CHAPTER VII

COMMERCIAL ACTIVITIES

7.1 Overview of Government Companies and Statutory Corporations

Introduction

7.1.1 As on 31 March 2008, there were 20 Government Companies (16 working and four non-working[1]) and two Statutory Corporations (both working) under the control of the State Government, same as on 31 March 2007. The accounts of the Government Companies (as defined in Section 617 of the Companies Act, 1956) are audited by the Statutory Auditors, who are appointed by the Comptroller and Auditor General of India (CAG) as per the provisions of Section 619(2) of the Companies Act, 1956. These accounts are also subject to supplementary audit by the CAG as per the provisions of Section 619 of the Companies Act, 1956. The audit arrangements of Statutory Corporations are as shown below:

Sl. No.	Name of the Corporation	Authority for audit by the CAG	Audit arrangement
1.	Uttarakhand Parivahan Nigam	Section 33(2) of the Road Transport Act, 1950	sole audit by the CAG
2.	Uttarakhand Peya Jal Sansadhan Vikas Evam Nirman	Section 20(1) of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971	sole audit by the CAG

In addition to above the State Government had formed (5 September 2002) the Uttarakhand Electricity Regulatory Commission and its audit is conducted by the CAG under section 104(2) of the Electricity Act, 2003.

Working Public Sector Undertakings (PSUs)

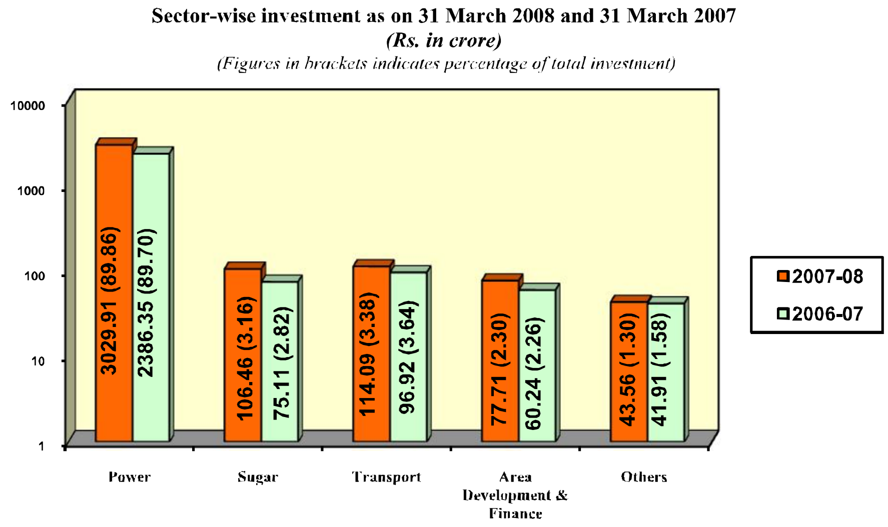
Investment in working PSUs

7.1.2 As on 31 March 2008, the total investment in 18 working PSUs (16 Government Companies and two Statutory Corporations) was Rs. 3,371.73 crore[2] (equity: Rs. 646.99 crore, share application money: Rs. 368.66 crore and long term loans[3]: Rs. 2,356.08 crore) against the total investment of Rs. 2,660.53 crore (equity: Rs. 614.94 crore, share application money: Rs. 94.68 crore and long term loans: Rs. 1,950.91 crore) in 18 working PSUs (16 Government Companies and two Statutory Corporations) as on 31 March 2007. The analysis of investment in working PSUs is given in the succeeding paragraphs.

[1] Non-working Government Companies are those that are in the process of liquidation/closure/merger, etc.
[2] State Government investment was Rs. 1553.94 crore (Others: Rs. 1817.79 crore). Figures as per Finance Accounts 2007-08 is Rs. 1143.91 crore. The difference is under reconciliation.
[3] Long term loans mentioned in paragraph 7.1.2, 7.1.3, 7.1.4 and 7.1.5 are excluding interest accrued and due on such loans.

Sector-wise investment in working Government Companies and Statutory Corporations

7.1.3 The investment (equity and long term loans) in PSUs under various sectors and percentage thereof at the end of 31 March 2008 and 31 March 2007 are indicated below in the bar chart:



Working Government Companies

7.1.4 The total investment in working Government Companies at the end of March 2007 and March 2008 was as follows:

(Rupees in crore)

Year	Number of Companies	Equity[4]	Share application money	Loans	Total
2006-07	16	537.70	94.68	1931.23	2563.61
2007-08	16	568.75	368.66	2320.23	3257.64

Source : Compiled from the information provided by the Companies.

