW 2.5	Dosti Flemingo Annexe	na	na	na	na	na	
11kV	SEWREE	SW 2.6	Deorukhkar Road	na	na	na	na	na	
11kV	SEWREE	SW 3.2	Naigaon	na	na	na	na	na	
11kV	SEWREE	SW 3.3	Tata Memorial Annexe	na	na	na	na	na	
11kV	SEWREE	SW 3.5	New Bharat Potteries	na	na	na	na	na	
11kV	SEWREE	SW 3.6	Wadia Hospital New	na	na	na	na	na	
11kV	SEWREE	SW 3.7	Golanji Hill	na	na	na	na	na	
11kV	SIMPLEX MILL	SXM-1.2	PLANET GODREJ LHS	na	na	na	na	na	
11kV	SIMPLEX MILL	SXM-1.3	LAXMI NIWAS	na	na	na	na	na	
11kV	SIMPLEX MILL	SXM-1.4	VIJAY LAXMI	na	na	na	na	na	
11kV	SIMPLEX MILL	SXM-2.2	PLANET GODREJ RHS	na	na	na	na	na	
11kV	SIMPLEX MILL	SXM-2.3	VEENA INDUSTRIAL ESTATE	na	na	na	na	na	
11kV	SIMPLEX MILL	SXM-2.4	SANE GURUJI MARG	na	na	na	na	na	
11kV	SIMPLEX MILL	SXM-2.5	WATER STREET	na	na	na	na	na	
11kV	APOLLO	A1.2	MERI WEATHER ROAD	na	na	na	na	na	
11kV	APOLLO	A1.3	COMMERCE HOUSE	na	na	na	na	na	
11kV	APOLLO	A1.4	REGAL	na	na	na	na	na	
11kV	APOLLO	A1.5	AMBALAL DOSHI MG.	na	na	na	na	na	
11kV	APOLLO	A2.1	NEW STOCK EXCHANGE	na	na	na	na	na	
11kV	APOLLO	A2.2	MARINE STREET	na	na	na	na	na	
11kV	APOLLO	A2.4	CH.SHIVAJI MARG	na	na	na	na	na	
11kV	APOLLO	A2.5	I.N.S.ANGRE	na	na	na	na	na	
11kV	APOLLO	A2.6	MANECKJI WADIA	na	na	na	na	na	
11kV	APOLLO	A2.7	FORBES STREET	na	na	na	na	na	
11kV	APOLLO	A3.1	NEW STOCK EXCHANGE	na	na	na	na	na	
11kV	APOLLO	A3.2	BATTERY STREET	na	na	na	na	na	
11kV	APOLLO	A3-3	BRITISH HOTEL LANE	na	na	na	na	na	
11kV	APOLLO	A3.4	DALAL STREET	na	na	na	na	na	
11kV	APOLLO	A3.6	APOLLO STATIC	na	na	na	na	na	
11kV	APOLLO	A4.1	M.G. ROAD	na	na	na	na	na	
11kV	APOLLO	A4.2	MUSEUM	na	na	na	na	na	
11kV	APOLLO	A4.3	APOLLO STATIC	na	na	na	na	na	
11kV	APOLLO	A4.4	OLD CUSTOM HOUSE	na	na	na	na	na	
11kV	APOLLO	A4.5	REGAL ANNEXE	na	na	na	na	na	
11kV	APOLLO	A4.6	DR.V.B.GANDHI MARG	na	na	na	na	na	
11kV	BALLARD ESTATE	BE1.1	NEW MINT ROAD	na	na	na	na	na	
11kV	BALLARD ESTATE	BE1.2	MINT ROAD	na	na	na	na	na	
11kV	BALLARD ESTATE	BE1.4	AUTO TR. NO. 1	na	na	na	na	na	
11kV	BALLARD ESTATE	BE1.5	BALLARD ESTATE	na	na	na	na	na	
11kV	BALLARD ESTATE	BE1.6	NEVILLE HOUSE	na	na	na	na	na	
11kV	BALLARD ESTATE	BE1.7	BALLARD ESTATE STATIC	na	na	na	na	na	
11kV	BALLARD ESTATE	BE2.1	MINT	na	na	na	na	na	
11kV	BALLARD ESTATE	BE2.2	AUTO TR.NO.2	na	na	na	na	na	
11kV	BALLARD ESTATE	BE2.4	CALTEX	na	na	na	na	na	
11kV	BALLARD ESTATE	BE2.5	MEHTA	na	na	na	na	na	
11kV	BALLARD ESTATE	BE2.6	GRESHAM	na	na	na	na	na	
11kV	BALLARD ESTATE	BE2.7	GRAHAM ROAD	na	na	na	na	na	
11kV	BALLARD ESTATE	BE3.1	BOMBAY ICE FACTORY	na	na	na	na	na	
11kV	BALLARD ESTATE	BE3.2	AUTO TR.NO.3	na	na	na	na	na	
11kV	BALLARD ESTATE	BE3.4	ST. GEORGE	na	na	na	na	na	
11kV	BALLARD ESTATE	BE3.5	MARSHALL BUILDING	na	na	na	na	na	
11kV	BALLARD ESTATE	BE3.6	NEW RESERVE BANK	na	na	na	na	na	
11kV	BALLARD ESTATE	BE3.7	SCINDIA HOUSE	na	na	na	na	na	
11kV	BACKBAY	BB1.2	TAJ WEL. MEWS(L.H.S.)	na	na	na	na	na	
11kV	BACKBAY	BB1.3	DALAMAL TOWER	na	na	na	na	na	
11kV	BACKBAY	BB1.4	BACKBAY RECLA.	na	na	na	na	na	
11kV	BACKBAY	BB1.5	SACHIVALAYA ANNEXE	na	na	na	na	na	
11kV	BACKBAY	BB1.6	MAKER CHAMBER -5	na	na	na	na	na	
11kV	BACKBAY	BB1.7	SNEH MANDAL	na	na	na	na	na	
11kV	BACKBAY	BB1.8	SHIPPING CORPO.(SP)	na	na	na	na	na	
11kV	BACKBAY	BB3.5	Piem Hotel	na	na	na	na	na	
11kV	BACKBAY	BB3.6	IDBI Tower	na	na	na	na	na	
11kV	BACKBAY	BB2.1	TAJ WEL. MEWS(R.H.S.)	na	na	na	na	na	
11kV	BACKBAY	BB2.2	CUFFE PARADE	na	na	na	na	na	
11kV	BACKBAY	BB2.3	COOPERAGE RD. PUMP.	na	na	na	na	na	
11kV	BACKBAY	BB2.4	EMBASSY CENTRE	na	na	na	na	na	
11kV	BACKBAY	BB2.5	JOLLY APARTMENT	na	na	na	na	na	
11kV	BACKBAY	BB2.6	COOPERAGE RD.	na	na	na	na	na	
11kV	BACKBAY	BB2.7	Y.C. PRATISTHAN	na	na	na	na	na	
11kV	BACKBAY	BB4.6	Free Press Journal (North)	na	na	na	na	na	
11kV	BACKBAY	BB4.7	Dilwara	na	na	na	na	na	
11KV	COLABA	C1.1	B'BAY BUS CHARGING DSS	na	na	na	na	na	

11KV	COLABA	C1.2	SOMANI SCHOOL	na	na	na	na	na	
11KV	COLABA	C1.3	STATE BANK	na	na	na	na	na	
11KV	COLABA	C1.4	PRESIDENT HOUSE	na	na	na	na	na	
11KV	COLABA	C1.5	IDBI TOWER	na	na	na	na	na	
11KV	COLABA	C1.6	VICTORIA BUNDER (W)	na	na	na	na	na	
11KV	COLABA	C2.1	BENNET VILLA	na	na	na	na	na	
11KV	COLABA	C2.2	TRADE CENTER NO.1	na	na	na	na	na	
11KV	COLABA	C2.3	MIDWODE HOUSE ROAD	na	na	na	na	na	
11KV	COLABA	C2.4	COLABA ROAD (SP)	na	na	na	na	na	
11KV	COLABA	C2.5	PIEM HOTEL	na	na	na	na	na	
11KV	COLABA	C3.2	DUMAYNE ROAD	na	na	na	na	na	
11KV	COLABA	C3.3	CUFFE PARADE (S)	na	na	na	na	na	
11KV	COLABA	C3.4	WOODHOUSE ROAD	na	na	na	na	na	
11KV	COLABA	C3.5	WATER FRONT TOWER	na	na	na	na	na	
11KV	G.T.	GT1.2	TIMES	na	na	na	na	na	
11KV	G.T.	GT1.3	L.T.MARG S/S	na	na	na	na	na	
11KV	G.T.	GT1.4	REWA CHAMBERS	na	na	na	na	na	
11KV	G.T.	GT1.5	RANG BHAVAN	na	na	na	na	na	
11KV	G.T.	GT1.6	ESPLANADE MAIDAN	na	na	na	na	na	
11KV	G.T.	GT1.7	G. T. HOSPITAL NO.3	na	na	na	na	na	
11KV	G.T.	GT2.1	G. T. HOSPITAL NO.2	na	na	na	na	na	
11KV	G.T.	GT2.2	CRAWFORD MARKET	na	na	na	na	na	
11KV	G.T.	GT2.3	EDWARD CINEMA	na	na	na	na	na	
11KV	G.T.	GT2.4	COMMISSIONER OFFICE	na	na	na	na	na	
11KV	G.T.	GT2.5	MEDICAL RESEARCH CENTRE	na	na	na	na	na	
11KV	G.T.	GT2.6	CARNAC BRIDGE	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC1.1	H. CHOWK STATIC	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC1.2	AMERICAN EXPRESS	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC1.3	HIGH COURT	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC1.4	THOMAS COOK	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC1.5	SARASWAT BANK	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC2.1	THAKERSEY MARG	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC2.2	MEHTA STATIC	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC2.3	ERECHSHAW BLDG	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC2.4	FORT HOUSE	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC2.5	CENTRAL BANK	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC2.7	TELECOM	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC3.1	BANDHAKAM BHAVAN	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC3.2	O. C. S	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC3.3	C.T.O	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC3.4	METRO HUTATMA (HV)	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC3.5	PITHA STREET	na	na	na	na	na	
11KV	HUTATMA CHOWK	HC3.6	SUKHIA STREET	na	na	na	na	na	
11KV	MARINE DRIVE	MD1.1	NEW COUNCIL HALL	na	na	na	na	na	
11KV	MARINE DRIVE	MD1.2	OBEROI	na	na	na	na	na	
11KV	MARINE DRIVE	MD1.3	VEER NARIMAN ROAD	na	na	na	na	na	
11KV	MARINE DRIVE	MD1.4	GIRLS HOSTEL	na	na	na	na	na	
11KV	MARINE DRIVE	MD1.5	E ROAD	na	na	na	na	na	
11KV	MARINE DRIVE	MD1.7	CH'GATE SEWAGE PPG.	na	na	na	na	na	
11KV	MARINE DRIVE	MD2.1	MARINE PLAZA	na	na	na	na	na	
11KV	MARINE DRIVE	MD2.2	IND. ASSURANCE BLDG	na	na	na	na	na	
11KV	MARINE DRIVE	MD2.3	YASHODHAN BLDG	na	na	na	na	na	
11KV	MARINE DRIVE	MD2.4	GIC	na	na	na	na	na	
11KV	MARINE DRIVE	MD2.5	HINDUSTAN LEVER	na	na	na	na	na	
11KV	MARINE DRIVE	MD2.7	INDIAN EXPRESS	na	na	na	na	na	
11KV	MARINE DRIVE	MD3.1	AIR INDIA	na	na	na	na	na	
11KV	MARINE DRIVE	MD3.2	C.C.I.	na	na	na	na	na	
11KV	MARINE DRIVE	MD3.3	MANIK MAHAL	na	na	na	na	na	
11KV	MARINE DRIVE	MD3.4	LOTUS HOUSE	na	na	na	na	na	
11KV	MARINE DRIVE	MD3.5	CHANDRAMUKHI	na	na	na	na	na	
11KV	NAVYNAGAR	NN1.1	DUXBURY LANE	na	na	na	na	na	
11KV	NAVYNAGAR	NN1.2	MES NO.1	na	na	na	na	na	
11KV	NAVYNAGAR	NN1.3	NAVY NAGAR STATIC	na	na	na	na	na	
11KV	NAVYNAGAR	NN1.4	TIFR(NEW)	na	na	na	na	na	
11KV	NAVYNAGAR	NN1.5	MILITARY DAIRY	na	na	na	na	na	
11KV	NAVYNAGAR	NN1.7	COLABA PURIFICATION	na	na	na	na	na	
11KV	NAVYNAGAR	NN2.2	HOLIDAY CAMP	na	na	na	na	na	
11KV	NAVYNAGAR	NN2.4	KENDRIYA VIDYALAYA	na	na	na	na	na	
11KV	NAVYNAGAR	NN2.5	TIFR (OLD)	na	na	na	na	na	
11KV	WANKHEDE STADIUM	WS1.2	WANKHEDE STADIUM STATIC RMU NO.2	na	na	na	na	na	
11KV	WANKHEDE STADIUM	WS1.3	AMBASSADOR HOTEL	na	na	na	na	na	
11KV	WANKHEDE STADIUM	WS1.5	WANKHEDE STADIUM STATIC RMU NO.1	na	na	na	na	na	

