Department of Industrial and Management Engineering
Indian Institute of Technology Kanpur

Forum of Regulators

4th Capacity Building Programme for Officers of Electricity Regulatory Commissions
18 – 23 July, 2011

Managing Distribution : The other side of Regulation

THE CESC WAY

ANIRUDDHA BASU

VICE PRESIDENT (DISTRIBUTION SERVICES)

19th July, 2011

CESC Limited

RP - Sanjiv Goenka Group

Growing Legacies

- Power & Natural Resources: CESC LIMITED; NPCL (NOIDA POWER COMPANY LIMITED); ICML (INTEGRATED COAL MINING LIMITED)
- Carbon Black: Phillips Carbon Black Ltd
- Retail: spencer's; au bon pain
- Media & Entertainment: sa re ga ma (Soul of India); music world; open media network
- Infrastructure: CESC PROPERTIES

WHO IS CESC ?

- **CESC is the oldest power utility in India operating since 1897.**

WHAT DOES CESC DO ?

- **CESC generates & distributes electricity to 24.9 lacs consumers in Kolkata & Howrah**

CESC Limited - Milestone

- **Generation and Distribution of Electricity since 1897**
- **First Thermal Power Generation Company in India**
- **Fully Integrated Energy Utility**
  Coal Mining – Generation – Transmission - Distribution
- **Billing Computerised in 1973**
- **New Supply Processing Computerised in 1989**
- **Point to Point SCADA Developed In-house in 1991**
- **Geographic Information System in 1993**
- **Optical Fibre Communication in 1994**

In 1989, CESC became a part of RPG Group.

CESC LIMITED – A SNAPSHOT

- **Licensed Area: 567 Sq Kms**
- **Operating in Kolkata & Howrah**
- **4 Coal fired stations with aggregate capacity 1225 MW**

Year ending 31.3.11 :

Units Sold: 8135 MU

System Demand (net) : 1657 MW

T&D Losses : 12.83 %

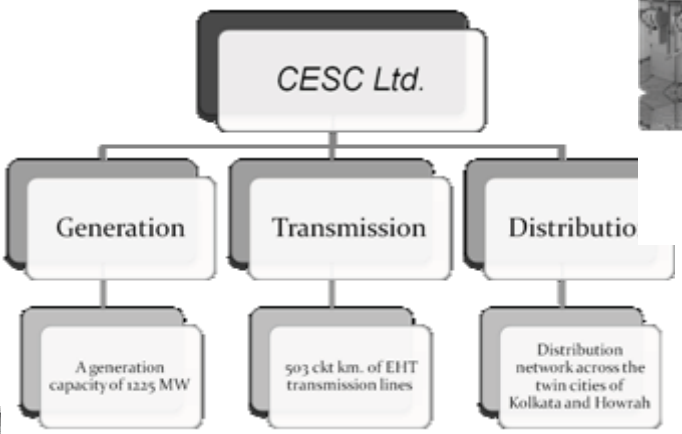
Energy Generated ~ 80%
Energy Imported ~ 20%

HT Consumers: 1673
LT Consumers: 2.49 Million

CESC Limited

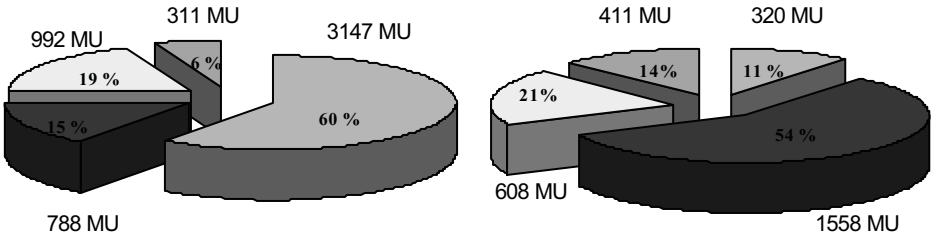
A Complete Power Utility

Broad Divisions



Energy Sales in 2010-2011

Total Sales = 8135 MU



LT = 5238 MU
(64 %)

HT = 2897 MU
(36 %)

DOMESTIC **INDUSTRIAL** **COMMERCIAL** **OTHERS**

HIGH TENSION CONSUMER

- Majority at 6/11 kV
- Some at 33 kV & 20 kV

Category	No of Consumers
Industrial (Rate-A)	638
Commercial (Rate-B)	521
Residential (Rate-R)	306
Public Water Works & Pumping Stns (Rate-U)	137
Cold Storage (Rate-CP)	4
Public Utility (Rate-I)	5
Calcutta Tramways Co Ltd (Rate-T)	11
Metro Railway (Rate-T)	3
Educational Ins (Rate-E)	13
Auditorium & Sports Complex (Rate-O)	14
Industrial 33 KV (Rate-A1)	4
Others (Rate-HTCON, HTCOP)	17
Total:	1673

About 36% Energy Sales is from HT Consumers

As on 31.03.11

CESC Limited

LOW TENSION CONSUMER

Category	No of Consumers
Domestic	2100173
Commercial	317497
Industrial	62451
Govt Educational Inst & Hospitals	1023
Pvt Educational Inst & Hospitals	150
Public Water Works	497
Total:	2481791

About 64% Energy Sales is from LT Consumers

As on 31.03.11

CESC Limited

ORGANISATIONAL ACHIEVEMENTS

- **Improvement in Generation Performance**
  - **Combined PLF – 90.18%**
  - **BBGS – 99.8% (One of the best in India)**
- **Reduction of T&D loss to 12.83 %**

