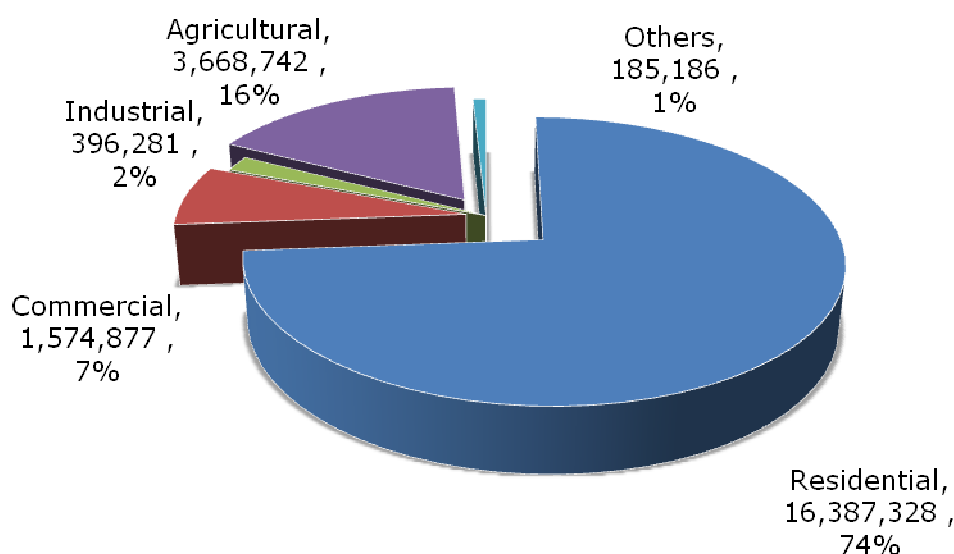


**MAHARASTRA STATE ELECTRICITY
DISTRIBUTION COMPANY LIMITED
Mumbai (Maharashtra)**

DISCOM Profile

MSEDCL provides electricity throughout the state of Maharashtra except Mumbai city. MSEDCL is one of the largest power distribution companies in the country in terms of number of consumers and electricity supplied. It serves more than 2.2 crore consumers spread over 3.07 lakh sq. km covering 41015 villages and 457 towns. Total no. of registered consumers with MSEDCL, as on 31st March 2014, are 2,71,53,963. This is the maximum number of consumers amongst any distribution licensees in India. Over the years, out of these consumers total 49,41,549 consumers are permanently disconnected. Therefore, balance consumers of MSEDCL as on March 2014 are 2,22,12,414. Bifurcation of these consumers amongst various categories is as follows.

Category	HT	LT	Total	%
Residential	347	1,63,86,981	1,63,87,328	74%
Commercial	2,911	15,71,966	15,74,877	7%
Industrial	12,766	3,83,515	3,96,281	2%
Agricultural	1,292	36,67,450	36,68,742	17%
Others	1,993	1,83,193	1,85,186	1%
Total	19,309	2,21,93,105	2,22,12,414	100%