11KV	WANKHEDE STADIUM	WS1.6	RECREATION DSS	na	na	na	na	na	
11KV	NARIMAN POINT	NP1.2	MITTAL TOWER (RHS)	na	na	na	na	na	
11KV	NARIMAN POINT	NP1.3	RAHEJA CENTER	na	na	na	na	na	
11KV	NARIMAN POINT	NP1.4	SBO QUARTERS	na	na	na	na	na	
11KV	NARIMAN POINT	NP1.5	BHAKTAWAR	na	na	na	na	na	
11KV	NARIMAN POINT	NP1.6	REGENT CHAMBERS	na	na	na	na	na	
11KV	NARIMAN POINT	NP1.7	N.C.P.A. THEATERE (RHS)	na	na	na	na	na	
11KV	NARIMAN POINT	NP1.8	OBEROI	na	na	na	na	na	
11KV	NARIMAN POINT	NP3.2	MAFATLAL	na	na	na	na	na	
11KV	NARIMAN POINT	NP3.3	INDIAN EXPRESS	na	na	na	na	na	
11KV	NARIMAN POINT	NP3.4	MAKER CHAMBERS VI	na	na	na	na	na	
11KV	NARIMAN POINT	NP3.5	OBEROI ANNEX	na	na	na	na	na	
11KV	NARIMAN POINT	NP3.6	MANTRALAYA	na	na	na	na	na	
11KV	NARIMAN POINT	NP3.7	DALAMAL HOUSE	na	na	na	na	na	
11KV	NARIMAN POINT	NP3.8	MITTAL BHAVAN	na	na	na	na	na	
11KV	NARIMAN POINT	NP2.1	FREE PRESS 'A'	na	na	na	na	na	
11KV	NARIMAN POINT	NP2.2	SACHIWALAYA ANNEXE	na	na	na	na	na	
11KV	NARIMAN POINT	NP2.3	INDIAN EXPRESS	na	na	na	na	na	
11KV	NARIMAN POINT	NP2.4	STATE BANK	na	na	na	na	na	
11KV	NARIMAN POINT	NP2.5	L &T CROSS ROAD	na	na	na	na	na	
11KV	NARIMAN POINT	NP2.6	J TATA ROAD	na	na	na	na	na	
11KV	NARIMAN POINT	NP2.7	NEW COUNCIL HALL	na	na	na	na	na	
11KV	NARIMAN POINT	NP4.1	SAKHAR KAR.SANGH	na	na	na	na	na	
11KV	NARIMAN POINT	NP4.2	N.C.P.A. THEATRE (LHS)	na	na	na	na	na	
11KV	NARIMAN POINT	NP4.3	FREE PRESS JR RD (N)	na	na	na	na	na	
11KV	NARIMAN POINT	NP4.4	JOLLY CHAMBER	na	na	na	na	na	
11KV	NARIMAN POINT	NP4.5	RANGADUG	na	na	na	na	na	
11KV	NARIMAN POINT	NP4.6	MAKER CHAMBER NO.IV	na	na	na	na	na	
11KV	NARIMAN POINT	NP4.7	OBEROI	na	na	na	na	na	
6.6 KV	MAHIM CAYSWAY	MC 1.1	Shaft-1 P 001 SB 1	na	na	na	na	na	
6.6 KV	MAHIM CAYSWAY	MC 1.2	Shaft-1 P 003 SB 2	na	na	na	na	na	
6.6 KV	MAHIM CAYSWAY	MC 1.3	Shaft-2 P005 SB 1	na	na	na	na	na	
6.6 KV	MAHIM CAYSWAY	MC 1.4	Shaft-2 P007 SB 2	na	na	na	na	na	
6.6 KV	MAHIM CAYSWAY	MC 2.1	Shaft-1 P002 SB 1	na	na	na	na	na	
6.6 KV	MAHIM CAYSWAY	MC 2.2	Shaft-1 P004 SB 2	na	na	na	na	na	
6.6 KV	MAHIM CAYSWAY	MC 2.3	Shaft-2 P006 SB 1	na	na	na	na	na	
6.6 KV	MAHIM CAYSWAY	MC 2.4	Shaft-2 P008 SB 2	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND1.1	MR 98	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND1.2	MR 28	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND1.3	MR 11	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND1.4	MR 66	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND1.5	MR83	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND2.1	MR 04	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND2.2	MR 40	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND2.3	MR 16	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND2.4	MR 60	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND2.5	MR75	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND3.1	MR 100	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND3.2	MR 35	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND3.3	MR 06	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND3.4	MR 58	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND3.5	MR 77	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND4.1	MR 45	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND4.2	MR 30	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND4.3	MR 21	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND4.4	MR 52	na	na	na	na	na	
6.6kv	NAVAL DOCK	ND4.5	MR 89	na	na	na	na	na	

Actual Power Purchase Details for FY 2020-21 (April-2020 to March-2021)

Sr.No.	Particulars	FY 2020-21	FY 2020-21		
		Approved in MYT Order dated 30th	Actuals (Apr-2020 to Mar-2021)		
		Quantum	Quantum	Total Cost	Avg. Rate
		(MU)	(MU)	(Rs.Crore)	Rs./kWh
	Long term / Medium term Sources				
1	TPC-G	**3,588.43**	**3,085.23**	**1,205.64**	**3.91**
	TPC-G Past Period			**68.92**	
2	Walwhan Solar Energy Maharashtra (Erstwhile Welspun)	**31.50**	**31.50**	**26.96**	**8.56**
2A	Purchase of Additional Solar RE Power generated from Walwhan Solar Energy Maharashtra (Erstwhile Welspun) td. Plant, 20 MW Solar Palnt Mangalwedha for FY 2020-21		**0.41**		
3	M/s Manikaran Power Ltd.	**744.60**	**846.41**	**330.92**	**3.91**
	Short term Sources				
4	Bilateral Power Purchase				
4.1	Trader		-	-	-
4.2	IEX (Purchase)		*133.99*	*49.01*	***3.66***
4.3	IEX (Sale)		*(19.43)*	*(5.67)*	***2.92***
4.4	STOA Application processing Fee of MSLDC		-	*0.01*	
	Total-Bilateral	**640.80**	**114.55**	**43.35**	**3.78**
5	Short Term Non-Solar Purchase		**-**	**-**	**#DIV/0!**
6	**REC Procurement**				
6.1	REC Procurement-Solar	*156.33*	-	-	
6.2	REC Procurement-Non-Solar	*490.04*	-	-	
	Total-REC Procurement	***646.37***	**-**	**-**	
7	**Standby Energy Purchase**		**2.86**	**-**	
8	**Pool Imbalance**		**(30.85)**	**-**	
9	Stand-by Charges			**100.28**	
10	Transmission Charges			**258.48**	
11	MSLDC Charges			**1.29**	
12	Bilateral Rebate			**-**	
13	RPS Rebate			**(0.84)**	
14	Rebat 1% Trans. Ch.Excluding TDS Amt.			**(2.58)**	
15	Rebat 1% Monthly SLDC. Ch. Amt.			**(0.01)**	
16	DPC & Intrest, (1315)				
	Sub Total_FY 2020-21	**5,005.33**	**4,050.12**	**2,032.41**	**5.02**
	Prior Period Payments				
17	**Payment for stand-by energy purchase in FY 2016-17 & FY 2017-18**			**1.27**	
18	**Prior period payments for pool imbalances of FY 2017-18 & FY 2018-19**			**256.54**	
18.1	MSLDC pool imbalnce cost DSM/WRPC PAYMENT (1307) for FY 2017-18.			*11.27*	
18.2	MSLDC pool imbalnce cost for FY 2018-19 and FY 2019-20. A/C. No. (1307)			*178.50*	

18.3	MS/MSPC/FCRbill//00071 dtd.06.01.2021.Fixed Cost Reconciliation and Carrying Cost bills for FY 208-19. 100/1307			*39.82*	
18.4	MSLDC veriable ch..as per MERC Order 297 of 2018 dtd.03.10.2019 and 90 of 2020 dtd.20.07. 2020 FY 2011-12 to 2017-18			*26.95*	
19	**Prior Period Payment of RE Power**			**0.64**	
19.1	Prior Period (RPS)_Additional Power of March-2020 from M/s.Walwhan			*0.64*	
	Sub Total			**258.45**	
	Total Power Purchase for FY 2020-21	**5,005.33**	**4,050.12**	**2,290.87**	**5.66**

OPERATION & MAINTENANCE (SOUTH) DIVISION

ANNUAL STATEMENT OF SoP OF BEST FOR THE YEAR 2020-21
AS PER REVISED SoP REGULATIONS, 2021

MONTH	BEST		
	SAIDI	SAIFI	CAIDI
	in minute		in minute
Apr-20	5.31	0.23	22.76
May-20	4.15	0.19	22.33
Jun-20	4.31	0.20	21.05
Jul-20	6.15	0.24	25.54
Aug-20	7.80	0.29	26.56
Sep-20	7.04	0.28	25.35
Oct-20	7.45	0.28	27.06
Nov-20	2.62	0.12	22.30
Dec-20	3.14	0.13	23.85
Jan-21	4.05	0.18	22.28
Feb-21	4.55	0.22	20.41
Mar-21	6.42	0.27	23.96
YTD	62.99	2.63	23.92

MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.

MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO.LTD.

Office of The Chief Engineer
Maharashtra State Load Dispatch Center,
Thane-Belapur Road, P.O. Airoli,
Navi Mumbai Pin – 400 708.
Tele :91-22-27601765 / 1766
Fax :91-22-27601769
Email : cesldc@mahasldc.in website : http://www.mahasldc.in

Ref: CE/MSLDC/EA/ No 0 1 8 1 6 Date: 2 7 AUG 2021

To,
The Deputy Chief Engineer (Regulatory),
BEST, BEST Bhavan,
BEST Marg,
Mumbai-400 001

Sub: Rectified T<>D drawl figure of BEST for FY 2020-21

Ref : Your office letter No. CER/SLDC/118/2021 dated 03/08/2021

Dear Sir,

With reference to the above subject energy drawl data for BEST at T<>D interface as per records of MSLDC for calculation of State Transmission Loss for the FY 2020-21 is tabulated below.

Month	FY 2020-21
Apr-20	31,25,79,814.00
May-20	34,86,46,460.00
Jun-20	31,33,86,188.00
Jul-20	31,67,22,289.00
Aug-20	30,66,74,305.00
Sep-20	33,23,61,684.00
Oct-20	36,83,17,235.00
Nov-20	33,43,51,954.00
Dec-20	31,94,86,278.00
Jan-21	30,36,90,114.00
Feb-21	29,39,49,976.00
Mar-21	38,12,56,815.00
Total	**3,93,14,23,112**

This is as per your requirement please.

Chief Engineer,
MSLDC, Airoli

पावर फाइनेंस कॉर्पोरेशन लिमिटेड
POWER FINANCE CORPORATION LTD.
(भारत सरकार का उपक्रम) (A Govt. of India Undertaking)
(आई.एस.ओ. 9001:2015 प्रमाणित) (ISO 9001:2015 Certified)

02:10: RDSS: 2021: I: BEST 21.11.2022

The Principal Secretary
Department of Energy, Govt. of Maharashtra,
3rd Floor, Main imarat, Madamkama Road,
Huttama Rajguru Chowk Mantralaya,
Mumbai Maharashtra - 400032

Sub: Financial assistance to BEST for implementation of Projects under Revamped Distribution Sector Scheme (RDSS) of Govt. of India in the State of Maharashtra.
Grant No. 21981001 (RDSS Metering Works)
Grant No. 21982001 (RDSS Loss Reduction Works)
Grant No. 21984S01 (RDSS PMA for Smart Metering Works) and
Grant No. 21984L01 (RDSS PMA for Loss Reduction Works)

Sir,

1. With reference to BEST letter dated 22.08.2022 regarding financial assistance under Revamped Distribution Sector Scheme (RDSS), we are pleased to convey that Monitoring Committee for RDSS constituted under the Chairmanship of Secretary (Power), Govt. of India, in its 13th meeting held on 28.10.2022 has approved the Action plan and Detailed Project Report (DPRs) for Loss Reduction works and Prepaid Smart Metering works of Brihanmumbai Electricity Supply and Transport Undertaking (BEST) under RDSS scheme as per below mentioned details:

   a) Results Evaluation Matrix for BEST as enclosed at **Annexure A** along with pre-qualifying criteria.
   b) DPR for Prepaid Smart metering works with total Project Cost of Rs. 659.17 Cr with Government Budgetary Support (GBS) of Rs. 146.69 Cr including incentive for Phase-I as per details in **Annexure B**.
   c) DPR for Infrastructure– Loss reduction works with total Project Cost of Rs. 972.88 Cr with GBS of Rs. 583.73 Cr as per details in **Annexure C**.
   d) Project Management Agency (PMA) charges of Rs. 17.07 Cr for Prepaid Smart Metering works and Infrastructure- Loss reduction works with GBS of Rs. 10.24 Cr as per details in **Annexure D**.

   Summary of approved projects cost and GBS for Projects and PMA is attached at **Appendix-I**.

2. **Funding Pattern:**

   a. The funding Pattern for BEST in the State of Maharashtra is given below:

Item Description	GBS % (Max)
Prepaid Smart metering solution at consumer, DT, and feeder level including integration of existing infrastructure	15% of the approved cost of metering including the operational cost, provided that it is not more

	than Rs. 900 per meter for consumer metering only.
Distribution Infrastructure works	60% of the approved cost of Distribution infrastructure works
PMA Charges for Metering and Infrastructure works	60% of the approved cost of PMA

b. The project cost approved by the Monitoring Committee or actual cost incurred whichever is less, shall be the eligible cost for determining the grant under the scheme for Infrastructure works and PMA Components. Any cost overrun after approval of the project by Monitoring Committee due to any reason whatsoever shall not be eligible for any grant and shall be borne by the BEST/respective State Government.

c. The release of GBS by Government of India will be subject to prescribed scheme guidelines and would be contingent to award of prepaid smart metering works & its satisfactory progress.

