REPORT ON ANNUAL ENERGY AUDIT OF CESC LIMITED FOR THE YEAR 2021-22

CESC House,
1, Chowringhee Square, Esplanade,
Chowringhee North, Bow Barracks,
Kolkata, West Bengal 700001

Conducted By

Nu Energy India

Mekhala Apartment, 47/4, Shyamnagar Road, Kolkata-700055, West Bengal
Mob: +91 9432121623
Email: nuenergyindia2005@gmail.com

Acknowledgement

Nu Energy India expresses sincere thanks to the management of **CESC Limited** as DISCOM, CESC House, Chowringhee Square, Kolkata –700 001 for awarding Nu Energy India to conduct 'Annual Energy Audit' 2021-22 at their distribution Licensing Areas.

The following officials of CESC, Kolkata have coordinated and helped the audit team during the site visits:

Mr. Santanu Sen (GM, Planning Dept.)

Ms. Eshita Roy (Dy. Manager, Planning Dept.)

We extend our sincere gratitude to Mr. Santanu Sen and all other officers for their keen interest shown in the study and the courtesy extended.

We are thankful to the management for giving us the opportunity to involve in this very interesting and challenging project of Annual Energy Audit at their distribution Licensing Areas.

We would be happy to provide any further clarifications, if required, to facilitate implementation of the recommendations.

NU ENERGY INDIA Kolkata

SATYAJIT HAZRA
Certified & Accredited Energy Auditor
Bureau of Energy Efficiency
Ministry of Power, Govt. of India
Reg. No.- CEA 02141/AEA-0185

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List of Abbreviations

AMI : Advanced Metering Infrastructure
AMR : Automated Meter Reading
AMRUT : Atal Mission for Rejuvenation and Urban Transformation
AT & C : Aggregate Technical and Commercial
BEE : Bureau of Energy Efficiency
Ckt : Circuit Kilometer
CT : Current Transformer
DC : Designated Consumer
DEEP : Discovery of Efficient Electricity Price
DISCOM : Electricity Distribution Company
DT : Distribution Transformer
EA : Energy Auditor
EHT : Extra High Tension
EHV : Extra High Voltage
EM : Energy Manager
EM : Energy Manager
FY : Financial Year
HT : High Tension
HVDS : High Voltage Distribution System
KVA : Kilo Volt Ampere
LT : Low Tension
MoP : Ministry of Power
MU : Million Unit
MW : Mega Watt
NO : Nodal Officer

OA	: Open Access
POC	: Point of Connection
PT	: Potential Transformer
PX	: Power Exchange
RE	: Renewable Energy
RLDC	: Regional Load Dispatch Centre
SDA	: State Designated Agency
SLD	: Single Line Diagram
SLDC	: State Load Dispatch Centre
T & D	: Transmission and Distribution

1. Executive Summary

This section presents a brief summary of the results of the Annual Energy Audit carried out during November 2022. The study covers mainly verification process for monitoring of input energy and consumption pattern at various voltage levels, identification of area of energy leakage, wastage or inefficient use, identification of high loss-making areas and networks, identification of overloaded segments of the network for necessary capacity additions, highlighting the strengths and weaknesses of the CESC as DISCOM in the management of energy and energy resources with a focus mainly on proposals and recommendations on Energy Conservation.

It is a well-known and acknowledged fact that distribution is the most risk prone segment and weakest link of the entire value chain of power sector, which has also been recognized in the National Electricity Policy. Apart from meeting high consumer expectations in terms of services provided and universal service obligation, the most challenging task of a distribution licensee is containing the losses in its system. Losses arise due to technical losses and unauthorized consumption by some consumers (commercial losses).

A team of two specialist consultants of Certified & Accredited Energy Auditor, BEE, Ministry of Power, Govt. of India & DISCOM specialist were involved in this annual energy audit. The energy audit was mainly targeted at identifying practical, sustainable and economically viable ENCON measures in all sections of CESC's Licensing areas, resulting from a detailed study and analysis of technical & commercial parameters. Following are the salient observations.

i. At present CESC is unable to provide area/feeder-wise loss figures, wherein all feeders & DTRs are equipped with communicable meters. As per record, distribution losses (distribution loss for 2021-22 is 7.98% as it was 8.35% for 2020-21).

   It is informed that CESC has adopted consumer indexing at strategic areas, over the years in order to reduce losses. Around 400 distribution transformers as of now are indexed in theft prone areas. Such indexation has helped to monitor loss figure of distribution transformers at different places and take necessary steps for loss reduction. Analytical & operational insights derived from such consumer indexed areas have helped CESC in taking purposeful decisions at other sites. 100 % Consumer indexing requires significant Capex investments, which is needed to be approved by the West Bengal Electricity Regulatory Commission (WBERC).

ii. All import energy data, sales data & AT & C loss were verified with the Annual Audited Report of CESC & as per the data to the WBERC.

iii. Audit addresses that distribution losses of CESC from the FY 2011-12 to FY 2021-22 which is found to be declined gradually from 12.1% to 7.98% by the adoption new technologies, action taken for Technical Loss Management by network up-gradation, installation of power factor controller, network management, condition monitoring, and close surveillance etc.

iv. Audit addresses that management of CESC has taken some of bold steps like Actions for Commercial Loss Management and Theft Control, conduct in-house energy auditing in specific LV & MV level, installation of 100% metering at distribution transformers, replacement of old electro-mechanical meters with high quality electronic meters, meter Board Renovation, 100% metered supply, automatic Meter Reading System for high value consumers, In house meter testing facility(NABL accredited) to identify defective and faulty meters, starting of Pre-paid metering, implementation of Smart Street Lighting Management System (SSLMS), installation of LT Aerial Bunched Conductor (ABC), installation of special tamper-evident paper seals in Service cut-out.

v. During interaction with Certified Energy Manager of CESC & other engineers, it was understood that management of CESC was determined to control AT & C losses by the adoption of new technologies. Still, as per CESC management, the trend of reduction in distribution loss has reached a trough during the past few years. Marginal rate of reduction of distribution loss becomes extremely low, and involve significant capital and operational expenditure. Insistence of continuous betterment of performance parameters is not always technically possible and may prove to be counter-productive for the consumers.

vi. CESC has an embedded network of extra high-voltage system comprising 132 kV and 220 kV lines in its distribution network. Therefore, distribution loss of CESC includes technical losses incurred in this EHV network also. Such losses have further accentuated with new sources coming up at a considerable distance from the congested load centers due to paucity of space and less contribution from load center based generating stations on account of environment, vintage and other issues.

vii. This audit also includes the field visit from 132/33KV substation, 33/11-6KV Distribution Station to DTR level including their LT feeder Pillar Distribution Box and HT & LT Consumers randomly for better understanding of CESC’s system. During field visit, it was found that all feeders,

direct HT consumers, are equipped with 0.2 class accuracy digital communicable multi-function meters & all DTRs (within Transformer House, on Pole Mounted structure & on Outdoor plinth) in their licensing areas are also equipped with AMR meter & there is no unmetered DTR.

Also, electrical measurements were carried out for one LT Industrial small consumer & one Commercial HT Consumer (Hospital) by Software Compatible Power Analyser to understand the electrical parameter like supply Voltage, current, Power Factor, KW, harmonic distortion, unbalancing & at the same time thermal imaging was also carried at cable terminals of incomer 200A fuse box and checked the level loading of said consumers.

viii. At present CESC do not evaluate unit-wise performance in terms of energy input, sales & losses and hence, unable to provide the performance data to audit team. During audit CESC has ensured that CESC will undertake a plan for unit wise energy accounting by communicable metering system and provide the same Fy23-24 onwards.

ix. CESC has installed about 25000 smart meters but these are not 'Smart Prepaid Meter'. Dynamic energy audit is possible in areas where smart meters have been installed. There are about 300 nos. non-smart prepaid meters. Apparently, consumers are not interested for non-smart prepaid meters.

x. CESC has adopted one 315 kWh state-of-the-art sustainable technology on Grid Connected Battery Energy Storage System (BESS) of maximum power rating 125 kVA, commissioned at CESC's low voltage distribution level in a joint effort with M/s. Exide Industries at East Calcutta Sub-station (S/S) near Kankurgachi, Kolkata. BESS facilitates applications like Peak shaving, Frequency Regulation & Voltage regulation.

xi. During audit, verification & validation process was carried out on the system metering data provided by CESC Ltd. as DISCOM through random field visit at their Chakmir 132kV Substation & Majerhat 132kV/33Kv Substation on 17.11.2022 at Kolkata. During interaction at substations, AEA & Discom sector expert from TPEA checked the Log Book & asked to Substation Engineers regarding over loading of feeders and they replied that at present no overloading is took place in feeders as all feeder cables are adequately sized and they have also spare standby feeder in substation facility and hence, they do not allow any over loading in feeders.

xii. Due to extensive use of non-linear loads like any kind of electronic loads i.e. LED Light in residential, commercial & industrial sector, 6-pulse AC

Drives (VVFD) in commercial & industrial sector, DC Drives in industrial sector, Battery Chargers in residential, commercial & industrial sector, UPS in residential, commercial & industrial sector, grid connected Inverter in Solar PV Power Generation etc., harmonics are generated, which increases line losses, DTR winding eddy current losses substantially. Hence, audit addresses that WBERC should enforce for harmonic mitigation as per harmonic regulation & control of IEEE 519 2014 & Central Electricity Authority at consumer premises, especially for industrial & commercial consumers.

xiii. Audit highlights the strengths and weakness of the CESC Ltd. as DISCOM in the management of energy and energy resources in the annual energy report and recommends necessary action to improve upon method of reporting data, energy management system.

2. Summary of Critical Analysis by Energy Auditor and Management Analysis

Sl. No.	*Pre-requisites*	*Comments from TPEA*	*Management Response*
1.	Identification and mapping of all of the electrical network assets.	At present identification and mapping for all electrical network assets is carried out by CESC. Feeder wise or DTR wise mapping is to be carried out for energy accounting purpose.	All the electrical assets (220kV to DTR level) are mapped. For ring-main connectivity, the electrical connection keeps changing in fault conditions, maintenance purpose and optimization of asset. Feeder-wise energy accounting up to DT level will be taken up in phases. As a trial, sample energy accounting for feeder is submitted (vide Annexure…)
2.	Identification and mapping of high tension and low-tension consumers.	At present CESC has all identification & mapping data for high-tension consumers only by adopting consumer indexing and it is not yet done in case of low-tension consumers. Thus, audit addresses to identify & map all low-tension consumers by adopting consumer indexing.	CESC have adopted consumer indexing at strategic areas, over the years in order to reduce losses mainly in theft prone areas. Such indexation has helped to monitor loss figure of distribution transformers at different places and take necessary steps for loss reduction. 100 % Consumer indexing requires significant Capex investments, which shall be taken up following approval from the WBERC.

3.	Development and implementation of information technology enabled energy accounting and audit system, including associated software.	CESC has adopted in house information technology with associated software for capturing energy accounting data through communicable meters of all HT feeders & DTRs. The same is to be implemented for energy accounting purpose.	In-house software for storing & calculating the meter reading data is in place for all the communicable meters connected in feeders and DTRs. Energy accounting and audit system for individual feeder/DTRs will be operative following 100% indexation & implementation of smart meters, which requires capex approval from the WBERC.
4.	Discom shall ensure the installation of functional meters for all consumers, transformers and feeders in accordance with the trajectory set-out in the regulation.	CESC has ensured the installation of functional AMR meters for all HT consumers, transformers and feeders. Same for LT consumers is yet to be done in accordance with the trajectory set-out in the regulation.	All the consumers, transformers and feeders are connected with meters. The meters connected at feeders, HT consumers and DTRs are AMR type. Functional/Smart meters shall be installed for all consumers following approval from the WBERC.
5.	All distribution transformers (other than high voltage distribution system upto 25kVA and other distribution system below 25 kVA) shall be metered with communicable meters. Existing non-communicable distribution transformer meters shall be replaced with communicable meters and integrated with advanced metering infrastructure	As per guide line of Trajectory for meter installation, CESC has installed communicable meters for all distribution transformers and they are integrated with advanced metering infrastructure.	All distribution transformers are equipped with communicable meters.

6.	The Discom shall establish an information technology enabled system to create energy accounting reports without any manual interference within a period of three years from the date of the commencement of these regulations.	During audit it was felt that CESC initiated to establish an information technology enabled system for data accumulation & calculation, while the same for energy accounting purpose is to be carried out to create energy accounting reports without any manual interference within a period of three years from the date of the commencement of these regulations.	CESC would comply the same following the implementation of smart meters with approval from WBERC.
7.	The Discom shall create a centralized energy accounting and audit cell comprising of a nodal officer, an energy manager, an information technology manager and a financial manager, having professional experience of not less than five years.	CESC has created a centralized energy accounting and audit cell comprising of a nodal officer, an energy manager, an information technology manager and a financial manager, having professional experience of not less than five years.	CESC has a centralized audit cell as given later in the report.

8.	Unit wise energy accounting	CESC is not carrying out energy accounting on unit/area-wise data for performance calculation. As license area of distribution business in CESC is found very less compared to DISCOMs, all areas are considered as single division and at present all feeders & DTRs in single division are equipped with digital communicable energy meters under control of centralized SCADA based system.	CESC is operating in a small area of Kolkata city & suburban area. Thus, no separate division/unit/area marking is not there at present for energy accounting purpose. CESC will undertake a plan for unit wise energy accounting and provide the same Fy23-24 onwards.

3. Background:

3.1. Extant Regulations and Role of BEE:

Extant Regulation:

The regulation as per notification of BEE on 6th October, 2021 is stated below-

No. 18/1/BEE/DISCOM/2021.—Whereas the draft regulations namely, the Bureau of Energy Efficiency (Manner and Intervals for Conduct of Energy Audit (Accounting) in Electricity Distribution Companies) Regulations, 2021, were published vide notification No.18/1/BEE/DISCOM/2021, dated the 15th April, 2021 in the Gazette of India, Extraordinary, Part III, Section 4, as required under sub-section (1) of section 58 of the Energy Conservation Act, 2001 (52 of 2001) inviting objections and suggestions from all persons likely to be affected thereby within forty five days from the date of publication of the Notification in the Official Gazette;

And whereas objections and suggestions received with respect to the said draft regulations within the specified period aforesaid have been duly considered;

Now, therefore, in exercise of the powers conferred by clause (g) of sub-section (2) of section 58, read with clause (q) of sub-section (2) of section 13 of the Energy Conservation Act, 2001 (52 of 2001), the Bureau of Energy Efficiency, with the previous approval of the Central Government, hereby makes the following regulations, namely: -

Short title, application and commencement –

a) These regulations may be called the Bureau of Energy Efficiency (Manner and Intervals for Conduct of Energy Audit in electricity distribution companies) Regulations, 2021.

b) These regulations shall apply to all electricity distribution companies specified as designated consumer.

c) They shall come into force on the date of their publication in the Official Gazette.

Every electricity distribution company shall conduct an annual energy audit for every financial year and submit the annual energy audit report to the Bureau and respective State Designated Agency.

Every annual energy audit under these regulations shall be conducted in the following manner, namely: -

a) Verification of existing pattern of energy distribution across periphery of electricity distribution company

b) Verification of accounted energy flow submitted by electricity distribution company at all applicable voltage levels of the distribution network

c) Verification of accuracy of the data collected in consultation with the nodal officer of the electricity distribution companies as per standard practice to assess the validity of the data collected

Analysis of the data with respect to–

a) consistency of data monitoring compared to the collected data;

b) recommendations to facilitate energy accounting and improve energy efficiency; and

c) with respect to the purpose of energy accounting in reducing losses for the electricity distribution company.

3.2. Role of BEE:

The role of BEE is to co-ordinate with designated consumers, designated agencies and other organizations and recognize, identify and utilize the existing resources and infrastructure, in performing the functions assigned to it under the Energy Conservation Act.

The Major Promotional Functions of BEE include:

- Create awareness and disseminate information on energy efficiency and conservation
- Arrange and organize training of personnel and specialists in the techniques for efficient use of energy and its conservation
- Strengthen consultancy services in the field of energy conservation
- Promote research and development
- Develop testing and certification procedures and promote testing facilities

- Formulate and facilitate implementation of pilot projects and demonstration projects
- Promote use of energy efficient processes, equipment, devices and systems
- Take steps to encourage preferential treatment for use of energy efficient equipment or appliances
- Promote innovative financing of energy efficiency projects
- Give financial assistance to institutions for promoting efficient use of energy and its conservation
- Prepare educational curriculum on efficient use of energy and its conservation
- Implement international co-operation programmes relating to efficient use of energy and its conservation

3.3. Purpose of audit and accounting Report:

Basic objective or purpose of the audit and accounting report is described below:

a) development of a comprehensive energy accounting system to quantify and determine actual losses in the power distribution system, segregated across technical and commercial losses.

b) Identification of areas of leakage, theft, wastage or inefficient use, thereby paving the way for tackling the present challenges of high Transmission and Distribution (T&D) losses.

c) to enable and ensure an independent 3rd party energy audit of the distribution system to arrive at a true and fair picture of T&D losses.

d) to enable the Distribution utilities to undertake targeted efficiency improvement activities to reduce Distribution losses in priority areas / customer segments.

e) providing a basis for prioritizing energy capital investments and help budget more accurately to achieve maximum results.

f) identification of overloaded segments of the network for necessary capacity additions.

3.4. Period of Energy Auditing and accounting:

a) Every electricity distribution company shall conduct an annual energy audit for every financial year and submit the annual energy audit report to the Bureau and respective State Designated Agency and also made available on the website of the electricity distribution company within a period of four months from the expiry of the relevant financial year:

Provided that on the commencement of these regulations, the first annual energy audit of every electricity distribution company shall be conducted within six months from the date of such commencement, by taking into account the energy accounting of electricity distribution company for the financial year immediately preceding the date of the commencement of these regulations.

i) Where a new electricity distribution company is established after the commencement of these regulations, such electricity distribution company shall conduct its first annual energy audit on completion of the first financial year from the date of being notified as designated consumer.

Table 1: Period of Energy Auditing and accounting

Date & Time	Activity	Description of Work Done
09.11.2022	Understanding of Overall Electrical Single Line Diagram (SLD)	Displayed & briefed the overall SLD of CESC's incoming and whole distribution network at various level of voltage.
	Understanding of sources of energy received from various sources	Discussed about the sources of energy received from various sources like TPS of CESC / purchased from other sources and solar power were explained.
	Clear understanding of energy accounting i.e., energy received in all types of voltage level and metering arrangement.	CESC have narrated their system of energy accounting i.e. energy received in all types of voltage level and distribution of energy through their EHT/HT/LT system. The CESC's network is equipped with proper metering system.
	Understanding of calculation of %age	Discussions were carried out regarding %age AT&C loss reduction and measures

	AT&C loss and reduction of losses.	taken during last three years to reduce loss.
10.11.2022	Discussion about data source & gap in loss data in last audit Fy 2021-22.	During the discussions CESC provided data sources like their Annual Report and data submitted to West Bengal Electricity Regularity Commission. Some of the data were randomly verified.
	Visit some of sites on random basis	It was decided to visit on random basis Energy Receiving station, Distribution station, consumer points, metering system etc. on 11th & 12th November 2022 at around 10-30 Hrs for full day programme.
11.11.2022	Site measurements	Electrical measurements were carried out at one of LT Industrial consumer, namely WONDER IMAGES PVT. LTD., Kolkata
	Verification of data	After that data verification was also carried out on energy input data, sale data, loss data at input substation level, collection efficiency data at office etc.
12.11.2022	Site measurements	Electrical measurements were carried out at one of HT Commercial consumer, namely RUBY GENERAL HOSPITAL, Kolkata
	Verification of data	After that data verification was also carried out on energy input data, sale data, loss data at input substation level, collection efficiency data at office etc.
17.11.2022	Substation Visit	Visited 132kV Chakmir Substation & 132kV/33kV Majerhat Substation and understanding the injected energy input, outgoing feeders, type energy meter (Communicable or non-communicable) connected, verifying log book for feeder loading etc.
19.11.2022	DTR Visit for AMR Meter verification	Visited two DTRs at Dum Dum Park (N) P/T & Dum Dum Park (E) P/T.

4. Introduction of DISCOMs (DC)

CESC's distribution infrastructure serves its 34,50,318 (approximately 3.45 million) Customers in Kolkata, Howrah, Hooghly, North and South 24 Parganas in the state of West Bengal. The demand for power is quite variable in its licensed area, with the Company having registered a peak demand more than 2,300 MW and a lean demand lower than 400 MW in recent years. During periods of high demand, CESC also imports power to complement its own generation (including from HEL). Conversely, it exports surplus power, when possible. Banking of power is also done with other licensees to facilitate availability of power during periods of high demand.

After Covid-19 pandemic, CESC is slowly recovering dip in power demand as HT & LT industrial loads are gradually increasing in the FY 2021-22. The peak power demand was 2,012 MW in 2021-22, compared to 1,865 MW in 2020-21, whereas the energy requirement increased by 4.88% from 9,796 million units (MU) in 2020-21 to 10,274 MU in 2021-22. About 90% of this requirement was met by CESC's own generation, including HEL in 2021-22.

4.1. Name and Address of Designated Consumer:

Name of the DC:

CESC Limited.

Address of the DC:
CESC House, Chowringhee Square, Kolkata – 700 001

4.2. Name and contact details of energy manager and Authorized signatory of DC:

Name of the Energy Manager:

Ms. Eshita Roy, Dy. Manager, Planning department.
Telephone: +91 33 4089 7620; e-mail: eshita.roy@rpsg.in

Authorized Signatory of DC:

Mr. Santanu Sen, General Manager, Planning department.

Table 2: Details of Audit Cell

Name of the Officer	**Department**	**Designation**	**Role in Energy Audit Cell**
Ms.Eshita Roy	Planning	Deputy Manager	Energy Manager

Ms.Sumouli Datta	Information Technology	Deputy General Manager	Information Technology Manager
Mr.Abhishek Mukherjee	Finance	Deputy Manager	Financial Manager
Mr.Santanu Sen	Planning	General Manager	Nodal Officer

4.3. Summary profile of DCs:

CESC is India's first fully integrated electrical utility company. Headquartered at Kolkata, West Bengal, CESC is the sole distributor of electricity within an area of 567 sq. km. of Kolkata & Howrah and serve 34,50,318 (approximately 3.45 million) consumers which include domestic, industrial and commercial users.

4.3.1. Asset- CESC Limited as on 31.03.2022

Generating Capacity	Budge Budge Generating Statior		750 MW
	Southern Generating Station		135 MW
	Titagarh Generating Station		240 MW
220/132/33 KV Substations	Installed Capacity		2000 MVA
132/33 KV Substations	Installed Capacity		2977 MVA
Distribution Stations	No. of Stations		117
	Transformer Capacity		3922 MVA
Tie Transformer	No. of Transformes		6
	Transformer Capacity		22 MVA
LT Substations	No. of AC Substations		8719
	Transformer Capacity		2994 MVA
Package Substations (PSS)	No. of Substations		114
	Installed Capacity		108 MVA
Distribution Network (Circuit Km.)			
		220 KV UG	48 Ckt. Km.
		220 KV OH	221 Ckt. Km.
		132 KV UG	318 Ckt. Km.
		132 KV OH	81 Ckt. Km.
		33 KV UG	1577 Ckt. Km.
		33 KV OH	92 Ckt. Km.
		20 KV UG	50 Ckt. Km.
HT Distribution		11 & 6 KV UG	7017 Ckt. Km.
		11 & 6 KV OH	87 Ckt. Km.
		3.3 KV UG	21 Ckt. Km.
LT Distribution		UG	8208 Ckt. Km.
		OH	5748 Ckt. Km.
HT Capacitor		132 & 33 kV	640 MVAR
		6 & 11 kV	273 MVAR
LT Capacitor (APFC)		0.4 kV	204 MVAR

4.3.2. Energy Flow including voltage-wise losses for 2021-22

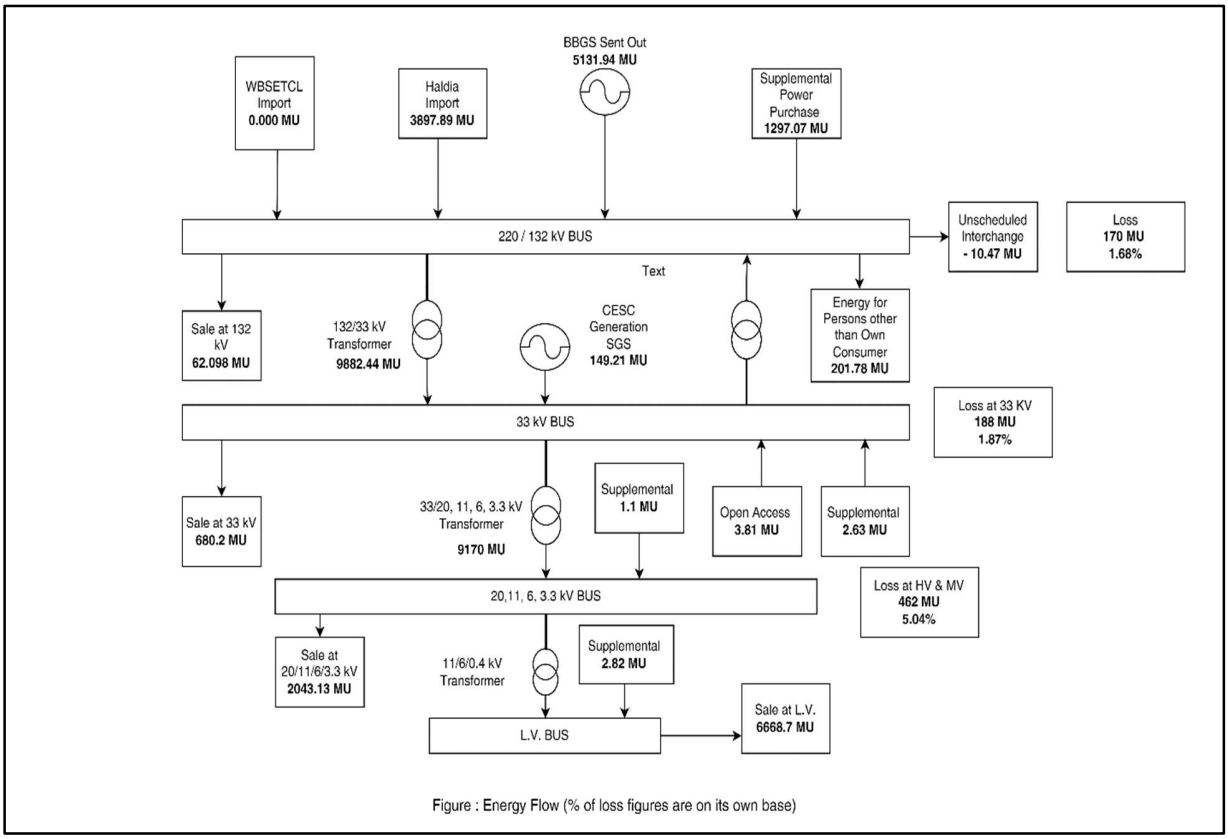


Figure : Energy Flow (% of loss figures are on its own base)

Figure 1- Energy Flow Diagram

Table 3: Voltage wise sales and losses 2021-22

Form-Details of Input Infrastructure				
Voltage level	**Energy Sales Particulars**	**MU**	**Reference**	
LT Level	DISCOM' consumers	6669	Include sales to consumers in franchisee areas, unmetered consumers	Sale at LT level
	Demand from open access, captive		Non DISCOM's sales	
	Embedded generation used at LT level		Demand from embedded generation at LT level	
	Sale at LT level	**6669**		Combined loss for 11kV and below. % loss w.r.t. 11kV input - 5.3%
	Quantum of 6/11kV & LT level losses	**462**		**11/6kV and LT combined Loss - (Energy from 33kV to 11/6kV System + Energy Input at 11kV + Energy Input at LT - Sales at 11/6kV +Sales at LT) / (Energy from 33kV to 11/6kV System + Energy Input at 11kV + Energy Input at LT) = 5.04%**
	Energy Input at LT level	2.8	Include sales to consumers in franchisee areas, unmetered consumers	From SPV Sources
11 kV Level	DISCOM' consumers	2043	Non DISCOM's sales	
	Demand from open access, captive	0	Demand from embedded generation at 11kV level	
	Embedded generation at 11 kV level used	0		
	Sales at 11 kV level	**2043**		
	Quantum of Losses at 11 kV		Include sales to consumers in franchisee areas, unmetered consumers	
	Energy input at 11 kV level	1.1	Non DISCOM's sales	From SPV Sources
33 kV Level	DISCOM' consumers	676	This is DISCOM and OA demand met via energy generated at same voltage level	
	Demand from open access, captive	4		CESC's Southern Gen Stn bussed at 33kV and SPV Sources
	Embedded generation at 33 kV or below level	156		% loss w.r.t. 33kV input - 1.95%
	Sales at 33 kV level	**680**		SGS
	Quantum of Losses at 33 kV	**188**	**Include sales to consumers in franchisee areas, unmetered consumers**	**33kV Loss - (Energy flow from EHV System + Energy input at 33kV - Sales at 33kV - Energy flow towards 11/6kV) / (Energy flow from EHV System + Energy input at 33kV) = 1.87%**
	Energy flow from 33kV System to11/6kV	9170		Measured at 11/6kV end of 33/11/6kV transformers
	Energy input at 33kV Level	155.6	Non DISCOM's sales	
> 33 kV	DISCOM' consumers	62.1		
	Demand from open access, captive			
	Cross border sale of energy			
	Sale to other DISCOMs			
	Banking			
	Loss at EHV System	**170**		**EHV Loss - (Energy Input - Sales at EHV - Energy flow towards 33kV) / Energy Input = 1.68%**
	Energy flow from EHV System to 33kV	9882		Measured at 33kV end of 220/132/33kV transformers
	Energy input at > 33kV Level	10115		
	Sales at 66kV and above (EHV)	62.1		
	Total Energy Requirement	**10274**		
	Total Energy Sales	**9454**		

Voltage-wise loss

Voltage	**Input including energy flow from upstream network (in MU)**	**Sale (in MU)**	**Flow to downstream network**	**Loss (on its own base) %**
11 kV & LT combined	9174	8712		5.04%
33 kV	10038	680	9170	1.87%
> 33 kV	10115	62	9882	1.68%

4.3.4. Consumer Base 2021-22

Table 4: Consumer Base

Sl. No.	Type of Consumers	Category of Consumers	Voltage Level (In Voltage)	No of Consumers
1	Domestic	LT	400/230 V	2935092
2	Commercial	LT	400/230 V	418810
3	Water Supply	LT	400/230 V	1120
4	Public Lighting	LT	400/230 V	23728
5	HT Water Supply	HT	6/11 kV	212
6	HT Industrial	HT	33/20/11/6/3 kV	525
7	Industrial (Small)	LT	400/230 V	64892
8	HT Commercial		33/11/6 kV	606
9	Applicable to Government Hospitals & Hospitals	LT	400/230 V	804
10	HT Res. Apartments Applicable to all areas	HT	33/11/6 kV	351
11	Government offices and department	LT	400/230 V	3136
12	Government Schools	LT	400/230 V	730
13	Private Educational Institutions and Hospitals	LT	400/230 V	174
14	Cold storage	HT	6/11 kV	3
15	Private Educational Institutions	HT	6/11 kV	23
16	Construction Power Supply	HT	6/11 kV	13
17	Co-operative Group Housing Society	HT	6/11 kV	5
18	Public Utility	HT	6/11 kV	30
19	Sports Complex	HT	6/11 kV	25
20	MES	HT	33/11/6 kV	21
21	Railway Traction / Metro	HT	132/33 kV	5
22	CTC	HT	6/11 kV	10
23	Others	EHT/HT	6/11/132 kV	3
TOTAL				**3450318**

4.3.5. Salient Features

At present population of Residential consumer & Commercial/Industrial-LT consumer contribute to be 85% & 14% respectively compared to other category of consumers, indicating high loss prone areas.