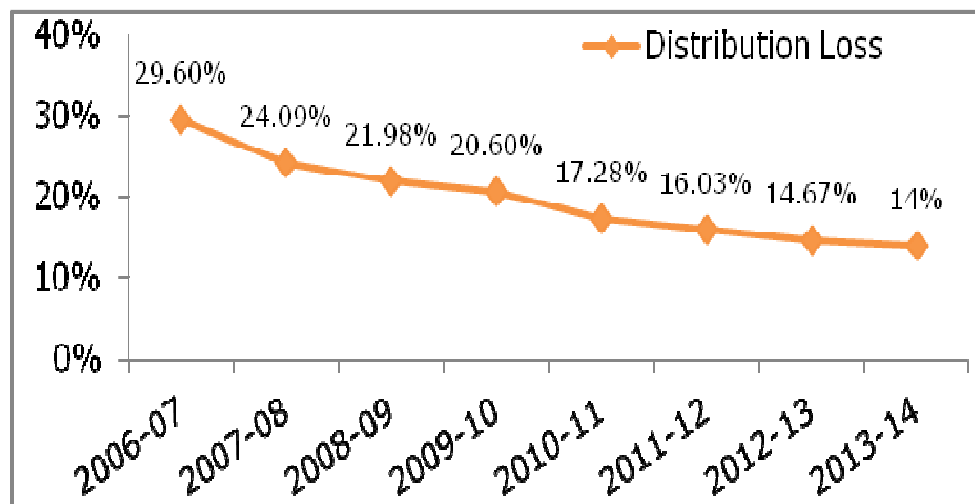


Operational Performance

MSEDCL presently has around 3.3 Lakh Ckt km of HT lines and around 5.93 lakh Ckt km of LT lines, with around 2700 substations. MSEDCL has added around 10 lakh agricultural connections in last five years. The demand for FY 2013-14 of MSEDCL is of around 14,506 MW, with a supply of around 13,830 MW leaving a deficit of 4 %.

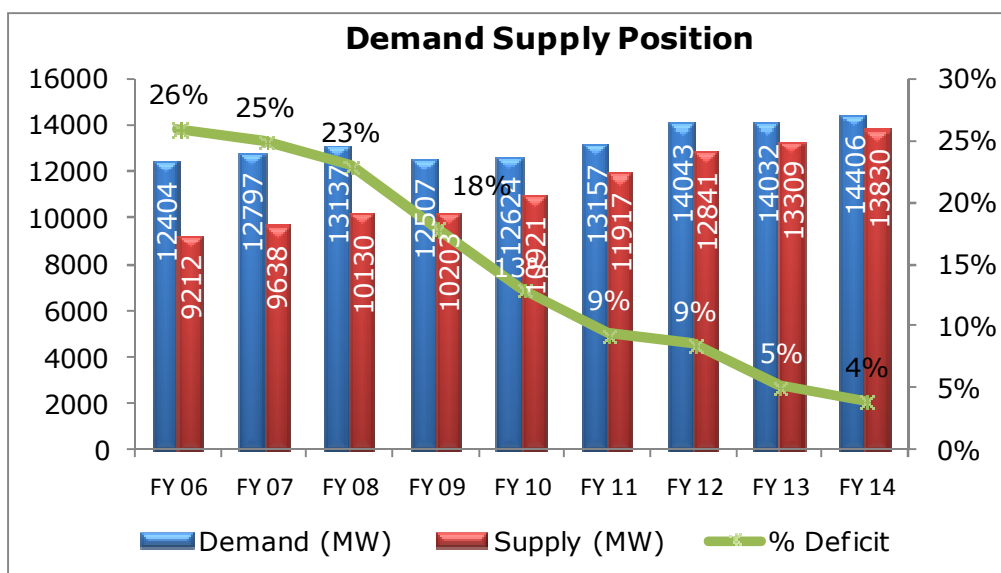
MAJOR ACHIEVEMENT OF MSEDCL

- MSEDCL has reduced distribution loss from whopping 31% (FY 2005-06) to 14% (FY 2013-14)
- The collection efficiency increased to 96% in FY 2013-14 from 82.96% (FY 2005-06).
- Transformer Failure Rate has been reduced to 7% in FY 2012-13 as compared to 16% in FY 2005-06.
- Bhiwandi Circle with 44% distribution losses and 68% collection efficiency has been franchised out to M/S Torrent Power on 26th Jan 2007 for ten years. It has reduced losses to ~17.3%, improved collection efficiency to 99 %.
- MSEDCL has implemented feeder wise DCL (Distribution Commercial Loss) concept which envisages higher load shedding in areas where recovery is low and distribution losses are high.
- This has yielded very good results in bringing community pressure to reduce the losses. The community now jointly endeavors to reduce losses so that they can have uninterrupted electricity.
- With such joint efforts, about 85% of MSEDCL area is load shedding free and collection efficiency is about 96%-98%.



- 13 state-of-the-art Consumer Facilitation Centers (CFCs) have been opened at Major Urban Centers. In addition 31 small CFCs have also been established at Sub Divisions.
- 24 x 7 online operating Centralized Customer Care Centre has been commissioned at Bhandup and Pune for redressal of complaints of consumers.
- Online bill payment facility has been made available for all consumers.