3. The terms and conditions of the sanction are as given below:

a) BEST to ensure implementation of the scheme in accordance with all the prescribed scheme guidelines (including SBDs).

b) <u>Prepaid Smart Metering works:</u>

i. DISCOM to submit the timelines for completing ongoing Smart Metering works. Further nodal Agency to ensure that timelines for completing Smart Metering (both Consumer and System metering) are adhered to and all consumers in the State/ DISCOM area are covered under Smart Metering within these timelines as per scheme guidelines.
ii. Funding under Metering component will be available only to Prepaid smart meters operating in prepayment mode for consumers, and in accordance with the uniform approach indicated by the Central Government, with implementation in OPEX/TOTEX mode.
iii. The Grant for smart metering works would be released in three equal yearly instalments subject to fulfilment of performance criteria including prescribed SLAs. Further, the grant per meter would also be rationalized considering exclusion of MDM from the scope of AMISP.
iv. A feeder and DT level automated online energy accounting system shall be put in place.
v. All feeders are to be metered with communicable & AMI/AMR meters by 31st December 2022, and shall be integrated with the National Feeder Monitoring System (NFMS) proposed to be put in place shortly.
vi. BEST to complete 100% DT Metering in Phase - I areas by March 2023 and in remaining areas by December 2023 to facilitate energy accounting.
vii. BEST while implementing the prepaid smart metering projects, shall ensure that the remotely readable metering at DT level; Consumer indexing; integration of feeder level data; and the consumer billing database under the AMI contracts are prioritised to be completed latest by March 2023.
viii. Prepaid Smart Meters may be installed outside the consumer premises, may be pole mounted, ground mounted panels, incoming service cables that may be armoured etc.

c) **Infrastructure works & PMA Charges:**

i. All feeders segregated for Agriculture should be solarized under the PM- KUSUM scheme of MNRE or any other similar scheme of State Government.
ii. BEST to carry out feeder level analysis to identify high loss feeders for reduction of losses through appropriate measures proposed in the DPR. The details of such feeders to be included in the DPR and submitted to Nodal Agency to verify the same. Feeder level analysis should be completed as early as possible but within 90 days of sanction.
iii. PMA charges over and above the permitted amount shall be borne by the BEST/ State Government.
iv. Also, services of PMA shall be retained up to completion of the project, without any financial implications beyond that already provided.
v. The Monitoring committee has advised nodal agency to review the tender documents already floated by the BEST in accordance with the respective SBD's. The fund release under RDSS shall be subject to compliance of RDSS guidelines and provisions of SBD's. Some minor deviations may be allowed subject to approval of Nodal Agency and Monitoring Committee.

The detailed terms & conditions of sanction letter is enclosed as **Annexure E**.

4. Result Evaluation Matrix and pre-qualifying criteria:

a) The AT&C losses and ACS-ARR Gap trajectories approved by Monitoring Committee are as given below:

Parameter	Units	Max marks	Base Year	Baseline values	Targets			
					FY 2022	FY 2023	FY 2024	FY 2025
ACS-ARR Gap								
(i) On Cash Basis	Rs./ kWh	30	2021	0.94	0.30	0.20	0.10	0
(ii) On subsidy received basis,				0.705	0.15	0.15	0.09	0
AT&C loss	%	30	2021	8.18%	8.00%	7.80%	7.60%	7.50%

b) BEST to mandatorily meet the pre-qualifying criteria and achieve the specified marks in the Evaluation Matrix based on which DPR for Modernisation & System Augmentation shall be sanctioned and grant for both loss reduction works (other than the advance for DPR for Loss Reduction) and for the Modernisation & System Augmentation works will be released.
c) BEST to ensure timely adoption of all suitable measures to meet the prequalifying criteria and to score at least 60% marks on the agreed Result Evaluation Matrix.
d) If by the end of year 2025-26, the BEST is not eligible for release of any grant, the initial advance of 10% of the grant component of the cost of DPR for Loss Reduction will have to be refunded by the DISCOM.

e) Approval of the Competent Authority shall be taken for changes in Action Plan made after approval of the Cabinet in accordance with direction of RDSS Monitoring Committee/ MOP/ Nodal Agency.

5. Fund Management:

a. BEST shall ensure that funds released under the scheme are utilized for the purpose for which it is released and will not be diverted for any other purposes whatsoever. The grant release from Nodal Agencies to the BEST shall be done through PFMS and the BEST shall use PFMS for fund flows to the lowest level as specified by the Government of India's instructions on the subject under the scheme.
b. BEST shall submit utilization certificates (UC) for the funds released during the financial year in prescribed format latest by 30th April of succeeding year in addition to the UC along with every claim.
c. For release of funds under the Scheme, BEST has to ensure updation of baseline data, physical & financial progress, Quality Monitoring, Fund Management, Asset identification through Geo-tagging, outcomes and achievements for evaluation under Result Evaluation Framework, closure, etc. on the digital platform to be developed by the Nodal Agencies.
d. For works other than metering works under Part A, counterpart funding will be provided by the BEST/ State Government. If BEST takes loan for counterpart funding, such loan will be taken from REC and PFC only. Further, counterpart funding from bilateral/multilateral funding agencies can also be leveraged for which the Government of India would extend benefits of reduced Government Guarantee fee.
e. In case loan component of the project cost is funded by the NBFCs under MoP, then in order to secure the loan, the existing TPA (Tri-partite Agreement) arrangement among Government of India, the State Government and the RBI shall be suitably amended to provide that the loan servicing payments in case of default can be recovered through RBI.

6. A Scheme Implementation Agreement will be signed between the Government of Maharashtra, BEST and Nodal Agency on behalf of MoP within 30 days of issuance of sanction letter. Copy of approved agreement format is attached at **Appendix-II**.

7. The Monitoring Committee is empowered to recall the grant released to the BEST at any stage of the scheme, in case the sanctioned works are left incomplete, or the assets could not be put to use, or funds are utilized for purposes other than those prescribed in the scheme/ as approved by the Monitoring Committee in accordance with the prescribed guidelines.

8. BEST to undertakes to seek full authorization by way of its Resolution passed in subsequent meeting of its Board / State Govt. in order to implement the RDSS Scheme on the said terms and conditions to the satisfaction of the Government of India / Nodal Agency.

9. Any unrecovered/ outstanding dues amounts of earlier Schemes of Ministry of Power, GOI shall also be allowed to be adjusted against releases in the current scheme.

10. It is requested to kindly acknowledge and accept the sanction letter within 15 days from the date of issue of this sanction letter as per the acceptance letter enclosed as **Annexure- F**.

11. The appointment of PMA and/or PIA, if any, should be in line with the RDSS Guideline and MoP letter dated 18th May 2022 & subsequent amendment thereof.

12. District wise and Project area wise bifurcation of work and project cost approved for Infrastructure – Loss reduction works etc. is to be submitted by BEST within 15 days of the issuance of the 13th MCM minutes as per the requirement of MOP/ Nodal Agency.

13. The sanction is subject to undertaking / commitment and implementation by BEST of the SOP issued by Ministry of Power as mentioned in para (o) of the decisions mentioned in minutes of 13th meeting of Monitoring Committee for RDSS.

Yours sincerely,

Encl: As Above

Saurav Kumar Shah
Executive Director
for **Power Finance Corporation**

Copy to:

1. Chairman & Managing Director, Brihanmumbai Electricity Supply and Transport Undertaking, BEST Bhawan, BEST Marg , Colaba, Mumbai, Maharashtra - 400001.
2. Joint Secretary (Distribution), MoP, Shram Shakti Bhawan, Rafi Marg, New Delhi-110001

Result Evaluation Framework for BEST (Maharashtra) **Annexure A**

S No.	Result Parameter	Units	Maximum Marks	Base Year and Baseline values (FY2021)	Targets			
					FY2022	FY2023	FY2024	FY2025
A	**Financial Stability (60% weightage; 65% in 1st year)**							
1	ACS-ARR Gap – Cash basis	Rs./ kWh	30	0.94	0.30	0.20	0.10	0.00
	ACS-ARR Gap – Subsidy received basis			0.705	0.15	0.15	0.09	0.00
2	AT&C loss	%	30	8.18	8.00	7.80	7.60	7.50
3	Outstanding/ Overdue Government Dues	Rs. Crore	15	41.43	30	20	10	0
4	Progress in putting Govt. Offices on prepaid meters (Total: 7634 Nos.)	%	15	0%	0%	5%	100%	100%
5	No. of creditor days (including payment to Gencos for supply of power)	Days Payable	5	9.5	Less than 45 days			
6	No. of debtor days	Days Receivable	5	53.5	Less than 45 days			
			100					
B	**Outcomes of Infra works (20% weightage)**							
1	Hours of supply (Urban)	Avg. Hours/ Day	20	23:53	23:54	23:55	23:56	23:57
2	%age of Feeder Level Energy accounting being published - BEE	%	20	0	0%	100%	100%	100%
3	%age of DT Level Energy accounting being published	%	20	0	0%	100%	100%	100%
4	Reliability of power supply - SAIFI (System Average Interruption Frequency Index)	Nos/ Year	20	2.63	2.50	2.25	2.0	1.50
5	Data availability in the National Feeder Monitoring System / NPP	%	20	0	0%	100%	100%	100%
			100					
C	**Infrastructure Works (10% weightage)**							
	Metering							
1	Consumer Metering [Target : 10,44,000]	%	20	0%	0%	25%	99%	100%

2	DT Metering [Target : 3356]	%	20	0	0%	100%	100%	100%
3	Feeder Metering [Target : 1239]	%	20	0	0%	100%	100%	100%
4	% of Consumers with Prepaid Smart Meters (other than Govt. Dept.)	%	15	-	-	15%	55%	100%
5	Augmentation of substations (add/ replace of DT's) – (Target : 666 Nos)	Nos	15	-	-	35	400	666
6	Replacement of weak/Old UG cables (33, 11KV & 22KV) to improve the quality of supply (Target : 373 Km)	Kms	10	-	-	35	180	373
			100					
D	**Policy and Structural Reforms (10% weightage)**							
1	SCADA	No. of Towns/ %	25	-	0	0%	100%	100%
3	ERP Implementation & Billing Module (Target: 6 Modules)	Yes/ No	25	0	0	0	3	6
4	Training of Discom Officials	Mandays	20	0	0	800	800	800
5	DT Failure rate	%	15	0.54	0.54	0.50	0.45	0.45
6	Digital Payments : as a % of total revenue collected	%	15	64%	65%	67%	70%	75%
			100					

Smart Metering DPR (BEST- Maharashtra) **Annexure – B**

Sl No.	Major Component	Item Particulars	Expected Life cycle unit cost (Rs. per meter)	Quantity (Phase I)	Quantity (Phase II)	Total Quantity	Estimated cost in Rs. Crores
				No.	No	Nos.	
(1)	(2)	(3)	(4)	(5)	(6)	(7) = (5)+(6)	(8) = (4)x(7)
1	**Consumer Metering**						
1.1		1 Phase Whole Current Smart Consumer Meter	6,000	8,90,071	11,131	9,01,202	**540.72**
1.2		3 Phase Whole Current Smart Consumer Meter	6,000	1,66,339	2,080	1,68,419	**101.05**
1.3		3 Phase LT-CT Operated Smart Consumer Meter	6,000	5,978	75	6,053	**3.63**
1.4		3 Phase CT-PT Operated HT Smart Consumer Meter	6,000	204	3	207	**0.12**
	Sub-Total			**10,62,592**	**13,289**	**10,75,881**	**645.53**
2	**DT Metering***	3 Ph LT-CT Operated DT Meter	23,000	3,356	42	3,398	**7.82**
3	**Feeder Metering**	3 Ph CT-PT Operated feeder Meter	42,000	1,239	16	1,255	**5.27**
4	**Boundary Metering**	3- phase CT/PT operated Boundary meter	42,000	131	2	133	**0.56**
	Total			**10,67,318**	**13,349**	**10,80,667**	**659.17**
	Total GBS excluding incentive for Phase – I						**98.88**
	Incentive for Phase – I						**47.82**
	Total GBS including Incentive of Phase - I						**146.69**

***100% DT metering to be completed by December 2023**

Infrastructure works under Loss Reduction (BEST-Maharashtra) **Annexture C**

S.No.		Description	Unit	Unit Cost (in Rs Lakhs)	Qty.	Total Cost (in Rs. Crore)
A	**ERP, Billing Software and IT/OT enablement works**					
	1	New MBC solution (SaaS mode)	LS	2259.00	1	22.59
	2	ERP Solutions incl. License cost & Implementation cost etc. (MM, FICO, HCM, AM, DMS, BI/BW)	LS	3219.00	1	32.19
	3	Infrastructure Hardware (IaaS) Cost for ERP deployment	LS	870.00	1	8.70
	4	Network connectivity across all sites, head office and central cloud infrastructure	LS	667.00	1	6.67
	5	Complete setup of centralized Customer Call Centre	LS	221.00	1	2.21
	6	Contingency Charges@5% of Project Cost	LS	362.00	1	3.62
		Sub Total (A)				**75.98**
B	**Implementation of SCADA & DMS**					
	1	**Implementation of SCADA & DMS**	LS	14372.00	1	143.72
		Sub Total (B)				**143.72**
C	**Replacement of old Switchgear**					
	1	Replacement of 33 KV, 1500MVA Switchgears with relays	Nos.	17.32	19	3.29
	2	Replacement of 11 kV, 350MVA Switchgears with relays at RSS (10 switchgear per panel)	Panels	63.06	32	20.18
	3	Replacement of 11 kV OCB Switchgears by VCB Switchgears at DSS (No. given of DSS)	Nos.	21.40	396	84.74
	4	Replacement of Oil Ring Main Unit by SF6 Ring Main Unit	Nos.	8.23	95	7.82
		Sub Total (C)				**116.03**

D	**Renovation /Augmentation of Infrastructure at Power/Receiving Substations**					
	1	Additional / Replacement of Transformer (Power Transformer) - 16/ 20 MVA ONAN/ONAF	Nos.	251.16	20.00	50.23
		Sub Total (D)				**50.23**
E	**Renovation /Augmentation of Infrastructure at Distribution Substations**					
	1	Augmentation of substations (additional / replacement of Distribution transformer (995 KVA) along with Breakers/Cable)	Nos.	28.95	666	192.80
	2	No of New RMUs	Nos.	8.23	104	8.56
		Sub Total (E)				**201.36**
F	**Renovation /Augmentation of HV and LV lines**					
	1	Replacement / Additional of 33KV, with 3cx 300 sq.mm Cu. XLPE Cables	Kms	132.68	120	159.22
	2	Replacement / Additional of HV weak/Old cable with 3C X 240 SQ. MM XLPE AL. cables	Kms	63.24	203	128.38
	3	Replacement / Additional of LV weak/Old cable with LV 4C X 300 SQ. MM XLPE AL. cables	Kms	50.86	50	25.43
		Sub Total (F)				**313.03**
G	**Auxiliary component cost for Consumer metering**					
	1	Auxiliary component cost for Consumer metering (Single pole MCB, Copper service cable etc)	NOS	0.01	523357	**72.53**
		Sub Total (G)				
	Total Cost of Loss Reduction in Crs. (A+B+C+D+E+F+G)					**972.88**
	Total GBS @ 60%					**583.73**

Details of PMA Charges (BEST Maharashtra) **Annexure – D**

Sl. No.	Particulars	Total Project Cost	GBS*	PMA Charges**	GBS for PMA Charges***
1	**Smart Metering Works**	659.17	98.88	2.47	1.48
2	**Infrastructure Works – Loss Reduction**	972.88	583.73	14.59	8.76
	Total	**1632.05**	**682.60**	**17.07**	**10.24**

*** Excluding incentives in case of Smart Metering works of Phase-I.**
**** 2.5% of GBS for Smart Metering (excluding incentive) and 1.5% of total project cost for Infrastructure works.**
***** 60% of PMA Charges.**

Appendix-I

Approved DPR Cost and Government of India (GoI) Grant for BEST, Maharashtra

All amount in Rs. Cr.