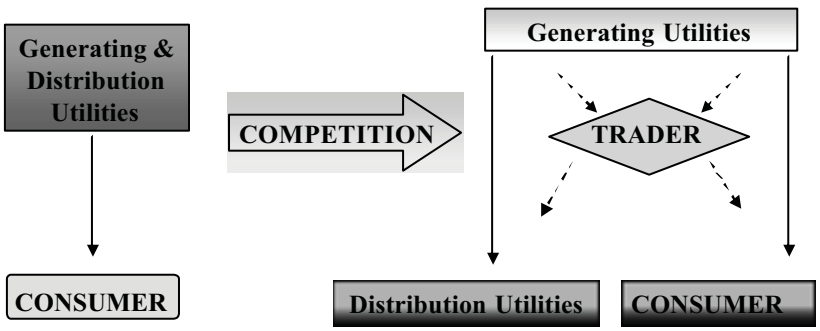
CESC Limited

CHALLENGES

- **New Act – hard Regulation / competition**
- **Rising consumer expectations**
- **Meeting Statutory Standards of Performance**
- **Changing employee mindset**
- **Attraction & Retention of Talents**
- **Controlling Power Theft**

CESC Limited

CHANGING SCENARIO



CESC Limited

CESC LIMITED

OBJECTIVES & STRATEGIES

CESC Limited

OBJECTIVES

- **To remain preferred "Choice of Consumer"**
- **To Grow Profitably**
- **To stay ahead of competition**
- **To expand business footprint**
- **To be Socially & Environmentally Responsive**

CESC Limited

ORGANISATIONAL STRATEGIES

A. Kolkata Centric

- **Reducing Demand and Supply gap**
- **Winning consumer confidence**
- **Improving Operational Efficiencies**
- **Reduction of Cost**

CESC Limited

B. National Footprint

- **HALDIA, West Bengal** – A 2 X 300 MW Coal fired thermal power project is scheduled to be completed by end of FY 2013-14.
- **CHANDRAPUR, Maharashtra** - A 2 X 300 MW Coal fired thermal power project is scheduled to be completed by FY 2013.
- **BHAGALPUR, Bihar** – Nalanda Power Company Limited, a subsidiary of CESC, has signed an MOU with the Bihar State Electricity Board (BSEB) for development of a 2000 MW power project in Bhagalpur District of Bihar.
- **DHENKANAL, Orissa** – CESC has acquired approximately 1000 acre of land at Dhenkanal in Orissa for setting up 2 X 660 MW Thermal Plant.
- **BIKANER, Rajasthan** – A solar power project is being executed by Surya Vidyut Limited, a subsidiary of CESC.

CUSTOMER SERVICE

- PRIMARY FOCUS OF CESC LTD

CESC Limited

WHAT DOES THE CUSTOMER WANT ?

- **Reliability of Power Supply**
- **Quality of Power**
- **Price**

CESC Limited

RELIABILITY OF POWER SUPPLY

- **Uninterrupted supply is ideal for a consumer.**
- **Supply may be interrupted due to various reasons**
  - **Drop in generation**
  - **Breakdown in transmission & distribution line**
- **Our system is primarily underground**
  - **Occurrence of fault is minimum**
  - **Fault restoration takes long time**

CESC Limited

RELIABILITY INDEX

One definition of Reliability Index is

R.I = (Total Consumer Hours Available – Interrupted Consumer Hours) / Total Consumer Hours Available

The higher the R.I of any distribution system the more it is reliable.

Our Current Reliability Index – 99.6%

CESC Limited

HOW TO INCREASE R.I OF A DISTRIBUTION SYSTEM

Total Consumer hours available is fixed.

Total Consumer Hours in a month for a particular area =

No. of Consumers of the area X 24 X 30

To increase R.I of a distribution system we, therefore, need to reduce the interrupted consumer hours.

CESC Limited

INITIATIVES TAKEN TO BUILD UP RELIABILITY IN DISTRIBUTION SYSTEM

☞Inculcating **THRUST AREAS**

- **CUSTOMER CENTRIC FOCUS**
- **TECHNICAL EXCELLENCE**
- **SERVICE EXCELLENCE**

CESC strives to excel the norms set

CESC Limited

CUSTOMER CENTRIC FOCUS

CESC Limited

☐ Formation of **Strategic Business Units (SBU)**
- Imparting Task Identity

OBJECTIVE

- Single-window service
- Coordinated operations
- Minimize delays
- Lowering losses

☐ Creation of **Customer Relation (CR) Cell**

CESC Limited

TECHNICAL EXCELLENCE

CESC Limited

IMPROVEMENT IN POWER SUPPLY RELIABILITY

(1) By reducing the number of interruptions
(Preventive Module)

&

(2) By reducing interruption time when such interruption of supply occurs
(Restoration Module)

CESC Limited

PREVENTIVE MODULE

CESC Limited

ACTION PLAN

MULTIPLE TRIPPING

- **111** feeders have been identified for specific action in this financial year on the basis of the following criteria:-
  - ❖ Feeders with history of multiple tripping in multiple months
  - ❖ Overloaded sections
  - ❖ Deficient network in Outskirt area
  - ❖ Radial network
  - ❖ Evacuation of power from proposed Distribution Stations

ACTION PLAN…….contnd

MULTIPLE TRIPPING

- **51 feeders** with history of multiple tripping due to non performance of age old PILC cable and Overloading were short listed for specific action in the FY 2010-11.

- Necessary network re-organisation has been completed for ***all selected feeders*** *in FY 2010-11.*

ACTION PLAN

OH FEEDERS

- **OBSERVATION**

  Out of 304 feeder tripping in April-June'08 fault in OH feeders were 53 which contributed to 17% of total trippings. However such feeders are only 18 in nos. (i.e. 2% of total feeders).

- **ACTIONS INITIATED**

  Entire 18 such OH feeders with bare conductors have been replaced with insulated conductors.

- **BENEFIT ACHIEVED**

  Transient/Overhead fault in FY 07-08 :161

  Transient/Overhead fault in FY 09-10 : 59

  % Change : -63%

In FY 10-11, the same trend is continued

ACTION PLAN

TRANSFORMER / SWITCHGEAR

- Fixing of creepage extenders within the HT fuse chamber to prevent flashover at transformer due to lizard. --- **Already fixed in FY 09-10**
- To ensure cable connecting clamps rigidly support the XLPE cable termination.
- Maintenance program of switchgear installations.