- MSEDCL has implemented innovative technologies such as Pre-paid meter, automatic meter reading through infra-red (I.R.) and Radio Frequency (R.F.) technology.
- SCADA and ERP are under implementation by MSEDCL.
- Maharashtra has been adding capacities in generation and also strengthening its infrastructure in Transmission as well as for Distribution of electricity in the State. These activities for the last 4 – 5 years have started yielding results and Maharashtra is moving towards load shedding free regime.
- A short term measure of Single Phasing Scheme was also implemented, whereby 15482 villages get 18-24 hours of single phase and 8-10 hours of 3 phase supply.
- Gaothan Feeder Separation Scheme implemented for 18095 villages, this scheme separates 11/22 kV feeders assuring evening supply for lighting in villages.



- There are about 41,000 villages in the State, out of which 31,000 are AG dominated load. Single phasing scheme is implemented on 1900 feeders and about 14900 villages are benefited. AG feeder separation scheme implemented on 3500 feeders and about 17000 villages are benefited. Through these schemes expected results of reduction of peak demand by about 2500 to 3000 MW is achieved so that the problems during evening peak are solved and load curve is almost flattened.

1. AG. DSM PROJECT

In order to accelerate Demand Side Management (DSM) measures in agriculture sector, Government of India approved a scheme on Agricultural Demand Side Management (Ag DSM) to be implemented by Bureau of Energy Efficiency (BEE), Ministry of Power. The objective of the scheme is to create appropriate framework for market based interventions in agriculture pumping sector by facilitating conducive policy environment to promote Public Private Partnership (PPP) to implement projects. As a part of national Ag DSM scheme, first pilot Ag DSM project

was launched at Mangalwadha subdivision of Solapur Circle. This first pilot Ag DSM project covers 2209 agricultural pumps connected on four feeders (Bramhapuri, Nandeshwar, Borale and Bhose) in Mangalwedha subdivision of Solapur Circle, Maharashtra.

The overall consumption of existing pump sets is work out to be 15.6 Million Units (MU), whereas with energy efficient pump sets, the consumption will go down to 9.4 MU for annual average operating hours of 1642. This will lead to the energy savings of 6.1 MU. The project is completed in year 2012 and energy saving achieved in the year 2013-14.

2. LT FIXED CAPACITOR SCHEME

Agricultural load is one of major category in agricultural predominant district. Currently operating power factor of Distribution Transformer supplying predominantly agricultural load is in range of 0.7 to 0.75. The Capacitor can be installed on secondary side of Distribution Transformers to improve operating power factor to 0.95. Improvement in power factor will lead to subsequent reduction in line losses and relieve Distribution System to the extent of reduction in kVA, thus resulting reduction in line & equipment loading and hence reduction in failure rate and improvement in voltage profile.

Up to date progress of Scheme is as below:

Scheme Name	Contract Value (in Cr. Rs.)	25 kVAr		30 kVAr		Total Capacitors	
		Target	Achieved	Target	Achieved	Target	Achieved
Installation of LT fixed capacitors	46.98	23073	23153	22285	22161	45358	45314

The works of LT Fixed Capacitor phase I as above are completed in the year of 2012-13. Realization of the benefits is in the year of 2013-14.

3. GAOTHAN FEEDER SEPARATION SCHEME (GFSS)

Gaothan feeder separation scheme (GFSS) involves segregation of agricultural load and other category load respectively on separate feeders. The immediate measure for load management can only be achieved by flattening of the load curve and shifting of the peak load to other off-peak periods and thus minimize the large-scale unrest among rural consumers arising out of load shedding. Such measure shall also help MSEDCL to eliminate the feeling of discrimination felt by the rural consumers vis-à-vis urban consumers.