Sl. No.	Grant No.	Name of the Project	Approved Project Cost	GoI Grant* Sanctioned	Additional Incentive** for Phase-I Smart Metering (GoI Grant)
1	21981001	RDSS Smart Metering Works	659.17	98.88	47.82
2	21984S01	RDSS PMA Grant for Smart Metering works	2.47	1.48	NA
Total			**661.64**	**100.36**	
3	21982001	RDSS Loss Reduction Works	972.88	583.73	NA
4	21984L01	RDSS PMA Grant for Loss Reduction Works	14.59	8.76	NA
Total			**987.47**	**592.49**	
Grand Total			**1649.11**	**692.85**	**47.82**

** 15% of the approved cost of the metering including the operational cost, provided that it is not more than Rs. 900 per meter for consumer metering only.*

*** Maximum incentive GBS for deployment of prepaid Smart meters by December, 2023- 7.50% of the cost per consumer meter including operational cost or Rs. 450 per consumer meter, whichever is lower*

General Terms and Conditions Applicable for Availing Financial Assistance under Revamped Distribution Sector Scheme

The terms and conditions of financial assistance as set out here under shall be binding on the DISCOM and State Government in accordance with the Scheme Implementation Agreement to be executed amongst PFC (on behalf of MoP), State Government & State Discom.

A. Project Financing & Fund Management:

1. The funding pattern under the scheme is as given below:

Part	Item Description	GBS % (Max)
Part A	Component I: Prepaid Smart consumer metering solution including Communicable/Smart System Metering at DT, feeder and boundary level including integration of existing infrastructure.	15% / 22.5% of meter lifecycle cost as the case may be (limited up to Rs.900 or Rs.1350 respectively per meter for Consumer metering only)
	Component II: Distribution Infrastructure works including SCADA, DMS, AB cables, feeder segregation etc.	60% or 90% of project cost as the case may be

2. The project cost approved by the Monitoring Committee or actual cost incurred whichever is less, shall be the eligible cost for determining the grant under the scheme for Component II and III of Part A. Any cost overrun after approval of the project (by Monitoring Committee) due to any reason whatsoever shall not be eligible for any grant and shall be borne by the DISCOM/respective State Government.

3. Part A: Component I- Metering:

   3.1. The operation and maintenance cost of the meter over the life of the meter as per the SBD shall be included in the project cost.

   3.2. Prepaid Smart metering for consumers, and System metering at Feeder and Distribution Transformer level with communicating feature along with associated Advanced Metering Infrastructure (AMI) will be done in TOTEX mode through PPP, to facilitate reduction of Distribution losses and enable automatic measurement of energy flows and energy accounting as well as auditing in line with the BEE regulations which will help in identifying high loss packets.

   3.3. Funding under Metering component of Part A will be available only if the DISCOM agrees to the operation of smart meters in prepayment mode for consumers, and in accordance with the uniform approach indicated by the Central Government, with implementation in TOTEX mode. Pre-paid smart metering works carried out after 1st January, 2020 will be eligible for funding, if they were carried out in TOTEX mode, after obtaining approval from Monitoring Committee in this regard

   3.4. In areas which do not have communication network, installation of prepayment meters, may be taken up.

   3.5. The financial support for Metering Component under Part A of the scheme shall be as under:

3.5.1. *Other than Special Category States:* 15% of the project cost of the metering works including the operational cost, limited upto Rs. 900 per meter for consumer metering only would be provided as grant by Government of India. Further, an incentive @ 7.5% of the cost per consumer meter worked out for the whole project or Rs. 450 per consumer meter, whichever is lower, would be for prepaid Smart meters installed within the targeted timeline of first phase mission i.e. by December, 2023.

3.5.2. *Special Category States (All North Eastern States including Sikkim, Himachal Pradesh & Uttarakhand and union Territories of Jammu & Kashmir, Ladakh, Andaman & Nicobar Islands & Lakshadweep)*: 22.5% of the project cost of the metering works including the operational cost, limited upto Rs. 1350 per meter for consumer metering only would be provided as grant by Government of India. Further, an incentive @ 11.25% of the cost per consumer meter worked out for the whole project or Rs. 675 per consumer meter, whichever is lower, would be for prepaid Smart meters installed within the targeted timeline of first phase mission i.e. by December, 2023.

4. Part A: Component II- Distribution Infrastructure works:

4.1. The eligible project cost shall include Central taxes and all fees like forest clearance, highway and railway crossing fee etc. The project cost shall however not include the cost of land, cost of buildings other than sub stations and anti-theft police stations, service lines to new consumers, compensation towards ROW (except forest clearance, highway and railway crossing fee), office equipment & fixtures, spares (other than mandatory spares prescribed by manufacturer), T&P, road cutting charges, vehicles and salaries and establishment expenditure. Further, the project cost shall be reduced to the extent of any Liquidated Damages actually levied, but the encashment of performance security or bid security (EMD) shall not reduce the project cost.

4.2. Feeders having significant agricultural load (30% or more) may be considered for separation under the loss reduction part of DPR and the same should also be proposed for solarization under the PM- KUSUM scheme of MNRE or any other scheme of Government.

4.3. Discom to submit feeder wise analysis of high loss feeders being taken up on priority under loss reduction works, within the 3 months of sanction to Nodal Agency.

4.4. The financial support for Part A: Component II under the scheme shall be as under:

4.4.1. Other than Special Category States:

a) 60% of project cost of works other than metering works under Part A and approved cost of PMA would be provided as grant by Government of India.

b) 40% of project cost of works and approved cost of PMA shall be arranged through own sources of State Government/ Utility or may avail loan from PFC & REC. Funding from bilateral/multilateral funding agencies can also be leveraged for which the Government of India would extend benefits of reduced Government Guarantee fee.

4.4.2. Special Category States (All North Eastern States including Sikkim, Himachal Pradesh & Uttarakhand and union Territories of Jammu & Kashmir, Ladakh, Andaman & Nicobar Islands & Lakshadweep)

a) 90% of project cost of works and approved cost of PMA would be provided as grant by Government of India.

b) 10% of project cost of works and PMA works shall be arranged through own sources of State Government/ Utility or may avail loan from PFC & REC. Funding from bilateral/multilateral funding agencies can also be leveraged for which the Government of India would extend benefits of reduced Government Guarantee fee.

5. Part A: Component III- Project Management:

5.1. 2.5% of the GBS of metering component and 1.5% of project cost of Distribution infrastructure works component, shall be allowed as PMA charges under the Scheme. PMA charges, over and above the permitted amount shall be borne by the respective DISCOM / State government.

5.2. 60% of the PMA charges allowed under the scheme for metering and Distribution infrastructure work components would be provided as grant by Government of India for other than Special Category States. For Special Category States, Government of India grant would be 90% of the allowed PMA charges.

5.3. Services of PMA shall be retained up to physical completion of the project, without any financial implications beyond that already provided

6. Release of grant to Discom by PFC:

6.1. Release of grant for Metering:

a) Grant for metering works, will be due when a meter is successfully installed and commissioned, and essential services and data related to it are provided for a period of one month to the DISCOM. It will be essential that a consumer meter is recharged at least once, for the release of grant pertaining to it to become due.

b) The DISCOM may submit claim for release of grant in a phased manner when grant becomes due against 5% of the total meters planned to be installed, or such number of meters or such period that the Nodal Agencies deem practical and convenient. After the first release, subsequent releases shall be subject to submission of utilization certificate of the previous releases.

6.2. Release of grant for Distribution Infrastructure works:

6.2.1. **Phase I- 10% of the grant for Loss reduction part of Project** (5% on sanction and further 5% on award of works)

a) Approval of the project by the Monitoring Committee
b) Execution of Scheme Implementation agreement

6.2.2. **Phase II**
30% of the grant for Loss reduction part of project in FY 2022-23 (including the advance 10%):

a) Qualification as per the Results Evaluation Framework of the Action Plan for FY 2021-22.
b) Submission of a certificate regarding utilization of grant already released in the Format prescribed by Ministry of Finance;

c) Submission of a certificate regarding receipts and expenditure on the project certified by a Chartered Accountant ;
d) Submission of physical and financial (grant and counterpart funding) progress report;
e) Sanction letter for counter-part funding / DISCOM's own resources / State Government funding for Distribution Infrastructure Works.
f) Award of prepaid Smart Metering works to be covered in the first phase to be completed by December 2023, as per the clause 3.2.2.2 of scheme guidelines.

30% of the grant for Modernization & System Augmentation part of project in FY 2022-23 (10 % on sanction and 20% on award of works.)

a) Approval of the project by the Monitoring Committee
b) Execution of Scheme Implementation agreement
c) Award of prepaid Smart Metering works to be covered in the first phase to be completed by December 2023, as per the clause 3.2.2.2 of scheme guidelines.

6.2.3. **Phase III: Cumulative release of 60% of grant component of the project cost of DPRs in FY 2023-24:**

a) Qualification as per the Results Evaluation Framework of the Action Plan for FY 2022-23.
b) Submission of a certificate regarding utilization of grant already released in the Format prescribed by Ministry of Finance;
c) Submission of a certificate regarding receipts and expenditure on the project certified by a Chartered Accountant;
d) Submission of physical and financial (grant and counterpart funding) progress report;
e) Sanction letter for counter-part funding / DISCOM's own resources / State Government funding for Distribution Infrastructure Works.

6.2.4. **Phase IV: Cumulative release of 95% of grant component of the project cost of DPRs in FY 2024-25:**

a) Qualification as per the Results Evaluation Framework of the Action Plan for FY 2023-24.
b) Submission of a certificate regarding utilization of grant already released;
c) Submission of a certificate regarding receipts and expenditure on the project certified by a Chartered Accountant;
d) Submission of physical and financial (grant and counterpart funding) progress report;
e) Sanction letter for counter-part funding / DISCOM's own resources / State Government funding for Distribution Infrastructure Works.

6.2.5. **Cumulative release of 100% of grant component of the project cost of DPRs in FY 2024-25:**

a) Submission of project completion report as per clause 4.9.1 of scheme guidelines.

6.2.6. Release of grant for PMA

Grant for PMA component shall be released, subject to the following conditions:
(i) Grant shall be released on the basis of the sanctioned cost or award cost, whichever is lower;

(ii) Grant will be released in the month of March, every year;
(iii) 10% shall be released as advance in the year of sanction;
(iv) 30% shall be released each year subsequent to the sanction year;
(v) Subsequent releases shall be subject to submission of utilization certificate of the previous releases and achievement against deliverables as specified in the SBD referred to in Clause

Discoms shall comply the amendments/supplemental to conditionalities prescribed for release of particular installment, if any, issued by MoP/PFC in future.

7. If DISCOM achieves the targets as per Action Plan of any previous FY in a subsequent year, then it shall be eligible for release of grant pertaining to that FY.

8. DISCOM (Implementing Agency) shall open an Assignment Account with NDRO, Reserve Bank of India (RBI) as Sub Agency for implementation of the RDSS through PFC (Central Nodal Agency) or as per the latest policy/ guidelines/ directives issued by Ministry of Power from time to time. All project related payments to the contractors/ agencies by DISCOM shall be done directly from the Assignment Account with RBI.

9. Regarding counterpart funding, DISCOM shall open a dedicated scheme account in a nationalized bank having E-banking facility or as per directions issued by MoP/ Nodal Agency. MoP/ Nodal Agency shall have the view right of the said Bank Account.

10. Any interest earned on grant shall be remitted to Ministry of Power's bank account on regular basis and at least once in a quarter.

11. Since grant under the scheme is Central Government money and DISCOMs are only the custodian of this money, income tax is not payable on interest earned on this money. DISCOMs shall take necessary steps to seek exemption from Income Tax Department regarding deduction of Tax at Source by the bank on interest accrued on un-utilized fund under the scheme. However, in case of deduction of TDS by bank, the Utilities shall claim refund of the deducted amount from Income Tax Department directly while filing annual tax return and remit it to Ministry of Power's account.

12. The Discom shall ensure that funds released under the scheme are utilized for the purpose for which it is released and will not be diverted for any other purposes whatsoever. In case of any breach or deviation further release of funds shall be stopped.

13. The grant release from Nodal Agencies to the DISCOMs shall be done through PFMS and the DISCOMs shall use PFMS for fund flows under the scheme. DISCOMs receiving funds under the scheme are to be registered / mapped in PFMS. The DISCOMs shall mandatorily enter details like receipts, expenditures, etc in Public Fund Management System (PFMS) portal. In case of non-entering desired details in PFMS portal, banks may not consider release of funds to Contractors.

14. DISCOM shall submit utilization certificates (UC) for the funds released during the financial year in prescribed format latest by 30th April of succeeding year in addition to the UC along with every claim.

15. DISCOMs shall maintain books of accounts both for receipt of funds from Nodal Agency and release to contractors for each of the project. The DISCOM shall ensure that fund shall not be invested in any other bank/branch, whether for short term or medium term, including fixed deposits.

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16. The DISCOM will ensure audit of the scheme accounts relating to receipts of funds from GoI / Nodal agency and expenditure incurred by the DISCOM against such receipts during the financial year by an independent Chartered Accountant and furnish a report to the Nodal agency latest by 30th June of the succeeding year.

