Chapter II

Performance audits relating to Government companies

Dakshin Gujarat Vij Company Limited and Paschim Gujarat Vij Company Limited

2.1 Performance Audit of Power Distribution Utilities

Executive summary

The distribution system of the power sector constitutes the final link between the power sector and the consumers. The efficiency of the power sector is judged by the consumers on the basis of performance of this segment. However, it constitutes the weakest part of the sector, which is incurring large losses. In view of the above, the real challenge of reforms in the power sector lies in efficient management of the distribution system. Hence, the National Electricity Policy (NEP) also gives emphasis for the efficiency improvements and recovery of cost of services provided to consumers to make power sector sustainable at reasonable and affordable prices besides others.

Network planning and execution

The creation of distribution network and up-keep of existing network to ensure efficient distribution system for covering maximum population in the State is an important work of Power Distribution Companies (DISCOMs). As on 31 March 2011, the four DISCOMs in Gujarat had a total distribution network of 5,21,157 CKM, 1,190 substations and 4,41,095 transformers for catering supply of power to 1.13 crore consumers.. The increase in the distribution capacity during 2006-11 could not match the pace of growth in consumer demand in all the DISCOMs as a whole as well as in Dakshin Gujarat Vij Company Limited (DGVCL) and Pashchim Gujarat Vij Company Limited (PGVCL). The inadequacy of available transformers capacity of DISCOMs to meet the connected load as on 31 March 2011 led to overloading of network and consequential rotational cuts in distribution of electricity. In selected three divisions of PGVCL, due to improper management of feeders, the connected load was very low compared to the transformer capacity which led to the loss of 104.92 million units valuing ₹ 42.08 crore in the form of iron and copper losses.

Implementation of central schemes

The NEP envisages supply of electricity to all areas including rural areas. Accordingly, Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) of Government of India (GoI) was being implemented. Overall funds of ₹ 135.33 crore under RGGVY remained unutilised by four DISCOMs (March 2011). Further, the deficiencies viz., delay in execution of work, non-synchronisation of activities, poor workmanship in execution of work, etc., were noticed in implementation of the scheme.

Under GoI's Restructured Accelerated Power Development Reforms Programme (R-APDRP), the DISCOMs were to establish IT enabled system (Part A) for the distribution management and also to strengthen sub-transmission and distribution system (Part B). As on 31 March 2011, out of ₹ 23.28 crore and ₹75.26 crore sanctioned (June 2009) to DGVCL and PGVCL respectively under Part A, ₹ 7.01 crore and ₹41.67 crore were released. Against this, ₹6.54 crore and ₹ 7.17 crore was actually utilised by

DGVCL and PGVCL respectively. Further, though funds of ₹ 50.14 crore and ₹ 140.58 crore were sanctioned in March/December 2010 for Part B for DGVCL and PGVCL respectively, the works were not started even after a lapse of nine months (DGVCL) and 18 months (PGVCL) since sanction of loans. During 2006-11, the AT&C losses ranged between 20.59 and 18.35 per cent and 33.77 to 29.03 per cent in DGVCL and PGVCL respectively against the envisaged norm of 15 per cent under R-APDRP.

Operational efficiency

The operational performance of the DISCOM is judged on the basis of availability of adequate power for distribution, adequacy and reliability of distribution network, minimising line losses, detection of theft of electricity, etc.

In DGVCL and PGVCL the distribution loss was in excess of Gujarat Electricity Regulatory Commission (GERC) guideline by 213.14 MUs valuing ₹ 105.79 crore (2008-10) and by 1,076.48 MUs valuing ₹ 451.01 crore (2007-11) respectively. The reasons for the high losses included decrease in maintenance activities, excessive failure of transformers (DTRs), delay in repairing DTRs, slow replacement of conventional meters with static/quality meters, non metering of all agricultural consumers, slow implementation of LT less system, slow conversion of LT conductors with Aerial bunch cables, high incidence of theft, etc.

Billing and collection efficiency

Deficiencies in billing system such as unrealistic estimation of agricultural consumption contrary to GERC directives and under recovery of additional Security Deposit (₹ 297.46 crore in DGVCL and ₹ 223.10 crore in PGVCL) were noticed. As far as collection efficiency was concerned, non/delay in disconnection of defaulted consumers, delay in issuance of estimate/release of connection order and delay in execution of decree for recovering dues were noticed.

Financial management

The turnover of DISCOMs was ₹ 19,053.09 crore in 2010-11, which was equal to 30.24 per cent and 3.70 per cent of the State Working PSUs turnover and State Gross Domestic Product, respectively. The holding company Gujarat Urja Vikas Nigam Limited is arranging for borrowings for meeting short and long term requirements of funds of DISCOMs. Hence, DISCOMs do not have any active role in arrangement of funds. However, DGVCL on its own accord, unwarrantedly borrowed funds of ₹ 80 crore and repaid it prematurely resulting in loss of interest of ₹ 8.25 crore. Further, instances of financial losses due to deficiencies such as non-availment of rebate (₹ 286.62 crore) from holding company for prompt payment against procurement of power, supply of power by DGVCL to agriculture consumers beyond eight hours without any commitment from GoG, for reimbursement of losses (₹ 38.94 crore), etc., were noticed.

Subsidy Support and Cross Subsidisation

Subsidy support from GoG showed a decreasing trend in two DISCOMs during review period. National Tariff Policy (NTP) envisaged that the tariff of all categories of consumers should range within plus or minus 20 per cent of the Average cost of supply (ACOS) by the year 2010-2011. However, fixation of tariff as per the norms of NTP could not be achieved by the two DISCOMS and there was cross subsidisation exceeding the said norms.

Tariff Fixation

The delay in filing of Annual Revenue Requirement in 2008-09 led to revenue loss of ₹ 51.75 crore in DGVCL and ₹ 48.89 crore in PGVCL. In none of the years during 2006-11 any of the two DISCOMs could recover the fixed costs fully against the revenue from sale of energy which indicate that tariff is on lower side and needs revision.

Consumer satisfaction

As per GERC guidelines for redressing the grievances of consumers, the details in a prescribed proforma are required to be maintained. However, in the test checked three divisions of DGVCL, the registers maintained were deficient so far as they did not record the details such as classification and nature of complaint,

time and date of redressal of grievances, etc.

Energy Conservation

DGVCL and PGVCL did not conduct energy audit during 2006-11 which would have, otherwise, enabled them to identify the areas of energy losses and take steps to reduce the same through system improvements, besides accurately accounting for the units purchased/sold and losses at each level.

Further, the fund provided (2006-11) by GoG for energy conservation activities were not fully utilised by the two DISCOMs.

Conclusion

The distribution reforms envisaged under National Electricity Policy/Plans were not fully achieved by the two DISCOMs. The improper management of feeders in PGVCL led to excessive distribution losses. The implementation of various GoI Schemes for rural electrification and system upgradation/controlling of AT&C losses were sub-optimal on account of several reasons like, poor workmanship/non-synchronisation of activities, inadequate maintenance activities, slow replacement of conventional meters with static/quality meters, failure in cent percent metering of agricultural consumers, slow implementation of LT less system, etc. Non-collection of additional security deposits, lack of financial autonomy, etc affected the financial health of the DISCOMs. The guidelines of GERC were not strictly adhered to as far as addressing the consumer grievances and conducting energy audits were concerned.

Recommendations

The performance audit contains seven recommendations for timely implementation of GoI Schemes, strengthening the distribution network, expediting the cent percent metering of the agricultural consumers and other measures for controlling the AT&C losses, taking corrective measures for timely recovery of dues from consumers, financial autonomy to DISCOMs, timely redressal of consumer complaints and conducting energy audit.

Introduction

2.1.1 The distribution system of the power sector constitutes the final link between the power sector and the consumer. The efficiency of the power sector is judged by the consumers on the basis of performance of this segment. However, it constitutes the weakest part of the sector, which is incurring large losses. In view of the above, the real challenge of reforms in the power sector lies in efficient management of the distribution system. The National Electricity Policy (NEP) in this regard *inter alia* emphasises on the adequate transition from financing support to aid restructuring of distribution utilities, efficiency improvements and recovery of cost of services provided to consumers to make the power sector sustainable at reasonable and affordable prices besides others.

2.1.2 As part of power sector reforms, the erstwhile Gujarat Electricity Board (GEB) was unbundled (1 April 2005) into seven[1] companies consisting of one holding company dealing with power purchase and other functions on

[1] (i) **Holding Company** viz., Gujarat Urja Vikas Nigam Limited (GUVNL) –deals with power purchase and other functions on behalf of all the subsidiary companies viz., **Power Generation Company** (ii) Gujarat state Electricity Corporation Limited (GSECL) **Power Transmission Company** (iii) Gujarat Energy Transmission Corporation Limited (GETCO) **Power Distribution companies** (iv) Uttar Gujarat Vij Company Limited (UGVCL) –in north Gujarat (v) Dakshin Gujarat Vij Company Limited (DGVCL) –in south Gujarat (vi) Paschim Gujarat Vij Company Limited (PGVCL) –in west Gujarat and (vii) Madhya Gujarat Vij Company Limited (MGVCL) –in central Gujarat.

behalf of all the six subsidiaries, including one power generation company, one transmission company and four power distribution companies. All the four Distribution companies (DISCOMs) were incorporated on 15 September 2003 under the Companies Act 1956. The DISCOMs are under the administrative control of Energy and Petrochemicals Department of Government of Gujarat (GoG). The management of each DISCOM is vested with a Board of Directors (BoD) comprising Chairman, Managing Director (MD) and the directors appointed by GoG. The day-to-day operations are carried out by the MD, who is the Chief Executive of DISCOM with the assistance of functional heads (Technical, Finance, Human Recourses, Civil and the Company Secretary). During 2006-07, 33,189 Million Units (MUs) of energy were sold by all four DISCOMs which increased to 45,974 MUs during 2010-11, i.e. an increase of 38.52 *per cent* during 2006-11. As on 31 March 2011, the DISCOMs had a distribution network of 5,21,157 Circuit Kilometers (CKM), 1,190 substations (under the control of GETCO[2]) and 4,41,095 transformers of various categories while total number of consumers was 1.13 crore. The turnover of DISCOMs was ₹ 19,053.09 crore in 2010-11, which was equal to 30.24 *per cent* and 3.70 *per cent* of the State working PSUs turnover[3] and State Gross Domestic Product[4], respectively. The DISCOMs employed 30,405 employees as on 31 March 2011.

2.1.3 The NEP aims to bring about reforms in the Power Distribution Sector with focus on system upgradation, controlling and reduction of Transmission and Distribution (T&D) losses including power thefts and making the sector commercially viable besides putting an effective financing strategy in place so as to generate adequate resources. It further aims to bring out the conservation strategy to optimise utilisation of electricity with focus on demand side management and load management. In view of the above, it was proposed to conduct a performance review on the working of two selected Power Distribution Utilities, viz., Dakshin Gujarat Vij Company Limited (**DGVCL**) and Paschim Gujarat Vij Company Limited (**PGVCL**) in the State sector to ascertain whether they were able to adhere to the aims and objectives stated in the National Electricity Policy and Plan and how far the distribution reforms have been achieved.

Scope and Methodology of Audit

2.1.4 The present performance audit conducted during December 2010 to June 2011 covers the performance of DISCOMs during the period from 2006-07 to 2010-11. The performance audit mainly deals with Network Planning and execution, implementation of Central Schemes, Operational Efficiency, Billing and Collection efficiency, Financial Management, Consumer Satisfaction, Energy Conservation and Monitoring. The audit examination of two selected DISCOMs involved scrutiny of records at the Head Office (HO) and five[5] out of 17 divisions (29 *per cent)* under three

[2] Gujarat Energy Transmission Corporation Limited, a State PSU which involved in transmission of power to all DISCOMs.
[3] ₹ 63,008.20 crore.
[4] ₹ 5,14,750 crore.
[5] Vapi O&M, Vapi Industrial, Vyara O&M, Ankleshwar Industrial and Surat Industrial

circles of **DGVCL** and 14[6] out of 41 divisions (34 *per cent)* under 11 circles of **PGVCL**. The divisions were selected based on highest revenue, highest transmission and distribution (T&D) losses and highest spending on implementation of Government schemes. The records of 23 and 76 sub-divisions of five and 14 selected Divisions of **DGVCL** and **PGVCL** respectively were also examined in Audit.

The methodology adopted for attaining the audit objectives with reference to audit criteria consisted of explaining audit objectives to top management, scrutiny of records at HO and selected units, interaction with the auditee personnel, analysis of data with reference to audit criteria, raising of audit queries, discussion of audit findings with the Management and issue of draft performance audit to the Management and the concerned Department for comments.

Audit Objectives

2.1.5 The objectives of the performance audit were to assess whether:

- aims and objectives of National Electricity Policy/Plans were adhered to and distribution reforms achieved;
- the central schemes such as, Revised Accelerated Power Development & Reform Programme (RAPDRP) and Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) were implemented efficiently and effectively;
- the power demand of the consumers in the state was met through efficient operation;
- the billing and collection of revenue from consumers were efficient;
- the financial management was effective and surplus funds, if any, were judiciously invested;
- an appropriate system is in place to assess consumer satisfaction and redressal of grievances;
- energy conservation measures were undertaken; and

Audit Criteria

2.1.6 The audit criteria adopted for assessing the achievement of the audit objectives were:

- Provisions of Electricity Act 2003;

[6] Surendranagar I, Surendranagar II, Savarkundla, Una, Botad, Bhavanagar Rural, Morbi, Bhuj O&M, Anjar, Jamnagar City 2, Porbandar City, Veeraval, Rajkot City 1 and Rajkot Rural Division.

- National Electricity Policy, Plan and norms concerning distribution network of DISCOMs and Planning criteria fixed by the SERC,
- Terms and conditions contained in the Central Scheme Documents;
- Standard procedures for award of contract and reference to principles of economy, efficiency and effectiveness;
- Norms prescribed by various agencies with regard to operational activities;
- Norms of technical and non-technical losses; and
- Guidelines/instructions/directions of GoG/SERC.

Financial Position and Working Results of the selected DISCOMs

2.1.7 The financial position of **DGVCL** for the last five years ending 2010-11 is given below:

(₹ in crore)

Particulars	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
A. Liabilities					
Paid-up Capital	0.05	0.05	267.73	267.73	267.73
Share Capital Suspense account	291.58	291.58	0	0	0
Reserve & Surplus	30.33	31.87	253.55*	275.12	337.87
Deferred Govt. grants, subsidies and consumer contributions	306.52	282.60	409.23	517.52	667.33
Borrowings (Loan Funds)					
Secured	29.87	404.81	340.03	295.92	171.51
Unsecured	626.19	253.37	298.07	240.34	149.16
Current Liabilities & Provisions	678.60	759.29	884.81	986.19	1,104.07
Total	**1,963.14**	**2,023.57**	**2,453.42**	**2,582.82**	**2,697.67**
B. Assets					
Gross Block	1,287.16	1,502.88	1,716.53	1,893.75	2,070.46
Less: Depreciation	192.85	255.60	329.21	411.74	503.71
Net Fixed Assets	1,094.31	1,247.28	1,387.32	1,482.01	1,566.75
Capital works-in-progress	9.06	13.19	8.80	21.39	49.17
Investments	0.00	0.00	0.00	0.00	0.00
Current Assets, Loans and Advances	859.77	763.10	1,057.30	1,079.42	1,081.75
Total	**1,963.14**	**2,023.57**	**2,453.42**	**2,582.82**	**2,697.67**
Net Worth[7]	**321.96**	**323.50**	**521.28**	**542.85**	**605.60**

* Includes Security Premium amount of ₹ 218.68 crore

Source: Annual Accounts of **DGVCL**

It may be seen from the above that the Net worth of **DGVCL** increased from ₹ 321.96 crore to ₹ 605.60 crore during the audit period. The Share Capital Suspense Account (₹ 291.58 crore) above represents the amount transferred by the GoG to **DGVCL** after unbundling (April 2005) of erstwhile GEB but pending issue of share capital. During 2008-09, the GoG bifurcated the said

[7] Net worth includes Paid-up capital, share capital suspense account and Reserves and Surplus

amount of share capital suspense account into equity share capital (₹ 72.90 crore) and share premium account (₹ 218.68 crore) which was grouped under Reserves and Surplus. In addition to that, in the same year (2008-09), the GoG had further infused ₹ 164.78 crore as equity capital and ₹ 30 crore as share application money which was converted into equity capital in 2009-10. As a consequential impact, the Paid-up capital and Reserves and Surplus increased from ₹ 0.05 crore (2007-08) to ₹ 267.73 crore (2008-09) and from ₹ 31.87 crore (2007-08) to ₹ 253.55 crore (2008-09) respectively. The increase in the equity capital during 2008-09 has the corresponding impact of increasing the net worth of the Company from ₹ 323.50 crore (2007-08) to ₹ 521.28 crore (2008-09).

2.1.8 The particulars of cost of electricity vis-à-vis revenue realisation per unit of **DGVCL** are indicated below in the working results:

(₹ in crore)

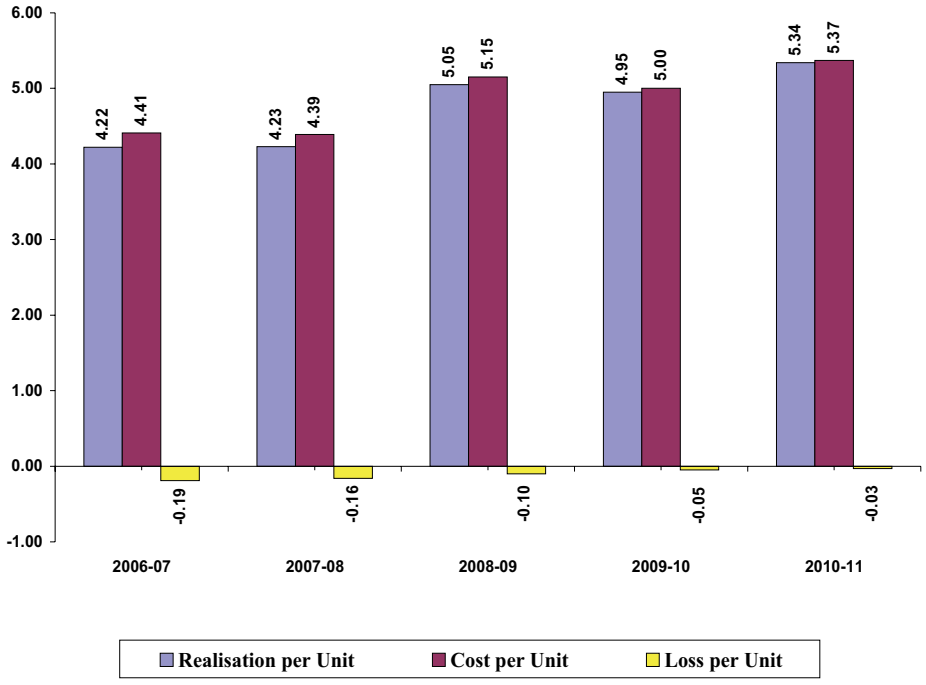
Sl. No.	Description	2006-07	2007-08	2008-09	2009-10	2010-11
1	Income					
(i)	Revenue from Sale of Power	3,138.46	3,324.59	4,148.22	4,384.36	5,210.31
(ii)	Revenue subsidy & grants	49.28	49.38	49.70	48.98	46.66
(iii)	Other income	174.11	133.14	84.75	88.62	119.47
(iv)	**Total Income**	**3,361.85**	**3,507.11**	**4,282.67**	**4,521.96**	**5,376.44**
2	Distribution (In MUs)					
(i)	Total power purchased	9,525	9,918	10,331	11,266	11,704
(ii)	Less: Transmission losses, if available	473	483	590	701	482
(iii)	Net Power available for Sale	9,052	9,435	9,741	10,565	11,222
(iv)	Less: Sub-transmission & distribution losses	1,495	1,456	1,436	1,606	1,385
(v)	**Net power sold**	**7,557**	**7,979**	**8,305**	**8,959**	**9,837**
3	Expenditure on Distribution of Electricity					
(a)	Fixed cost					
(i)	Employees cost	143.65	124.61	147.21	173.90	174.48
(ii)	Administrative and General expenses	22.53	24.49	26.42	30.89	31.13
(iii)	Depreciation	53.59	64.58	75.57	85.20	92.97
(iv)	Interest and finance charges	80.37	73.29	89.42	92.69	86.45
(v)	Other Expenses (Capitalised expenses)	(50.78)	(42.88)	(40.85)	(38.55)	(38.68)
(vi)	**Total fixed cost**	**249.36**	**244.09**	**297.77**	**344.13**	**346.35**
(b)	Variable cost					
(i)	Purchase of Power	3,030.39	3,194.76	3,953.55	4,048.68	4,880.88
(ii)	Repairs & Maintenance	21.58	35.67	20.33	16.40	20.31
(iii)	Other debits	32.98	30.57	7.32	71.82	40.81
(iv)	**Total variable cost**	**3,084.95**	**3,261.00**	**3,981.20**	**4,136.90**	**4,942.00**
(c)	**Total cost 3(a) + (b)**	**3,334.31**	**3,505.09**	**4,278.97**	**4,481.03**	**5,288.35**
4	Realisation (₹ per unit sold) (including revenue subsidy) ((1(i) + 1(ii))/ 2(v) X10)	4.22	4.23	5.05	4.95	5.34
5	Fixed cost (₹ per unit) (3(a) (vi) / 2(v) X10)	0.33	0.30	0.36	0.38	0.35
6	Variable cost (₹ per unit) (3(b) (iv) / 2(v) X10)	4.08	4.09	4.79	4.62	5.02
7	Total cost per unit (in ₹) (5+6)	4.41	4.39	5.15	5.00	5.37
8	Contribution (4-6) (₹ per unit)	0.14	0.14	0.26	0.33	0.32
9	**Profit (+)/Loss(-) per unit (in ₹) (4-7)**	**-0.19**	**-0.16**	**-0.10**	**-0.05**	**-0.03**

Source: Annual Accounts and Information furnished by **DGVCL**

It may be seen from the above that while the realisation *per* unit increased from ₹ 4.22 to ₹ 5.34 during 2006-11 (26.54 *per cent*), the total cost per unit also increased from ₹ 4.41 to ₹ 5.37 (21.77 *per cent*) during the corresponding period. The contribution per unit had increased by around 128 *per cent* from ₹ 0.14 to ₹ 0.32 during the period 2006-2011 with corresponding decrease in loss per unit from ₹ 0.19 (2006-07) to ₹ 0.03 (2010-11), viz., more than 84 *per cent*. The main reason behind the significant decrease in loss per unit was upward revision in tariff structure during the year 2008-09.

Recovery of cost of operations

2.1.9 DGVCL was not able to recover its cost of operations. During the last five years ending 2010-11, the loss per unit is as given in the graph below:



It may be seen from the working results that there had been a revenue gap[8] of ₹ 146.57 crore in 2006-07 (even after including revenue subsidies and grants), which decreased to ₹ 31.38 crore in 2010-11. Though the revenue gap has recorded significant reduction during 2006-11, the same needs attention of GoG for necessary remedial action.

[8] Total Income (Excluding other income) less Total Cost

2.1.10 The financial position of **PGVCL** for the last five years ending 2010-11 is given below:

(₹ in crore)

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
A. Liabilities					
Paid up Capital	0.05	0.05	462.90	462.90	562.90
Share Suspense account	869.63	869.63	0	0	0
Reserve & Surplus	44.28	45.44	698.76*	702.61	705.72
Deferred Govt. grants, subsidies and consumer contributions	429.32	407.48	520.21	653.64	778.78
Borrowings					
Secured	0	609.21	482.57	348.50	254.86
Unsecured	1,863.41	649.28	754.20	671.53	547.54
Current Liabilities & Provisions	709.25	1,442.05	1,796.11	2,068.98	2,577.86
Total	**3,915.94**	**4,023.14**	**4,714.75**	**4,908.16**	**5,427.66**
B. Assets					
Gross Block (includes assets not in use)	2,899.50	3,265.29	3,764.89	4,419.39	5,044.50
Less: Depreciation	533.41	673.28	832.43	1,019.95	1,241.71
Net Fixed Assets	2,366.09	2,592.01	2,932.46	3,399.44	3,802.79
Capital works-in-progress	86.13	96.50	140.21	123.56	166.62
Investments	0	0	0	0	
Current Assets, Loans and Advances	1,462.48	1,333.80	1,641.67	1,384.24	1,456.10
Miscellaneous Expenditure to the extent not written off	1.24	0.83	0.41	0.92	2.15
Accumulated losses	0	0	0	0	0
Total	**3,915.94**	**4,023.14**	**4,714.75**	**4,908.16**	**5,427.66**
Net Worth	**913.96**	**915.12**	**1,161.66**	**1,165.51**	**1,268.62**

* Includes Security Premium amount of ₹ 652.23 crore
Source: Annual Accounts of **PGVCL**

It may be seen from the above that the Net worth of **PGVCL** increased from ₹ 913.96 crore to ₹ 1268.62 crore during the audit period. The Share Capital Suspense Account (₹ 869.63 crore) above represents the amount transferred by the GoG to **PGVCL** after unbundling (April 2005) of erstwhile GEB but pending issue of share capital. During 2008-09 the GoG bifurcated the said amount of share capital suspense account into equity share capital (₹ 217.40 crore) and share premium account (₹ 652.23 crore) which was grouped under Reserves and Surplus. In addition to that in the same year (2008-09) the GoG had further infused ₹ 205.45 crores as equity capital and ₹ 40 crore as share application money. As a consequential impact, the Paid-up capital and Reserves and Surplus increased from ₹ 0.05 crore (2007-08) to ₹ 462.90 crore (2008-09) and from ₹ 45.44 crore (2007-08) to ₹ 698.76 crore (2008-09) respectively. The increase in the equity capital during 2008-09 has the corresponding impact of increasing the net worth of the Company from ₹ 915.12 crore (2007-08) to ₹ 1,161.66 crore (2008-09). The increase in the current liabilities and provisions (CL&P) during 2007-08 was mainly due to regrouping of security deposit of consumers to the extent of ₹ 674 crore under CL&P which was shown under unsecured loans during 2006-07. In addition, the CL&P kept on increasing during 2008-11 due to increase in the dues of **PGVCL** to GUVNL.

2.1.11 The particulars of cost of electricity vis-à-vis revenue realisation per unit of **PGVCL** are indicated below in the working results:

(₹ in crore)

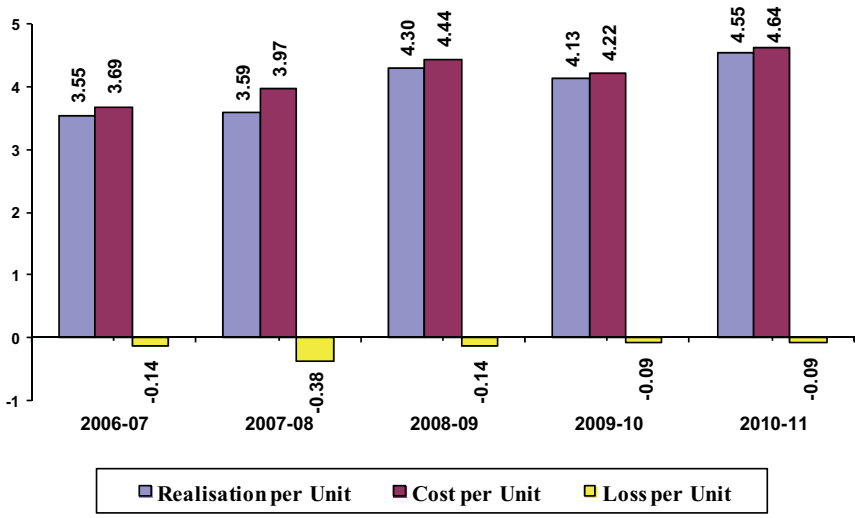
Sl. No.	Description	2006-07	2007-08	2008-09	2009-10	2010-11
1	**Income**					
(i)	Revenue from Sale of Power	3,361.17	3,782.25	4,951.65	5,192.75	6,285.65
(ii)	Revenue subsidy & grants	474.22	466.24	403.00	394.32	397.50
(iii)	Other income	179.89	453.07	172.55	142.11	157.22
(iv)	**Total Income**	**4,015.28**	**4,701.56**	**5,527.20**	**5,729.18**	**6,840.37**
2	**Distribution (In MUs)**					
(i)	Total power purchased	16,985	18,413	19,189	21,167	20,883
(ii)	Less: Transmission losses, if available	839	973	1186	1309	860
(iii)	Net Power available for Sale	16,146	17,440	18,003	19,858	20,023
(iv)	Less: Sub-transmission & distribution losses	5,332	5,603	5,554	6,345	5,324
(v)	**Net power sold**	**10,814**	**11,837**	**12,449**	**13,513**	**14,699**
3	**Expenditure on Distribution of Electricity**					
(a)	**Fixed cost**					
(i)	Employees cost	280.75	290.16	363.46	389.93	390.29
(ii)	Administrative and General expenses	82.57	57.84	68.66	75.16	80.26
(iii)	Depreciation	130.89	143.34	161.51	188.58	223.92
(iv)	Interest and finance charges	145.19	142.53	144.96	148.10	137.58
(v)	Other Expenses (Capitalised expenses)	(36.47)	(42.47)	(121.55)	(140.89)	(134.63)
(vi)	**Total fixed cost**	**602.93**	**591.40**	**617.04**	**660.88**	**697.42**
(b)	**Variable cost**					
(i)	Purchase of Power	3,313.47	3,996.50	4,817.48	4,882.97	5,967.50
(ii)	Repairs & Maintenance	77.00	82.84	66.52	75.09	69.13
(iii)	Other debits	(1.05)	0	11.42	77.57	81.81
(iv)	Prior period expenses (net off increase)	0.77	28.67	12.55	4.75	-0.13
(v)	**Total variable cost**	**3,390.19**	**4,108.01**	**4,907.97**	**5,040.38**	**6,118.31**
(c)	**Total cost 3(a) + (b)**	**3,993.12**	**4,699.42**	**5,525.01**	**5,701.26**	**6,815.73**
4	Realisation (₹ per unit sold) (including revenue subsidy) ((1(i) + 1(ii))/ 2(v) X10)	3.55	3.59	4.30	4.13	4.55
5	Fixed cost (₹ per unit) (3(a) (vi) / 2(v) X10)	0.55	0.50	0.50	0.49	0.47
6	Variable cost (₹ per unit) (3(b) (v) / 2(v) X10)	3.14	3.47	3.94	3.73	4.17
7	Total cost per unit (in ₹) (5+6)	3.69	3.97	4.44	4.22	4.64
8	Contribution (4-6) (₹ per unit)	0.41	0.12	0.36	0.40	0.39
9	**Profit (+)/Loss(-) per unit (in ₹) (4-7)**	-0.14	-0.38	-0.14	-0.09	-0.09

Source: Annual Accounts and information furnished by **PGVCL**

It may be seen from the above that while the realisation *per* unit increased from ₹ 3.55 to ₹ 4.55 during 2006-11 (28.17 *per cent*), the total cost per unit also increased from ₹ 3.69 to ₹ 4.64 (25.75 *per cent*) during the corresponding period. As a result, the contribution per unit had decreased from ₹ 0.41 to ₹ 0.39 during 2006-2011.