5. Discussion and Analysis:

5.1. Energy Accounts in the current year (FY 2021-22):

Consumer Base of FY 2021-22:

Table 5: Consumer Base of FY 2021-22

Type of Consumer	**No. of Consumer**	**% No. of Consumers**
Residential	29,35,443	85
Commercial/Industrial-LT	4,83,702	14
Commercial/Industrial-HT	1,131	0
Others	30,393	1
Total	**34,50,318**	**100**

Input Energy (Generation & Purchase) of FY 2021-22:

Table 6: Input Energy (Generation & Purchase) of FY 2021-22

Particulars	**Unit**	**Value**
At EHT System (400 kV, 220 kV, 132 kV and 66 kV)		
CESC Own Generation (Thermal)	MU	5,131.94
Import from Haldia	MU	3,897.89
Renewable & Co-Generation (Other than roof top Solar)	MU	739.06
Supplemental Power Purchase	MU	338.12
Energy for Persons other that Consumers	MU	0.00
Unscheduled Interchange	MU	-10.47
At 33 kV		
Southern Generating Station	MU	149.21
Supplemental Power Purchase	MU	2.63
Supplemental Power Purchase at 11kV	MU	1.10
Open Access	MU	3.81
Total	**MU**	10,274.23

Sale at Different Voltage Level for FY 2021-22:

Table 7: Sale at Different Voltage Level for FY 2021-22

Particulars	**Unit**	**Value**
Sale at 132 kV Voltage Level	MU	76.30
Sale at 33 kV Voltage Level	MU	680.20
Sale at 20, 11, 6, 3.3 kV Voltage Level	MU	2028.90
Sale at LV Voltage Level	MU	6668.70
Total	**MU**	**9,454.10**

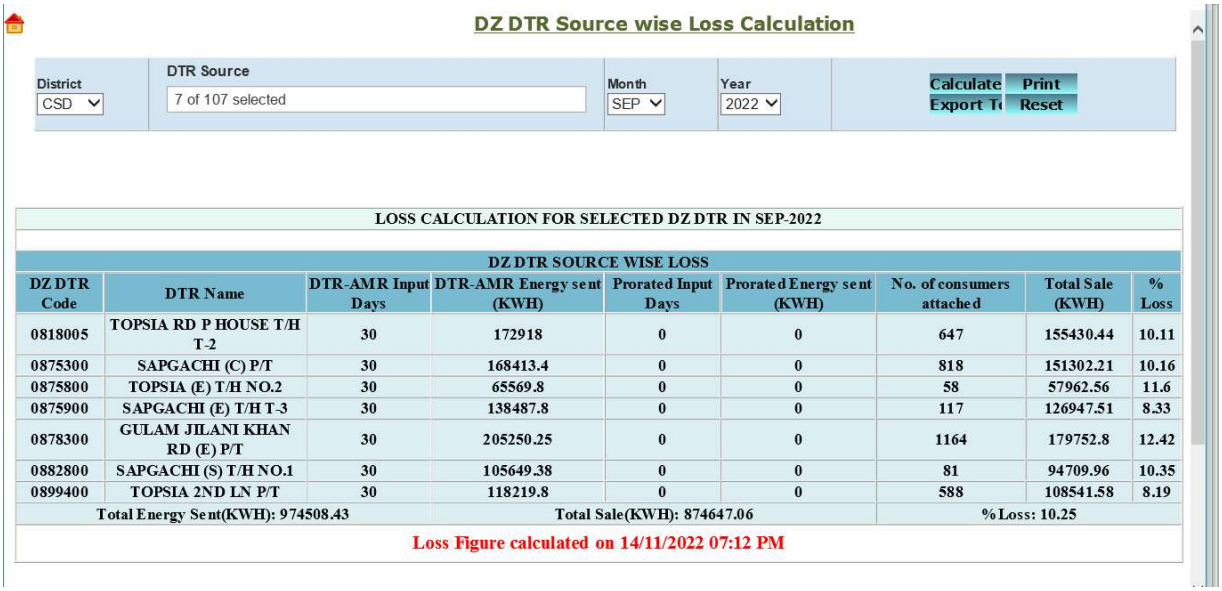
Loss Calculation of FY 2021-22:

Table 8: Loss Calculation of FY 2021-22

Particulars	**Unit**	
Total Input Energy	MU	10,274.2
Total Billed / Metred Energy	MU	9,454.1
Total Distribution Loss	MU	820.1
Distribution Loss	%	7.98%

5.2. Unit-wise performance:

As License area of CESC is confined within Kolkata & surrounding suburban area. Thus, Region, Division and Zone are considered as single zone and hence, CESC is not carrying out monitoring on unit/feeder-wise data for performance calculation. Only suspected loss prone areas comprising of around 400 nos. of DTRs are indexed in theft prone areas by inhouse energy audit team and understanding of over loading pattern for particular phase of DTR, level of unbalancing in between phases etc. Such indexation has helped to monitor loss figure of distribution transformers at different places and take necessary steps for loss reduction. Analytical & operational insights derived from such consumer indexed areas have helped CESC in taking purposeful decisions at other sites. The screenshot of the sample internal IT page maintained by Loss Control Cell (LCC) to monitor energy loss in the indexed DTRs are given below:



DZ DTR Source wise Loss Calculation

District: CSD | DTR Source: 7 of 107 selected | Month: SEP | Year: 2022 | Calculate | Print | Export To | Reset

LOSS CALCULATION FOR SELECTED DZ DTR IN SEP-2022

DZ DTR SOURCE WISE LOSS

DZ DTR Code	DTR Name	DTR-AMR Input Days	DTR-AMR Energy sent (KWH)	Prorated Input Days	Prorated Energy sent (KWH)	No. of consumers attached	Total Sale (KWH)	% Loss
0818005	TOPSIA RD P HOUSE T/H T-2	30	172918	0	0	647	155430.44	10.11
0875300	SAPGACHI (C) P/T	30	168413.4	0	0	818	151302.21	10.16
0875800	TOPSIA (E) T/H NO.2	30	65569.8	0	0	58	57962.56	11.6
0875900	SAPGACHI (E) T/H T-3	30	138487.8	0	0	117	126947.51	8.33
0878300	GULAM JILANI KHAN RD (E) P/T	30	205250.25	0	0	1164	179752.8	12.42
0882800	SAPGACHI (S) T/H NO.1	30	105649.38	0	0	81	94709.96	10.35
0899400	TOPSIA 2ND LN P/T	30	118219.8	0	0	588	108541.58	8.19
Total Energy Sent(KWH): 974508.43			Total Sale(KWH): 874647.06			%Loss: 10.25		

Loss Figure calculated on 14/11/2022 07:12 PM

Figure 2- DTR source wise loss calculation

In case of identified theft prone loss areas, surveillance action is taken by CESC to detect the theft, leading to disconnection of tampered meters, organize dehooking drives & theft prevention and finally follow up of disconnected consumers. 100 % Consumer indexing requires significant Capex investments, which is needed to be approved by the WBERC. Sample energy accounting of one of the DTRs is attached in Annexure.

5.3. Actions for Technical Loss Management:

1. Network up-gradation:

a. CESC makes regular investments in capacity creation for its network, in order to meet the system demand and loss reduction,
b. CESC operates its majority (80%) of its primary distribution voltage level at 6 kV and not at 11 kV. Activities are ongoing for upgradation from 6kV to 11kV, wherever feasible. For that, CESC is procuring dual ratio 33/11 kV and 6 kV distribution station transformers which have two tapings at its secondary side to facilitate such up-gradation. All new distribution transformers (DTRs) have two tapings at its primary side to facilitate such up-gradation.

c. Quality control of conductor joints and cable terminations: Training and assessment of jointers and technicians and strict adherences to the operating manuals and use of appropriate tools are regularly being done for this purpose.

d. Capacity addition has been carried out in last 5 years in CESC's distribution system.

2. Installation of power factor controller:

a) In order to reduce the technical losses, CESC's team after analysing network AMR data has identified transformer operating under low PF and has installed APFC near Load centers. This has helped in reduction of I^2R loss of the transformers as well as loss of corresponding HT feeder and networks.

b) CESC has carried out detailed analysis of network data and based on their analysis have decided to install 2000 nos. of 100 KVAR APFC unit at LV side of the transformer for low PF compensation. Performance of these transformers are being monitored by specially developed analytical tools.

3. Network Management:

a) Network reorganization is carried out to optimize distribution transformer and feeder loading. In the last five years, average feeder loading has decreased from 80-85% to 70-75%.
b) Supervisory Control and Data Acquisition (SCADA) and Distribution Management System (DMS) are in place to monitor power flow on real time basis and initiate corrective actions like load balancing etc.

4. Condition Monitoring:

a) CESC has adopted new generation technologies like Dissolved Gas Analysis (DGA) for transformers and Discharge Detection for switchgears for regular health monitoring of their assets at all voltage level. This has helped in optimizing the performance of their assets.

5. High Voltage Distribution System (HVDS) installation:

a) HVDS in the range of 25 KVA to 63 KVA has been introduced for low load density locality to reduce LT losses.

b) CESC's HT distribution network is mainly underground. In order to reduce the Fault repair time CESC provides LT network interconnectors with a view to faster supply restoration.

In order to improve the ratio of LT & HT network length, CESC has planned modified HVDS approach for new DTR capacity with minimum LT network.

6. Metering Infrastructure:

CESC completed installation of communicable meters in all feeders & DTRs few years back mainly to monitor asset performance in terms of loading analysis, power factor analysis, identifying unbalancing etc. which in turn helps to optimise/rationalise the assets and network planning.

a) Feeder loading data are analysed on daily basis by the O&M team to identify short time overloading so that the same can be addressed immediately by using ring-main connectivity. CESC's technical team analyses the long-term overloading that calls for capital investment for network augmentation, addition or reorganisation.

b) Within the licenced area of 567 sq-km, CESC has nearly 8800+ distribution transformers of various capacities. Overloading of the DTRs during entire year, especially in summer, warrants capital investment to address the overloading in order to avoid failure of the assets. CESC generates persistent overloaded DTR list & monitor the DTRs.

Moreover, unbalancing analysis is carried out to address overloading as well as to identify theft-prone area.

Analysis of the power factor data of each DTRs helps to compensate the KVAR loading of the LT network by installing APFC at the feeder pillar boxes.

c) Replacement of old meters with high quality electronic meters:

- CESC has replaced electromechanical meters with electronic meters to achieve more accurate recording of energy consumption.
- More than 5,00,000 old electromechanical meters have been replaced in 2015-16, 2016-17 and 2017-18.

d) Meter Board Renovation:

- For better management of metering system, all dilapidated meters are replaced in phased manner with new renovated meter boards.

e) Automatic Meter Reading System:

- CESC has installed Automatic Meter Reading (AMR) system, automatically collecting data from the meter, for all the High Tension (HT) consumers & for high load (LTCT) consumers.

7. Smart Street Lighting Management System (SSLMS):

a) Due to highly unpredictable load put up by public bodies for illumination of streets and public places, CESC carried out various measurements at in-house laboratory for finalizing the design of another innovative product "Smart Street Lighting Management System" with metering system.

b) Some of the important features of these units are as follows:

Meter-cum-controller unit for specific requirement of CESC, AMR and AMI facility, self-protection feature against overload and short circuit within the unit and downstream consumer's network and GSM and GPRS technology for communication of base control station with the units installed at road-side

8. LT Aerial Bunched Conductor (ABC) installation:

a) CESC is adopting Aerial Bunched Conductors in place of bare LT lines to prevent theft by hooking as such cables are insulated and difficult to tap. LTAB cable ensures the safety of consumer in place of bare conductor.

5.4. Actions for Commercial Loss Management and Theft Control:

1. Use of coaxial cable in LT distribution network:

In loss prone pockets, over the period, even LT AB cables are violated either by rupturing the insulation in the mid span or accessing the live parts from the joints for hooking/tapping. In order to combat such kind of theft of electricity, coaxial cables are now being used because of its inherent construction which will result in a cable fault if such attempts are being made by the pilferers.

2. Service cut-out installation:

i) CESC has introduced special tamper proof paper seals for low and medium voltage service installations to deter pilferage from consumer's service boxes.

ii) CESC is replacing re-wireable fuse cut-outs at the service termination with MCBs/ MCCBs inside an enclosure with special types of seals to prevent unauthorized access to service parts.

3. Other steps to prevent tapping from pillar boxes/service cut-outs:

i) Installation of modified pillar box with HRC Fuse:

- For reduction in interruption CESC introduced modified distribution boxes equipped with HRC fuses and door locking arrangements.

- The pilferers also broke the locking arrangements of the modified pillar boxes and started hooking from the bus-bars inside. Usage of insulated bus bar protecting paint to prevent hooking/tapping from the bus bar of pillar boxes has been undertaken as proof of concept.
- CESC has recently introduced specially designed antitheft pillar boxes in pilfer prone pockets.

4. Public awareness program:

a) CESC is continuing with extensive public awareness campaign covering print and electronic media.

b) Regular visits to schools are also made to instill awareness against this social menace particularly amongst the young.

c) Advertisements are made for proper connection to various festivals viz. Durga Puja etc. as well as for the consumers intending to install air-conditioners.
d) In pilfer-prone areas, posters are being fixed and leaflets are being distributed in Bengali, Hindi and Urdu indicating danger in theft of electricity.
e) Mobile announcements using microphones are being done to reduce unauthorized access of electricity.

5. Continuous surveillance:

As a part of surveillance, the following activities are undertaken on regular basis:

- Checking of meter
- Surprise inspection of lines/ removal of hooking, booking of offenders etc. are undertaken,
- High end commercial and industrial consumers are monitored by IT based system.

6. Loss Control Cell – A dedicated team:

a) A fully dedicated team is developed to control losses in the system. The team constantly changes its action plan with regard to mode, manner, and timing of anti-pilferage activities.

7. IT - based monitoring system:

For monitoring of loss control in CESC, IT based Loss Control Cell (LCC) is in existence since 2001-02. The IT based signal has been upgraded and has been intricated with different control agencies like System for LCC Information Management (SLIM), Criminal Case Information Management (SCCIM), Inspection Cum Disconnection Reporting (ICDR), Consumer Information System (CIS).

5.5. Energy Conservation measures already taken and proposed for future:

5.5.1. Energy Conservation Measured Already Taken:

CESC Limited has given a great effort to reduce their Distribution losses during the past years. CESC Limited implemented various Energy Conservation Projects to reduce the losses. They have achieved a reduction of 4.12 % of Distribution loss from FY 2011-12.

At present CESC Limited is maintaining Distribution Loss of only 7.98%.
For achieving the above the implemented Energy Conservation Projects are described below:

a) CESC is installing power factor controller at appropriate places in the distribution network since 2016-17. The transformers operating under low PF had been identified from the AMR data for installation of APFC units.

More than 2000 units were installed at the LV side of the transformers operating under low PF. Addition of such units not only reduces the

technical loss but also increase additional capacity in the LV distribution network.

b) EESL distributed 9 W LED bulbs and 20 W LED tube lights since January 2017. The 9 W LED bulbs are replaced with 100 W incandescent lamps and 22 W CFLs whereas a LED tube light is replaced with a 40 W conventional tube light.

c) Loss prone areas are being identified through energy audit at LV and MV level of distribution transformers. 100% metering arrangements have been done in distribution transformers located in theft prone pockets. For the purpose of energy audit, meter reading and monitoring is done at a remote place through GPRS (General Packet Radio Service) communication.

d) Replacement of old electromechanical meters with electronic meters result in more accurate recording of energy consumption from present consumption levels. All non-superior old electromechanical type meters have been replaced by the year 2017-18. More than 5,00,000 old electromechanical meters have been replaced in 2015-16, 2016-17 and 2017-18.

   CESC has installed Automatic Meter Reading (AMR) system, a technology for automatically collecting data from the meter, for all the High Tension (HT) consumers, for high load (LTCT) consumers. Meters along with accessories are also re-engineered suitably to prevent theft of electricity.

e) It is observed in some areas that the power is drawn directly from bare LT lines by hooking. It can be prevented by replacing the overhead bare LT lines with Aerial Bunched Conductors. CESC is already adopting such measures. Such cables are insulated and difficult to tap AB cable also helps in providing safety.

f) In loss prone pockets, over the period, even LT AB cables are violated either by rupturing the insulation in the mid span or accessing the live parts from the joints for hooking/tapping. In order to combat such kind of theft of electricity, coaxial cables are now being used because of its inherent construction which will result in a cable fault if such attempts are being made by the pilferers.

g) Pillar Box fuse burnings have been reduced drastically following installation of modified pillar boxes which also help in controlling losses. Modified Pillar Boxes are equipped with HRC fuses and door locking arrangement. Access is only available from the front side. With modified

distribution boxes, fusing cases and therefore interruption is grossly reduced.

5.5.2. Grid Connected Battery Energy Storage System:

The conventional unidirectional power flow has become bidirectional with the emergence of Distributed Energy Sources (DERs) & prosumers in the electricity distribution system. The electricity landscape is undergoing transformations that are more complex than ever before for emerging technologies, new creative business models, and altering regulatory environments. The power system's electricity supply and demand must be balanced, and real-time energy production across the grid should match the dynamic demands. The development of economical battery energy storage systems (BESS) will be a key aspect of this balancing process. It presents a review on the application like load levelling beyond a pre-set level, aiding deferrals of CAPEX for meeting localized load growth, voltage and frequency regulations & cost analysis of 315 kWh (Maximum power rating: 125 kVA) grid connected Battery Energy Storage System (BESS) commissioned at CESC's low voltage distribution level, in a joint effort with Exide Industries Limited. It concludes by providing information on various adoption drivers and future prospects in the power distribution system. CESC has adopted grid connected one sustainable Technology of 315 kWh Battery Energy Storage System (BESS) of maximum power rating 125 kVA, commissioned at CESC's low voltage distribution level at East Calcutta Sub-station (S/S) near Kankurgachi, Kolkata on 27th January, 2021.
The following applications of BESS are depicted below:

a) **Peak shaving:** Over 24 hours, peak loads are normally observed for shorter durations and may occur not more than twice a day. The peak demand pattern is dependent on the type of consumers, season, occasions, etc. DISCOMs require their network to be rated based on anticipated peak demand along with growth trends. On the contrary, the base load being comparatively lower in amplitude results in the underutilization of assets for most of the period of operation. BESS can help to cater to momentary peak demands thereby keeping network components at favorable loading conditions, and deferring immediate investment requirements.

We have defined the Baseline Power considering the load curve of the Duttabud (W) O/T No. 1 at 100 kVA. Our BESS is connected to one of the distributors of the above DTR. The system monitors demand using a metering arrangement on the distributor and feed the data to the plant controller. The load pattern of Duttabad (W) O/T No. 1 is given below:

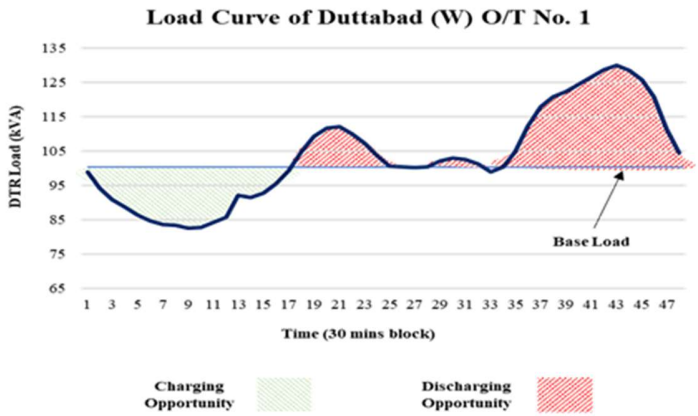


Figure 3: Yearly average load pattern of Duttabad (W) O/T No. 1 showing charging and discharging opportunity

The plant controller compares the preset Baseline Power of the concerned distributor to inject or absorb power from the grid. Any demand above the pre-set value is discharged from the BESS, maintaining the distributor loading within a specified limit. This feature helps to mitigate intermittent peak demands above the annual average loading of the DTR. On the other hand, the battery bank is charged during lower loading conditions than the baseline power, meeting Demand Response activity. The history of loading data shows that following a similar loading pattern, 32% of the time blocks is be available for discharging of the BESS while 34% of the time blocks are available for charging of the same, thereby peak shaving & flattening the load curve.

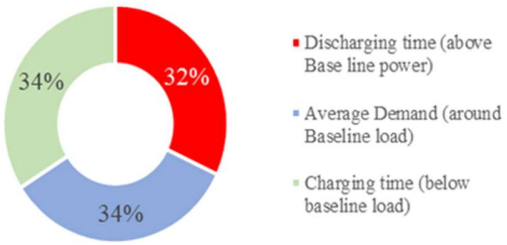


Figure 4: Loading pattern of Duttabad (W) O/T No. 1

The PCS power vs Load power of BESS during peak shaving is given below:

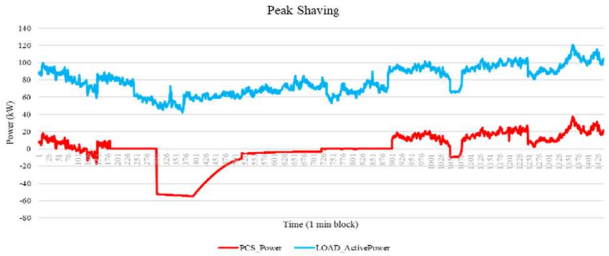


Figure 5: PCS power vs Load power of BESS

b) **Frequency Regulation-** BESS can absorb or deliver power to the grid very fast. In case of high frequency than normal, absorption of power from the grid helps in reducing the grid frequency; during low frequency, delivery of power into the grid supports to increase the frequency. BESS can stable frequency variation by proving necessary energy support. BESS can help in Deviation Settlement Mechanism (DSM). Deviation Settlement Mechanism is a regulatory mechanism by which grid stability is achieved by imposing penalties and incentives for over drawl or under drawl from the schedule. DSM is a frequency-linked mechanism [4]. This practice can help in reducing penalties and/or generating revenue for a utility.

DSM rate is zero paise per kWh when the grid frequency is 50.05Hz or more; 800 paise per kWh when the grid frequency is 49.84Hz or lower. At 50Hz, it is the daily Average Clearing Price (ACP). Following table depicts DSM rate, assuming ACP Rs. 3 per kWh.

Table 9: DSM Rate

Sl. No.	Freq (Hz)	DSM Rate (Rs/ kwh)
1	50.05	0
2	50.04	0.6
3	50.03	1.2
4	50.02	1.8
5	50.01	2.4
6	50	3
7	49.99	3.31
8	49.98	3.63
9	49.97	3.94
10	49.96	4.25
11	49.95	4.56
12	49.94	4.88
13	49.93	5.19
14	49.92	5.5
15	49.91	5.81
16	49.9	6.13
17	49.89	6.44
18	49.88	6.75
19	49.87	7.06
20	49.86	7.38
21	49.85	7.69
22	49.84	8

We have set the frequency band for BESS operation from 49.98 Hz to 50.02 Hz. We have kept the BESS on maintenance mode from 1 AM to 4 AM. This mode is meant for charging the battery for its deficit energy if any during the

previous operation period. Throughout the remaining period, the battery is being operated depending on the frequency. The battery is being charged when the frequency is more than 50.02 Hz and it is getting discharged when the frequency is less than 49.98 Hz. The PCS power vs frequency pattern of BESS is given below for a typical day:

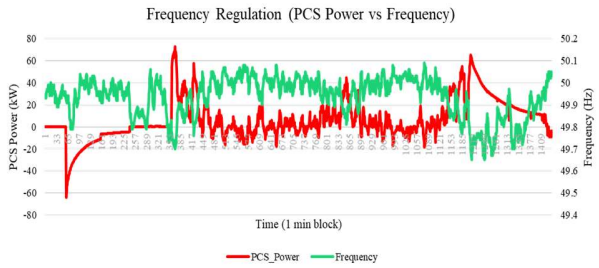


Figure 6: PCS power vs Frequency of BESS

c) **Voltage regulation -** A predefined power up to 125kVAr is fed to and drawn from the grid to demonstrate the applicability of BESS for compensation of voltage fluctuation due to intermittency of inductive loads in the circuit. The system delivers reactive power to the grid when grid voltage falls below a predefined limit and absorbs when grid voltage rises above a predefined limit. The battery absorbs reactive power from the grid when voltage is more than 3 % of the rated voltage and it delivers reactive power to the grid when voltage is less than 3 % of the rated voltage (240 V Single Phase).

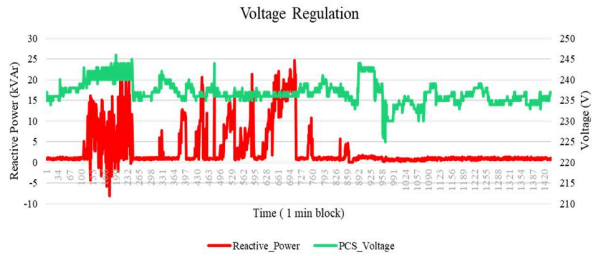


Figure 7: PCS Reactive power vs Voltage of BESS

System consists of various equipment like Battery Bank, Power Conversion System, Energy Management System, Isolation Transformer & Battery Management System.

Figure 8- Battery Bank & Power Conversion System

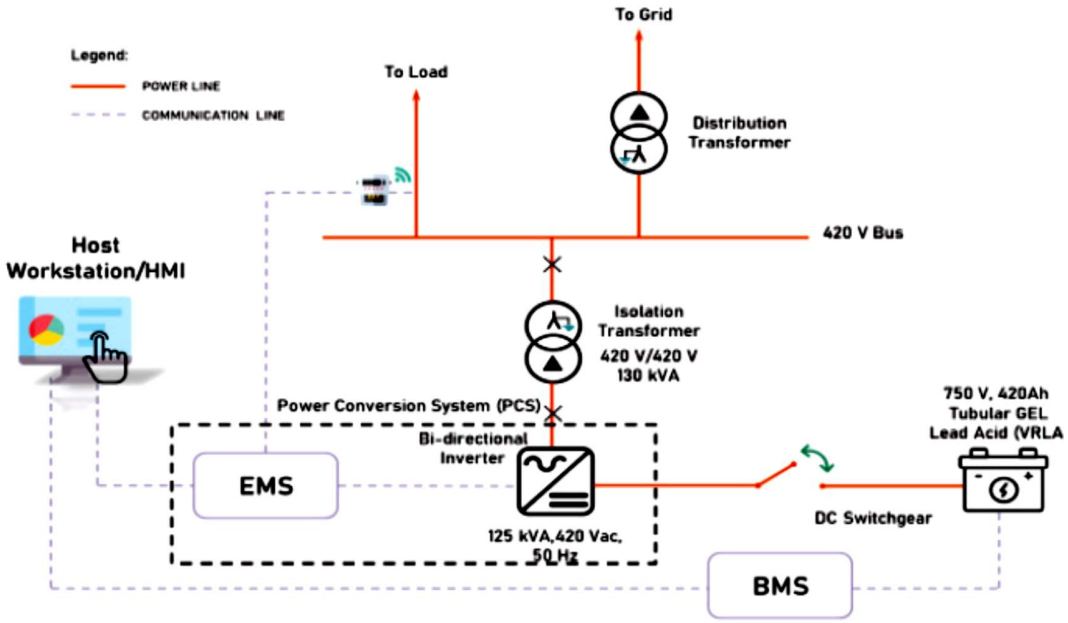


Figure 9- Circuit diagram of BESS

5.5.3. Energy Conservation Measured Proposed for Future:

1) As most of LT Bulk & HT Bulk consumers use non-linear electronic loads extensively for energy saving, harmonic dumping on grid is increasing, leading to higher line losses & Transformer losses & de-rating of Transformer Capacity. Audit addresses to mitigate harmonics at consumer end by the installation of harmonic filter & inclusion of

rebate/surcharge provision in tariff as per harmonic control guide line of CEA.

2) Some cases of monthly billing power factor of HT Consumer are found leading in nature due to over VAr compensation & it drops sharply from unity level, resulting in higher line current & higher kVA demand. It is mainly due to wrong setting APFC controller of capacitor panel at consumer end.

   Audit addresses to mention leading power factor at monthly electricity bill & inform consumer for adjustment of setting of APFC capacitor panel at their end. LT bulk consumers may be included for power factor surcharge / rebate, as it is not applicable at present.

During audit, an attempt was taken to verify & measure the different electrical parameters on one LT Industrial consumer, namely 'Wonder Images Pvt. Ltd.', located at central part of Kolkata, which is a Flex printing manufacturing unit & implies printing premium digital banners using industrial-sized colour digital printing presses and another HT Commercial consumer, namely 'Ruby General Hospital', located at south-east part of Kolkata, which is a first private hospital in West Bengal. Electrical power measurements comprised of data logging during 30 minutes in 5 second time interval on 11.11.2022 at LT CESC incomer for Wonder Images of using sophisticated KRIKARD ALM 31 load manager and same on 12.11.2022 at HT 11kV VCB incomer Ruby General Hospital by using sophisticated KRIKARD ALM 31 load manager. During measurements & logging, all major electrical parameters, like voltage profile, current profile, power factor, all power profile, individual harmonic level were captured & analyzed with maximum, minimum & average values.

MEASURED DATA SHEET FOR WONDER IMAGES PVT. LTD.

Table 10: Measured data sheet for Wonder images PVT. LTD.

Phase to Phase Voltage Measurements at LT Incomer of Wonder Images							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
V1 rms	11-11-2022	233.7	216.0	238.9	V	30:00	(min:s)
V2 rms	11-11-2022	233.3	226.7	243.7	V	30:00	(min:s)
V3 rms	11-11-2022	231.8	224.6	238.2	V	30:00	(min:s)
Line Current Measurements at LT Incomer of Wonder Images							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units

A1 rms	11-11-2022	37.04	26.28	122.70	A	30:00	(min:s)
A2 rms	11-11-2022	30.88	20.22	68.66	A	30:00	(min:s)
A3 rms	11-11-2022	29.48	18.69	62.99	A	30:00	(min:s)
AN rms	11-11-2022	6.0	2.6	22.8	A	30:00	(min:s)
Power Factor Measurements at LT Incomer of Wonder Images							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
PF1	11-11-2022	0.807	0.773	0.876	p.u.	30:00	(min:s)
PF2	11-11-2022	0.705	0.649	0.827	p.u.	30:00	(min:s)
PF3	11-11-2022	0.794	0.754	0.896	p.u.	30:00	(min:s)
PFT	11-11-2022	0.771	0.735	0.862	p.u.	30:00	(min:s)
Unbalance Measurements at LT Incomer of Wonder Images							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
Aunb (IEEE 112)	11-11-2022	14.2	7.5	36.8	%	30:00	(min:s)
Aunb (u2)	11-11-2022	14.4	8.8	27.8	%	30:00	(min:s)
Uunb (IEEE 112)	11-11-2022	0.5	0.3	0.7	%	30:00	(min:s)
Vunb (IEEE 112)	11-11-2022	0.62	0.00	1.40	%	30:00	(min:s)
Vunb (u2)	11-11-2022	0.5	0.3	0.7	%	30:00	(min:s)
Power Measurements at LT Incomer of Wonder Images							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
P1 (W)	11-11-2022	6.973	5.9	9.553	kW	30:00	(min:s)
P2 (W)	11-11-2022	5.081	4.082	7.402	kW	30:00	(min:s)
P3 (W)	11-11-2022	5.42	4.732	7.85	kW	30:00	(min:s)
PT (W)	11-11-2022	**17.47**	**14.83**	**24.25**	**kW**	**30:00**	**(min:s)**
Q1 (var)	11-11-2022	3.768	3.033	4.68	kvar	30:00	(min:s)
Q2 (var)	11-11-2022	3.566	2.983	4.455	kvar	30:00	(min:s)
Q3 (var)	11-11-2022	2.399	1.885	3.156	kvar	30:00	(min:s)
QT (var)	11-11-2022	9.732	7.974	12.12	kvar	30:00	(min:s)
S1 (VA)	11-11-2022	8.618	7.511	11.16	kVA	30:00	(min:s)

S2 (VA)	11-11-2022	7.171	6.238	8.931	kVA	30:00	(min:s)
S3 (VA)	11-11-2022	6.812	6.074	8.783	kVA	30:00	(min:s)
ST (VA)	11-11-2022	22.6	20.05	28.08	kVA	30:00	(min:s)
Harmonic Distortion Measurements at LT Incomer of Wonder Images							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
A1 THDf	11-11-2022	41.7	29.7	48.0	% f	30:00	(min:s)
A2 THDf	11-11-2022	57.2	35.6	66.8	% f	30:00	(min:s)
A3 THDf	11-11-2022	55.2	34.1	63.2	% f	30:00	(min:s)
U12 THDf	11-11-2022	1.4	1.2	1.7	% f	30:00	(min:s)
U23 THDf	11-11-2022	1.3	1.2	1.7	% f	30:00	(min:s)
U31 THDf	11-11-2022	1.4	1.3	1.7	% f	30:00	(min:s)
V1 THDf	11-11-2022	1.74	1.50	2.0	% f	30:00	(min:s)
V2 THDf	11-11-2022	1.74	1.60	2.2	% f	30:00	(min:s)
V3 THDf	11-11-2022	1.87	1.70	2.1	% f	30:00	(min:s)