17. The works and finances would be open to audit by the office of the Comptroller & Auditor General of India (C&AG) as well as Internal Audit Wing, Office of Controller of Accounts, MoP

18. **Recall of Grant:**

18.1. If by the end of year 2025-26, a DISCOM is not eligible for release of any grant, the initial advance of 10% of the grant component of the cost of DPR for Loss Reduction will have to be refunded by the DISCOM.

18.2. The Monitoring Committee is empowered to recall the grant released to the DISCOMs at any stage of the scheme, in case the sanctioned works are left incomplete, or the assets could not be put to use, or funds are utilized for purposes other than those prescribed in the scheme/ as approved by the Monitoring Committee in accordance with the prescribed guidelines.

18.3. Any unrecovered/ outstanding dues amount from earlier Schemes of Ministry of Power, GoI shall also be allowed to be adjusted against releases in the current Scheme.

19. In case loan component of the project cost is funded by the NBFCs under MoP, then in order to secure the loan, the existing TPA (Tri-partite Agreement) arrangement among Government of India, the State Government and the RBI shall be suitably amended to provide that the loan servicing payments in case of default can be recovered through RBI.

B. Project Implementation by Discom:

20. Mode of Implementation:

20.1. **Metering**: These projects shall be implemented in TOTEX mode (Total expenditure includes both capital and operational expenditure) with the following options:

a) Installation and commissioning of meters and cost recoveries in equated monthly instalments by PPP or implementation partner (or service provider) with no upfront payment by DISCOM

b) Some initial payment shall be made to the service provider upon installation and commissioning of the meters, with the rest of the payments made on equated monthly / quarterly instalments over the operational period.

20.2. **Distribution infrastructure works:** The projects shall be implemented normally on turnkey basis. However, certain works may be taken up on partial turnkey basis or departmentally with the approval of DRC and consent of Nodal Agency, subject to, overall guidance of the Monitoring Committee.

21. The scheme shall be implemented in accordance with the Ministry of Power's Office Memorandum No. 20/9/2019-IPDS dated 20th July, 2021, Scheme Implementation Agreement and operational guidelines issued including amendments/supplemental if any.

22. Discom to follow Standard bidding Document (SBD) as issued by Nodal Agencies for selection of AMI service provider, for Distribution infrastructure works, SCADA and PMA.

23. The DISCOMs may make minor changes in the SBD, while retaining its basic structure and essence, provided that the approval of the Nodal Agency is taken for the changes, subject to, overall guidance the Monitoring Committee

24. Prepaid smart Metering projects taken up by DISCOMs through MOU route with CPSUs or their JVs and Subsidiaries shall also be permitted subject to their being implemented in TOTEX mode as per proposed model circulated by Ministry of Power vide letter No. 14/07/2021- UR&S-II-(E-260509) dated 19.01.2022.

25. Keeping in view the aims and objectives of Atma Nirbhar Bharat Abhiyan, Ministry of Power has issued Public Procurement (Preference to Make in India) for Purchase Preference (linked with local content) Order in respect of Power Sector on 28.7.2020. This order is in line with the DPIIT Notification No. P-45021/2/2017-PP(BE-II) dated 4th June,2020. This order along-with amendments, if any, from time to time, shall be followed by the DISCOMs in the implementation of the scheme. However, in case a DISCOM is availing funds through multi-lateral financial institutions, applicable DEA directives may be followed.

26. Discom may appoint one or more PMA for project management. Existing PMA of DDUGJY or Saubhagya or IPDS or PMDP or any other Central/State Govt scheme of power sector may be used for preparation of DPR and Action Plan, and the expenses incurred will be eligible under the scheme. For all other works including bid process, monitoring of implementation, project completion, result evaluation and related works, a new PMA will have to be appointed as per the SBD as circulated by the Nodal agency. DISCOMs desirous of appointing CPSUs or their JVs and subsidiaries as PMA on nomination shall be required to obtain a specific approval from the Ministry of Power through concerned Nodal Agency. Any such proposal would be sent by the DISCOM along with the imperative need along with a detailed justification.

27. The sunset date for the scheme will be 31.03.2026, the works executed beyond which will not be eligible for release of Central Government grant.

28. Discom to ensure updation of MIS web portal to be developed by the Nodal Agencies for submission of Action Plan & DPRs, capturing baseline data, physical & financial progress, quality reports, outcomes and achievements for evaluation under Result Evaluation Framework, closure, etc.

C. Result Evaluation Framework:

29. Discom to meet the pre-qualifying criteria and achieve the specified marks in the Evaluation Matrix based on which DPR for Modernisation & System Augmentation shall be sanctioned and grant for both loss reduction works (other than the advance for DPR for Loss Reduction) and for the Modernisation & System Augmentation works will be released.

30. For qualifying in the Evaluation Matrix, a DISCOM needs to score a minimum of 60 marks.

D. Monitoring & Evaluation

31. This scheme would be reviewed by the District Electricity Committees, to be notified by the State Government in compliance to the notification of Government of India dated 16th Sept, 2021.

32. The DISCOM shall be responsible & accountable for assuring quality in the scheme works. Accordingly, DISCOM shall formulate a comprehensive Quality Assurance (QA) and Inspection Plan with an objective to build quality infrastructure under the project. The QA and Inspection Plan shall be an integral Part of the contract agreement with turnkey contractor or equipment supplier/vendor and erection agency as the case may be in case of partial turnkey and departmental execution of works. Documentation with regard to Quality Assurance & Inspection Plan shall be maintained by DISCOM and kept in proper order for scrutiny during the course of project execution and for future reference. The DISCOM has to ensure that the quality of

material/equipment supplied at site and field execution of works under the project is in accordance with Quality Assurance & Inspection Plan. DISCOM may use the MQP (Manufacturing Quality Plan) and FQP (Field Quality Plan) used in DDUGJY and IPDS schemes by suitably modifying as per requirement of this scheme.

33. In addition to the in-house quality checks and processes followed by the DISCOM, the nodal agency (PFC/ REC) shall carry out concurrent inspection of works through Third Party Quality Monitoring Agency (TPQMA).

E. Interpretation

Any dispute arising out of this Agreement/ interpretation of any clause may be referred to Secretary (Power), Govt. of India whose decision shall be final and binding on all parties. In case of any inconsistency between the Terms and Conditions of this sanction letter and the provisions of RDSS Guidelines, the latter shall prevail.

Appendix-II

[This MoA is to be executed on Non-Judicial Stamp Paper of Rs 200/-]

IMPLEMENTATION AGREEMENT AMONGST

_____ Limited, the Nodal Agency onbehalf of Ministry of Power, Government of India

AND

State Government,

AND

Power Utility

For Implementation of Revamped Distribution Sector Scheme

This TRIPARTITE MEMORANDUM OF AGREEMENT (hereinafter referred to as the **"Implementation Agreement")** is made this ..... day of .....20....

BY AND AMONGST

_____ Limited, A Government of India Undertaking, having its Registered Office at _____ (hereinafter referred to as "**Nodal Agency**" or "_____") part on behalf of Ministry of Power, Government of India, which expression shall unless it be repugnant to the subject or context thereof, include its successors and assigns, of the **FIRST PART;**

AND

State Government of..... (hereinafter referred to as "**State Government**") which expression shall unless it be repugnant to the subject or context thereof, include its successors and assigns, of the **SECOND PART**

AND

..... *[Distribution Company]* having its Head/Registered Office at ..... (hereinafter referred to as **"DISCOM"** which expression shall unless repugnant to the context or meaning thereof includes its successors and assigns) of the **THIRD PART**.

The Nodal Agency, the State Government, and the Utility are hereinafter also referred to collectively as the **"Parties"** and individually as the **"Party"**.

WHEREAS the Government of India has launched **Revamped Distribution Sector Scheme** (hereinafter referred to as "**RDSS**") as a Central Sector Scheme to improve the operational efficiencies and financial sustainability, by providing financial assistance to DISCOMs for strengthening of supply infrastructure. The DISCOM can take up projects relating to installation of prepaid smart meters for all consumers along with associated AMI, communicable meters for DTs & Feeders to enable automated Energy Audit and Accounting, SCADA, DMS & RT-DAS, Enterprise Resource planning (ERP) and other ICT initiatives, and Distribution infrastructure works as required

for strengthening and modernizing the system as well as measures for loss reduction with the end objective of reducing losses and ensuring 24 x 7 power supply , Public Charging Infrastructure for Electric Vehicles (EVs), Disaster Resilient Infrastructure works (hereinafter referred to as the "**Project**") on the terms & conditions contained in the **Order No. F. No. 20/9/2019-IPDS dated 20.07.2021 issued by Ministry of Power and RDSS guidelines and any amendments thereto issued by the nodal agency.**

NOW IT IS HEREBY AGREED BY AND BETWEEN THE PARTIES HERETO as follows:

1. This Agreement signed between (a) _____ Limited, the Nodal Agency on behalf of Ministry of Power, Government of India;(b) State Government and (c) Discom for implementation of Revamped Distribution Sector Scheme shall be implemented by the Discom in letter and spirit. Government of India will monitor implementation of the precedent conditions agreed to upon in this Agreement before releasing funds through Nodal Agency.

2. This Agreement shall be read in accordance with the provisions of **Order No. F. No. 20/9/2019-IPDS dated 20.07.2021 issued by Ministry of Power and RDSS guidelines and any amendments thereto issued by the nodal agency**. The said RDSS Guidelines shall form an integral part of this agreement as Annexure – 'A' as if fully set forth hereunder and all the terms and conditions set out in the said Revamped Distribution Sector Scheme Guidelines shall be binding on the Parties hereto.

3. The parties have agreed that the individual project(s), as proposed by DISCOM and sanctioned by the Monitoring Committee (MC) /nodal agency, under Revamped Distribution Sector Scheme (RDSS), commencing from the financial year 2021-22 shall be deemed to have been covered under this agreement. The terms and conditions of sanction by the MC/nodal agency for a particular project, as contained in the sanction letter (including the supplementals, modifications if any) issued by the nodal agency, shall also form part and parcel of this agreement.

4. DISCOM has to formulate, plan, design, develop and implement the projects in accordance with the Standard Bidding Documents for various components as circulated by Nodal agencies and in line with the Central Vigilance Commission (CVC) guidelines. Also, guidelines, SBDs, specifications and construction standards shall be adopted wherever applicable.

5. State Government and DISCOM agree that in the event the projects are not implemented satisfactorily in line with the sanction terms and conditions, left incomplete or the assets could not be put to use, or funds are utilized for purposes other than those prescribed in the scheme/ as approved by the Monitoring Committee in accordance with the prescribed guidelines then Monitoring Committee is empowered to recall the grant released to the DISCOMs at any stage of the scheme.

6. State Government and DISCOM agree that performance in the Reforms Based Results Linked Revamped Distribution scheme would also form integral part of the financing norms of PFC, REC, Banks/FIs and MDBs for any project in the Distribution Sector even beyond those related to funding under this scheme.

7. State Government and DISCOM agree that if due to adverse performance in the Reforms Based Results Linked Revamped Distribution scheme, funds does not get released then any advance amount released shall be refunded to the Government of India.

8. PROJECT FINANCING

i) For Smart Metering works:

The financial support under the scheme shall be as under:

a) 15% of sanction cost limited up to Rs.900 per meter for Consumer metering would be provided as grant by Government of India (22.5% for special category limited to Rs.1350)

b) The implementation of the metering scheme is proposed through PPP on TOTEX mode. State Government/DISCOM may also provide budgetary support in TOTEX mode.

c) An incentive of 7.5% (11.25% for special category) of the cost per consumer meter worked out for the whole project or Rs. 450 per consumer meter (Rs.675 for special category), whichever is lower, would be provided for prepaid Smart meters installed within the targeted timeline of first phase mission i.e. by December, 2023. The decision of Monitoring Committee shall be final while calculating Additional grant applicable to any project under the Scheme.

d) The consumer meters shall mandatorily be prepaid meters to be eligible for availing grant under the scheme.

e) Discoms shall ensure Feeder/DT metering in accordance with the requirements of the scheme/ directions of MOP

ii) **For Distribution Infrastructure works:**

a) The sanction of DPR for Modernisation & System Augmentation and release of grant for both loss reduction works (other than the advance) and for the Modernisation & System Augmentation works will be based on the DISCOM meeting the pre-qualifying criteria and achieving the specified marks in the Evaluation Matrix. Also, Monitoring Committee will issue sanctions of loss reduction works contingent to sanctions of metering works being already in place; or, Smart metering works being already implemented by the DISCOMs in line with the SBD for Smart prepaid metering in TOTEX mode; or together, as the case may be.

b) The financial support under the scheme shall be as under:

- The grant shall be restricted to 60% (90% for special category) of sanction cost or award cost or executed cost (excluding State & local taxes) whichever is lower *(this lowered cost herein after shall be referred to as 'Sanction cost')*. The state & local taxes are not admissible under RDSS and to be borne by the State Government/Discom
- 40% (10% for special category) of sanction cost shall be either loan from Financial Institutions (REC/PFC or MDBs) or own funds of State Government. REC/PFC shall consider offering loans at competitive interest rates for the RDSS scheme.

iii) Cost overruns beyond sanction cost, if any, and PMA charges beyond allowed GOI grant shall be borne by the State Government/Discom.

iv) To be eligible for grant, State Government/Discom has to follow the SBD circulated by the nodal agency or obtain specific approval of Nodal agency for deviations.

v) State Government to arrange for DISCOM contribution in case DISCOM fails to arrange the same;

vi) State Government to furnish guarantee for the loan component under the scheme in case the DISCOM is not able to provide any other mode of security.

vii) Directives of Ministry of Power in this regard if any, would be followed.