Recovery of cost of operations

2.1.12 PGVCL was not able to recover its cost of operations during the last five years ending 2010-11; the loss ranged from ₹ 0.38 in 2007-08 to ₹ 0.09 in 2010-11 per unit as given in the graph below:



It may be seen from the working results that there had been a revenue gap of ₹ 157.73 crore in 2006-07 (even after including revenue subsidies and grants), which decreased to ₹ 132.58 crore in 2010-11. The revenue gap recorded during 2010-11 is significant and needs attention of GoG for necessary remedial action.

Our analysis revealed that main reasons for low realisation per unit in **DGVCL** and **PGVCL** were low agricultural tariff, failure in cent *per cent* metering of agricultural consumers and slow replacement of electro-mechanical meters with static/quality meters, as discussed in the succeeding paragraphs.

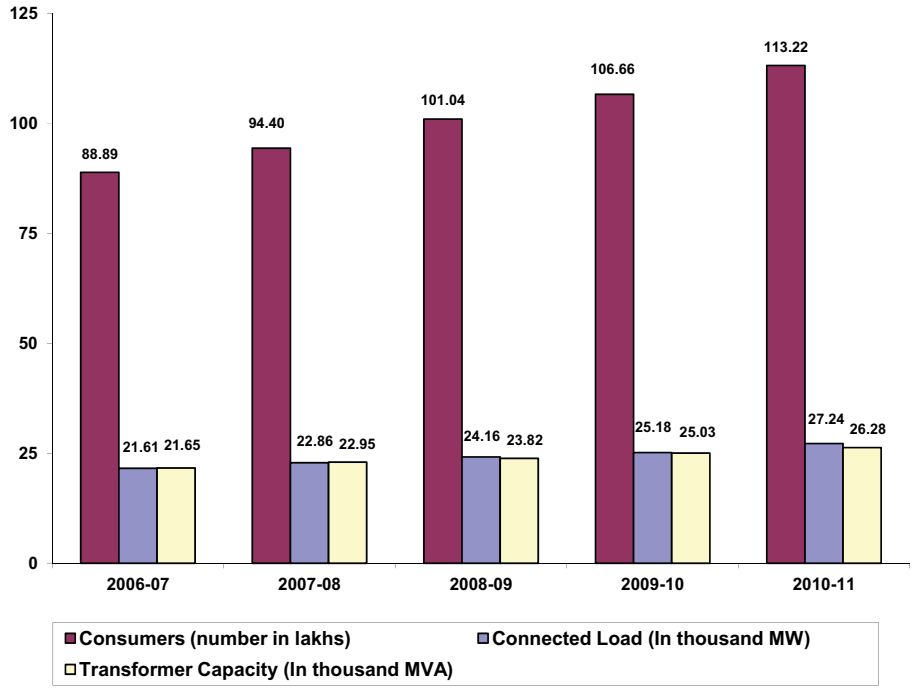
Audit Findings

2.1.13 We explained the audit objectives to the selected DISCOMs during an 'Entry Conference' held on 8 March 2011 **(PGVCL)** and 10 March 2011 **(DGVCL)**. Subsequently, audit findings were reported to both the DISCOMs and the GoG in July 2011 and discussed in an 'Exit Conference' held with the Management of **PGVCL** on 4 August 2011 and **DGVCL** on 9 September 2011 which was attended by MD and heads of the departments of both the DISCOMs. The Management of both the DISCOMs replied to the audit findings in August 2011 which were endorsed (September 2011) by the State Government. The views expressed by them have been duly considered while finalising this performance audit. The audit findings are discussed in subsequent paragraphs.

Distribution Network Planning

2.1.14 The Power Distribution Companies in the State are required to prepare long term/annual plan for creation of infrastructural facilities for efficient distribution of electricity so as to cover maximum population in the State. Besides, the upkeep of the existing network, additions in distribution network are planned keeping in view the demand/connected load, anticipated new connections and growth in demand based on Electric Power Survey. Considering physical parameters, Capital Investment Plans are submitted to the GoG/SERC. The major components of the outlay include normal development and system improvement besides rural electrification and strengthening of IT enabled systems.

The particulars of consumers and their connected load during 2006-11 for the **DISCOMs** as a whole are given below in the bar chart.



While the system improvement and rural electrification schemes have been dealt with separately under subsequent paragraphs, the particulars of distribution network planned vis-a-vis achievement thereagainst for the DISCOMs as a whole and the selected DISCOMs, i.e. **DGVCL** and **PGVCL** is depicted in ***Annexure 7***. The network infrastructure covering transmission lines and sub-stations are created and maintained by Gujarat Energy Transmission Corporation Limited (GETCO) which is not covered in this review.

As can be seen from ***Annexure 7*****,** the overall connected load of the DISCOMs as a whole had increased from 21,606 MW (equivalent to 27,007.5 MVA at 0.80 power factor) in 2006-07 to 27,239 MW (equivalent to 34,048.75 MVA) in 2010-11. Against this, the increase in the available transformers capacity of

DISCOMs as a whole was from 21,645 MVA (2006-07) to 26,277 MVA (2010-11) as depicted in the graph. Thus, the increase in distribution capacity could not match the pace of growth in consumer demand. As such, the available transformers capacity of 34,048.75 MVA of the four DISCOMs as on 31 March 2011 was inadequate to meet the connected load of 27,239 MW (equivalent to 34,048.75 MVA) as on that date.

In **DGVCL** and **PGVCL** also, against the connected load of 5,335 MW (equivalent to 6,668.75 MVA) and 10,141 MW (equivalent to 12,676.25 MVA) as on 31 March 2011, the available transformers capacity was 4,086 MVA and 10,347 MVA respectively. Thus, the available transformers capacity in both the DISCOMs selected in the review was also inadequate to meet the connected load as on 31 March 2011, which led to overloading of network and consequential rotational cuts in power distribution by the DISCOMs.

Management of feeders

2.1.15 The power supply from the substation reaches the consumer through the feeders and the transformers. The management of feeder *inter alia* includes proper allocation of transformers under each feeder and also ensuring the optimum utilization of transformers by proper allocation of connected load (contracted load) under it. A review of management of feeders in selected three divisions (Jamnagar, Porbandhar and Veraval) of **PGVCL** relating to 2007-08 to 2009-10 revealed that the total connected load (contracted load) was very low as compared to stipulated load of 80 *per cent* of the transformer capacity causing significant energy loss.

Test check of records of 260 out of 2,003 feeders, conducted during the period, showed that in 2,601 transformers of 53 feeders, the connected load was less than 80 *per cent* as detailed below:

Total number of feeders/transformers	Percentage of connected load to Transformer capacity				
	less than 30	30 to 50	50 to 60	60-70	70-80
53/2,601	15/834	22/1,286	6/181	6/153	4/147

Improper management of feeders led to loss of 104.92 million units valuing ₹ 42.08 crore (2007-10)

We observed thOat though the connected load was low, **PGVCL** used higher capacity transformers viz., 25, 63, 100 and 200 KVA under the above feeders instead of using lower capacity transformers viz., 5, 10, and 16 KVA. As a result of not using the transformer capacity commensurate with the connected load led to loss of 104.92 million units valuing ₹ 42.08 crore (calculated at the average realisation rate of ₹ 4.01 for 2007-10) in the form of Iron and Copper loss[9].

[9] **Iron loss** is also called core loss or excitation loss. It is the power used in the process of exciting the core of a transformer. **Copper losses** are an undesirable transfer of energy, as are core losses, which result from induced currents in adjacent components. The term is applied regardless of whether the windings are made of copper or another conductor such as aluminium.
Iron – 1,15,00,124 units and Copper - 9,34,25,671 units (Standard value of iron/copper loss (in watts) x no. of transformers = Total iron/copper loss (in watts)/1000 = Loss in KW x 24 hrs x 365 days = Annual loss.)

At the same time, however, we observed that **PGVCL** as a whole was facing a large number of Distribution Transformers (DTRs) failure ranging from 91.90 to 97.53 *per cent* on account of overloading of DTRs as discussed under paragraph **2.1.34**.

Thus, the Company needs to commission the feeders and DTRs of the capacity commensurate with the connected load based on the study/assessment of region-wise actual consumer demand.

PGVCL stated (August 2011) that very low connected load to the transformers was due to using of higher capacity transformers as against the lower contracted load, since the lower capacity transformers were not available in the market. However, now it had started using lower capacity transformers.

The reply is not tenable. Since **PGVCL** did not attempt to purchase lower capacity transformers in the past, their contention that lower capacity transformers were not available in the market could not be established by **PGVCL**.

Implementation of Jyoti Gram Yojana

2.1.16 The GoG launched (2004-05) the Jyoti Gram Yojana **(JGY)** with the aim to provide continuous power supply for agriculture and domestic use in rural areas and to reduce the distribution losses of rural sector. Under the scheme, the power supply to rural areas is given through installation of separate JGY feeders, for agricultural use (three phase feeders) and domestic use (single phase feeders) with a view to provide uninterrupted supply for 8 to 10 hours per day for agricultural use and 24 hours supply for domestic use. The JGY was implemented till 2007-08 in the state as a whole at a total cost of ₹ 1,290 crore by incurring expenditure on feeders, HT/LT lines, transformers, poles, etc.

We observed that in **DGVCL** and **PGVCL,** though the main objective of 24 hours supply to rural areas was achieved, no significant achievement was noticed in reduction of distribution losses in JGY feeders. The distribution loss in JGY feeders after implementation (2008-11) was ranging from 52 to 60 *per cent* as against 60 to 66 *per cent* before implementation (2007-08) of JGY. The reasons for high losses were theft and pilferage of power, non replacement of defective conductors and non-replacement of conventional meters with static/quality meters.

While accepting the facts of the case, **PGVCL** stated (August 2011) that it had taken corrective measures by replacing the conductors, providing quality meters, de-augmentation of transformers etc., during 2008-10 thereby reducing the distribution losses from 66 to 52 *per cent* during 2008-11. The fact, however, remains that **PGVCL** failed to reduce distribution losses in JGY feeders to the norms prescribed by GERC (26 to 30 *per cent)*.

Implementation of Centrally Sponsored Schemes

Rural Electrification

2.1.17 The NEP states that the key objective of development of the power sector is to supply electricity to all areas including rural areas for which the GoI and the GoG would jointly endeavour to achieve this objective. Accordingly, the Rajiv Gandhi Grameen Vidhyutikaran Yojana (RGGVY) was launched in April 2005, which aimed at providing access to electricity for all households in five years for which the Government provides 90 *per cent* capital subsidy.

As per the scheme guidelines, a village is considered to be electrified if following conditions are fulfilled:

- basic infrastructure such as Distribution Transformer and Distribution lines are provided in the inhabited locality as well as the Dalit Basti hamlet where it exists;
- electricity is provided at all public places like Schools, Panchayat Office, Health Centers, Dispensaries, Community centers etc.; and
- at least 10 *per cent* of the total number of households in the village are electrified.

Besides, the GoI notified the Rural Electrification Policy (REP) in August 2006. The REP *inter alia* aims at providing access to electricity for all households by 2009 and minimum lifeline consumption of one Unit per household per day as a merit good by the year 2012. The other RE schemes viz., Accelerated Electrification of one lakh villages and one crore households, Minimum Needs Programme were merged into RGGVY. The features of the erstwhile 'Kutir Jyoti Programme' were also suitably integrated into this scheme.

Total villages falling under the jurisdictions of four DISCOMs were 18,065 (as per 2001 Census[10]). In respect of **DGVCL** and **PGVCL,** out of 3,683 and 5,629 villages as on 31 March 2006, 3,505 and 5,613 villages were electrified which was 95.17 *and* 99.72 *per cent* of total villages respectively (31 March 2011).

Funds available and its utilization

2.1.18 For implementation of the scheme, a Tripartite Agreement was entered between Rural Electrification Corporation (REC), GoG and respective DISCOMs for availing financial assistance from GOI. Of the total project cost, 90 *per cent* of the cost was given as subsidy and remaining 10 *per cent* in the form of loan carrying interest at the rate of five *per cent*. The loan was repayable in 15 years inclusive of five years moratorium. As per the condition

[10] Figures of 2001 census was considered in absence of figures of 2011 census

entered with REC, the project should be executed on a turnkey basis within a period of two years from the release of first installment. In the event the projects are not implemented satisfactorily in accordance with the scheme conditions, the capital subsidy could be converted into interest bearing loans. The position of the funds available vis-à-vis utilised under RGGVY by all the four DISCOMs for implementation of rural electrification during the five years ending 31 March 2011 is given below:

(₹ in crore)

Year	Opening Balance	Funds received during the year	Total funds available	Funds Utilised	Percentage of utilisation	Unspent funds at the end of the year
2006-07	98.71	13.36	112.07	10.08	8.99	101.99
2007-08	101.99	17.93	119.92	26.71	22.27	93.21
2008-09	93.21	52.52	145.73	13.54	9.29	132.19
2009-10	132.19	94.32	226.51	38.78	17.12	187.73
2010-11	187.73	76.80	264.53	129.20	48.84	135.33

Source: Information furnished by GUVNL (Holding company)

Utilisation of funds by DISCOMs under RGGVY was very poor and was ranging between 8.99 to 48.84 *per cent*

It is evident from the table that during five years from 2006-07 to 2010-11, utilisation of funds by four DISCOMs under RGGVY was very poor ranging between 8.99 and 48.84 *per cent*, particularly during 2006-07 and 2008-09 when it was only around nine *per cent* of the funds available. Of the unspent balance of ₹ 135.33 crore at the end of March 2011, ₹ 12.16 crore and ₹ 30.55 crore (31.56 per cent) pertained to **DGVCL** and **PGVCL** respectively.

Implementation of RGGVY Scheme

2.1.19 In **DGVCL**, the implementation of RGGVY scheme was made to cover six districts viz., Bharuch, Narmada, Dang, Navsari, Surat and Valsad. The total amount of financial assistance of ₹ 63.05 crore (subsidy ₹ 57.59 crore and loan ₹ 5.46 crore) was extended by REC during 2006-11, of which ₹ 52.90 crore (84 *per cent)* was spent for the scheme during the period. In two out of six districts (i.e. Bharuch, and Narmada) the scheme was implemented by a central PSU, i.e. Power Grid Corporation of India Ltd. (PGCIL) which has not been covered in this review. In the remaining four districts, **DGVCL** implemented the scheme by utilizing ₹ 22.57 crore out of ₹ 34.73 crore (65 *per cent)* received for these districts as on 31 March 2011. Of the four districts covered by **DGVCL**, work in Dang district was completed (October 2009) while in the remaining three districts viz., Surat, Valsad and Navsari, against the stipulated completion of December 2010/ January 2011, the works were still not completed (September 2011). The status of works in these three districts is given below:

No achievement was made against the targets for laying HT lines and installation of transformers by DGVCL

Nos. of Below Poverty Line House Holds (BPL HH)			HT Line (Span length in KM)			LT Line (Span length in KM)			Distribution Transformer		
Target	Ach.	%age	Target	Ach.	%age	Target	Ach.	%age	Target	Ach.	%age
1,21,452	83,211	68.51	43	0	0	1,033.14	481.43	46.60	62	0	0

As could be seen from the table above, in the three districts against the targets for covering the beneficiaries and laying of LT lines, the achievements were 68.51 *per cent* and 46.60 *per cent* respectively. There was no achievement in respect of laying HT lines and installation of transformers. Deployment of

inexperienced personnel by the contractor and consequential poor workmanship in the work executed led to the slow progress in achievement of the target. We observed that among the three districts, in Surat district, the progress of achievement against the targets for number of beneficiaries to be covered and laying of LT lines were 59.26 *per cent* and 39.76 *per cent* respectively.

DGVCL stated that (September 2011) the slow progress in the work was caused mainly due to prolonged monsoon during the year 2010. However, necessary actions were taken to expedite the work and the company was hopeful of completing the project by 30 November 2011 as per the extended time limit of REC.

The reply is not tenable. The duration of 18 months for execution of work was stipulated in the contract after reckoning the uncontrollable forces including monsoon. The non completion of works in all the three districts even after lapse of nine months since the scheduled date of completion indicates the poor monitoring and management of the contract by **DGVCL**.

In **PGVCL**, all the eight districts were selected for implementation of the scheme during 2006-11. During 2008-11, **PGVCL** had utilized ₹ 41.43 crore (58 *per cent)* out of the total funds of ₹ 71.98 crore made available from REC. The stipulated date of completion of scheme works was May 2009 in Bhavanagar district and was June 2011 in remaining seven districts viz., Rajkot, Porbandar, Junagadh, Jamnagar, Kutch, Amreli and Surendranagar districts. Except Amreli district, in other seven districts the works were not completed (September 2011). The status of completion of works in these districts is given below:

Nos. of Below Poverty Line House Holds (BPL HH)			HT Line (Span length in KM)			LT Line (Span length in KM)			Distribution Transformer		
Target	Ach.	%age	Target	Ach.	%age	Target	Ach.	%age	Target	Ach.	%age
2,19,978	1,45,670	66.22	600.4	292.4	48.70	2,140.0	1,347.8	62.98	1,323	1,180	89.19

As could be seen from the table above, as against the targets for covering the beneficiaries, laying of HT lines, LT lines and installation of transformers, the achievements were 66.22 *per cent*, 48.70 *per cent*, 62.98 *per cent* and 89.19 *per cent* respectively.

The main reasons for the delay in execution of works were inadequate deployment of man power, non-completion of detailed survey, delay in procurement of material by the contractor and also poor monitoring of the project activities by **PGVCL**.

No synchronisation between the activities of laying of lines and installing of transformers under RGGVY in PGVCL

In the implementation of electrification schemes, the HT and LT lines were to be laid first in order to charge the transformers which in turn would be used to service BPL HH beneficiaries. However, we noticed that in three[11] out of eight districts covered by **PGVCL**, though 48 *per cent* and 52 *per cent* of HT and LT line respectively were yet to be laid, cent *per cent* of the planned transformers were installed and charged by utilising the HT/LT lines already

[11] Jamnagar, Junagadh and Rajkot districts.

created under a separate centrally/state sponsored scheme viz Sagar Khedu scheme on the plea of servicing the BPL HH beneficiaries on urgent basis. This indicated that the entire network of laying line and installing of transformers under RGGVY were not synchronised.

Restructured Accelerated Power Development Reforms Programme

2.1.20 The Government of India (GoI) approved the Accelerated Power Development Reforms Programme (APDRP) to leverage the reforms in power sector through the GoG. This scheme was implemented by the power sector companies through the GoG with the objective of up-gradation of sub-transmission and distribution system including energy accounting and metering, for which financial support was provided by GOI.

In order to carry on the reforms further, the GOI launched the Restructured APDRP (R-APDRP) in July 2008 as a Central Sector Scheme for XI Plan. The R-APDRP scheme comprises Part A and B. Part A was dedicated to establishment of IT enabled system for achieving reliable and verifiable baseline data system in all towns, besides, installation of SCADA[12]/Distribution Management System. For this, 100 *per cent* loan is provided, and was convertible into grant on completion and verification of the scheme work by Third Party independent evaluating agencies.

The Part B of the scheme deals with strengthening of regular sub-transmission and distribution system and upgradation projects. Under the scheme the financial assistance to the extent of 25 *per cent* of the approved project cost (Part-B) was to be provided in the form of loan through Power Finance Corporation Limited (PFC), a central PSU, which was the nodal agency appointed by the GoI for implementation of scheme. Remaining 75 *per cent* of project cost is to be arranged by DISCOM through GUVNL from financial institutions.

As per terms of sanction of loan, if DISCOMs successfully complete the projects within the time schedule and achieve the target of reducing the aggregate technical and commercial (AT&C) losses to 15 *per cent* on a sustainable basis for a period of five years, then 50 *per cent* of the entire loan (i.e. loan availed from GoI and FIs) would be converted into grant. The conversion of loan into grants would be allowed in equal tranches, every year during five years starting from first year in which the baseline data system under Part-A of project area concerned is established and verified by an agency appointed by the GOI.

[12] **Supervisory Control And Data Acquisition –** It generally refers to industrial control systems: computer systems that monitor and control industrial, infrastructure, or facility-based processes.

Financial Performance

2.1.21 The details of the funds released by GOI, mobilised from other agencies (including REC/ PFC/Commercial Banks), utilisation thereagainst and balances in respect of all the DISCOMs in the State are depicted below.

(₹ in crore)

Year	Funds received	Fund available	Funds utilised
APDRP			
2006-07	0	0	0
2007-08	400.00	400.00	400.00
2008-09	193.73	193.73	193.73
R-APDRP (Part A & B)			
2009-10	68	68	14.5
2010-11	130.94	184.44	23.31

Source: Information furnished by GUVNL

During 2006-08 GUVNL received ₹ 593.73 crore (grant ₹ 15.75 crore and incentive ₹ 577.98 crore) for all its subsidiaries. The DISCOMs came into existence from 1 April 2005; however, the activities relating to planning, mobilisation of funds and monitoring of implementation of APDRP was carried out by erstwhile GEB/the holding company viz., GUVNL on behalf of all its power subsidiary companies including DISCOMs, hence not covered in the performance audit.

As regards implementation of R-APDRP by **DGVCL** and **PGVCL**, the observations based on our analysis are discussed below:

Establishment of IT enabled system (Part A)

2.1.22 Part – A of the R-APDRP scheme is dedicated to establishment of IT enabled system and SCADA/ Distribution Management System. The work mainly consisted of consumer indexing, geographic information system **(**GIS) mapping, metering of distribution transformers, adoption of IT applications for meter reading, billing and collection, energy accounting, redressal of consumer grievances, etc. Under Part-A scheme, Power Finance Corporation (PFC), the nodal agency of GOI, was to sanction and release the funds to DISCOMs. The release of funds by PFC against sanctions was linked with actual utilisation of funds by DISCOMs against achievement of identified milestones. We observed that under part-A of the scheme, PFC sanctioned (June 2009) ₹ 23.38 crore and ₹ 75.26 crore to **DGVCL** and **PGVCL** during 2009-11 and released thereagainst ₹ 7.01 crore (30 *per cent*) and ₹ 41.67 crore (55 *per cent*) to **DGVCL** and **PGVCL** respectively.

DGVCL and PGVCL utilised 30 and 55 per cent respectively against the funds sanctioned for Part A under R-APDRP

The details of fund received and utilised during 2009-11 by **DGVCL** and **PGVCL** are summarized below:

(₹ in crore)

Year	Amount Received		Fund available		Funds utilized		Unutilised Balance		Percentage of unutilised balance to funds available	
	DGVCL	PGVCL	DGVCL	PGVCL	DGVCL	PGVCL	DGVCL	PGVCL	DGVCL	PGVCL
2008-09	Funds not received									
2009-10	7.01	22.57	7.01	22.57	1.72	4.03	5.29	18.54	75.46	82.14
2010-11	0	19.10	5.29	37.64	4.82	3.14	0.47	34.50	8.88	91.66

Source: Information furnished by **DGVCL** and **PGVCL**

It can be noticed from the table that against an amount of ₹ 7.01 crore and ₹ 41.67 crore received during 2009-11, ₹ 6.54 crore (93 *per cent*) and ₹ 7.17 crore (17 *per cent*) only were utilized by **DGVCL** and **PGVCL** respectively. Further, in terms of the sanction, the entire works under Part-A should be completed by **DGVCL** and **PGVCL** by February 2012 and June 2012 respectively. As against this, we observed that out of 11 towns and 36 towns to be covered by **DGVCL** and **PGVCL** under Part-A, **DGVCL** could complete the works in three towns (27 per cent) only while **PGVCL** could not complete the works in any of the 36 towns (September 2011).

The slow progress of works by **DGVCL** and **PGVCL** resulted in non-release of funds by PFC causing consequential delays in implementation of the scheme.

DGVCL/PGVCL replied (August 2011) that initially there was a delay in appointment of the IT implementing agency (ITIA). Even after appointment, the agency took time for the development of the software. Further, there was slow progress in the area of completion of GIS and in the field activity of consumer indexing. However, now the ITIA has accelerated the activity by deploying enough manpower and is hopeful of completing the project by December 2011.

Reply is not convincing as the reasons for the delays put forth by the DISCOMs were controllable with effective monitoring and prompt corrective actions.

Strengthening of sub-transmission and distribution system (Part-B)

2.1.23 Under Part-B of R-APDRP scheme, the focus was on reduction of AT&C losses by DISCOMs on sustainable basis through strengthening of distribution systems by renovation and modernisation of transformer centers, re-conductoring of lines, load bifurcation, feeder separation, aerial bunched conductoring in dense areas etc. GOI was providing 25 *per cent* of the approved project cost as loan and DISCOMs were required to arrange for the finance to meet the remaining 75 *per cent* of the project cost from financial institutions (FIs).

DGVCL and PGVCL did not initiate execution of Part-B of R-APDRP even after nine and 18 months respectively since sanctioning of loans

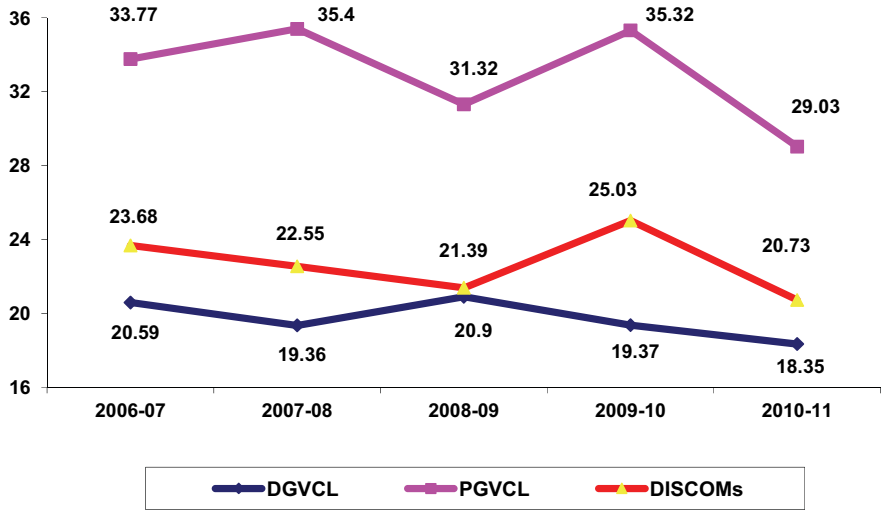
In **DGVCL,** against the total project cost of ₹ 200.56 crore approved for eight towns to be covered under Part-B, PFC had sanctioned loan of ₹ 45.80 crore in March 2010 and ₹ 4.34 crore in December 2010, out of which only ₹ 30.08 crore (60 *per cent*) was released (September 2010/March 2011). In **PGVCL,** out of the total project cost of ₹ 562.31 crore approved for 36 towns to be covered, PFC sanctioned (March 2010) loan of ₹ 140.58 crore and released (September 2010/March 2011) ₹ 99.84 crore (71 *per cent*). We, however, observed that none of the two DISCOMs had initiated any action for executing the scheme works even after lapse of nine months (**DGVCL)** and 18 months (**PGVCL)** since sanction of loan (September 2011).

DGVCL/**PGVCL** replied that the initial works relating to inviting of tenders for award of different works have been started and they are expecting to complete all the works by March 2013 (**DGVCL)**/December 2012 (**PGVCL).**

Replies are not acceptable as considerable time lost by two DISCOMs in initiating action for implementation of the scheme is indicative of the deficient planning by **DGVCL/PGVCL**

Aggregate Technical & Commercial Losses

2.1.24 One of the prime objectives of R-APDRP scheme was to strengthen the distribution system with the focus on reduction of Aggregate Technical & Commercial Losses (AT&C losses) on sustainable basis. The graph below depicts the AT&C losses over the performance audit period in respect of **DGVCL, PGVCL** and State as a whole:



Source: Information furnished by **DGVCL**, **PGVCL** and GUVNL

The overall reduction in AT&C losses was 2.24 and 4.74 per cent in DGVCL and PGVCL respectively during 2006-11

As can be seen from the graph, the position of AT&C losses of the four DISCOMs in the State as a whole showed decrease of 2.95 *per cent* from 23.68 (2006-07) to 20.73 *per cent* (2010-11).

As against this, the AT&C losses in **DGVCL** and **PGVCL** also showed a mix trend during 2006-11 registering an overall reduction of 2.24 and 4.74 *per cent* respectively which was not satisfactory for five years period.

Consumer metering

2.1.25 Attainment of 100 *per cent* metering was one of the prime objectives of the R-APDRP scheme. Accordingly, the work of metering of unmetered consumers and replacement of defective and stopped meters were required to be done under the scheme. As regards the metering of consumers, we observed that as on 31 March 2011, all the consumers of **DGVCL** (22.08 lakh numbers) and **PGVCL** (39.27 lakh numbers) were metered except the agricultural consumers totaling 0.46 lakh (**DGVCL)** and 2.60 lakh (**PGVCL)**.

As far as replacement of defective and stopped meters was concerned, the targets for replacement of meters were fixed internally by **DGVCL** and

PGVCL. The details of year wise target fixed and achievement made thereagainst is indicated below:

Year	DGVCL			PGVCL		
	Target for replacement of defective/ stopped meters during the year	Actual meters replaced during the year	Percentage of achievement against the target	Target for replacement of defective/ stopped meters during the year	Actual meters replaced during the year	Percentage of achievement against the target
2006-07	1,25,000	1,14,302	91.44	1,34,443	1,42,317	105.86
2007-08	1,25,000	3,01,095	240.88	1,54,892	1,34,899	87.09
2008-09	1,25,000	1,12,267	89.81	NA	1,93,562	NA
2009-10	1,25,000	75,937	60.75	2,34,550	1,64,915	70.31
2010-11	1,25,000	41,415	33.13	2,34,670	2,26,362	96.46

Source: Information furnished by **DGVCL** and **PGVCL**

It could be seen from the above table that the **DGVCL** could not achieve the target in any of the years except 2007-08, during which **DGVCL** had to urgently replace more number of defective/stopped meters due to damage of large number of meters by flood. In **PGVCL**, no target was fixed in 2008-09; however, in 2007-08, 2009-10 and 2010-11, the targets fixed were not achieved.