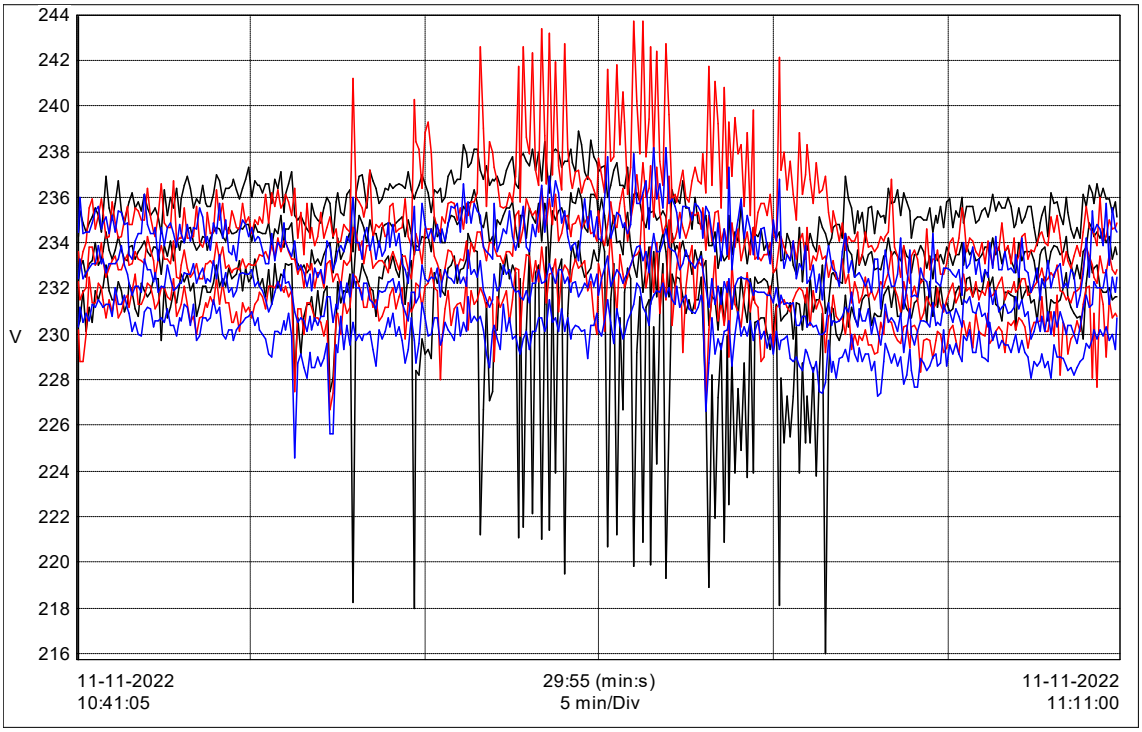


Figure 10- Voltage profile of WONDER IMAGES PVT. LTD

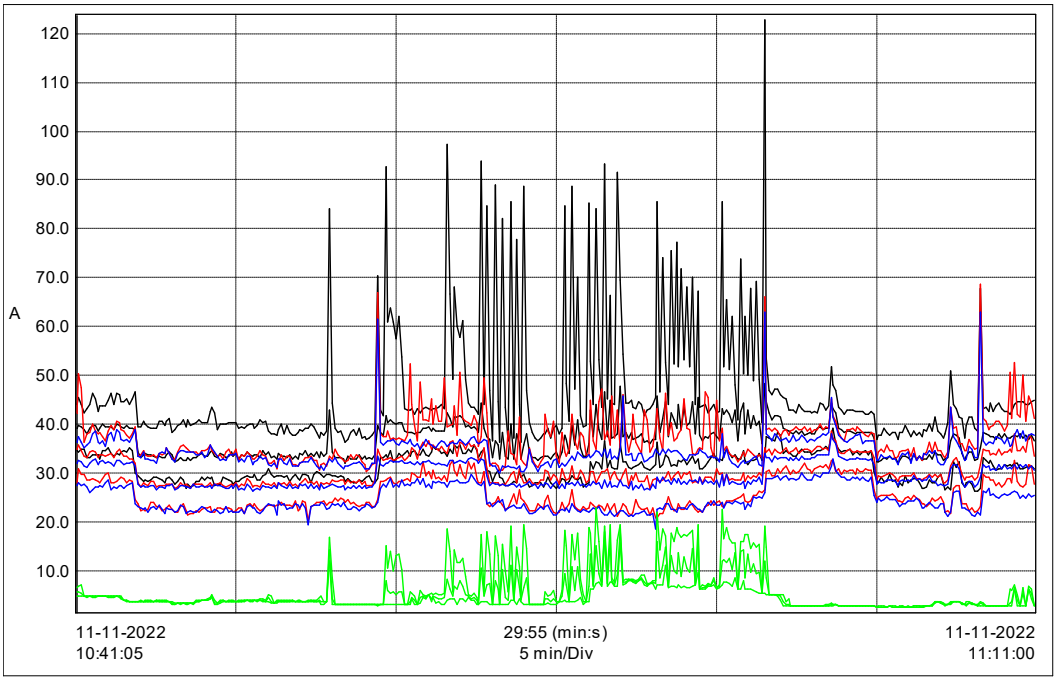


Figure 11- Current profile of WONDER IMAGES PVT. LTD

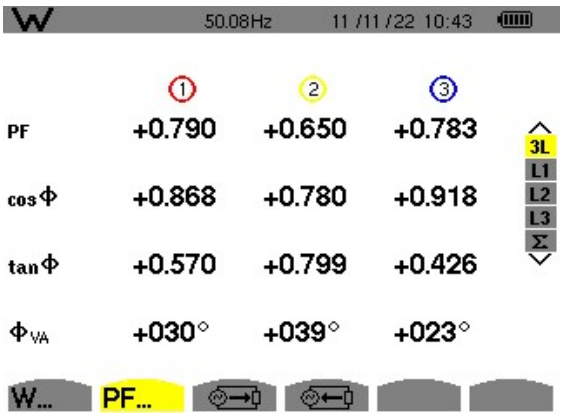


Figure 12- Power Factor Profile

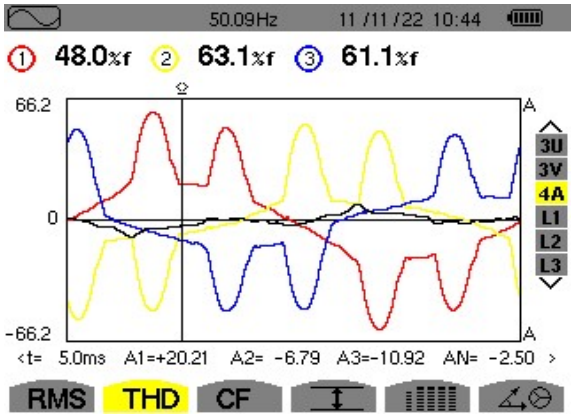
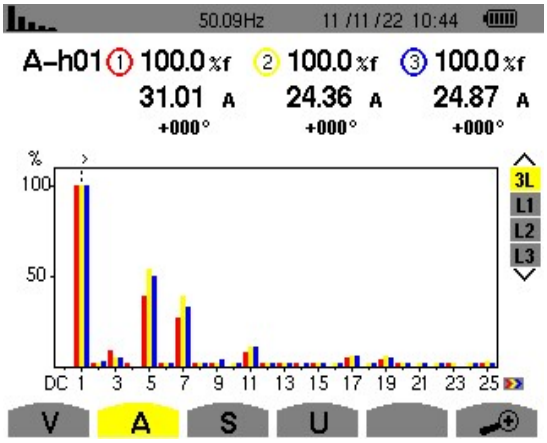


Figure 13- Harmonic Distortion



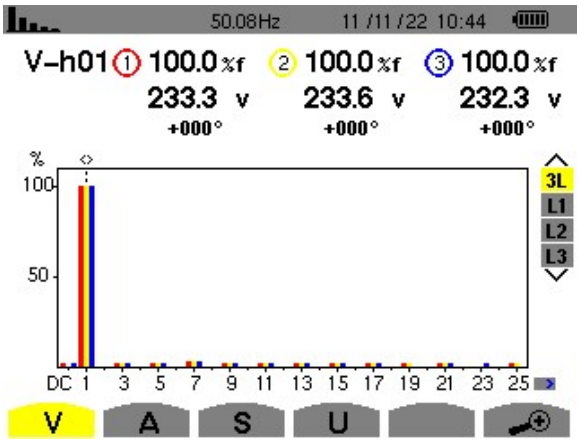


Figure 14- Bar Chart- Different Order of Harmonics

FINDINGS ON ELECTRICAL MEASUREMENT AT WONDER IMAGES

i. Average phase to neutral voltage or phase to phase is found to be less as compared to nominal supply voltage. Above voltage curve indicates that voltage flickering is found high. As per consumer, supply voltage drops significantly at evening time, which poses difficulty to run the plant's machineries.
ii. Average voltage unbalancing is found to be satisfactory and lies within acceptable limiting value of 3%.
iii. Average current unbalancing in between phases is found to be high (**14.18%**) as compared to acceptable limiting value of 10%, leading to increase of line loss.
iv. Average load power factor is found to be very less (**0.771 Lag**) without any capacitor bank in consumer premises, resulting in increase of line current, losses and kVA demand.
v. Average "Total Current Harmonic Distortion" (%THDi) is found to be very high (**51.4%**) at 415-volt LT incomer, which does not comply with the harmonic regulation of 8% as per IEEE 519 2014. In this case mainly 5^{th} & 7^{th} order of harmonic current flows either through Wonder Images internal networks or through grid networks, resulting in increase of fed DT losses & line losses of grid further.
vi. Average "Total Voltage Harmonic Distortion" (%THDi) is found to be satisfactory (**1.78%**) as against acceptable limit of 5% as per harmonic regulation of IEEE 519 2014.
vii. Overall impact of low power factor & higher order of odd & evil harmonic current flow leads to increase the line losses & winding eddy current losses of CESC DT substantially and also leads to increase kVA demand of consumer and de-rate DT capacity considerably.

MEASURED DATA SHEET FOR RUBY GENERAL HOSPITAL

Table 11: Measured data sheet for Ruby general hospital

Phase to Phase Voltage Measurements at HT VCB Incomer of Ruby General Hospital							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
U12 rms	12-11-2022	10.9	10.7	11.1	kV	30:20	(min:s)
U23 rms	12-11-2022	11.0	10.8	11.2	kV	30:20	(min:s)
U31 rms	12-11-2022	10.9	10.7	11.1	kV	30:20	(min:s)

Line Current Measurements at HT VCB Incomer of Ruby General Hospital							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
A1 rms	12-11-2022	25.38	23.22	28.71	A	30:20	(min:s)
A2 rms	12-11-2022	25.53	23.13	28.95	A	30:20	(min:s)
A3 rms	12-11-2022	23.52	21.18	26.55	A	30:20	(min:s)
AN rms	12-11-2022	2.1	2.0	2.3	A	30:20	(min:s)
Power Factor Measurements at HT VCB Incomer of Ruby General Hospital							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
PF1	12-11-2022	0.951	0.918	0.978	p.u.	30:20	(min:s)
PF2	12-11-2022	0.956	0.925	0.980	p.u.	30:20	(min:s)
PF3	12-11-2022	0.931	0.887	0.967	p.u.	30:20	(min:s)
PFT	12-11-2022	0.946	0.911	0.976	p.u.	30:20	(min:s)
Unbalance Measurements at HT VCB Incomer of Ruby General Hospital							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
Aunb (IEEE 112)	12-11-2022	5.2	3.2	7.2	%	30:20	(min:s)
Aunb (u2)	12-11-2022	4.0	1.9	6.0	%	30:20	(min:s)
Uunb (IEEE 112)	12-11-2022	0.6	0.5	0.7	%	30:20	(min:s)
Vunb (IEEE 112)	12-11-2022	0.50	0.40	0.60	%	30:20	(min:s)
Vunb (u2)	12-11-2022	0.5	0.4	0.7	%	30:20	(min:s)
Power Measurements at HT VCB Incomer of Ruby General Hospital							
Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
P1 (W)	12-11-2022	151.5	143.4	163.1	kW	30:20	(min:s)
P2 (W)	12-11-2022	154.2	146.2	166.2	kW	30:20	min:s)
P3 (W)	12-11-2022	138.5	128.3	150.3	kW	30:20	(min:s)
PT (W)	12-11-2022	**444.2**	**418.2**	**475.2**	**kW**	**30:20**	**min:s)**
Q1 (var)	12-11-2022	-41.83	-57.79	-24.01	kvar	30:20	min:s)
Q2 (var)	12-11-2022	-37.54	-53.62	-19.57	kvar	30:20	(min:s)
Q3 (var)	12-11-2022	-46.62	-61.99	-28.85	kvar	30:20	(min:s)
QT (var)	12-11-2022	-126	-170.9	-74	kvar	30:20	(min:s)
S1 (VA)	12-11-2022	159.2	149.3	174.7	kVA	30:20	min:s)
S2 (VA)	12-11-2022	161.3	150.8	174.9	kVA	30:20	(min:s)
S3 (VA)	12-11-2022	148.7	135.9	161	kVA	30:20	min:s)
ST (VA)	12-11-2022	469.3	436.3	508.2	kVA	30:20	min:s)
Harmonic Distortion Measurements at HT VCB Incomer of Ruby General Hospital							

Name	Date	AVG.	MIN.	MAX.	Units	Duration	Units
A1 THDf	12-11-2022	14.9	12.4	18.0	% f	30:20	(min:s)
A2 THDf	12-11-2022	16.6	13.8	19.6	% f	30:20	(min:s)
A3 THDf	12-11-2022	17.4	14.6	20.9	% f	30:20	(min:s)
U12 THDf	12-11-2022	1.3	1.2	1.4	% f	30:20	(min:s)
U23 THDf	12-11-2022	1.1	1.0	1.3	% f	30:20	(min:s)
U31 THDf	12-11-2022	1.2	1.1	1.4	% f	30:20	(min:s)
V1 THDf	12-11-2022	1.34	1.20	1.5	% f	30:20	(min:s)
V2 THDf	12-11-2022	1.23	1.10	1.4	% f	30:20	(min:s)
V3 THDf	12-11-2022	1.12	1.00	1.3	% f	30:20	(min:s)

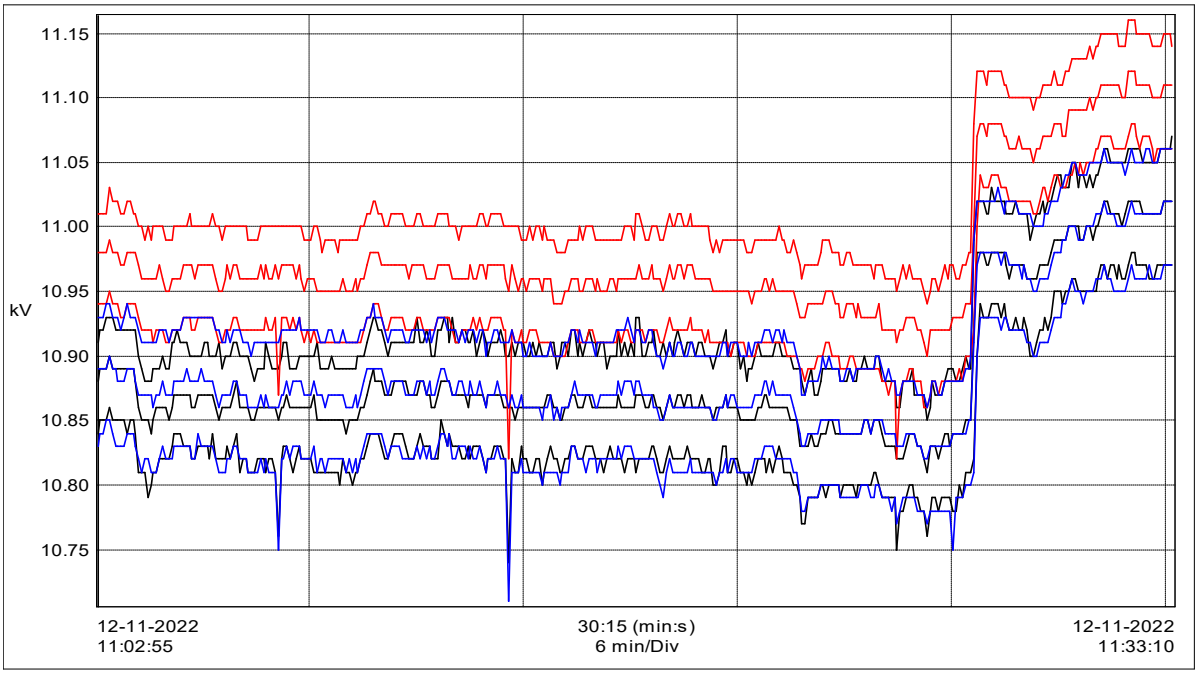


Figure 15- Voltage Profile of Ruby general hospital

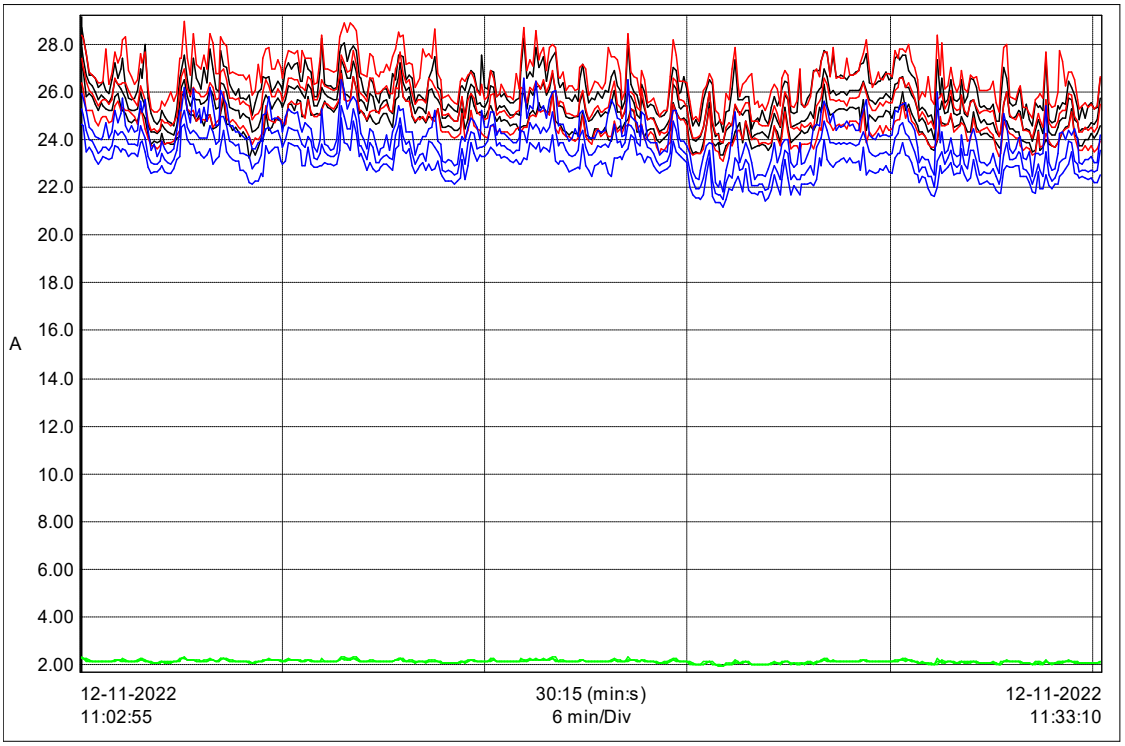


Figure 16- Current Profile of Ruby general hospital

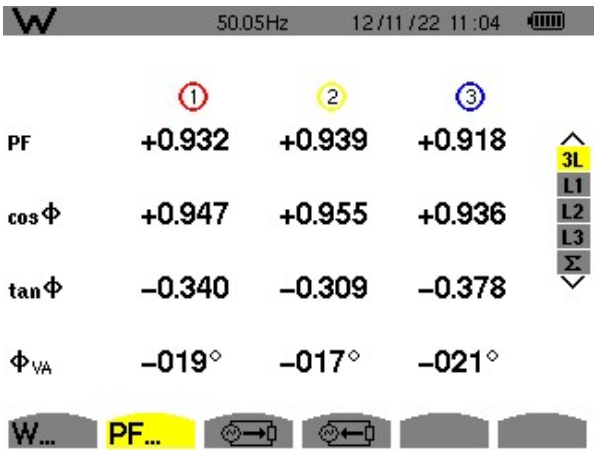


Figure 17- Power factor profile

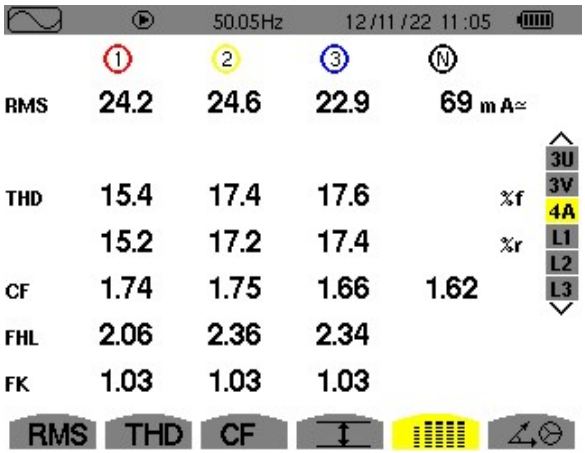


Figure 18- harmonic distortion

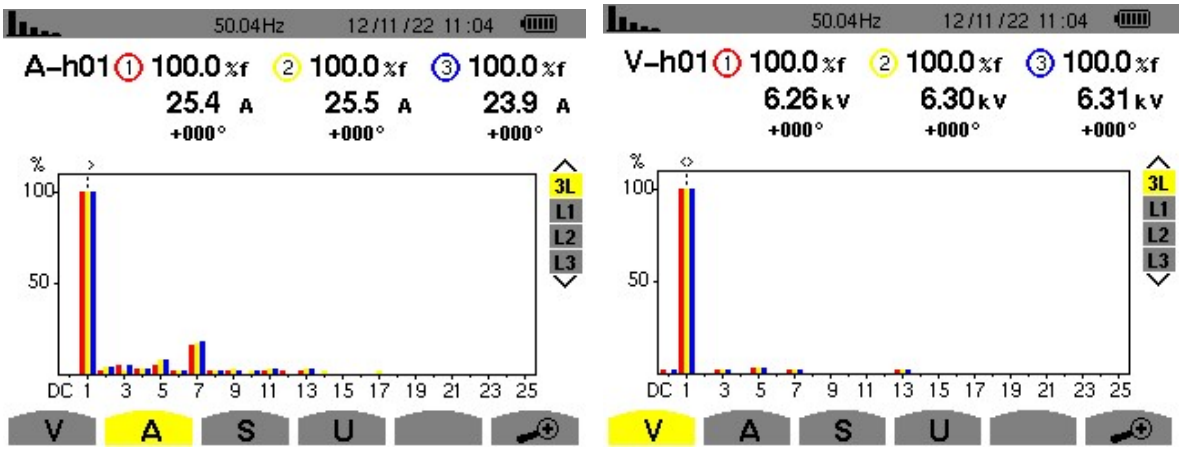


Figure 19- Bar Chart- Different Order of Harmonics

FINDINGS ON ELECTRICAL MEASUREMENT AT RUBY GENERAL HOSPITAL

i. Average phase to phase is found to be satisfactory as compared to nominal supply voltage of 11 kV.

ii. Average voltage unbalancing is found to be satisfactory (0.5%) and lies within acceptable limiting value of 3%.

iii. Average current unbalancing in between phases is found to be also satisfactory (5.2%) as compared to acceptable limiting value of 10%.

iv. Average load power factor is found to be satisfactory (**0.946 Lead**) with capacitor APFC at LT PCC of 1500 kVA Transformer. It is revealed that power factor is not maximized to above 0.99 as power factor drops with leading in nature due improper setting APFC, resulting in higher HT current flow in 11 kV feeder & higher LT current flow in Ruby Transformer.

v. Average "Total Current Harmonic Distortion" (%THDi) is found to be very high (**16.3%**) at 11 kV incomer, which does not comply with the harmonic regulation of 8% as per IEEE 519 2014. In this case mainly 3^{rd}, 5^{th} & 7^{th} order of harmonic current flows either through hospital internal networks or through grid networks, resulting in increase of Transformer losses & line losses of grid further.

vi. It is reported that observed winding temperature of Ruby General Transformer of 1500 kVA capacity goes beyond 90°C at above 900 ampere load current during peak summer & rainy seasons and winding is heated excessively. In this condition Transformer is cooled by large volume flow of forced draft pedestal fan & by running an exhaust fan. It indicates that higher order of harmonics heats the Transformer winding & derate the Transformer from its original capacity.

vii. Average "Total Voltage Harmonic Distortion" (%THDi) is found to be satisfactory (**1.23%**) as against acceptable limit of 5% as per harmonic regulation of IEEE 519 2014.

viii. Overall impact of leading power factor & higher order of odd & evil harmonic current flow leads to increase the line losses of grid & winding eddy current losses of Ruby Transformer substantially and also leads to de-rate the capacity of Ruby Transformer.

Table 12: Energy conservation proposed for future

Sl. No.	Project	Annual energy saving in MU (appx.)	Annual monetary saving in Rs.Lakh
1	Mitigation of harmonics at consumer end by the installation of harmonic filter & inclusion of rebate/surcharge provision in tariff as per harmonic control guide line of CEA. (Considering @ 0.2% saving on Annual sales to all consumers-8978.24MU for FY 2021-22.)	17.96	2578.47
2	LT bulk consumers should come under power factor surcharge / rebate in tariff, as it is not applicable at present.	0.58	347.07

5.5.4. Cost Benefit Analysis of ENCON Measures:

1.1.2.1. Installation of harmonic filter & inclusion of rebate/surcharge provision in tariff as per harmonic control guide line of CEA.

Modern industrial & commercial facilities are characterized by the widespread application of nonlinear loads (AC Drive (VFD), DC Drive, Arcing devices, saturable devices, LED based lighting system, Inverter base Air-conditioner, Refrigerator, UPS, PLC etc.). These loads can make up a significant portion of the total facility loads and inject harmonic currents into the power system, causing harmonic distortion in the voltage & current. In an ideal power system, the voltage supplied to the consumers and the resulting current wave forms are sine waves. Nonlinear loads change the sinusoidal nature of the ac power current thereby resulting in the flow of harmonic currents in the ac power system.

Presence of harmonics results in increased losses, overheating, relay malfunctioning and damage to insulation.

At present there are 525 nos. of HT Industrial Consumers, which consumes 1213.39 MU/year (FY 2021-22) electrical energy, 606 nos. of HT Commercial Consumers, which consumes 550.28 MU/year (FY 2021-22) electrical energy and 352 nos. of HT Residential Apartments, which consumes 258.66 MU/year (FY 2021-22) electrical energy.

It is observed that total harmonic distortion at HT incomer for some of industries, commercial sectors & Residential Apartment (approx. 10%) are found to be crossed by 5% & 8% respectively as in case of study in Ruby General Hospital mentioned above analysis. As per earlier CEA regulation, when the consumer fails to provide adequate harmonic filtering equipment to avoid dumping of harmonics into Licensee's network beyond the permissible limits (>8% THDi), the consumer is liable to pay compensation at 15% of the respective tariff. As and when the consumer brings down the harmonics within the limit, compensation charges shall be withdrawn. The measurement of harmonics shall be done by the Distribution Licensee using standard meters/equipment in the presence of consumers or their representatives.

Hence, audit addresses that as all HT feeders, DTs & HT consumers will be equipped with communicable metering system within stipulated time frame, mentioned in the Trajectory for meter installation in first schedule, harmonic monitoring through communicable metering system will be easier and those consumers will dump harmonics beyond 8% THDi, should be penalized as per previous CEA regulation. As a result, reliability of CESC grid will be improved and Transformer Eddy Current Losses & line losses will be reduced to minimum @ 0.2% energy saving on sales to consumers of high total current harmonic distortion (> 8% THD). In that case CESC should communicate & motivate their HT consumers of high total current harmonic distortion in writing regarding the importance of harmonic mitigation by the installation of harmonic filtration at their load centres.

Detailed techno-commercial analysis for harmonic mitigation at consumer end is given below.

Table 13: Cost Benefit Analysis on Harmonic Penalty for High THD HT Consumers

Cost Benefit Analysis on Harmonic Penalty for High THD HT Consumers			
Sl. No.	**Particulars**	**Unit**	**Analysis & Result**
1.	Number of total HT Industrial Consumers	nos.	525

2.	Annual energy consumed by total HT Industrial Consumers	MU	1213.39
3.	Number of HT Industrial Consumers having high total current harmonic distortion	nos.	53
4.	Annual energy consumed by HT Industrial Consumers having high total current harmonic distortion	MU	121
5.	Number of total HT Commercial Consumers	nos.	606
6.	Annual energy consumed by total HT Commercial Consumers	MU	550.28
7.	Number of HT Commercial Consumers having high total current harmonic distortion	nos.	61
8.	Annual energy consumed by HT Commercial Consumers having high total current harmonic distortion	MU	55
9.	Number of total HT Residential Consumers	nos.	352
10.	Annual energy consumed by total HT Residential Consumers	MU	258.66
11.	Number of HT Residential Consumers having high total current harmonic distortion	nos.	35
12.	Annual energy consumed by HT Residential Consumers having high total current harmonic distortion	MU	26
13.	Expected annual energy saving after harmonic mitigation at consumer end	MU	0.40
14.	Average cost of electricity	Rs./kWh	8.50
15.	Expected annual monetary saving by harmonic loss reduction	Rs.Lakh	34.38
16.	Annual Monetary Gain from harmonic Penalty @15%	Rs.Lakh	2578.47
17.	Net annual monetary gain by CESC	Rs.Lakh	2612.85
NOTE: As Consumers will invest for harmonic filter, thus there will be no investment from utility's end. Thus, there will be gain, no scope for loss. In that case payback period & IRR calculation cannot be evaluated.			

Assumption:

1) Minimum @ 0.2%-line loss & DT winding eddy current loss saving on annual sales to consumers of high harmonic distortion
2) 10% HT Consumers having high current harmonic distortion
3) 15% of unit cost will be charged for high THD HT consumers as per previous CEA regulation

4) Average cost of electricity – Rs.8.50/kWh

1.2.2.2. LT bulk consumers should come under power factor surcharge /rebate in tariff, as it is not applicable at present.

At present there are 64892 nos. of LT Industrial consumers, which are consumed 770.26 MU (FY 2021-22) of electrical energy. It is observed that billing power factor of some of LT Industrial consumers of CESC, like "Wonder Images Pvt. Ltd." is found very poor & it is less than 0.80 as they are not installed capacitor banks or Static Var Generator (SVG) at their load centre, resulting in drawing of high magnetizing current & increase of overall line current and hence, increase the line losses & kVA demand especially at upstream grid network.

Moreover, at present power factor surcharge/rebate in tariff is not applicable for LT Industrial consumers, wherein it is applicable for HT consumers.

Hence, audit addresses to introduce power factor surcharge/rebate in tariff for all LT Industrial consumers as in case of HT consumers have so that system line losses & kVA demand will be reduced. If their billing power factor increases above 0.99, they will be awarded by maximum 5% rebate on unit cost and if their billing power factor decreases below 0.85, they will be penalized by maximum 3.5% on unit cost as in case of it is applicable for tariff of HT consumers. In that case tariff of all LT Industrial consumers is considered as non-TOD category.

In that case CESC should communicate & motivate their LT Industrial consumers of low billing power factor in writing regarding the importance & benefits of power factor correction by the installation of capacitor banks or Static Var Generator (SVG) at their load centres and save the line losses in the tune of 0.5%.
It is approximated that LT Industrial consumers of low billing power factor (<0.80) are found to be around 15% and these consumers should come under power factor surcharge in monthly electricity bill.

Table 14: Cost Benefit Analysis on Low PF Penalty for LT Industrial Consumers

Cost Benefit Analysis on Low PF Penalty for LT Industrial Consumers			
Sl. No.	**Particulars**	**Unit**	**Analysis & Result**
1	Number of total LT Industrial Consumers	nos.	64892

2	Annual energy consumed by total LT Industrial Consumers	MU	770.26
3	Number of LT Industrial Consumers having Low Power Factor (<0.80)	nos.	9734
4	Annual energy consumed by LT Industrial Consumers having low Power Factor	MU	115.54
13	Expected annual line loss saving after Power Factor Correction at consumer end	MU	0.58
14	Average cost of electricity	Rs./kWh	8.5
15	Expected annual monetary saving after line loss saving	Rs.Lakh	3.34
16	Annual Monetary Gain from Power Factor Penalty @3.5% of unit cost	Rs.Lakh	343.73
17	Net annual monetary gain by CESC	Rs.Lakh	347.07
NOTE: As Consumers will invest for PFC Capacitors or SVG, thus there will be no investment from utility's end. Thus, there will be gain, no scope for loss. In that case payback period & IRR calculation cannot be evaluated.			

Assumption:

1) Minimum @ 0.5%-line loss saving on annual sales to LT Industrial consumers of low billing Power Factor
2) Power Factor penalty 3.5% of unit cost as in case of applicable for HT consumers of CESC
3) For calculation purpose tariff of all LT industrial consumers of low power factor is considered as non-TOD category.
4) 15% LT Consumers having low billing power factor
5) Average cost of electricity – Rs.8.50/kWh

Note: Majority of annual energy saving figures (as given in Table 5.9) have been estimated following discussions with CESC and a report prepared by Administrative Staff College of India (ASCI), Hyderabad for CESC. CESC is investing regularly for capacity augmentation to meet the system demand, manage distribution loss and improve reliability of supply. Distribution loss has been reduced from 9.6% in 2017-18 to 7.98% in 2021-22. Assuming system units of 10000 MU, energy saving during the period is about 125 MU, which may have been contributed by the other activities as mentioned above which are not easily amenable to computations.

6. Sample of Meter Testing and Calibration Certificates

CESC LIMITED

METER TEST CERTIFICATE

Issued by : **CESC Testing Laboratory**
Testing Department, *CESC Limited*
4, Sashi Sekhar Bose Row, KOLKATA - 700025.

CERTIFICATE NO. 2205060002
ULR NO.TC802622000000174F

TC-8026

DISCIPLINE:ELECTRICAL TESTING GROUP:MEASURING INSTRUMENT

1.	**Client Name & Address:-**	SYSTEM CONTROL DEPARTMENT,CESC LIMITED CESC HOUSE
2.	**Reference:-**	
	Service Request Form No.	09/22/2
	Date	31-03-2022
	Date of receipt of the Item	31-03-2022
	Condition of the Item on receipt	OK
3.	**Test Report:-**	
	Date of Issue	06-05-2022
	Date of Testing	From : 04-04-2022 To : 04-04-2022
4.	**Description of Equipment under test:- (as per name plate)**	
	Meter Serial No. / (ID)	S6433335/ (MH2ST2203310002)
	Type /Model	R3E
	Meter Constant	25600
	Rating	3 x 1 (2) A, 110/√3 V, 50 Hz
	Class of Accuracy	0.2s
	Last Reading	2.4608801GWh
	Insulation Grade	⧈
	Wires	4
	Make	SECURE
	MF	1
	CT Ratio	1000:1
	PT Ratio	220000:110
5.	**Test Details:-**	Test Specification:-
√ √ √ √ √	a) Limits of Error b) No-Load Condition c) Starting Condition d) Meter Constant e) Insulation Resistance f) Power Consumption g) Repeatability	**Client's Requirement** **Specification as per IS 14697 : 2021**
6.	Note: -1) This report relates only to the particular sample received for Testing at lab.	
7.	Results:- a) The conforms to the requirements of the above standard(s) with respect to the tests carried out. The test results are annexed. b) As per customer's requirement the results have been reported without incorporating MU. c) The expanded uncertainties of all measurement are as following at approximately 95% confidence level: i) Active Power : 0.06% @ 952.5 Watt ii) Reactive Power : 0.06% @ 952.5 Var iii) Apparent Power : 0.08% @ 952.5 VA iv) Current : 0.07% @ 5mA v) Voltage : 0.04% @ 63.5 V vi) Frequency : 0.05% @ 50 Hz vii) Insulation Resistance : 5% @ 10 Mohm	
8.	Remarks: - Meter has been tested without CTs and VTs. Meter is registering on the basis of primary current and voltage.	

This Certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Checked by Tapas Mukherjee	Approved By: Signature Name Pranab Kumar Bhunia Technical Manager

CTL/F/04 Rev.01

RP-Sanjiv Goenka Group

CESC LIMITED

METER TEST CERTIFICATE

Issued by : **CESC Testing Laboratory**
Testing Department, *CESC Limited*
4, Sashi Sekhar Bose Row, KOLKATA - 700025.