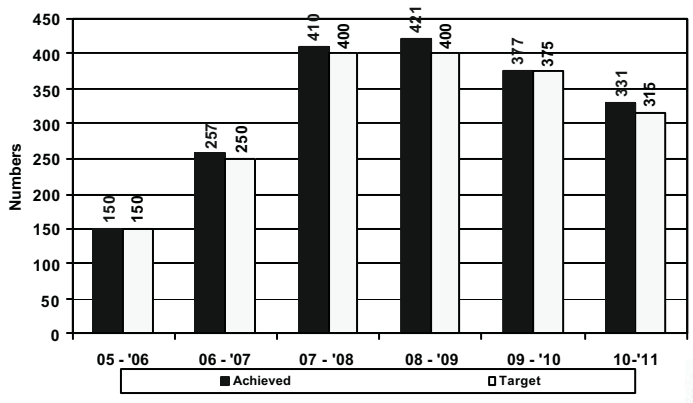
ACTION PLAN

MV / LT SYSTEM

- 377 nos. Distribution transformers were commissioned in '09-10 to cater to load growth of the MV/LT system as well as to reduce consumer calls/transformer outage as against 150 nos. in 2005 – '06 : 2.5 times more capital expenditure in this score.

- **DTR COMMISSIONED IN FY 10-11: 331 Nos**

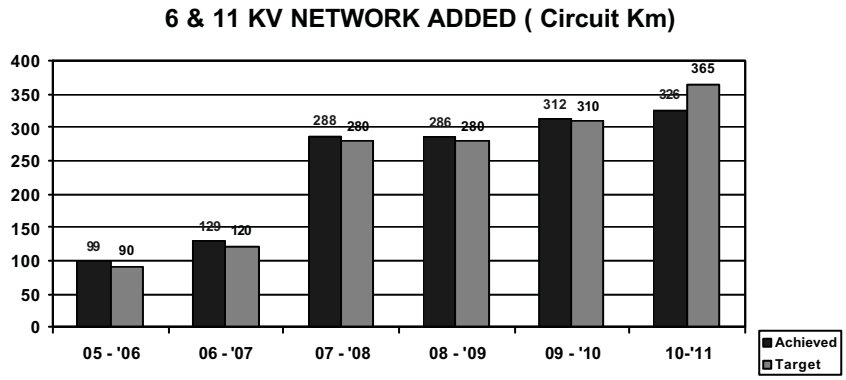
OUR EFFORTS TOWARDS CAPACITY ADDITION……
DISTRIBUTION TRANSFORMERS ADDED TO SYSTEM



FAILURE RATE OF DTR IS LESS THAN 2.1% PER YEAR

CESC Limited

CAPITAL INVESTMENT IN DISTRIBUTION

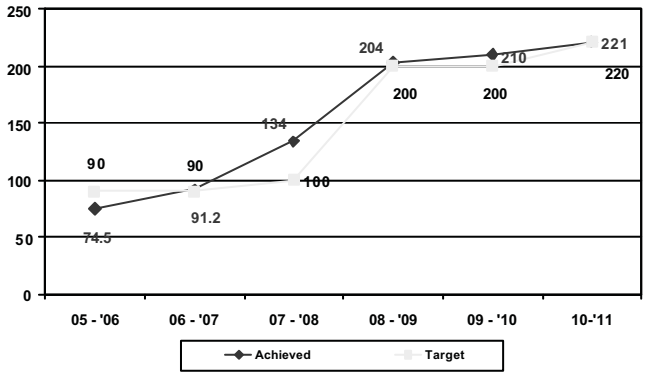


LARGE SCALE ADDITION TO TRANSFORMER & CABLE CAPACITY

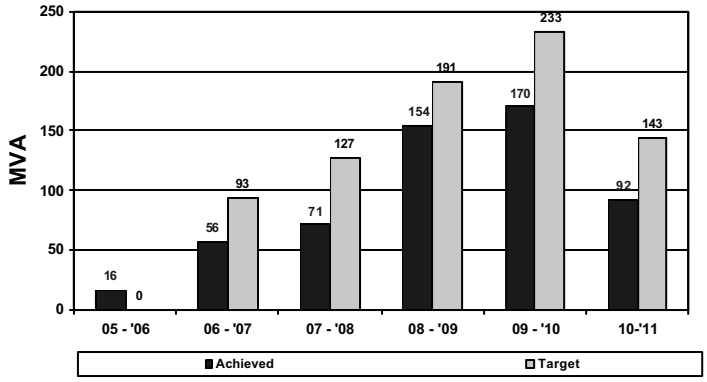
		2005-06	ADDITION	ADDITION	ADDITION	ADDITION	ADDITION
		BASE	2006-07	2007-08	2008-09	2009-10	2010-11
POWER TRANSFORMERS	NOS.(33/11/6 KV)	162	4	7	12	13	8
	MVA	2327	56	71	154	171	92
DISTRIBUTION TRANSFORMERS	NOS.(11/6/.4 2 KV)	4688	257	410	421	377	331
CABLE	33 KV (CKT. KM)	1020	33	37	22	20	20
	11 KV (KM)	3534	129	288	285	312	326
RMU	NOS.			415	1178	965	703

CAPITAL INVESTMENT IN DISTRIBUTION (MV Network Added)

(Figures in CKT KM)



CAPITAL INVESTMENT IN DISTRIBUTION (33/11/6KV Transformer Capacity Added)



RESTORATION MODULE

CESC Limited

RESTORATION MODULE IN LT & HT

- Reinforcement and re-engineering of Call Centre activities.
- Reduction of restoration time by better call monitoring.
- Insertion of sufficient number of RMUs in the existing HT feeders for quicker fault isolation.