Progress of GFSS as on October 2014:

Name of the Scheme	Cost of the Scheme (in Cr.)	Feeders		Villages		Load Management		Expend. (in Cr.)
		Scope (Nos)	Achieved (Nos)	Scope (Nos)	Achieved (Nos)	Scope (MW)	Achieved (MW)	
GFSS-I	895	1498	1498	6932	6932	1905	1905	816
GFSS-II	1006	895	892	7005	6775	1088	995	950
GFSS-III	231	-	-	381	328	-	-	212
GFSS Left-out	721	1008	1075	3601	2856	628	362	658
GFSS-Shrirampur	87	81	70	176	132	161	72	40
GFSS Total	2940	3482	3535	18095	17023	3782	3334	2676

4. SINGLE PHASING SCHEME

Single Phasing of the selected rural mixed load feeders is carried out by use of changeover switches at substation. The scheme envisages supplying Single Phase rural lighting load through three nos. of single phase transformers. During the normal operation, the agricultural load continues to be supplied from the three phase transformers. On operation of the changeover switch, there will be no supply to the 3-phase load on the 11 kV distribution network whereas single phase supply is available to the lighting and fan load. On reversing changeover switch, normal 3-phase supply shall be restored.

Progress of Single Phasing Scheme as on October 2014:

Name of the Scheme	Cost of the Scheme (in Cr.)	Feeders		Villages		Load Management		Expend. (in Cr.)
		Scope (Nos)	Achieved (Nos)	Scope (Nos)	Achieved (Nos)	Scope (MW)	Achieved (MW)	
Single Phasing-I	235	1186	1186	8085	8085	1153	1153	213
Single Phasing-II	221	768	768	3877	3877	722	722	214
Single Phasing-III	205	-	-	2325	1880	-	-	178
Single Phasing Left-out	268	-	-	1195	1105	-	-	237
Single Phasing Total	929	1954	1954	15482	14947	1875	1875	842

First Prize

Electricity Distribution Companies (DISCOMs)

KERALA STATE ELECTRICITY BOARD LTD. Pattom, Thiruvananthapuram (Kerala)

DISCOM Profile

Kerala State Electricity Board Ltd. is functioning as a company, incorporated under the Companies Act, 1956, fully owned by the Govt. of Kerala. It generates, Transmits and distributes electricity in the Kerala state and comes under the authority of the Department of Power. Its Mission is to provide quality power at affordable cost, on demand, to the consumers of the state and to act as the catalyst for total development of the state.

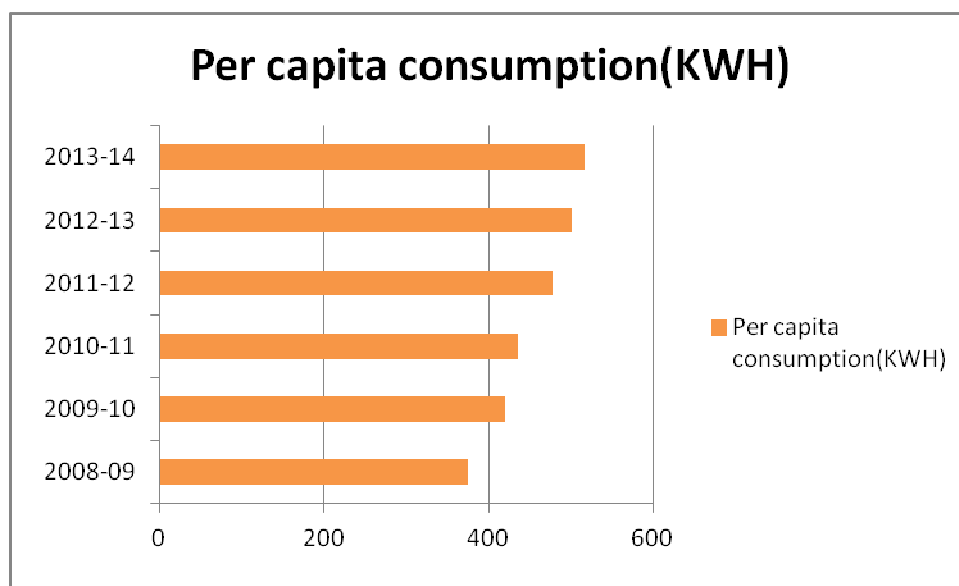
KSEBL provides supply to more than 1.12 Crores (approx.) consumers of the state and has been performing the planning and development of the power system. As a fully owned Government public utility, KSEB has been implementing all the policy directions of the State Government, such as providing free electricity to consumers below poverty line, Giving priorities for service connections to weaker sections in the society, subsidy to Agricultural consumers, orphanages and similar other eligible consumers. It has been implementing various schemes, formulated by Central Government such as R-APDRP (Restructured Accelerated Power Development and Reforms Programme), RGGVY (Rajeev Gandhi Grammeen Vidyuthikaran Yojana).