Investment in the current year has increased over the previous year mainly due to increase in equity (including share application money) and loans to the PSUs in the Power Sector.

As on 31 March 2008, the total investment in working Government Companies comprised 28.78 *per cent* of equity capital and 71.22 *per cent* of loans as compared to 24.67 *per cent* and 75.33 *per cent* respectively as on 31 March 2007.

The summarised statement of Government investment in working Government Companies in the form of equity and loans is given in ***Appendix 7.1.***

[4] During 2006-07, Uttarakhand Chay Vikas Nigam Limited wrongly intimated their equity as Rs.67.50 crore as against Rs. 3.25 crore. The correct figure has now been provided by the Company. Accordingly, the previous year figures have been recast.

Working Statutory Corporations

7.1.5 Two Statutory Corporations (both working) were formed between the period May 2001 and October 2003 after the creation of the State of Uttaranchal (now Uttarakhand). As per the available information, the total investment in these Corporations at the end of March 2007 and March 2008 was as follows:

(Rupees in crore)

Sl. No.	Name of Corporation	2006-07		2007-08	
		Capital	Loan	Capital	Loan
1.	Uttarakhand Parivahan Nigam	77.24	19.68	78.24	35.85
2.	Uttarakhand Peya Jal Sansadhan Vikas Evam Nirman Nigam	Details are not available as the accounts are in arrears since formation of the Corporation in November 2002.			

Source: Compiled from the information provided by the Corporation.

As on 31 March 2008, the total investment in working Statutory Corporations comprised 68.58 *per cent* of equity capital and 31.42 *per cent* of loans as compared to 79.69 *per cent* and 20.31 *per cent* respectively as on 31 March 2007.

The summarised statement of Government investment in working Statutory Corporations in the form of equity and loans is given in ***Appendix 7.1.***

Budgetary outgo, grants/subsidies, guarantees issued, waiver of dues and conversion of loans into equity

7.1.6 The details regarding budgetary outgo, grants/subsidies, guarantees issued, waiver of dues and conversion of loans into equity by the State Government in respect of the working Government Companies and Statutory Corporations are given in ***Appendices 7.1*** and ***7.3***.

The budgetary outgo in the form of equity, loans and grants/subsidies from the State Government to working Government Companies and Statutory Corporations for the three years up to March 2008 are given below:

(Rupees in crore)

Particulars	2005-06				2006-07				2007-08			
	Companies		Corporation		Companies		Corporation		Companies		Corporation	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
A (i)Equity Capital outgo from budget	3	271.41	1	20.00	4	115.71	1	29.24	3	306.27	1	1.00
(ii) Loans given from budget	3	115.96	-	-	4	95.77	1	1.93	5	142.69	1	19.50
Total A (i) + (ii)	**5[5]**	**387.37**	**1**	**20.00**	**7[5]**	**211.48**	**1**	**31.17**	**7[5]**	**448.96**	**1**	**20.50**
B (i) Grant towards Projects/ Programmes/ Schemes	3	50.22	-	-	2	12.86	-	-	3	19.09	1	9.60
(ii) Subsidy	2	12.42	-	-	1	3.82	-	-			-	-
Total B (i) + (ii)	**5**	**62.64**	**-**	**-**	**3**	**16.68**	**-**	**-**	**3**	**19.09**	**1**	**9.60**
Total outgo A+B	**8[5]**	**450.01**	**1**	**20.00**	**7[5]**	**228.16**	**1**	**31.17**	**8[5]**	**468.05**	**1**	**30.10**

Source : Compiled from the information provided by the PSUs.

[5] Indicate actual number of Companies/Corporation, which received budgetary support in the form of equity, loans, grants and subsidies from the Government in respective years.

During 2007-08, the Government had guaranteed loans aggregating to Rs. 211.05 crore obtained by Kichha Sugar Company Limited and Uttaranchal Jal Vidyut Nigam Limited. At the end of the year, guarantees amounting to Rs. 1200 crore against one working Company was outstanding. During 2007-08 guarantee commission of Rs. 34.99 crore was paid/payable by these companies to the State Government.

Finalisation of accounts by working PSUs

7.1.7 The accounts of the Government Companies for each financial year are required to be finalised within six months from the end of the relevant financial year under Section 166, 210, 230, 619 and 619-B of the Companies Act, 1956 read with Section 19 of Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. They are also to be laid before the Legislature within nine months from the end of the financial year. Similarly, in case of Statutory Corporations their accounts are to be finalised, audited and presented to the Legislature as per the provisions of their respective Acts.