CESC LIMITED

FASTER RESTORATION BY RING MAIN UNITS (RMU)

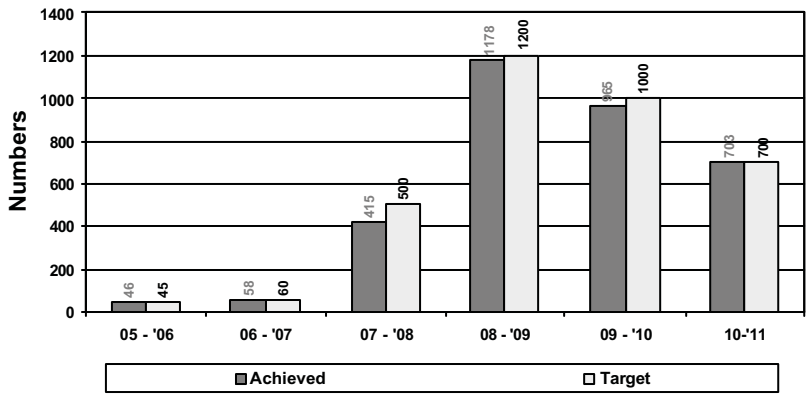
Introduction of SF_6 Gas Filled RMU s

Advantages:

- Ensures faster restoration of supply.
- Capable of Operation in "On-Load" condition – Minimum Interruption.
- Fault Passage Indicator - Indicates the direction of fault facilitating quicker detection of fault.
- Safety of Operating Personnel
- Less skill of Operating Engineer required .

CESC LIMITED

CAPITAL INVESTMENT IN DISTRIBUTION (RMU s Added)



RESTORATION MODULE

RMU – Overall Strategy

- Total no. of transformers : **6753 (approx.)**
- No. of HT consumers : **1673 (approx.)**

OUR AIM → One RMU every 3 source / consumer

RESTORATION MODULE
Contd……

FAULT MANAGEMENT SYSTEM

CESC Limited

FAULT MANAGEMENT SYSTEM - LT

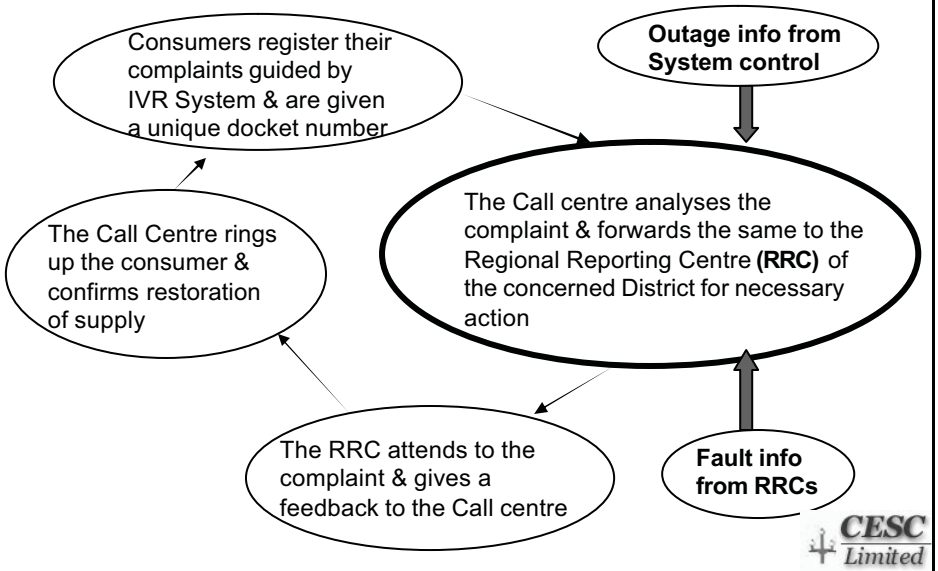
Computerised 24 x 7 call centre for attending consumer complaints -**1912**

All calls are docketed & routed to 10 RRCs

- Deployment of repair teams round the clock
- Fleet of 100 vans with wireless
- Decentralization of Engineers on emergency duty

CESC LIMITED

CALL CENTRE OPERATION



CESC Limited

ADVANTAGES OF CENTRALIZED CALL CENTRE

- Single window to consumers
- Telephone Number easy to remember
- RRC personnel can manage supply outage / fault in a better way with the help of centralised call centre.

CESC LIMITED

FAULT MANAGEMENT SYSTEM - HT

- **SPECIALIST TEAMS comprising distribution engineers, supervisors, skilled & unskilled hands available ROUND THE CLOCK at COMMAND STATIONS, 132 KV JADAVPUR S/S & BT ROAD SITE OFFICE to attend any HT fault in the distribution network**

CESC Limited

NECESSITY OF 3 – SHIFT HT FAULT MANAGEMENT

BACKGROUND

DEFICIENCIES :

- **Excessive work pressure on engineers**
- **Grueling working hours**
- **None available to attend to outages from 6am to 8 am**
- **Difficulty in providing guidance to operating personnel in the event of multiple feeder tripping beyond normal office hours**

NECESSITY OF DECENTRALISATION

All Engineers reported at **COMMAND STATION**. Feeder outages within our entire licensed area was attended from there. In case of feeder outages in the fringe areas it took a long time to reach the concerned station/ plant.

TO IMPROVE OUR OPERATIONAL EFFICIENCIES in the light of the S.E.R.C. guidelines and to provide greater satisfaction to our consumers the decentralization was essential.

CESC Limited

Relationship with Singapore Power

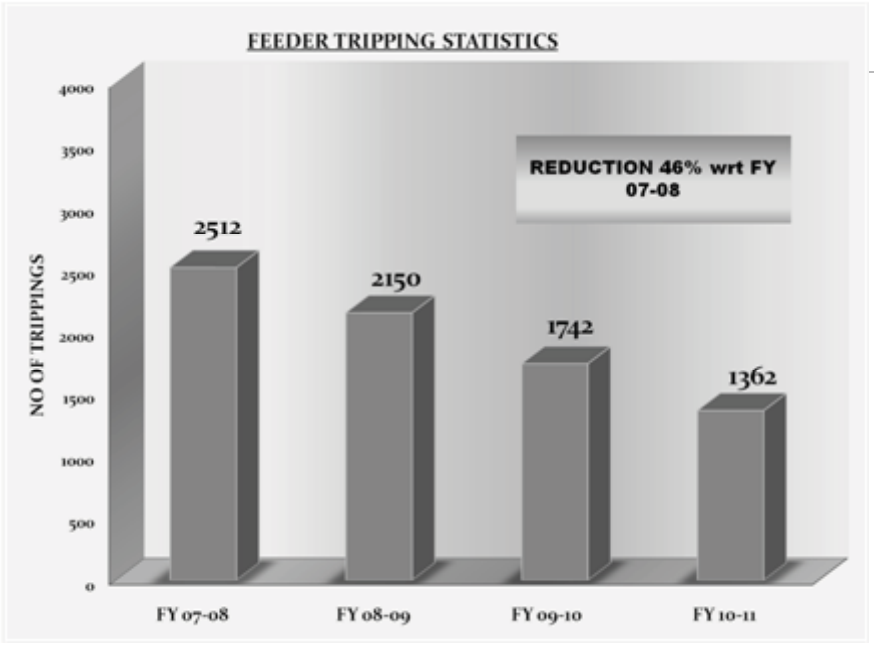
Vision

[redacted]