CERTIFICATE NO. 2205060002
ULR NO.TC802622000000174F

TC-8026

DISCIPLINE:ELECTRICAL TESTING GROUP:MEASURING INSTRUMENT

Sl No.	Particulars of Tests & Clause Number	Requirements as per Specification		Error Obtained	Remarks
		Test Condition	Error Limits		
1.	**Limits of Error due to variation of Current [in Percentage(%)] Clause No.11.1** **Balanced Load - Forward Connection (Active)** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	200% Ibasic at UPF	±0.20	-0.02	Conform
		200% Ibasic at 0.5 Lag	±0.30	-0.04	Conform
		200% Ibasic at 0.8 Lead	±0.30	-0.02	Conform
		200% Ibasic at 0.866 Lag	±0.30	-0.04	Conform
		100% Ibasic at UPF	±0.20	-0.03	Conform
		100% Ibasic at 0.5 Lag	±0.30	-0.05	Conform
		100% Ibasic at 0.8 Lead	±0.30	-0.03	Conform
		50% Ibasic at UPF	±0.20	-0.04	Conform
		50% Ibasic at 0.5 Lag	±0.30	-0.05	Conform
		50% Ibasic at 0.8 Lead	±0.30	-0.05	Conform
		20% Ibasic at UPF	±0.20	±0.00	Conform
		20% Ibasic at 0.5 Lag	±0.30	+0.07	Conform
		20% Ibasic at 0.8 Lead	±0.30	-0.03	Conform
		10% Ibasic at UPF	±0.20	-0.03	Conform
		10% Ibasic at 0.5 Lag	±0.30	+0.01	Conform
		10% Ibasic at 0.8 Lead	±0.30	-0.06	Conform
		5% Ibasic at UPF	±0.20	-0.01	Conform
		5% Ibasic at 0.5 Lag	±0.50	+0.04	Conform
		5% Ibasic at 0.8 Lead	±0.50	-0.04	Conform
		2% Ibasic at UPF	±0.40	+0.03	Conform
		2% Ibasic at 0.5 Lag	±0.50	+0.13	Conform
		2% Ibasic at 0.8 Lead	±0.50	-0.03	Conform
		1% Ibasic at UPF	±0.40	-0.06	Conform
2.	**Limits of Error due to variation of Current [in Percentage(%)] Clause No.11.1** **Un-Balanced Load - R Phase - Forward Connection (Active)** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	200% Ibasic at UPF	±0.30	-0.04	Conform
		200% Ibasic at 0.5 Lag	±0.40	-0.04	Conform
		100% Ibasic at UPF	±0.30	±0.00	Conform
		100% Ibasic at 0.5 Lag	±0.40	+0.01	Conform
		20% Ibasic at UPF	±0.30	-0.02	Conform
		20% Ibasic at 0.5 Lag	±0.40	+0.06	Conform
		10% Ibasic at UPF	±0.30	-0.05	Conform
		10% Ibasic at 0.5 Lag	±0.40	-0.01	Conform
		5% Ibasic at UPF	±0.30	-0.04	Conform
3.	**Limits of Error due to variation of Current [in Percentage(%)] Clause No.11.1** **Un-Balanced Load - Y Phase - Forward Connection (Active)** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	200% Ibasic at UPF	±0.30	+0.01	Conform
		200% Ibasic at 0.5 Lag	±0.40	+0.03	Conform
		100% Ibasic at UPF	±0.30	±0.00	Conform
		100% Ibasic at 0.5 Lag	±0.40	-0.03	Conform
		20% Ibasic at UPF	±0.30	+0.03	Conform
		20% Ibasic at 0.5 Lag	±0.40	+0.17	Conform
		10% Ibasic at UPF	±0.30	-0.03	Conform
		10% Ibasic at 0.5 Lag	±0.40	+0.04	Conform
		5% Ibasic at UPF	±0.30	-0.02	Conform
4.	**Limits of Error due to variation of Current [in Percentage(%)] Clause No.11.1** **Un-Balanced Load - B Phase - Forward Connection (Active)** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	200% Ibasic at UPF	±0.30	±0.00	Conform
		200% Ibasic at 0.5 Lag	±0.40	+0.01	Conform
		100% Ibasic at UPF	±0.30	-0.01	Conform
		100% Ibasic at 0.5 Lag	±0.40	+0.03	Conform
		20% Ibasic at UPF	±0.30	-0.05	Conform
		20% Ibasic at 0.5 Lag	±0.40	+0.04	Conform
		10% Ibasic at UPF	±0.30	-0.05	Conform
		10% Ibasic at 0.5 Lag	±0.40	+0.01	Conform
		5% Ibasic at UPF	±0.30	-0.02	Conform

Checked by Tapas Mukherjee

Approved By:
Signature
Name Pranab Kumar Bhunia
Technical Manager

CTL/F/04 Rev.01

RP-Sanjiv Goenka Group

CESC LIMITED

METER TEST CERTIFICATE

Issued by : **CESC Testing Laboratory**
Testing Department, *CESC Limited*
4, Sashi Sekhar Bose Row, KOLKATA - 700025.

CERTIFICATE NO. 2205060002
ULR NO.TC802622000000174F

TC-8028

DISCIPLINE:ELECTRICAL TESTING GROUP:MEASURING INSTRUMENT

Sl No.	Particulars of Tests & Clause Number	Requirements as per Specification: Test Condition	Error Limits	Error Obtained	Remarks
5.	**Limits of Error due to variation of Current [in Percentage(%)] Clause No.11.1** **Balanced Load - Forward Connection (Reactive)** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	200% Ibasic at Zero PF	±0.20	-0.04	Conform
		200% Ibasic at 0.866 Lag	±0.30	-0.01	Conform
		200% Ibasic at 0.6 Lead	±0.30	-0.03	Conform
		100% Ibasic at Zero PF	±0.20	-0.05	Conform
		100% Ibasic at 0.866 Lag	±0.30	-0.06	Conform
		100% Ibasic at 0.6 Lead	±0.30	-0.05	Conform
		50% Ibasic at Zero PF	±0.20	-0.05	Conform
		50% Ibasic at 0.866 Lag	±0.30	-0.07	Conform
		50% Ibasic at 0.6 Lead	±0.30	-0.06	Conform
		20% Ibasic at Zero PF	±0.20	-0.02	Conform
		20% Ibasic at 0.866 Lag	±0.30	-0.13	Conform
		20% Ibasic at 0.6 Lead	±0.30	+0.03	Conform
		10% Ibasic at Zero PF	±0.20	-0.05	Conform
		10% Ibasic at 0.866 Lag	±0.30	-0.10	Conform
		10% Ibasic at 0.6 Lead	±0.30	-0.01	Conform
		5% Ibasic at Zero PF	±0.20	-0.03	Conform
		5% Ibasic at 0.866 Lag	±0.50	-0.13	Conform
		5% Ibasic at 0.6 Lead	±0.50	+0.02	Conform
		2% Ibasic at Zero PF	±0.40	+0.02	Conform
		2% Ibasic at 0.866 Lag	±0.50	-0.15	Conform
		2% Ibasic at 0.6 Lead	±0.50	+0.07	Conform
		1% Ibasic at Zero PF	±0.40	-0.08	Conform

Sl No.	Particulars of Tests & Clause Number	Requirements as per Specification	Test Condition	Observations
6.	**Test of Starting & Running with No-Load** **Clause No.11.4.2 & 12.12** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	It is to be verified that	Applied Voltage :	
		1) The meter shall be fully functional within 5 secs after the rated voltage is applied to the meter terminals.	Rated Voltage : 63.5 Volts Current circuit - Open	Meter was found fully functional within 5 secs Conform
		2) The meter shall not produce more than one output pulse count.	115% of rated voltage = 73 Volts Current circuit - Open	Meter did not produce any test output pulse count. Conform
7.	**Test of Starting current** **Clause No.11.5 & 12.13** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	It is to be verified that The meter shall start and continue to register at 0.1% Ibasic at UPF	Applied Voltage/Current Rated Voltage : 63.5 Volts Current circuit = 1 mA	Meter started and continued to record energy Conform

Checked by Tapan Mukherjee

Approved By:
Signature
Name Pranab Kumar Bhunia
Technical Manager

CTL/F/04 Rev.01

RP-Sanjiv Goenka Group

CESC LIMITED

METER TEST CERTIFICATE

Issued by : **CESC Testing Laboratory**
Testing Department, *CESC Limited*
4, Sashi Sekhar Bose Row, KOLKATA - 700025.

CERTIFICATE NO. 2205060002
ULR NO.TC802622000000174F

TC-8026

DISCIPLINE:ELECTRICAL TESTING GROUP:MEASURING INSTRUMENT

Sl No.	Particulars of Tests & Clause Number	Requirements as per Specification	Test Condition	Observations
8.	**Test of Meter Constant for Active & Reactive Energy** **Clause No.11.6 & 12.14** **Balanced Load - Forward Connection (Active)** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	It is to be verified that The relation between the test output and the indication in the display shall comply with the marking on the name plate of the meter.	Applied Voltage/Current Rated Voltage : 63.5 Volts Current (Imax) = 2 A Power Factor = 0.866 Lag	Error : -0.05% Conform
9.	**Test of Meter Constant for Active & Reactive Energy** **Clause No.11.6 & 12.14** **Balanced Load - Forward Connection (Reactive)** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%**	It is to be verified that The relation between the test output and the indication in the display shall comply with the marking on the name plate of the meter.	Applied Voltage/Current Rated Voltage : 63.5 Volts Current (Imax) = 2 A Power Factor = 0.866 Lag	Error : -0.06% Conform
10.	**Insulation Resistance Test** **Clause No.12.7.6.4** Environmental Condition : Temperature : **25.6°C** R. Humidity : **50.1%** Atm. Pressure : **1010hPa**	Between current, voltage & aux. circuits together and Earth : >=5 MOhm Between circuits not intended to be connected in service : >=50 MOhm	Applied Voltage : 500 ± 50 V DC	50 MOhm Pass 100 MOhm Pass

Checked by Tapas Mukherjee	Approved By: Signature Name Pranab Kumar Bhunia, Technical Manager

CTL/F/04 Rev.01

RP-Sanjiv Goenka Group

Date: 11.08.2022

Minutes of meeting between Budge Budge Generating Station (CESC LTD), Testing department (CESC LTD) and WBSETCL on 11.08.2022 regarding joint calibration of 12 numbers Secure make Apex 100 meters installed at GT and ST HV side of all 3 Units:

- Joint calibration of the following 12 Nos. APEX 100 Energy meters (Make: Secure), installed at BBGS, CESC Limited, carried out.

Meter Serial No	Feeder Name	Meter CT ratio	Meter PT ratio	Total M. F.	Main / Check
S6405346	GT1	1500/1	132KV/110V	1	Main
S6405347	GT1	1500/1	132KV/110V	1	Check
S6405350	ST1	300/1	132KV/110V	1	Main
S6405351	ST1	300/1	132KV/110V	1	Check
S6405348	GT2	1500/1	132KV/110V	1	Main
S6405349	GT2	1500/1	132KV/110V	1	Check
S6405352	ST2	300/1	132KV/110V	1	Main
S6405353	ST2	300/1	132KV/110V	1	Check
S6405344	GT3	1000/1	220KV/110V	1	Main
S6405345	GT3	1000/1	220KV/110V	1	Check
S6405342	ST3	300/1	220KV/110V	1	Main
S6405343	ST3	300/1	220KV/110V	1	Check

- Calibration results for all meters found satisfactory.
- Calibration sheets with all details are attached herewith as Annexure.

(Mr K. C. Betal, DCE, WBSETCL)

(Mr D. Mondal, JEE, WBSETCL)

(Mr S. Bhattacharyya, T/D, CESC Ltd)

(Mr S. Das, S/O, CESC Ltd)

(Mr S. N. Choudhury, BBGS, CESC Ltd)

(Mr S. Ghorui, BBGS, CESC Ltd)

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 132 kV GT - 1 **Main**

Ckt. CTR : 1500/1 A **Ckt. VTR : 132 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405346

Type : APEX 100 **Meter CTR : 1500/1 A**

Accuracy Class : 0.2 S **Meter PTR : 132 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : Schulmberger, France.

Type : SM 3050

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: 04B417301

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	23516884.1005	1·0	38·38528	Initial rdg.	0	1·8	38·4084	−0·060	20 mins.	A= 450 Amps. MW= 103·7 PF= 0·981
	Final rdg.	23517267.9533			Final rdg.	21·338					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC)

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

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Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 132 kV GT - 1 **Check**

Ckt. CTR : 1500/1 A **Ckt. VTR : 132 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405347

Type : APEX 100 **Meter CTR : 1500/1 A**

Accuracy Class : 0.2 S **Meter PTR : 132 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : **Schulmberger, France.**

Type : **SM 3050**

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: **04B417301**

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	23512[illegible]81327	1'0	38·37953	Initial rdg.	0	1'8	38·4084	-0'075	20min	A= 450 Amps MW= 103'7 PF= 0'981
	Final rdg.	23512[illegible]19280			Final rdg.	21'338					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC) Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 132 kV ST - 1 Main

Ckt. CTR : 300/1 A **Ckt. VTR : 132 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405350

Type : APEX 100 **Meter CTR : 300/1 A**

Accuracy Class : 0.2 S **Meter PTR : 132 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : Schulmberger, France.

Type : SM 3050

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: 04B417301

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	64329.032424	1'0	3.51242	Initial rdg.	0	~~1.8~~ 0.36	3.512592	-0.005	1 hr.	A= 19.93 MW= 3.81 PF= 0.84
	Final rdg.	64332.544841			Final rdg.	9.7572					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC) / Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 132 kV ST - 1 **Check**

Ckt. CTR : 300/1 A **Ckt. VTR : 132 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405351

Type : APEX 100 **Meter CTR : 300/1 A**

Accuracy Class : 0.2 S **Meter PTR : 132 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : **Schulmberger, France.**

Type : **SM 3050**

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: **04B417301**

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	64335.637436	1.0	3.513413	Initial rdg.	0	0.36	3.512592	+0.023	1 hr.	A= 19.93 MW= 3.81 PF= 0.81
	Final rdg.	64339.150849			Final rdg.	9.7572					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC) Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 132 kV GT - 2 **Main**

Ckt. CTR : 1500/1 A **Ckt. VTR : 132 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** 56405348

Type : APEX 100 **Meter CTR : 1500/1 A**

Accuracy Class : 0.2 S **Meter PTR : 132 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : **Schulmberger, France.**

Type : **SM 3050**

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: **04B417301**

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	22600 65'64177	1'0	69.3092	Initial rdg.	0	1'8	69.3126	-0.004	35 min.	A= 695 Amp MW= 170 PF= 0.99 Lag.
	Final rdg.	22601 34'95097			Final rdg.	38'507					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC)/Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 132 kV GT - 2 Check

Ckt. CTR : 1500/1 A **Ckt. VTR : 132 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405349

Type : APEX 100 **Meter CTR : 1500/1 A**

Accuracy Class : 0.2 S **Meter PTR : 132 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : Schulmberger, France.

Type : SM 3050

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: 04B417301

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	22601137.28246	1.0	69.35314	Initial rdg.	0	1.8	69.3126	+0.058	35min.	A= 695 Amps MW= 170 PF= 0.99 Lag.
	Final rdg.	22602206.63560			Final rdg.	38.507					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC) Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 132 kV ST - 2 Main

Ckt. CTR : 300/1 A **Ckt. VTR : 132 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405352

Type : APEX 100 **Meter CTR : 300/1 A**

Accuracy Class : 0.2 S **Meter PTR : 132 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : Schulmberger, France.

Type : SM 3050

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: 04B417301

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	6643519903	1'0	3·531727	Initial rdg.	0	0'36	3·53304	-0'037	30 min.	A= 40·5 Amp.
	Final rdg.	6638·730763			Final rdg.	9·8140					MW= 7·5
											PF= 0·82 (Lag)
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A=
	Final rdg.				Final rdg.						MW=
											PF=
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A=
	Final rdg.				Final rdg.						MW=
											PF=

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC) Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 132 kV ST - 2 **Check**

Ckt. CTR : 300/1 A **Ckt. VTR : 132 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405353

Type : APEX 100 **Meter CTR : 300/1 A**

Accuracy Class : 0.2 S **Meter PTR : 132 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : **Schulmberger, France.**

Type : **SM 3050**

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: **04B417301**

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	66473·973039	1·0	3·534549	Initial rdg.	0	0·36	3·53304	+0·062	30 min.	A= 40·5 Amp. MW= 7·5 PF= 0·82 (Lag)
	Final rdg.	66477·507588			Final rdg.	9·8140					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC)
			11/8/22

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 220 kV GT - 3 **Main**

Ckt. CTR : 1000/1 A **Ckt. VTR : 220 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405344

Type : APEX 100 **Meter CTR : 1000/1 A**

Accuracy Class : 0.2 S **Meter PTR : 220 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : **Schulmberger, France.**

Type : **SM 3050**

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: **04B417301**

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	2643839.21651	1·0	88·26018	Initial rdg.	0	2·0	88·208	+0·059	21 min.	A= 580 Amp MW= 227 PF= 0·993 lead
	Final rdg.	2643927.47669			Final rdg.	44·104					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC) / Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 220 kV GT - 3 **Check**

Ckt. CTR : 1000/1 A **Ckt. VTR : 220 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405345

Type : APEX 100 **Meter CTR : 1000/1 A**

Accuracy Class : 0.2 S **Meter PTR : 220 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : Schulmberger, France.

Type : SM 3050

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: 04B417301

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	216439733.91778	1.0	88.2015	Initial rdg.	0	2.0	88.208	-0.007	21 min	A= 580 Amps MW= 227 PF= 0.993 (Lead)
	Final rdg.	216440621.1928			Final rdg.	44.104					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC)/Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 220 kV ST - 3 Main

Ckt. CTR : 300/1 A **Ckt. VTR : 220 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S6405342

Type : APEX 100 **Meter CTR : 300/1 A**

Accuracy Class : 0.2 S **Meter PTR : 220 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : Schulmberger, France.

Type : SM 3050

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: 04B417301

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	35108.02250	1.0	3.07296	Initial rdg.	0	0.6	3.07302	-0.002	58 min	A= 10.5 MW= 3.3 PF= 0.824 lag.
	Final rdg.	35111.09546			Final rdg.	5.1217					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC) Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

Station : Budge Budge Generating Station **Date :** 11.08.2022

Feeder : 220 kV ST - 3 **Check**

Ckt. CTR : 300/1 A **Ckt. VTR : 220 kV/√3 /110 V/√3**

Meter Details :

Make : Secure Meters Ltd **Meter Sl. No. :** S64O5343

Type : APEX 100 **Meter CTR : 300/1 A**

Accuracy Class : 0.2 S **Meter PTR : 220 kV/√3 /110 V/√3**

Mode of connection : 3P4W **Meter MF: 1.0**

Standard (Reference) Meter Details :

Make : **Schulmberger, France.**

Type : **SM 3050**

Accuracy Class: 0.05% in Active, 0.20 % in Reactive, 0.25% (at UPF) in Apparent.

Sl No.: **04B417301**

	Meter Under Test				Standard Meter (Reference)						
Parameter	Measurement		MF	Net advance	Measurement		MF	Net advance	% Error	Duration of Test	Other Parameters
Active Energy (MWH)	Initial rdg.	35305.01360	1.0	3.07414	Initial rdg.	0	0.6	3.07302	+0.036	58 mins	A= 10.5 MW= 3.2 PF= 0.84 lag.
	Final rdg.	35308.08774			Final rdg.	5.1217					
Reactive Energy (MVArH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						
Apparent Energy (MVAH)	Initial rdg.				Initial rdg.						A= MW= PF=
	Final rdg.				Final rdg.						

Signature Testing Dept. (CESC LTD)	Signature BBGS (CESC LTD)	Signature System Control Dept. (CESC LTD)	Signature (SLDC) / Testing WBSETCL

Note:

A) The Standard Meter has been calibrated By Yadav Measurements Pvt. Ltd., Certificate No.: YMPL/332193/132021 dated 09/03/2022

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CHECK LIST FOR ACCURACY MEASUREMENT OF METER AT SITE 3 Ph. 4 Wire

Dated 11/10/22

Meter No. 37262236 Reference Meter ACCUCHEK

Sl. No. AHP 98836

ance regi under te		

To ....

: Mete error found within limit

M) : .....

Suman Chakladar (Manager)

11/10/2022

Testing Done by : DINESH KR. ROY & RAMIT CHAT

: .....

Done : .....

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7. Critical Analysis by Energy Auditor:

During field interaction & on-site visit auditor wanted to know the status of identification and mapping status of all of the electrical network assets, status of identification and mapping of high tension and low-tension consumers, status of the development and implementation of information technology status enabled energy accounting and audit system, including associated software, installation status of functional meters for consumers, transformers and feeders, status of adoption of an information technology enabled system to create energy accounting report reports without any manual interference and status of formation of cell for centralized energy accounting etc.

During field interaction & on-site visit auditor observed that CESC possessed sound communicable meters connected with feeders & DTRs of CESC for capturing loss data, having system for identification and mapping of all high-tension consumers, but not having for low tension consumers. Still, during verification processes in their conference hall, CESC was unable to show the loss figures in details for feeders/DTRs in their records.

Management response for action plan of CESC was found to be very positive and CESC was agreed upon to implement it with top priority within the target stipulated in pre-requisites of BEE’s regulation.

As a professionally managed company, CESC has reduced their AT & C losses quite appreciably from the FY 2011-12 to FY 2021-22 by the adoption of Technical Loss Management by network up-gradation, installation of power factor controller, network management, regular health monitoring of the assets at all voltage levels, High Voltage Distribution System (HVDS) installation, LED bulb distribution, Commercial Loss Management and Theft Control, conducting in house Energy audit, replacement of old meters with high quality electronic meters, adoption of Automatic Meter Reading System, Smart Street Lighting Management System, LT Aerial Bunched Conductor (ABC) installation, use different types of seals to prevent unauthorized access to service parts etc.

A critical analysis is carried out by deputed Accredited Energy Auditor with several interactions with CESC’s Energy Manager & others to know the facts of efficient managing of Aggregate Technical & Commercial losses.

During interaction, it was revealed that CESC was practiced to compute the feeder wise and DT wise energy accounting & losses based on complete mapping from the beginning stage, although their all feeders & DTRs were equipped with energy metering system. Only at present CESC monitors the some of DTRs of loss prone areas & non-loss prone areas with consumer indexing, which helps to identify and locate all the consumers on geographical map, which are being fed

from the Distribution Mains. As per stipulated regulation it is mandatory for projection of such losses in the report. CESC was agreed upon to regularize this loss projection within stipulated timeline.

Normally, the concept of Aggregate Technical & Commercial losses provides a realistic picture of loss situation in the context it is measured. It is **combination of energy loss (Technical loss + Theft + inefficiency in billing) & commercial loss (Default in payment + inefficiency in collection).**
Distribution loss consists of two parts:

a) Technical loss and
b) Commercial loss

} Aggregate Technical & Commercial Losses (AT & C)

Where, AT & C Loss (%) = {1 – (Billing Efficiency * Collection Efficiency)} * 100

Billing Efficiency (%) = Billed Energy/Input Energy *100

Collection Efficiency (%) = Revenue Collected/Billed Amount (Current Assessment)

Followings are the pre-requisites for annual energy audit and periodic energy accounting, presenting in tabulated form.

It is a well-known and acknowledged fact that distribution is the most risk prone segment and weakest link of the entire value chain of power sector, which has also been recognized in the National Electricity Policy. Apart from meeting high consumer expectations in terms of services provided and universal service obligation, the most challenging task of a distribution licensee is containing the losses in its system. Losses arise both as a natural phenomenon in the network (technical losses) and also due to unauthorized consumption by some consumers of the distribution licensee (commercial losses).

Containment of distribution loss is the most critical part of the distribution business, which requires significant efforts, personnel efficiency, continuous monitoring and progressive investment into the network for attaining a satisfactory level of operation. The following table shows the distribution loss figures for last 10 years.

Table 15: Distribution loss yearly

Year	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Distn Loss	12.1%	11.9%	11.8%	11.8%	11.6%	11.1%	9.6%	9.0%	8.9%	8.4%	7.98%

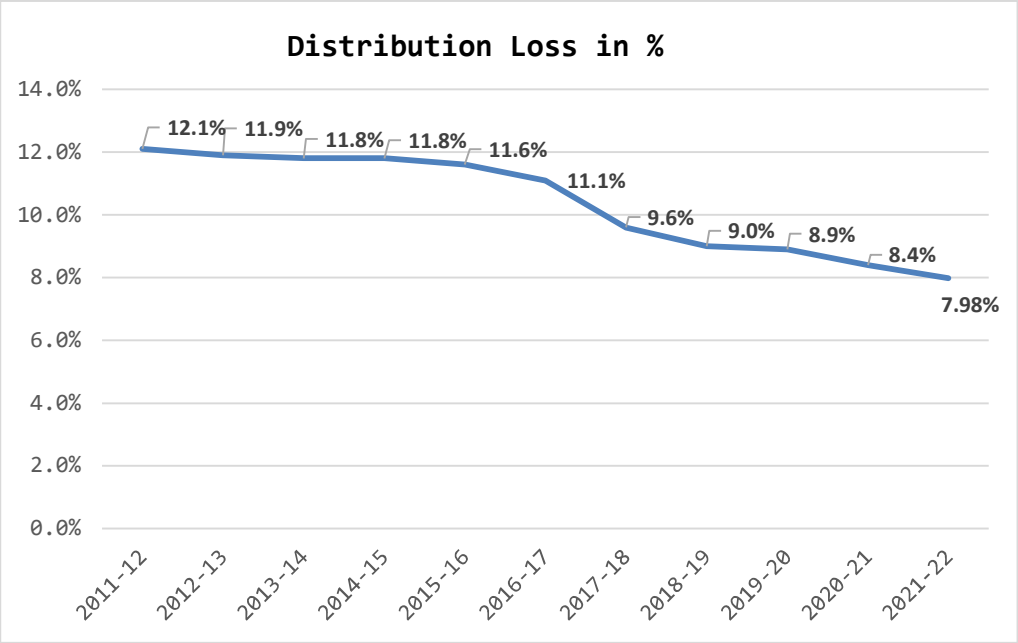

Figure 20- Distribution loss

In case of CESC, the task of containing the distribution losses within acceptable limit is increasingly becoming challenging as the ratio of HT to LT sales is reducing over the years, from over 38% in the year 2010-11 to about 29% in the year 2021-22. It is a well-known and an acknowledged fact that higher the proportion of low voltage sales, the higher would be the technical component of distribution loss. This change in the sales ratio is beyond the control of any licensee and depends entirely on the pattern of demand of electricity of the consumers.

The following graph depicts the declining trend in proportion of HT sales within CESC's area of supply.

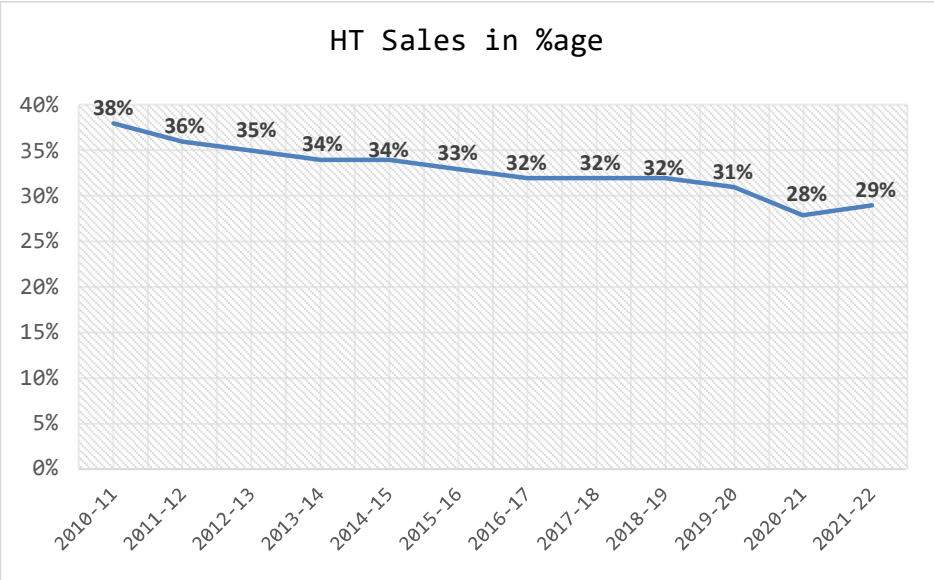

Figure 21- HT sale

CESC has an embedded network of extra high-pressure system comprising 132 kV and 220 kV lines in its distribution network. Therefore, the above distribution loss of CESC includes technical losses incurred in this EHV network also. Distribution loss of CESC's EHV system is about 1.7%. Such losses have further accentuated with new sources coming up at a considerable distance from the load centers and decreasing contribution from load center based generating stations on account of environment, vintage and other issues.

Also, hostile environment and stiff opposition from miscreants, ingenious methods and technologies developed by pilferers to consume electricity by-passing meters of the licensee in some pockets of the license area poses a significant difficulty to CESC for further containment of loss. Theft, a reason of commercial loss, is a major concern for the distribution licensee. The activities adopted by the pilferers lead to immense danger of electrical accidents leading to loss of human life and property. Since these means are undertaken in a thickly populated area, the risks are manifold, and public lives in these areas are prone to huge danger for the benefit of unscrupulous peoples.

The trend of reduction in distribution loss has reached a trough during the past few years. Marginal rate of reduction of distribution loss becomes extremely low. Further reduction will involve significant capital and operational expenditure and may prove to be counter-productive for the consumers.

8. Inclusion and Exclusions:

a) Individual area-wise & voltage-wise feeder energy accounting & their losses are not included.
b) Individual substation & feeder DTR losses are not included.
c) Capacity addition in Transformers, Switchgears & Cabling has been included in last 5 years in CESC's distribution system.
d) Addition of 73098 nos. (2.16%) of consumers
e) Addition of 4389 nos. (18.06%) of 'Smart Meters' at LT Consumers
f) Addition of 21 nos. (1.03%) of 'Feeders'.
g) Addition of 84 nos. (0.96%) of 'DTR'.
h) Addition of 68684 nos. (2.06%) of 'Conventional metered Consumer'.
i) Addition of 22 nos. (0.09%) of 'AMR meter' at LT consumer
j) Addition of 4389 nos. (18.06%) of 'Smart meter' for LT consumer
k) Addition of 64 Ckt-km (0.91%)

9. Notes of the EA/EM along with queries and replies to data gaps:

Feeder-wise/unit-wise losses are not available due to:

i. The entire EHT/HT/LT system is in Ring Main. For ring-main connectivity, the electrical connection keeps changing in fault conditions, maintenance purpose and optimization of asset. Thus, feeder-wise energy accounting will not be correct; it is calculated as a whole.
ii. 100% consumer indexing is not in place; thus, feeder wise /DTR wise energy accounting or loss calculation is not possible.
iii. CESC operates in small area comprising of single unit. Thus, loss of entire unit is given. However, from FY 21-22 onwards, unit wise loss can be provided by dividing the licensed area in units/divisions by proper arrangement at our end.

10. Annexure:

10.1. Introduction of Verification Firm

NU Energy India (NEI) is basically a consulting organization, having its registered office at Mekhala Apartment, 47/4, Shyamnagar Road, Kolkata-700055 since last 2005. NEI have multidisciplinary experts of Certified & Accredited Energy Auditors, who have adequate qualifications & knowledge regarding energy efficiency. It is needless to mention that NEI team have experience of executing more than 200 projects in various sectors of industry & commercial establishment not only in India but also abroad.

Complete range of services, which are being carried out by Nu Energy India includes the following.

- Energy Audit
- Power Quality Audit
- Water Audit
- Safety Audits

10.2. Minutes of Meeting with CESC Team

Minutes of meeting held between CESC and Nu Energy India held at CESC Prinsep Street office Kolkata on 7th November 2022.
The following persons were present in the meeting

CESC Limited

1. Mr. Santanu Sen, General Manager, Planning Department
2. Ms. Eshita Roy, Dy Manager, Planning Department

Nu Energy India

1. Mr. Satyajit Hazra
2. Mr. Anshu Bikash Dey
3. Mr. Anjan Majumdar
4. Mr. Anirban Dutta

A kickoff meeting was held on 7th November 2022 between CESC and Nu Energy India to finalize the modality of carrying out Annual Energy Audit stipulated by BEE.

The following were discussed.

1. The updated SLD of CESC's incoming and whole distribution network was briefed and explained for various level of voltage.
2. The sources of energy received from various sources like TPS of CESC/ purchased from other sources and solar power were explained.
3. CESC have narrated their system of energy accounting i.e energy received in all types of voltage level and distribution of energy through their EHT/HT/LT system. The CESC's network is equipped with proper metering system.
4. Discussions were held regarding present gaps & limitations of calculation for feeder wise losses, voltage wise losses & division wise losses and planning for overcome such gaps & limitations on detailed loss calculations.
5. Auditor & sector expert requested to provide data for last two years as per the format provided by BEE.
6. Discussions were also held regarding the formula adopted by CESC to calculate AT&C loss, especially technical loss and commercial loss.
7. During the discussions CESC provided data sources like their Annual Report and Data submitted to the West Bengal State Electricity Regularity Commission. Some of the data were randomly verified.
8. Planning for visit randomly one 11kV HT Consumer & one LT Industrial Consumer on 12th & 14th November 2022 at around 11 Hrs.
9. It was decided to visit on random basis at Chakmir 132kV Sub-station, Majerhat 132kV/33kV Substation, Street DTRs, etc. on 17th & 18th November 2022 at around 11 Hrs.
10. Ended with vote of thank.

10.3. Check List prepared by auditing Firm

An annual energy audit checklist is used to assess the energy efficiency of CESC based on equipment, appliances, design, and usage. Accredited Energy Auditor develops this checklist to identify opportunities for energy cost reduction and recommend solutions.

- Documentary evidence for T & D system related data voltage-wise energy input data, sale data, feeder-wise loss data, collection efficiency etc.
- List of Measures adopted for energy conservation and quantity of energy saved with proper document support.
- Checking & verification of over loading of feeders at Substation level either by the study of SCADA system or by the log book.