DGVCL replied (August 2011) that there was shortfall in achieving target during 2009-11 due to non availability of static meters in the market. Reply is not convincing as in case of difficulties in procuring the static meters, **DGVCL** had the option to procure and install the high precision electromechanical meters (quality meters) in place of damaged/defective meters, which are equally accurate in recording the power consumption. As per the study of the erstwhile GEB, it was conclusively recommended that quality meters were equally efficient and result in more inflow of revenue by increasing the consumption reading to the extent of more than 19.06 units per month.

Operational efficiency

2.1.26 The operational performance of the DISCOM is judged on the basis of availability of adequate power for distribution, adequacy and reliability of distribution network, minimizing line losses, detection of theft of electricity, etc. These aspects have been discussed later in the subsequent paragraphs.

Purchase of Power

2.1.27 In Gujarat, purchase of power on behalf of all the four DISCOMs is carried out by the holding Company i.e. GUVNL and the DISCOMS do not have any role in the purchase of power and hence the aspects relating to purchase of power have not been covered in the performance audit.

Sub-transmission & Distribution Losses

2.1.28 The distribution system is an important and essential link between the power generation source and the ultimate consumer of electricity. For efficient functioning of the system, it must be ensured that there are minimum losses in sub-transmission and distribution of power. While energy is carried from the generation source to the consumer, some energy is lost in the network. The losses at 33 KV stage are termed as sub-transmission losses while those at 11 KV and below are termed as distribution losses. The distribution networks consisting of 11 KVA and below are maintained by the DISCOMs and so the differences between the energy received (paid for) by the DISCOMs and energy billed to consumers are termed as distribution losses. The percentage of losses to available power indicates the effectiveness of the distribution system. The losses occur mainly on two counts, i.e. technical and commercial. Technical losses occur due to inherent character of the equipment used for transmitting and distributing power and resistance in conductors through which the energy is carried from one place to another. On the other hand, commercial losses occur due to theft of energy, defective meters and drawal of unmetered supply, etc.

Energy losses in DGVCL and PGVCL

2.1.29 The energy losses of **DGVCL** for last five years up to 2010-11 are given below:

(In Million Units)

Sl.No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1.	Energy purchased	9,525	9,918	10,331	11,266	11,704
2.	Transmission losses	473	483	590	701	482
3.	Energy available for sale	9,052	9,435	9,741	10,565	11,222
4.	Energy sold	7,557	7,979	8,305	8,959	9,837
5.	Energy losses (3 – 4)	1,495	1,456	1,436	1,606	1,385
6.	Percentage of energy losses (*per cent*) {(5 / 3) x 100}	16.52	15.43	14.74	15.20	12.34
7.	Percentage of losses allowed by GERC (*per cent*)	16.59	15.45	14.45	13.45	12.45
8.	Excess losses (in MUs)	(-) 6.34	(-) 1.89	28.25	184.89	(-)12.34
9.	Average realization rate per unit (in ₹)	4.22	4.23	5.05	4.95	5.34
10.	Value of excess losses (₹ in crore) (Sl. No.8 x Sl. No.9 /10)	(-) 2.68	(-) 0.80	14.27	91.52	(-)6.59

Source: Information furnished by **DGVCL**

Distribution loss in excess of norms led to revenue loss of ₹ 105.79 crore during 2008-10 in DGVCL

It would be seen from the above table that energy losses ranged between 12.34 and 16.52 *per cent* during the last five years ending 31 March 2011. The losses in **DGVCL** were within the norms in 2006-08 and 2010-11, while the loss was in excess of norms by 0.29 *per cent* in 2008-09 and by 1.75 *per cent* in 2009-10, causing revenue loss of ₹ 14.27 crore and ₹ 91.52 crore in two years respectively.

2.1.30 Further, our observations on a review of feeder wise analysis of three[13] out of 17 divisions of **DGVCL** for the period 2007-11 are summarised below:

Particulars	2007-08	2008-09	2009-10	2010-11
Units sent out (In MUs)	108.52	114.05	131.13	136.31
Units sold out (In MUs)	64.65	68.27	79.29	84.34
Distribution Loss (In percent)	40.43	40.14	39.53	38.13
Total number of feeders (In number)	232	235	238	247
Feeders having losses more than GERC norms (In number)	161	153	163	160
Feeders having losses more than 30 percent (In number)	125	118	131	121

It could be seen from the table that in the above three Divisions, during 2007-11, of the total number of 232 to 247 feeders, 153 to 163 feeders were having distribution losses in excess of GERC norms and 118 to 125 feeders were having losses even more than 30 *per cent*. Further, out of 247 feeders as at the end of 2010-11, 131 feeders (53 *per cent*) were persistently having losses in excess of GERC norms, whereas, in 48 feeders (19 *per cent*) losses were showing increasing trend during 2007-11.

2.1.31 The energy losses of **PGVCL** for last five years up to 2010-11 are given below:

(In Million Units)

S.No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1.	Energy purchased	16,985	18,413	19,189	21,167	20,883
2.	Transmission losses	839	973	1,186	1,309	860
3.	Energy available for sale	16,146	17,440	18,003	19,858	20,023
4.	Energy sold	10,814	11,837	12,449	13,513	14,699
5.	Energy losses (3 – 4)	5,332	5,603	5,554	6,345	5,324
6.	Percentage of energy losses (*per cent*) {(5 / 3) x 100}	33.02	32.12	30.85	31.95	26.59
7.	Percentage of losses allowed by GERC (*per cent*)	34.22	32.00	30.00	28.00	26
8.	Excess losses (in MUs)	(-) 193.75	20.93	153.02	784.39	118.14
9.	Average realisation rate per unit (in ₹)	3.55	3.59	4.30	4.13	4.55
10.	Value of excess losses (₹ in crore) (Sl. No.8 x Sl.No.9 /10)	(-) 68.78	7.51	65.80	323.95	53.75

Source: Information furnished by **PGVCL**

Distribution loss in excess of norms led to revenue loss of ₹ 451.01 crore during 2007-11 in PGVCL

It would be seen from the above table that energy losses ranged between 26.59 and 33.02 *per cent* during the period 2006-11. Reduction in these losses is the most significant step towards making the Company financially self-sustaining. It could be seen from the above table that the **PGVCL** suffered loss of ₹ 451.01 crore during the period 2007-11 due to excess energy losses over the limit prescribed by GERC.

The importance of reducing losses can be gauged from the fact that a one *per cent* decrease in losses could add ₹ 59.93 crore[14] and ₹ 91.10 crore[15] to the annual profits of **DGVCL** and **PGVCL** respectively.

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[13] Vyara O&M , Vapi O&M and Ankleshwar O&M Division

[14] Energy available for sale 11,222 MUs x one *per cent* x Average realisation rate ₹ 5.34 = ₹ 59.93 crore (**DGVCL**).

[15] Energy available for sale 20,023 MUs x one *per cent* X Average Realisation Rate ₹ 4.55 per unit = ₹ 91.10 crore. (**PGVCL**).

Reasons for high energy losses

The main reasons for such high energy losses were decrease in maintenance activity of distribution network, excess failure of distribution transformers (DTRs), delay in repairing the DTRs, theft of electricity, non replacement of conventional meters with static/quality meters, high percentage of LT/HT ratio, etc., as discussed below:

Decrease in maintenance activity

2.1.32 For proper maintenance of distribution network in **DGVCL**, the yearly targets were fixed mainly for carrying out the maintenance of HT lines (11 KV), LT lines and DTRs (11/22 KVs). We observed that against the target fixed for the maintenance of HT lines, the achievement was ranging between 58 and 69 *per cent* during 2008-11. Whereas, in case of LT lines and DTRs the achievement decreased from 67 to 27 *per cent* (2006-11) and 57 to 30 *per cent* (2007-11) respectively.

In **PGVCL**, we observed that against the target fixed for the maintenance of HT lines, the achievement was ranging between 42 and 69 *per cent* during 2006-11, whereas, in case of LT lines and DTRs the achievement decreased from 45 to 40 *per cent* and 53 to 37 *per cent* (2006-11) respectively. However, both DISCOMs did not take any corrective action for achieving the targets.

We observed that the available manpower were mostly engaged in attending to the increasing work load on account of release of new connections; complaints from consumers etc., the target for maintenance activity could not be achieved.

Performance of Distribution Transformers

2.1.33 The GERC had fixed the norms regarding failure of DTRs in its tariff orders. The details of norms fixed, actual DTRs failed and the expenditure incurred on their repairs related to **DGVCL** is depicted in the table below:

Sl. No	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Existing DTRs at the close of the year(in Number)	35,924	39,654	43,254	48,456	53,493
2	DTR Failures (in Number)	5,992	6,269	6,099	6,251	6,996
3	Percentage of failures	16.68	15.81	14.1	12.9	13.08
4	Norm allowed by GERC (in percentage)	--	10	10	10	10
5	Excess failure percentage over norms	--	5.81	4.1	2.9	3.08
6	Expenditure on repair of failed DTRs (₹ in crore)	4.61	4.78	5.62	4.74	4.91
7	Average expenditure incurred on repair of one transformer (in ₹)	7,693.59	7,624.82	9,214.63	7,582.79	7,018.30
8	Extra[16] expenditure incurred in excess of GERC norms (₹ in crore)	----	1.76	1.63	1.07	1.16

Source: Information furnished by **DGVCL**

[16] Total transformer X excess failure percentage over norms X average repairing cost of one transformer.

It could be seen from the above table that **DGVCL** failed to achieve the target fixed by GERC in all the four years from 2007-08 to 2010-11. **DGVCL** incurred excess expenditure of ₹ 5.62 crore over a period of four years due to higher losses than norms fixed by GERC.

2.1.34 The details of norms fixed, actual DTRs failed and the expenditure incurred on their repairs related to **PGVCL** is depicted in the table below:

Sl. No	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Existing DTRs at the close of the year(in Number)	1,13,451	1,27,226	1,48,127	1,77,135	2,07,297
2	DTR Failures (in Number)	27,429	27,430	29,317	30,633	39,006
3	Percentage of failures	24.18	21.56	19.79	17.29	18. 82
4	Norm allowed by GERC (in percentage)	--	10	10	10	10
5	Excess failure percentage over norms	--	11.56	9.79	7.29	8.82
6	Expenditure on repair of failed DTRs (₹ in crore)	--	--	13.21	14.43	14.36
7	Average Expenditure incurred on repair of one transformer (in ₹)	--	--	4,505.91	4,710.60	3,681.48
8	Extra expenditure incurred in excess of GERC norms (₹ in crore)	--	--	6.53	6.08	6.73

Source: Information furnished by **PGVCL**

Excess expenditure of ₹ 5.62 crore and ₹ 19.34 crore was incurred by DGVCL and PGVCL due to failure of DTRs in excess of norms

It may be seen from the above table that **PGVCL** failed to achieve the target fixed by GERC in all the four years. The excess expenditure incurred on repair of failed DTRs was to the tune of ₹ 19.34 crore during 2008-11. In the Tariff order for the year 2007-08, GERC directed **PGVCL** to bring the DTR failure rate to 10 *per cent* as the prevailing failure rate was very high. Further, DTR failure rate was very high both in **DGVCL** and **PGVCL** as compared to the failure rate of five *per cent* in MGVCL (the DISCOM in central Gujarat) recorded during 2009-10. The high DTR failure rates were controllable and could be minimised by carrying out timely preventive maintenance; conversion of LT conductors into Aerial Bunch cables to reduce overloading of DTRs and maintaining voltage of the supply. The year wise details of number of DTRs failed due to overloading to total number of DTRs failed and also its percentage in **DGVCL** and **PGVCL** are given below:

Year	Total Number of DTRs failed[17]		Number of failures due to over-loading		Percentage of failures due to over-loading	
	DGVCL	PGVCL	DGVCL	PGVCL	DGVCL	PGVCL
2006-07	4,798	25,083	49	23,275	1.02	92.80
2007-08	5,028	25,180	46	23,755	0.91	94.35
2008-09	4,869	26,954	39	24,875	0.80	92.29
2009-10	4,911	28,309	31	26,015	0.63	91.90
2010-11	5,033	33,996	22	33,155	0.44	97.53

Source: Information furnished by **DGVCL** and **PGVCL**

Though the percentage of DTRs failure due to overloading was negligible in **DGVCL**, it was very high and was ranging between 91.90 to 97.53 *per cent* in **PGVCL** during 2006-11. This is indicative of the immediate need for improving the distribution system in **PGVCL.**

[17] Excluding failures due to manufacturing defects

PGVCL stated (August 2011) that it had taken strenuous corrective measures viz., feeder bifurcation work, review of the working of distribution transformer centre, replacement of deteriorated conductors, conversion of LT to HT lines, installation checking, etc. for minimising the transformer failure due to overloading. However, the fact remains that despite the corrective measures stated to have been taken by **PGVCL**, the percentage of DTR failure due to overloading to the total failures continued to be abnormally high in all five years and also showed an increasing trend in the years 2007-08 and 2010-11.

Delay in repair of Distribution Transformers

2.1.35 As per the general terms and conditions of purchase order, the suppliers were required to guarantee the performance of DTRs for five years from the date of supply/installation. If the DTRs failed after the expiry of the guarantee period, the same could be got repaired through outside agencies since both **DGVCL** and **PGVCL** were not having any in-house facility to repair the DTRs. For DTRs that failed within the guarantee period, the supplier should repair and return the DTRs within 30 days from the date of receipt of damaged DTRs by him, whereas if the DTR failed after the expiry of the guarantee period, it should be repaired and returned by the repairing agency within 45 days from the date of approval of estimate[18] or the receipt of transformer oil.

Repair of 7,380 DTRs in DGVCL and 1,695 DTRs in PGVCL failed within the guarantee period was abnormally delayed

In **DGVCL**, it was observed that during the performance audit period, 7,380 DTRs failed within the guarantee period. Delays ranging from six months to two years were noticed in returning the repaired transformers by the suppliers/repairing agency. On a review of three divisions[19], it was noticed that in 76 cases, the suppliers had not yet returned (June 2011) the DTRs (valuing ₹ 28.25 lakh) which were given for repair during the period between October 2000 and September 2010. In **PGVCL,** it was observed that during the performance audit period, 1,695 DTRs (valuing ₹ 9.36 crore) failed within the guarantee period and were awaiting for repair/replacement for more than one month to six months at the end of 2010-11. Both **DGVCL** and **PGVCL**, however, failed to encash the performance guarantee (PG) furnished by the suppliers by invoking tender condition clause 49 against them. Since the DTRs had strategic value in the distribution network, the Management should have ensured an effective mechanism in place for ensuring the timely repair and return of the damaged DTRs by the suppliers and repairing agencies.

PGVCL stated (August 2011) that during monsoon most of the transformer suppliers could not repair and return the failed transformers within stipulated time of 30 days as per tender clause 49. However, it was withholding the payments against the bills of the defaulting suppliers. The reply is not tenable. The very purpose of inserting the clause for encashing of PG in the contract

[18] The failed transformer would be inspected by the repairing agency in the presence of DISCOM officials and the agency would prepare an estimate for items to be repaired as per approved item rate before approval of estimate.

[19] Vyara, Vapi (O&M) Division and Vapi Industrial Division.

would be defeated if the same was not invoked at the appropriate time against the defaulting suppliers.

Poor performance of repaired DTRs

2.1.36 As per the terms of the agreement of repair, while attending repairs of the transformer the repairing agency should ensure that guaranteed technical parameters and performance thereagainst were maintained even after repairing of transformers. The fact that in **DGVCL,** 5,746 numbers of repaired DTRs failed within the guarantee period (maximum 18 months) showed the poor workmanship of the repairing agencies.

Slow replacement of conventional meters with static/quality meters

2.1.37 In the detailed project report of APDRP Scheme, the DISCOMs estimated that replacement of old conventional meters with static/quality meters would increase energy reading by 19.06 units per month per meter replaced. Further, Central Electricity Authority (CEA) instructed (March 2006) that all interface meters, consumers and energy accounting and audit meters should be of static type. However, it was observed that both **DGVCL** and **PGVCL** were not able to replace all the conventional meters even by the end of March 2011.

Slow replacement of conventional meters led to estimated revenue loss of ₹ 144.40 crore to DGVCL and ₹ 317.39 crore to PGVCL

In **DGVCL**, out of 14,47,971 consumer connections (March 2004) having old conventional meters, 2,22,644 meters (15.38 *per cent)* were not yet replaced by quality/static meters (March 2011). **DGVCL** purchased (2006) 4.75 lakh electro-mechanical high precision (quality) meters within a span of eight months. Considering the availability of bulk quantity of quality meters in the market, **DGVCL** could have purchased and replaced minimum of 4,75,000 meters per annum from the year 2004-05 onwards and thereby it could have completely replaced the entire lot of old conventional meters by the end of March 2007. However, due to slow progress in replacement of conventional meters, **DGVCL** suffered a loss of revenue[20] of ₹ 144.40 crore on the estimated under recording of consumption of energy of 301.84 MUs (2007-11) **(*Annexure-8*)** in conventional meters. In **PGVCL,** it was observed that from 2006-07 to 2010-11, out of 14,23,297 meters, only 8,58,829 conventional meters were replaced. As at March 2011, 5,64,468 conventional meters (39.66 *per cent)* were still to be replaced by static/quality meters. Thus, slow replacement of conventional meters with static/quality meters led to revenue loss of 782.64 MUs worth ₹ 317.39 crore (2007-11) **(*Annexure-8*).**

DGVCL and **PGVCL** stated (August 2011) that as the static meters were of new concept during that period, problems were faced with the quality of meters being offered by the suppliers. However, in order to meet the demand, the conventional meters were also purchased along with the static meters. Accordingly, replacement of conventional meters with static meters was being carried out gradually.

[20] Year wise loss units X realisation rate of the relevant year.

The reply is not tenable. Though CEA guidelines were issued in March 2006, adequate efforts were not made by the DISCOMs for early replacement of the conventional meters with static meters so as to ensure the precision recording of energy supply and safeguard the financial interest. Further, wherever static meters were not easily available, DISCOMS should have replaced the conventional meters with quality meters, which were equally good in recording the actual power consumption as evident from the study results of erstwhile GEB.

Failure in cent percent metering of Agricultural Consumers

2.1.38 DISCOMs have two types of tariff for agriculture sector, i.e. metered and horse power (HP) based (unmetered). As per HP based tariff, the entire connected load of unmetered agricultural consumers is charged at the rate of ₹ 140[21] per month per HP, i.e. ₹ 1,680 per annum per HP irrespective of the actual consumption. As per the GoG policy, out of the aforesaid amount of ₹ 1,680 per HP per annum, the consumer has to pay only ₹ 665/- per HP per annum (consumer having connected load below 7.5 hp) or ₹ 805/- per HP per annum (connected load above 7.5 HP) only while remaining fixed charges is compensated by the GoG in the form of subsidy. Further, the GoG is also extending 100 *per cent* subsidy towards fuel cost adjustment charges (also called FPPPA[22] Charges) considering consumption of maximum 1,700 units per HP of connected load for a maximum of eight hours of power supply to the un-metered agricultural consumer.

GERC directed (Tariff order 2004) the DISCOMs to complete cent *per cent* metering of all consumers. GERC reiterated the above directives through the tariff orders issued from time to time. Position of Agricultural Consumers (AG) viz. Metered Agricultural Consumers (MAG) and Unmetered Agricultural Consumers (UAG) of **DGVCL** is as under:

Year	Total AG Consumers		MAG Consumers		UAG Consumers		Percentage of UAG Consumers to total AG Consumers
	Nos.	Connected Load in HP	Nos.	Connected Load in HP	Nos.	Connected Load in HP	
2006-07	79,101	4,39,717	31,732	1,86,236	47,369	2,53,481	59.88
2007-08	81,279	4,58,530	34,597	2,06,234	46,682	2,52,296	57.43
2008-09	84,317	4,81,783	38,139	2,31,457	46,178	2,50,326	54.77
2009-10	88,625	5,10,652	42,777	2,61,431	45,848	2,49,221	51.73
2010-11	92,210	5,33,159	46,503	2,84,505	45,707	2,48,654	49.57

Source: Information furnished by **DGVCL**

- Progress of metering of UAG Consumers was very slow, i.e. 3.51 *per cent* over a period of five years.
- At the end of 2010-11, around 50 *per cent* agricultural consumers were unmetered.

[21] This was revised to ₹ 160 per month per hp i.e. ₹ 1920 per annum per HP from 2010-11.
[22] Fuel Price and Power Purchase Cost Adjustment.

- Metering of distribution transformer center (DTC) of agricultural dominant feeders was only 29.97 *per cent* (i.e., 6,050 out of 20,184 DTCs) at the end of 2010-11.

The position of UAG consumers in **PGVCL** is as under:

Year	Total AG Consumers		MAG Consumers		UAG Consumers		Percentage of UAG Consumers to total AG Consumers
	Nos.	Connected Load in HP	Nos.	Connected Load in HP	Nos.	Connected Load in HP	
2006-07	3,62,372	30,32,323	1,04,187	7,99,630	2,58,185	22,32,693	71.25
2007-08	3,81,009	30,44,648	1,22,316	8,90,394	2,58,693	21,54,254	67.90
2008-09	4,04,861	32,63,408	1,45,298	10,60,058	2,59,563	22,03,350	64.11
2009-10	4,37,088	36,55,109	1,77,562	13,71,174	2,59,526	22,83,935	59.38
2010-11	4,57,992	39,01,990	1,98,417	15,69,279	2,59,575	23,32,711	56.68

Source: Information furnished by **PGVCL**

It could be seen from the above table that number of UAG consumers increased from 2,58,185 in 2006-07 to 2,59,575 in 2010-11. Thus, the overall metering work of UAG consumers was very slow.

Gross misuse of energy by unmetered agricultural consumers led to total energy loss of 1,372.04 MUs and 15,675.52 MUs in DGVCL and PGVCL respectively during 2006-11

2.1.39 We observed that in both the DISCOMs against one HP of connected load, the consumption of UAG consumers was on an average three times higher than the consumption of MAG during 2006-11 as can be seen from ***Annexure-9***. The abnormally high consumption by UAG consumers in comparison to MAG consumers is indicative of gross misuse of energy by UAG consumers on account of negligence, theft, unauthorised connections and overloading, etc. which caused high incidences of AT&C losses besides damaging the distribution system of the DISCOMs. This could have been avoided by cent percent metering of all the UAG consumers.

The total loss of energy in **DGVCL** and **PGVCL** on this account worked out to 1,372.04 MUs and 15,675.52 MUs respectively during 2006-11, as detailed in ***Annexure 9.***

DGVCL/PGVCL stated (August 2011) that due to stiff resistance of the farmers, they were not able to fulfill cent *per cent* metering of UAG consumers. However, metering had been done in all the new connections released to the agricultural consumers; besides campaigns were conducted to create awareness among the agricultural consumers about the necessity for metering their consumption of energy.

Reply is not acceptable as considering the huge energy losses involved, **DGVCL/PGVCL** need to take effective steps for metering of UAG consumers in a planned manner by educating/convincing the consumers through awareness campaign in co-ordination with local bodies, local MLAs etc. and also taking administrative help of the GoG, so as to enforce metering on UAG consumers.

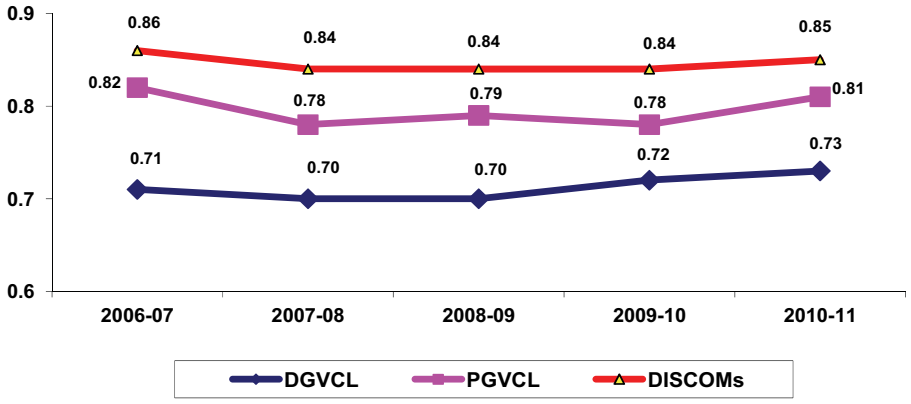
Commercial losses

The majority of commercial losses relate to consumer metering and billing, besides pilferage of energy. While the metering and billing aspects are covered

under implementation of R-APDRP scheme in previous paragraphs and billing efficiency under subsequent paragraphs respectively, the other observations relating to commercial losses are discussed below.

Implementation of LT less system

2.1.40 High voltage distribution system is an effective method for reduction of technical losses, prevention of theft, improved voltage profile and better consumer service. The GOI had also stressed (February 2001) upon the need of adopting LT less system of distribution through replacement of existing LT lines by HT lines so as to reduce the distribution losses. The HT-LT ratio in **DGVCL** and **PGVCL** over the review period is depicted in the graph below:



Source: Information furnished by all DISCOMs.

It may be seen from the above graph read with ***Annexure 7*** that in **DGVCL** the HT/LT ratio improved from 0.71 (2006-07) to 0.73 (2010-11) while it deteriorated in **PGVCL** from 0.82 to 0.81 respectively**.**

We observed that in **DGVCL** the total LT lines converted into HT lines during 2006-11 were 18.14 CKM which worked out to a meager 0.06 *per cent* of the HT lines as on 31 March 2011. In **PGVCL** the conversion was only in AG dominant feeders (2,153.84 CKM) under high voltage distribution scheme (HVDS) during 2008-11. Both the DISCOMs did not have any plan showing milestones for converting the LT lines into HT lines.

Conversion of LT Conductors into Aerial Bunch Cables

2.1.41 Aerial Bunch cables prevent illegal tapping of low voltage distribution lines and help in reducing overloading of DTRs and maintain voltage of the supply. The progress in conversion of LT conductors into aerial bunch cables in both DISCOMs were very slow as could be seen from the table given below:

Year	Target (in CKM)		Achievement (in CKM)		Shortfall (in CKM)		Percentage of achievement against target	
	DGVCL	PGVCL	DGVCL	PGVCL	DGVCL	PGVCL	DGVCL	PGVCL
2006-07	Nil	Nil	Nil	24	Nil	Nil	Nil	Nil
2007-08	Nil	100	Nil	70	Nil	30	Nil	70
2008-09	225	200	105	205	120	Nil	46.67	Nil
2009-10	2,444	Nil	827	640	1,617	Nil	33.84	Nil
2010-11	2,950	Nil	764	1494	2,186	Nil	25.90	Nil
Total	**5,619**		**1,696**	**2,433**	**3,923**		**30.18**	

Source: Information furnished by **DGVCL** and **PGVCL**

While no targets were fixed by **PGVCL** (except 2007-08 and 2008-09), it had converted 2,433 CKM Aerial Bunch conductors out of 1,21,199 CKM of LT line during 2006-11 which works out to two *per cent*.

We observed that **DGVCL** started fixing targets for conversion of LT conductor into Aerial Bunch conductors from 2008-09 onwards. Despite availability of funds, there was an overall shortfall of 70 *per cent* in achieving the targets during 2008-11. Though DGVCL invited tenders at circle office level for providing Aerial Bunch Conductors during 2009-10, they could not finalise the tender over a dispute in labour rates and contractors quoting very high rates. In a test check of selected divisions[23], we observed that even after awarding the works at division level, the targets could not be achieved due to improper implementation of labour contracts and also due to lack of proper monitoring of contractors works at Division/Sub-Division levels.

High incidence of theft

2.1.42 Substantial commercial losses are caused due to theft of energy by tampering of meters by the consumers and unauthorised tapping/hooking by the non-consumers. As per Section 135 of Electricity Act 2003, theft of energy is an offence punishable under the Act. The year-wise actual number of theft cases detected, targeted assessment and actual amount realised thereagainst by **DGVCL** and **PGVCL** during 2006-11 are given in ***Annexure 10***.

Our analysis revealed that though **DGVCL** had fixed the target for number of checking, the achievement thereagainst has been decreasing from 56 *per cent* to 28 *per cent* during 2006-10. However, **PGVCL** had never fixed any target for checking of the connections. Though both DISCOMs were fixing the target for theft assessment, no target was fixed for realisation of such amount, which resulted in poor realisation of the amount assessed as discussed in the succeeding paragraph.

Performance of Raid Team

2.1.43 In order to minimise the cases of pilferage/loss of energy and to save DISCOMs from sustaining heavy financial losses on this account, Section 163 of Electricity Act 2003, provides that the licensee (DISCOMs) may enter the premises of a consumer for inspection and testing the apparatus. Vigilance

[23] Vyara O&M Division and Bardoli O&M Division.

team headed by an Officer of the rank of Inspector General of Police at the headquarters of the holidng company viz., GUVNL was entrusted with the work of conducting raids for checking the premises of the consumers with the assistance of Assistant Engineer and other departmental officer of the DISCOMs concerned. Executive Engineers of the concerned divisions were required to prepare work plan to conduct raids by identifying such consumers/areas where large scale theft was suspected. Due to lack of coordination between the vigilance wing of the holding company and the concerned divisions of DISCOMs and non availability of sufficient police assistance at local level, raids did not yield the desired results.