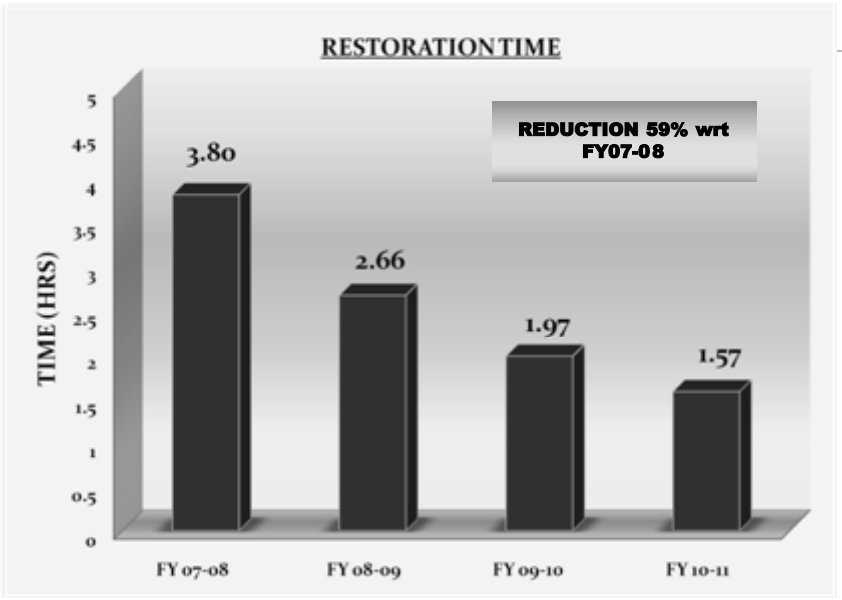
2 year journey with Singapore Power

- **Introduction of Condition based monitoring & maintenance practice**
- **"Do first time right" philosophy**
- **Introduction of SOPs**
- **Model zone development**
- **Larger scale organisation restructuring based on "Doer" – "Thinker" concept**
- **Building redundancy in network through appropriate planning process**

RESULTS ACHIEVED



AVERAGE RESTORATION TIME – HT TRIPPING		
YTD 09-10	YTD 10-11	% Improvement
APR-MAR	APR-MAR	
hrs	hrs	
A	B	A-B/A
1.97	1.57	19
NOTE: After commencement of 3 shift operation average restoration time has reduced .		



REDUCTION OF 6 & 11 KV UG & OH FAULTS

Parameter	April 2009– March 2010	April 2010 – March 2011	% Change
Tripping due to UG Cable Fault	**627**	**430**	**-31**

CESC Limited

SUMMARY REPORT OF FEEDERS APPEARED IN MULTIPLE TRIPPING IN MULTIPLE MONTHS IN FY 10 - 11 IN COMPARISION WITH FY 09 – 10

NOS OF FEEDERS IN FY 09-10	TOTAL TRIPPING CONTRIBUTED by 43 FEEDERS IN FY 09-10	NOS OF FEEDERS IN FY 10 - 11	TOTAL TRIPPING CONTRIBUTED BY 33 FEEDERS IN FY 10 -11	% CHANGE IN NOS OF FEEDERS	% CHANGE IN TRIPPING COUNT	COMMON FEEDERS IN BOTH FY
43	263	33	200	-23%	-24%	*08
EXCLUDING SPIKE						
34	251	23	146	-32%	-42%	

*COMMON FEEDERS

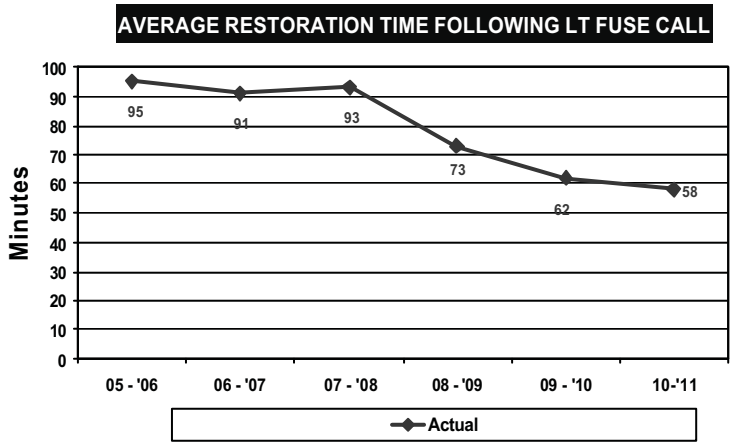
SUMMARY REPORT OF FEEDERS APPEARED IN MULTIPLE TRIPPING IN MUTIPLE MONTH IN THE PERIOD APRIL'10 --- SEPT'10 IN COMPARISION WITH APRIL'09 --- SEPT'09

NOS OF FEEDERS TRIPPED IN THE PERIOD (APR'09 - SEPT'09)	TOTAL TRIPPING CONTRIBUTED by 18 FEEDERS IN THE PERIOD (APR'09 - SEPT'09)	NOS OF FEEDERS TRIPPED IN THE PERIOD (APR'10 - SEPT'10)	TOTAL TRIPPING CONTRIBUTED by 12 FEEDERS IN THE PERIOD (APR'10 - SEPT'10)	% CHANGE IN NOS OF FEEDERS	% CHANGE IN TRIPPING COUNT	COMMON FEEDERS IN THE SAME PERIOD IN BOTH FY
18	90	12	75	-33%	-17%	1

COMMON FEEDER:

LILLUAH D/S -- 4/WAY LC AT PARULIA METAL INDUST.