It has been implementing DSM activities and has 213 nos. DSM cells, as on 31-12-2013



Energy Consumption

Year(FY)	Per capita consumption(kWh)
2008-09	375
2009-10	420
2010-11	436
2011-12	478
2012-13	501
2013-14	516



Net energy saving for the year 2013-14 : 81.66 MU

Expenditure incurred for this savings : 238.86 Crores

Energy Conservation Measures Taken

KSEB has consistently been reducing the Transmission and Distribution (T&D) losses, since 2001-02. The details are given below:-

Year	T&D Loss within KSEB system (%)	Extent of reduction (%)		Total Energy sales within the State (MU)	Savings in Generation & Power Purchase (MU)	Savings in Power purchase cost)* (Rs. Cr)
		Yearly	Cumulative			
2010-11	16.09	1.62	14.67	14547.90	3673.33	1285.66
2011-12	15.65	0.44	15.11	15980.53	4134.41	1447.04
2012-13	15.30	0.35	15.46	16838.24	4438.80	1553.58
2013-14	14.96	0.34	15.8	17454.04	4683.52	1639.233

Other DSM Activities

1. DSM activity in Ice plants (during 2014-15) Energy saving activities in various Ice plants of Kerala (Trivandrum, Ernakulam & Kannur districts) are carried out and found that an energy saving of about 300 to 400 units per day has been achieved.
2. DSM activity named "Labhaprabha" is in progress, to reduce domestic energy consumption.
3. Energy Conservation awareness classes were conducted among the students of Barton Hill Engg. College, Trivandrum, Kariavattom university college of Engg, Trivandrum, school students and also, among the employees of KSEB.

**Certificate of Merit Electricity Distribution Companies
(DISCOMs)**

**DAKSHIN GUJARAT VIJ COMPANY LIMITED
Surat (Gujarat)**

Discom Profile

As a part of efforts towards restructuring of Power Sector in the State of Gujarat the Government of Gujarat reorganized erstwhile Gujarat Electricity Board functionally into a Generation Company, a Transmission Company and four Distribution Companies. Of the four Distribution companies, Dakshin Gujarat Vij Company Ltd. was incorporated on 15-September-2003 and obtained Certificate for Commencement of Business on 15-Oct-2003. The Company commenced the commercial operations with effect from 1st April 2005 and has been entrusted with the responsibility of the distribution of electricity in the Southern districts of Gujarat state. The brief profile of the company is tabulated below –

Area in sq. kms	23,307
Districts covered	7
Talukas covered	37
Towns covered	28
No. of Villages	3,518
Circles	4 Nos.
Division Offices	19 Nos.
Sub Division Offices	112 Nos.
Sub stations	186 Nos.
Transformer centers	83096 Nos.
11 KV and 22 KV Feeders	1572 Nos.
H.T Line	39260 KMs
L.T Line	45485 KMs
LT : HT line Ratio	1.158
Daily Energy catered	55 MUs
Connected Load	6348 MW
Revenue	Rs. 8,461Crores
Consumers	25.86 Lakh (2968 nos. HT Consumers & rest LT Consumers)
Employees	6211