- Take photo evidence of Energy Saving Projects and other opportunities for improvement
- Add notes and comments where necessary
- List of measuring Equipment and Instrument and Frequency of calibration along with calibration report by any NABL accredited Laboratory.
- Major metering areas calibration certificates
- Design documents
- Energy balance in tabulated form
- Verification of power purchase bills
- Documentary support for Normalization factors and its externalities

10.4. Brief Approach & Methodology for Audit

Followings are approach & methodology for the annual energy audit.

a) Organized a kick off meeting at CESC office premise with CESC's personnel along with their certified energy manager for familiarization of their Transmission & Distribution system from EHT network to LT network.
b) Explained the objectives of this annual energy audit for DISCOM in details as per notification no. 18/1/BEE/DISCOM/2021BOF Bureau of Energy Efficiency.
c) Visited 220kV/132kV substation, 33kV/11kV distribution station, outdoor DTR, Pole Mounted DTR, LT feeder Pillar Box randomly.
d) Understanding of all energy input points at different voltage level & energy metering or energy accounting & monitoring facilities with conventional metering, smart metering & prepaid metering system within the CESC's License boundary areas.
e) Understanding of energy flow between transmission and 33kV/20kV/11kV/3.3kV incoming distribution feeders, energy flow between 33kV outgoing and 11kV/6.6kV incoming feeders, energy flow between distribution transformer or high voltage distribution system to end-

consumer including radial or ring main system, energy flow between Feeder to end-consumer & energy flow between 132kV/33kV/20kV/11kV/3.3kV directly to consumer.

f) Collection of data on energy received, sold, billed, Distribution losses, AT & C losses & collection efficiency for FY 2021-22 and verified these data with data shown in Company Annual Report & submitted data of WBERC.

g) Verification of the accuracy of the data collected in consultation with the certified energy manager of the CESC Ltd. as per standard practice. Also, analyse and process the data with respect to consistancy of data monitoring compared to the collected data.

h) Understanding of AT & C loss reduction measures taken by CESC during last few years & potential scope for further loss reduction.

10.5. Infrastructure Details:

Generating Capacity	Budge Budge Generating Statior	750 MW
	Southern Generating Station	135 MW
	Titagarh Generating Station	240 MW
220/132/33 KV Substations	Installed Capacity	2000 MVA
132/33 KV Substations	Installed Capacity	2977 MVA
Distribution Stations	No. of Stations	117
	Transformer Capacity	3922 MVA
Tie Transformer	No. of Transformes	6
	Transformer Capacity	22 MVA
LT Substations	No. of AC Substations	8719
	Transformer Capacity	2994 MVA
Package Substations (PSS)	No. of Substations	114
	Installed Capacity	108 MVA
Distribution Network (Circuit Km.)		
	220 KV UG	48 Ckt. Km.
	220 KV OH	221 Ckt. Km.
	132 KV UG	318 Ckt. Km.
	132 KV OH	81 Ckt. Km.
	33 KV UG	1577 Ckt. Km.
	33 KV OH	92 Ckt. Km.
	20 KV UG	50 Ckt. Km.
HT Distribution	11 & 6 KV UG	7017 Ckt. Km.
	11 & 6 KV OH	87 Ckt. Km.
	3.3 KV UG	21 Ckt. Km.
LT Distribution	UG	8208 Ckt. Km.
	OH	5748 Ckt. Km.
HT Capacitor	132 & 33 kV	640 MVAR
	6 & 11 kV	273 MVAR
LT Capacitor (APFC)	0.4 kV	204 MVAR

10.6. Electrical Distribution System:

- Energy flow between transmission and 220kV/132kV/33kV/20 kV/11kV/6.0 kV/3.3 kV incoming distribution feeders
- Energy flow between 132kV/33kV outgoing and 20 kV/11kV/6.6 kV/6.0 kV incoming feeders
- Energy flow between 11kV/6.0 kV/3.3 kV feeders and distribution transformers, or high voltage distribution system

- Energy flow between distribution transformer, or high voltage distribution system to end-consumer, including ring main system
- Energy flow between Feeder to end-consumer &
- Energy flow between 132kV/33kV/20 kV/11kV/6.0 kV/3.3 kV directly to consumer

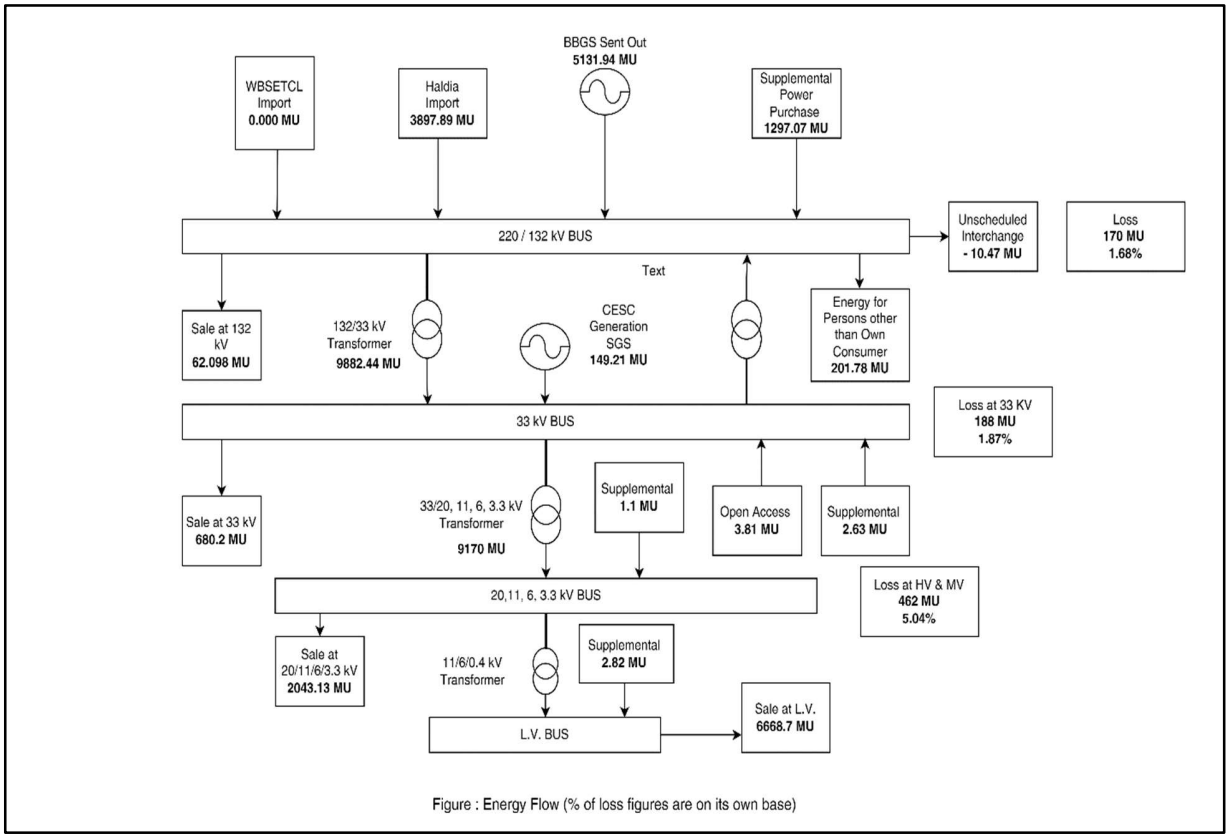

Figure 22: Energy Flow Diagram

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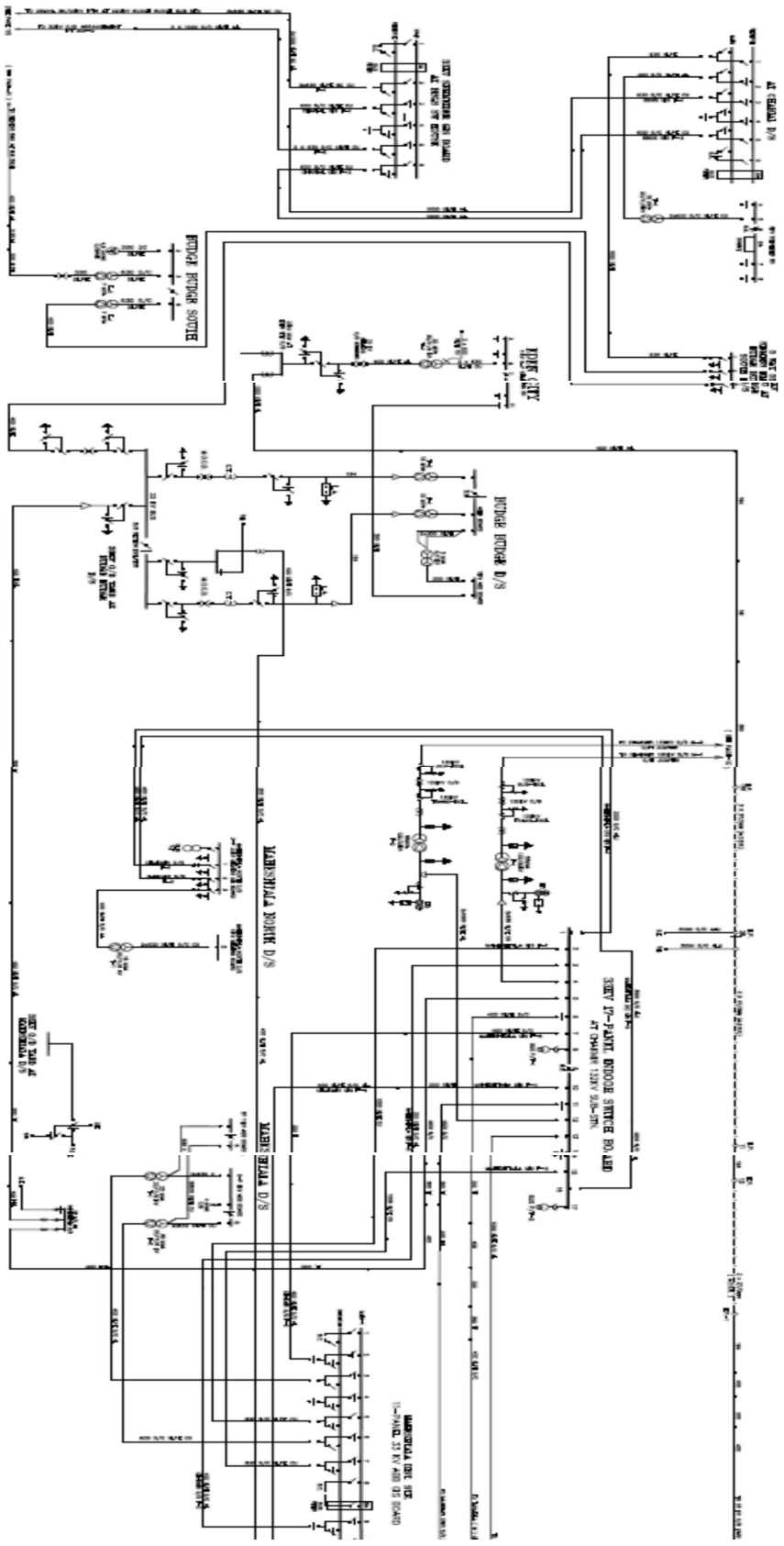
Figure 23: Typical Layout of 132KV Chakmir S/S



10.7. Power Purchase Details:

REPORT - I

DAILY OBLIGATION SUMMARY REPORT

Trading Date	: 15-Jan-21	Delivery Date	: 16-Jan-21
Entity ID	: E1WB0CSC0000	Entity Name	: CESC Ltd.
Portfolio Code	: E1WB0CSC0001	Portfolio Name	: CESC

•	Funds Payin(-) / Payout(+)	2,349,645.27
•	Charges	
	> NLDC Application Fees	-6.00
	> CTU Transmission Charges	-480,478.73
	> NLDC Scheduling & Operating Charges - Buy	-200.00*
	> NLDC Scheduling & Operating Charges - Sell	-200.00*
	> STU Transmission Charges	-296,179.86
	> Distribution Charges	0.00
	> Any other Charges	0.00
	> SLDC Scheduling and Operating Charges	-1,000.00
	> ALDC Scheduling and Operating Charges	0.00
•	Fees	-24,285.00
	> IGST	-4,371.30
	> SGST	0.00
	> CGST	0.00
	> UTGST	0.00
•	Total	1,542,924.38

Remarks :

- NLDC Application Fee = ` 5,000.00 / (No of Successful Portfolios - 834).
- Injection CTU Transmission Charges = ` 395.70/ MWh.
- Drawal CTU Transmission Charges = ` 395.70/ MWh.
- NLDC Scheduling & Operating Charges - Buy = ` 1.00 x (Total Traded Buy Qty in MWh)
NLDC Scheduling & Operating Charges - Sell = ` 1.00 x (Total Traded Sell Qty in MWh)
* Max Charges applied
- State Transmission/Distribution Charges and Scheduling and Operating Charges are as per the Rate specified in Standing Clearance.

- Trade details displayed on the next page Annexure A.

** This is a computer generated report.

Page 1 of 2

REPORT - I

DAILY OBLIGATION SUMMARY REPORT

Daily Trade Report

Period	Qty in MW	Rate/MWh	Amount in `	Period	Qty in MW	Rate/MWh	Amount in `
00:00 - 00:15	0.00	1,999.81	0.00	12:00 - 12:15	-130.00	3,409.70	110,815.25
00:15 - 00:30	0.00	2,049.68	0.00	12:15 - 12:30	-130.00	3,400.92	110,529.90
00:30 - 00:45	0.00	2,106.02	0.00	12:30 - 12:45	-130.00	3,259.03	105,918.48
00:45 - 01:00	0.00	2,049.82	0.00	12:45 - 13:00	-130.00	2,999.48	97,483.10
01:00 - 01:15	0.00	2,106.11	0.00	13:00 - 13:15	-130.00	2,900.83	94,276.98
01:15 - 01:30	0.00	1,999.74	0.00	13:15 - 13:30	-130.00	2,799.19	90,973.68
01:30 - 01:45	0.00	2,050.31	0.00	13:30 - 13:45	-130.00	2,749.91	89,372.08
01:45 - 02:00	0.00	1,999.91	0.00	13:45 - 14:00	-130.00	2,749.71	89,365.58
02:00 - 02:15	0.00	1,999.64	0.00	14:00 - 14:15	-130.00	2,669.11	86,746.08
02:15 - 02:30	0.00	1,999.30	0.00	14:15 - 14:30	-130.00	2,580.75	83,874.38
02:30 - 02:45	0.00	1,999.22	0.00	14:30 - 14:45	-130.00	2,580.75	83,874.38
02:45 - 03:00	0.00	1,999.22	0.00	14:45 - 15:00	-130.00	2,580.08	83,852.60
03:00 - 03:15	0.00	1,988.81	0.00	15:00 - 15:15	-130.00	2,580.92	83,879.90
03:15 - 03:30	0.00	1,988.65	0.00	15:15 - 15:30	-130.00	2,580.96	83,881.20
03:30 - 03:45	0.00	1,988.62	0.00	15:30 - 15:45	-130.00	2,580.74	83,874.05
03:45 - 04:00	0.00	1,949.94	0.00	15:45 - 16:00	-130.00	2,749.10	89,345.75
04:00 - 04:15	0.00	1,917.96	0.00	16:00 - 16:15	-130.00	2,799.30	90,977.25
04:15 - 04:30	0.00	2,049.40	0.00	16:15 - 16:30	-130.00	2,800.34	91,011.05
04:30 - 04:45	0.00	2,101.61	0.00	16:30 - 16:45	0.00	2,899.00	0.00
04:45 - 05:00	0.00	2,102.66	0.00	16:45 - 17:00	0.00	2,963.97	0.00
05:00 - 05:15	0.00	2,106.37	0.00	17:00 - 17:15	20.00	2,963.14	-14,815.70
05:15 - 05:30	0.00	2,167.60	0.00	17:15 - 17:30	69.00	2,950.75	-50,900.44
05:30 - 05:45	0.00	2,300.88	0.00	17:30 - 17:45	128.00	2,999.22	-95,975.04
05:45 - 06:00	0.00	2,308.68	0.00	17:45 - 18:00	138.00	3,189.56	-110,039.82
06:00 - 06:15	0.00	2,450.07	0.00	18:00 - 18:15	122.00	3,100.63	-94,569.22
06:15 - 06:30	0.00	2,579.18	0.00	18:15 - 18:30	101.00	3,409.69	-86,094.67
06:30 - 06:45	0.00	2,731.39	0.00	18:30 - 18:45	90.00	3,500.39	-78,758.78
06:45 - 07:00	0.00	2,809.19	0.00	18:45 - 19:00	85.00	4,520.57	-96,062.11
07:00 - 07:15	0.00	2,900.99	0.00	19:00 - 19:15	63.00	4,751.00	-74,828.25
07:15 - 07:30	0.00	3,339.05	0.00	19:15 - 19:30	53.00	4,750.67	-62,946.38
07:30 - 07:45	0.00	3,840.20	0.00	19:30 - 19:45	42.00	3,999.99	-41,999.90
07:45 - 08:00	0.00	4,116.90	0.00	19:45 - 20:00	31.00	3,991.38	-30,933.20
08:00 - 08:15	0.00	4,000.59	0.00	20:00 - 20:15	15.00	3,322.29	-12,458.59
08:15 - 08:30	0.00	4,900.16	0.00	20:15 - 20:30	0.00	3,189.14	0.00
08:30 - 08:45	0.00	5,700.19	0.00	20:30 - 20:45	0.00	2,798.11	0.00
08:45 - 09:00	0.00	6,000.32	0.00	20:45 - 21:00	0.00	2,795.40	0.00
09:00 - 09:15	-130.00	4,989.41	162,155.83	21:00 - 21:15	0.00	2,499.70	0.00
09:15 - 09:30	-130.00	4,350.93	141,405.23	21:15 - 21:30	0.00	2,497.55	0.00
09:30 - 09:45	-130.00	3,999.57	129,986.03	21:30 - 21:45	0.00	2,600.25	0.00
09:45 - 10:00	-130.00	3,840.66	124,821.45	21:45 - 22:00	0.00	2,579.93	0.00
10:00 - 10:15	-130.00	3,500.68	113,772.10	22:00 - 22:15	0.00	2,376.39	0.00
10:15 - 10:30	-130.00	3,999.09	129,970.43	22:15 - 22:30	0.00	2,479.57	0.00
10:30 - 10:45	-130.00	4,000.12	130,003.90	22:30 - 22:45	0.00	2,200.57	0.00
10:45 - 11:00	-130.00	4,500.02	146,250.65	22:45 - 23:00	0.00	2,397.71	0.00
11:00 - 11:15	-130.00	3,799.59	123,486.68	23:00 - 23:15	0.00	2,300.63	0.00
11:15 - 11:30	-130.00	3,777.37	122,764.53	23:15 - 23:30	0.00	2,301.20	0.00
11:30 - 11:45	-130.00	3,600.75	117,024.38	23:30 - 23:45	0.00	2,300.26	0.00
11:45 - 12:00	-130.00	3,333.37	108,334.53	23:45 - 24:00	0.00	2,301.56	0.00
Total Trade (Buy + Sell) MWh					1,214.2500		2,349,645.27

Authorised Signatory

Name : Amit Kumar

Designation : Sr VP Market Operations

** This is a computer generated report.

RP - Sanjiv Goenka Group
Growing Legacies

HALDIA ENERGY LIMITED
Haldia Energy Limited
CIN : U74210WB1994PLC066154
E-mail : haldiaenergy@rpsg.in

HEL-F/2021/115

April 13, 2021

The Executive Director (Power Marketing)
CESC Limited
CESC House
Chowringhee Square
Kolkata: 700001

Dear Sir,

Submission of Invoice for Power Supply – March'21

With reference to the captioned subject attached please find the following Invoices for supply of Power for the period from 01.03.2021 to 31.03.2021:

Invoice No. & Date	Particulars	Amount (Rs)
HEL/2020-21/23 dated 13.04.2021	Capacity Charges and Energy Charges for March'21	197,91,75,553
HEL/2020-21/24 dated 13.04.2021	Transmission Charges for March'21	9,51,03,345
	Total Amount Payable	**207,42,78,898**

(Rupees Two Hundred Seven Crore Forty Two Lac Seventy Eight Thousand Eight Hundred Ninety Eight only)

Kindly acknowledge receipt.

Yours faithfully,

Authorised Signatory

ED (PM)/2021-22/60 Dated:18.04.21

The Executive Director & CFO
CESC House

Provisional bill for Import of Power from TPTCL
Period: 09.04.2021 to 15.04.2021

Enclosed please find 1 no invoice, as detailed below, from TPTCL on account of Energy Charge for power purchase by CESC Ltd. From **TATA POWER HALDIA (Co-Generation Power**) for the period from **09.04.2021 to 15.04.2021** duly certified from this end. **The due date for payment is 23.04.2021.** The payment is to be deposited to TPTCL **Current Account No 032305002355**, maintained in ICICI Bank Ltd. Lower Parel, Mumbai,Maharashtra. The payment may also be made through RTGS. **RTGS/ NEFT : Code ICIC0000323, PAN No. AABCT9887A, GSTIN No. 09AABCT9887A1ZZ**

Sl. No.	Bill No.	Date	CERTIFIED Amount (Rs.)
1	96000131592	16.04.2021	1,91,46,275.00
	TOTAL		**1,91,46,275.00**

CESC LIMITED Chowringhee Square Kol-700001 CESC HOUSE

(for) EXECUTIVE DIRECTOR
(POWER MARKETING)

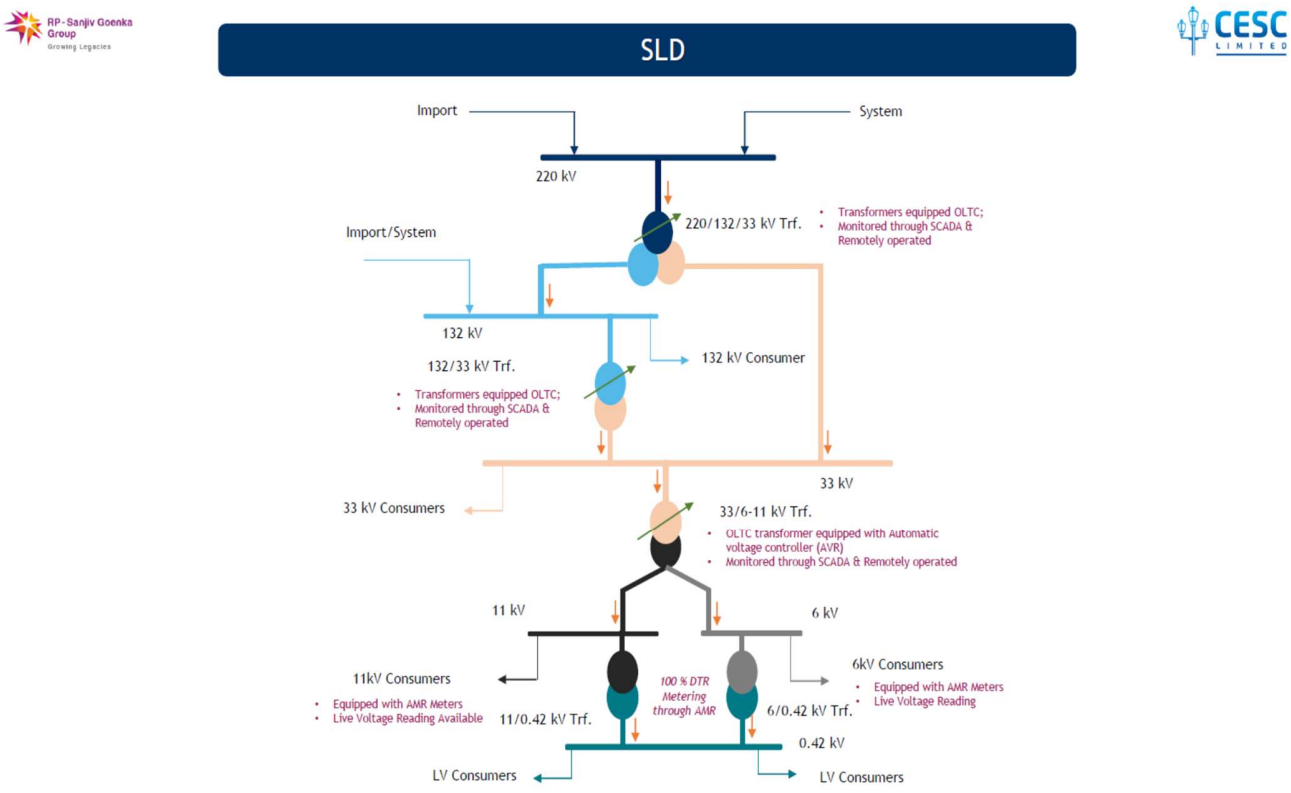
Certification of Provisional Energy supply bill from TPTCL

PERIOD : From 9th April 2021 to 15th April 2021

BillNo: 96000131592 Dated :16.04.2021

	Energy at delivery point (in kwh)	Tariff Rate (` /kwh)	Amount (`)
Energy Bill of TATA POWER HALDIA (Co-Gen. power) for the period from 09-04-2021 to 15-04-2021	4840000	31p less fron IEX rate for each block	19146275.01
Invoice Value :	**4840000**		**19146275.01**
			19146275.01
Net Certified Amount (`)			**19146275.00**
			(Rupees One Crore Ninety One Lakh Forty SixThousand Two Hundred and Seventy Five only.)

10.8. Single Line Diagram (SLD):



10.9. Category of Service details (With Consumer and voltage-wise):

Table 16: Category of consumers

Sl. No.	Type of Consumers	Category of Consumers	Voltage Level (In Voltage)	No of Consumers
1	Domestic	LT	400/230 V	2935092
2	Commercial	LT	400/230 V	418810
3	Water Supply	LT	400/230 V	1120
4	Public Lighting	LT	400/230 V	23728
5	HT Water Supply	HT	6/11 kV	212
6	HT Industrial	HT	33/20/11/6/3 kV	525
7	Industrial (Small)	LT	400/230 V	64892
8	HT Commercial		33/11/6 kV	606
9	Applicable to Government Hospitals & Hospitals	LT	400/230 V	804
10	HT Res. Apartments Applicable to all areas	HT	33/11/6 kV	351
11	Government offices and department	LT	400/230 V	3136
12	Government Schools	LT	400/230 V	730
13	Private Educational Institutions and Hospitals	LT	400/230 V	174
14	Cold storage	HT	6/11 kV	3
15	Private Educational Institutions	HT	6/11 kV	23
16	Construction Power Supply	HT	6/11 kV	13
17	Co-operative Group Housing Society	HT	6/11 kV	5
18	Public Utility	HT	6/11 kV	30
19	Sports Complex	HT	6/11 kV	25
20	MES	HT	33/11/6 kV	21
21	Railway Traction / Metro	HT	132/33 kV	5
22	CTC	HT	6/11 kV	10
23	Others	EHT/HT	6/11/132 kV	3
TOTAL				**3450318**

10.10. Photo Gallery in Field Survey:

Verifying Source Data by AEA at CESC Office Verifying Log Book & Feeder Loading by Discom Expert at Chakmir 132kV Substation

Verifying energy metering system at Chakmir 132kV Substation & Power Transformer at outdoor

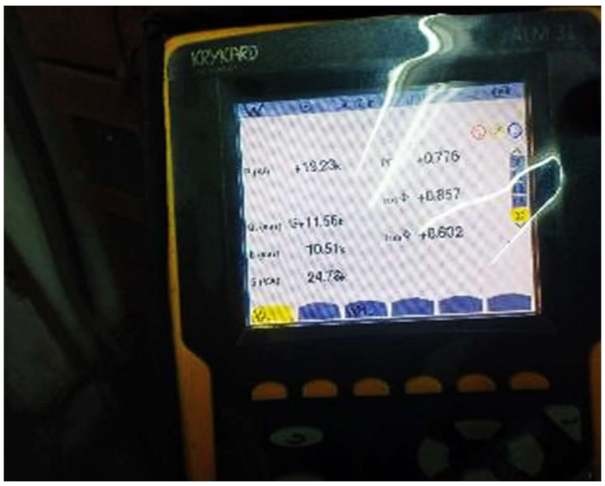
Verifying Feeder Loads at Majerhat 132kV/33kV Substation by Discom Expert

Verifying energy metering system at Majerhat 132kV/33kV Substation & Power Transformer at outdoor

Verifying Log Book data at Chakmir 132kV Substation by Discom Expert

Verifying DTR AMR metering system at Dum Dum Park (N) P/T & Dum Park (E) P/T.

Load Flow & Overloading Measurements at LT Supply Point of Wonder Images Pvt. Ltd.



Meter Box Sealing Arrangement

Power Factor at Wonder Images Pvt. Ltd.

Load Flow & Overloading Checking at 11 kV VCB HT Supply Point of Ruby General Hospital


Load Flow & Overloading Checking at 11 kV VCB HT Supply Point of Ruby General Hospital


Thermal Imaging carried out by AEA at Incomer of LT PCC Panel of Ruby General Hospital

10.11. Annexures

Table 17: Feeder wise Loss

Feeder Name: Alipore D/S--- Gopal Nagar P/T								
Sl No	CODE	Volt	DTR/Consumer Name	Energy from DTR metering & consumner metering (MU)	Sum of Energy from DTR & Consumer (MU)	Energy from Feeder Metering (MU)	Loss (MU)	% Loss
1	200310	6OT	Alipore Rd O/T No.2	1.33	8.36498625	8.4804175	0.11543125	1.4%
2	200700	6OT	Alipore (S) O/T	0.61				
3	211870	6PT	Paramhansa Dev Rd P/T	1.08				
4	231200	6PT	Chetla Hat Rd (S) P/T	0.89				
5	245130	6OT	Alipore (S) O/T No 2	0.62				
6	245290	6PT	Gopal Nagar P/T	1.21				
7	106600103	6CON	B P Poddar Hosp & Med Res	2.24				
8	107302503	6CON	City Scape Developers	0.38				

Table 18: DTR Wise Loss

LOSS CALCULATION FOR SELECTED DTR IN MAR-2022								
DTR SOURCE WISE LOSS								
DTR Code	DTR Name	DTR-AMR Input Days	DTR-AMR Energy sent(KWH)	Prorated Input Days	Prorated Energy sent(KWH)	No. of meters attached	Total Sale(KWH)	% Loss
817900	TOPSIA RD. T/H	31	181298.25	0	0	632	157594.92	13.07
Total Energy Sent(KWH): 181298.25			Total Sale(KWH): 157594.92			%Loss: 13.07		
Loss Figure calculated on 13/03/2022 12:39 PM								
For highlighted DTR, some consumers have been entered manually which need authentication								

Consumer List							
Srl No.	Consumer No.	Meter No.	Name	Address	Billed Unit(KWH)	Prorated Sale(KWH)	Reading Span (Days)
DTR Source: TOPSIA RD. T/H NO.1							
1	227102002	6296275	BENAZEER MAQSUD	3RD-FR 9/B/1 TOPSIA ROAD KOLKATA 700039	125	4.17	30
2	227102400	5975901	JANAB ABDUL MAZID	9/E TOPSIA ROAD LP 95/7/1 KOLKATA 700039	163	5.43	30
3	227102401	3998712	SUSHMA KHAN	9/E TOPSIA RD KOLKATA 700 039	262	8.73	30
4	227102402	5370553	SHAHBAZ AHMED	4TH-FR 9E TOPSIA RD LP-95/7/1 KOLKATA 700039	217	7.23	30
5	227102403	5592464	PRADIP SHAW	GR-FR 9E TOPSIA RD LP-95/7/1 KOLKATA 700039	50	1.67	30
6	227102404	5868793	SHAHANAZ	9/G TOPSIA RD LP-95/7/2 KOLKATA 700039	191	6.37	30
7	227102405	5874436	MDRASHID	9/G TOPSIA RD LP-95/7/2 KOLKATA 700039	107	3.57	30
8	227102406	5880822	SHANAZ BEGUM	9/G TOPSIA RD LP-95/7/2 KOLKATA 700039	132	4.4	30
9	227102407	5880821	SK AWESH ALI	9/G TOPSIA RD LP-95/7/2 KOLKATA 700039	0	0	30
10	227102408	5965890	ROUSHAN ARA	4TH-FR 9/G TOPSIA RD KOLKATA	157	5.23	30
11	227102409	5810980	MD NASIM ANSARI	1ST-FR 9/G TOPSIA RD LP-95/7/2 KOLKATA 700039	116	3.87	30
12	227102410	7041909	MD MERAJ UDDIN	1ST-FR; 9/E TOPSIA ROAD KOLKATA 700039	37	1.23	30
13	227102411	5964669	MD SABIR ABDUL RASHID	SHAIKH 9/G TOPSIA RD KOLKATA 700039	23	0.77	30
14	227102412	6164453	SK ANWAR ALI	TOP-FR; 9/E TOPSIA ROAD LP-95/7/1 KOLKATA 700039 *9/E	7	0.23	30
15	227102700	3297349	SHAMSHAD ALAM	LP.95/7/1 9/E TOPSIA RD KOLKATA 700 039	246	8.2	30
16	227102701	6076490	SHAKIL AHMED	2ND-FR 9/E TOPSIA ROAD LP-95/7/1 KOLKATA 700039	0	0	0
17	227102800	3371761	ZULFEQUAR AHMED	LP.95/7/1 9/E TOPSIA RD KOLKATA 700 039	129	4.3	30
18	227102901	7049951	JANAB ABDUL SATTAR	9/C TOPSIA ROAD LP-95/7 KOLKATA 700039	223	7.43	30
19	227102902	5995493	MOSARRAT JAHAN	9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	174	5.8	30
20	227102903	6027771	HENNA KAUSER	2ND-FR 9C TOPSIA ROAD LP-95/07/01 KOLKATA 700039	379	12.63	30
21	227102904	6046529	TARIQUE ALI	9 C TOPSIA RD LP-95/7/1 KOLKATA 700039	0	0	0
22	227102905	6033984	SK JOYNAL ALI	2ND-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	107	3.57	30
23	227102906	7077384	ABDUL RAZZAK	1ST-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	96	3.2	30
24	227102907	7077277	SHAKIR ALAM	SATTAR BUILDING BL-1A;1ST-FR;FL-1A 9/C TOPSIA RD LP-95/7	269	8.97	30
25	227102908	7077273	NASIMA BEGUM	SATTAR BUILDING BL-AA;GROUN-FR;FL-AA 9/C TOPSIA RD LP-95/7 KOLKATA 700039	134	4.47	30
26	227102909	7077278	SHAHEED ALAMN	SATTAR BUILDING BL-A1;GROUN-FR;FL-A1 9/C TOPSIA RD LP-95/7/1 KOLKATA 700039	180	6	30
27	227102910	7083324	MD.SARFARAZ	9/C TOPSIA ROAD KOLKATA 700039	168	5.6	30
28	227103101	6037254	MOHAMMAD SHADAB	3RD-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	141	4.7	30
29	227103102	6038985	MD JAVED ALAM	9C TOPSIA RD LP-95/7/1 KOLKATA 700039	332	11.07	30