None of the 16 working Government Companies and two Statutory Corporations finalised their accounts for the year 2007-08 within the stipulated period. During the period from October 2007 to September 2008, eight working Government Companies and one statutory Corporation finalised their accounts for the previous years.

The accounts of all the working Government Companies and two Statutory Corporations were in arrears for periods ranging from one to 21 years as on 30 September 2008 as detailed below:

Year from which accounts are in arrears	Number of working		Reference to serial number of *Appendix 7.2*	
	Government Companies	Statutory Corporations	Government Companies	Statutory Corporations
1 to 2 years	3	-	A-10,15,16	-
3 to 4 years	4	1	A-11,12,13,14	B-1
5 to 8 years	4	1	A-1,3,5, 9	B-2
9 to 15 years	3	-	A-2,4,6	-
15 to 21 years	2	-	A-7,8	-

Investment made by State Government in PSUs whose accounts are in arrears

7.1.8 The State Government had invested Rs. 1,348.83 crore (equity: Rs. 894.19 crore, loan: Rs. 397.57 crore, grants: Rs. 57.07 crore) in eight PSUs during the years for which accounts have not been finalised as detailed in ***Appendix 7.4.*** In the absence of accounts and their subsequent audit, it can not be ensured whether the investments and expenditure incurred have been properly accounted for and the purpose for which the amount was invested has been achieved or not and thus, Government's investment in such PSUs remain outside the scrutiny of the State Legislature. Further, delay in finalisation of accounts may also result in risk of fraud and leakage of public money apart from violation of the provisions of the Companies Act, 1956.

The administrative departments have the responsibility to oversee the activities of these entities and to ensure that the accounts are finalised and adopted by these PSUs within the prescribed period. Though the concerned administrative departments and officials of the Government were apprised time to time by the Audit, of the arrears in finalisation of accounts, no remedial measures had been taken. As a result of which the net worth of these PSUs could not be assessed in audit.

Financial position and working results of working PSUs

7.1.9 The summarised financial results of working PSUs (Government Companies and Statutory Corporations) as per their latest finalised accounts are given in ***Appendix 7.2.***

According to the latest finalised accounts of 15 Companies[6] and one Statutory Corporation[7], 11 companies[8] and one Statutory Corporation (Uttarakhand Parivahan Nigam) had incurred an aggregate loss of Rs. 203.82 crore and four companies[9] earned a profit of Rs. 59.46 crore.

Working Government Companies

Profit earning working Government Companies and dividend

7.1.10 Out of eight working Government Companies, which finalised their eight accounts for previous years by September 2008, only three Companies[10] earned a profit of Rs. 58.84 crore (***Appendix 7.2***). These companies had not declared any dividend. The Government has not formulated any dividend policy.

Loss incurring working Government Companies

7.1.11 Out of 11 loss incurring working Government Companies, eight companies[11] had accumulated losses aggregating Rs. 345.80 crore, which exceeded their paid-up capital of Rs. 38.27 crore (***Appendix 7.2***).

Despite poor performance and complete erosion of their paid-up capital, the State Government continued to provide financial support to four Companies[12] amounting to Rs. 56.10 crore by way of loans and grant during 2007-08 ***(Appendix 7.1)***.

[6] Out of 16 working Government Companies, first accounts of one company (Power Transmission Corporation of Uttranchal Limited) have not been received.

[7] In case of one corporation (Uttarakhand Peya Jal Sansadhan Vikas Evam Nirman Nigam) first accounts have been received but certification is pending.

[8] Trans Cables Limited, Uttar Pradesh Digitals Limited, Uttrakhand Chay Vikas Nigam Limited, Uttar Pradesh Hill Electronics Corporation Limited, Kumaon Mandal Vikas Nigam Limited, Garhwal Anusuchit Janjati Vikas Nigam Limited, Kumaon Anusuchit Janjati Vikas Nigam Limited, Kichha Sugar Company Limited, Doiwala Sugar Company Limited, Uttarakhand Power Corporation Limited and Gharwal Mandal Vikas Nigam.

[9] Uttaranchal Jal Vidyut Nigam Limited, Uttaranchal Bahuudeshia Vitta Evam Vikas Nigam Limited, State Industrial Development Corporation of Uttaranchal Limited and Uttarakhand Purv Sainik Kalyan Udham Limited.