2.1.44 Following is the position of raids conducted in **DGVCL** during 2006-11:

(₹ in crore)

Sl. No.	Year	Total number of consumers as on 31 March	No. of consumers checked	Assessed amount	Realised amount	Unrealised amount	Percentage of checking to total nos. of consumer	Percentage of realised amount against assessment
1	2006-07	17,10,164	2,50,490	21.60	10.76	10.84	14.65	49.81
2	2007-08	18,27,803	2,36,776	22.53	6.27	16.26	12.95	27.83
3	2008-09	19,35,568	2,15,596	27.51	13.16	14.35	11.14	47.84
4	2009-10	20,44,219	1,86,950	25.33	13.05	12.28	9.15	51.52
5	2010-11	22,07,983	2,03,340	26.28	7.46	18.82	9.21	28.39

Source: Information furnished by **DGVCL**

The percentage of realised amount against the amount assessed during the raids was ranging between 27.83 *per cent* and 51.52 *per cent* during 2006-11. Of the five years in four years, the percentage of realised amount against the assessed amount was less than 50 *per cent*. The percentage of checking of number of consumers decreased drastically over a period of five years despite increase in number of consumers due to shortage of sufficient man power in installation checking squads. It shows non-adherence to CEA guidelines regarding checking of every meter at least once in five years.

2.1.45 Following is the position of raids conducted in **PGVCL** during 2006-11.

(₹ in crore)

Sl. No.	Year	Total number of consumers as on 31 March	No. of consumers checked	Assessed amount	Realised amount	Unrealised amount	Percentage of checking to total nos. of consumer	Percentage of realised amount against assessment
1	2006-07	32,06,166	7,55,532	56.00	23.88	32.12	23.56	42.64
2	2007-08	33,44,482	7,64,098	41.13	21.27	19.86	22.85	51.71
3	2008-09	35,35,852	9,05,859	47.19	23.10	24.09	25.62	48.95
4	2009-10	37,00,782	11,15,792	42.66	21.18	21.48	30.15	49.65
5	2010-11	39,27,191	8,06,637	42.45	25.30	17.15	20.54	59.60

Source: Information furnished by **PGVCL**

It could be seen from the table that the percentage of realised amount against the amount assessed during the raids was ranging between 42.64 *per cent* and 59.60 *per cent* during 2006-11. In all the years, **PGVCL** was unable to realise even 60 *per cent* of the assessed amount which was indicative of the fact that

though raids were conducted, their effectiveness could not be ensured in terms of realisation. Considering the huge amount remaining unrealised by **DGVCL/PGVCL** during five years from 2006-11, both DISCOMs need to enhance the effectiveness of the mechanism for early realisation of the assessed amount.

Billing Efficiency

2.1.46 As per the practice followed, DISCOMs take the reading of energy consumption of each consumer at the end of the notified billing cycle. Sale of energy to metered categories consists of two parts viz., metered and assessed units. The assessed units refer to the units billed to consumers in case meter reading is not available due to meter defects, door lock etc. After obtaining the meter readings, DISCOMs issue bill to the consumers for consumption of energy. High Tension consumers (having contract demand of 100 KVA and above) and Low Tension Industrial consumers are billed on monthly basis, while other consumers are billed on bi-monthly basis. As per the schedule of billing, monthly bills are to be issued within 30 days from previous bill and bi-monthly bills are to be issued within 60 days from previous billing with a variation of maximum two days. The efficiency in billing of energy lies in distribution/sale of maximum energy by the DISCOMs to its consumers and realise the revenue therefrom in time.

We observed that **DGVCL** and **PGVCL** are issuing bills relating to defective meters and door lock cases based on the average consumption of energy for last three months. However, the details of assessed units in such cases were not maintained by both the DISCOMs. In respect of un-metered agriculture consumers also, bills are issued based on assessment which is discussed in subsequent paragraph.

Non adherence to GERC directive

Methodology was not devised for realistic estimation of agricultural consumption as per GERC directive

2.1.47 The GoG had appointed a committee viz. Mishra committee to study the actual power consumption in agricultural sector based on meters already installed on agricultural distribution transformer centres (DTCs). The committee, based on the study of the consumption pattern of AG consumers available on the installed transformers concluded (March 1999) that estimated agricultural consumption should be considered at 1,700 units[24] per year per HP of connected load. The same criteria was approved by GERC (1999) and adopted by the DISCOMs to assess consumption of UAG consumers. As DISCOMS have since stopped releasing new connections without meters and feeders of agricultural loads have also been separated, the GERC directed (2006) DISCOMs to evolve a suitable methodology for assessing realistic consumption by UAG consumers under the changed circumstances. However, DISCOMs had not devised any methodology for assessment of consumption by UAG consumers to the satisfaction of GERC so far (September 2011). Further, the DISCOMs also did not comply with the GERC (in ARR petition-2008-09) directive for expediting metering of DTCs so as to have realistic data

[24] One horse power x 0.746 Kw x 8 hours x 285 days excluding 80 monsoon days = 1,700.88 kwh.

on actual consumption of energy at each DTC, which could help in assessing unmetered consumption. No justification was on record for the non compliance to the GERC directives.

Under recovery of Additional Security Deposit

2.1.48 GERC notified (31 March 2005) that LT consumers with bi-monthly billing cycle should at all times maintain with the licensee (i.e. DISCOMs) an amount equivalent to three months of their consumption charges as security deposit against any default in payment towards the electricity supplied/to be supplied to them during the period, till the agreement for supply of energy is in force. In case of LT consumers with monthly billing cycle, however, the security deposit should be equal to one and half month's consumption. Further the DISCOMs need to review the adequacy of amount of security deposit (SD) once in a year based on the consumers' average consumption during the previous 12 months. The DISCOMs were liable to pay interest on SD of consumers at the Bank Rate (as on 1 April of every year) notified by Reserve Bank of India (RBI) or such higher rate as may be fixed by the GERC from time to time.

2.1.49 A reference is invited to the paragraph 4.14 of Audit Report (Commercial) 2008-09, Government of Gujarat, wherein short recovery of SD from LT consumers and consequential loss of interest of ₹ 21.67 crore up to the year 2008-09 in ten divisions of **DGVCL** was pointed out**.**

SD was short collected by ₹ 297.46 crore in DGVCL and ₹ 223.10 crore in PGVCL

Further, test check of the records for the year 2009-10 relating to a review of adequacy of SD of LT consumers revealed that even after highlighting this lapse in our previous report, **DGVCL** was not able to collect SD as per the directive of GERC. During the year 2009-10, against 14,96,855 out of the 20,44,219 consumers, an amount of ₹ 297.46 crore was short collected towards SD for the year which led to further loss of interest (net) of ₹ 12.64 crore (calculated at 4.25 *per cent*[25]) for the year.

2.1.50 In **PGVCL,** the system of assessment and recovery of SD was not at all followed as per the directive of GERC. Only in September 2010, **PGVCL** initiated action by directing the sub-divisions to assess and collect the shortfall in SD till November 2010. We noticed that in **PGVCL,** an amount of ₹ 223.10 crore was short collected from consumers towards SD for the year 2009-10 which led to loss of interest (net) of ₹ 9.48 crore (calculated at 4.25 *per cent*) (March 2011). The above included 49 sub-divisions falling under 10 divisions[26] which did not collect any SD from 3,98,869 consumers.

PGVCL stated (August 2011) that though it had initiated action for collecting SD, the same could not be collected due to resistance of consumers. The fact, however, remains that **PGVCL** initiated action only after lapse of five years since issue of GERC notification and the action taken was also not effective.

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[25] Interest on working capital @ 10.25 *per cent* as approved by GERC less interest payable on SD at the rate of 6.00 *per cent*

[26] Una, Kodinar, Anjar, Savarkundla, Rajkot City-I, Rajkot City-II, Porbandar, Veraval, Jamnagar and Bhavnagar (Rural).

Revenue collection efficiency

2.1.51 As revenue from sale of energy is the main source of income of DISCOM, prompt collection of revenue assumes great significance. The salient features of the collection mechanism being followed by the DISCOM are as follows:

- Consumers may make payments of the bills by cash, cheques or by demand draft.
- Revenue billed in respect of HT services is collected at collection counters located at every circle office.
- In respect of LT services, electricity bills are generally collected by the revenue cashiers (RC) except in some areas where collection work is entrusted to certain private collection agencies.
- Both HT and LT consumers are required to pay electricity charges within 10 days from the date of the bills, failing which the consumers are liable for payment of delayed payment charges at the rate of 1.5 *per cent* per month on the amount of the bill for the period of the delay.

2.1.52 The table below indicates the balance outstanding in **DGVCL** at the beginning of the year, revenue assessed during the year, revenue collected and the balance outstanding at the end of the year during last five years ending 2010-11.

DGVCL

(₹ in crore)

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Balance outstanding at the beginning of the year	467.26	439.78	393.74	358.19	361.08
2	Revenue assessed/Billed during the year	3,576.08	3,759.39	4,466.64	5,030.54	5,445.49
3	Total amount due for realisation (1+2)	4,043.34	4,199.17	4,860.38	5,388.73	5,806.57
4	Amount realised during the year	3,603.40	3,805.43	4,502.19	5,026.45	5,443.51
5	Amount written off during the year	0.16	0	0	1.2	0.36
6	Balance outstanding at the end of the year (3 – (4+5)	439.78	393.74	358.19	361.08	362.70
7	Percentage of amount realised to total dues ((4/3)x100)	89.12	90.62	92.63	93.28	93.75
8	Arrears in terms of No. of months assessment (6/(2/12 months)	1.48	1.26	0.96	0.86	0.80

Source: Information furnished by **DGVCL**

2.1.53 Similar details of the balance outstanding in PGVCL at the beginning of the year, revenue assessed during the year, revenue collected and the balance outstanding at the end of the year during last five years ending 2010-11 are given in the table below.

PGVCL

(₹ in crore)

Sl. No.	Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
1	Balance outstanding at the beginning of the year	779.89	719.53	635.78	609.80	590.71
2	Revenue assessed/Billed during the year	3,602.46	4,015.78	4,897.60	5,381.66	5,902.75
3	Total amount due for realisation (1+2)	4,382.35	4,735.31	5,533.38	5,991.46	6,493.46
4	Amount realised during the year	3,662.82	4,099.53	4,923.58	5,400.75	5,980.43
5	Amount written off during the year	-	-	-	-	-
6	Balance outstanding at the end of the year (3 – (4+5)	719.53	635.78	609.80	590.71	513.03
7	Percentage of amount realised to total dues (4/3)	83.58	86.57	88.98	90.14	92.10
8	Arrears in terms of No. of months assessment (6/(2/12 months)	2.40	1.90	1.49	1.32	1.04

Source: Information furnished by **PGVCL**

Outstanding dues from PDC had increased in DGVCL and PGVCL indicating the inefficiency in collection of dues of two DISCOMs

We observed from the above details that in both DISCOMs, during 2006-11 the balance dues outstanding at the end of the year 2010-11 have reduced significantly as compared to the outstanding dues at the close of 2006-07. The arrears at the end of each year in two DISCOMs in terms of number of months assessment also showed decreasing trend, which is indicative of improvement in the revenue collection. However the dues outstanding from Permanently Disconnected consumers (PDC) included under total outstanding for each year had increased during 2006-11 from ₹ 352.09 crore (2006-07) to ₹ 364.51 crore (2010-11) and ₹ 477.30 crore (2006-07) to ₹ 493.74 crore (2010-11) in **DGVCL** and **PGVCL** respectively, which showed inefficiency of two DISCOMs in collection of dues against PDC.

Non disconnection of power supply of defaulted consumers

2.1.54 As per provisions of Payment of Bill of the Electricity Supply and related matters regulations (Notification No.11 of 2005) issued by GERC distribution, licensee has to allow a period of 10 days for payment of Electricity Bills from the date of billing. If the consumers fail to pay within that period, a notice has to be issued on the 11th day to pay the bill along with delayed payment charges (DPC) within the next 15 days. Otherwise, electricity supply would be disconnected temporarily on the 26th day from the date of billing. Further, reconnection of the supply would be made only after receipt of bill amount along with the DPC and reconnection charges.

Review of records in **DGVCL** for the period 2006-2011 revealed that:

- **DGVCL** issued notice for disconnection only to 51.92 lakh (i.e. an average 58 *per cent*) out of 89.34 lakh of consumers who were defaulters in making the payments and were liable for disconnection.

- Of 51.92 lakh, actual disconnections were made only in case of 31.69 lakh consumers. Thus, percentage of disconnection made to the total defaulters worked out to 35.47. Non disconnection of supply to 57.65 lakh defaulting consumers had not only resulted in slow recovery of dues but also in loss of revenue by way of reconnection charges of ₹ 80.25 crore[27] from them.

In **PGVCL**, out the 152.84 lakh defaulting consumers, the actual disconnection of supply was made in case of 43.76 lakh consumers only. Non disconnection of supply to 109.08 lakh defaulting consumers had not only resulted in slow recovery of dues leading to accumulation of loss but also in loss of revenue by way of reconnection charges of ₹ 128.90 crore[28] from them.

DGVCL and **PGVCL** stated (August 2011) that the number of defaulting consumers who were not disconnected as commented in audit was not correct since it did not reckon the defaulting consumers to whom installments were allowed, who have gone on appeal, whose dues were less than one rupee, etc. Further, considering the priority of other works and availability of manpower, suitable actions were taken from time to time for disconnection of supply of defaulting consumers.

The reply is not tenable. We had taken the details of defaulting consumers from the revenue management information system (MIS) of DISCOMs. Further, the reply does not provide the details of the numbers of consumers liable for disconnection after reckoning such cases which according to them were not liable for disconnection. To safeguard the financial interest, the DISCOMs should also give due priority for timely action for disconnection of defaulting consumers.

Delay in permanent disconnection of defaulted consumers

Delay in permanent disconnection of defaulting consumers led to blocking up of funds of ₹ 148.58 crore in DGVCL and ₹ 83.62 crore in PGVCL

2.1.55 As per provisions of GERC Notification, in case electricity dues are not deposited by the consumers within the due date indicated in the Bill, the supply shall be disconnected temporarily as discussed above. Even after disconnection of power supply if the consumers failed to pay the bill, the supply would be disconnected permanently. Thus, outstanding dues from any PDC should not be of more than two bills (Original first bill + bill for next 25 days consumption). Our analysis of the position of arrears from PDC consumers in **DGVCL** as on 31 March 2011, revealed that out of total arrears of ₹ 181.61 crore from 2.97 lakh PDC consumers, an amount of ₹ 148.58 crore related to cases where more than two months bills[29] were outstanding. In **PGVCL**, out of total arrears of ₹ 121.49 crore, an amount of ₹ 83.62 crore related to cases where more than two months bills were outstanding.

[27] 57,65,148 consumers x average reconnection charges at ₹ 139.19.
[28] 1,09,08,841consumers x average reconnection charges at ₹ 118.16.
[29] As the amount of outstanding against first two bills was not made available to audit the arrears against latest two bills have been excluded to arrive at the outstanding beyond two billing cycles.

It shows the inefficiency of DISCOMs in prompt disconnection of supply of defaulted consumers as well as allowing further consumption of electricity in subsequent period despite non payment of bills. Thus, the defaulted consumer eventually turned into PDC consumers and realisation of outstanding dues would take very long period as settlement of such cases by Civil Suit/Lok Adalat would take more time. Had DISCOMs disconnected the supply of the above PDC consumers in time, blocking up of ₹ 148.58 crore in **DGVCL** and ₹ 83.62 crore in **PGVCL** could have avoided.

DGVCL replied that the number of defaulted consumers not disconnected beyond two billing cycles did not reckon the PDC cases where arrears were agreed to be recovered in installments or where PDCs preferred appeal etc.

Reply is not acceptable as the data of PDC cases pending for disconnection for periods beyond two billing cycles has been adopted only from the Management Information System (MIS) of **DGVCL**. Further, in response to our request for providing data in support of the reply, **DGVCL** had shown its inability for the same in absence of required software/system with them.

Non-disconnection of supply of consumers with heavy arrears

It was observed in case of **PGVCL** that consumers having huge arrears, did not make payment of electricity dues in time, but their supply was not disconnected as per provisions of GERC Notification of 2005. The cases of huge arrears are given below:

Heavy outstanding receivables from Nagarpalikas

2.1.56 In **PGVCL** a review of the electricity charges recoverable from the various consumers for the period 2006-07 to 2010-11 revealed that an amount of ₹ 153.07 crore from Nagarpalikas was outstanding as on 31 March 2011. Of this, an amount of ₹ 147.94 crore remained outstanding for a period of five years. This indicates that **PGVCL** did not make adequate efforts for timely recovery of the dues.

PGVCL stated (August 2011) that they were constantly pursuing the matter of recovery of dues with Nagarpalikas. Stringent action could not be possible for disconnecting the supply as it would create public unrest. However, at the top level, the matter was taken up with the District Collector, Municipal Finance Board and GoG for expediting the payment of dues by the Nagarpalikas. The fact, however, remains that huge amount is pending affecting the financial interest of **PGVCL.**

Undue favour extended to Extra High Tension consumer

In the following instances, undue favour was shown to the defaulting HT industrial consumers by the divisions of **PGVCL**:

2.1.57 **PGVCL** had allowed an extra HT (EHT) Consumer[30] in Anjar division having contracted load of 22,500 KVA to pay energy bills in installments from August 2008. As the consumer was irregular in payment of dues, the supply was temporarily disconnected in March 2009. **PGVCL**, however, restored the supply to the consumer in July 2009 and allowed him to pay the dues in eight installments and collected post dated cheques instead of permanently disconnecting the supply. The supply was continued till November 2009; thereafter the supply was permanently disconnected in June 2010. None of the cheques given by the consumer was honoured. The dues from the consumer mounted from ₹ 1.56 crore (October 2008) to ₹ 6.17 crore (November 2009) due to supply of power during that period. The total dues inclusive of minimum charges till the date of permanent disconnection was ₹ 8.48 crore; however, **PGVCL** initiated legal action against the consumer only in March 2010. Thus, allowing the consumer to pay the dues in installments contrary to the provisions of GERC notification and also continuing the power supply by **PGVCL** despite mounting defaults resulted in accumulation of arrears to ₹ 8.48 crore.

Undue favour extended to two defaulting consumers in repayment of dues led to accumulation of arrears to ₹ 17.78 crore

2.1.58 In case of another EHT consumer[31], **PGVCL** disconnected the supply in May 2008 since the consumer defaulted in payment of bill of ₹ 3.11 crore and issued PDC notice as per prescribed rules. On the request (September 2008) of the consumer, **PGVCL** restored supply in October 2008 and also allowed the consumer to make payment of 25 *per cent* of the arrears as down payment and the balance in eight installments. Though **PGVCL** was aware that the consumer had already applied (August 2008) to BIFR for registering his Unit as a Sick unit, it had restored (October 2008) the supply ignoring DISCOM's own financial interests. Based on the consumer reference, BIFR also directed (December 2008) **PGVCL** to continue the supply of power. Only in June 2010, BIFR dismissed the consumer's reference for registering it as a sick unit on the ground that the consumer manipulated his accounts for availing the benefit of sick unit. Since the supply to the consumer was continued during this period, the arrears from the consumer also mounted to ₹ 9.30 crore till the supply was permanently disconnected in July 2010. The action of the **PGVCL** in restoring the supply to the defaulting consumer by allowing instalments to pay arrears in violation of GERC guidelines and thereto even after being aware of the consumer's reference to BIFR led to accumulation of arrears of ₹ 9.30 crore.

PGVCL stated (August 2011) that since the EHT and HT consumers were significantly contributing to the revenue of **PGVCL**, in the instant cases the request of the consumers were considered and installments were allowed without disconnection of power supply. However, the fact remains that instalments were allowed to the defaulting consumers in violation of GERC guidelines, which ultimately proved to be detrimental to the financial interests of **PGVCL**.

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[30] Extra HT consumer is one who draws power directly from 66 KV line and above. M/s Banian and Berry Alloys Private Limited.

[31] M/s.New Tech Forge & Foundry Limited, Rajkot.

Delay in issuance of estimate/release of connection order

2.1.59 GERC has laid down various standards for DISCOMS to provide better and timely services to consumers *vide* Notification No. 10 of 2005 – "Standard of performance of Distribution Licensees". Clause 9.3 of Chapter IX of the Notification stipulates that "Bulk Power connections are to be released in a time bound manner."

As per the time limit prescribed therein, maximum 60 days[32] in case of HT connections up to 2,500 KVA and 210 days[33] in case of HT connections above 2,500 KVA is permissible for issuance of connection release order on completion of all the administrative and technical formalities.

However, detailed scrutiny of records of three Industrial Divisions (Vapi, Surat and Ankleshwar) of **DGVCL** relating to new HT connections released between April 2006 and March 2011 revealed that there was delay in (i) issuance of demand notice (estimate) and (ii) issuance of connection release order. The table below shows the delay in release of new HT connections.

Division	Prescribed time limit (Days)	Total Connection Released	Total connections released with delay	Days Taken	
				Minimum	Maximum
Ankleshwar Industrial (up to 2,500 KVA)	60	98	56	73	422
Ankleshwar Industrial (above 2,500 KVA)	210	4	3	251	614
Vapi Industrial (up to 2,500 KVA)	60	168	77	61	247
Surat Industrial (Up to 2500 KVA)	60	199	164	61	462

Delay in release of new connection led to revenue loss of ₹ 3.17 crore

Such delay in release of connection order not only indicates violation of GERC notification but also deprived the consumers of the desired level of services as per standards, besides causing potential revenue loss to **DGVC**L. Had the above connection release orders been issued in time, **DGVCL** could have earned at least the minimum demand charges of ₹ 3.17 crore to the extent of delay occurred.

DGVCL stated (August 2011) that various works prior to release of connection viz., verifying the ownership /other documents of the new consumer, survey by field office to assess for the point of supply, obtaining approval from GETCO, etc. had taken considerable time in releasing the connection. In respect of three cases of consumers with contract demand of above 2,500 KVA, the delays were mainly attributable to Transmission Company (GETCO) in granting the approval for technical feasibility in releasing the connection.

[32] 15 days from the date of application for issuance of estimate and 45 days from the date of receipt of estimate amount for issuance of connection release order.

[33] 30 days from the date of application for issuance of estimate and 180 days from the date of receipt of estimate amount for issuance of connection release order.

The reply is not tenable. GERC fixed the time limit after reckoning the reasonable requirement of time for completing the above works including obtaining the approval from GETCO prior to release of connection.

Delay in execution of decree

2.1.60 In case of legal suit filed against the defaulting consumers for recovery of dues, the DISCOM after the receipt of court decree in favour of it, should file Darkhast in the court for executing the decree. It was observed that in **DGVCL**, neither the Darkhast was filed after the receipt of decree nor execution of the decree was carried out due to laxity on the part of **DGVCL**. Circle wise detail of status of execution of court decrees are tabulated below:

Sl. No.	Year	Name of circle	Total Pending decrees		Decrees received in favor of the Company but Darkhast yet to be filed	
			Numbers	₹ in lakh	Numbers	₹ in lakh
1	2006-07	Surat	117	85.05	94	59.01
2		Bharuch	495	132.56	340	91.33
3		Valsad	613	712.50	427	159.33
Total			**1,225**	**930.11**	**861**	**309.67**
1	2010-11	Surat	188	402.81	98	260.70
2		Bharuch	1,113	723.83	270	98.09
3		Valsad	477	686.89	93	14.36
Total			**1,778**	**1,813.53**	**461**	**373.15**

Source: Information furnished by **DGVCL**

It could be seen from the above table that 1,778 decrees worth ₹ 18.14 crore received in favour of **DGVCL** is pending (March 2011) of which 461 decrees worth ₹ 3.73 crore were pending due to non filing of Darkhast (petition) by the Company for decree execution. No justification was on record for the said delay.

DGVCL stated (August 2011) that receiving the decree in favour of **DGVCL** and filing of Darkhast and execution of the decree was a continuous process and it had been continuously making efforts for timely execution of decrees. However, some pending decrees were very old and the whereabouts of the consumers and other relevant details could not be traced out. In some cases, the financing company of the consumers had first right over the properties of the consumers.

Thus, the fact remains that due to lack of adequate efforts in filing Darkhast in time by **DGVCL,** execution of decree and recoveries thereagainst had correspondingly delayed.

Financial Management

2.1.61 Efficient fund management serves as a tool for decision making, for optimum utilisation of available resources and borrowings at favourable terms at appropriate time. The financial management of DISCOMs includes revenue collection, billing, borrowings, grants, transfer of funds, interest recovery/payments, security deposits, bank reconciliations and other related

transactions. While the revenue and billing have been dealt with in the preceding paragraphs, the other areas are discussed below.

The Fund Management of the all the DISCOMs are carried out by GUVNL, which includes raising of loans and their repayment along with interest. The DISCOMs broadly maintain two type of accounts viz., Non-operative collection account and Operative accounts both at HO and at field office level. The revenue realised against sale of energy is being deposited by sub-division, division and circle offices in the Non-operative account. The HO of DISCOM meets their fund requirements for payments to suppliers/employees payment etc., by adjusting against the fund collected under Non-operative account and remits the balance fund to GUVNL on a day to day basis. Under the operative account, funds are being made available to sub-division, division, and circle offices by HO to enable them to meet their expenditure. In addition, GUVNL makes arrangement with banks for providing cash credit (CC) facility to HO of each DISCOM for meeting their additional fund requirements. The funds available under Non-operative account would also be used to repay the dues under CC account before remitting to GUVNL. However, matters relating to the borrowings for long term requirements and working capital arrangements with banks are being taken care of by GUVNL. Hence, as far as fund management is concerned, DISCOMs have no active role. However, few instances of avoidable losses in **DGVCL** and **PGVCL** were noticed and have been discussed as under:

Unwarranted borrowings from Bank

2.1.62 In an isolated instance, instead of availing loans through GUVNL**, DGVCL** directly availed (September 2009) a long term loan of ₹ 80 crore from Bank of Baroda for implementing system improvement scheme. As per terms of agreement, the loan was repayable within 42 months including the moratorium period of six months in monthly installments at an interest rate of 9.50 *per cent*. **DGVCL** received ₹ 80.00 crore in five installments during September 2009 to June 2010. However, in February 2011 **DGVCL** repaid the loan amount inclusive of interest amounting to ₹ 88.25 crore on the plea that the bank did not reduce interest rate to the then prevailing rate of 8.5 *per cent*. Thus, the Company had incurred an interest of ₹ 8.25 crore for the period of 17 months.

Unwarranted borrowings led to avoidable payment of interest of ₹ 8.25 crore in DGVCL

We observed that even after adjusting all the fund requirements including power purchase cost, huge amounts of surplus funds of **DGVCL** were available with GUVNL. In March 2009, when the Management of **DGVCL** decided to avail the loan, it was aware that it had a surplus fund of ₹ 333.25 crore with GUVNL. Further, as per the arrangement made, GUVNL was to raise the funds for the DISCOMs. In view of the above, borrowing by **DGVCL** from the bank was unwarranted and had led to avoidable expenditure of ₹ 8.25 crore.

DGVCL stated (August 2011) that as the net cash and cash equivalent was reduced during 2009-10 and also for incurring the capital expenditure under system improvement scheme, the fund was required to be raised on long term basis. Hence the above loan was borrowed. Further, the extra expenditure of

₹ 8.25 crore pointed out by Audit was erroneous as the whole amount of interest paid was taken instead of the differential rate between the actual interest rate on the loan and the average cash credit rate that prevailed.

The reply is not tenable as there was only marginal reduction of ₹ 5.41 crore in cash and cash equivalent of **DGVCL** during 2009-10, which did not justify huge borrowings of ₹ 80 crore. Besides, **DGVCL** had surplus of ₹ 333.25 crore (September 2009) with the holding company (GUVNL), which did not warrant fresh borrowings by **DGVCL**.

Non-availment of rebate on Procurement of power

2.1.63 DGVCL entered into (April 2006) Bulk Supply Agreement (BSA) with the holding company viz., GUVNL for the supply of electricity in bulk which was approved by the GERC. As per article 7.5 of the BSA, if **DGVCL** makes payment of dues for the purchase of power to GUVNL within seven days of raising the provisional invoice, then **DGVCL** would be eligible for a rebate at the rate of 1.5 *per cent* on such payment.

DGVCL suffered a loss of ₹ 286.62 crore due to non availment of rebate for prompt payment as per agreement

A review of monthly invoices of GUVNL and payments made by **DGVCL** for the period 2006-10 revealed that during the said period, **DGVCL** purchased 52,644 MUs of energy valued at ₹ 19,108.26 crore. As per practice, **DGVCL** was transferring all its collected revenue after deduction of the expenses, other than the expenditure for purchase of power on daily basis to GUVNL and the surplus fund of **DGVCL** with GUVNL remained between ₹ 105.05 crore to ₹ 324.19 crore at the end of each year during 2006-11. This is indicative of the fact that all the invoices of the GUVNL were paid by **DGVCL** within a period of seven days. Hence it was entitled to get the rebate of 1.5 *per cent* i.e. ₹ 286.62 crore on the payments made for purchase of power. However, **DGVCL** did not avail the benefit of rebate.

DGVCL replied (August 2011) that GUVNL availed rebate for prompt payment made by them from their suppliers and the purchase cost was arrived after reckoning the rebate availed. Accordingly, the rebate was passed on to the DISCOMs in the form of lesser purchase cost.

The reply is not tenable. GUVNL, based on the PPA made with the suppliers, was availing the rebate. Whereas for the invoice raised against the DISCOMS for the power sold, GUVNL through BSA, agreed to pass on the rebate to the DISOCMs on the sale price against prompt payment of the DISCOMs. However, in the case of **DGVCL**, GUVNL did not pass on the benefit of rebate even though they had made the payment within the time stipulated as per the agreement defeating the very purpose of the incentive for prompt payment prescribed in the agreement.

***Supply of energy beyond stipulation of eight hours to agriculture consumer*s**

2.1.64 As per GoG policy, DISCOMs supply power for eight hours to agriculture consumers. In cases of drought spells or specific need for water for longer hours for agriculture in order to save the crops, the power shall be supplied as per specific directives of GoG from time to time. Accordingly,

DGVCL did not claim subsidy of ₹ 38.94 crore for supply of energy beyond eight hours to agricultural consumers

during July to September 2009, **DGVCL** supplied power to agriculture sector for more than eight hours. The power supplied to the unmetered agricultural consumers was on an average 9.13 hours. During the period, per HP of connected load energy availability for the unmetered AG consumers was 2,152 units as against the earmarked 1,700 units (for eight hours supply). Neither GUVNL nor **DGVCL** ever demanded/received any subsidy from the GoG for the supply of energy made to agricultural consumers for above eight hours at a lower rate. Thus, supply of energy for more than eight hours by **DGVCL** without any commitment/assurance from GoG/GUVNL for release of additional subsidy for power supplied beyond eight hours resulted in loss of ₹ 38.94 crore (108.18 MUs[34]) at an average purchase cost of ₹ 3.60[35] per unit.