RESULTS ACHIEVED



JOURNEY TOWARDS EXCELLENCE

Technical Audit Cell

MISSION

Comprehensive LT Fault Management with special emphasis on

- **Reducing UG Distributor Faults**
- **Introducing Quality & Focus in Job Execution, Supervision & Planning**
- **Development of strong & robust LT Fault Management MIS**
- **Imparting systematic training on LT jointing technology at all levels (Engineer-upto DMM, Junior Engineer, Supervisor, Jointer)**
- **Innovation of new technology**

ACTIVITIES INITIATED

Site Audit & Turnaround time Analysis of Contractor Set Jobs

- **Old jobs (U/G)**
- **Ongoing job audit with focus on**
  - **Job quality**
  - **Compliance of tool set**
  - **Turnaround time**
  - **Safety at workplace**
  - **Cable installation quality**
- **Regular transaction of Audit Report & District Feedback**

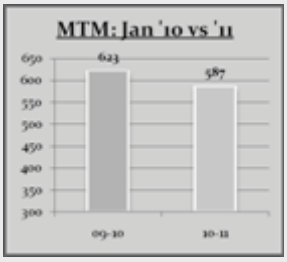
MVAC Distributor Faults: Monthly Report

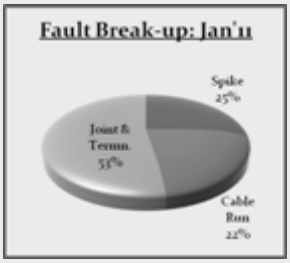
District: All Districts

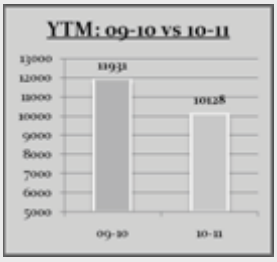
Month: March 2011

YTM/MTM Cable Fault Figures:

FY	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	YTM
09-10	1100	1624	1363	1523	1549	1607	962	908	672	623	750	1048	11931
10-11	1132	1387	1311	1240	1334	1090	818	581	648	587	683	900	10128
% Change	2.9	-14.6	-3.8	-18.6	-13.9	-32.2	-15.0	-36.0	-3.6	-5.8	-8.9	-14.1	-15.1







Fault Break-up: Jan'11

Type	Spike	Cable Run	Joint & Termn.	Total
Count	148	130	309	587
%	25%	22%	53%	

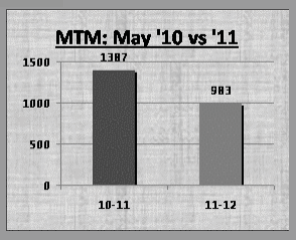
MVAC Distributor Faults: Monthly Report

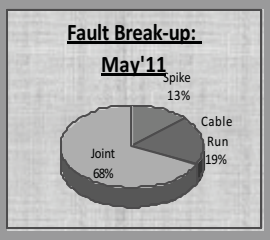
District: All Districts

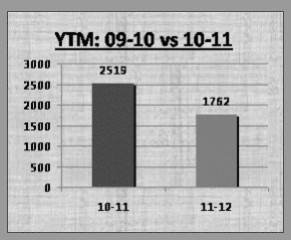
Month: May 2011

YTM/MTM Cable Fault Figures

Month	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	YTM
10-11	1132	1387											2519
11-12	779	983											1762
% Change	-31.2	-29.1											-30.1







SERVICE EXCELLENCE

PARAMETERS FOR CUSTOMER SATISFACTION

- **New connection**
- Meter reading, billing and payment
- Receipt and handling of complaints
- Behaviour of employees

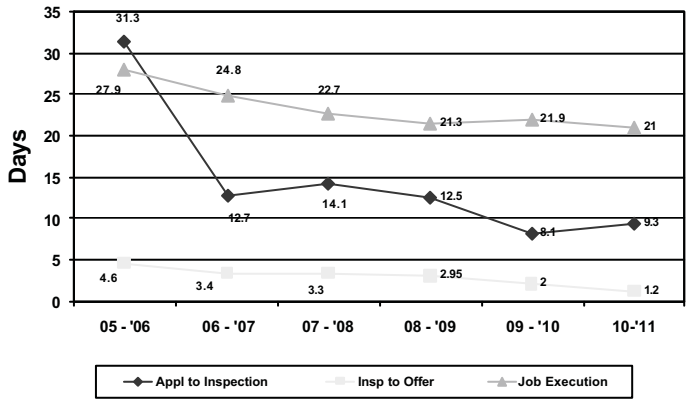
NEW CONNECTION

- Fully computerized system - seamless migration of new consumer into billing database – facility to track every single application – faster processing.
- About 1,50,000 applications are processed & 80,000 new connections effected every year on an average.

PARAMETERS FOR IMPROVEMENT IN EFFECTING NEW CONNECTION

- No. of days required to send offer after carrying out inspection
- No. of days required to effect supply after payment by applicants

IMPROVEMENT ACHIEVED IN NEW CONNECTION

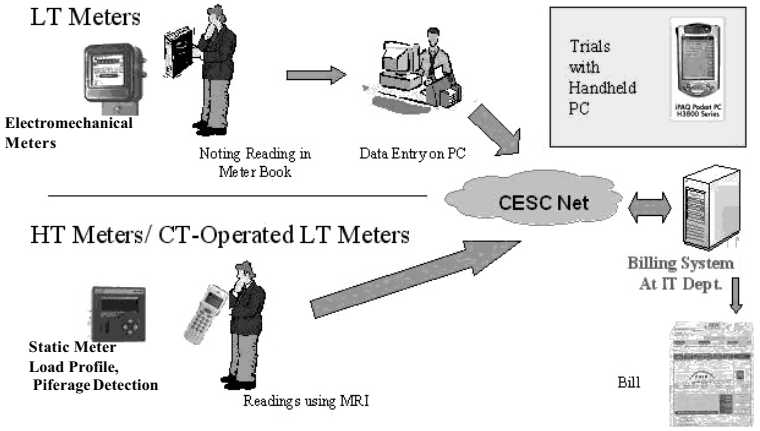


PARAMETERS FOR CUSTOMER SATISFACTION

- New connection
- **Meter reading, billing and payment**
- Receipt and handling of complaints
- Behaviour of employees