[10] Uttaranchal Jal Vidyut Nigam Limited, Uttaranchal Purv Sainik Kalyan Evam Udham Limited and State Industrial Development Corporation of Uttaranchal Limited.

[11] Trans Cables Limited, Uttar Pradesh Digitals Limited, Uttrakhand Chay Vikas Nigam Limited, Garhwal Mandal Vikas Nigam Limited, Garhwal Anusuchit Janjati Vikas Nigam Limited, Kichha Sugar Company Limited, Doiwala Sugar Company Limited and Uttrakhand Power Corporation Limited.

[12] Uttar Pradesh Digitals Limited, Kichha Sugar Company Limited, Doiwala Sugar Company Limited and Uttrakhand Power Corporation Limited.

Working Statutory Corporations

Loss incurring working Statutory Corporation

7.1.12 Uttarakhand Parivahan Nigam has accumulated loss aggregating to Rs. 26.31 crore, as against the paid-up capital of Rs. 78.24 crore (***Appendix 7.2***).

Despite poor performance the State Government continued to provide financial support to the Corporation amounting to Rs. 30.10 crore by way of equity, loans and grant during 2007-08 (***Appendix 7.1*** and ***7.3)***.

Return on capital employed

7.1.13 As per the latest finalised annual accounts of PSUs, the capital employed[13] worked out to Rs. 2,757.18 crore and total return[14] thereon amounted to Rs. (-) 141.94 crore compared to total return of Rs. 228.30 crore (11.40 *per cent*) in the previous year. The details of capital employed and total return on capital employed in case of working Government Companies and Statutory Corporations are given in ***Appendix 7.2***.

Reforms in the power sector

State Electricity Regulatory Commission

7.1.14 The Uttarakhand Electricity Regulatory Commission (Commission) was formed (5 September 2002) under Section 17 of the Electricity Regulatory Commission Act, 1998[15]. It is a single member Commission headed by a Chairman, who is appointed by the State Government. The audit of accounts of the Commission is conducted by the CAG under Section 104 (2) of the Electricity Act, 2003. The Commission had issued eight tariff orders up to September 2008. The commission has finalised its accounts up to 2006-07.

Non-working Public Sector Undertaking (PSUs)

Investment in non-working PSUs

7.1.15 As on 31 March 2008, the total investment in four non-working PSUs (all Government Companies) was Rs. 0.39 crore[16] (equity only), same as on 31 March 2007.

The classification of non-working Government Companies at the end of March 2008 was as under:

(Rupees in crore)

Sl. No.	Status of non-working Government Companies	Number of Companies	Investment	
			Equity	Long term loans
1.	Under liquidation[17]	1	0.17	-
2.	Others[18]	3	0.22	-
	Total	**4**	**0.39**	**-**

[13] Capital employed represents net fixed assets (including capital work-in-progress) plus working capital.
[14] For calculating total return on capital employed, interest on borrowed funds is added to net profit/subtracted from the loss as disclosed in the profit and loss account.
[15] Since replaced with Section 82(1) of the Electricity Act, 2003.
[16] Figures as per Finance Accounts 2007-08 is Rs. 0.15 crore. The difference is under reconciliation.
[17] Uttar Pradesh Agro Industries Limited .
[18] Kumtron Limited, Uttar Pradesh Hill Phones Limited and Uttar Pradesh Hill Quartz Limited.

Out of four non-working Government Companies, Uttar Pradesh Agro Industries Limited (UPAI) was under liquidation/closure under section 560 of the Companies Act, 1956 since 31 March 1991. Effective steps need to be taken for its expeditious liquidation /closure.

Budgetary outgo, grants/subsidies, guarantees, waiver of dues and conversion of loans into equity

7.1.16 During the year 2007-08, there was no budgetary outgo in the form of equity/loans/subsidy/grants.

Finalisation of accounts by non-working Government PSUs

7.1.17 One out of four non-working Government Companies was under liquidation. The accounts of three non-working Companies were in arrears for periods ranging from 18 to 21 years as on 30 September 2008 as seen from ***Appendix 7.2.***

Financial position and working results of non-working Government Companies

7.1.18 The summarised financial results of non-working Government Companies as per their latest finalised accounts are given in ***Appendix 7.2.***

The summarised details of paid-up capital, net worth, cash loss/profits and accumulated loss/ profit of non-working Government Companies as per their latest finalised accounts are given below.