Energy Consumption

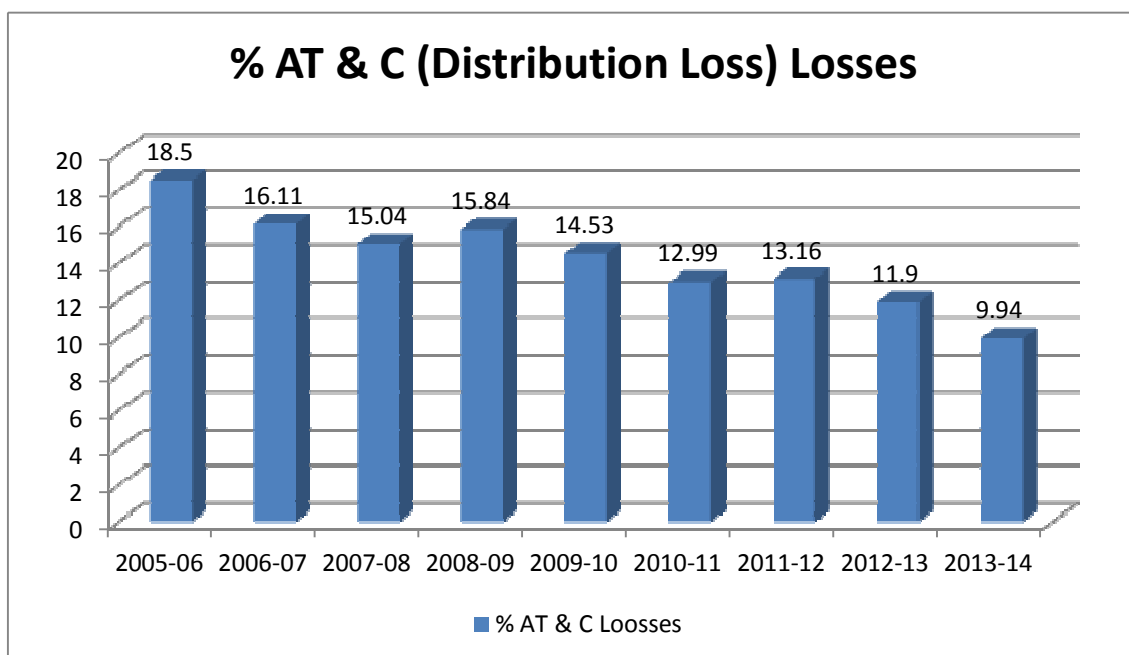
Particulars	YEAR	
	2012-13	2013-14
Input energy into the system in MUs (A)	12807	16835
Units billed in MUs (Sold out) (B)	11283	15162
Billing Efficiency (C=B/A)	88.10%	90.05%
Distribution losses in MUs (D=A-B)	1524	1673
Distribution losses in %age	11.90%	9.94%
Collection Efficiency in %age (E)	100%	100%
%AT&C Losses $\{(1-\text{Billing Efficiency}(C) \times \text{Collection Efficiency}(E)) \times 100$	11.90%	9.94%

Energy Conservation Projects

1. AT&C (Distribution losses) LOSSES REDUCTION

Most important efficiency parameter of a Distribution Licensee is the success in reducing the AT&C losses especially in relation to the regulatory targets that have been set up.

Hence, since the commencement of commercial operations of the company in 2005, reduction of AT&C losses has been one of our crucial activities. Thus in a span of 8 years, since the formation of the Company, the % reduction achieved in the AT&C losses is to the tune of 6.60%. During the year the DISCOM has achieved the actual Distribution losses of 9.94%.



The Distribution loss, which is a combination of Technical and Commercial losses, has been brought down to the present levels through a number of rectification activities as enumerated below.

Reduction of Technical Losses

- i. Bifurcation of lengthy/overloaded feeders either from the Existing S/S or by erecting new feeders from the newly commissioned S/S in co ordination with the State Transmission Utility (GETCO). The total no of feeders bifurcated and New S/S commissioned in the last few recent few years are as under.

PARTICULARS	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
No. of feeders bifurcated	14	18	33	49	68	57
No. of New S/S Commissioned.	5	7	10	19	16	18

- ii. Replacement of Conventional CRGO transformers by Amorphous Core transformers to achieve a reduction the Core losses by 40 to 45%. (No load losses of transformer). In fact, in the last four financial years a total of 6040 nos. CRGO transformers were replaced by Amorphous Core transformers.
- iii. Adoption of HVDS system to minimize the LT line losses, if not to eliminate which not only improves the HT/LT ratio in addition to curbing the power theft through hooking by unscrupulous consumers. The progresses of the HVDS system of the last 4 years are 1401 nos.