30	227103103	6038963	ARMAN KHAN	3RD-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	116	3.87	30
31	227103104	6034259	RESHMA KHATOON	3RD-FR 9C TOPSIA ROAD KOLKATA 700039	138	4.6	30
32	227103106	6111108	RUKSANA BEGUM	4TH-FR 9C TOPSIA ROAD KOLKATA 700039	322	10.73	30
33	227103108	6111103	RAHIMA BIBI	GR-FR 9C TOPSIA ROAD KOLKATA 700039	61	2.03	30
34	227103110	6116199	MD ARIF	2ND-FR 9C TOPSIA ROAD KOLKATA 700039	102	3.4	30
35	227103111	6130111	TAHERA BEGUM	1ST-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	191	6.37	30
36	227103113	6076377	DILSHAD ALAM	1ST-FR 9C TOPSIA ROAD KOLKATA 700039	275	9.17	30
37	227103601	4425032	AZHAR IQBAL	1-FR 9D TOPSIA RD LP-95/7/3 KOLKATA 700 039	670	22.33	30
38	227103602	7012924	ASAD IQBAL	2ND-FR 9D TOPSIA ROAD LP-95/7/1 KOLKATA 700039	229	7.63	30
39	227103603	6458653	BARCATOON NISHA	4TH-FR 9D TOPSIA ROAD LP-95/7/1 KOLKATA 700039	131	4.37	30
40	227103604	6453275	FAIYAZ AHMED KUBHAI	2ND-FR 9D TOPSIA ROAD KOLKATA 700039	1199	39.97	30
41	227103605	7198389	PINKI BEGUM	3RD-FR 9D TOPSIA ROAD LP-95/7/1 KOLKATA 700039	204	6.8	30
42	227103606	6476755	MEHNAAZ SHAMIM	3RD-FR 9D TOPSIA ROAD LP-95/7/1 KOLKATA 700039	127	4.23	30
43	227103607	6476756	SHAGUFTA KHAN	4TH-FR 9D TOPSIA RD LP-95/7/1 KOLKATA 700039	30	1	30
44	227103608	6476758	NARGIS BEGUM	4TH-FR 9D TOPSIA ROAD LP-95/7/1 KOLKATA 700039	18	0.6	30
45	227103901	7077253	NAUSHAD ALAM	1ST-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	312	10.4	30
46	227104105	4616741	ZAFRUL HASSAN	9H TOPSIA RD KOLKATA 700 039 LP.95/7/2	688	22.93	30
47	227104113	3927670	SHAKIL AHMED	2ND-FR; 9H TOPSIA RD LP-95/7/2 KOLKATA 700039	722	24.07	30
48	227104114	4142862	SUSHIL KUMAR GADIA	9/H TOPSIA RD KOLKATA 700 039	0	0	30
49	227104128	6042343	SAMIDA KHATOON	3RD-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	763	25.43	30
50	227104129	6027642	SAMREEN NAAZ	9C TOPSIA RD LP-95/7/1 KOLKATA 700039	354	11.8	30
51	227104130	6046547	ABDUL RAHAMAN	1ST-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	161	5.37	30
52	227104132	7045620	ABDUL MANNAN	1ST-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	0	0	30
53	227104133	7073315	MOHAMMAD SALAHUDDIN	2ND-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	205	6.83	30
54	227104134	7083298	GAFAR ABDUL	GR-FR 9C TOPSIA ROAD LP-95/7/1 KOLKATA 700039	89	2.97	30
55	227104201	4576339	HAIDER ALI	GR-FR 9Q, TOPSIA RD LP-95/7/2 KOLKATA 700 039	66	2.2	30
56	227104202	4937311	RAHILA HAIDER	2-FR 9Q, TOPSIA RD LP-95/7/2 KOLKATA 700039	92	3.07	30
57	227104203	5630457	MD AFZAL HUSSIAN	3-FR 9 Q TOPSIA ROAD LP-95/7/2 KOLKATA 700039	200	6.67	30
58	227104204	5975292	SAIFUL ISLAM	3RD-FR 9/Q TOPSIA ROAD KOLKATA 700039	190	6.33	30
59	227104205	5995157	MD SHOAIB ALAM	3RD-FR;FL-3 9/Q TOPSIA ROAD KOLKATA 700039	844	28.13	30
60	227104400	2796149	MD.QASIM & SONS	LP.95/7/2 9H/1 TOPSIA RD KOLKATA 700 039	187	6.23	30
61	227104401	5812327	MAZDA HOSSAIN	9H/1 TOPSIA RD LP-95/1/3/5/1/10 KOLKATA 700039	140	4.67	30
62	227104402	5998268	SK SAMIR	9H/1 TOPSIA RD LP-95/1/3/5/1/10 KOLKATA 700039	2	0.07	30
63	227104600	6287818	MD. SULEMAN	LP.95/7/2 9H/1 TOPSIA RD KOLKATA 700 039	236	7.87	30
64	227104601	3759429	SALMA BEGUM	9H TOPSIA RD KOLKATA 700 039 LP.95/7/2	24	0.8	30
65	227104602	4254198	KAISER M.ANWAR	9/H TOPSIA RD KOLKATA 700 039 LP.95/7/2	534	17.8	30
66	227104603	4559335	SALMA BEGUM	9/H TOPSIA RD CALCUTTA 700 039 95/7/2	782	26.07	30

67	227104604	4145097	MD MEHFOOZ ALAM	2ND FLOOR 9/H TOPSIA RD KOLKATA 700 039 95/7/2	682	22.73	30
68	227104605	4962939	ASSMA BEGUM	9/H TOPSIA RD LP-95/7/2 KOLKATA 700 039	1034	34.47	30
69	227104606	4997317	TANWIR PARVEZ	4-FR 9H/1 TOPSIA RD LP-95/7/2 KOLKATA 700039	134	4.47	30
70	227104607	5889104	DR KHURSHID ANWAR	9/H TOPSIA RD LP-95/7/2 KOLKATA 700039	277	9.23	30
71	227104608	5979947	SHAWNAZ PARVEEN	9H/1 TOPSIA RD LP-95/1/3/5/1/10 KOLKATA 700039	160	5.33	30
72	227104609	5807068	SHAMA PARVEEN	3-FR 9H TOPSIA RD KOLKATA	106	3.53	30
73	227104610	5975190	SHAKIL AHMED	9H/1 TOPSIA RD KOLKATA 700039	93	3.1	30
74	227104611	5807069	MD HANNAN	3-FR 9H TOPSIA RD LP-95/7/2 KOLKATA 700039	306	10.2	30
75	227104612	5975278	AJHERI MOBARAK BAGBAN	9H/1 TOPSIA RD LP-95/7/2 KOLKATA 700039	1208	40.27	30
76	227104613	7047908	PARVIN SAYARA	9H/1 TOPSIA RD LP-95/1/3/5/1/10 KOLKATA 700039	23	0.77	30
77	227104616	7083263	FARIZA BEGUM	4TH-FR 9H/1 TOPSIA ROAD LP-95/7/2 KOLKATA 700039	35	1.17	30
78	227104700	3845248	MD.USMAN	LP.95/7/2 43/1/1 TOPSIA RD KOLKATA 700 039 * 9/H/1 TOPSIA	128	4.27	30
79	227104800	2782966	MD.KHAID SHAMIN	LP.95/7/2 9/H/1 TOPSIA RD KOLKATA 700 039	743	24.77	30
80	227104801	6040846	TARANNUM PARVEEN	9/H/1 TOPSIA RD LP-95/7/2 KOLKATA 700039	165	5.5	30
81	227104802	7198183	MD HIMAYUN	GRD-FR 9/H/1 TOPSIA RD LP-95/7/2 KOLKATA 700039	276	9.2	30
82	227104900	2782967	NIAZ AHMED	LP.C 9/H/1 TOPSIA RD KOLKATA	443	14.77	30
83	227104901	3391563	MD SHAMSUL HUDA	9/H/1 TOPSIA RD KOLKATA 700 039 LP.95/7/2	215	7.17	30
84	227105000	2782963	IQUBAL AHAMED	LP.C 9/H/1 TOPSIA RD KOLKATA	0	0	30
85	227105001	5774029	MD PARVEZ ALAM	9/H/1 TOPSIA ROAD LP-95/7/3 KOLKATA 700039	291	9.7	30
86	227105002	7047909	MD NASIM	9/H/1 TOPSIA RD LP-95/7 KOLKATA 700039	186	6.2	30
87	227105100	2850977	MD.ISLAM ANSARI	LP.95/7/2 9H/1 TOPSIA RD KOLKATA 700 039	616	20.53	30
88	227105101	6112250	MD. AFTAB	GR-FR 9H/1 TOPSIA ROAD LP-95/7/2 KOLKATA 700039	299	9.97	30
89	227105200	6287757	REHANA BEGUM	9/H/1,TOPSIA ROAD LP-95/7/2 KOLKATA-700 039	378	12.6	30
90	227105300	2787095	WAKIL AHMED	LP.95/7/2 9/H/1 TOPSIA RD KOLKATA 700 039	19	0.63	30
91	227105301	6295486	MOHAMMED MERAJUDDIN	2ND-FR 9/H/1 TOPSIA ROAD LP-LP.95/7/2 KOLKATA 700039	80	2.67	30
92	227105400	2787098	BILQUIS ARA	9/H/1 TOPSIA RD LP-95/7/2 KOLKATA 700039	247	8.23	30
93	227105500	4155983	MEHTAB BEGUM	9/H/1A,TOPSIA ROAD KOLKATA-	23	0.77	30
94	227105501	4431548	TOUSIF PARVEZ	3RD-FR 9/H/1A TOPSIA RD LP-95/7/3 KOLKATA 700 039	0	0	0
95	227105502	4660644	MD MOHIUDDIN	1-FR 9H/1A TOPSIA RD LP-95/7/3 KOLKATA 700 039	112	3.73	30
96	227105504	6112015	RIZWAN ALAM	9/H/1A TOPSIA RD KOLKATA	281	9.37	30
97	227300603	5578560	MD GULZAR	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	308	10.27	30
98	227300604	5894537	GOLAM AOLIA JAMADAR	GR-FR 10/2 TOPSIA RD LP-68/8 KOLKATA 700039	348	11.6	30
99	227300605	5894536	SAJID ALAM&ANJUM ALAM	10/2 TOPSIA RD LP-95/1/2 KOLKATA 700039	319	10.63	30
100	227300606	5868918	NAUSHAD QURASHI	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	61	2.03	30
101	227300607	5965565	SHAHINA AKHTAR	10/2 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	101	3.37	30
102	227300608	7027683	ZEENAT PARVEEN	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	282	9.4	30
103	227300609	7027684	MD AZHARUDDIN	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	222	7.4	30
104	227300610	5975301	MUSARRAT JAHAN	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	882	29.4	30
105	227300611	5975576	SK AZHARUDDIN	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	0	0	30

106	227300612	5951469	MIRADYASUDDIN	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	25	2.68	28
107	227300613	5999237	NAUSHAD AHAMAD	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	83	2.77	30
108	227300614	5816086	DR MD MUMTAZ AHMED	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	353	11.77	30
109	227300615	7045776	SADDAM HOSSAIN	GR-FR 10/2 TOPSIA ROAD LP-95/8 KOLKATA 700039	43	4.61	28
110	227300616	5995132	MOLLA ZIHAUL HAQUE	2-FR 10/2 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	154	5.13	30
111	227300617	5815877	MAHJABEEN PARVEEN	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	0	0	30
112	227300618	5998392	SK MANSUR ALAM	GR-FR 10/2 TOPSIA ROAD LP-95/8 KOLKATA 700039	49	5.25	28
113	227300619	6041027	MD IMTEYAZ ALAM	GR-FR;FL-10/2 TOPSIA RD LP-95/8 KOLKATA 700039	0	0	28
114	227300620	7073283	HALIMA BEGUM	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	115	3.83	30
115	227300621	7073299	SHAMSUNNIHAR BEGUM	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	110	3.67	30
116	227300622	7073297	AYESHA BEGUM	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	162	5.4	30
117	227300623	6035268	SK SHABBIR MONDAL	4-FR;FL-4 10/2 TOPSIA RD LP-95/8 KOLKATA 700039	410	13.67	30
118	227300624	6111078	SAJDA KHATOON	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	333	11.1	30
119	227300625	6112244	ABIDA NASREEN	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	101	3.37	30
120	227300626	6114931	MD NAIYER	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	110	3.67	30
121	227300629	6218804	AFSHAN ZAREEN	GND-FR 10/2 TOPSIA RD LP-95/8 KOLKATA 700039	14	1.5	28
122	227300630	6218805	SHADAN RAHMAN	GND-FR 10/2 TOPSIA RD LP-95/8 KOLKATA 700039	1	0.11	28
123	227300631	6221883	MD JAVED	GRD-FR 10/2 TOPSIA ROAD LP-95/7 KOLKATA 700039	7	0.75	28
124	227300632	6221896	ISHRAT PARVEEN	GD-FR 10/2 TOPSIA ROAD LP-95/8 KOLKATA 700036	124	4.13	30
125	227300636	6371887	ABDULLAH NIZAM	3RD-FR 10/2 TOPSIA RD LP-95/8 KOLKATA 700039	68	2.27	30
126	227300900	5470346	SAFIR AHMED	10/3 TOPSIA ROAD LP 95/7 KOLKATA 700 039	111	3.7	30
127	227300901	4676669	RESHMA KHATOON	GR-FR; 10/3 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	118	3.93	30
128	227300902	5375837	MOHAMMAD EHSAN	GD-FR 10/3 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	145	4.83	30
129	227300903	5804128	MD SAFI	10/3 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	12	1.29	28
130	227300906	5995178	SK ADIL	10/3 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	12	1.29	28
131	227300907	6046540	KHURSHID ALAM	3-FR 10/3 TOPSIA ROAD LP-95/7/0/1 KOLKATA 700039	74	2.47	30
132	227301000	3524145	SHAHID ABBAS	10/3 TOPSIA ROAD LP.95/7 KOLKATA 700039.	24	2.57	28
133	227301100	5470347	MD SHAMIM ALAM	10/3 TOPSIA ROAD KOLKATA - 700	182	6.07	30
134	227301201	4799511	MOHAMMAD SOHAIL	10/3 TOPSIA RD CALCUTTA 700 039	1	0.11	28
135	227301202	4481147	SHAHBAZ AHMED	10/3 TOPSIA RD LP-95/8 KOLKATA 700 039	151	5.03	30
136	227301203	4481141	DOLY BEGUM	10/3 TOPSIA RD LP-95/8 KOLKATA 700 039	120	4	30
137	227301204	5972936	BEGUM NISHA	4-FR 10/3 TOPSIA RD LP-95/8 KOLKATA 700039	136	4.53	30
138	227301300	5470348	MD NAZIR	10/3 TOPSIA ROAD LP-95/7 KOLKATA - 700 039	137	4.57	30
139	227301400	2655930	SK NOOR HOSSAIN	10/3 TOPSIA ROAD KOLKATA	22	2.36	28
140	227301700	3002320	BADRUNNESSA BEGUM	LP.95/8 10/3 TOPSIA RD KOLKATA 700 039	88	2.93	30
141	227301800	3017264	SK.SORWARDI	LP.95/8 10/4 TOPSIA RD KOLKATA 700 039	43	1.43	30
142	227302200	2985651	SK.ABDUL MOHIT	LP.95/8 10/4 TOPSIA RD KOLKATA 700 039	174	5.8	30
143	227302201	3087035	ABDUL HAMID	LP.95/8 10/4 TOPSIA RD KOLKATA 700 039	0	0	0

144	227302202	3135149	MD SERAJ	10/4 TOPSIA RD LP-95/8 KOLKATA 700039	42	1.4	30
145	227302203	4133917	SK FAROOQUE JAN KARIM	2ND FLOOR 10/4 TOPSIA RD KOLKATA 700 039 95/7/0/1	53	1.77	30
146	227302204	4133911	FARZANA BEGUM	3RD FLOOR 10/4 TOPSIA RD KOLKATA 700 039 95/7/0/1	39	4.18	28
147	227302205	4685376	ABDUL QAIYUM ANSARI	3RD FLOOR 10/4 TOPSIA RD KOLKATA 700 039 95/8	138	4.6	30
148	227302206	4181798	SK AZHAR JAN KARIM	3RD FLOOR 10/4 TOPSIA RD KOLKATA 700 039 95/7/0/1	94	3.13	30
149	227302207	4181797	MD WASIM	4TH FLOOR 10/4 TOPSIA RD KOLKATA 700 039 95/7/0/1	69	2.3	30
150	227302208	4341216	RAHMAT ALI	10/4 TOPSIA RD KOLKATA 700039 LP-95/7/0/1	43	1.43	30
151	227302209	4300217	ASFAQUE AHMED	NAGMA AHMED 3RD-FR; 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA	168	5.6	30
152	227302210	6375379	SADAF ALI	3RD-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700 039	39	4.18	28
153	227302211	6100831	GULZAR AHMED SAJID	10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700 039	311	10.37	30
154	227302212	4527875	MD ANWAR	4-FR 10/4 TOPSIA RD LP-95/7/1/0 KOLKATA 700 039	0	0	0
155	227302213	6087091	RUKHSANA BEGUM	1-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700 039	32	1.07	30
156	227302214	4450366	MD GUDDU	4-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700 039	197	6.57	30
157	227302215	4453810	FARHAT JAHAN	3RD-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700 039	195	6.5	30
158	227302216	4657863	REZA BUKSH	2-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700 039	209	6.97	30
159	227302217	5019954	MD TAHIR	3-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	0	0	30
160	227302218	5019890	ZAHIDA RAHMAN	3-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	80	2.67	30
161	227302219	5019885	MD ARSHAD	10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	270	9	30
162	227302220	5019955	MD SHAHJAHAN	3RD-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	56	1.87	30
163	227302221	5392611	ASHIYA ARA & SAZIA ARA	4TH-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	188	6.27	30
164	227302222	5392612	HAIDER KHAN	IST-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	112	3.73	30
165	227302223	5530456	SK SHAMIM	4TH-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	50	1.67	30
166	227302224	5899554	MD PARVEZ & MD SAJID	2-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	52	5.57	28
167	227302225	7184079	SK MAZHAR JAN KARIM	10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	72	2.4	30
168	227302226	5899280	SYED ABDUL RAUF	1-FR 10/4 TOPSIA RD LP-95/7/0/1 KOLKATA 700039	30	1	30
169	227302227	5865946	SHAIKH MAZHAR JAN KARIM	1ST FLOOR SOUTH 10/4 TOPSIA RD LP-95/7/0 KOLKATA 700039	109	3.63	30
170	227302300	3026725	ZAHEDA PARVEEN	10/4 TOPSIA RD LP-95/7 KOLKATA 700039	145	4.83	30
171	227302301	3428723	PARVEZ AHMED	2ND-FR; 10/4 TOPSIA ROAD LP-95/7 KOLKATA 700039 *2ND	0	0	0
172	227302400	3026724	SK HAMID HOSSAIN	LP.95/7 10/4 TOPSIA RD KOLKATA 700 039	255	8.5	30
173	227304900	3489209	TANVIR ALAM	LP.95/1/10/7/10/1 81/1F TOPSIA RD PHASE - IV KOLKATA 700 039	504	16.8	30
174	227305106	5811073	MD ZAHID PARWEZ	IST-FR 11 TOPSIA RD KOLKATA	11	0.37	30
175	227307901	4026080	MD JAHANGIR	81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	278	9.27	30
176	227307902	3971329	MD KALIM	GD FLOOR 81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	112	3.73	30
177	227307903	6055597	SHAHEEN PARVEEN	2ND FLOOR 81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	117	3.9	30
178	227307904	5270004	MD ASHRAF ALI	3RD FLOOR 81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	344	11.47	30
179	227307905	6404090	SARFARAZ SHAHAB	1ST-FR; 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	1835	61.17	30
180	227307906	5270005	MD SHABBIR ALI	3RD FLOOR 81/1G TOPSIA RD KOLKATA 700 039 LP.Y	323	10.77	30

181	227307908	5270006	MOHAMMAD PRAWEZ ALAM	2ND-FR; 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	101	3.37	30
182	227307909	3868881	NAZMA RAHMAN	2ND-FR; 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	473	15.77	30
183	227307910	5088483	FARZANA ZAKIR	1ST FLOOR 81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	355	11.83	30
184	227307911	3846893	ZUBAIDA KHATOON	2ND FLOOR 81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	173	5.77	30
185	227307912	3953062	MD SHORAB	2ND FLOOR 81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	0	0	0
186	227307914	5270007	MD IRSHAD ALAM	3RD FLOOR 81/1/G TOPSIA RD KOLKATA 700 039 LP.95/8	160	5.33	30
187	227307915	3860545	MD. KAMRUDDIN	81/1G TOPSIA RD LP.95/8 KOLKATA 700 039	172	5.73	30
188	227307916	3864864	AZHAR ALI	81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	72	2.4	30
189	227307917	3864865	MD ASLAM	81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	1	0.03	30
190	227307918	3860552	SYED MD KAMALUDDIN	81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	516	17.2	30
191	227307919	3860553	MD ABU UMAR	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	191	6.37	30
192	227307920	3815365	SHAHNAWAZ ALAM	81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	56	1.87	30
193	227307921	4758310	SHAMIM AKTHAR	81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	160	5.33	30
194	227307922	5270008	MD SHAHRE ALAM	81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	49	1.63	30
195	227307923	3864778	ANJUM ZAFAR	81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	128	4.27	30
196	227307924	5305224	ZAINAB PARVEEN	81/1G TOPSIA RD CALCUTTA 700 039 LP.95/8	161	5.37	30
197	227307925	4593333	SARWARI KHATOON	81/1G TOPSIA RD CALCUTTA 700 039 LP.95/8	183	6.1	30
198	227307928	4191163	MERAZUL ISLAM	1ST FLOOR ROOM 5 81/1G TOPSIA RD KOLKATA 700 039 95/8	246	8.2	30
199	227307929	4191151	FARADIBA ARA BEGUM	2ND FLOOR FL 6 81/1G TOPSIA RD KOLKATA 700 039 95/8	450	15	30
200	227307930	4250462	ZAINUL ABEDIN	GRD FLOOR ROOM 8 81/1G TOPSIA RD KOLKATA 700 039 LP 95/8	279	9.3	30
201	227307931	5096063	MURSHID ALAM	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	177	5.9	30
202	227307932	5071456	MUSTAFA KAMAL	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	113	3.77	30
203	227307933	5071457	IBRAR AHMED	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	66	2.2	30
204	227307934	5071458	HASNAIN AHMED , SONS	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	78	2.6	30
205	227307935	5071459	MOHAMED SHAMIM	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	49	1.63	30
206	227307936	7115815	SHAKILA KHATOON	4-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	343	11.43	30
207	227307937	5071461	SM SHAHNEMAZ &	S.M. ARBAAZ 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	32	1.07	30
208	227307938	5286839	MD MAHBOOB ANSARI	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	121	4.03	30
209	227307939	5286838	NURUL HASSAN SIDDIQUE	1-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	900	30	30
210	227307940	5286837	SHAMIM AKHTER	3-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	295	9.83	30
211	227307941	5286836	MD RAFIQUE	4-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	239	7.97	30
212	227307942	5286835	RASHED AHMED	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	1	0.03	30
213	227307943	5286834	AMNA BEGUM	4-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	266	8.87	30
214	227307944	5286833	MOSAFFIR AKDAS	3-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	178	5.93	30
215	227307945	5286963	ARMAN KHAN	4-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	306	10.2	30
216	227307946	5367373	OBAIDUR RAHMAN	81/1G TOPSIA ROAD LP-95/8 KOLKATA 700039	43	1.43	30

217	227307947	5899459	FARHANA YASMIN	4TH-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	1	0.03	30
218	227307948	5928649	PARWIN SULTANA	81/1G TOPSIA ROAD KOLKATA	68	2.27	30
219	227307949	5928729	FAIZAAN ABEDIN	81/1G TOPSIA ROAD LP-95/8 KOLKATA 700039	15	0.5	30
220	227307950	5932082	SHAHNA HUQ	81/1G TOPSIA ROAD LP-95/8 KOLKATA 700039	142	4.73	30
221	227307951	5928807	JAWED MAHMOOD	GD-FR 81/1G TOPSIA RD LP-95/8 KOLKATA 700039	300	10	30
222	227307952	7027829	MUNNI BEGUM	81/1G TOPSIA RD LP-95/8 KOLKATA 700039	22	0.73	30
223	227307954	6110973	MD SHAHRE ALAM	81/1G TOPSIA ROAD KOLKATA	45	1.5	30
224	227308101	3971554	MD AYUB ANSARI	GD FLOOR 81/1G TOPSIA RD KOLKATA 700 039 LP.95/8	0	0	0
225	227308102	5989974	MD NOUSHAD	81/1G TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	92	3.07	30
226	227308802	5811077	HUSNA PARVEEN	11 TOPSIA RD LP-95/9 KOLKATA	101	3.37	30
227	227309100	3488753	BHARAT RUBBER WORKS	80/A/6,TOPSIA ROAD L.P-95/10 KOLKATA-700 039	45	1.5	30
228	227309101	4521215	MD IMRAN KHAN	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	289	9.63	30
229	227309102	4521219	AZIMUDDIN AHMED	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	125	4.17	30
230	227309103	4521218	MD YAMIN	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	295	9.83	30
231	227309104	4521214	SALMA KHATOON	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	498	16.6	30
232	227309105	4465552	TAJUDDIN AHMED	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	324	10.8	30
233	227309106	4522923	PARVEZ AHMED	M08 A065 80A/7 TOPSIA RD LP-95/9 KOLKATA 700 039	42	1.4	30
234	227309107	4522926	MD SAMEER	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	252	8.4	30
235	227309108	4522929	MD. SHAKIL AKHTER	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	0	0	0
236	227309109	4465609	MD SARFARAZ	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	15	0.5	30
237	227309110	4465604	ABDUL SALAM	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	65	2.17	30
238	227309111	4465602	NASIRUDDIN AHMED	M08 A065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	140	4.67	30
239	227309112	4465553	MD SHOAIB ALAM	M08A 068 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	372	12.4	30
240	227309113	7108294	ASGAR AZAD	M08A 065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	279	9.3	30
241	227309114	4465555	FAMMIDA HOSSAIN	M08A 065 80A/6 TOPSIA RD LP-95/9 KOLKATA 700 039	259	8.63	30
242	227309115	4527608	MD SHAHBAZ ALI	BL-A072;3RD-FR;FL-M08 80A/7/1 TOPSIA RD LP-95/9 KOLKATA	307	32.89	28
243	227309116	4528621	JAVED ALAM	M08 A072 80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700 039	196	21	28
244	227309117	4528612	MAHMOODA BEGUM	M08A 072 80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700 039	399	42.75	28
245	227309118	4528616	MOINUDDIN	M08A 072 80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700 039	18	1.93	28
246	227309119	4528613	AFTAB ALAM	M08A 072 80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700 039	171	18.32	28
247	227309120	4528824	SK RAJU	M08A 072 80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700 039	126	13.5	28
248	227309121	6156379	NAFISA BANO	M08A 072 80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700 039	80	8.57	28
249	227309122	4553007	MUNSHI MONIRUL ISLAM	M08A 072 80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700 039	131	14.04	28
250	227309123	4553009	MD KHALIQUE	M08A 072 80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700 039	238	25.5	28
251	227309125	5738429	MD SALAUDDIN	4TH-FR 80A/7/1 TOPSIA ROAD LP-95/9 KOLKATA 700039	266	28.5	28
252	227309126	5738556	ZAKIR HOSSAIN	80A/7/1 TOPSIA RD LP-95/9 KOLKATA 700039	168	18	28
253	227309132	7013063	SK. NASIRUDDIN	80A/6 TOPSIA ROAD LP-95/9 KOLKATA 700039	38	1.27	30
254	227309133	7016520	MD. SALAMGIR	80A/6 TOPSIA RD LP-95/9 KOLKATA 700039	226	7.53	30

255	227309136	7041800	FAIYAZ AHMED KUBHAI	1-FR 80A/6 TOPSIA RD LP-95/9 KOLKATA 700039	47	1.57	30
256	227309137	5812700	MD YASIN	80A/6 TOPSIA ROAD LP-95/9 KOLKATA 700039	54	1.8	30
257	227309138	5812698	MD AHTARAM	80A/6 TOPSIA ROAD LP-95/9 KOLKATA 700039	37	1.23	30
258	227309139	5812699	ABDUL RAHMAN	80A/6 TOPSIA RD LP-95/9 KOLKATA 700039	42	1.4	30
259	227309142	7045999	ASHFAQUE ALAM	80A/6 TOPSIA RD KOLKATA 700039	127	4.23	30
260	227309143	6249655	MD SERFRAZ UDDIN	2ND-FR;FL-B 80A/6 TOPSIA RD LP-95/9 KOLKATA 700039	110	3.67	30
261	227309700	5470358	MUSTT KANIZ AKHTARI BANO	11/B TOPSIA ROAD LP 95/9 KOLKATA 700039	42	1.4	30
262	227309701	5878337	BEGUM MASUMA	4-FR 11/B TOPSIA RD LP-95/9 KOLKATA 700039	146	4.87	30
263	227309702	5878336	MD SALIM	11/B TOPSIA ROAD LP-95/9 KOLKATA 700039	20	0.67	30
264	227309703	5874183	QUDSIA BANO	11/B TOPSIA RD LP-95/5 KOLKATA 700039	130	4.33	30
265	227309704	5928594	EHASANUL HAQUE	11/B TOPSIA RD LP-95/9 KOLKATA 700039	307	10.23	30
266	227309705	6448226	AKRAM PARVEZ	11 TOPSIA RD LP-95/9 KOLKATA	87	2.9	30
267	227309706	5965905	MD FAIZ ALAM	11/B TOPSIA RD LP-95/9 KOLKATA 700039	141	4.7	30
268	227309707	5811070	SANA RAFIQUE	11 TOPSIA RD LP-95/9 KOLKATA	18	0.6	30
269	227309708	7045683	ATAUR RAHMAN	11 TOPSIA ROAD KOLKATA 700039	16	0.53	30
270	227309709	6149670	MD ZAHID PARWEZ	11 TOPSIA ROAD KOLKATA 700039	1303	43.43	30
271	227309710	6081409	AFTAB AHMED	GRD-FR 11/B TOPSIA ROAD LP-LP-95/9 KOLKATA 700039	22	0.73	30
272	227309711	6081519	NUZHAT PARVEEN	1ST-FR 11/B TOPSIA ROAD LP-LP-95/9 KOLKATA 700039	57	1.9	30
273	227309712	6453362	SARWAR AFZAAL[COMMON]	11/A TOPSIA ROAD LP-95/9 KOLKATA 700039	24	0.8	30
274	227309800	5470359	SRI NOOR MOHAMMAD	11/B TOPSIA ROAD LP-95/9 KOLKATA-700 039	153	5.1	30
275	227309801	5951555	MD KALAM	1-FR 11B TOPSIA RD LP-95/9 KOLKATA 700039	143	4.77	30
276	227500300	5180978	MD AZIZ	80A/7,TOPSIA ROAD NEAR M MEMORIAL SCHOOL LP-95/9 KOLKATA-700 039	2672	89.07	30
277	227500900	2888433	SK KALOO	78/C TOPSIA ROAD LP 95/10 KOLKATA 700039	0	0	29
278	227501000	5470408	KHURSHID ALAM	78/C TOPSIA ROAD LP 95/10 KOLKATA 700039	0	0	30
279	227501100	5582298	JB KHURSHID ALAM	78/C TOPSIA ROAD LP-95/10 KOLKATA 700 039	323	10.77	30
280	227501302	4453960	WASIM AKHTAR MIDDYA	80A/1A TOPSIA RD LP-95/10 KOLKATA 700 039	85	2.83	30
281	227501400	2940126	AFTAB ALAM	80/A/1A TOPSIA RD LP-95/10 KOLKATA 700039	98	3.27	30
282	227501800	7108209	MD.OSMAN GHANI	80/A/1A,TOPSIA ROAD KOLKATA-700 039	343	11.43	30
283	227501801	7016852	MOHAMMED IRFAN	80/A/1A TOPSIA ROAD KOLKATA	427	14.23	30
284	227501802	6135127	RANI KHAN	2ND-FR 80/A/1A TOPSIA RD LP-95/13 KOLKATA 700039	102	3.4	30
285	227501900	6295231	SK JAMAL UDDIN	80/A/1/A TOPSIA ROAD LP 95/13 KOLKATA 700039	131	4.37	30
286	227502400	3394657	GOLAM KHAN	LP.95/10 80A/1/A TOPSIA RD KOLKATA 700 039	82	2.73	30
287	227502600	3031021	MANSOOR KHAN	LP.95/10 80A/1A TOPSIA RD KOLKATA 700 039	70	2.33	30
288	227502601	5773987	SALMA KHATOON	2ND-FR 80A/1A TOPSIA RD LP-95/10 KOLKATA 700039	271	9.03	30
289	227502701	3432142	JAMIL ANWER	80/A/7/A/2 TOPSIA RD KOLKATA 700 039 LP.95/8	303	10.1	30
290	227502702	5948930	RAZZAQUE ARZOO	80A/7A/1 TOPSIA ROAD LP-95/8 KOLKATA 700039	67	2.23	30
291	227502703	5951400	EJAZ AHMED	3RD-FR 80A/7A/2 TOPSIA ROAD LP-95/8 KOLKATA 700039	252	8.4	30
292	227502704	5807077	NUNIRA BANO	80/A/7/A/2 TOPSIA RD LP-95/8 KOLKATA 700039	379	12.63	30
293	227502705	5806701	BIJAY KUMAR SHAW	80A/7A/1 TOPSIA ROAD LP-95/8 KOLKATA 700039	41	1.37	30