(Rupees in crore)

Particular	Paid-up capital	Net worth[19]	Cash loss[20]	Accumulated loss
Non-working Companies	0.35	(-) 0.04	0.03	0.07

Results of audit on the accounts of PSUs by the Comptroller and Auditor General of India

7.1.19 During the period from October 2007 to September 2008, accounts of eight working Government Companies and one Corporation were selected for audit. The net impact on the profitability of these PSUs of the important audit observations was as follows:

Details	No. of accounts	Rs. in crore
1. Increase in Profit	1	20.50
2. Decrease in Profit	1	12.89

Some of the major errors and omissions noticed during audit of annual accounts of some of the Government Companies are mentioned below.

[19] Net worth represents paid-up capital *plus* free reserves *less* accumulated loss.
[20] Cash loss represents loss *minus* depreciation for the year.

7.1.20 ***Errors and omissions noticed in case of Government Companies Comments by the statutory auditors.***

State Infrastructure and Industrial Development Corporation of Uttaranchal Limited (2006-07)

- Excess payment of Rs. 11.96 crore was made to the contractors as per investigation committee report.
- Transfer of industrial plots in case of two firms at industrial estate Haridwar was unjustified and resulting in financial loss of Rs. 1.04 crore.
- Income from sale of land at Sitarganj was understated by Rs. 5.81 crore as the above is subject to adjustment.
- There was variation and addition of clauses in the concession agreement executed with ELEDCO infrastructure and Properties Limited in comparison to the draft bid documents. The financial burden on account of additional external infrastructure worked out to be approximately Rs. 50 crore.

Kichha Sugar Company Limited (2006-07)

- The Company has not followed Accounting Standard 10 in respect of accounting for Discarded Building and Plant and Machinery and Accounting Standard 15 in respect of Accounting for Retirement Benefits.

Comments during supplementary audit

Uttarakhand Power Corporation Limited (2004 - 05)

- The Uttarakhand Electricity Regularity Commission vide its order dated 4 October 2004 reduced the tariff in respect of Steel Companies (consumers) from 1 September 2004. The Company, however, excessively charged Rs. 3.85 crore as electricity charges for which no liability was created. This has resulted in understatement of liabilities and loss for the year by Rs. 3.85 crore.
- The Company created excess liability of Rs. 17.90 crore for compound interest instead of simple interest payable to the Central Public Sector Undertakings (CPSUs) to whom "Power Bonds" at simple interest were issued. This has resulted in overstatement of loss by Rs. 17.90 crore.

Uttarakhand Jal Vidyut Nigam Limited (2003 - 04)

- Renovation & Modernisation Fund was overstated by Rs. 20.32 crore due to excess rate charged from Uttarakhand Power Corporation Limited on sale of energy which resulted in understatement of current liabilities.

State Infrastructure & Industrial Development Corporation of Uttarakhand (2006 – 07)

- Accounting of interest on the land premium as income instead of amounts payable to Government of Uttarakhand resulted in overstatement of income and understatement of current liabilities by Rs. 12.73 crore.

Internal audit/Internal control

7.1.21 The Statutory Auditors are required to furnish a detailed report upon various aspects including the internal audit/internal control systems in the Companies audited by them in accordance with the directions issued by the CAG to them under Section 619 (3) (a) of the Companies Act, 1956 and to identify areas which need improvement. Accordingly, the Statutory Auditors had observed in the case of five Companies[21] that the internal control system was weak and not commensurate with the size and nature of their business.

Response to inspection reports, draft paragraphs and reviews

7.1.22 Observations made during audit and not settled on the spot are communicated to the heads of PSUs and concerned departments of the State Government through inspection reports. The heads of the Offices/PSUs are required to furnish replies to the inspection reports through their respective heads of departments within a period of six weeks. Inspection reports issued up to March 2008 pertaining to 16 PSUs disclosed that 2206 paragraphs relating to 580 inspection reports were outstanding at the end of September 2008. Department - wise break-up of inspection reports and audit observations outstanding as on 30 September 2008 are given in ***Appendix-7.5.***

Similarly, draft paragraphs and reviews on the working of the PSUs are forwarded to the Principal Secretary, Finance and the Principal Secretary/Secretary of the administrative department concerned demi-officially seeking confirmation of facts & figures and their comments thereon within a period of six weeks. Five draft paragraphs forwarded to the Energy Department and one review forwarded to Energy Department on the activities of APDRP during May and August 2008 had not been replied so far as detailed in ***Appendix-7.6.***

It is recommended that the Government should ensure that (a) procedure exists for action against the officials who fail to send replies to inspection reports/draft paragraphs/reviews and Action Taken Notes for recommendations of COPU as per the prescribed time schedule, (b) action is taken to recover loss/outstanding advances/overpayment in a time bound schedule, and (c) system of responding to audit observations is revamped.