Reduction of Commercial Losses

The commercial losses mainly contributed by the poor and inefficient metering accounted for almost 64% (10.21% of the total of 16.11%) of the total Distribution losses in the year of commencement of operations of the Company. However, through a series of continuing rectification activities the Company has been able to reduce the Commercial losses and as on today it accounts for only 40% % of the total Distribution losses (4.23 % of total of 10.21%). The steps taken by the company in the reduction of commercial losses are as under:-

- i. Replacement of old/sluggish meters by new quality/static meters along with providing New Metal Meter Boxes (MMB), and sealing of the installations to make them foolproof.

Particulars	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Replacement of old/faulty meters.	120962	82103	47991	171145	124225	136264

- ii. Replacement of Bare LT conductors with LT Aerial Bunched Cables (ABC) in addition to the practice of erecting LT lines in theft prone areas by using A B Cables only.

Particulars	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Providing L T A B Cables in KMS.	24	419	714	1814	2345	1916

- iii. Vigorous installation checking programs conducted by the Vigilance wing of the company as well as by the (O&M) squads.

Particulars	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
%age installations checked to the total no. of installations.	11.14%	8.82%	9.9%	8.46%	10.21%	7.35%

- iv. Adoption of the facility of Automatic Meter Reading in case of HT/EHT consumers to avoid the manual intervention in addition to cross verification of the meter readings taken by meter readers in case of LT consumers, analysis of consumption category wise, verification of the zero/Low consumption cases as well as the non-billing cases.

Furthermore RAPDRP scheme covering part A and Part B was introduced to bring down the losses.

2. Increase in collection efficiency

As a part of increasing the consumer's satisfaction in addition to the increased collection efficiency, DGVCL has taken a number of steps to facilitate the consumers in payment of their energy bills.

3. Fulfilment of RPO obligations

Renewable Purchase Obligations as stipulated by regulator GERC are complied in letter and spirit by the company. As against the RPO of 7% for 2013-14, the actual consumption from renewable sources from wind, solar and biomass was 7.07%.

Other Initiatives

- i. "DGVCLAapneDware"
DGVCL has introduced the unique concept of "DGVCL AapneDware" consumer centric program by arranging program at pre-determined places convenient to consumer mass and dates. A total 51 Nos. of such programs were arranged in one month covering 112 nos. of sub divisions by giving wide publicity through press well in advance to resolve the grievances of the consumer on the spot. In addition to this, LokDarbars are arranged at Taluka headquarters for on the spot redressal of consumer complaints and also collection of customer feedback. In the last year alone, 10 such LokDarbars were arranged.
- ii. Lighting Day
DGVCL has celebrated LIGHTING DAY on 16-17th October 2013, just before Dipawali Festival- "The festival of Lights".
*Total 5539 nos. of connections were released in two days.

*It has enhanced the trust bonding and consumer's satisfaction towards the company's customer friendly policies.

iii. Consumer Redressal Committees:

As per notification no: 4 of 2004 of GERC DGVCL has formed 3 Tier style Complaint Redressal Committees at division offices and circle offices and consumer grievances Redressal forum at corporate office.

iv. Creating Brand Image Of Company

- Distribution of energy conservation pamphlets among common people and displaying hoardings at public places and major division and circle office buildings.

Adoption of technological solutions

- Adoption of Web-based RAPDRP GIS in 33 Sub Divisions covering 8.54 Lacs consumers which facilitate the DISCOM for better Complaints resolution, maintenance, inventory of Assets etc.
- Spot Billing through Hand Held Equipments (HHE) introduced in town areas of four Circles as a part of enhancing customer satisfaction by prompt issue of bills, and elimination of human errors and delay in rectification of the same. GPRS based spot billing of LT consumers is started from April 2012.
- Monitoring of the HT Consumers through Automatic Meter Reading (AMR) devices.
- To provide conventional electricity to the tribal residents of Shurpaneshvar Wild life Sanctuary of NARMADA District above 135 Km underground cable is laid and villages are electrified
- In the year 1029 transformers are replaced during the year 2013-14 for reliable power supply.
- Aerial Bunched Cables are provided in Chemical polluted and costal area.
- The DISCOM has achieved approximately 100% Rev Collection efficiency since year 2006-2007.
- Hi-Tech Meter testing laboratory is provided.