DGVCL stated (August 2011) that the power was supplied more than eight hours due to drought condition, to save the paddy crop as a social obligation as per instructions of GoG.

The fact, however, remains that the Company should have claimed reimbursement of losses suffered by it on this account from the GoG/GUVNL as the power for additional hours was supplied at the instance of the GoG/GUVNL.

Non installation of DTC meters

2.1.65 The Chairman, GUVNL directed (February 2008) **PGVCL** to complete the metering of all the distribution transformer centres (DTC) by December 2008. However, it was observed that **PGVCL** procured 72,203 numbers of 100/5 ampere CT operated static meters and 34,849 numbers of 200/5 Ampere CT operated static meters during July 2008 to January 2009 and installed 24,572 numbers and 19,891 numbers respectively till 31 March 2011. Thus, 47,631 numbers (66 *per cent*) and 14, 958 numbers (43 *per cent*) of the above meters respectively valued at ₹ 15.17 crore were not installed (March 2011) due to lack of effort on the plea of lack of manpower, which led to locking up of funds to that extent and consequential loss of interest of ₹ 3.37 crore at 10.25 *per cent*[36] for 26 months (February 2009 to March 2011).

Subsidy Support and Cross Subsidisation

2.1.66 There is an urgent need for ensuring recovery of cost of service from consumers to make the power sector sustainable. The GoG is providing subsidy with a view to ensure supply of power to specific category of consumers at concessional rates of tariff.

Subsidy Support

As per the mechanism in place, GUVNL is directly dealing with the GoG for Government subsidy and is maintaining a subsidy account showing the

[34] Consumption during the year 2009-10 (526.81 MUs) less consumption during the year 2008-09 (418.63 MUs) for connected load of 2,44,810 HP.
[35] Cost of power purchase ₹ 4,048.68 crore / Total units purchased 11,266 million units
[36] Based on interest on working capital approved by GERC for 2010-11.

opening balance, subsidy due and received for the year and the closing balances at the end of the year, i.e. receivable from the government for the DISCOMs as a whole. Based on the agricultural consumers in each DISCOM, the share of subsidy of each DISCOMs are worked out and booked in respective DISCOMs accounts. Details in this regard for all the DISCOMs are given below:

(₹ in crore)

Particulars	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Opening balance	11.97	72.16	252.27	596.20	727.73
Add: Due from GoG during the year	1,830.19	1,934.35	3,214.97	2,831.04	2,862.90
Less: Received during the year	1,770.00	1,754.24	2,871.04	2,699.51	2,662.00
Closing balance	72.16	252.27	596.20	727.73	928.63

As can be seen from the table, in none of the years the subsidy due to the four DISCOMs were received from the Government in the year itself which led to accumulation of ₹ 928.63 crore towards subsidy receivable from the Government as at the end of March 2011.

2.1.67 Year wise details of amount of subsidy and the amount of sale of energy excluding the amount of subsidy for the selected DISCOMs are given below:

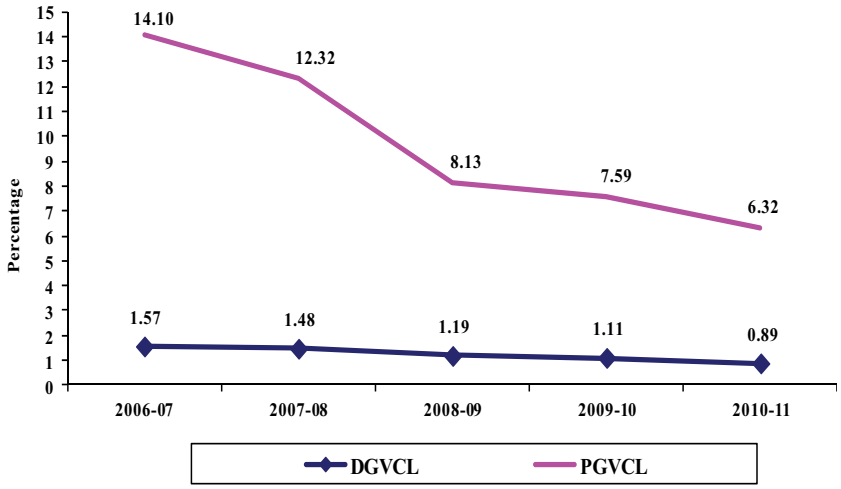
(₹ in crore)

Year	**DGVCL**			**PGVCL**		
	Sales	**Subsidy**	**Percentage**	**Sales**	**Subsidy**	**Percentage**
2006-07	3,138.46	49.28	1.57	3,361.17	474.22	14.10
2007-08	3,324.59	49.38	1.48	3,782.25	466.24	12.32
2007-09	4,148.22	49.70	1.19	4,951.65	403.00	8.13
2009-10	4,384.36	48.98	1.11	5,192.75	394.32	7.59
2010-11	5,210.31	46.66	0.89	6,285.66	397.50	6.32

Source: Information furnished by GUVNL and annual accounts of **DGVCL** and **PGVCL**

The graph below indicates revenue subsidy support from GoG (against concessional tariff) as a percentage of sales[37] by **DGVCL** and **PGVCL** for the last five years ending 31 March 2011.

[37] The figures of total revenue from sale of energy here is excluding revenue subsidy from GoG for concessional tariff.



It is evident from the above that subsidy support from the Government is showing a decreasing trend over the period 2006-11 due to increase in the number of non agricultural consumers where subsidy was not given.

Cross subsidisation

2.1.68 Section 61 of Electricity Act 2003 stipulates that the tariff should progressively reflect the average cost of supply (ACOS) of electricity and also reduce cross subsidy in a phased manner as specified by the Commission. National Tariff Policy envisaged that the tariff of all categories of consumer should range within plus or minus 20 *per cent* of the ACOS by the year 2010-2011. The position as regards cross-subsidies in various major sectors of consumers in both the DISCOMs as approved in tariff orders (2006-11) by GERC is shown at ***Annexure 11.***

The highest beneficiaries of cross subsidies were mainly agricultural, residential and public water works categories of consumers

It may be seen from the ***Annexure 11*** that both in **DGVCL** and **PGVCL** the highest beneficiaries of cross subsidies were Agricultural, Residential and Public Water Works categories of consumers during 2006-11. The major contributors of cross subsidies were categories of Commercial (2006-07) and Railway Traction (2007-11) in **DGVCL** and Commercial and HT Industrial (2006-11) in **PGVCL** In **DGVCL,** the categories subsidised by more than 20 *per cent* of ACOS were Residential, Agricultural (2006-11) and Public Water Works during 2007-11. In case of **PGVCL,** such subsidisation was extended to Agricultural and Public Water Works throughout five years period from 2006-11.

Thus, target of bringing the tariff of all categories of consumers within plus or minus 20 *per cent* of the ACOS by the year 2010-11 as envisaged in the National Tariff Policy was not achieved by any of the two DISCOMs**.** Hence, there is an urgent need to correct this imbalance by progressively and gradually reducing the existing cross subsidy levels.

Tariff Fixation

2.1.69 The financial viability of DISCOMs depends upon generation of surplus (including fair returns) from the operations to finance their operating needs and future capital expansion programmes by adopting prudent financial practices. Revenue collection is the main source of generation of funds for DISCOMs. While other aspects relating to revenue collection have been discussed in preceding paragraphs, the issues relating to tariff are discussed hereunder.

The tariff structure of the DISCOMs are subject to revision approved by the respective State Electricity Regulatory Commission (SERC) after the objections, if any, received against Aggregate Revenue Requirement (ARR) petition filed by them within the stipulated date. The Company was required to file the ARR for each year 120 days before the commencement of the respective year**.** The SERC accepts the application filed by the Company with such modifications/conditions as may be deemed just and appropriate and after considering all suggestions and objections from public and other stakeholders. The due date for filing ARR, actual date of filing, date of approval of tariff petition and the effective date of the revised tariff in respect of all the DISCOMs are the same**,** the details of which are given below:

Year	Due date of filing	Actual date of filing	Delay in days	Date of approval	Effective date
2006-07	30.11.2005	06.01.2006	37	06.05.2006	01.04.2006
2007-08	30.11.2006	28.12.2006	28	31.03.2007	01.04.2007
2008-09	31.01.2008	31.07.2008	181	17.01.2009	01.02.2009
2009-10	30.11.2008	26.08.2009	269	14.12.2009	14.12.2009
2010-11	30.11.2009	23.12.2009	23	31.03.2010	01.04.2010

Source: Information furnished by all DISCOMs

ARR were filed with a delay of 23 to 269 days by DISCOMs during 2006-11

It could be seen from the above table that the DISCOMs failed to file the ARR petition before the due date in all the years under review. For the year 2008-09, being the first year for filing the ARR under Multi Year Tariff (MYT) basis, GERC allowed the DISCOMs to file the ARR up to 31 January 2008 instead of November 2007. Despite that, there was an inordinate delay of 181 days in filing the ARR for the year 2008-09. Further, filing of the ARR by the DISCOMs for the year 2009-10 also, was abnormally delayed by 269 days which lacked justification.

DGVCL stated (August 2011) that the delay in filing of ARR for the year 2008-09 was mainly due to compilation of various data for preparation of ARR due to introduction of MYT system by GERC. So far as filing of ARR 2009-10 was concerned, it was delayed due to deputation of majority of staff for General Election work.

The reply is not tenable. GERC brought to the notice of DISCOMs draft MYT regulation well in advance in August 2007 itself; further, against the schedule of 30 November 2007, extension was granted by GERC till 31 January 2008 for filing the ARR for 2008-09. As the filing of ARR has priority, DISCOMs should have made adequate efforts for timely filing of ARR in 2009-10 also.

Loss of Revenue due to belated submission of tariff petition

2.1.70 As per GERC Multi Year Tariff regulations issued *vide* notification dated 20.12.2007, the distribution company was required to file separate ARR under Multi Year Tariff for Commission's approval for the control period from 1 April 2008 to 31 March 2011, latest by 31 January 2008.

Belated filing of tariff petition resulted in loss of ₹ 51.75 crore in DGVCL and ₹ 48.89 crore in PGVCL

We observed that both **DGVCL** and **PGVCL** failed to file separate accounting statements with ARR within the stipulated period of 31 January 2008 and belatedly filed it on 31 July 2008 on the plea of extra time consumed in compilation of various data for preparation of ARR as per newly introduced MYT system. As a result, the upward revision of energy charges (minimum increase of 10 paisa per unit in five[38] consumer categories) in tariff for 2008-09 could not be made effective from 1 April 2008. GERC issued tariff order on 17 January 2009, and the order came into force from 1 February 2009 only. Consequent to this delay, the two DISCOMs had to bill their consumers for the period from April 2008 to January 2009 by adopting the pre-revised rate approved in the previous tariff order applicable for the year 2007-08. Had the Company filed accounting statements along with ARR in time with GERC, it would have got the tariff order in time which could have been made applicable from 1 April 2008. Thus, the delay in filing of accounting statements along with ARR led to loss[39] of ₹ 51.75 crore in **DGVCL** and ₹ 48.89 crore in **PGVCL**.

Deficit in recovery of cost

2.1.71 Detailed analysis revealed that the extent of tariff was lower than break even levels (in percentage terms) of revenue from sale of power at the present level of operations and efficiency for the period 2006-11 for **DGVCL** as shown in the table below:

(₹ in crore)

Year	Sales (excluding subsidy)	Variable costs	Fixed costs	Contribution	Deficit in recovery of fixed costs	Deficit as percentage of sales
(1)	(2)	(3)	(4)	(5) = (2) – (3)	(6) = (4) – (5)	(7)={(6)/ (2)} X 100
2006-07	3,138.46	3,084.95	249.35	53.51	195.84	6.24
2007-08	3,324.59	3,261.00	244.09	63.59	180.50	5.43
2008-09	4,148.22	3,981.20	297.77	167.02	130.75	3.15
2009-10	4,384.36	4,136.90	344.13	247.46	96.67	2.20
2010-11	5,210.31	4,942.00	346.35	268.31	78.04	1.50

Source: Annual Accounts and information furnished by **DGVCL**

[38] Residential, Commercial LT, Industrial LT, Water Works and Industrial HT.

[39] Total number of units consumed by various categories of consumers x the differential rate in the energy charges (10 paise per unit) between the two tariff orders for 2007-08 and 2008-09 for 10 months i.e., from April 2008 to January 2009.

Position in respect of **PGVCL** for the period 2006-11 is tabulated below:

(₹ in crore)

Year	Sales (excluding subsidy)	Variable costs	Fixed costs	Contribution	Deficit in recovery of fixed costs	Deficit as percentage of sales
(1)	(2)	(3)	(4)	(5) = (2) – (3)	(6) = (4) – (5)	(7)={(6)/ (2)} X 100
2006-07	3,361.17	3,390.19	602.93	(-)29.02	631.95	18.80
2007-08	3,782.25	4,108.01	591.4	(-)325.76	917.16	24.25
2008-09	4,951.65	4,907.97	617.04	43.68	573.36	11.58
2009-10	5,192.75	5,040.38	660.88	152.37	508.51	9.79
2010-11	6,285.65	6,118.31	697.42	167.34	530.08	8.43

Source: Annual Accounts and information furnished by **PGVCL**

It could be seen that during 2006-11, while **DGVCL** was able to cover its variable cost, **PGVCL** could not fully recover even the variable cost during 2006-07 and 2007-08 against the revenue from sale of energy (excluding the subsidy). As far as fixed cost was concerned, in none of the years, **DGVCL** and **PGVCL** could recover it fully against the revenue from sale of energy. It appears that the tariff is on lower side and needs to be revised for recovery of the cost. Further, the costs could be brought down by improving operational efficiency, viz., reduction in AT&C losses, conversion of LT lines to HT lines, metering of unmetered connections, replacement of defective meters, improving billing and collection efficiency etc., which have been discussed separately in the performance audit. Moreover, efforts should also be made to reduce cross subsidisation among various sectors (categories) of consumers.

Loss due to non-request for enhancement of Tariff Rate

2.1.72 As per GERC (Terms and Conditions of Tariff) Regulation 2004, the DISCOMs were allowed to have full amount of return on equity (ROE) of 14 *per cent*. Ministry of Power (MOP), GoI had also instructed (February 2008) the GoG to ensure full ROE to power utilities. Accordingly, **DGVCL** and **PGVCL** while filing the ARR petition for the year 2007-08 had demanded (December 2006) ROE of ₹ 47.09 crore and ₹ 138.46 crore respectively at the admissible rate of 14 *per cent*. The projected ROE could be achieved either by way of increase in tariff or by reducing the cost or both. However, both the DISCOMS did not ask GERC for revision of tariff. Considering the lesser scope for minimising the cost coupled with absence of request for revision of tariff by DISCOMs, GERC approved the ARR reckoning the ROE at lower rate of seven *per cent* only (₹ 23.55 crore and ₹ 69.23 crore respectively).

Had the DISCOMs requested for revision of Tariff to get 14 *per cent* ROE (which they were eligible as per GERC regulations), it would have got the projected ROE of ₹ 47.09 crore and ₹ 138.46 crore respectively. Since the DISCOMs did not ask for revision of tariff, they were left with no other option but to minimise the cost. However, DISCOMs failed to decrease the cost; on the contrary **DGVCL** and **PGVCL** incurred a loss[40] of ₹ 127.66 crore and ₹ 449.81 crore respectively against the 14 *per cent* ROE of ₹ 47.09 crore and ₹ 138.46 crore during 2007-08. In subsequent financial years (i.e., 2008-09 to

[40] Loss per unit X Net power sold

2010-11), however, the GERC approved ROE at the rate of 14 *per cent* and also approved the revision of tariff accordingly.

Consumer Satisfaction

2.1.73 One of the key elements of the Power Sector Reforms was to protect the interest of the consumers and to ensure better quality of service to them. The consumers often face problems relating to supply of power such as non-availability of distribution system for release of new connections or extension of connected load, frequent tripping of lines and/ or transformers and improper metering and billing.

DISCOMs were required to introduce consumer friendly environment like introduction of computerised billing, online bill payment, establishment of customer care centres, etc. to enhance satisfaction of consumers and reduce the advent of grievances among them. The billing issues have already been discussed in the preceding paragraphs. The redressal of grievances is discussed below.

Redressal of Grievances

2.1.74 The GERC specified the mode and time frame for redressal of grievances *vide* its Notification No.4 of 2004 "Establishment of forum for redressal of grievances of consumer regulations" in pursuance of the Electricity Act, 2003. GERC had also prescribed (*vide* its Notification No. 10 of 2005) the Standard of Performance (SOP) for DISCOMs, the time limit for rendering services to the consumers and compensation payable for not adhering to the same. The nature of services contained in the SOP *inter alia* includes line breakdowns, distribution meter complaints, installation of new meters/ connections or shifting thereof, etc.

There is a three tier system for redressal of consumer grievances comprising Consumer Redressal Committees (CRC) at Division and Circle Level and Consumer Grievances Redressal Forum (CGRF) at Corporate Level. The consumer shall register grievances before concerned Division level CRC who shall dispose of the complaint within one month. Circle level CRC and Corporate level CGRF act as an appellate body above Division CRC and Circle CRC respectively. Further, GERC has appointed an Ombudsman as an authority for hearing appeals against the decisions of corporate level CGRF. In this regard, scrutiny of records of **DGVCL** revealed the following:

- GERC in SOP regulation prescribed specific proforma for maintenance of the complaint register. However, on a test check of three divisions[41], we observed that the registers maintained were deficient as far as they did not record the mandatory details such as classification and nature of complaint, time and date of redressal of complaint etc.

[41] Vyara, Vapi (Rural) and Vapi (Industrial)

- The overall position as regard receipt of complaints and their clearances in **DGVCL** is depicted in the table below:

(in number)

Sl. No.	Particulars	2007-08	2008-09	2009-10	2010-11
1.	Total complaints received	3,49,315	3,18,004	3,46,878	3,46,092
2.	Complaints redressed within time	3,49,297	3,18,004	3,45,415	3,42,829
3.	Complaints redressed beyond time	0	0	0	0
4.	Pending complaints	18	0	1,463	3,263
5.	Percentage of complaints redressed beyond time to total complaints	0	0	0	0
6.	Compensation paid, if any, to Consumers (₹ in lakh)	Nil	Nil	Nil	Nil

Source: SOP Information furnished by **DGVCL** to GERC

- As could be seen from the table that the complaints redressed beyond time was shown as nil during 2007-11. In the test check, we observed that 16,190 numbers and 5,377 numbers of complaints were not redressed within the stipulated time during 2007-11 by Vapi (Rural) and Vapi (Industrial) division respectively. This raised doubts on the authenticity of the information furnished by **DGVCL** to GERC.

Non adherence to the provisions of SOP of GERC related to redressal of consumer grievance

- SOP regulation stipulates that scheduled outage of interruption should be notified to public at least 48 hours in advance. However, on a test check of records of selected three divisions, we observed that in several instances, notice was published in the newspaper on the same day of scheduled outage in violation of SOP.
- As per **DGVCL** policy (up to August 2010), it has to allow load development rebate to the new HT consumer in the first three bills. However, on the test check of Vapi (Industrial) Division it was noticed that in 92 out of 101 HT connections released during 2007-10, **DGVCL** had not given the rebate to the consumers.
- Instances of delay in issuance of estimate/release of connection order as discussed in paragraph no.**2.1.59** *supra* had put hardship to the consumers

The overall position as regard receipt of complaints and their clearances in **PGVCL** is depicted in the table below:

(in number)

S.No.	Particulars	2007-08	2008-09	2009-10	2010-11
1.	Total complaints received	6,24,138	6,66,455	6,82,574	5,62,202
2.	Complaints redressed within time	5,99,020	6,43,770	6,60,831	5,32,124
3.	Complaints redressed beyond time	14,873	16,094	18,392	28,239
4.	Pending complaints	10,245	6,591	3,351	1,839
5.	Percentage of complaints redressed beyond time to total complaints	2.39	2.42	2.70	5.03
6.	Compensation paid, if any, to Consumers (₹ in lakh)	Nil	Nil	Nil	Nil

Source: SOP Information furnished by **PGVCL** to GERC

As seen from the above table the percentage of complaint redressed beyond time to total complaints received increased from 2.39 to 5.03 during 2007-11,

which is indicative of the ineffectiveness of the mechanism for redressal of consumer grievances.

Energy Conservation

2.1.75 Recognising the fact that efficient use of energy and its conservation is the least cost option to mitigate the gap between demand and supply, the GOI enacted the Energy Conservation Act, 2001. The conservation of energy being a multi-faceted activity, the Act provides both promotional and regulatory roles on the part of various organisations. The promotional role includes awareness campaigns, education and training, demonstration projects, R & D and feasibility studies. The regulatory role includes framing of rules for mandatory audits for large energy consumers, devising norms of energy consumption for various sectors, implementation of standards and provision of fiscal and financial incentives.

Considering the importance of energy saving, the GoG also provides financial assistance in the form of grants every year for implementation of various energy conservation measures. The details of grant received from the Government through GUVNL to **DGVCL** and **PGVCL** for energy conservation and utilisation thereagainst during the performance audit period is given below:

(₹ in crore)

Year	DGVCL		PGVCL	
	Grant Received	Grant utilised	Grant Received	Grant utilised
2006-07	3.00	0.00	0	0
2007-08	1.25	0.00	0	0
2008-09	0.35	0.47	0.75	0.04
2009-10	1.76	3.69	6.78	5.30
2010-11	0.49	1.59	5.35	4.99
Total	**6.85**	**5.75**	**12.88**	**10.33**

Source: Information furnished by **DGVCL** and **PGVCL**

Funds provided for energy conservation activities were not fully utilised

DGVCL received total fund of ₹ 6.85 crore during 2006-11 and **PGVCL** ₹ 12.88 crore during 2008-11, of which both **DGVCL** and **PGVCL** spent ₹ 5.75 crore and ₹ 10.33 crore respectively during 2008-11. **DGVCL** utilised the funds for conversion of LVDS to HVDS[42] and installation of aerial bunch conductors whereas **PGVCL** utilised for conversion of LVDS to HVDS, providing of energy efficient pumps, IEC[43] and APFC[44]. Despite this, the fund of ₹ 1.10 crore and ₹ 2.55 crore remained unutilised by **DGVCL** and **PGVCL** respectively during 2008-11 which lacked justification.

Energy Audit

2.1.76 A concept of comprehensive energy audit was put in place with the objective of identifying the areas of energy losses and taking steps to reduce the same through system improvements besides accurately accounting for the

[42] Low Voltage Distribution System to High Voltage Distribution Scheme.
[43] Information Education and Communication.
[44] Automatic Power Factor Controller.

units purchased/ sold and losses at each level. The main objectives of energy audit are as follows:

- better and more accurate monitoring of the consumption of electricity by consumers;
- elimination of wastages;
- reduction of downtime of equipment;
- Massive savings in operational costs and increase in revenue, etc.

We observed that both **DGVCL** and **PGVCL** did not carry out any energy audit during the period 2006-11. One of the reasons for not taking up the energy audit was that metering of distribution transformer centers (DTCs) were not completed in any of the two DISCOMs. Metering of DTCs helps in proper accounting of energy sent out from the feeders to various consumers and also in identifying high energy loss pockets. GERC, *vide* its tariff orders, issued directions to expedite the work of metering of DTCs. However, the work of metering was slow in **DGVCL** as evident from the following details made available to audit pertaining to the period 2006-11:

Year	Total DTC	Metered DTC at year end	Unmetered DTC at year end	Percentage of metered DTC to total DTC	Additional DTC procured	Metering of DTC done during the year
2006-07	35,924	19,316	16,608	53.77	--	--
2007-08	39,626	22,278	17,348	56.22	3,702	2,962
2008-09	43,254	22,678	20,576	52.43	3,628	400
2009-10	47,796	24,003	23,793	50.22	4,542	1,325
2010-11	57,765	29,604	28,161	51.25	9,969	5,601
Total					**21,841**	**10,288**

Source: Management Information System Report of **DGVCL**

At the end of March 2011, 51.25 *per cent* DTCs were metered. Installation of meters during the year 2007-11 was much lower as compared to the number of additional meters procured during that year. This led to more number of unmetered DTCs in the year 2010-11 in comparison with 2006-07 which showed that **DGVCL** was not even able to provide meters to all the newly installed DTCs. Similar analysis in respect of **PGVCL** could not be done due to non-availability of relevant data.

DGVCL and **PGVCL** stated (August 2011) that efforts were being made to provide meters on the DTCs. As far as metering agricultural DTCs was concerned, due to resistance from farmers it could not be carried out fully. However, campaigns were made to create awareness to the farmers about the purpose of metering the DTCs.

Acknowledgement

We acknowledge the cooperation and assistance extended by different levels of the Management at various stages of conducting the performance audit.

Conclusion

- **The distribution reforms as envisaged under National Electricity Policy/Plans were not fully achieved by DGVCL/PGVCL; the feeders/DTRs commissioned by PGVCL in test checked regions were not commensurate with the connected load;**

- **Implementation of centrally sponsored schemes (R-APDRP, RGGVY) by DGVCL/PGVCL was not efficient and effective. Several deficiencies like, under utilisation of scheme funds, delayed completion/non-synchronisation of works, etc. were noticed which had adverse effects on implementation of schemes;**

- **AT&C losses of DGVCL and PGVCL stood between 20.59 and 18.35 *per cent* and 33.77 and 29.03 *per cent* respectively as against R-APDRP stipulated norm of 15 *per cent* on account of various deficiencies like, excessive failure of DTRs due to inadequate maintenance activities, avoidable delays in repairs of DTRs, slow replacement of conventional meters with quality/static meters, non-metering of all agricultural consumers, slow implementation of LT less system, slow conversion of LT conductors with Aerial Bunch Cables, etc.**

- **Deficiencies in the billing system, such as incorrect estimation of agricultural consumption and under recovery of additional Security Deposit were noticed. The collection activities of two DISCOMs also had several shortcomings like, mounting arrears against permanent disconnected consumers, non-disconnection of power supply to defaulting consumers and consumer with heavy arrears, revenue loss due to delay in issue of estimate/release of connection order, avoidable delay in execution of decree against defaulting consumers, etc.**

- **The DISCOMs did not have financial autonomy in management of funds and raising loans. Instances of unwarranted borrowings and non-claiming of rebate from holding company for prompt payment were noticed in DGVCL.**

- **There was no effective system in place in DGVCL/PGVCL to assess consumer satisfaction and redressal of grievances.**

- **No effective energy conservation measures were undertaken by DGVCL/PGVCL. None of the two DISCOMs conducted energy audit during 2006-11.**

Recommendations

- **DISCOMs should focus on proper management of feeders so that feeders/DTRs commissioned would commensurate with the connected load of the consumers;**
- **DISCOMs should implement the GoI schemes meant for rural electrification and system augmentation within the time schedule fixed, so as to achieve the envisaged objectives of the schemes;**
- **DISCOMs should strive to achieve the norms of AT&C losses by strengthening the efficiency of distribution system through evolving adequate maintenance system, proper management of DTRs, expeditious replacement of conventional meters with quality/static meters, etc.**
- **Corrective measures such as, conducting awareness campaign and metering all the agricultural consumers, prompt disconnection of defaulting consumers, timely recovery of dues, prompt execution of court decrees for recovery of dues from defaulting consumers etc., need to be taken;**
- **GUVNL should give sufficient financial autonomy to the DISCOMs for efficient performance of their activities;**
- **The guidelines of GERC regarding redressal of consumer grievances should be adhered to by the DISCOMs.**
- **DISCOMs should conduct energy audits as per the directives of GERC.**

Gujarat State Petroleum Corporation Limited

2.2 Functioning of Gujarat State Petroleum Corporation Limited

Executive summary

The Company was incorporated on 29 January 1979 for exploration, development and production of petroleum and carrying on business of all chemicals derived from hydrocarbons. The Company ventured in exploration activities under Pre-NELP in 1994 and participated in bidding with introduction of New Exploration Licensing Policy (NELP) from 1999. The Company is also engaged in gas trading activity and caters to industries engaged in power generation, steel and city gas distribution.

Blocks and hydrocarbon reserves

After surrender of four blocks (2006-10), the Company, as on 31 March 2011, had 64 blocks, of which 53 blocks are in India and 11 blocks are overseas. Of the 53 domestic blocks, the Company is operator in nine blocks and non operator in 44 blocks. The Company has 14 producing blocks which are domestic.

The proved and probable (2P) reserves in 11 out of 14 producing blocks are 3,376.9 MBbl of oil and 19.6 BCF of gas. Of the remaining 39 domestic blocks which are under exploration stage, one offshore block viz., Krishna Godavari (KG) block entered development stage and 2P of KG block is 18,303.7 MBbl of oil and 947.3 BCF of gas.

Bidding for hydrocarbon blocks

The Company with its consortium submitted bid for acquiring KG block without properly assessing related technical and financial issues. As a result, against the estimated drilling cost of US $ 102.23 million and the total depth committed of 45,348 meter in the minimum work programme (MWP), the actual drilling cost incurred was US $ 1,302.88 million (₹ 5,920.27 crore) and the total depth drilled was of 77,395.07 meters.

The main reason for the incorrect estimation was adoption of deficient geological model prepared by a joint venture (JV) partner, Geo Global Resources Inc., Canada (GGR). The Company on the ground that GGR was a technical expert, admitted GGR in the JV without taking any financial contribution from him during the exploration phase of KG block. As a result, the Company incurred GGR's share of US $ 175.07 million (₹ 780.81 crore) towards the exploration cost and suffered loss of interest of ₹104.14 crore during 2007-11.

Exploration

An unreasonable time of 14 to 106 months was taken (2006-11) for completing the environment impact studies (EIS) in eight out of nine domestic blocks where the Company was operator.

Against the estimated drilling rate of 27.76 meters per day, the actual rate was 22.49 meters per day in drilling (July 2004 to April 2010) 16 wells in KG offshore block. This resulted in extension of tenure of drilling activity and consequential avoidable expenditure of ₹ 180.91 on drilling work.

Reliance Industries Limited (RIL) a private sector enterprise, installed Control and Riser Platform unilaterally in the part area of KG block licensed to the Company on which no other operator has any right without the consent of the Company/GoI. As per the mining lease conditions of GoI, the Company would be responsible for safety and security of all structures in its block including RIL's structure for its life period.

Further, in exploration activities, instances such as, drilling of well in area belonging to other operator, acceptance of material against specifications, incurring of imprudent expenditure and payment of idle charges were noticed. Consequently, the Company incurred avoidable expenditure of ₹ 13.23 crore and also suffered loss of ₹12.45 crore.