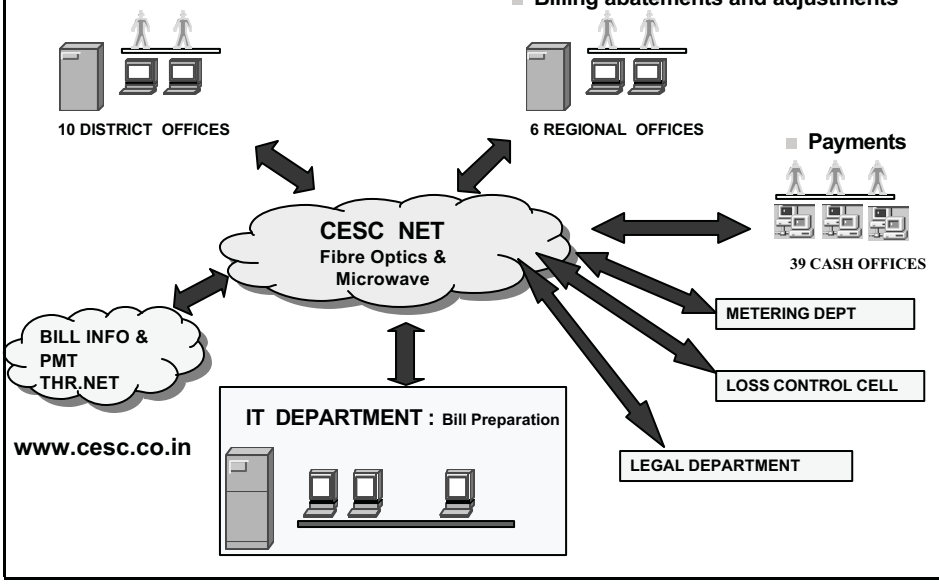
METER READING

- Monthly Meter Readings – 600 Meter Inspectors
- 72 % of LT Meters are "Superior Quality"
- 100 % of HT Meters are Static Intelligent Meters
- Reading of HT consumers through AMR



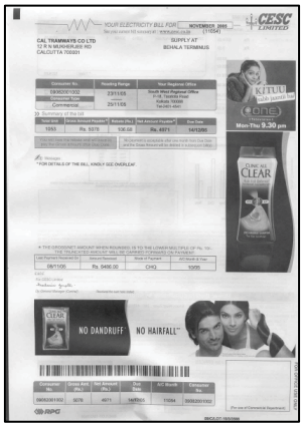
Billing: Interconnected Computer Systems

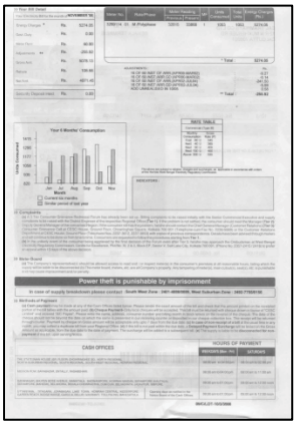
- New Application Processing
- Additional load
- Monthly Meter Readings
- Disconnections & Reconnections
- Billing abatements and adjustments



THE ELECTRICITY BILL (LT)

Front **Reverse**





DUPLICATE BILLS ISSUED FROM ALL REGIONAL OFFICES & CASH OFFICES

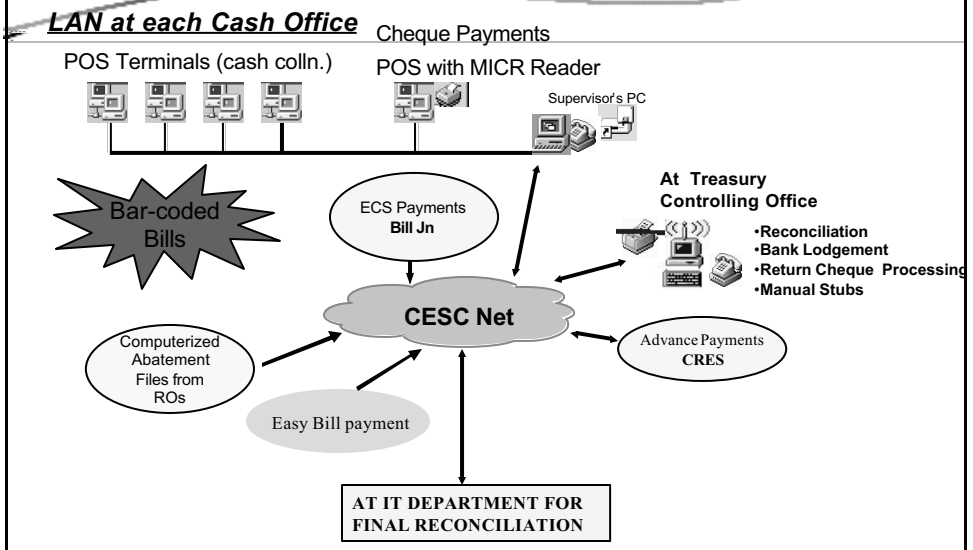
MAIN FEATURES IN LT BILL

- ✓**Information on consumption, reading & bill amount**
- ✓**Tariff related information**
- ✓**Both side printing with dynamic information**
- ✓**Providing comparative unit consumption with last 6 months vis-à-vis similar months of last year through histogram**
- ✓**Information on Security Deposit & last payment made**