294	227502706	7041791	SHAMSHAD AHMED	80A/7A/1 TOPSIA ROAD LP-95/8 KOLKATA 700039	7	0.48	29
295	227502707	6163257	MOLLA SANAWAJ	2ND-FR 80A/7A/1 TOPSIA ROAD LP-95/8 KOLKATA 700039	88	2.93	30
296	227502708	6196504	NEYAZ RUB	3RD-FR 80A/7A/1 TOPSIA ROAD LP-95/10 KOLKATA 700039	1243	41.43	30
297	227502709	6196505	SK SHAHNAWAZ UDDIN	3RD-FR 80A/7A/1 TOPSIA ROAD LP-95/10 KOLKATA 700039	64	2.13	30
298	227502710	6227894	MD SALIM	GR-FR 80A/7A/1 TOPSIA RD LP-95/8 KOLKATA 700039	64	4.41	29
299	227502711	6227893	MOHAMMAD FEROZ	4TH-FR 80A/7A/1 TOPSIA RD LP-95/8 KOLKATA 700039	154	5.13	30
300	227502712	6218866	SALIMA BEGUM	2ND-FR; 80A/7A TOPSIA RD LP-95/8 KOLKATA 700039	185	6.17	30
301	227502713	6216052	INTEKHAB UR RAHMAN	IST-FR 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	32	1.07	30
302	227502714	6243022	FAISAL NEYAZ	GR-FR;FL-1 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	168	5.6	30
303	227502715	6243038	AMIR KHAN	GR-FR;FL-2 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	34	1.13	30
304	227502716	6243024	FIZZA NEYAZ	2ND-FR;FL-1 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	149	4.97	30
305	227502717	6243021	MD NURUDDIN	2ND-FR;FL-2 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	71	4.9	29
306	227502718	6242966	ISHRAT BANO	IST-FR 80A/7A/1 TOPSIA RD LP-95/10 KOLKATA 700039	183	6.1	30
307	227502719	6242965	NAZAR AFREEN	IST-FR 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	362	12.07	30
308	227502720	6243025	ARIF HOSSAIN	3RD-FR 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	46	1.53	30
309	227502721	6242964	RIZWANA SULTAN	3RD-FR 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	173	5.77	30
310	227502722	6242962	SK ALLAUDDIN	IST-FR;FL-1 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	26	0.87	30
311	227502723	6242961	TAHERA BEGUM	4TH-FR;FL-2 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	166	5.53	30
312	227502724	6242963	RANA SHAKIL	4TH-FR;FL-1 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	68	2.27	30
313	227502725	6243023	RUKSANA KHALID	IST-FR;FL-2 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	41	1.37	30
314	227502726	6243037	MUMTAZ AZMI	4TH-FR;FL-3 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	0	0	0
315	227502900	4154066	FARHAT MOIN	80/A/1/8 TOPSIA ROAD LP 95/10 KOLKATA 700 039	464	15.47	30
316	227503000	6227862	ROBEDA KHATOON	80/A/1/B TOPSIA ROAD LP 95/10 KOLKATA 700039	0	0	29
317	227503001	5975088	MD GAYASUDDIN	4-FR; 80A/1B TOPSIA RD LP-95/10 KOLKATA 700039	97	3.23	30
318	227503002	5951488	MD REYAZ UDDIN	4TH-FR 80A/1B/2 TOPSIA RD LP-95/10 KOLKATA 700039	44	3.03	29
319	227503100	5470409	MD ALLUDDIN	80/A/1/B TOPSIA ROAD L.P NO:-95/10 KOLKATA-700 039	201	6.7	30
320	227503200	3471409	MD MAINUDDIN	80/A/1/B TOPSIA ROAD KOLKATA 700039	292	9.73	30
321	227503300	6350744	MD FAIYAZUDIN	80/A/1/B TOPSIA ROAD LP 95/10 KOLKATA 700039	35	1.17	30
322	227503400	5019436	SK NOORU	80/A/1/B TOPSIA ROAD LP 95/10 KOLKATA 700 039	19	1.31	29
323	227503401	5804290	MD IBRAHIM	80/A/1/B TOPSIA ROAD KOLKATA 700039	88	2.93	30
324	227503500	1960776	ABDUL RAHAMAN	80A/1B,TOPSIA ROAD LP-95/10 KOLKATA-700 039	74	5.1	29
325	227503502	5937151	MD SIKANDER	80A/1B TOPSIA ROAD KOLKATA	105	3.5	30
326	227503503	7016848	ABDUL RAHAMAN	80A/1B TOPSIA ROAD LP-95/10 KOLKATA 700039	110	3.67	30
327	227503600	3464157	ASMA BEGUM	LP.95/10 80/A/1B/2 TOPSIA RD KOLKATA 700 039	109	3.63	30
328	227503601	5951461	FARHAT SHAHID	GD-FR 80/A/1B/2 TOPSIA RD LP-95/10 KOLKATA 700039	8	0.27	30
329	227503700	5037671	HALIMA FAIYAZ	80/A/1B TOPSIA ROAD KOLKATA -700039.	125	4.17	30
330	227503800	5470410	ZEBA BEGUM	80A/1B/2 TOPSIA ROAD LP 95/10 KOLKATA 700 039	0	0	30

331	227503900	3125762	MD QUASIM	80/A/1/B TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	29
332	227504000	5470411	KHURSHIDA KHATOON	80A/1/B/2 TOPSIA RD LP 95/10/5 KOLKATA 700039	29	0.97	30
333	227504100	3464354	HASNA BIBI	80A/1/B/2 TOPSIA RD LP 95/10/5 KOLKATA 700039	179	5.97	30
334	227504200	3464391	ABU TALIB (ASGHER)	80A/1B TOPSIA RD KOLKATA 700	117	3.9	30
335	227504201	5975177	QUNOOT GAYAS	80A/1B/2 TOPSIA ROAD KOLKATA 700039	129	4.3	30
336	227504202	6372740	MD. ZUBAIR	80A/1B/2 TOPSIA ROAD KOLKATA 700039	75	2.5	30
337	227504203	5951402	IQRA REYAZ	80A/1B/2 TOPSIA ROAD KOLKATA 700039	102	3.4	30
338	227504204	5951401	EHTIDA REYAZ	80A/1B/2 TOPSIA ROAD KOLKATA 700039	79	2.63	30
339	227504205	5952211	MUHAMMAD FAIZAN	80A/1B/2 TOPSIA ROAD KOLKATA 700039	93	3.1	30
340	227504206	5952213	MUHAMMAD SHOAIB	80A/1B/2 TOPSIA ROAD KOLKATA 700039	296	9.87	30
341	227504301	5952209	MUHAMMAD SHAHBUDDIN	80A/1B/2 TOPSIA ROAD KOLKATA 700039	237	7.9	30
342	227504400	5026627	ZEBA KHATOON	80/A/1/B TOPSIA ROAD KOLKATA 700 039	22	0.73	30
343	227504600	5470412	MD HAROON	80/A/1/B TOPSIA ROAD KOLKATA-700 039	0	0	30
344	227504601	5641884	ZAHIDA BEGUM	80A/1B/1 TOPSIA RD LP-95/10 KOLKATA 700039	639	21.3	30
345	227504700	3464155	SK AHMED	80/A/1/B TOPSIA ROAD KOLKATA-700 039	137	4.57	30
346	227504800	3026903	AZIMUDDIN AHMED	LP.95/10 80A/3 TOPSIA RD KOLKATA 700 039	14	0.97	29
347	227504801	3087411	MD.SAYEED	LP.95/10 80A/3 TOPSIA RD IST FLOOR KOLKATA 700 039	113	3.77	30
348	227504802	5949063	ASIAM KHAN	80A/3 TOPSIA RD LP-95/10 KOLKATA 700039	128	4.27	30
349	227504803	5973277	RAFIQUE AHMED	80A/3 TOPSIA RD LP-95/10 KOLKATA 700039	89	2.97	30
350	227504804	7049758	AMNA KHATOON	1-FR 80A/3 TOPSIA ROAD LP-95/10 KOLKATA 700039	439	14.63	30
351	227504900	3526640	AMINA KHATUN	80/A/3,TOPSIA ROAD LP-95/10 KOLKATA-700 039	108	3.6	30
352	227504901	6334337	ABDUL RASHID	80/A/3 TOPSIA RD KOLKATA 700 039 LP.95/10	172	5.73	30
353	227504902	5874413	SHAMSHAD	80/A/3 TOPSIA ROAD LP-95/10 KOLKATA 700039	139	4.63	30
354	227504903	5878271	GUDDU	80A/3 TOPSIA ROAD LP-95/10 KOLKATA 700039	209	6.97	30
355	227504904	7003654	MD LAL BABU	BL-66;1-FR;FL-2 80/A/3 TOPSIA ROAD LP-95/10 KOLKATA 700039	65	2.17	30
356	227504905	7013281	ABDUL RAFIQUE	80/A/3 TOPSIA ROAD LP-95/10 KOLKATA 700039	99	3.3	30
357	227504906	5935946	AMIR ALI	80A/3 TOPSIA RD LP-95/10 KOLKATA 700039	41	1.37	30
358	227504907	5935837	MD MOSADDAQUE IMAM	3RD-FR 80A/3 TOPSIA RD LP-95/10 KOLKATA 700039	78	2.6	30
359	227504908	5935952	AKBAR ALI	IST-FR 80A/3 TOPSIA RD LP-95/10 KOLKATA 700039	82	2.73	30
360	227504909	5935953	RASHID ALAM	2ND-FR 80A/3 TOPSIA RD LP-95/10 KOLKATA 700039	116	3.87	30
361	227504910	5935954	AHMED ALI	GR-FR 80A/3 TOPSIA RD LP-95/10 KOLKATA 700039	130	8.97	29
362	227504911	6112248	NAZIA SULTANA	1ST-FR 80A/3 TOPSIA ROAD LP-95/10 KOLKATA 700039	0	0	29
363	227505000	2810584	ZAINUL ABEDIN	80/A/3 TOPSIA RD LP-95/11OP KOLKATA 700039	53	3.66	29
364	227505300	2641916	AKILA KHATOON	80/A/3/1 TOPSIA RD LP 95/10 KOLKATA 700039	235	7.83	30
365	227505400	5470413	NOORJAHAN BEGUM	80/A/3/1 TOPSIA RD KOLKATA 700 039 LP 95/10	124	4.13	30
366	227505500	5470414	SRI RAZZAK ALI	80/A/3/1 TOPSIA ROAD LP 95/10 KOLKATA 700039	290	9.67	30
367	227505501	3860532	ALI REZA	80A/3/1 TOPSIA RD KOLKATA 700 039 LP.95/10	158	5.27	30

368	227505502	7047927	ASIF ALI	80A/3/1 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	160	5.33	30
369	227505800	5065703	ABDUL BASIR	80/A/3/1 TOPSIA RD KOLKATA 700 039 LP 95/10	27	1.86	29
370	227505900	5878013	MD ZAFAR ALAM	80A/3/1 TOPBIA RD LP 95/10 KOLKATA 700 039	94	3.13	30
371	227506000	2657625	SMT KURAISHA BEGUM	80/A/3/1 TOPSIA ROAD LP 95/10 KOLKATA 700 039	157	5.23	30
372	227506300	5470416	M FAROOQUE	80/A/3/1 TOPSIA ROAD LP 95/10 KOLKATA 700 039	283	9.43	30
373	227506400	2647185	SK.NASIRUDDIN	80A/3/1,TOPSIA ROAD LP.95/10 KOLKATA -700039	113	3.77	30
374	227506500	5470417	MUSTARI BEGUM	80A/3/1 TOPSIA ROAD LP 95/10 KOLKATA 700 039	152	5.07	30
375	227506600	4697623	RAZIUDDIN	80A/3/1 TOPSIA RD LP-93/10 KOLKATA 700039	47	3.24	29
376	227506601	5975287	NUSRAT JAHAN	80A/3/1 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	114	3.8	30
377	227506700	4694482	MD ZAMIRUDDIN	80A/3/1 TOPSIA RD KOLKATA 700 039 LP 95/10	20	0.67	30
378	227506900	5470418	NAZNI BEGUM (SM)	80A/2 TOPSIA RD LP 95/10 KOLKATA 700039	354	11.8	30
379	227506901	5951463	SABINA KHANAM	80A/2 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	99	3.3	30
380	227507100	3075078	SK RAJA MIA	80/A/2 TOPSIA ROAD LP 95/10 KOLKATA 700039	203	6.77	30
381	227507101	5271710	AYESHA BANO	3-FR 80/A/2 TOPSIA RD LP-95/10 KOLKATA 700039	149	4.97	30
382	227507102	5271711	SHABANA SHAHID	3-FR 80/A/2 TOPSIA RD LP-95/10 KOLKATA 700039	513	17.1	30
383	227507103	6456216	MD NASIR	4-FR 80/A/2 TOPSIA RD LP-95/10 KOLKATA 700039	112	3.73	30
384	227507104	5271622	UMER ALI	4-FR 80/A/2 TOPSIA RD LP-95/10 KOLKATA 700039	156	5.2	30
385	227507105	5271623	SHAHNAZ PARVEEN	4-FR 80/A/2 TOPSIA RD LP-95/10 KOLKATA 700039	206	6.87	30
386	227507106	5271620	JAHRA BEGUM	4-FR 80/A/2 TOPSIA RD LP-95/10 KOLKATA 700039	86	2.87	30
387	227507107	5283630	SOHAILA KHATUN	3-FR; 80/A/2 TOPSIA RD LP-95/10 KOLKATA 700039	12	0.4	30
388	227507108	5544954	MD FEROZ KHAN	80A/2 TOPSIA RD LP-95/10 KOLKAT 700039	126	4.2	30
389	227507109	5935981	NASRIN BANU	80A/3 TOPSIA RD KOLKATA 700039	83	2.77	30
390	227507200	4649520	MD SHAKIL	2ND-FR; 57D TOPSIA ROAD SOUTH LP-95/10 KOLKATA 700046 *80A/2,TOPSIA ROAD	54	1.8	30
391	227507301	3385411	MAJNU RAHAMAN	80/A/2 TOPSIA RD KOLKATA 700 039 LP.95/10	90	3	30
392	227507400	5470419	MD. HAIDER ALI	80/A/2 TOPSIA ROAD LP 95/10 KOLKATA 700 039	172	5.73	30
393	227507401	3621746	MD. FALAHUDDIN	80/A/2 TOPSIA RD KOLKATA 700 039 LP.95/10	119	3.97	30
394	227507500	4646350	SULTAN AHMED	80/A/2 TOPSIA RD LP 95/10 KOLKATA 700039	494	16.47	30
395	227507501	5774189	ANWAR HOSAIN	80A/2 TOPSIA ROAD LP-95/10 KOLKATA 700039	121	4.03	30
396	227507601	6156385	INAMUL HAQUE	80A/11 TOPSIA RD CALCUTTA 700 039 95/10	334	11.13	30
397	227507602	4393735	MD MOSIM	3RD-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	52	1.73	30
398	227507603	5950376	GAZALA KHATOON	2ND-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	186	6.2	30
399	227507604	4445549	AZIMUDDIN AHMED	80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	69	2.3	30
400	227507605	4445541	NAZIR HUSSAIN SHAMSI	3RD-FR; 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	336	11.2	30
401	227507606	4448271	MURSHIDA BEGUM	GR-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	89	2.97	30
402	227507607	4448272	MD MUNNA	80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	165	5.5	30
403	227507608	6156381	WAHIDA KHATOON	80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	221	7.37	30

404	227507609	4600381	MD SAJID	FL-9 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	0
405	227507610	4660531	MD MAHFOOZ ALAM	FL-10 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	10	0.33	30
406	227507611	4681688	BABY ARA	2-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	97	3.23	30
407	227507612	7012197	MD SHAMIM	1-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	67	2.23	30
408	227507613	4735875	SHABANA KHAN	GD-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	0
409	227507614	7067950	MD NASIM	3-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	233	7.77	30
410	227507615	7067952	MD.AFZAL ALI	3RD-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	117	3.9	30
411	227507616	7068074	MAZHAR HASAN	1ST-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700 039	276	9.2	30
412	227507617	7068040	ANJUM ARA	4-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	51	1.7	30
413	227507618	7067949	AKBAR ALI	4-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	99	3.3	30
414	227507619	5726156	SK JAHANGIR ALI	3-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	100	3.33	30
415	227507620	5726228	ASGAR ALI	4TH-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	160	5.33	30
416	227507621	5726229	MD FIRDOS ALAM	2ND-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	150	5	30
417	227507622	5726230	BABY MAHNAAZ	4TH-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	194	6.47	30
418	227507623	7016847	MD RIZWAN SHAHI	3RD-FR 80A/12 TOPSIA RD KOLKATA 700039	113	3.77	30
419	227507624	5774133	BILKISH BEGUM	4TH-FR 80A/12 TOPSIA RD KOLKATA 700039	84	2.8	30
420	227507625	5774035	TABASSUM BEGUM	4TH-FR 80A/12 TOPSIA RD KOLKATA 700039	127	4.23	30
421	227507626	5774134	SHANAZ BEGUM	4TH-FR 80A/12 TOPSIA RD KOLKATA 700039	82	2.73	30
422	227507627	5774135	SULTANA BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	5	0.17	30
423	227507628	5774136	MD. IRFAN	80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	19	0.63	30
424	227507629	7016850	TARANNUM ARA	GRD-FR 80A/11 TOPSIA RD KOLKATA 700039	7	0.23	30
425	227507630	5774031	SANJIDA BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	152	5.07	30
426	227507631	5937265	ZEENAT BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	146	4.87	30
427	227507632	5773960	MAHAJABEEN MUMTAZ	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	94	3.13	30
428	227507633	5773957	MUIMUMA KHATOON	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	125	4.17	30
429	227507634	5773958	BANU BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	60	2	30
430	227507635	5548924	MD. MUJIBUL RAHMAN	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	132	4.4	30
431	227507636	5774034	SK ABED	C/O AKIL AHMED 4-FR 80A/12 TOPSIA RD KOLKATA 700039	63	2.1	30
432	227507637	5965817	BANU BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	132	4.4	30
433	227507638	5807043	SHABANA PARVEEN	80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	114	3.8	30
434	227507639	7016546	YASMIN BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	254	8.47	30
435	227507640	5807046	FIRDOUS BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	86	2.87	30
436	227507641	5806842	JAMIL AHMED	1ST-FR 80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	157	5.23	30
437	227507642	5806841	SAIYADA KHATOON	2ND-FR 80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	34	1.13	30
438	227507643	6057676	NASIM AKHTAR	1ST-FR 80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	121	4.03	30
439	227507644	5979900	AKBAR ALI	AKIL AHMED BARIWALA 1ST-FR 80A/12 TOPSIA RD LP-95/10	249	8.3	30

440	227507645	5979588	JAMIL AHMED	1ST-FR 80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	11	0.37	30
441	227507646	5952257	AFTAB KHAN	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	2	0.07	30
442	227507647	5952177	MD. NAZIR KHAN	80A/11 TOPSIA ROAD LP-95/10 KOLKATA 700039	147	4.9	30
443	227507648	7041982	SYED SAQLAIN	80A/11 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	102	3.4	30
444	227507649	5998488	MUMTAZ BEGUM	1ST-FR 80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	206	6.87	30
445	227507650	6037070	BABY NOOR	1ST-FR 80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	19	0.63	30
446	227507651	6037005	SARWARI BEGUM & SHAZIA	ALI 2ND-FR 80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	114	3.8	30
447	227507652	6196687	SHAMIM ANWAR	GR-FR 80A/11 TOPSIA RD LP-95/10 KOLKATA 700039	0	0	30
448	227507653	6076144	UZMA INAM	4TH-FR 80A/11 TOPSIA ROAD LP-95/10 KOLKATA 700039	608	20.27	30
449	227507654	6209998	ASGARI BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	127	4.23	30
450	227507700	5470420	JB JAHANGIR ALAM	80A/2 TOPSIA ROAD KOLKATA 700	8	0.27	30
451	227507901	5567363	SK ALAUDDIN	80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	74	2.47	30
452	227508001	5531708	SARIFA BEGUM	80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	13	0.43	30
453	227508002	5585971	HASSAN ALI	80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	3	0.1	30
454	227508003	5586002	ZOHEB HASAN	2ND-FR 80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	179	5.97	30
455	227508005	5567190	ABDUL SAHID	80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	119	3.97	30
456	227508007	5589498	ANJUNA BEGUM	80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	77	2.57	30
457	227508008	5952306	ANWARI BEGUM	80A/14 TOPSIA ROAD KOLKATA	78	2.6	30
458	227508201	5567364	AFSARI BEGUM	80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	19	0.63	30
459	227508202	5567365	MD DANISH ALAM	80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	5	0.17	30
460	227508500	5470421	SK MD YOUNUS	80/A/13 TOPSIA ROAD LP 95/10 KOLKATA 700039	297	20.48	29
461	227508501	7003969	MD. IQBAL KHAN	80/A/13 TOPSIA ROAD LP-95/10 KOLKATA 700039	263	18.14	29
462	227508502	7003965	MD. SHOEB RAJA	80/A/13 TOPSIA ROAD LP-95/10 KOLKATA 700039	241	16.62	29
463	227508503	5774096	RASHID AKBAL	80/A/13 TOPSIA ROAD LP-95/10 KOLKATA 700039	219	15.1	29
464	227508504	5949067	MD.SAMSHAD AKHTAR	TOP-FR 80/A/13 TOPSIA RD LP-95/10 KOLKATA 700039	196	13.52	29
465	227508505	7016849	MD MINAJ	80/A/13 TOPSIA ROAD LP-95/10 KOLKATA 700039	161	11.1	29
466	227508506	7016853	MD IRFAN AHMED	80/A/13 TOPSIA RD LP-95/10 KOLKATA 700039	74	5.1	29
467	227508507	5979587	KHALID IQBAL	3-FR 80/A/13 TOPSIA RD LP-95/10 KOLKATA 700039	231	15.93	29
468	227508700	5470422	AKLIMA KHATOON	80/A/13 TOPSIA ROAD LP 95/10 KOLKATA 700 039	0	0	0
469	227508701	5740827	SARFARAJ AHMED	80/A/13 TOPSIA ROAD LP-95/10 KOLKATA 700039	905	62.41	29
470	227508702	5931813	QAYUM KHAN	GR-FR 80/A/13 TOPSIA RD KOLKATA 700039	189	13.03	29
471	227508703	5973267	SK. ASRAF ALI	80/A/13 TOPSIA ROAD LP-95/10 KOLKATA 700039	101	6.97	29
472	227508704	5774107	MOHAMMAD ABDUL	1-FR 80/A/13 TOPSIA RD LP-95/10 KOLKATA 700039	41	2.83	29
473	227508705	5773988	MD ASAGAR	80/A/13 TOPSIA ROAD LP-95/10 KOLKATA 700039	260	17.93	29
474	227508706	5774095	MD JAMALUDDIN	3RD-FR 80/A/13 TOPSIA RD LP-95/10 KOLKATA 700039	97	6.69	29
475	227508707	5774230	NAJMA KHATOON	80A/13 TOPSIA ROAD LP-95/10 KOLKATA 700039	98	6.76	29
476	227508708	5774106	JAHIDA PARVEEN	1ST-FR 80/A/13 TOPSIA RD LP-95/10 KOLKATA 700039	31	2.14	29

477	227508709	7041799	MD SAJID	BL-66;4TH F-FR 80/A/13 TOPSIA RD KOLKATA 700039	412	28.41	29
478	227508800	5470423	SRI SHAIKH RAMJI	80/A/13/1/A TOPSIA ROAD LP 95/10 KOLKATA 700039	117	3.9	30
479	227508900	5470424	MUSTT AZIZA KHATOON	80/A/13/1/A TOPSIA ROAD LP 95/10 KOLKATA 700039	103	3.43	30
480	227508901	3586332	MD.AFSAR	80A/13/1A TOPSIA RD KOLKATA 700 039 LP.95/10	20	0.67	30
481	227508903	5937223	MD. IQBAL	80A/13/1A TOPSIA ROAD LP-95/10 KOLKATA 700039	87	2.9	30
482	227508904	5937216	MOHD. MANSUR ALAM	80A/13/1A TOPSIA ROAD KOLKATA 700039	169	5.63	30
483	227508905	5937221	SAJIDA PARVEEN	80A/13/1A TOPSIA ROAD KOLKATA 700039	128	4.27	30
484	227508906	5937217	YAASMIN PARWEEN	80A/13/1A TOPSIA ROAD KOLKATA 700039	5	0.17	30
485	227508907	5937219	MD. HASHIM	80A/13/1A TOPSIA ROAD KOLKATA 700039	0	0	30
486	227508908	5937218	AFSAR HOSSAIN	80A/13/1A TOPSIA ROAD KOLKATA 700039	113	3.77	30
487	227508909	5937220	SK. MD. IQBAL	80A/13/1A TOPSIA ROAD KOLKATA 700039	106	3.53	30
488	227508910	5937215	MD. AKHTAR	80A/13/1A TOPSIA ROAD LP-95/10 KOLKATA 700039	11	0.37	30
489	227509000	3394721	JANAB S M ASLAM	80/A/13/1/A TOPSIA ROAD KOLKATA 700039	244	8.13	30
490	227509001	5932540	NASIRUDDIN AHMED	80A/13/1A TOPSIA ROAD KOLKATA 700039	0	0	30
491	227509002	5937222	MD. SAJID HUSSAIN	80A/13/1A TOPSIA ROAD KOLKATA 700039	175	5.83	30
492	227509801	5774033	MD. SALIM AKHTER	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	74	2.47	30
493	227509802	5806300	MD KHALIQUE	80A/12 TOPSIA RD LP-95/1/3/5/1/10 KOLKATA 700039	86	2.87	30
494	227509803	5964918	MAHTAB BEGUM	80A/12 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	16	0.53	30
495	227510001	5774103	SONA DEVI	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	52	1.73	30
496	227510003	5774032	SK. MD. ASLAM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	4	0.13	30
497	227510004	5937224	SK PEARO	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	112	3.73	30
498	227510005	5951282	SHAMA BEGUM	GR-FR 80A/13/1A TOPSIA RD KOLKATA 700039	213	7.1	30
499	227510006	7054798	SHAMA BEGUM	GR-FR 80A/12 TOPSIA RD KOLKATA 700039	98	3.27	30
500	227510007	5952489	NOORJAHAN BEGUM	BL-66 80A/12 TOPSIA RD KOLKATA 700039	176	5.87	30
501	227510301	5773955	MD AZIZ	80A/12 TOPSIA RD KOLKATA	24	0.8	30
502	227510302	5773956	YASMIN BEGUM	80A/12 TOPSIA RD KOLKATA	97	3.23	30
503	227510303	5948734	AYESHA KHATOON	80A/12 TOPSIA RD LP-95/1/3/5/1/10 KOLKATA 700039	84	2.8	30
504	227510304	7073316	NASRIM ARA	TOP-FR 80A/12 TOPSIA RD KOLKATA 700039	21	0.7	30
505	227510401	5774132	MD. JAHANGIR ALAM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	14	0.47	30
506	227510402	5774131	SK. OSMAN	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	104	3.47	30
507	227510403	7027752	MD KHALIQUE	TOP-FR 80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	62	2.07	30
508	227510404	5806843	MUMTAZ BEGUM	80A/12 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	3	0.1	30
509	227510405	5979829	MD PERVEZ	80A/12 TOPSIA RD LP-95/1/3/5/1/10 KOLKATA 700039	19	0.63	30
510	227510602	7016846	MUMTAZ BEGUM	80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	236	7.87	30
511	227510700	5470425	SHAKIL AHMED	LP.95/10 80/A/5 TOPSIA RD KOLKATA 700 039	126	4.2	30
512	227510800	2734277	NOOR ALAM	LP.95/10 80A/5 TOPSIA RD KOLKATA 700 039	0	0	0
513	227510801	7049867	EKBAL KHAN	80/A/5 TOPSIA RD LP-95/10 KOLKATA 700039	24	0.8	30
514	227510900	4674602	KHORSHIDA KHATOON	LP.95/10 80A/5 TOPSIA RD	415	13.83	30

515	227510901	5815871	RAMEZAH FARMAN	3RD-FR 80A/12 TOPSIA ROAD LP-95/10 KOLKATA 700039	91	3.03	30
516	227511000	2993425	ZAFAR ALAM	LP.95/10 80A/5 TOPSIA RD KOLKATA 700 039	0	0	0
517	227511001	7047680	YASMIN KHURSHID	80A/5 TOPSIA RD LP-95/10 KOLKATA 700039	0	0	0
518	227511100	2433997	GAZALA KHATOON	LP.95/10 80A/5 TOPSIA RD KOLKATA 700 039	94	3.13	30
519	227511200	5979776	NOOR ALI	80/A/5 TOPSIA ROAD LP 95/10 KOLKATA 700039	288	9.6	30
520	227511300	5470426	HUSAIN ALI	80/A/5 TOPSIA ROAD LP 95/11 KOLKATA 700039	290	9.67	30
521	227511301	5935904	ZEBA RAHMAN	CO/ AMJAD ALI G-FR 80A/5 TOPSIA ROAD KOLKATA 700039	13	0.43	30
522	227511302	5949073	ADNAN SHAHID	80A/5 TOPSIA RD KOLKATA 700039	209	6.97	30
523	227511303	5995060	SHAMIMA BEGUM	2ND-FR 80A/5 TOPSIA ROAD LP-95/10 KOLKATA 700039	138	4.6	30
524	227511400	5052753	JANAB AMJAD ALI	80/A/5 TOPSIA ROAD LP 95/10 KOLKATA 700039	0	0	0
525	227511401	3810605	KISHAN SHAW	GR FLOOR 80/A/5 TOPSIA RD KOLKATA 700 039 95/10	128	4.27	30
526	227511402	4776264	ABDUL KADER	142/2, RADHA BAZAR KOLKATA 700 001 * 80A/5 TOPSIA RD	2	0.07	30
527	227511403	5250507	BILQUIS BANO	IST-FR; 80A/5 TOPSIA RD LP-95/10 KOLKATA 700039 *IST	91	3.03	30
528	227511404	5738357	MD AKHTAR	GR-FR 80A/5 TOPSIA RD LP-95/10 KOLKATA 700039	99	3.3	30
529	227511405	5738351	MD IBRAHIM	2ND-FR 80A/5 TOPSIA RD LP-95/10/0 KOLKATA 700039	154	5.13	30
530	227511406	5738356	MD WASIM AKHTAR	IST-FR 80A/5 TOPSIA RD LP-95/10/0 KOLKATA 700039	21	0.7	30
531	227511408	5931761	MD. HASHIM	80A/5 TOPSIA ROAD LP-95/10 KOLKATA 700039	274	9.13	30
532	227511409	7012937	MD ISMAIL	2ND-FR 80/A/5 TOPSIA ROAD LP-95/10 KOLKATA 700039	88	2.93	30
533	227511410	7013287	KHURSID ALI	80A/5 TOPSIA ROAD LP-95/10 KOLKATA 700039	0	0	30
534	227511411	5949114	MD. SALIM KHAN	80A/5 TOPSIA ROAD LP-95/10 KOLKATA 700039	222	7.4	30
535	227511412	5812875	SK PARVEZ	80A/5 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	23	0.77	30
536	227511413	7027771	SK AHMED	80/A/5 TOPSIA RD KOLKATA	104	3.47	30
537	227511414	7027770	SHAHEEN PARVEEN	80A/5 TOPSIA RD LP-95/10 KOLKATA 700039	112	3.73	30
538	227511415	5951462	SK SAHABUDDIN	80/A/5 TOPSIA ROAD LP-95/10 KOLKATA 700039	136	4.53	30
539	227511416	5928769	REKHA SHAW	80A/5 TOPSIA RD LP-95/11 KOLKATA 700039	50	1.67	30
540	227511418	6373723	MD HASHIM	80/A/5 TOPSIA RD LP-95/10 KOLKATA 700039	312	10.4	30
541	227511500	6112342	SHAKIL AHMED	80/A/5 TOPSIA ROAD KOLKATA 700	291	9.7	30
542	227511600	2888473	MAKSOOD ALAM	LP.95/10 80A/5 TOPSIA RD KOLKATA 700 039	60	2	30
543	227511602	5949066	NISHAT FATMA	80A/5 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	161	5.37	30
544	227511800	5470428	MD BADRUL HASSAN	80/A/5 TOPSIA ROAD LP 95/10 KOLKATA 700039	336	11.2	30
545	227512202	4583480	JEBA PARVEEN	1ST-FR; 80A/14 ADJ 78B TOPSIA RD LP-95/10/0 KOLKATA 700039 *M08 A078 TOPSIA RD	107	3.57	30
546	227512203	4455264	MD RIZWAN GHANI	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	234	7.8	30
547	227512204	4497990	MD YOUNUS	M08 A078 ADJ 80/A/1A TOPSIA RD LP-95/10/0 KOLKATA 700039 *78B,TOPSIA ROAD	136	4.53	30
548	227512207	4455227	YASMIN BEGUM	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	298	9.93	30
549	227512208	5666192	AKBAR ALI	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	0	0	0
550	227512209	4455224	MD AKHTAR ALI	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	26	0.87	30
551	227512210	4455225	MD ZAHIRUDDIN KHAN	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	208	6.93	30