9. Funds

i) The release of the fund shall be as per the clause 5.2 of the operational guidelines of RDSS. The terms & conditions of release of funds for a particular project as contained in operational guidelines issued, shall also form part of the present agreement. The guidelines shall include supplementals and modifications issued, if any. The releases will be subject to the deductions as agreed amongst Nodal Agencies, State Government and Discom, as per RDSS guidelines or statutory requirements.

ii) State Government/ Discom commits to refund grant component released to Utility in case of non-compliance of RDSS guidelines/ this agreement or poor progress resulting to short-closure/ cancellation.

iii) MoP/ Monitoring Committee is empowered to recall the grant released to the DISCOMs at any stage of the scheme, in case the sanctioned works are left incomplete or the assets could not be put to use or funds are utilized for purposes other than those prescribed in the scheme/ as approved by the Monitoring Committee in accordance with the prescribed guidelines. Further, if by the end of year 2025-26, a DISCOM is unable to get any fund released due to non-fulfillment of performance criteria of the scheme,, the initial advance of 10% will have to be refunded by the DISCOM. Any unrecovered/due amounts from earlier schemes of Ministry of Power, GOI shall also be allowed to be adjusted against releases in the current scheme till 2025-26.

iv) In order to secure the loan of NBFCs under MoP, the existing TPA (Tri-partite Agreement) arrangement among Government of India, the State Government and the RBI shall be suitably amended to provide that the loan servicing payments in case of default can be recovered through RBI.

v) DISCOMs shall maintain books of accounts both for receipt of funds from Nodal Agency and release to contractors for each of the project.

vi) DISCOM shall ensure that fund shall not be invested in any other bank/branch, whether for short term or medium term, including fixed deposits.

10. Opening of Bank Account

i) DISCOM (Implementing Agency) shall open an Assignment Account with NDRO, Reserve Bank of India (RBI) as Sub Agency for implementation of the RDSS through PFC (Central Nodal Agency) or as per the latest policy/ guidelines/ directives issued by Ministry of Power from time to time. All project related payments to the contractors/ agencies by DISCOM shall be done directly from the Assignment Account with RBI. Regarding counterpart funding, DISCOM shall open a dedicated scheme account in a nationalized bank having E-banking facility or as per directions issued by MoP/ Nodal Agency. MoP/ Nodal Agency shall have the view right of the said Bank Account.

ii) State Government/Discom shall enter details like receipts, expenditures, etc in Public Fund Management System (PFMS) portal. In case of non-entering desired details in PFMS portal, banks may not consider release of funds to Contractors.

11. Distribution Reforms Committee

i) State Government shall setup a Distribution Reforms Committee (DRC), headed by the Chief Secretary, Secretary in charge of the Energy/Power Department of the State as the convener and consisting of Secretary (Finance), Secretary (Land Revenue) and Secretary (Forest and Environment) as its members. The roles and responsibilities of Distribution Reforms Committee (DRC) are mentioned in clause 7.4 of the operational guidelines of RDSS.

12. DISTRICT ELECTRICITY COMMITTEE (DEC):

i) State Government shall also setup a District Electricity Committee (DEC) as per the Ministry of Power letter no. 42/17/2011-RE [206787] dated 26.09.2021. The Committee shall meet periodically at District headquarters at least once in 3 months to review and coordinate overall development of power supply infrastructure in the district in accordance with the schemes of Government.

ii) State Government shall also facilitate participation of Public Representatives in the inauguration events etc.

13. PROJECT MANAGEMENT

i) Project Management Agency (PMA) shall be appointed by Discom/Power Department to assist them in project management to ensure timely implementation of the project. PMA charges, restricted to 2.5% of the GBS of component I - metering and 1.5% of project cost of component II - Distribution infrastructure works, shall be sanctioned as a separate component of the scheme. PMA charges, over and above the permitted amount shall be borne by the respective DISCOM/ Government.

ii) State Government shall ensure Reforms support in the form of consultancy for Discoms and payments thereof.

iii) State Government/Discom shall ensure establishment of a dedicated project implementation cell at district level and a centralized cell at Head office level.

14. CONSTRUCTION / IMPLEMENTATION

i) State Government/Discom shall make all possible efforts to complete the project(s) within the approved time frame starting from the date of award of project. State Government to provide required land for substations and facilitate in obtaining other statutory clearances (ROW, forest etc.);

ii) State Government/Discom to ensure following Public Procurement (Preference to Make in India) for Purchase Preference (linked with local content) Order in respect of Power Sector dated 28.7.2020 or its latest amendments thereof. DEA directives to be followed in case funds are availed through multi-lateral financial institutions.

iii) State Government/Discom shall suitably incorporate the provisions towards levy of Liquidated Damages in their agreements with contractors for delay in completion of the project(s) and also other relevant contractual provisions pertaining to the procurement of

goods and works. Out of the amount recovered towards Liquidated Damages, if any, by State Government/Discom under this provision, the amount proportionate to subsidy shall be remitted to MoP account.

iv) During implementation of projects, State Government/Discom shall be solely responsible & accountable for assuring quality in RDSS works. State Government/Discom shall formulate a comprehensive Quality Assurance (QA) and Inspection Plan with an objective to build Quality Infrastructure under RDSS works. The QA and Inspection Plan shall be an integral Part of the contract agreement with turnkey contractor or equipment supplier/vendor and erection agency as the case may be in case of partial turnkey and departmental execution of works.

v) State Government/Discom shall also ensure that the quality of material/equipment supplied at site and field execution of works under the project is in accordance with Quality Assurance & Inspection Plan.

vi) State Government/Discom to ensure submission of updated monthly physical and financial progress of the project to the Nodal Agency including its updation on the web portal.

vii) State Government/Discom shall ensure submission of geotagged photographs of the assets created under the scheme and same shall be uploaded in the portal while submitting the progress and claims. The detailed methodology shall be provided by the Nodal agency.

viii) State Government/Discom shall ensure that there is no duplication / overlapping of works with any other Government of India and State scheme.

ix) Appropriate third party/parties will be appointed by MOP / Nodal Agencies to assess / verify the achievements of DISCOMs with respect to the action plan finalized on periodical basis using the Result Evaluation Framework.

x) The projects shall be awarded and implemented within the time frame as per guidelines on turn-key basis through e-tendering in accordance with the prescribed Procurement Policy, Standard Bidding Document and Technical Specifications / amendments thereof.

xi) For metering, Standardization Testing and Quality Certification (STQC) & Cyber security aspects have to be mandatorily included in the contract, while following Government of India's stipulations related to source of procurement.

15. UTILISATION CERTIFICATE

i) State Government/Discom shall submit Utilization Certificate (UC) for the funds released during the Financial year and utilization thereof in prescribed format, latest by 30th April of succeeding year. The UC shall provide the physical progress/achievements also apart from financial utilization. Utilization Certificate is also mandatory to be submitted for every disbursement. The prescribed format of UC shall be furnished by the Nodal agency.

16. ARBITRATION

i) Any differences or dispute among the parties arising out of or in connection with this project shall be discussed and settled amicably amongst the parties. In the event of non-settlement of the difference or dispute within sixty (60) days, the same shall be referred to the Secretary to the Government of India in the Ministry of Power, as the sole arbitrator whose decision shall be final and binding on the parties to this Agreement.

17. FORCE MAJEURE

i) The parties shall ensure due compliance with the terms of this Agreement. However, no party shall be liable for any claim for any loss or damage whatsoever arising out of failure to carry out the terms of the Agreement to the extent that such a failure is due to force majeure events such as fire, rebellion, mutiny, civil commotion, riot, strike, lock-out, forces of nature, accident, act of God and any other reason beyond the control of concerned party. But any party claiming the benefit of this clause shall satisfy the other party of the existence of such an event and give written notice of 30 days to the other party to this effect. The services covered under this Agreement shall be started as soon as practicable by the parties concerned after such eventuality has come to an end or ceased to exist.

18. IMPLEMENTATION OF THE AGREEMENT

i) All discretions to be exercised and directions, approvals, consents and notices to be given and actions to be taken under these presents, unless otherwise expressly provided herein, shall be exercised and given by the signatories to this Agreement or by the Authorized representative(s) that each party may nominate in this behalf and notify in writing to the other party by Registered Post. Any other nomination of Authorized representative(s) and/or changes in designation shall be informed likewise in writing to/by State Government/Discom and PFC within one month of signing of the Agreement. Any changes in designations/ registered office address shall be intimated in writing to all concerned parties.

ii) In case of any inconsistency between the Terms and Conditions of this Agreement and the provisions of RDSS Guidelines, the latter shall prevail.

iii) Any dispute arising out of this Agreement/interpretation of any clause may be referred to Secretary (Power), Govt. of India whose decision shall be final and binding on all parties.

19. NOTICE

i) All notices required or referred to under this Agreement, shall be in writing and signed by the respective authorized signatories of the parties mentioned herein above, unless otherwise notified. Each such notice shall be deemed to have been duly given if delivered or served by registered/speed post of Department of Posts to the respective heads on the addresses mentioned in the recital.

20. VALIDITY & TERMINATION

i) This agreement shall remain valid until all liabilities and obligations of the Discom pertaining to the RDSS scheme implementation are discharged to the satisfaction of the Nodal Agency/Ministry of Power.

ii) This agreement shall remain valid unless terminated with consent of all the Parties.

21. JURISDICTION

The competent Courts of Delhi shall have exclusive jurisdiction in all matters relating to or arising out under these presents.

IN WITNESS WHEREOF the parties have executed these presents through their Authorized Representatives at _____.

SIGNED AND DELIVERED BY (on behalf of **STATE GOVT. OF .....**) **Signature** ..... **Name & Designation** ..... **Address**	in the presence of ..... Signature ..... Name & Designation ..... Address ....
SIGNED AND DELIVERED BY (on behalf of **UTILITY**.....) **Signature** ..... **Name & Designation** ..... **Address**	in the presence of ..... Signature ..... Name & Designation ..... Address ....
SIGNED AND DELIVERED BY **Power Finance Corporation Ltd** (on behalf of **Ministry of Power, Govt. of India**) **Signature** ..... **Name & Designation** ..... **Address**	in the presence of ..... Signature ..... Name & Designation ..... Address ....

Annexure-F

Acceptance Letter

(From Government of .....)

No. Dated:

.....

The Chairman & Managing Director,
Power Finance Corporation Limited,
Urjanidhi, 1 Barakhamba Lane
Connaught Place,
New Delhi-110001

Sub: Acceptance of financial assistance to <DISCOM> for implementation of Projects under RDSS Scheme (Grant Nos. _____and PMA Grant No- _____) and terms and conditions for implementation of projects under RDSS

This is with reference to your sanction letter No..... dated: ..... conveying approval of Action Plan and DPRs for sanction of project cost of Rs.....Cr. for implementation of prepaid Smart metering works & Rs..... for implementation of Infrastructure works under Loss reduction in..... <DISCOM> under RDSS scheme.

The Government accepts the Action Plan and above sanctions on the terms and conditions as set out in the sanction letter under reference above and RDSS guidelines..

District wise and Project area wise bifurcation of work and project cost approved for Infrastructure – Loss reduction works etc. shall be submitted by <Discom> within 15 days of this letter as per the requirement of MOP/ Nodal Agency.

Yours faithfully,

(Authorized Officer)
State Government

General information of BEST Distribution Network

The Electric Supply Branch of the Undertaking distributes electricity in the island city of Mumbai from Colaba to Sion in the North-East and up to Mahim in the North-West as a distribution licensee as per the Electricity Act 2003 and also as an Undertaking of MCGM under MMC Act 1888. The electricity distribution system developed by BEST over 100 long years has several salient features for the year 2020-2021 as under,

- **Geographical area of distribution:** Around 72 Sq.kms.
- **Residential population:** About 32 lacs.
- **Types of consumers:** Residential, Commercial, Industrial

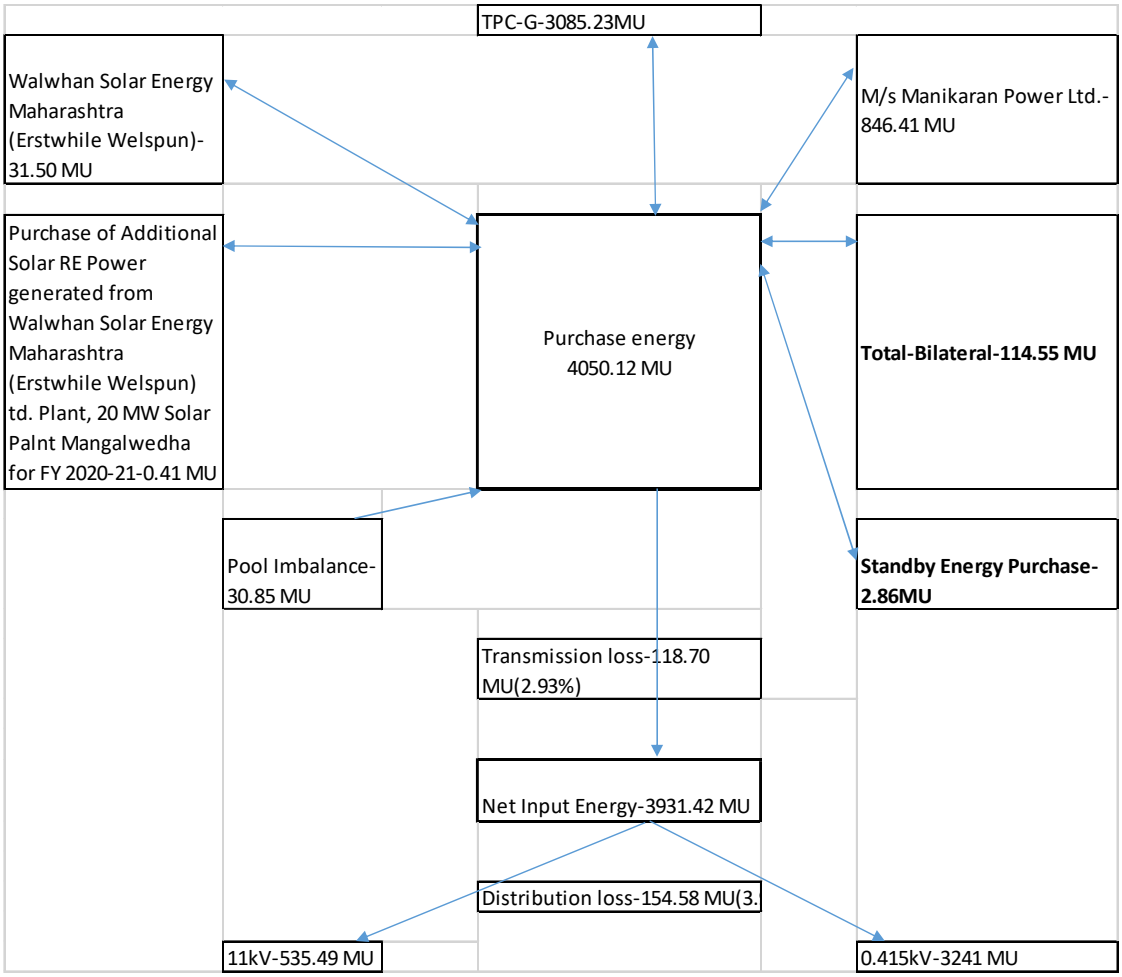
The brief description of the BEST is enclosed below for the FY 2020-21