Twenty-six unviable wells were not abandoned even after expiry of 166 to 1,610 days since completion of test (November 2006 to October 2010), so as to bring the wells area to the pre-existing local environment as per the Regulation 59 of Oil Mines Regulations, 1984.

Development

The Company incurred total expenditure of ₹ 104.29 crore on drilling of wells without obtaining approval of the Management Committee/GoI for the Field Development Plan (FDP). In absence of necessary approval, the said expenditure could not qualify for recovery as 'cost petroleum'. Further, delay of 12 months in finalisation of construction contract from the date of approval of FDP would have corresponding impact in commencement of production activities in KG block.

Marketing

During 2006-11, the total revenue from trading of gas was ₹ 19,245.39 crore and the revenue from sale of its own production of gas and oil was ₹ 1,563.63 crore which indicated that Company was focusing mainly on trading rather than production activity. In trading activities the Company failed to safeguard its interest due to non-insertion of clause for recovery of Take or Pay (ToP) charges in the contracts for sale of gas with 25 to 36 customers out of 38 to 47 customers. This led to potential revenue loss of ₹ 502.19 crore in selected cases.

Though the Company purchased (2006-09) gas on spot price, it sold gas at a price which was lesser than the purchase price by ₹ 5.23 to ₹ 430.79 per MMBTU which resulted in extension of undue benefit of ₹ 70.54 crore to a private entrepreneur, Adani Energy (Gujarat) Limited.

Finance

Though exploration, development and production activities are of high risk and capital intensive nature and requires long gestation period, the Company largely utilised (2006-11) short term loans (constituting 38 per cent of the total borrowings) on these activities. The dependence on short term loans for these activities was not a prudent financial practice.

Instances of losses due to financial deficiencies such as, interest loss (₹ 3.14 crore) due to delay in raising claims for recovery of dues from JV partners and avoidable payment of penal interest (₹ 4.17 crore) due to short remittance of advance tax were noticed.

Internal Control and Monitoring Mechanism

The internal control and monitoring mechanism of the Company was weak in several areas like non-submission of annual budget to Board of Directors, absence of Management Information System with regard to taking up of exploration and development activities as per the commitments made in Minimum Work Programme of Profit Sharing Contracts and as per the approved FDP, etc.

Conclusion

Proper assessment of technical and financial issues was not done before bidding for acquisition of KG block. Unreasonable time was taken in completing environment impact study and wells were drilled beyond exploration period. Improper management of exploration and development activities led to incurring of avoidable expenditure/ losses. Financial interest of the Company was not safeguarded due to non insertion of clause for recovery of ToP charges in all the contracts for sale of gas. Proper internal control and monitoring system was not in existence.

Recommendations

The review contains five recommendations which inter alia include properly assessing both financial and technical issues before bidding for the blocks, devising mechanism for improving the efficiency in the management of activities related to exploration and development, insertion of the clause for recovery of ToP charges in all the contracts for sale of gas and improving the internal control and monitoring system.

Introduction

2.2.1 Gujarat State Petroleum Corporation Limited[1] (the Company) was incorporated on 29 January 1979. The main objectives of the Company *inter alia* includes exploration, development and production of petroleum, carrying on business of all chemicals derived from hydrocarbons, generate energy in any form for sale and supply from available fuel and other inputs, etc. The Company actually ventured in the exploration activities under Pre-NELP in 1994 and participated in bidding with introduction of New Exploration Licensing Policy (NELP) from 1999. The Company is also engaged in gas trading activity and caters to industries engaged in power generation, steel and city gas distribution. As on 31 March 2011, Government of Gujarat (GoG) was holding 89.83 *per cent* of equity stake in the Company.

2.2.2 The Management of the Company is vested in the Board of Directors (BoD) comprising a Chairman and the Managing Director (MD) and nine Directors. The MD is the chief executive officer who is assisted by 15 heads of department of the Company. The BoD has constituted various sub-committees viz*.,* Project Committee, Human Resource Committee, Audit Committee, and Shareholders/ Investors Grievance Committee to assist BoD in performing their duties.

Scope of Audit

2.2.3 The performance audit was conducted from December 2010 to July 2011 and covers various activities of the Company relating to bidding for and acquisition of hydrocarbon blocks, exploration, development and production of petroleum including environmental issues, marketing of oil/ natural gas and financial management during the period of five years up to 2010-11. For the detailed checking of records related to exploration, development, production of petroleum, seven[2] out of 18 hydrocarbon blocks (the blocks) (38 *per cent*) where the Company was operator were selected for test check. Of the seven blocks, five were onshore in which Company's stake was more than 50 *per cent* and two were offshore blocks, one each in domestic and overseas. In case where Company was non-operator, seven[3] out of 46 blocks (15 *per cent*) were selected. Of the seven blocks, four blocks in which the Company had stake of more than 60 *per cent* and three blocks (including one overseas block) with smaller stake of the Company were selected. Further, we test checked the records relating to the transactions under other activities of the Company based on their importance in terms of money value, compliance to statutes, etc.

[1] It was called Gujarat State Petrochemicals Corporation Limited prior to November 1994.
[2] Tarapur, Ahmedabad, KG block, Sanand-Miroli, Ankleshwar, Unawa and North Hapy blocks.
[3] North Kathana, Kanawara, Allora, Hazira, Mumbai offshore, CB-ONN-2005/ 10 and WA-388 Australia.

Audit objectives

2.2.4 The objectives of performance audit were to assess whether:

- bidding for acquisition of the hydrocarbon blocks was made in the most competitive manner based on proper study of prospective oil and gas acreage and evaluation of geological and economical risks;
- different phases involved in exploration, development and production related activities were carried out timely in an efficient and effective manner with due observance to the provisions of relevant Rules and Regulations;
- the trading activities relating to sale of gas were carried out efficiently and effectively duly safeguarding the interests of the Company;
- management of finances of the Company was efficient and effective; and
- internal control system and monitoring mechanism was effective and efficient.

Audit criteria

2.2.5 The following audit criteria were adopted for assessing the performance of the Company:

- Guidelines/circulars issued by Directorate General of Hydrocarbon (DGH)/ Government;
- New Exploration Licensing Policy – 1999;
- Conditions in the Petroleum Exploration License and Oil Mines Regulations, 1984;
- Production Sharing Contracts (PSC) entered into with Ministry of Petroleum and Natural Gas (MoPNG);
- Minimum Work Programme (MWP);
- Agenda and minutes of Operating Committee/ Management Committee/ BoD; and
- Contracts with consultancy firms, rig operators, suppliers and other service providers.

Audit methodology

2.2.6 The audit methodology involved review, scrutiny and analysis of:

- Joint bid agreement, Production Sharing Contract, resolution of Operating Committee/ Management Committee/ Board of Directors, Field Development Plan, Minimum Work Programme, Appraisal/ drilling programme, Gas Purchase/ Sale Agreements, agreements with banks/ suppliers, other service providing agencies etc.*;*
- Records related to exploration, development, production and marketing activities, financial records, files, registers of the Company's HO and Management Information system records relating to block wise monthly progress reports, etc.

Financial position and working results

2.2.7 The financial position of the Company for the period 2006-11 is tabulated below:

(₹ in crore)

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
A. Liabilities					
Shareholders' funds					
Paid up Capital	105.61	105.61	211.22	219.73	223.44
Share application money	--	--	--	--	500.00
Free Reserve & Surplus	1,377.14	1,757.32	2,000.49	2,268.59	2,539.73
Committed Reserves (Mainly Share premium)[4]	1.28	1.49	0.77	670.16	959.67
Loan Funds					
Secured –Long term	--	735.21	2,863.55	3,204.45	4,146.36
Unsecured - Short term	839.79	1,451.70	2,083.66	3,179.38	2,980.32
Current Liabilities and Provisions	500.12	933.90	1,897.30	861.83	1,079.59
Net Deferred Tax Liability	0.13	1.25	45.85	64.08	61.35
Total	**2,824.07**	**4,986.48**	**9,102.84**	**10,468.22**	**12,490.46**
B. Assets					
Gross Block	966.49	1,067.42	1,303.53	1,801.80	1,839.60
Less: Depreciation	501.17	628.24	772.78	929.06	1,056.33
Net Fixed Assets	465.32	439.18	530.75	872.74	783.27
Capital works-in-progress	1,568.09	3,221.47	6,056.16	7,690.19	9,434.60
Investments	285.52	381.39	406.50	423.54	450.96
Current Assets, Loans and Advances	505.14	944.44	2,109.43	1,475.70	1,797.60
Miscellaneous Expenditure	--	--	--	6.05	24.03
Total	**2,824.07**	**4,986.48**	**9,102.84**	**10,468.22**	**12,490.46**

Source: The Company's Annual Reports

The equity capital of the Company increased by ₹ 105.61 crore during 2008-09 on account of issue of bonus shares in 1:1 ratio. There was further increase in the paid-up capital during 2009-10 and 2010-11 by ₹ 8.51 crore and ₹ 3.71 crore when the face value of share was split (2009-10) from ₹ 10 *per* share to ₹ 1 *per* share and shares were issued at a premium of ₹ 80 *per* share and ₹ 81.76 per share during 2009-10 and 2010-11 respectively. The corresponding share premium amount of ₹ 680.83 crore (2009-10) and ₹ 302.83 crore (2010-11) so collected by the Company was grouped under 'committed reserves'. GoG further, invested ₹ 500 crore in the Company

[4] This includes credit/ debit balance of Foreign Exchange Translation Reserve.

through Gujarat State Investments Limited at ₹ 81 *per* share, which is being shown as 'share application money', pending allotment during 2010-11.

The Company's total borrowings increased from ₹ 839.79 crore to ₹ 7,126.68 crore during 2006-11 so as to meet the fund requirements against capital expenditure incurred on exploration activities, which also caused corresponding increase in the capital work-in-progress during the said period. Since the Company has been persistently earning profits during 2006-11, the free reserves and surplus have also increased from ₹ 1,377.14 crore (2006-07) to ₹ 2,539.73 crore (2010-11).

2.2.8 The working results of the Company for the period 2006-11 are tabulated below:

(₹ in crore)

Particulars	**2006-07**	**2007-08**	**2008-09**	**2009-10**	**2010-11**
Income					
Sales[5]	**2,632.13**	**4,117.49**	**5,476.18**	**3,868.55**	**4,767.39**
Other income	19.04	25.72	31.25	26.98	38.66
Increase/ (Decrease) in stock	0.77	2.28	(1.66)	1.27	149.78
Total	**2,651.94**	**4,145.49**	**5,505.77**	**3,896.80**	**4,955.83**
Expenditure					
Purchase of gas/ petroleum products	2,055.79	3,128.22	4,406.09	3,112.94	4,207.73
Prod. selling and operational exp.	171.57	155.98	175.34	127.23	141.08
Payments to and provisions for Employees	1.92	3.25	8.82	7.51	8.50
Administrative and other expenses	14.03	94.04	135.02	64.89	21.39
Interest and finance charges	0.63	6.53	7.43	27.14	41.66
Miscellaneous Expenditure (written off)	--	--	--	--	1.70
Total	**2,243.94**	**3,388.02**	**4,732.70**	**3,339.71**	**4,422.06**
Profit before depreciation	**408.00**	**757.47**	**773.07**	**557.09**	**533.77**
Depreciation, Amortisation and depletion	104.17	129.47	142.30	154.07	130.15
Profit for the year	**303.83**	**628.00**	**630.77**	**403.02**	**403.62**
Provision for tax	76.66	222.24	255.86	83.40	80.99
Profit after tax	**227.17**	**405.76**	**374.91**	**319.62**	**322.63**

Source: The Company's Annual Reports

Reduction in sales from ₹ 5,476.18 crore in 2008-09 to ₹ 3,868.55 crore in 2009-10 was mainly due to (i) decrease in gas production due to depletion of gas from Hazira block; (ii) crash in gas price in international market causing corresponding downward impact in the purchase and sale value of gas; and (iii) availability of cheaper gas from Reliance Industries Limited (RIL). These aspects have been discussed in detail under succeeding paragraph nos. between **2.2.39** and **2.2.40**.

Audit findings

2.2.9 We explained the audit objectives to the Company during an 'Entry Conference' held on 24 March 2011. Subsequently the audit findings were reported to the Company and the State Government in August 2011 and discussed in an 'Exit conference' held on 2 September 2011, which was attended by the Managing Director, Executive Director and Sectional heads of the Company. The Management replied to the audit findings in September 2011. The views expressed by them have duly been considered while finalising the performance audit report. The audit findings are discussed in the succeeding paragraphs.

[5] This includes sale of electricity-windmill of ₹ 21.53 crore and ₹ 31.19 crore for 2009-10 and 2010-11 respectively.

Bidding for the hydrocarbon blocks and its acquisition

2.2.10 The Government of India (GoI) mainly allotted hydrocarbon blocks (blocks) between 1994 and 1998 to National Oil Companies (NOCs) on nomination basis. During the same period, GoI also offered blocks to private entities under Production Sharing Contracts (PSC) entered with them after following open bidding process and such blocks were called 'Pre-New Exploration Licensing Policy (NELP) blocks'.

The Directorate General of Hydrocarbon (DGH), the oil and gas regulatory body of GoI, formulated and implemented the GoI's NELP-1999 schemes I to VIII. The procedure for bidding under NELP involved the process of invitation of bids, data viewing by the bidders, purchase of data package by willing bidders, submission of bids by bidders to DGH, evaluation of bids by DGH, award of block for specified period, signing of Production Sharing Contract (PSC) and grant of petroleum exploration license (PEL).

During 2006-11, of the 72 onshore blocks offered by GoI under NELP VI to VIII, the Company along with its Joint Venture (JV) partners participated in 30 blocks and succeeded in acquisition of 11 blocks (37 *per cent*), of which the Company was operator[6] in two blocks. As far as acquisition of offshore blocks were concerned, of the 115 offshore blocks offered, the Company and its JV partners had participated in 31 blocks and succeeded in acquisition of 22 blocks (71 *per cent*) of which the Company was operator in one block. Thus, the success rate in getting award of domestic blocks has been fairly good. Further, the Company had also acquired 11 overseas blocks which included five onshore blocks (Egypt, Yemen and Indonesia) and six offshore blocks (Australia and Egypt). Of these, the Company is operator in nine blocks and non operator in two blocks.

Acquisition of blocks

2.2.11 The year-wise details of blocks acquired, surrendered and in hand by the Company till 31 March 2011 is tabulated below:

(Figures in number of blocks)

Year of acquisition	Acquired		Surrender		In hand	
	Domestic	Overseas	Domestic	Overseas	Domestic	Overseas
1994-95	4	-	-	-	4	-
1996-97	1	-	-	-	1	-
2001-02	3	-	-	-	3	-
2002-03	3	-	-	-	3	-
2003-04	4	-	-	-	4	-
2004-05	3	-	-	-	3	-
2005-06	2	1	-	-	2	1
2006-07	1	1	1	-	-	1
2007-08	20	3	-	-	20	3
2008-09	7	4	1	1	6	3
2009-10	4	-	1	-	3	-
2010-11	4	3	-	-	4	3
Total	**56**	**12**	**3**	**1**	**53**	**11**

Source: Information as provided by the Company

As could be seen from the above table, the Company acquired participating interest (PI) in 68 blocks (56 domestic and 12 overseas blocks) till 2010-11.

[6] An operator is a company or individual leading and responsible for managing exploration, development and production operation in a block.

Of these, four blocks (3 domestic and 1 overseas blocks) where the Company was non operator, were surrendered (2006-10) at the instance of the operator, as the commercial success in those blocks could not be achieved.

2.2.12 Break-up of blocks acquired during pre-NELP and NELP based on various categories viz*.,* operatorship, and location along with present status of the blocks as on 31 March 2011 is given below:

(Figures in number of blocks in hand)

NELP round/ Month of issue of notice inviting offer	Total	Located in			Where Company is		Under	
		On shore	Off shore	Deep water	Operator	Non operator	Explo-ration	Produ-ction
Domestic Block								
Pre-NELP	13	12	1	--	2	11	--	13
NELP-II December 2000	1	1	--	--	1	--	--	1
NELP III March 2002	1	--	1	--	1	--	1	--
NELP IV May 2003	3	3	--	--	1	2	3	--
NELP V January 2005	2	2	--	--	1	1	2	--
NELP VI February 2006	19	6	2	11	2	17	19	--
NELP VII December 2007	10	4	4	2	1	9	10	--
NELP VIII April 2009	4	1	1	2	--	4	4	--
Total (A)	**53**	**29**	**9**	**15**	**9**	**44**	**39**	**14**
Overseas blocks (All acquired during 2006-11)								
Australia	2	--	2	--	--	2	2	--
Egypt	5	1	3	1	5	--	5	--
Yemen	3	3	--	--	3	--	3	--
Indonesia	1	1	--	--	1	--	1	--
Total (B)	**11**	**5**	**5**	**1**	**9**	**2**	**11**	**--**
Total (A+B)	**64**	**34**	**14**	**16**	**18**	**46**	**50**	**14**

Source: Information as provided by the Company

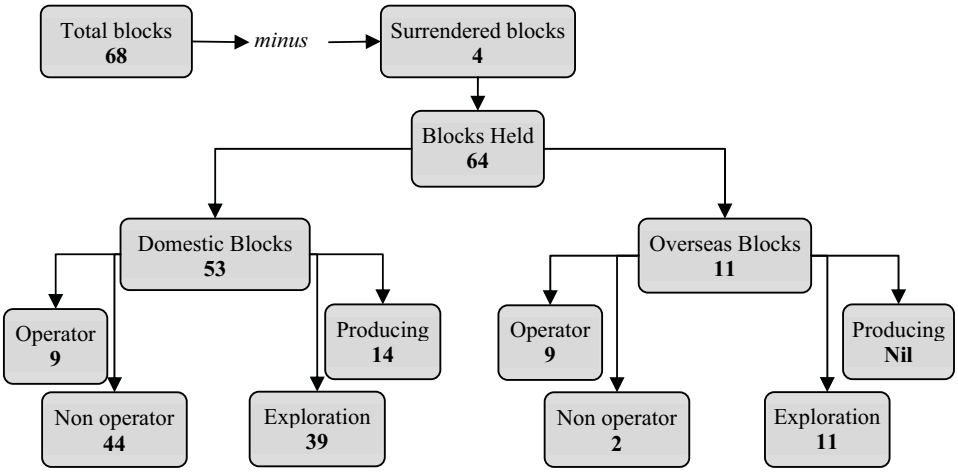
As could be seen from the table, of the 64 blocks in hand, 53 blocks are located in India and 11 blocks are located overseas. Of the 53 domestic blocks, only 14 are producing blocks[7] and balance 39 blocks are in exploration stage. Further, out of the 53 blocks, the Company is the operator only for nine blocks and non operator[8] for the balance 44 blocks. Of the 14 producing blocks, the Company is operator only for 3 blocks and non operator for the balance 11 blocks. In respect of 11 overseas blocks which are all in exploration stage, the Company is operator in nine blocks and non operator in two blocks.

GoI allots block to a consortium of bidders that form an unincorporated joint venture[9] for undertaking exploration and production activity in the block. A separate PSC for each block between the consortium (the consortium includes joint venture (JV) partners and the Company) on one part and MoPNG (GoI) on other part were entered into for the above blocks. Further, Joint Operating Agreement (JOA) was also signed among the (JV) partners including the Company for the blocks, whereby the members of the consortium arrived at an understanding with the object to conduct and perform their rights and obligations pursuant to the PSC in a manner which would be consistent with the provisions of the contract. The position of blocks is also shown in the diagram given below:

[7] Allora, Asjol, Bhandut, Cambay, Dholasan, Hazira, Ingoli, Kanwara, North Balol, North Kathana, Pramoda, Sabarmati, Tarapur and Unawa.

[8] A non operator is a company or individual in a block having a participating interest without being responsible for managing the exploration, development, or production operation in the block.

[9] A joint venture is where the parties do not form any legal entity. An unincorporated joint venture is either an *ad hoc* project or legally structured as a partnership.



Proved and probable reserves

2.2.13 Of the 39 domestic blocks which are under exploration stage, 38 are still under exploration and balance one i.e., Krishna Godavari basin (KG block) has completed the exploration stage and entered development stage for which Field Development Plan was approved (October 2009) and proved and probable (2P) reserve assessed. Out of 14 producing blocks, in 11 blocks, 2P reserves were assessed and the remaining three blocks viz., Cambay, Dholasan and Unawa, did not pass the Economic Limit Test[10] for 2P reserves. As such, during 2006-11, in the two blocks (Cambay and Dholasan) where the Company is non operator, the income was not adequate to cover the expenses and the aggregate loss was ₹ 4.37 crore during four out of five years. In the remaining one block (Unawa), the income was adequate to cover the expenses during four out of five years and the aggregate profit was ₹ 2.92 crore as on 31 March 2011.

The total 2P reserves of both oil and gas in KG block (Development stage block) and 11 producing blocks are tabulated below:

Sl. No.	Particulars	Proved and probable (2P) reserves	
		Oil (in MBbl – million barrels of Oil)	Gas (in BCF-billion cubic feet)
1	KG Block	18,303.7	947.3
2	Eleven Producing block[11]	3,376.9	19.6
Total		**21,680.6**	**966.9**

Source: Draft Red Herring Prospectus prepared by the Company for its proposed Initial Public Offer

The proved and probable reserve of gas[12] was 966.9 billion cubic feet and crude oil was 21,680.6 million barrel in four[13] and eleven[14] blocks respectively

[10] A well is said to reach an "economic limit" when its production rate covers the expenses including taxes.

[11] Allora, Asjol, Hazira, Ingoli (Ahmedabad block) & Sanand East (Sanand-Miroli block), Kanawara, North Kathana, Pramoda, Sabarmati, North Balol and Tarapur.

[12] As certified by Gaffney, Cline and Associates, an independent international energy advisory group (September 2009).

[13] KG block, Hazira, Kanawara, and North Balol.

[14] KG block, Allora, Asjol, Hazira, Ingoli (Ahmedabad block) & Sanand East (Sanand-Miroli block), Kanawara, North Kathana, Pramoda, Sabarmati, and Tarapur.

(September 2009). The 2P reserves of both crude oil and gas were higher in KG block. Our observations relating to bidding for KG block are discussed below.

Bidding for KG block

2.2.14 The blocks in Krishna Godavari basin were offered (March 2002) under NELP-III. The Company submitted the bid (August 2002) in consortium with Jubilant Enpro Limited (JEL), New Delhi and Geo Global Resources Inc., Canada (GGR). As per the joint bidding agreement entered with JEL and GGR, the Company would be operator for the block and its participating interest (PI) was 80 *per cent* while PI of JEL and GGR was 10 *per cent* each. KG-OSN-2001/3 (KG Block) was awarded and PSC was entered (February 2003) between GoI and the consortium.

As per terms of PSC, the period of exploration was six and half years consisting of three phases. The Minimum Work Programme (MWP) consisted of acquisition, processing and interpreting (API) of 3D seismic data, reprocessing of seismic data and drilling of exploratory wells. The details of MWP are tabulated below:

Phase	Period		3D (Sq. km)	Reproc-essing (Line km)	No. of wells	Estimated cost in MWP. million US $			Total meter of drilling depth committed
	From	To				Drilling	Seismic	Total	
I	Feb. 2003	Aug. 2005	1,250	2,298.4	14[15]	52.23	7.00	59.23	33,098
II	Aug. 2005	Feb. 2008	--	--	4[16]	32.00	0.12	32.12	8,750
III	Feb. 2008	Aug.2009	--	--	2[17]	18.00	0.35	18.35	3,500
Total			**1,250**	**2,298.4**	**20**	**102.23**	**7.47**	**109.70**	**45,348**

Source: Information as provided by the Company

It can be seen from the table that the Company was to drill 20 wells with total depth committed of 45,348 meter during February 2003 to August 2009. As per the GoI policy for merger of exploration/phases under NELP-III and IV introduced in June 2007, the contractor (the Company) would be entitled to have a substitution of additional meterage drilled in deeper wells against the aggregate meterage committed under MWP. Against the committed depth of 45,348 meters in 20 wells, the Company, till August 2008 drilled 12 wells with a total depth of 48,360 meters and hence, in terms of GoI policy, the Company's exploration phase was declared completed (October 2008). The Company, however, continued to deploy rig till August 2009 and completed drilling of totally 16 wells by April 2010 with total depth of 77,395.07 meters, incurring aggregate drilling cost of US $ 1,302.88 million (₹ 5,920.27 crore at the average of annual rate, i.e., ₹ 45.44/US $). We observed the following:

Wrong estimation of cost for bidding

2.2.15 As per the bid evaluation criteria, the financial capability of the bidder based on the net worth should be at least equal to or more than the cost of

[15] Drill in the range of 900–4,118 meters.
[16] Drill in the range of 1,100–2,850 meters.
[17] Drill in the range of 1,550–1,950 meters.

MWP of phase I. The consortium net worth[18] was US $ 60.05 million (₹ 291.18 crore at prevailing rate of ₹ 48.49/US $) against the estimated cost (both drilling and seismic) of phase I of US $ 59.23 million (₹ 287.21 crore at prevailing rate of ₹ 48.49/US $). We, however, observed that the estimated cost of phase I was worked out at lower side and, if the cost of hiring rig and associated services that prevailed at the time of submission of bid (August 2002) was considered realistically, the estimated cost would have been US $ 169.270 million[19] (₹ 820.79 crore at prevailing rate of ₹ 48.49/US $) i.e., almost three times more than the cost projected (US $ 59.23 million) at the time of submission of bid. Further, the Company was supposed to have considered the possible escalation in the cost for the wells to be drilled over the period of two and half years for phase I. If cost of phase I work was estimated properly, then the estimated cost would have been much higher than what was quoted at the bidding stage and the consortium would have been ineligible for bidding. Further, the actual average cost incurred by the Company for drilling *per* meter was seven times higher at US $ 16,834 (₹ 7.65 lakh at prevailing rate of ₹ 45.44/US $), against the estimated cost US $ 2,254 (₹ 1.02 lakh at prevailing rate of ₹ 45.44/US $). This confirms the fact that the proper estimation of cost for the phase I was not made at the time of bidding. Though the Company had no experience as operator of an offshore block, it had hastily committed to drill wells with a depth ranging from 900 to 4,118 meters and had finally drilled 16 wells with depths ranging from 2,535 to 6,007 meters (i.e., 1.46 to 2.81 times than the estimated depth). The actual time taken against estimate and related extra expenditure are discussed in paragraph no. **2.2.20.**

Against the estimated exploration cost of US $ 109.70 million the actual cost was US $ 1,404.86 million which was 12.81 times higher than the estimated cost

The actual total cost incurred including cost of seismic study (US $ 101.98 million) was US $ 1,404.86 million (₹ 6,265.68 crore at the average rate of ₹ 44.60/US $) for exploration activity of all the three phases which was 12.81 times (in terms of US $) the estimated cost of US $ 109.70 million (₹ 531.94 crore at prevailing rate of ₹ 48.49/US $). This indicated the aggressive approach adopted by the Company while bidding for the block, which in turn reveals the undue risk taken by the Company in the high risk prone oil exploration activity.

The Management stated (September 2011) that the KG block was offered under NELP-III in March 2002 by which time the Company had an experience of 10 years in the field and was looking to expand its acreage base for carrying out further exploration activity. Accordingly, having assessed the high potential of KG offshore block with an estimated reserve of 45 TCF, keeping in view the interest shown by other bidders such as ONGC, RIL, etc, and the 60 *per cent* weightage assigned to MWP in evaluation of bidding, the Company adopted aggressive bidding in terms of MWP and could secure the block for the consortium. If aggressive bidding had not been adopted, the consortium would not have got the high potential KG block.

[18] Net worth – the Company US $ 52.70 million; GGR US $ 1.30 million and JEL US $ 6.05 million.

[19] Cost of hiring a rig US $ 61,800 *per* day *plus* Cost of associated services US $ 30,900 *per day* × 2 rigs × 913 days required to drill 33,098 meter as per Minimum Work Programme submitted at the time of bidding.

Thus, the fact remains that aggressive bidding for KG block was made without properly assessing the technical and financial issues before bidding for the block. Further, due to adopting aggressive bidding in obtaining KG block, the Company was not only exposed to high risks in exploration activity but it also had to highly depend on borrowing. The unsecured borrowings of the Company on this account, have already increased by ₹ 2,140.53 crore during 2006-11.

Incorrect geological model for bidding for KG block

2.2.16 Having succeeded in bidding for the KG block, the Company, JEL and GGR entered into (August 2003) a joint operating agreement (JOA) among themselves. Further, the Company as Operator of the block admitted GGR into consortium with 10 *per cent* PI in the block on the ground that GGR was a technical expert in the exploration field. On behalf of GGR, the Company contributed GGR's share of 10 *per cent* to the venture fund set up for the exploration expenditure of KG block. The said contribution made by the Company in the form of advance was recoverable from GGR only if the activities in the block succeeded. Otherwise, GGR would not be paying their share of contribution. Though the services of technical expert could be measured and determined in monetary terms, the Company admitted GGR with 10 *per cent* PI without any basis. Further, the Company also suffered a loss of interest of ₹ 11.43 crore (August 2003 to March 2007) due to remitting the GGR's share of cost (₹ 149.53 crore) into the venture fund till March 2007. These aspects had already been reported *vide* paragraph 3.5 of the Audit Report 2006-07 (Commercial)-Government of Gujarat.

Incorrect geological model of GGR led to escalation in exploration cost from US $ 109.70 million to US $ 1,404.86 million

Our analysis further revealed that the bidding for KG block was made as per the geological model prepared by GGR. As per the geological model, of the 20 wells planned under MWP, four wells having High Pressure High Temperature (HPHT) (i.e., deeper than 4,000 meter) were to be drilled. But in reality, Company had to drill total 12 HPHT wells as against the four wells estimated. This was indicative of the deficient geological model prepared by GGR, which led to escalation in the cost of exploration phase from US $ 109.70 million (₹ 531.94 crore) to US $ 1,404.86 million (₹ 6,265.68 crore).

2.2.17 In order to review the geological model of GGR and also to provide technical services for KG block, the Company had to engage (April 2004) another technical expert viz., Petrotel, USA at a cost of US $ 0.60 million i.e. ₹ 2.64 crore (₹ 44/US $ as in April 2004). Thus, admitting GGR into the consortium without any financial risk, but only on the strength of their technical expertise did not yield the desired purpose.