552	227512211	4455240	YUSUF JAMAL	GD-FR; 80A/13 TOPSIA RD KOLKATA 700039 *M08 A078,ADJ 78B TOPSI	133	4.43	30
553	227512212	4455238	AMIR KHAN	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	3	0.1	30
554	227512213	4455235	MD FAIYAZUDDIN	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	35	1.17	30
555	227512214	4455236	JAHANARA BEGUM	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	206	6.87	30
556	227512215	4455266	JAWED KHAN	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	106	3.53	30
557	227512216	4455237	MD AKRAM	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	112	3.73	30
558	227512217	4583370	MD JAVED KHAN	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	93	3.1	30
559	227512218	4455234	SYED ASHRAF ALI	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	122	4.07	30
560	227512219	4455226	ANWAR ALI	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	1	0.03	30
561	227512220	4455261	NISAR KHAN	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	197	6.57	30
562	227512221	4583540	SABAHAT AFROZ	80 A/14 TOPSIA ROAD KOLKATA 700039 *95/10/0	68	2.27	30
563	227512222	4583532	MD REZA	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	103	3.43	30
564	227512223	4583536	ASHRAF ANJUM	80A/12 TOPSIA RD KOLKATA 700039 *M08 A079,78/B TOPSIA	118	3.93	30
565	227512224	4455296	MUNI BEGUM	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	0	0	29
566	227512225	4455299	NASRIN BEGUM	78/F TOPSIA RD LP-95/10/0 KOLKATA 700039 *78/B,TOPSIA	157	5.23	30
567	227512226	4455298	MD SHAKIL	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	113	3.77	30
568	227512227	4455293	MARJINA BIBI	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	91	3.03	30
569	227512228	4455294	RASHID ALI	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	0	0	0
570	227512229	4455233	MUKHTAR ALI	M08 A079 ADJ : 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	164	5.47	30
571	227512230	4455232	MD ISLAM	M08 A079 ADJ : 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	122	4.07	30
572	227512231	4455262	JAMIL AHMED	M08 A078 ADJ : 78/B TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	29
573	227512232	4455263	ASLAM KHAN	M08 A078 ADJ : 78/B TOPSIA RD LP-95/10 KOLKATA 700 039	339	23.38	29
574	227512233	4455231	ANSARI FATMA	M08 A079 ADJ : 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	49	3.38	29
575	227512234	4455295	ABDUL RAZZAQUE	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	9	0.62	29
576	227512236	4455291	SAMI AHMED	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	37	1.23	30
577	227512237	4455292	NOOR BIBI	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	76	2.53	30
578	227512238	4583538	SANJEEDA BEGUM	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	73	5.03	29
579	227512239	4583531	SHABBIR ALI	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	93	3.1	30
580	227512240	4583533	SK SALAUDDIN	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	92	3.07	30
581	227512241	4583367	ASLAM KHAN	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	20	0.67	30
582	227512242	4583369	MD YAQUB	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	64	2.13	30
583	227512243	4583368	MD ANSAR	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	153	5.1	30
584	227512244	4583528	SAYEEDA REYAZ	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	165	5.5	30
585	227512245	4583527	GULNAZ SHAHAB	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	0	0	29
586	227512246	4583526	RAZIA GAYAS	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	104	3.47	30
587	227512247	4583525	UZMA FAIYAZ	M08 A079 80A/1B TOPSIA RD LP-95/10/0 KOLKATA 700 039 * 78/B	123	4.1	30

588	227512248	4583474	GULSAN IBRAHIM	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	83	2.77	30
589	227512250	4584034	AMIR ALI	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	24	1.66	29
590	227512251	4629257	KIRTI AZAD	M 08 A136 78/B TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	0
591	227512252	4631911	AZIMUN NESHA	M 08 A136 78/B TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	0
592	227512253	4631961	MD SARFARAZ	M 08 A136 78/B TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	0
593	227512254	4631951	AHMED NESAR	M 08 A136 78/B TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	29
594	227512255	6226642	MEHMOOD ALAM	M 08 A136 78/B TOPSIA RD LP-95/10 KOLKATA 700 039	0	0	0
595	227512256	4631959	MD AFZAL	M 08 A136 78/B TOPSIA RD LP-95/10 KOLKATA 700 039	27	1.86	29
596	227512267	5951708	RAZZAQUE ARZOO	M08 A078 ADJ : 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	6	0.2	30
597	227512268	5951707	ABDUL RAHMAN	M08 A078 ADJ : 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	110	3.67	30
598	227512270	5951706	ABDUL SAJID	M08 A079 78/B TOPSIA RD LP-95/10/0 KOLKATA 700 039	224	7.47	30
599	227512275	5567191	SHIREEN SULTANA	80A/14 TOPSIA RD LP-95/10 KOLKATA 700039	127	4.23	30
600	227512288	5931824	ZEBA BEGUM	MD ARIF BARIWALA 3RD-FR 78B TOPSIA ROAD LP-95/10 KOLKATA	0	0	0
601	227512289	5774037	MD IBRAR	3-FR 80A/12 TOPSIA RD LP-95/10 KOLKATA 700039	158	5.27	30
602	227512296	5979585	MD. KALAM KHAN	78/B TOPSIA ROAD LP-95/10 KOLKATA 700039	0	0	0
603	227512297	5804429	TABASSUM SABA	80A/12 TOPSIA RD LP-95/10/0 KOLKATA 700039	13	0.43	30
604	227512300	2668749	MOULANA HAALI ACADEMY	14/A TOPSIA ROAD LP 95/9 KOLKATA 700039	56	3.86	29
605	227512301	4655640	KULSUM BEGUM	M08 A078 78/B TOPSIA RD LP-95/9 KOLKATA 700 039	215	7.17	30
606	227512306	4455272	MD SAJJAD HUSSAIN	M08 A078 ADJ : 78B TOPSIA RD LP-95/10/0 KOLKATA 700 039	156	5.2	30
607	227512400	2671139	M MEMORIAL	14/A TOPSIA ROAD KOLKATA	890	29.67	30
608	227512500	2758072	MONU MEMORIAL	INSTITUTION BENGALI PRIMARY SECTION 14/A,TOPSIA ROAD LP-95/9 KOLKATA-700 039	573	19.1	30
609	227512601	5295854	MD.SIRAZ KHAN	14 TOPSIA RD KOLKATA 700 039 LP.95/10	3	0.1	30
610	227512602	3924837	MD AFROZ KHAN	14 TOPSIA RD KOLKATA 700 039 LP.95/10	69	2.3	30
611	227512604	7016500	MD FEROZ KHAN	GD-FR 14 TOPSIA ROAD LP-95/10 KOLKATA 700039	188	6.27	30
612	227512607	7047569	RESHMA BEGUM	14 TOPSIA RD KOLKATA 700039	45	1.5	30
613	227512608	5973304	VINOD THAKUR	GD-FR 14 TOPSIA ROAD LP-95/10 KOLKATA 700039	107	3.57	30
614	227512609	7047877	SHABNAM BANU	14 TOPSIA RD KOLKATA 700039	82	5.66	29
615	227512610	7047572	MD AYUB	14 TOPSIA RD KOLKATA 700039	93	6.41	29
616	227512611	7047573	LATIFUN NESSA	GD-FR 14 TOPSIA RD LP-95/10 KOLKATA 700039	15	1.03	29
617	227512612	7047904	ASHRAFUDDIN AHMED	14 TOPSIA RD LP-95/10 KOLKATA	0	0	29
618	227512613	7051247	MOHIUDDIN AHMED	GD-FR 14 TOPSIA RD KOLKATA	59	1.97	30
619	227512615	7123021	ABDUL RASHID	GR-FR 14 TOPSIA ROAD LP-95/1/3/5/1/10 KOLKATA 700039	5	0.17	30
620	227512812	7047571	FEROJA BEGUM	14 TOPSIA RD KOLKATA 700039	92	3.07	30
621	227512813	5816234	MD IMRAN ALI	14 TOPSIA ROAD KOLKATA 700039	0	0	29
622	227512814	6037084	MD SIRAJUDDIN	14 TOPSIA RD LP-95/10 KOLKATA	46	3.17	29
623	227512818	7077373	MD RIZWAN	14 TOPSIA RD KOLKATA 700039	112	3.73	30
624	230812401	7097343	ROUSHNI PARWEEN	10/2 TOPSIA RD LP-95/8 KOLKATA 700039	240	25.71	28
625	5003613401	4971537	SHYAMAL KR. CHAUDHURI	47/10 RAMKRISHNA GHOSH ROAD LP-84/5/0 KOLKATA - 700 050	177	12.21	29
626	8507001003	4160019	M/S LIBRA RUBBER	PRODUCTS 9/L TOPSIA ROAD KOLKATA 700 039	15142	504.73	30
627	8507001004	4313442	SM ISMAT BEGUM	9/B/1 TOPSIA ROAD LP 95/7/1 KOLKATA 700039	2946	98.2	30
628	8507001007	5118068	WASIMUR RAHMAN	9/L TOPSIA ROAD KOLKATA 700039	27494	916.47	30
629	8507200100	2869514	MD SALAHUDDIN	80/A/6 TOPSIA ROAD KOLKATA	2758	91.93	30

630	8600201700	5207841	RELIANCE JIO INFRATEL	PVT. LTD. 80A/7A TOPSIA ROAD LP-95/10 KOLKATA 700039	2010	67	30
631	9620009873	4959897	EE(E) KMC Z-III LTG DEPT	28A K. N. SEN ROAD. E-KOLKATA BLDG.(4TH FL) KOLKATA-700042 80A/6 TOPSIA RD. KOL-39 OPP. MONU MEMORIAL INSTI LP-95/9 W-	2808	93.6	30
Actual Sale(KWH): 152135			**Prorated Sale(KWH): 5459.92**		**Total Sale(KWH): 157594.92**		

For highlighted DTR, some consumers have been entered manually which need authentication

General Information					
1	**Name of the DISCOM**	CESC Limited			
2	**i) Year of Establishment**	1899			
	ii) Government/Public/Private	Private			
3	**DISCOM's Contact details & Address**				
i	City/Town/Village	Kolkata			
ii	District	Kolkata			
iii	State	West Bengal		Pin	700001
iv	Telephone	(033) 22256040-49		Fax	
4	**Registered Office**				
i	Company's Chief Executive Name	Debasish Banerjee			
ii	Designation	Managing Director (Distribution)			
iii	Address	CESC Ltd, CESC House, Chowringhee Square			
iv	City/Town/Village	Kolkata		P.O.	
v	District				
vi	State	West Bengal		Pin	700001
vii	Telephone	66340710		Fax	
5	**Nodal Officer Details***				
i	Nodal Officer Name (Designated at DISCOM's)	Santanu Sen			
ii	Designation	General Manager (Planning)			
iii	Address	13, Biplabi Anukul Chandra Street			
iv	City/Town/Village	Kolkata		P.O.	
v	District	Kolkata			
vi	State	West Bengal		Pin	700072
vii	Telephone			Fax	
6	**Energy Manager Details***				
i	Name	Eshita Roy			
ii	Designation	Deputy Manager (Planning Department)		Whether EA or EM	EM
iii	EA/EM Registration No.	EM-3000 19/21			
iv	Telephone			Fax	
v	Mobile	9163396620	E-mail ID	eshita.roy@rpsg.in	
7	**Period of Information**				
	Year of (FY) information including Date and Month (Start & End)	1st Apr, 2021 - 31st March, 2022			

Performance Summary of Electricity Distribution Companies			
1	Period of Information Year of (FY) information including Date and Month (Start & End)	1st Apr, 2021 - 31st March, 2022	
2	**Technical Details**		
(a)	**Energy Input Details**		
(i)	Input Energy Purchase (From Generation Source)	Million kwh	10476
(ii)	Net input energy (at DISCOM Periphery after adjusting the transmission losses and energy traded)	Million kwh	10274
(iii)	Total Energy billed (is the Net energy billed, adjusted for energy traded))	Million kwh	9454
(b)	Transmission and Distribution (T&D) loss Details	Million kwh	820
		%	7.98%
	Collection Efficiency	%	99.53%
(c)	Aggregate Technical & Commercial Loss	%	8.41%

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

Santanu Sen
General Manager (Planning)
CESC Limited
Planning Department
13, Bijoli Anukul Chandra Street,
Kolkata-700 072

Signature:-

SATYAJIT HAZRA
Certified & Accredited Energy Auditor
Bureau of Energy Efficiency
Ministry of Power, Govt. of India
Reg. No.- CEA 02141/AEA-0185

Name of Authorised Signatory: Santanu Sen

Name of the DISCOM: CESC LTD

Name of AEA*: Satyajit Hazra

Full Address:- CESC HOUSE. CHOWRINGHEE SQUARE, KOLKATA-700001

Registration Number: CEA 02141/AEA-0185

Date: 23/11/20222

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				CESC supplies in and around Kolkata. There is no circle level. Hence it is considered as one unit.
ii	Number of divisions				
iii	Number of sub-divisions				
iv	Number of feeders	2069			6/11kV Feeders
v	Number of DTs	8833			
vi	Number of consumers	3450318			
2	**Parameters**	**66kV and above**	**33kV**	**11/22kV**	**LT**
a. i.	Number of conventional metered consumers				3396083
ii	Number of consumers with 'smart' meters				28689
iii	Number of consumers with 'smart prepaid' meters				
iv	Number of consumers with 'AMR' meters				25272
v	Number of consumers with 'non-smart prepaid' meters				274
vi	Number of unmetered consumers				0
vii	**Number of total consumers**				3450318
b.i.	Number of conventionally metered Distribution Transformers				
ii	Number of DTs with communicable meters				8833
iii	Number of unmetered DTs				
iv	**Number of total Transformers**				8833
c.i.	Number of metered feeders				2069
ii	Number of feeders with communicable meters				2069
iii	Number of unmetered feeders				0
iv	**Number of total feeders**				2069
d.	Line length (ct km)	666	1701	7061	13798
e.	Length of Aerial Bunched Cables	302	92	87	5695
f.	Length of Underground Cables	364	1609	6974	8103

3	Voltage levels	Particulars	MU	Reference	Remarks (Source of data)
i	66kV and above	Long-Term Conventional	9030	Includes input energy for franchisees	CESC's Budge Budge Gen Stn and Haldia Energy Ltd.
		Medium Conventional			
		Short Term Conventional	490		Energy Exchange and other sundry sources
		Banking	58		
		Long-Term Renewable energy			
		Medium and Short-Term RE	739	Includes power from bilateral/ PX/ DEEP	PCBL, GDAM, GTAM
		Captive, open access input		Any power wheeled for any purchase other than sale to DISCOM. Does not include input for franchisee.	
		Sale of surplus power	-202		Energy sales to other than own consumers.
		Quantum of inter-state transmission loss		As confirmed by SLDC, RLDC etc	Above figures are net off transmission losses
		Power procured from inter-state sources	10115	Based on data from Form 5	
		Power at state transmission boundary	10115		Energy at CESC's boundary
ii	33kV	Long-Term Conventional	149		Own Southern Gen Stn
		Medium Conventional			
		Short Term Conventional			
		Banking			
		Long-Term Renewable energy			
		Medium and Short-Term RE			
		Captive, open access input	3.81		Open Access Units
		Sale of surplus power			
		Quantum of intra-state transmission loss			
		Power procured from intra-state sources	153		
iii		**Input in DISCOM wires network**	10268		Units input at EHV and 33kV
iv	33 kV	Renewable Energy Procurement	2.63		From SPV Sources
		Small capacity conventional/ biomass/ hydro plants Procurement			
		Captive, open access input			
v	11 kV	Renewable Energy Procurement	1.1		From SPV Sources
		Small capacity conventional/ biomass/ hydro plants Procurement			
		Sales Migration Input			
vi	LT	Renewable Energy Procurement	2.8		From SPV Sources
		Sales Migration Input			
vii		**Energy Embedded within DISCOM wires network**	6.55		
viii		**Total Energy Available/ Input**	10274		Total Input for Sale to Consumers

4	Voltage level	Energy Sales Particulars	MU	Reference	
i	LT Level	DISCOM' consumers	6669	Include sales to consumers in franchisee areas, unmetered consumers	Sale at LT level
		Demand from open access, captive		Non DISCOM's sales	
		Embedded generation used at LT level		Demand from embedded generation at LT level	
		Sale at LT level	**6669**		
		Quantum of LT level losses			
		Energy Input at LT level	2.8	Include sales to consumers in franchisee areas, unmetered consumers	From SPV Sources
ii	11 kV Level	DISCOM' consumers	2043	Non DISCOM's sales	Sale at 11/6kV includes sale to WBSEDCL
		Demand from open access, captive		Demand from embedded generation at 11kV level	
		Embedded generation at 11 kV level used			From SPV Sources
		Sales at 11 kV level	**2043**		
		Quantum of Losses at 11 kV		Include sales to consumers in franchisee areas, unmetered consumers	
		Energy input at 11 kV level	1.1	Non DISCOM's sales	From SPV Sources
iii	33 kV Level	DISCOM' consumers	676	This is DISCOM and OA demand met via energy generated at same voltage level	
		Demand from open access, captive	3.81		
		Embedded generation at 33 kV or below level	155.6		Includes Southern Gen Stn, Open Access and SPV Sources
		Sales at 33 kV level	**680**		
		Quantum of Losses at 33 kV		Include sales to consumers in franchisee areas, unmetered consumers	
		Energy input at 33kV Level	155.6	Non DISCOM's sales	
iv	> 33 kV	DISCOM' consumers	62.1		
		Demand from open access, captive			
		Cross border sale of energy			
		Sale to other DISCOMs			
		Banking			
		Energy input at > 33kV Level	10115		
		Sales at 66kV and above (EHV)	62.1		
		Total Energy Requirement	**10274**		
		Total Energy Sales	**9454**		

Energy Accounting Summary

5	DISCOM	Input (in MU)	Sale (in MU)	Loss (in MU)	Loss %
i	LT	2.8	6669		
ii	11 Kv	1.1	2043		
iii	33 kv	156	680		
iv	> 33 kv	10115	62		

6	Open Access, Captive	Input (in MU)	Sale (in MU)	Loss (in MU)	Loss %
i	LT				
ii	11 Kv				
iii	33 kv		3.81		
iv	> 33 kv				

Loss Estimation for DISCOM	
T&D loss	820
D loss	820
T&D loss (%)	7.98%
D loss (%)	7.98%

Eshita Roy
ESHITA ROY
ENERGY MANAGER
Reg. No. : EM-300019/21
CESC LIMITED
Princep Street Office,Kolkata-72

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

Division Wise Losses

Period From 1st Apr, 2021 - To 31st March, 2022

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)	% 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	Collected Amount in Rs. Crore	Collection Efficiency	AT & C loss (%)
1	Total	-		Residential	2935443	0	2935443	85%	4083.1	0	4083.1	63%	10274	4720	0	4720	50%	820.1228892	7.98%	3300.60905	3279.78961	99.37%	
				Agricultural	0	0	0	0%	0.0	0	0.0	0%		0	0	0	0%			0	0	0.00%	
				Commercial/Industrial-LT	483702	0	483702	14%	1552.0	0	1552.0	24%		1826	0	1826	19%			1529.54955	1519.31786	99.33%	
				Commercial/Industrial-HT	1131	0	1131	0%	479.3	0	479.3	7%		1764	0	1764	19%			1374.45163	1374.451632	100.00%	
				Others	30042	0	30042	1%	387.6	0	387.6	6%		1145.222	0	1145	12%			838.020249	836.3113772	99.80%	
Sub-total					**3450318**	**0**	**3450318**	**100%**	**6501.9903**	**0**	**6501.99033**	**100%**	**10274.23**	**9454.109**	**0**	**9454**	**100%**	**820**	**7.98%**	**7042.63048**	**7009.870479**	**99.53%**	**8.4%**
Sub-total					**0**	**0**	**0**	**100%**	**0**	**0**	**0**	**100%**	**0**	**0**	**0**	**0**	**100%**	**0**	**0%**	**0**	**0**	**0.00%**	**100%**
76	Total			Residential	2935443	0	2935443	85%	4083.1	0	4083.1	63%	10274.23	4720	0	4720	50%	820.1228892	7.98%	3300.6	3279.78961	99.37%	
				Agricultural	0	0	0	0%	0.0	0	0.0	0%		0	0	0	0%			0	0	0.00%	
				Commercial/Industrial-LT	483702	0	483702	14%	1552.0	0	1552.0	24%		1826	0	1826	19%			1529.54955	1519.31786	99.33%	
				Commercial/Industrial-HT	1131	0	1131	0%	479.3	0	479.3	7%		1764	0	1764	19%			1374.45163	1374.451632	100.00%	
				Others	30042	0	30042	1%	387.6	0	387.6	6%		1145	0	1145	12%			838.020249	836.3113772	99.80%	
77	**At company level**				**3450318**	**0**	**3450318**	**100%**	**6501.9903**	**0**	**6501.99033**	**100%**	**10274.23**	**9454.109**	**0**	**9454**	**100%**	**820**	**7.98%**	**7042.63048**	**7009.870479**	**99.53%**	**8.4%**

** 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 category of consumers by the

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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

Santanu Sen
General Manager (Planning)
CESC Limited
Planning Department
13, Bipinbi Anukul Chandra Street,
Kolkata-700 072

Name of Authorised Signatory: Santanu Sen

Name of the DISCOM: CESC LTD
Full Address:-CESC HOUSE. CHOWRINGHEE SQUARE, KOLKATA-700001
Date:23/11/2022

Signature:- Eshita Roy

ESHITA ROY
ENERGY MANAGER
Reg. No. : EM-30019/21
CESC LIMITED
Princep Street Office,Kolkata-72

Name of Energy Manager: ESHITA ROY
Registration Number: EM-30019/21

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

A. Summary of energy input & Infrastructure

S.No	Parameters	Period Period From 1st Apr, 2021 - To 31st March, 2022	Remarks (Source of data)
A.1	Input Energy purchased (MU)	10476	
A.2	Transmission loss (%)	0%	CESC has no transmission line. 220/132kV network of CESC is embedded in its distribution system. Losses in CESC's 220/132kV network is included in its distribution loss
A.3	Transmission loss (MU)	0.00	
A.4	Energy sold outside the periphery(MU)	201.78	For persons other than consumers
A.5	Open access sale (MU)	3.81	
A.6	EHT sale	76.30	
A.7	Net input energy (received at DISCOM periphery or at distribution point)-(MU)	10274.23	
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	100%	
A.11	% of metering available at consumer end	100%	
A.12	No of feeders at 66kV voltage level	0	
A.13	No of feeders at 33kV voltage level	462	
A.14	No of feeders at 11kV voltage level	2069	Includes 6kV
A.15	No of LT feeders level	8833	No. of DTRs
A.16	Line length (ckt. km) at 66kV voltage level	668	CESC has 668 ckt. Km of 220kV and 132kV lines as on 31.3.22 in its distribution system.
A.17	Line length (ckt. km) at 33kV voltage level	1719	Includes 20kV
A.18	Line length (ckt. km) at 11kV voltage level	7125	Includes 6kV
A.19	Line length (km) at LT level	13956	ckt. Km
A.20	Length of Aerial Bunched Cables	6229	includes Overhead lines (220/132/33/11/6/0.4kV)
A.21	Length of Underground Cables	17218	
A.22	HT/LT ratio	0.68	

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: Date of last actual meter reading/ communication	Feeder Type (Agri/ Industrial/Mixed)	Status of Communication: % data received through automatically if feeder AMR/AMI	Status of Communication: Number of hours when meter was unable to communicate in period	Status of Communication: Total Number of hours in the period	Period from...to... Meter S.No	CT ratio	PT ratio(KV/V)	Import (MU)	Export (MU)	Sales	Remarks (Source of data)	
B.1			132KV			BBGS	GSBBG-STATION TRANSFORMER 1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-0907A501-01	300 / 1	132 / 110	5131.94	0.00	8978.24		
							GSBBG-STATION TRANSFORMER 1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-0907A503-01	300 / 1	132 / 110					
							GSBBG-GENERATOR TRANSFORMER 1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-1305A130-01	1500 / 1	132 / 110					
							GSBBG-GENERATOR TRANSFORMER 1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-0907A517-01	1500 / 1	132 / 110					
							GSBBG-STATION TRANSFORMER 2	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-0907A507-01	300 / 1	132 / 110					
							GSBBG-STATION TRANSFORMER 2	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-0907A502-01	300 / 1	132 / 110					
							GSBBG-GENERATOR TRANSFORMER 2	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-0907A508-01	1500 / 1	132 / 110					
							GSBBG-GENERATOR TRANSFORMER 2	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-0907A500-01	1500 / 1	132 / 110					
							GSBBG-UNIT-3-40/25/25 MVA 220-6.9-6.9 KV STN. TR. 1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-1305A129-01	300 / 1	220 / 110					
							GSBBG-UNIT-3-40/25/25 MVA 220-6.9-6.9 KV STN. TR. 1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	MT-1009A061-01	300 / 1	220 / 110					
							GENERATOR TRANSFORMER 3	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405345	1000 / 1	220 / 110					
							GENERATOR TRANSFORMER 3	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405344	1000 / 1	220 / 110					
B.5			33kV			SGS	STATION TRANSFORMER -1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405365	300 / 1	33 / 110	149.21	0.00			
							STATION TRANSFORMER -1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405360	300 / 1	33 / 110					
							GENERATOR TRANSFORMER-1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405363	1500 / 1	33 / 110					
							GENERATOR TRANSFORMER-1	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405358	1500 / 1	33 / 110					
							GENERATOR TRANSFORMER 2	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405359	1500 / 1	33 / 110					
							GENERATOR TRANSFORMER 2	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405361	300 / 1	33 / 110					
							STATION TRANSFORMER 2	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405366	300 / 1	33 / 110					
							STATION TRANSFORMER 2	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6405364	1500 / 1	33 / 110					
B.2			220KV				HEL	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	Attached in Annexure			3897.89	0.00			
B.3			132/220KV				IEX etc.	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760				1297.07	0.00			
B.4			132/220KV				UI	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760				-10.47	0.00			
B.7			132/220KV				Energy for persons other than consumers	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760				0.00	201.78			
B.6			33kV				Solar	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760				2.63	0.00			
B.8			11kV				Solar	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760				3.92	0.00			
B.9			33 KV				Open Access (ITC)	Metered	Functional	31-03-2021	Domestic / Commercial / Industrial	100.00%	0	8760	S6426967	100/5	33 / 110	3.81	0.00			
B.13401	Total (MU)																	10476	201.78			
B.13402	Net input energy at DISCOM periphery (MU)																	10274				

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			Please enter feeder id and name or leave blank
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Date:23/11/2022

Signature

ESHITA ROY
ENERGY MANAGER
Reg. No. : EM-300019/21
CESC LIMITED
Princep Street Office,Kolkata-72

Name of Energy Manager: ESHITA ROY
Registration Number: EM-30019/21

Details of Input Energy Sources								
Period Period From 1st Apr, 2021 - To 31st March, 2022								
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	Budge Budge	750	Coal	Own	Embedded in Distn system		220/132kV	
2	Haldia	600	Coal	LTA	Intra/Inter		220kV	
3	Southern	135	Coal	Own	Embedded in Distn system		33kV	
4	Powe Market			ST	Intra/Inter		220/132kV	
5	RE Sources of Cons		RE		Embedded in Distn system		33/11/0.4kV	

Eshita Roy
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(Details of Consumers)						
Summary of Energy						
Period Period From 1st Apr, 2021 - To 31st March, 2022						
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	400/230 V	2935092	4460.860714	
2	Commercial	LT	400/230 V	418810	1055.443392	
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	400/230 V	1120	34.234114	
8	Public Lighting	LT	400/230 V	23728	236.629079	
9	HT Water Supply	HT	6/11 kV	212	473.422284	
10	HT Industrial	HT	33/20/11/6/3 kV	525	1213.391019	
11	Industrial (Small)	LT	400/230 V	64892	770.259216	
12	Industrial (Medium)					
13	HT Commercial		33/11/6 kV	606	550.276742	
14	Applicable to Government Hospitals & Hospitals	LT	400/230 V	804	18.832942	
15	Lift Irrigation Schemes/Lift Irrigation Societies					
16	HT Res. Apartments Applicable to all areas	HT	33/11/6 kV	351	258.655287	
17	Mixed Load					
18	Government offices and department	LT	400/230 V	3136	60.089818	
19	Others-1 (if any , specify in remarks)	LT	400/230 V	730	2.718623	Government Schools
20	Others-2 (if any , specify in remarks)	LT	400/230 V	174	3.605057	Private Educational Institutions and Hospitals
21	Others-3 (if any , specify in remarks)	HT	6/11 kV	3	2.781393	Cold storage
22	Others-4 (if any , specify in remarks)	HT	6/11 kV	23	6.383834	Private Educational Institutions
23	Others-5 (if any , specify in remarks)	HT	6/11 kV	13	3.611379	Construction Power Supply
24	Others-6 (if any, specify in remarks)	HT	6/11 kV	5	2.641857	Co-operative Group Housing Society
25	Others-7 (if any, specify in remarks)	HT	6/11 kV	30	54.198898	Public Utility
26	Others-8 (if any, specify in remarks)	HT	6/11 kV	25	3.710753	Sports Complex
27	Others-9 (if any, specify in remarks)	HT	33/11/6 kV	21	39.976407	MES
28	Others-10 (if any, specify in remarks)	HT	132/33 kV	5	144.97366	Railway Traction / Metro
29	Others-11 (if any, specify in remarks)	HT	6/11 kV	10	1.253764	CTC
30	Others-12 (if any, specify in remarks)	EHT/HT	6/11/132 kV	3	14.201348	WBSEDCL sale
31	Others-13 (if any, specify in remarks)				32.91446	Company Premises
32	Others-14 (if any, specify in remarks)				3.80642	Open Access Sale
33	Others-15 (if any, specify in remarks)				5.122268	LT Short term
34	Others-16 (if any, specify in remarks)				0.11	HT Short term
			Total	3450318	9454	

Eshita Roy
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(Details of Feeder-wise losses)

Period Period From 1st Apr, 2021 - To 31st March, 2022

Sl No.	Zone	Name of the Circle	Name of the Division	Name of the Sub-division	Name of the Sub-Station	Feeder Code/ID	Feeder Name	Type of Feeder (Urban/Mixed/Industrial/Agricultural/Rural)	Type of feeder meter (AMI/AMR/Other)	Input Energy Received at Feeder (in Mwh)	Final Net Export at Feeder Level (In Mwh)	Feeder Consumption (In Mwh)	Billing Efficiency (%)	Billed Amount (in Rs. Lakhs)	Collected Amount (in Rs. Lakhs)	Collection Efficiency (%)	T&D losses (%)	AT&C losses (%)	% Data Received through Automatically (if feeder AMR/AMI)	Remarks
1									AMR	10274	8978	9454.11	92.02%	704263.05	700987.05	99.53%	7.98%	8.41%		CESC operates its network in ring-main system; network configurations are often changed to provide 24x7 supply to its consumers and optimise power sources. Feeder-wise loss computations are difficult unless there is full-scale automation and smart metering. CESC will take up a program following approval from the WBERC.

Eshita Roy

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Princep Street Office,Kolkata-72

Annexure -1: Consumer Category-wise Subsidy Billed/Received/Due for 2021-22 (Full Year)														
Consumer Category (Separate for each subsidized consumer category)	**Billed Energy**			**Subsidized Billed Energy**			**Applicable rate of Subsidy as notified by State govt.**		**Subsidy Due from State Govt.**			**Subsidy Actually Billed / claimed from State Govt. (As against col.12)**	**Subsidy Received from State Govt. (As against col.13)**	**Balance Subsidy yet to be Received from State Govt.**
	Metered	**Un-metered**	**Total**	**Metered (out of col.2)**	**Un-metered (out of col.3)**	**Total**	**Metered Energy**	**Un-metered Energy**	**Metered Energy**	**Un-metered Energy**	**Total**			
	(in Million kWh)			**(in Million kWh)**			**(in Rs/kWh)**		**(in Rs. Cr.)**			**(in Rs. Cr.)**	**(in Rs. Cr.)**	**(in Rs. Cr.)**
1	**2**	**3**	**4=2+3**	**5**	**6**	**7=5+6**	**8**	**9**	**10=5X8**	**11=6x9**	**12=10+11**	**13**	**14**	**15=13-14**
Residential	4720	-	4720	24	-	24	6.51	-	15.35	-	15.35	15.35	15.24	0.11
Agriculture	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Commercial/Industrial – LT	1826	-	1826	-	-	-	-	-	-	-	-	-	-	-
Commercial/Industrial - HT	1764	-	1764	-	-	-	-	-	-	-	-	-	-	-
Other (specify) [2]	1145	-	1145	-	-	-	-	-	-	-	-	-	-	-
Total	**9454**	**-**	**9454**	**24**	**-**	**24**	**6.51**	**-**	**15.35**	**-**	**15.35**	**15.35**	**15.24**	**0.11**
Notes :														

1. Full subsidy (including meter rent) has been provided by the State Government vide memo no. 53-POW-13012(12)/2/2018-SECTION (POWER) dated 17 March 2020 to the Lifeline Domestic consumers with a connected load upto 0.3 KW and having monthly consumption upto 25 units.

2. Others include LT Specified Institution (Municipal or Non-Municipal), Government School, Government aided School or Government Sponsored School, LT/HT Public Water Works and Sewerage, Pumping Station under local Authority, HT Cold Storage or Dairy with chilling plant, HT Public Utility, HT Co-operative Group Housing Society for providing power to its members or person for providing power to its employees in a single premises, HT Construction Power Supply, LT/HT Private Educational Institutions and Hospitals, HT Sports Complex and Auditorium run by Govt. / local bodies for cultural affairs, Public Bodies (Municipal or Non-Municipal), Street Lighting, LT/HT Short-term Supply and sale to other licensees .

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