BILL PAYMENT FACILITY

- **39 cash offices located at convenient locations**
- **Payment at cash offices through cash/cheque/bank draft**
- **Cheque Drop boxes at different locations**
- **ECS, Internet payment options**
- **Easy Bill payment option initially in 100 outlets**
- **Advance payment through CRES (Convenience Returns Security) as well as own scheme with attractive return @ 6.0 % p.a.**

Payment Collection



PARAMETERS FOR CUSTOMER SATISFACTION

- New connection
- Meter reading, billing and payment
- **Receipt and handling of complaints**
- Behaviour of employees

COMPLAINT HANDLING SYSTEM

- Senior Officers upto Dy. General Managers are designated at all Regional Offices to redress consumer complaints
- Contact details of relevant officers are printed on the bill
- Most of the complaints are resolved through telephones
- Computerised system to track all complaints
- Suitable MIS for Sr. Officers to follow up
- Footfall analysis on a regular basis to take course corrections
- Creation of **Customer Relation Cell**

CUSTOMER RELATIONS DEPARTMENT

- **Builds Relationship with important consumers**
- **Handles grievances and complaints**
- **Runs the Call Centre**

PROMPT CONSUMER GRIEVANCE REDRESSAL

- **Grievance Redressal Officers**
  - For Commercial matters – metering, billing, payments etc.
  - For Supply matters – new connections, extensions, interruptions etc.
- **Central Grievance Redressal Officers**
  - For Commercial & supply matters

PARAMETERS FOR CUSTOMER SATISFACTION

- New connection
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- **Behaviour of employees**

INITIATIVES FOR ENHANCING CUSTOMER ORIENTATION

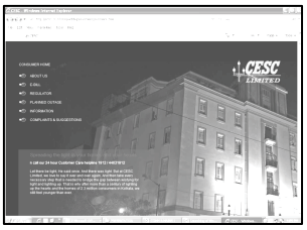
- **Regular training / interaction with supervisors/front line staffs to change mindset to be more customer oriented**
- **Dynamic modification of work practice to cope with the customer expectations**

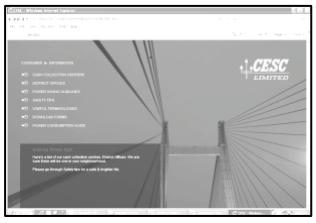
SUB SYSTEM FOR EFFICIENT FUNCTIONING & BETTER CUSTOMER SERVICE

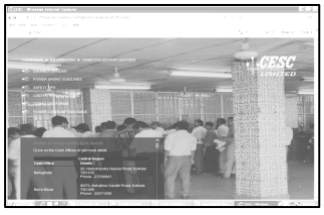
- **Consumer details, Bill Information and on-line payment facility available on the Internet**
- **Different forms can be downloaded from Internet**
- **Duplicate consumption bills can be downloaded from Internet**
- **Refund of Security Deposit after voluntary disconnection of supply within 15 days**
- **Restoration of supply within 24 hrs of compliance**
- **Availability of duplicate bills from cash offices irrespective of Regions**

Our Website: www.cesc.co.in

- **Monthly bills can be downloaded**
- **Forms can be downloaded**
- **Complaints/ queries can be made**
- **Bills can be paid**







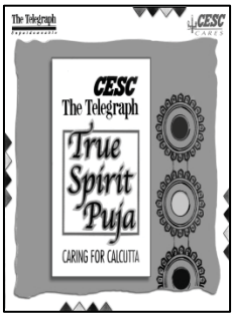
INITIATIVES FOR ENHANCING CUSTOMER RELATIONSHIPS

- **Introduction of Help Desk at Regional Offices**
- **HT consumer visit**
- **Organising meeting with NGOs / Consumer organisations**
- **Conducting programs on 'Safety & Conservation' for students (Catch them Young) at different schools.**
- **Regular interaction with public representatives / opinion makers / media personnel**
- **Meeting with Licensed Electrical Contractors**

INITIATIVES FOR ENHANCING CUSTOMER RELATIONSHIPS Contd.....

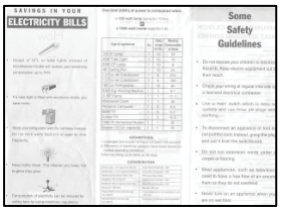
- **Pre-paid metering-already initiated**
- **Educating consumers for efficient use of electricity & safety**
- **Initiating customer perception survey**

COMMUNICATING WITH CUSTOMERS



- Banners & hoardings
- Slides at cinema halls
- Live programs in radio & television
- Mailers with monthly electricity bills
- Advertisement in news papers
- Car Stickers
- Educating consumers about safety, protection by taking part in Durga Puja

COMMUNICATING WITH CUSTOMERS



NEW INITIATIVES

- Distribution Automation
- Implementation of DREAMS (Distribution Related Engineering Asset Management Software to manage the distribution assets in a better way
- New connection job scheduling – to intimate applicants when their job will be executed.
- Source Metering – to carry out energy audit & load survey analysis towards better customer service
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- Visualizing network assets in GIS (Geographical Information System)

STAYING AHEAD

- **Equipped with Distribution Training Institute accredited with CEA and imparting both classroom and hands-on training on O&M**
- **Centralised HRD addressing development plans and training on management and behavioural science**
- **Stretch internal targets of consumer service with actual performance exceeding regulatory benchmarks**
- **Partnership with Singapore Power extended to launch Asia Institute of Power Management for training and capacity building in Indian Power sector to support innovation, promote best-in-class practices and facilitate change management**

BENCHMARK

STANDARD OF PERFORMANCE VIS-À-VIS OUR POSITION

AREA	STANDARD OF PERFORMANCE	OUR POSITION
Failure of Distribution Licensee's fuse	3 hrs	58 min
HT U/G cable fault	4 hrs	1.57 hrs
Replacement of burnt-out / faulty meters where supply is affected	24 hrs	12 hrs
Voltage complaint	15 days if local problem 6 months if correction requires augmentation of dist system	12 days 4 months
Voltage fluctuation	4 days	2 days

CONTINUOUS MONITORING & IMPROVEMENT


Thank You
CESC
Limited