Incurring of exploration cost without receiving the share of JV partner led to loss of interest of ₹ 104.14 crore

Further, the terms agreed with GGR in JOA, did not permit the Company to recover the share of GGR on the exploration cost incurred during the currency of exploration phase, even though the actual exploration cost incurred for the block was 12.81 times more than the estimated cost, as discussed in the previous paragraph. Moreover, the Company suffered a loss of interest of ₹ 104.14 crore[20] due to remitting the share of cost of US $ 175.07 million

[20] Calculated at the Company's year-wise average borrowing rate prevailed during 2007-11.

(₹ 780.81 crore at the average rate of ₹ 44.60/US $) of GGR into the venture fund during April 2007 to March 2011. As per the Company's estimate, the production in the KG block would start in the year 2013.

The Management stated (September 2011) that at the time of NELP-III bidding, the Company was looking for an expert who could evaluate the block and recommend a potential block for bidding. Mr. Jean Paul Roy of GGR, being a technical expert in the field, was admitted as a JV partner for the block. He would not have agreed to solely carry out a technical evaluation of the block for bidding without being offered a Participating Interest (PI) in the block. Further, based on then existing 2D seismic and well data, GGR prepared a geological model which demonstrated the possibility of establishing significant hydrocarbon resources in KG basin and the model was the basis for the Company bidding.

Regarding the reasons for the escalation in the exploration cost based on the geological model of GGR, it was stated that against the estimated four HPHT wells, while drilling the Company encountered HPHT conditions in 12 wells leading to increase in the drilling cost. Further, increase in the crude oil price led to severe shortage of rig which had also led to increase in the hiring cost. For engaging Petrotel to review the geological model of GGR, it was stated that as an established industrial practice, second opinion was also obtained on the model in the context of 3D seismic data subsequently acquired.

The reply is not tenable. The Company's contention that Mr. Roy would not have agreed to carry out the technical evaluation without a PI being offered to him was an invalid apprehension not supported by any documents. The Company's record clearly indicated that the geological model of GGR had failed in respect of well depth estimate, its location and exploration cost estimates. Hence, Petrotel was engaged to thoroughly revise the geological model of GGR.

Exploration

2.2.18 Based on the commitments made in the MWP of PSC and also on the basis of his rights and responsibilities as defined in the Joint Operating Agreement entered with his JV partners, the operator of a block undertakes the activities during exploration phase with the approval of the Members of Operating Committee (OC)[21] and Management Committee (MC)[22]. The exploration phase covers the activities starting from (i) conducting of preliminary environment impact study (EIS) for preventing/ minimising the environmental damages and also the consequential effects thereof on property and people caused by the effect of petroleum operation prior to taking up the work of acquisition, processing and interpreting (API) seismic data in the

[21] Operating committee (OC) is formed as per the provisions of JOA which specifies procedure for decision making and frequency and place of meetings. OC consists of representative of operator and non-operating partners of JV. OC will review and approve the work programme and budget and also review the progress of work and submit to MC.

[22] Management committee (MC) consists of two GoI nominees and one nominee each from each member of the consortium; in case of no consortium, two members shall be nominated. The main function of MC is to approve the work programme, budget, review the progress of activities and advise the consortium.

contract area (the awarded block), (ii) reprocessing of available seismic data and also undertake API of seismic data to find the petroleum traps from the images of the sub-surface rock layers, (iii) again conducting EIS in the specific areas identified for drilling prior to taking up the drilling of exploratory wells to reassess the possible impact on the environment due to impending drilling operation, (iv) drilling of exploratory wells to find new gas or oil reserves, (v) promptly intimate MC and GoI on the discovery of hydrocarbons prior to taking up the testing of the well so that, if required, GoI could send its representative for witnessing the testing of the well being carried out to determine whether the discovery is of potential commercial interest, (vi) preparation and execution of appraisal programme to carry out an adequate and effective appraisal to determine whether the discovery is a commercial discovery and also to determine the boundaries of the area to be delineated as the 'Development Area', (vii) declaration of commercial viability of the discovery and devising the development plan for taking up the development activity of the block. The approval of OC and MC is required for undertaking the above activities so that the cost incurred on the activities would become eligible for recovery as a contract cost. Our observations related to the exploration phase are discussed below:

Delay in carrying out environment impact studies

2.2.19 According to Article 14.5 of the PSC, the Company was required to carry out environment impact studies (EIS) through persons having special knowledge on environmental matters in order to determine the prevailing situation relating to the environment, human beings and local communities, the flora and fauna in the contract area and in the adjoining or neighboring areas and establish the likely effect of exploration activities on the same. Article 14.5.1 stipulates that the preliminary part of the EIS should be concluded prior to commencement of seismographic study and final part should be concluded prior to starting the drilling of wells in the exploration phase. The timely completion of EIS is necessary, so that other exploration activities could be taken up and completed within a period of five to seven years as prescribed in PSC.

Time taken for completing pre-drilling EIS ranged between 14 and 106 months

During 2006-11, of the nine domestic blocks where the Company was operator, in eight blocks, the time taken for completing pre-drilling EIS since award of work, ranged between 14 and 106 months as given in column no. 9 of ***Annexure*-12**. As can be seen from the ***Annexure*-12**, in three blocks viz*.,* Tarapur, Unawa and Ahmedabad, the time taken for completing EIS was more than 60 months though all these blocks were located onshore. The inordinate time taken in completing the EIS lacked justification.

The Management stated (September 2011) that the process of EIS preceding the drilling activity could be initiated only after finalisation of the location for drilling based on the seismic study. Further, the EIS would be conducted separately for each phase and not for the block as a whole and the EIS process also included public hearing. All this led to taking of considerable time in completion of EIS. In case of Tarapur, Unawa, and Ahmedabad blocks, the drilling work program was firmed at a later date and accordingly pre drilling EIS was taken up.

The reply is not tenable as the reasons for delay put forth by the Company are of routine nature normally involved in the process. However, the reply brings out the fact that abnormal delay was caused on account of delay in firming up the location by the Company for drilling activity, which is indicative of ineffectiveness of the study works carried out by the Company.

Time and cost overrun in drilling of offshore wells

2.2.20 In offshore block, KG block was the only block wherein the Company as an operator carried out the drilling of exploration wells. As referred in paragraph no **2.2.14**, the Company drilled 16 wells during July 2004 to April 2010 by deploying four rigs at different periods of time in KG block. Our analysis of actual time taken against the estimated time for drilling work revealed that as per the drilling plan, the well should be drilled at the rate of 27.76 meters *per* day. However, a total depth of 77,395.07 meters of 16 wells was drilled in 3,441 days i.e., at the average rate of 22.49 meters *per* day. As a result of short drilling of 5.27 meter depth *per* day, the Company had deployed rigs 653 days in excess of estimated days resulting in extra expenditure of ₹ 180.91 crore[23] on drilling work. This indicated that the management of drilling operation was not properly monitored.

Against the estimated drilling rate of 27.76 meters per day, the average rate of drilling was 22.49 meter per day which led to extra expenditure of ₹ 180.91 crore

The Management stated (September 2011) that the KG field was a unique field and due to High Pressure High Temperature (HPHT) conditions in the deeper reservoir, the drillability of the well was very poor which led to decrease in the average drilling rate *per* day against the rate estimated in the drilling plan.

The reply is not acceptable as the facts of unique field conditions/ HPHT wells were already taken care of at the time of preparing the drilling plan by the Company.

Drilling of exploratory well in area belonging to other operator

2.2.21 The Company is operator in onshore block in CB-ON/ 2 (Tarapur) in which the Company has PI of 80 *per cent* and GGR has 20 *per cent*. In the nearby block i.e., North Kathana Field (NKF), the Company was a non-operator with PI of 70 *per cent* while other JV partners have PI of 30 *per cent.* Heramec is the operator for NKF block. The Company drilled (February 2005 to April 2009) 36 exploratory wells in the Tarapur block, of which one exploratory well TS-8 was drilled during June to August 2007 at a total cost of ₹ 10.54 crore and proved to be oil bearing. The Company, however, subsequently noticed (December 2007) that the well TS-8 was drilled in the neighboring NKF block instead of within the boundaries of Tarapur block. In view of this, the Company handed over (19 March 2008) the well along with cost to Heramec, the operator of NKF. For regularising the induction of TS-8 under NKF block, the Management Committee of NKF deliberated (13 February 2010) on the issue including the representatives from MoPNG, DGH. However, the representative of MoPNG in MC instructed (February 2010) Heramec not to book the expenditure in the JV's account of NKF till the issue was resolved.

[23] Calculated at the least rate of rig hiring charge US $ 61,800 *per* day paid by the Company converted at the average rate of ₹ 44.83 *per* US $ prevailed during the period 2004 to 2009.

Drilling of well at a wrong place led to blocking up of the funds of ₹ 10.54 crore and also loss of interest of ₹ 3.94 crore

We observed that the Company did not investigate and fix the responsibility for drilling the well in the adjacent block viz. NKF block where the Company was not an operator. Thus, due to the Company's laxity, a well was drilled at a wrong place which not only resulted in loss of interest of ₹ 3.94 crore[24] on the blocked up fund (August 2007- March 2011) but also exposed the Company to financial loss due to not resolving the issue of recovery of the expenditure of ₹ 10.54 crore incurred on drilling the well.

The Management stated (September 2011) that the well was drilled in a wrong place due to ambiguity in geodetic projection system[25]. However, appropriate follow up action had been initiated with DGH and Heramec and the issue would be put up in the next MC meeting.

Thus, the fact remains that due to Company's laxity, the well was drilled without proper verification of the map made out from geodetic projection system.

Hiring of Jack up rig from Premium drilling

2.2.22 The Company invited (March 2007) tender for deployment of Jack-up rig[26] to take up the drilling activities in KG block. The technical specification of the tender stipulated for using the drill pipe grade of S-135. The Company awarded (April 2007) the work to Premium Drilling Inc., USA (rig operator) being the only qualified bidder. Though in the technical bid, the rig operator offered S-135 drill pipe grade suitable for the work, the Company while entering into agreement, accepted the drill pipe of lower grade of XD 105 as subsequently offered by the rig operator in deviation from the technical specification.

However, when the drilling work commenced in May 2007 with the use of low grade XD 105 pipe, the Company encountered the problems of additional drilling, logging, casing running, etc. Resultantly, the Company decided (March 2008) to use the drill pipe S-135 as per the original specification in the place of XD 105 grade pipes. Accordingly, rig operator replaced (May 2008) the XD 105 grade pipes with S-135 grade pipes for which the Company had to bear extra expenditure of US $ 89,330 (₹ 38.14 lakh at prevailing rate of ₹ 42.70/US $) towards transportation cost. However, the extra cost other than the transportation cost incurred by the Company on above account could not be quantified in absence of the required details in this regard. As S-135 grade pipe was specified in the tender based on the site requirement, the Company should have insisted that the rig operator mobilised the same grade pipes while commencing the drilling activities. The Company's failure to insist for the grade pipes specified lacked justification.

The Management stated (September 2011) that the rig was readily available from nearby RIL block. As it would be easy for mobilising the rig to the

[24] Calculated on ₹ 10.54 crore at the average borrowing rate ranging between 6.64 to 14.10 *per cent* prevailing during the period.

[25] A map projection of geodetic reference system indicates shape, size, position and orientation of (mathematical) reference of surface (*e.g.* sphere or spheroid).

[26] A Jack-up rig is a type of mobile platform to stand still on the sea floor resting on a number of supporting legs.

Company's block, the XD 105 grade drill pipes which were on the board of the rig were accepted. Though the work was stuck up twice while drilling, but it had occurred due to hole condition of the well and not due to use of XD 105 grade drill pipes.

The reply is not tenable. The Company should have insisted that the rig operator should bring equipment and drill pipes at his cost as per the specifications while mobilising the rig to the Company's block. The Company's records indicated that XD 105 grade drill pipes had technical limitations for use in deep directional wells which were being drilled in the Company's block.

Unfruitful expenditure on civil works

2.2.23 The Company as operator of Ankleshwar onshore block was to drill 14 exploratory wells during April 2006 to March 2009 as per MWP of exploration phase I. Accordingly, it had taken up the work of drilling five wells during May 2008 to August 2008 and had also simultaneously acquired necessary land to drill another six[27] wells. Out of the five wells drilled, four wells were dry and the Company decided (August 2008) to take up the drilling of the proposed six wells only after reassessing the feasibility in continuing the work based on the study of drilled well data with 3D seismic data. However, the Company went ahead with civil work on the site for the proposed six wells and incurred expenditure of ₹ 1.65 crore during July to September 2008 even without the approval of other JV partners in Operating Committee (OC) meeting. Finally, in April 2011 the Company decided to drop the work in the site acquired for the six wells. As per the Company's estimation, the execution of civil work (earthwork and masonry) would have hardly taken 25 days, hence, it should not have incurred expenditure of ₹ 1.65 crore hastily. Rather it should have taken up the work at the site for six wells only after re-assessing the feasibility results of the five drilled wells. Further, as the work was executed without the approval of the JV partners, they refused to admit (October 2010/January 2011) the Company's claim for this expenditure.

Expenditure of ₹ 1.65 crore on civil work incurred against the Company's own decision and also without OC approval remained unfruitful

The Management stated (September 2011) that as the phase I of the exploratory period was to expire and the extension for the phase had been applied, these locations were taken up for initial staking and civil work so as to complete the MWP within the time. Further, the Company had sought concurrence of the OC for this expenditure and approval was awaited.

Thus, the fact remains that the Company went ahead with site preparation work of the proposed six wells against its own decision of August 2008 and also without the approval of OC.

Wasteful expenditure on drilling

2.2.24 We observed a similar instance in Sanand–Miroli onshore block, where the Company was operator. The Company decided (August 2008) to drill exploratory well viz. SE-11 in the block. Another well viz. SE-6 was also to be drilled in the block based on the success result of SE-11. The SE-11 was

[27] Ank-2, 6, 11, 22, 23 and 27.

drilled (September-October 2008) and on completion of testing there was no hydrocarbon finding (February 2009). The Company, however, without waiting for the test results of SE-11, executed (January 2009) the civil work at the cost of ₹ 44.21 lakh in the proposed site for well SE-6. Since the result of SE-11 was a failure, the Company never drilled the proposed SE-6 well. Thus, disregarding of its own decision led to incurring of unfruitful expenditure of ₹ 44.21 lakh.

Non fixation of norms for testing of wells

2.2.25 The 'Objects' in the well are identified before starting the process of testing. The object in oil exploration activity means the zone of interest to find the possible presence of hydrocarbon. Then, the wells drilled are tested by conducting the drill stem test. Under this procedure, an instrument viz*.,* Sonde (which remotely senses the electrical/ radioactive properties of rocks and their fluid) is sent into the well to obtain important sampling information on the formation of fluid so as to establish the probability of commercial production. Normally, one to six 'Objects' are identified in a well for testing. As a prudent practice, the Management should fix the norms with reference to the time required for testing the 'Objects' in the well. However, the Company had not fixed any such norms.

No norms were fixed for testing of objects in the well. The time taken for testing per object was ranged from 1 to 43 days in onshore wells

We observed that during 2006-11, the Company tested 212 'Objects' in 79 onshore wells and 37 'Objects' in 13 offshore wells in the blocks where it was the operator. Huge variations were, however, noticed in the time taken in conducting the object tests in the wells. The time taken for testing *per* object in the onshore wells varied from one to 43 days, whereas it ranged from 12 to 33 days in offshore wells. In the absence of fixation of any norms for time for testing the 'Objects', we are not in a position to comment on the reasonability of the time taken in testing the above 'Objects'. As the equipments used for testing are hired on hourly basis, it is all the more important to fix the norms regarding time for testing so as to control the testing cost. An instance of fruitless expenditure incurred in testing a well is discussed in the succeeding paragraph **2.2.26** below**.**

The Management stated (September 2011) that the main objective of testing of well was identification of mobile fluid (oil, gas and water). If the mobile fluid was identified, further test for measuring the pressure would be taken up; otherwise, the test would be discontinued. In view of this, the variance was bound to be there in the duration of testing period and hence no norm was fixed.

The reply is not tenable. It is possible for the Company to fix the norm for testing the wells based on its experience and analysis of the data relating to testing of wells as has been fixed and followed by Oil and Natural Gas Corporation Limited, a central PSU engaged in the similar activities.

Fruitless expenditure in testing a well

2.2.26 The Company is operator in onshore block, CB-ONN-2002/3 (Sanand-Miroli) block. It drilled exploratory well viz*.,* SE-2 with a depth of

2,470m in September 2007; based on the tests results, the Company identified (October 2007) three 'Objects' from bottom of the well viz., Object 1 (2,303-2,311m and 2,313-2,317.5m), Object 2 (1,890-1,900m) and Object 3 (1,683-1,695m and 1,630-1,651m). As per the industry practice in vogue, in the casing string[28] cemented to the sides of the well, the holes called perforations are made by shot to reach to the producing formation. The process of perforation starts from the 'Objects' identified at the bottom of the well and moves to the 'Objects' identified at the middle and then top of the well. This approach is economical and technically feasible. The Company, instead of taking up the perforations of SE-2 well starting from Object 1 to 3, had taken up and completed only Object 2 and 3 (i.e. only on the middle and top of the well). After perforation of Object 2 and 3, it was found that both areas were of litho logically 'Olpad formation'[29] and Object 2 was of dry zone and Object 3 had insignificant hydrocarbon presence which neither had any self flow nor had shown any improvement even after performing the process of 'hydraulic fracturing'[30].

The workover rig[31] (i.e. John 50 VII) after execution of perforations work at Object 2 and 3 during 26 October to 3 November 2007 moved from SE-2 well to SE-4 well. The Company, having no justification on record, had moved the rig again back to SE-2 well and performed (3-8 February 2008) the perforation works on the Object 1 of SE-2. After the perforations were done at the cost of ₹ 21.83 lakh (including the cost of mobilisation and demobilisation of the rig) on the Object 1 of SE-2, it was found that the zone was 'Olpad formation' and was water bearing.

The expenditure of ₹ 21.83 lakh incurred was avoidable, because the Company had already noted the poor results in Object 2 and 3 of SE-2. Under the circumstances, the Company's decision to perform the perforation on Object 1 of SE-2 again by mobilising the rig and incurring the cost was neither technically sound nor in consonance with the best practices in the industry.

The Management stated (September 2011) that as the Object 1 was having least potential, the perforation was done at Object 2 and then at Object 3, thereafter the rig was mobilised to SE-4 to test the interesting zones identified. The rig was mobilised back to SE-2 to test the remaining left out Object 1.

The reply is not tenable. The Company skipped the Object 1 being least potential object of SE-2 and mobilised the rig to SE-4 well. The reason given for incurring avoidable expenditure on re-mobilising the rig to SE-2 for taking up the perforation work on its least potential Object 1 was therefore not convincing.

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[28] Joints of steel pipes screwed together to form a casing string.

[29] A formation is a mapable rock layer with definite top and bottom. Geologists have divided all sedimentary rocks into formation. A well was drilled in Olpad area in 1969 and the formation was named after the area i.e. Olpad formations.

[30] An engineering method used to increase the permeability (i.e., the ease with which a fluid can flow through a rock) of a reservoir around the wellbore to increase production. Under this method liquid under high pressure is pumped down a well to fracture the reservoir rock adjacent to wellbore.

[31] A portable rig is with a mast and hoisting system used for testing, maintaining, restoring or improving production from a well.

Delay in putting up Declaration of Commerciality to Managing Committee

2.2.27 The Sanand-Miroli onshore block consisted of two parts i.e., Northern Sanand area and Southern Miroli area. During the exploration phase (July 2004 to July 2010), in Northern Sanand area, the Company drilled 11 wells[32] (i.e., 9 exploratory wells and 2 appraisal[33] wells). Of the wells drilled, oil discoveries were made in five wells i.e. SE-2, SE-4, SE-5, SE-8 and SE-10, of which a cluster consisting of SE-2, SE-4, SE-5 (oil wells) and SE-3 (gas well) were to be developed for production.

We observed that declaration of commerciality (DoC) for the cluster as per Article 10.5 of PSC was submitted to MC on 31 July 2010 for consideration by MC members. The Company being Operator of the block was designated as Secretary of MC under Article 6.4 of PSC and was required to ensure timely placement of the relevant issues in the MC meeting for their approval. However, the issue of DoC was placed belatedly in the MC meeting on 31 July 2011 (i.e., after a period of one year since the submission of DoC). We observed that the DoC submitted on 31 July 2010 was not properly prepared by the Company. DGH had sought clarification on various issues which led to delay in putting up the DoC in MC meeting. The delay in submission of DoC in MC meeting has a consequential effect on preparation and submission of field development plan[34] (FDP) and taking up the development work.

Construction of fixed platform in KG block by another operator

2.2.28 The Company submitted (June 2009) a Field Development Plan (FDP) for the discoveries viz., Deen Dayal West (DDW) located in south west of the KG block (Shallow water[35]) for 17 sq. km. The FDP for DDW field was approved (November 2009) by DGH with envisaged commencement of production from December 2011 that was revised to June 2013.

Reliance Industries Limited (RIL), a private sector enterprise was developing (May 2004) KG-DWN-98/ 3 block (RIL block) (Deep water[36]) located adjacent to the KG block with water depth up to 2,700 meter. RIL sought (December 2003) the Company's consent to acquire soil data/ survey/ investigation related to pipe line route/ platform/ Pipe Line End Manifold in the KG block. The Company in principle agreed for the request stating (January 2004) that it had no objection for RIL's sub-sea pipeline route or Shallow Water Pipeline End Manifold (SWPLEM) in KG block. However, it requested for discussion to mitigate any mutual issues that may come up based on Company's exploration/ development plans.

[32] Exploratory well-SE-2, SE-4, SE-3, SE-5, SE-8, SE-9, SE-10, SE-11 and SE-14 and Appraisal well-SE-8A1 and SE-8A2.

[33] Appraisal well – A well drilled to measure the size/quality (commercial potential) of a hydrocarbon discovery. Before development, a discovery is likely to need several such wells.

[34] It contains the proposal for construction, establishment, and operation of all the facilities and services for and incidental to the recovery, storage and transportation of the petroleum from the proposed field to the delivery point.

[35] A block with water depth up to 400 meters.

[36] A block with water depth exceeding 400 meters.

Though the Company had, in-principle, agreed only for laying of RIL's sub-sea pipeline route or SWPLEM through KG block. RIL, unilaterally started installing (January 2007) Control and Riser Platform (CRP) complex, in addition to pipeline in KG block. By this time, the Company had discoveries in two wells (June 2005 and July 2006) in DDW field. The Company expressed (January 2007) concern to RIL stating that the in-principle approval was given only for laying pipeline in KG block, and the additional works including CRP had cut the Company's development plan and it could not afford to have the discovered DDW field severed in parts. In response, RIL expressed (February 2007) its inability to make any change in its work plan on the plea that the above development was based on no objection certificate (NOC) received from the Company and also approval given by DGH. Whereas, no copy of the approval by DGH was available in the records of the Company.

We observed that if RIL wanted to have the platform in their deep water block, it could go only for a floating platform which would have involved very high capital cost in comparison to the cost of fixed CRP constructed in shallow water block (KG block) of the Company. Thus, RIL constructed CRP through encroachment into Company's KG block in a well planned manner and was unduly benefitted at the cost of the Company, the extent of which was not quantifiable in the absence of required details.

No consent was obtained from GoI by the Company before giving in -principle approval to RIL for laying pipeline/ CRP in area of the Company's KG block

We further, observed that as per Rule 7 of the Petroleum and Natural Gas Rules, 1959, every lessee has to construct and maintain structures necessary for production and does not have the right to transfer the title and interest of the lease without the written consent of GoI. However, no such consent was obtained by the Company before giving in-principle approval to RIL. Further, as per the mining lease conditions, the Company would be responsible for safety and security of all structures in its block and, therefore, it would also be responsible for RIL's structures for its life period.

The Management stated (September 2011) that the issue of RIL putting up their surface facilities at KG block did come up when the block was only under exploration lease with the Company. Since the Company did not have any mining lease for the block at that time, it did not have any right on any matter concerning the block except exploration of sub-surface reservoirs in the block. The block continued to be the property of GoI and RIL was using above ground part of the block. The mining lease for the block was granted to the Company only in August 2010. By that time, the surface facilities of RIL had already been established. However, RIL's putting up their structure in the block had neither affected the developmental activities nor the production plan of the Company. Further, any Contractor, including RIL, would require an approved FDP to start production of oil/ gas. This implied that structures, including the CRP, had the approval of the MC consisting of members from GOI and DGH. Hence, the Company being a contractor cannot override the decision, which had implicit Government approval taken in national interest.

The reply is not tenable. Even in the exploration license issued to the Company for the block in March 2003, it was stipulated that the license issued was subjected to the provisions of PNG Rules. As per the Rules, necessary

approvals should have been specifically obtained from GoI by the Company, before giving in-principle approval to RIL. Thus, the in-principle no objection granted by the Company for putting up the RIL structure in January 2004 was in violation of PNG Rules. Further, as RIL had established fixed CRP in Company's KG block, the Company cannot avoid obtaining RIL's prior consent/ NOC before taking up any development activity in the KG block surrounding CRP. An instance of extra expenditure incurred by the Company due to delay in giving consent by RIL for carrying out the development work in KG block has also been discussed in succeeding paragraph **2.2.29.**

Payment of idle charges due to restriction of RIL in KG block

2.2.29 In KG block, in order to acquire 3D seismic data with more accuracy and reliability for drilling the wells in the DDW field (proposed development phase), the Company decided (August 2008) to go for Q-marine survey[37] for accurate and reliable seismic data. Accordingly, the Company issued (December 2008) the Letter of Award (LOA) to Western Geco International Limited, United Kingdom (WGIL) for acquiring 3D seismic data covering 474 sq. km on Q-marine technology basis. While the work was under execution, some portion of the area marked for API work was not free due to pre-occupation of four working rigs of the Company and also due to the Control and Riser Platform (CRP) put up by RIL as discussed in preceding paragraph no. **2.2.28**. Hence, a specially equipped vessel was required to be deployed to acquire the seismic data beneath the rigs and CRP through the process of undershooting[38]. Accordingly, the Company issued (3 January 2009) LOA to WGIL for mobilising the special vessel and the work was also taken up from 27 January 2009. Though, RIL agreed (4 February 2009) to the Company's request for issue of NOC to take up the undershooting work on 15 February 2009 in the area beneath their CRP, RIL prolonged and gave clearance only on 21 February 2009 to take up the work. As a result, the work could be completed on 24 February 2009 with a delay of 7.767 days[39] resulting in avoidable payment of day rate for the vessel amounting to US $ 1.24 million[40] (₹ 5.76 crore @ ₹ 46.39/US $). Thus, the Company's failure to prevent RIL in putting up the CRP in the KG block, subsequently necessitated the Company to seek and wait for RIL's NOC for taking up the undershooting work in the Company's area resulting in avoidable payment of idle charges amounting to ₹ 5.76 crore.

Existence of RIL's CRP in the Company's block and consequential necessity for obtaining the consent of RIL for executing the Company's work in its own block led to avoidable payment of ₹ 5.76 crore

The Management stated (September 2011) that the Operator who carries out exploration/ development activities within a block has to seek approval of the other operator to avoid any damage to other operator's structure in the block. Accordingly, the Company sought the permission from RIL whose facilities in the form of CRP were already installed in its block.

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[37] Q-marine survey is propriety technology owned by Western Geco. In the Q technology, the electronics and fibre optic networks provide very high channel count recording systems which ensure acquisition of accurate reliable seismic data.

[38] It is the process of making a 3D seismic image of the subsurface of an area without the seismic equipment ever being on that land.

[39] The delay attributable to RIL as worked out by the Company.

[40] At the actual day rate of US $ 1,59,757.50 for 7.767 days converted at the actual exchange rate of ₹ 46.39 *per* US $ prevailing on the date of payment on 14 September 2010.

Thus, the fact remains that the Company's failure to prevent RIL in putting up the CRP in the KG block led to the avoidable payment of idle charges as cited above.

Infructuous expenditure on wells drilled without DGH approval

2.2.30 The Company and Heramac hold PI of 70 and 30 *per cent* respectively in Unawa block. The Company is the operator for the block. In the Operating Committee (OC) meeting (19 May 2008) of the block, it was decided to drill one development well (UN-1A) and to start drilling work in another development well (UN-2A) based on the results of UN-1A. Accordingly, UN-1A was drilled (1-22 July 2008), and the test results of the well showed that the well was water bearing. The Company, however, with the concurrence of Heramac in OC meeting (31 July 2008) but without the approval of MC decided to drill appraisal well UN-2A. The well UN-2A was drilled (31 July 2008 - 8 August 2008) and the work was terminated after drilling up to the depth of 750 meters against the planned depth of 2,100 meters, without any reason. DGH, however, did not approve the drilling work of UN-2A as it was taken up without MC approval. As a result, the expenditure of ₹ 2.75 crore incurred on the work was not eligible for cost recovery under Article 15 of PSC. Drilling of UN-2A well without approval of MC lacked justification.

A well drilled without MC approval at the cost of ₹ 2.75 crore was not eligible for cost recovery as DGH did not approve the drilling work

The Management stated (September 2011) that the drilling of UN-2A had been taken up based on the interpretation of mud logging and wire-line logging data results of UN-1A obtained initially and the final test result of UN-1A was received later. As the result was unsatisfactory, the drilling of UN-2A was terminated forthwith. The issue of approval had been referred to MC and DGH and was pending with them.

Thus, the fact remains that the Company went ahead with drilling of UN-2A without waiting for the test results of UN-1A ignoring its financial interests.

Non abandonment of wells

2.2.31 As per the special conditions included in the environmental clearance given by the Ministry of Environment and Forest, (MoEF) under EIA notification of 2006, in the event that no economic quantity of hydrocarbon is found, the Company should implement a full abandonment plan at drilling site in accordance with the Regulation 59 of Oil Mines Regulations, 1984 to bring the unviable well area to pre-existing local environment. We observed that the testing of 26 wells (exploratory and appraisal wells) were completed during November 2006 to October 2010 in four blocks as per the details given in the ***Annexure*-13**. As per the test results, the wells were neither dry nor had any presence of hydrocarbon for commercial exploitation. However, even after expiry of 166 to 1,610 days since completion of tests, the wells were not abandoned to bring it to pre-existing local environment (31 March 2011). The non compliance to the Regulation lacked justification. Further, the drilling of well PK-6 in Ahmedabad block and TS-5 in Tarapur block were completed in January 2004 and June 2007 respectively. However, neither the testing of the wells was carried out nor were the wells abandoned. Reasons for not testing the wells were not on record. Further, the non abandonment of the wells for a

Even after expiry of 166 to 1,610 days since completion of tests, 26 wells were not abandoned to bring it to pre-existing local environment

long time may cause environmental damage to local habitation, flora and fauna in the contract area.