- **Geographical area of distribution:** Around 72 Sq.kms.
- **Residential population:** About 32 lacs.
- **Types of consumers:** Residential, Commercial, Industrial
- **Nos. of consumers:** 10,44,368
- **Nos. of Services:** 76,698
- **Connected load:** Total – 4,357 MW, Per consumer- 4.25 KW
- **Maximum Demand (MD) :**736 MVA/723 MW
- **MD:** Maximum demand Per Sq. Km- 10.03 MW and Maximum Demand Per consumer- 0.70 KW
- **System load factor:** 62.05 %
- **System MVAr Actual** - 138.17
- **Distribution Loss:** 3.93%
- **Receiving Sub Stations (RSS):** 64 Nos. (110/33/22 kV),
- BEST Network as upstreams 157 number of Power Transformers with an installed capacity of 3166.7 MVA.The capacitor banks are installed on HV side with 103 no. having total Capacity of 244.17 MVAr.
- **The downstream Network has installed number of Distribution Sub Stations (DSS) of** 2451 Nos. (11kv/415 volts) (source: as per Yearly report FY2020-21)
- Distribution Transformers : Total 3298 nos.
- **LV Capacitors:** Total - 3100 Nos., Capacity – 191.02 MVAr
- **Cable Length (Km):** EHV-537, HV- 2150, LV-9025 and Other-227
- **Cable length per MD(MW) load:** EHV - 0.74 km, HV - 2.98 Km and LV - 12.49 Km
- **Distribution Pillars**: 8581 Nos. (Incl. ADP, ZP, MP)
- **Unit purchased:** 4050.12 MUs
- **Unit sold:** 3776.84 MUs
- **Cost of Energy paid to TATA :** 2317.29 Cr
- **F.A. Paid to TATA's:** - 38.93 Cr ,**Numbers of Street light lamps:** 41955 numbers
- **Assets: -** 2944.48 Cr
- **Numbers of employees:** 6079

Table 1 BEST Network Snapshot FY 2020-21

AVVNL Network Snapshot	
Number of circles	1
Number of divisions	1
Number of sub-divisions	1
Number of feeders	839
Number of DTs	3298
Number of consumers	1044368

Energy Flow Diagram



Number of Feeders Zonewise and Voltage levelwise given in table below

O&M ZONE	I/C FEEDER			O/G FEEDER				BEST RSS I/C FROM BEST 110KV
	110KV	33KV	22KV	110KV	33KV(CONS.	11KV	6.6KV	33KV
CN	0	17	8	0	2	151	0	12
NW	2	27	2	0	6	148	0	8
CS	2	19	0	0	0	176	0	12
S	5	17	2	1	0	159	20	6
NE	0	22	6	0	0	130	8	0
TOTAL	9	102	18	1	8	764	28	38
	129							

Zonewise Details are given below

Summary of Central North Zone :

TOTAL NO. OF RSS = 16

(33/11KV - 8NOS, 33-22KV/11KV -4NOS, 22/11KV- 1NO, 33/415 V - 2NOS, 33KV H.T.ROOM - 1NO.)

I/C FEEDER 110KV	0	O/G FEEDER 110KV	0
I/C FEEDER 33KV	17	O/G FEEDER 33KV(OTHER)	4
I/C FEEDER 22KV	8	O/G FEEDER 33KV CONS	2
33KV I/C FEEDER from BEST 110 RSS	12	O/G FEEDER 11KV	151
		O/G FEEDER 6.6KV	0
TOTAL			157
I/C FEEDER	**37**	**O/G FEEDER**	**155**

Summary of North WEST Zone :

TOTAL NO. OF RSS = 15

I/C FEEDER 110KV	2	O/G FEEDER 110KV	0
I/C FEEDER 33KV	27	O/G FEEDER 33KV(OTHER)	13
I/C FEEDER 22KV	2	O/G FEEDER 33KV CONS.	6
33KV I/C FEEDER from BEST 110 RSS	8	O/G FEEDER 11KV	148
		O/G FEEDER 6.6KV	0
TOTAL			
I/C FEEDER	**31**	**O/G FEEDER**	**154**

Summary of Central South Zone :

TOTAL NO. OF RSS = 12

I/C FEEDER 110KV	2	O/G FEEDER 110KV	0
I/C FEEDER 33KV	19	O/G FEEDER 33KV(OTHER)	13
I/C FEEDER 22KV	0	O/G FEEDER 11KV	176
33KV I/C FEEDER from BEST 110 RSS	12	O/G FEEDER 6.6KV	0
I/C FEEDER	**21**	**O/G FEEDER**	**189**

Summary of South Zone :

TOTAL NO. OF RSS = 11

I/C FEEDER 110KV	5	O/G FEEDER 110KV	1
I/C FEEDER 33KV	17	O/G FEEDER 33KV(OTHER)	8
I/C FEEDER 22KV	2	O/G FEEDER 11KV	159
33KV I/C FEEDER from BEST 110 RSS	6	O/G FEEDER 6.6KV	20
TOTAL			188
I/C FEEDER	**24**	**O/G FEEDER 110KV**	**188**

Summary of North East Zone :

TOTAL NO. OF RSS = 10

I/C FEEDER 110KV	0	O/G FEEDER 110KV	0
I/C FEEDER 33KV	22	O/G FEEDER 33KV	0
I/C FEEDER 22KV	6	O/G FEEDER 11KV	130
33KV I/C FEEDER from BEST 110 RSS	0	O/G FEEDER 6.6KV	8
I/C FEEDER	**28**	**O/G FEEDER**	**138**

Installed Capacity of Network

Zone	TOTAL MVA
NW	750.9
NE	427
CS	712
CN	512.8
S	764
MVA	**3166.7**

POWER TRANSFORMER (NORTH WEST)		TOTAL MVA
16 MVA	9	144
16/20 MVA	19	380
10/10.25 MVA	2	20.5
3.2 MVA	2	6.4
100 MVA	2	200
TOTAL	**34**	**750.9**

POWEER TRANSFORMER NORTH EAST		TOTAL MVA
16 MVA	17	272
16/20 MVA	4	80
10/12.5 MVA	6	75
TOTAL	**27**	**427**

POWER TRANSFORMER (CENTRAL SOUTH)		TOTAL MVA
16 MVA	22	352
16/20 MVA	8	160
100 MVA	2	200
TOTAL	**32**	**712**

POWER TRANSFORMER (CENTRAL NORTH)		TOTAL MVA
16 MVA	10	160
16/20 MVA	12	240
10/12.5 MVA	8	100
3.2 MVA	4	12.8
100 MVA	0	0
TOTAL	**34**	**512.8**

POWER TRANSFORMER (SOUTH)		TOTAL MVA
12.5	2	23
15 MVA	7	105
16 MVA	11	176
20 MVA	4	80
45 MVA	4	180
100 MVA	2	200
TOTAL	**30**	**764**

Performance Summary of Electricity Distribution Companies			
1	Period of Information Year of (FY) information including Date and Month (Start & End)	1st April 2020 to 31st March 2021	
2	**Technical Details**		
(a)	**Energy Input Details**		
(i)	Input Energy Purchase (From Generation Source)	Million kwh	4050.12
(ii)	Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	Million kwh	3931.42
(iii)	Total Energy billed (is the Net energy billed. adjusted for energy traded))	Million kwh	3776.84
(b)	Transmission and Distribution (T&D) loss Details	Million kwh	154.58
		%	3.93%
	Collection Efficiency	%	98.09%
(c)	Aggregate Technical & Commercial Loss	%	5.76%

I/We undertake that the information supplied in this Document and Pro-forma is accurate to the best of my knowledge and if any of the information supplied is found to be incorrect and such information result into loss to the Central Government or State Government or any of the authority under them or any other person affected, I/we undertake to indemnify such loss.

Authorised Signatory and Seal

Name of Authorised Signatory

Name of the DISCOM:

Full Address:-

Chief Engineer (Customer Care) Office
[BEST - Undertaking]
3rd Floor, Mi... Annex Bldg.,
BEST Marg, Colaba
Mumbai, Pin-400 001. Tel: 22799563

Seal

Signature:-

Name of Energy Manager*: V. M. SHINDE

Registration Number: EM-1900

PPS ENERGY SOLUTIONS PVT. LTD.

Details of Division Wise Losses (See note below**)

Division Wise Losses

Period From

S.No	Name of circle	Circle code	Name of Division	Consumer profile: Consumer category	No of connection metered (Nos)	No of connection Un-metered (Nos)	Total Number of connections (Nos)	% of number of connections	Connected Load metered (MW)	Connected Load Un-metered (MW)	Total Connected Load (MW)	% of connected load	Energy parameters: Input energy (MU)	Billed energy (MU): Metered energy	Billed energy (MU): Unmetered/ assessment energy	Billed energy (MU): Total energy	% of energy consumption	Losses: T&D loss (MU)	Losses: T&D loss (%)	Commercial Parameter: Billed Amount in Rs. Crore ++	Commercial Parameter: Collected Amount in Rs. Crore ++	Commercial Parameter: Collection Efficiency	AT & C loss (%)
	Mumbai City			Residential	764316	0	764316	73%	2374.64	0.00	2374.64	55%	3931.42	1931.94	0.00	1931.94	51%	154.58	3.93%	3313.91	3250.69	98.09%	5.76%
				Agricultural	0	0	0	0%	0.00	0.00	0.00	0%		0.00	0.00	0.00	0%						
				Commercial/Industrial-LT	279050	0	279050	27%	1568.47	0.00	1568.47	36%		1321.68	0.00	1321.68	35%						
				Commercial/Industrial-HT	185	0	185	0.02%	408.82	0.00	408.82	9%		507.31	0.00	507.31	13%						
				Others	497	0	497	0.05%	5.04	0.00	5.04	0.12%		15.92	0.00	15.92	0.4%						
	At company level				1044048	0	1044048	100%	4356.9687	0.00	4356.97	100%	3931.42	3776.845	0.00	3776.84	100%	154.58	3.93%	3313.91	3250.69	98.09%	5.76%

** Note - It shall be mandatory to record the energy supplied separately for each category of consumers which is being provided a separate rate of subsidy in the tariff, by the state government, so that the subsidy due for the electricity distribution company is quarterly calculated by multiplying the energy supplied to each of such

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Color code	Parameter
	Please enter name of circle
	Please enter circle code
0	Please enter numeric value or 0
	Formula protected

I/We undertake that the information supplied in this Document and Pro-forma is accurate to the best of my knowledge and if any of the information supplied is found to be incorrect and such information result into loss to the Central Government or State Government or any of the authority under them or any other person affected, I/we undertake to indemnify such loss.

Authorised Signatory and Seal

Name of Authorised Signatory:

Name of the DISCOM

Full Address:-

Seal

23/1/23

Chief Engineer (Customer Care) Office
[B.E.S.& T. Undertaking]
3rd Floor, New Admn. Annex Bldg.,
BEST Marg, Colaba,
Mumbai - 400 001. Tel. 22769563

Signature:-

Name of Energy Manager: N.M. SHINDE

Registration Number: EM-1900

PPS ENERGY SOLUTIONS PVT. LTD.

Form-Input energy(Details of Input energy & Infrastructure)

A. Summary of energy input & Infrastructure

S.No	Parameters	FY 2020-21	Remarks (Source of data)
A.1	Input Energy purchased (MU)	4050.12	
A.2	Transmission loss (%)	2.93%	
A.3	Transmission loss (MU)	118.70	
A.4	Energy sold outside the periphery(MU)	0	
A.5	Open access sale (MU)	0	
A.6	CHT sale	0	
A.7	Net input energy (received at DISCOM periphery or at distribution point)-(MU)	3931.42	Net Input Energy fig matched
A.8	Is 100% metering available at 66/33 kV (Select yes or no from list)	Yes	
A.9	Is 100% metering available at 11 kV (Select yes or no from list)	Yes	
A.10	% of metering available at DT	0%	
A.11	% of metering available at consumer end	100%	
A.12	No of feeders at 66kV voltage level		
A.13	No of feeders at 33kV voltage level		
A.14	No of feeders at 11kV voltage level		
A.15	No of LT feeders level		
A.16	Line length (ckt. km) at 66kV voltage level		
A.17	Line length (ckt. km) at 33kV voltage level (UG cable)	536.8486	
A.18	Line length (ckt. km) at 11kV voltage level (UG cable)	2148.986	
A.19	Line length (km) at LT level (UG cable)	9020.1616	
A.20	Length of Aerial Bunched Cables	0	
A.21	Length of Underground Cables	11705.5762	
A.22	HT/LT ratio	0.297712471	