The Management stated (September 2011) that the wells could be abandoned only with the approval of OC members. However, the OC members normally haul in all technical data of the dry wells so that no opportunity in terms of hydrocarbon potential was ignored or lost before abandoning the unviable wells. Further, as the exploratory drilling was continued in the blocks, the Company had also considered the possibility of using any such well as injector/ directional well in future while taking up the drilling operation in the nearby site.

The reply is not tenable as the delayed action in deciding the abandonment of failed wells for abnormally long periods may have consequential impact of violating the environmental laws and regulations.

Establishment of hydrocarbon prospectivity in the operator blocks of Company

2.2.32 As discussed in paragraph **2.2.12**, the Company was operator in nine domestic blocks, of which in six blocks[41], the Company drilled 109 wells (93 onshore and 16 offshore) as on 31 March 2011. The Company had discovery of hydrocarbons in 54 wells (i.e., 50 *per cent*) (42 onshore and 12 offshore), which was found to be at satisfactory level. However, no drilling activities were undertaken by the Company in remaining three blocks[42] even after lapse of 21 to 58 months from the effective date of PSC for the blocks.

The Management stated (September 2011) that they would complete the drilling programme within the PSC timeframe.

Development

2.2.33 Development activities cover preparation of field development plan (FDP) after declaration of commercial discovery, conducting EIS (second part) with reference to development area, drilling of development wells, obtaining petroleum mining lease from State Government for onshore fields and from GoI for offshore fields, creation of facility for production including installation of platforms, laying of pipelines and other processing facilities. Our observations related to development phase are discussed below.

Non preparation of FDP for Tarapur block and incurring of irregular expenditure

2.2.34 Company as operator should not carry out exploration activities after expiry of exploration period without obtaining extension in exploration period from DGH. In Tarapur block, during the exploration phase (November 2000 to November 2008) the Company as operator drilled 35 wells and found the

[41] One offshore viz., KG block (KG-OSN-2001/ 3) and five onshore viz., Unawa, Tarapur, Ahmedabad, Ankleshwar and Sanand-Miroli blocks.

[42] One is offshore viz., Mumbai offshore; and two are onshore viz., KG onshore (KG-ONN-2004/ 2) and Rajasthan.

presence of commercial oil/ gas in 12 wells. The declaration of commerciality (DOC) to MC and GoI was submitted (April 2008) and all the work committed under MWP in exploration phase was also completed (November 2008). However, the Company, instead of preparing and obtaining the approval of FDP, continued to drill (December 2008) one exploratory well at the cost of ₹ 9.87 crore and seven appraisal wells[43] (relating to exploratory phase) at a total cost of ₹ 71.25 crore. Hence, MC did not approve (February 2009) the exploratory and appraisal wells drilled after the expiry of exploration period. Further, the JV partner, GGR also did not agree to share the cost of drilling the appraisal wells as the same was incurred without the MC approval. Hence, the Company will have to bear the entire cost of ₹ 71.25 crore (Company's share ₹ 57 crore and GGR share of ₹ 14.25 crore) in drilling the appraisal wells. In addition, the Company also drilled (October-December 2007) three development wells at a cost of ₹ 23.17 crore without MC approval.

Expenditure of ₹ 104.29 crore incurred for drilling of wells without MC approval will not qualify for recovery as 'cost petroleum'

As a result, the total expenditure of ₹ 104.29 crore (₹ 9.87 crore *plus* ₹ 71.25 crore *plus* ₹ 23.17 crore) incurred for drilling all the wells without MC approval will not qualify for 'cost petroleum' (i.e., recovery of cost petroleum) under Article 14 of PSC.

The Management stated (September 2011) that the seven appraisal wells were related to the Tarapur well no. 6 where there was oil discovery and hence would become eligible for cost recovery. Regarding approval of drilling cost of one exploration well, the issue was under examination by DGH and MoPNG.

The reply was, however, silent on irregular drilling of three development wells without approval of FDP by DGH.

Thus, the fact remains that none of the above cited wells had the approval of MC and hence did not qualify for 'cost petroleum' so far (August 2011).

Delay in supply of input data for preparation of FEED work

2.2.35 In KG block, having discovered (2004) gas in KG-8 well, the Company decided (December 2005) to bring the gas onshore on fast track basis by devising a plan for creation of facilities, such as, well head platform, pipeline and other facilities. Accordingly, it issued (January 2006) work order to Mustang Engineering Pty. Ltd., Australia (firm A) for taking up Front End Engineering Design (FEED) at a cost of AUS $ 1.687 million i.e. ₹ 5.85 crore[44] with scheduled completion by 2 June 2006. The FEED study involved preparation of design, estimates and tender documents for award of contracts for the creation of above mentioned facilities. For FEED study, metocean data and soil data related to the surrounding of KG 8 well were required. The Company, however, did not supply new metocean data as required by firm A. In August 2006 when the design was prepared by firm A, the Company did not accept the same on the ground that the design suggested

[43]A well drilled from the side of exploratory well (where discovery is noticed) to assess characteristics such as flow rate of a proven hydrocarbon accumulation.
[44]Calculated at ₹ 34.68 *per* AUS $ at the prevailing price during placement of work order.

was heavy and abnormal. Firm A cited (May 2007) that the design was prepared based on certain hypothesis as the Company did not provide metocean data for the study.

Failure to supply the required data for FEED work led to incurring of infructuous expenditure of ₹ 5.85 crore and payment of idle charges ₹ 2.07crore

Thus, due to Company's failure in providing the required metocean data to Firm A, the expenditure of ₹ 5.85 crore incurred for FEED work proved unfruitful.

2.2.36 We observed that the Company re-awarded (6 February 2007) the FEED work to Worley Parsons, Thailand (firm B) at a cost of US $ 1.89 million with the stipulation to complete it within 18 weeks from the date of award i.e., by 12 June 2007. However, the Company belatedly provided the reservoir data in June 2008, which led to delay in completion of work by firm B till March 2009. However, for the delay caused in providing the data, the Company paid US $ 0.40 million i.e. ₹ 2.07 crore[45] towards idle charges to firm B (March 2009) which was avoidable.

The Management stated (September 2011) that initially after issue of order to firm A, the Company supplied (January 2006) metocean data available with it. However, when the new metocean data from M/s. A H Glenn (Consultant) was received in August 2006, the Company did not pass it to firm A, since firm A was on the verge of concluding their design work. Regarding delay in providing reservoir data to Firm B, it was stated that the Company was planning to provide data in March 2007 on the receipt of test results of two wells (KG-17 and KG 15). However, due to significant differences noticed between test results of the two wells, the Company waited to have another test result from well KG-22 and hence could supply reservoir data in June 2008.

The reply is not acceptable as the Company should have ensured availability of new and firm metocean/ reservoir data from consultant before award of work to firm A and firm B.

Development activities in KG-block

2.2.37 In offshore KG block, the Company had eight discoveries in KG-8, KG-15, KG-16, KG-17, KG-19, KG-21, KG-22 and KG-31**.** The total area of KG block is 1,850 sq. km. consisting of three discovered fields on western, northern, and eastern side of the block. The Company as operator submitted (June 2009) the field development plan (FDP) for two discoveries of western field viz., KG-8 and KG-15 of Deen Dayal West (DDW) field at a total projected cost of US $ 3,069 million (₹ 13,945.53 crore at prevailing rate of ₹ 45.44/US $) to MC. The MC approved (November 2009) the FDP envisaged for having 15 wells (conversion of existing 4 exploratory wells and drilling of 11 new development wells), two offshore platforms, 20 km. long pipeline to onshore and setting up of onshore gas terminal. It was also planned to start the production by December 2011.

We observed that the Company had finalised the contract for construction of offshore platform and submarine pipeline in April 2011 and June 2011

[45]Calculated at ₹ 51.62 *per* US $ at the prevailing rate during March 2009.

respectively, after delay of 12 months[46] from the date of approval of FDP. This delay has corresponding impact on commencement of the production activities in the block.

Improper award of work related to development of KG block led to postponement of production activities

The Management stated (September 2011) that as the price quoted in the single offer received (July 2010) for the work was unreasonably high, the Company had to rework the tendering philosophy afresh. This caused delay in award of the works.

The reply is not acceptable as the invitation of tender for entire work as a whole on lump sum basis had restricted the number of bidders/ offers to bare minimum of one. Company should have invited the tenders by splitting the works into different parts based on the activities/ skills involved as subsequently done by the Company.

Production

2.2.38 The production activities include all the operations conducted for the purpose of producing petroleum after the commencement of production.

Performance of gas and oil producing fields

2.2.39 As discussed in paragraph no. **2.2.12**, the Company has total 14 producing blocks. During 2006-11, the total quantity of production of gas and oil from these blocks was 1,929.79 Million Cubic Meter (MM^3) and 0.22 Million Metric Tonne (MMT) respectively. The year wise details of production, cost of production, revenue and profit/ loss are given in the table below:

Particulars	2006-07		2007-08		2008-09		2009-10		2010-11		Total	
	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas	Oil	Gas
Production (Qty) oil in MMT/ gas in MM^3	0.03	652.51	0.04	481.08	0.04	359.53	0.06	262.59	0.05	174.08	0.22	1,929.79
Total Sales ₹ in crore	415.65		323.22		327.35		290.00		207.41		1563.63	
Total production exp[47] ₹ in crore	253.89		274.77		268.99		216.44		152.39		1,166.48	
Profits (₹ in crore[48])	161.76		48.45		58.36		73.56		55.02		397.15	

Source: The Company's Annual Reports

During 2006-11, the sales from production activity reduced from ₹ 415.65 crore to ₹ 207.41 crore (i.e. by 50.10 *per cent*) due to reduction in production of gas from 652.51 MM^3 to 174.08 MM^3 in five years period. This reduction was mainly due to depletion of gas in the Hazira block (from 11.8 BCF to 8.6 BCF), which was a producing block since 1994. During the same period, there was an increase in sale of oil from 0.03 MMT to 0.05 MMT due to addition of two blocks viz*.,* Ahmedabad (February 2008) and Tarapur (September 2009). However, the Company would not be in a position to enhance the production of gas/ oil till June 2013 in view of the delay in execution of works of KG block as discussed in paragraph no. **2.2.37.**

[46]As worked out after considering six months for tendering and award of work from November 2009.
[47]Production expenditure, duties and taxes, foreign exchange loss, depletion cost, others.
[48]Arrived without reckoning administrative and other expenses, employee cost, interest and finance charges.

Marketing

2.2.40 The Company also undertakes trading activities by purchasing gas mainly from three suppliers viz., Panna Mukti Tapti JV, Petronet LNG Limited, Hazira LNG Private Limited, etc., and also sells gas mainly to the customers engaged in industrial, power generation and gas distribution activities. The purchase and sale of gas are made with regular suppliers and customers respectively through execution of agreements with them. Besides, the Company also purchases and sells the gas on spot (*ad hoc*) basis depending on the market scenario. The revenue and expenditure out of gas trading activity during 2006-11 are given below:

(₹ in crore)

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11	Total
Revenue from Trading	2,216.48	3,794.27	5,148.83	3,557.02	4,528.79	19,245.39
Expenditure for Trading	2,055.79	3,128.22	4,406.09	3,112.94	4,207.73	16,910.77
Surplus/ (deficit)[49]	160.69	666.05	742.74	444.08	321.06	2,334.62

Source: The Company's Annual Reports

The major reduction in sales value from ₹ 5,148.83 crore (2008-09) to ₹ 3,557.02 crore (2009-10) (30.92 *per cent*) was mainly due to crash in gas price (ranged between US $ 13.49 to US $ 3.62 *per* MMBTU[50]) during 2008-10 in international market (July 2008 to September 2009). This also correspondingly resulted in decrease in purchase value of natural gas from ₹ 4,406.09 crore (2008-09) to ₹ 3,112.94 crore (2009-10) (i.e. by 29.35 *per cent*). Besides, additional inflow of huge quantity of D6 gas of RIL also contributed towards reduction in trading operations of the Company during 2009-10.

The revenue from trading was 12.31 times more than the revenue from sale of the Company's own production of oil/ gas

During the period 2006-11, however, the total revenue from trading of gas was ₹ 19,245.39 crore, which was 12.31 times more than the aggregate revenue of ₹ 1,563.63 crore from sale of own production of oil/ gas during this period. This indicated that Company's focus during this period remained mainly on trading rather than on production activity.

Non inclusion of Take or Pay clause in gas sale contracts

2.2.41 As discussed in the above paragraph, in the trading of gas, the Company enters into contracts with both suppliers and customers for purchase and sale of gas respectively. The Company is buying and selling the gas both in the unit of SCM[51] based on the volume of gas and in the unit of MMBTU[52] based on the calorific value of gas. As per the provisions of contracts entered into with the suppliers, if the Company fails to lift the minimum off-take quantity of gas (i.e., 80 *per cent* of the daily contracted quantity), it has to make penal payment viz. Take or Pay[53] (ToP) charges. Simultaneously, to safeguard its financial interest, the Company has to insert similar penal clause

[49]Arrived at without reckoning administrative and other expenses, employee cost, interest and finance charges.
[50]One million British thermal units.
[51]Standard cubic meter.
[52]One million British thermal units.
[53]It is a penal charge recoverable from the customers who had not lifted the minimum off-take quantity of gas as per the terms of gas sale agreement entered with the Company.

in the contract entered into with the customers so as to recover the penal charges in the event of short lifting of the minimum off-take quantity of gas by the customers.

We observed that during 2007-11, the total number of customers purchasing the gas ranged from 38 to 47, to whom the Company sold 291.90 crore SCM and 39.91 crore MMBTU as per the contracts entered into with them. Of these, the quantity of gas sold to 25 to 36 customers constituted 59 to 94 *per cent* of the total quantity of gas sold during the period. The Company, however, did not insert ToP charges penalty clause in the contracts entered with 25 to 36 customers out of total number of customers ranging from 38 to 47 during 2007-11. This was prejudicial to the interest of the Company. We test checked the records made available for the period 2008-11 related to four[54] customers with whom the Company entered into gas sale contracts without ToP charges clause. We observed that the Company was unable to levy and recover ToP charges of ₹ 502.19 crore[55] from these customers who did not off-take the minimum quantity of gas as per terms of the contract. For the customers with whom the contracts were entered with ToP charges clause, the Company had recovered ₹ 6.41 crore ToP charges during 2007-11.

Non insertion of ToP clause in sale contracts led to non recovery of ₹ 502.19 crore from the customers who did not off-take the minimum quantity of gas

The Management stated (September 2011) that entering into contract without ToP charges clause was becoming an industry practice. Major customers viz., NTPC, IFFCO,etc. normally invite tenders for purchasing gas on non ToP charges basis and the Company's competitors viz., IOC, BPCL and GAIL also submit their bids on non ToP charges basis to these customers. In such a competitive market, to meet the customer requirement, the Company had to take the commercial decision of selling the gas on non ToP charges basis. This non binding obligation nature of contracts helped the Company to earn profit by entering into short term contracts with willing customers from time to time based on the prevailing price and demand for gas in a dynamic market.

The reply is not tenable. Though the Company was paying ToP charges to its suppliers, it had failed to safeguard its own interest due to non inclusion of ToP charges clause in the contracts entered with its customers. Further, in the absence of such a penal clause, the Company cannot ensure that the customers adhere to the provisions of the contract, as these customers would not have any disincentive that would help to ensure the consistent offtake of gas quantity from the Company.

Passing of undue benefit to Adani Energy Limited

2.2.42 A mention was made in paragraph no. 3.4 of Audit Report 2005-06 (Commercial) - GoG, about the undue favour shown to Adani Energy (Gujarat) Limited (AEL), a private sector enterprise, by the Company for not recovering the minimum charges of ₹ 1.80 crore for not taking delivery of contracted quantity of gas from the date of commencement of supply as per

[54]Bhander Power Limited, Torrent Power Limited, Gujarat Industries Power Corporation Limited, Gujarat State Electricity Corporation Limited.

[55]Worked out for the shortfall quantity of gas off taken compared to 80 *per cent* of the contracted quantity and valued at the weighted average price of gas sold during the respective financial year in respect of four customers.

the provision of gas supply agreement (GSA). One more instance of passing of undue favour to AEL as observed in audit is discussed below.

Undue favour of ₹ 70.54 crore was passed on to AEL by selling gas at the price lower than the purchase price

During the period 2006-09, 73,70,196 MMBTU quantity of gas was sold to AEL by the Company from the gas purchased on spot purchase basis from Hazira LNG Private Limited. The spot purchase price of the gas was ranging from ₹ 340.95 *per* MMBTU to ₹ 1,075.44 *per* MMBTU, whereas it was sold to AEL at the price lesser by ₹ 5.23 to ₹ 430.79 *per* MMBTU during the period from 2006-07 to 2008-09 without any recorded reason. This led to passing of undue benefit of ₹ 70.54 crore at the cost of Company's revenue.

The Management stated (September 2011) that it was procuring spot gas from three suppliers viz*.,* HLPL[56], IOCL and BPCL. The gas procured from HLPL was not only sold to AEL but also to other customers. The price charged from AEL was higher than the weighted average sales price of the spot gas per MMBTU. Hence, no undue benefit was passed to AEL.

The reply is not tenable. The weighted average sales price of the spot gas was arrived at by dividing the total sales price charged from all the customers with total quantities of gas sold. Thus, the average price worked out by the Company does not give a correct picture as it included the sale price of gas charged from other customers (other than AEL) which was higher than the cost. Hence, while arriving at overall results of gas trading activities, higher prices so charged from other customers has nullified the impact of losses of sale of gas to AEL. As such, the gas sold to AEL was procured on spot basis and so the selling price of the gas to any customers including AEL should be more than the purchase price of such gas.

Finance

2.2.43 Efficient fund management serves as a tool for decision making, for optimum utilisation of available resources and borrowings at favourable terms at appropriate time. For the efficient management of fund, the Company should prepare financial budget based on the work programme planned, recover dues from JV partners through cash calls[57] and joint interest billing[58], raise sales invoices and recover dues along with interest/ Take or Pay charges, if any, applicable from the customers of gas, and make timely payment of statutory dues, dues to suppliers, so as to avoid any penal interest etc. The cash flow statement showing the management of fund during 2006-10 and the instances of the Company's failure in recovering the dues from customers/ JV partners, payment of avoidable penal interest due to improper tax planning, as observed by us, are discussed in the following paragraphs.

[56]Hazira LNG Private Limited.

[57]It means any request for payment of cash made by the Operator, in accordance with an approved work programme and approved budget to the JV partners in connection with JV operations.

[58]A statement of the cost and expenditure incurred during the prior month, indicating the amount payable by the JV partner after considering the advance received from them for the venture.

Management of fund

2.2.44 The following table shows the details of cash inflow and outflow of the Company during 2006-11:

(₹ in crore)

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11
Cash from Operating Activities	195.78	538.71	1,175.44	(431.39)	372.34
Cash from Investing Activities	(729.05)	(1,727.65)	(2,693.08)	(2,002.80)	(1,264.82)
Cash from Financing Activities	545.08	1,183.97	2,314.69	1,683.06	874.75
Net increase or (Decrease) in Cash and cash equivalents	11.81	(4.97)	797.05	(751.13)	(17.73)

Source: The Company's Annual Reports

Analysis of the cash flow from investing and financing activities during 2006-11 indicated that the Company raised total amount of ₹ 7,149.08 crore through short/long term borrowings and utilised fund of ₹ 7,837.52 crore towards exploration and development activities in the blocks which were under exploration and development phases. The details are given below:

(₹ in crore)

Particulars	2006-07	2007-08	2008-09	2009-10	2010-11	Total
Short term loan	569.79	611.91	631.97	1,095.71	(199.06)	2,710.32
Long term loan	0	727.62	2,128.35	340.89	1,241.90	4,438.76
Proceeds from loans	**569.79**	**1,339.53**	**2,760.32**	**1,436.60**	**1,042.84**	**7,149.08**
Exploration and development expenditure being capitalised	**733.68**	**1,634.27**	**2,553.75**	**1,657.69**	**1,258.13**	**7,837.52**

Source: The Company's Annual Reports

Of the total borrowings during 2006-11, there were short term loans (including cash credit with banks) which were borrowed at rates ranging between 6.75 and 11.75 *per cent*. The long term borrowing was availed at the interest rate of 11.25 *per cent* from a consortium of banks.

Utilisation of short term borrowings for the exploration/ development works indicated the imprudent financial practice followed by the Company

2.2.45 The exploration, development and production activities of the Company are of high risk, capital intensive nature and requires long gestation period. Therefore, the utilisation of long term loan on these activities would be more advantageous instead of short term loan which is not a dependable source, as the short term loan assistance could be discontinued by the banks at short notice. However, as can be seen from the above table, the Company depended on the short term loans which constituted 38 *per cent* of its total borrowings for the exploration and development activities. This is not a prudent financial practice. Hence, the Company should arrange for increasing the funds such as raising long term loans or raising equity fund through private placement with financial institutions/ through Initial Public Offer (IPO). We observed that though an IPO was planned (March 2010) by the Company, it had to defer it due to unfavourable capital market conditions. The Company, by expediting the exploration and development activities, can enhance the production of oil and gas, which may give a favourable scenario to launch the IPO.

The Management stated (September 2011) that the short term loan mainly consisted of line of credit (LoC) availed from consortium of banks. Though LoC was given for a period of 12 months, the same was renewed year after year and became perpetual in nature like a long term loan. Further, the interest

being charged on short term loan was less by 3 to 4 *per cent* in comparison with long term loans. However, the Company had already started to match the long term application funds from long term resources and was also in the process of raising the equity on private placement basis in the year 2011.

The reply is not tenable. The Company utilised the short term loan mainly during 2006-10 for capital expenditure (exploration and development expenditure) which was not prudent and against the accepted business practices. Though the Company at present is able to avail short term finance at comparatively low financial cost, this may not prevail in the long run. Further, the short term finance/ LoC facility may not be a dependable source for meeting long term requirement as the extension of such facility is at the discretion of the consortium of banks.

Belated raising of joint interest billing

2.2.46 As per the Accounting Procedure 4 of Article 1 of Joint Operating Agreement, the Company, being an operator of KG block should render joint interest billing (JIB) statement to all JV partners, by 25th day of each month. The JIB shows the cost and expenditure incurred during the prior month and the amount payable by the JV partner after considering the advance received from them for the venture. We observed that an amount of ₹ 123.28 crore and ₹ 46.26 crore being the share of expenditure recoverable from JV partner JEL for the block were due for raising JIB on 25 April 2009 and 25 January 2010 respectively. However, against the due dates for JIB, the Company belatedly raised the JIB on 19 June 2009 and 18 February 2010 i.e. with a delay of 55 days and 24 days respectively on the above funds. This led to loss of interest of ₹ 2.08[59] crore on the blocked up amount to the extent of the delay.

Delayed raising of joint interest billing led to loss of interest of ₹ 2.08 crore

The Management stated (September 2011) that it could not raise JIB due on 20 April 2009 relating to the period of March 2009 as March month, being close of the financial year, the Company had to wait till May 2009 for the receipt of all invoices for the period up to 31 March 2009 so as to effect the TDS for that year. Similarly, it could not raise JIB due on 25 January 2010 relating to the period December 2009 as the Company closed its accounts up to 31 December 2009 for IPO purpose and hence, the JIB was raised subsequently, in the above cases.

The reply is not tenable. Raising of invoice of JIB has nothing to do with closing of accounts and thus, the interest loss due to belated raising of JIB could have been avoided.

Non recovery of interest from joint venture partners

2.2.47 As discussed in the above paragraph, the JIB issued by the operator to the JV partner was required to be paid within 30 days of issue as stipulated in the JOA. If the JV partners fail to make the payment within the stipulated time, the operator is entitled to recover the due amount along with interest calculated at the London Inter Bank Offer Rate (LIBOR) *plus* two *per cent* per

[59]Calculated at the Company's average borrowing rate of 9.64 *per cent* prevailing during 2009-10.

annum during the period of default from the JV partner. We observed that in respect of Sanand-Miroli block, the Company did not levy and recover interest on the dues ranging between ₹ 0.66 crore and ₹ 3.56 crore (during August 2007-2009), which were paid by JV partners (JEL and GGR) after delays ranging from 12 to 368 days. This led to loss of interest of ₹ 1.06[60] crore, not recovered by the Company as per provisions of JOA.

The Company did not recover interest of ₹ 1.06 crore on delayed payment of cash calls made by JV partners

The Management stated (September 2011) that the cash calls raised against GGR and JEL were not acknowledged by them for want of OC resolution. Subsequently on pursuing them, the cash calls were paid by them and hence the interest was not charged on the delayed payments.

The reply does not give the reason for the pendency of the OC resolution. The Company, being operator, had to ensure timely approval of OC resolution and its issuance to non operating members.

Short remittance of advance tax led to payment of avoidable interest

2.2.48 The Company planned (June 2008) to commission a Wind Mill Project (WMP) at an estimated cost of ₹ 300 crore before 31 March 2009 so as to avail the depreciation of ₹ 120 crore[61] on the investment and thereby to get the tax benefit of ₹ 40.79 crore for the financial year (FY) 2008-09 under section (U/s) 32 of Income Tax Act, 1961. The Management, while giving its in principle approval for taking up the project in September 2008, was aware that conducting of feasibility study, invitation and finalisation of international bids, award of contract and commissioning of WMP would take more than six months period. However, the Company continued to pay lesser advance tax U/s 211 of the Income Tax Act, 1961, taking into account the tax benefit of ₹ 40.79 crore against projected commissioning of WMP and accordingly paid total advance tax amounting to ₹ 150 crore[62] during financial year 2008-09.

We observed that as the WMP could not be commissioned during the FY 2008-09 and tax benefit on account of WMP was not available to the Company. Since the Company had already reckoned the benefit of tax on WMP, the advance tax of ₹ 150 crore U/s 211 paid was short by ₹ 74.86 crore as against payable tax of ₹ 224.86 crore. Thus, for the shortfall of advance tax payments, the Company had to pay penal interest U/s 234B and 234C amounting to ₹ 7.65 crore. Since the Company was aware in September 2008 itself that it would not be possible to commission the WMP by 31 March 2009, it could have avoided payment of penal interest to the extent of ₹ 4.17 crore on shortfall of advance tax (₹ 40.79 crore) had it not imprudently taken into account the benefit of projected commissioning of WMP.

Short remittance of advance income tax led to avoidable payment of penal interest of ₹ 4.17 crore

The Management stated (September 2011) that if the Company did not consider the envisaged tax shield, then it would have funded for the payment of applicable advance tax through borrowings, which would also result in incurring of interest.

[60] The loss of interest due to delay of JEL was ₹ 90.80 lakh and GGR was ₹ 15.76 lakh. Calculated the interest at the LIBOR prevailing *plus* two *per cent* i.e., between 4.12 and 7.19 *per cent*.
[61] Depreciation is @ 80 *per cent* for the period of six months on ₹ 300 crore.
[62] Four installments of ₹ 10 crore, ₹ 45 crore, ₹ 28.50 crore and ₹ 66.50 crore.

The reply is not tenable since payment of advance tax is a statutory requirement, which the Company should comply with in any circumstances. Further, the contention of the Management is mere hindsight as the Company even after knowing that it would not be able to commission the project by 31 March 2009, failed to pay the due amount of advance tax and consequently paid the penal interest.

Internal Control and Monitoring Mechanism

2.2.49 The following deficiencies were noticed in the internal control and monitoring mechanism of the Company:

- No system was in place for submission of annual budget to BoD;
- No detailed milestones were prepared for taking up the exploration activities as per the commitment given in MWP of PSC and also for taking up development activities as per FDP for the block, where the Company was operator;
- Management Information System (MIS) was also not in place for periodical reporting on the physical and financial status of each block against the commitments made in MWP and FDP to top Management;
- No system for reporting the instances of delays in drilling work occurred due to controllable reasons on part of service provider/ the Company;
- No MIS for showing the status of indents placed by various departments for purchase of material/ for availing services *vis-à-vis* purchases made/ services hired, etc.;
- System was not in place to keep track of the receipt of approvals granted in OC/ MC meetings held; and
- No mechanism was in place to report periodically to the top management i.e. MD and BoD about the status of disputes between JV partners/ issues pending with DGH/ MoPNG related to exploration production and development activities of various blocks and the methodology devised for settling the issues.

Acknowledgement

We acknowledge the cooperation and assistance extended by different levels of the Management at various stages of conducting the performance audit.

Conclusion

- **Bidding process adopted by the Company for acquisition of hydrocarbon block was found to be defective as in case of KG block, the bids of the Company ignored the actual cost involved,**

which exposed the Company against high risks in exploration activities.

- **Exploration and development activities undertaken by the Company suffered with several deficiencies such as, delays in acquisition of study data, excessive time taken in drilling work than envisaged in drilling plan, execution of work without approval of Operating Committee/Management Committee, delay in preparation of field development plan, execution of drilling operation beyond exploration period, etc. which caused huge financial losses to the Company.**

- **The Company suffered financial losses in trading activities on account of undue favours extended to the buyers by way of non recovery of Take or Pay charges, sale of gas/ oil at price below purchase costs, etc.**

- **Management of finances by the Company was not prudent and efficient as it financed the exploration/ development activities through short term borrowing, which is against the accepted business practices.**

- **The Company did not have proper internal control and monitoring system in place.**

Recommendations

The Company should consider:

- **Proper assessment of both financial and technical issues before bidding for the blocks.**

- **Devising a mechanism for improving the efficiency in the management of the activities related to exploration and development and also in ensuring compliance to related Acts, rules and regulations, instructions of Directorate General of Hydrocarbon/Government of India and provisions of Production Sharing Contract and Joint Operating Agreement.**

- **Inclusion of clause for recovery of ToP charges in all the contracts for sale of gas.**

- **Arranging for enhancement of long term loans or raising equity fund through private placement with financial institutions/ through Initial Public Offer (IPO).**

- **Improve the internal control and monitoring system including revamping of present MIS system in place**