B. Meter reading of input energy at injection points

S.No	Zone	Circle	Voltage Level (kVA)	Division (kVA)	Sub-Division (kVA)	Feeder ID	Feeder Name	Feeder Metering Status (Metered/ unmetered/ AMR/AMI)	Status of Meter (Functional/Non-functional)	Metering Date Date of last actual meter reading/ communicable	Feeder Type (Ag/Y Industrial/ Mixed)	Status of Communication: % data received through successfully if feeder AMR/AMI	Status of Communication: Number of hours when meter was unable to transmit	Status of Communication: Total Number of hours in the period	Period From: Meter S.No	Period From: CT/PT ratio	Period From: Import (MU)	Period From: Export (MU)	Solar	Remarks (Source of data)
B.1			110KV	1	1		BACKBAY_BACKBAY_1								93319206	1200/1A	153.58	0.00		Existing Feeder Metering System is discontinued from May 2017 and is not in a working condition as some of the meters installed on intermittent feeders are found defective and some equipment are not functioning All metering points are metered by AMR meter at TPC-G. These Feeders are under the scope of TPC-G and There
B.2			110KV	1	1		BACKBAY_BALFEAY_2								93319215	1200/1A	131.04	0.00		
B.3			110KV	1	1		BACKBAY_BACKBAY_3								93218209	600/1A	115.84	0.00		
B.4			110KV	1	1		CARMAC_BACKBAY_1								93018217	600/1A	0.25	85.84		
B.5			110KV	1	1		BACKBAY_MARIMAN_POINT_2								93039217	300/1A	44.12	0.00		
B.6			33KV	1	1		BACKBAY_COLABA_2								93222001	800/1A	27.68	0.00		
B.7			33KV	1	1		BACKBAY_NAVYNAGAR_3								93221098	800/1A	43.65	0.00		
B.8			33KV	1	1		BACKBAY_ESPLANADE_4								93218305	400/1A	21.68	0.00		
B.9			33KV	1	1		BACKBAY_WANKHEDE_1								93078108	400/1A	32.86	0.00		
B.10			33KV	1	1		APOLLO_2								93022040	800/1A	33.29	0.00		
B.11			33KV	1	1		APOLLO_3								93078155	400/1A	23.81	0.00		
B.12			33KV	1	1		BALLARD_ESTATE_1								93072098	800/1A	17.54	0.00		
B.13			33KV	1	1		BALLARD_ESTATE_3								93578092	800/1A	49.12	0.00		
B.14			33KV	1	1		COLABA_2 MR MASED 3								93219235	600/1A	33.31	0.00		
B.15			33KV	1	1		ESPLANADE_1								93217301	600/1A	34.98	0.00		
B.16			33KV	1	1		ESPLANADE_2								93223041	800/1A	29.62	0.00		
B.17			33KV	1	1		ESPLANADE_3								93578082	400/1A	17.21	0.00		
B.18			33KV	1	1		GIRGAUM_1								93578085	800/1A	26.92	0.00		
B.19			33KV	1	1		GIRGAUM_2								93520081	400/1A	0.00	0.00		
B.20			33KV	1	1		GRANT ROAD_2								93578090	800/1A	28.96	0.00		
B.21			33KV	1	1		GT_HOSPITAL_3								93578182	400/1A	15.78	0.00		
B.22			33KV	1	1		HUTATMA_CHOWK_1								93222042	800/1A	13.59	0.00		
B.23			33KV	1	1		HUTATMA_CHOWK_4								93578083	400/1A	16.41	0.00		
B.24			33KV	1	1		JJ_HOSPITAL_2								93071902	400/1A	83.02	0.00		
B.25			33KV	1	1		KASARA_1								93578148	800/1A	8.98	0.00		

B.26		33kV	1	1		KAVARA_2								Y0578194	400/1A	91.36	0.00	
B.27		33kV	1	1		MALABAR_HILL_2								Y0319214	400/1A	88.32	0.00	feeder ID as per TPC G
B.28		33kV	1	1		MALABAR_HILL_3								Y0578304	400/1A	5.38	0.00	
B.29		33kV	1	1		MARINE_DRIVE_1								Y0121956	400/1A	17.93	0.00	
B.30		33kV	1	1		MASJID_1								Y0539054	800/1A	43.68	0.00	
B.31		33kV	1	1		MASJID_2								Y0578091	400/1A	37.51	0.00	
B.32		33kV	1	1		MAZGAON_DOCK_2								Y0578104	800/1A	14.89	0.00	
B.33		33kV	1	1		MAZGAON_SHIPYARD_1								Y0319241	800/1A	6.87	0.00	
B.34		33kV	1	1		MUMBADEVI_1								Y0319253	800/1A	21.85	0.00	
B.35		33kV	1	1		MUMBADEVI_2								Y0227936	800/1A	84.66	0.00	
B.36		33kV	1	1		ST.HOSP_2								Y0323035	800/1A	29.76	0.00	
B.37		33kV	1	1		MUMBADEVI_3								Y0578063	400/1A	31.11	0.00	
B.38		22kV	1	1		NAVALDOCK_1								Y0578105	800/1A	11.94	0.00	
B.39		22kV	1	1		NAVALDOCK_2								Y0578135	800/1A	6.87	0.00	
B.40		22kV	1	1		NAVALDOCK_3								Y0578139	800/1A	0.00	0.00	
B.41		33kV	1	1		OMKAR_1								Y0118308	800/1A	49.85	0.00	
B.42		33kV	1	1		OMKAR_2								Y0222030	800/1A	59.88	0.00	
B.43		33kV	1	1		OMKAR_3								Y0231906	400/1A	86.25	0.00	
B.44		33kV	1	1		PRINCESS_1								Y0511173	400/1A	81.48	0.00	
B.45		33kV	1	1		PRINCESS_2								Y0318210	400/1A	53.25	0.00	
B.46		33kV	1	1		PRINCESS_3								Y0319243	800/1A	47.04	0.00	
B.47		33kV	1	1		PRINCESS_4								Y0578068	800/1A	0.00	0.00	
B.48		33kV	1	1		RAMA_1								Y0318183	800/1A	13.55	0.00	
B.49		33kV	1	1		RAMA_2								Y0319227	800/1A	0.00	0.00	
B.50		33kV	1	1		RAMA_3								Y0222030	800/1A	36.27	0.00	
B.51		33kV	1	1		RAMA_4								Y0118307	400/1A	85.78	0.00	
B.52		22kV	1	1		RAMA_5								Y0578109	800/1A	11.29	0.00	
B.53		22kV	1	1		RAMA_6								Y0118314	800/1A	12.83	0.00	
B.54		22kV	1	1		RAMA_7								Y0221956	800/1A	18.50	0.00	
B.55		22kV	1	1		RAMA_8								Y0578108	800/1A	23.17	0.00	
B.56		33kV	1	1		RAMA_9								Y0222044	400/1A	55.25	0.00	
B.57		33kV	1	1		RAMA_10								Y0118311	800/1A	59.58	0.00	
B.58		33kV	1	1		RAMA_11								Y0578141	400/1A	81.36	0.00	
B.59		33kV	1	1		RAMA_12								Y0578140	400/1A	28.34	0.00	
B.60		33kV	1	1		PRATIKSHA_NAGAR_1								Y0231909	400/1A	80.04	0.00	
B.61		33kV	1	1		RAWALI_HILL_1								Y0232004	400/1A	84.67	0.00	
B.62		33kV	1	1		RAWALI_HILL_2								Y0511169	400/1A	86.54	0.00	
B.63		33kV	1	1		SION FORT_1								Y0122013	400/1A	18.35	0.00	
B.64		22kV	1	1		SION FORT_2								Y0319128	800/1A	11.35	0.00	
B.65		33kV	1	1		SITALADEVI_1								Y0511170	400/1A	14.40	0.00	
B.66	Mumbai City	33kV	1	1		SITALADEVI_2								Y0118713	400/1A	33.64	0.00	
B.67		22kV	1	1		SITALADEVI_3								Y0118712	400/1A	26.37	0.00	
B.68		33kV	1	1		SITALADEVI_4								Y0123031	400/1A	18.72	0.00	
B.69		33kV	1	1		VIVIL_1								Y0118308	400/1A	44.97	0.00	
B.70		33kV	1	1		VIVIL_2								Y0221957	800/1A	51.65	0.00	
B.71		33kV	1	1		WADALA_1								Y0511171	400/1A	48.08	0.00	
B.72		33kV	1	1		WADALA_2								Y0118703	800/1A	78.53	0.00	
B.73		33kV	1	1		WADALA_3								Y0319240	800/1A	174.25	0.00	
B.74		110kV	1	1		PAREL_KHETWADI_1								Y0319251	800/1A	270.08	0.00	
B.75		110kV	1	1		ORMAC_KHETWADI_2								Y0578130	800/1A	50.99	0.00	
B.76		33kV	1	1		CUMBALLA_1								Y0578168	800/1A	36.71	0.00	
B.77		33kV	1	1		CUMBALLA_2								Y0578148	800/1A	8.04	0.00	
B.78		33kV	1	1		CUMBALLA_HILL_3								Y0578159	800/1A	24.40	0.00	
B.79		33kV	1	1		LOVE_GROVE_1								Y0578167	800/1A	19.75	0.00	
B.80		33kV	1	1		LOVE_GROVE_2								Y0578117	800/1A	33.22	0.00	
B.81		33kV	1	1		LOVE_GROVE_3								Y0578163	800/1A	83.55	0.00	
B.82		33kV	1	1		WESTEL_1								Y0578169	800/1A	9.38	0.00	
B.83		33kV	1	1		WESTEL_2								Y0578157	800/1A	3.15	0.00	
B.84		33kV	1	1		WESTEL_3								Y0578146	800/1A	15.34	0.00	
B.85		33kV	1	1		WORLI_1								Y0511165	800/1A	12.87	0.00	
						WORLI_2												

8.86	33KV	1	1		WORLI_3									Y0578192	800/1A	18.26	0.00
8.87	33KV	1	1		WORLI_DARLY_1									Y0578138	800/1A	17.32	0.00
8.88	33KV	1	1		WORLI_DARLY_2									Y0578195	800/1A	4.63	0.00
8.89	33KV	1	1		PRABHADEVI_3 (O/S CUMBALLA_3									Y0578185	800/1A	23.28	0.00
8.90	33KV	1	1		PRABHADEVI_2									Y0578186	800/1A	25.31	0.00
8.91	33KV	1	1		PRABHADEVI_1(O/S CUMBALLA_1									Y0511358	800/1A	16.64	0.00
8.92	33KV	1	1		ARCONA PARK									Y0228256	800/1A	29.45	0.00
8.93	33KV	1	1		EKCLAIR_2 (O/S WORLI_2									Y0221917	800/1A	40.69	0.00
8.94	33KV	1	1		BYCULLA_2									Y0197215	800/1A	18.43	0.00
8.95	33KV	1	1		BYCULLA_1									Y0221630	800/1A	11.16	0.00
8.96	33KV	1	1		KEM_1									Y0271641	800/1A	11.38	0.00
8.97	22KV	1	1		KEM_2									Y0511239	800/5A	18.12	0.00
8.98	33KV	1	1		CHEMBUR_1									Y0316254	800/1A	19.31	0.00
8.99	33KV	1	1		CHEMBUR_2									Y0316255	800/1A	16.65	0.00
8.100	22KV	1	1		MAHALAXMI_1									Y0221843	800/5A	31.28	0.00
8.101	33KV	1	1		MAHALAXMI_2									Y0511187	800/1A	25.89	0.00
8.102	33KV	1	1		MAHALAXMI_3									Y0221925	800/1A	27.94	0.00
8.103	33KV	1	1		MAZGAON DOCK_1 (132 KV)									Y0511164	800/1A	20.11	0.00
8.104	22KV	1	1		MAZGAON(SEPPARD_2 (33 KV)									Y0511198	800/5A	25.88	0.00
8.105	33KV	1	1		MOGARE_MUL_1									Y0511243	800/1A	17.31	0.00
8.106	22KV	1	1		RAMAN MATOSHI_2									Y0221941	800/5A	18.47	0.00
8.107	22KV	1	1		PAREL_1									Y0576049	800/5A	14.40	0.00
8.108	33KV	1	1		PAREL_2									Y0511164	800/1A	8.16	0.00
8.109	33KV	1	1		PAREL_3									Y0511168	800/1A	2.74	0.00
8.110	22KV	1	1		SEWRI_1									Y0221926	800/5A	5.92	0.00
8.111	33KV	1	1		SEWRI_2									Y0511240	800/1A	10.43	0.00
8.112	33KV	1	1		SEWRI_3									Y0221965	800/1A	0.00	0.00
8.113	33KV	1	1		SIWAN_MUL_1									Y0511238	800/1A	22.50	0.00
8.114	22KV	1	1		SION_SION_1									Y0221929	600/5A	10.90	0.00
8.115	33KV	1	1		SION_SION_2									Y0221930	800/5A	10.25	0.00
8.116	22KV	1	1		TEYERNATON_MUL_1									Y0578113	800/5A	12.69	0.00
8.117	33KV	1	1		INTERCONNECTOR_1_ORA_15									Y0221925	800/5A	34.04	0.00
8.118	132Kv	1	1		LOVE_GROVE_2									Y0221862	600/5A	189.29	0.00
8.119	132Kv	1	1		INTERCONNECTOR_2_ORA_14									Y0221869	600/5A	15.45	0.00
8.120	33KV	1	1		SEAWARD_MUL_1									Y0316193	800/1A	45.48	0.00
8.121	33KV	1	1		BOMBAY CENTRAL_1									Y0221867	800/5A	34.58	0.00
8.122	33KV	1	1		TARDEO_1									Y0221860	800/5A	29.43	0.00
8.123	33KV	1	1		ELPHINSTON ROAD_1									Y0221856	800/5A	24.07	0.00
8.124	33KV	1	1		JAJJI HOSPITAL_1									Y0316296	800/1A	22.19	0.00
8.125	33KV	1	1		POONHAMMALA_1									Y0221858	800/5A	33.95	0.00
8.126																	
8.127																	
8.128																	
8.129																	
	Total (MU)															3972.80	45.84
	Net input energy at DISCOM periphery (MU)																3931.42

Color code			Parameter
			Please enter voltage level or leave blank
			Please enter feeder id and name or leave blank
			Enter meter no or leave blank
			Enter CT/PT ratio or leave blank
0			Please enter numeric value or 0
			Please select yes or no from list
			Formula protected

I/We undertake that the information supplied in this Document and Pro-forma is accurate to the best of my knowledge and if any of the information supplied is found to be incorrect and such information result into loss to the Central Government or State Government or any of the authority under them or any other person affected, I/we undertake to indemnify such loss.

Authorised Signatory and Seal

Name of Authorised Signatory
Name of the DISCOM
Full Address:-

Seal

Chief Engineer (Customer Care) Office
[B.E.S.&T. Undertaking]
3rd Floor, M... Shinde Bldg.,
BEST Marg, ...
Mumbai - 400 001. Tel.: 22799563

CHIEF ENGINEER (CUSTOMER CARE) ELECTRIC SUPPLY B.E.S.&T. UNDERTAKING

Signature:-
Name of Energy Manager*: V.M SHINDE
Registration Number: EM 1900

PPS ENERGY SOLUTIONS PVT. LTD. PPS