[21] Kumaon Mandal Vikas Nigam Limited, Uttaranchal Bahuudeshia Vitta Evam Vikas Nigam Limited, Uttarakhand Chay Vikas Nigam Limited, Doiwala Sugar Company Limited and Kichha Sugar Company Limited.

Departmentally managed Government commercial /quasi-commercial undertakings

General

7.1.23 Consequent upon formation of the State of Uttarakhand with effect from 9 November 2000 under the Uttar Pradesh Reorganisation Act, 2000, the assets and liabilities of the departmentally managed Government commercial undertakings already situated in Uttarakhand were to be passed on to the newly formed State.

Accordingly, the assets and liabilities of the following departmentally managed Government commercial undertakings located within the State were deemed transferred to the newly created State from the aforesaid date.

Sl. No.	Department	Name of the undertakings
1.	Food and Civil Supplies	Grain Supply Scheme: Regional Food Controller, Dehradun Regional Food Controller, Haldwani
2.	Irrigation	Irrigation Workshop Division, Roorkee
3.	Animal Husbandry	State Livestock and Agricultural Farms, Kalsi, Dehradun State Livestock and Agricultural Farms, Manjhara, Dehradun
4.	Health	Rishikul Ayurvedic Pharmacy, Haridwar State Vaccine Institute, Patwadangar, Nainital

Lack of accountability for the use of public fund in departmentally managed commercial and quasi-commercial undertakings

7.1.24 Activities of quasi-commercial nature are performed by the departmental undertakings of the Government. These undertakings have to prepare pro-forma accounts annually in the prescribed format showing the results of financial operations so that the Government can assess the results of their working. The heads of departments in Government are to ensure that the undertakings, which are funded by the budgetary releases, prepare the accounts and submit the same to the Accountant General for audit by 30 June every year. It was observed by Audit that only the Irrigation Workshop Division (IWD), Roorkee had finalised its accounts for the year 2006-07, while the other undertakings have not finalised their accounts for the period 9 November 2000- March 2001, 2001-02, 2002-03, 2003-04, 2004-05, 2005-06, 2006-07 and 2007-08. Thus the accounts except in the cases of IWD, Roorkee, were in the arrears for a period of eight years, and in the case of IWD, Roorkee for a period of one year. There is no improvement despite this being pointed out by Audit earlier. The finalised accounts of departmentally managed commercial and quasi-commercial undertakings reflect their overall financial health and efficiency in conducting their business. In the absence of timely finalisation of accounts, the investment of the Government remains outside the scrutiny of the Audit/State Legislature. Consequently, corrective measures, if any required, for ensuring accountability and improving efficiency could not be taken in time. Besides, the delay also opens the system to risk of fraud and leakage of public money.

619-B Companies

7.1.25 There was one[22] working company within the purview of Section 619-B of the Companies Act, 1956. ***Appendix 7.7*** gives the details of paid up capital, investment by way of equity, loans and grants and summarised working results of the Company based on its latest available accounts.

PERFORMANCE REVIEW

UTTARAKHAND POWER CORPORATION LIMITED

7.2 Implementation of Accelerated Power Development Reforms Programme

Highlights

Against the target of 15 *per cent,* AT&C losses stood at 37 *per cent* in March 2008.

[Paragraph 7.2.13]

Energy accounting and auditing was not initiated because of incomplete DT metering and non-completion of consumer indexing

[Paragraphs 7.2.16 and 7.2.17]

Reliability and quality of power supply as measured by frequency of outages and their duration, deteriorated because of disproportionate burdening of lower ends of transmission.

[Paragraph 7.2.21]

The company diverted funds of Rs. 13.84 crore to works not included in the detailed project reports.

[Paragraph 7.2.34]

Material worth Rs. 5.98 crore procured from APDRP fund was diverted to other works.

[Paragraph 7.2.40]

The company paid interest free mobilisation advance of Rs. 7.73 crore to 15 contractors without having any provision in DPRs and financial rules.

[Paragraph 7.2.37]

Works worth Rs. 13.28 crore included in the DPRs were not executed due to deficient DPRs or failure of company to install data logging system in the circles.

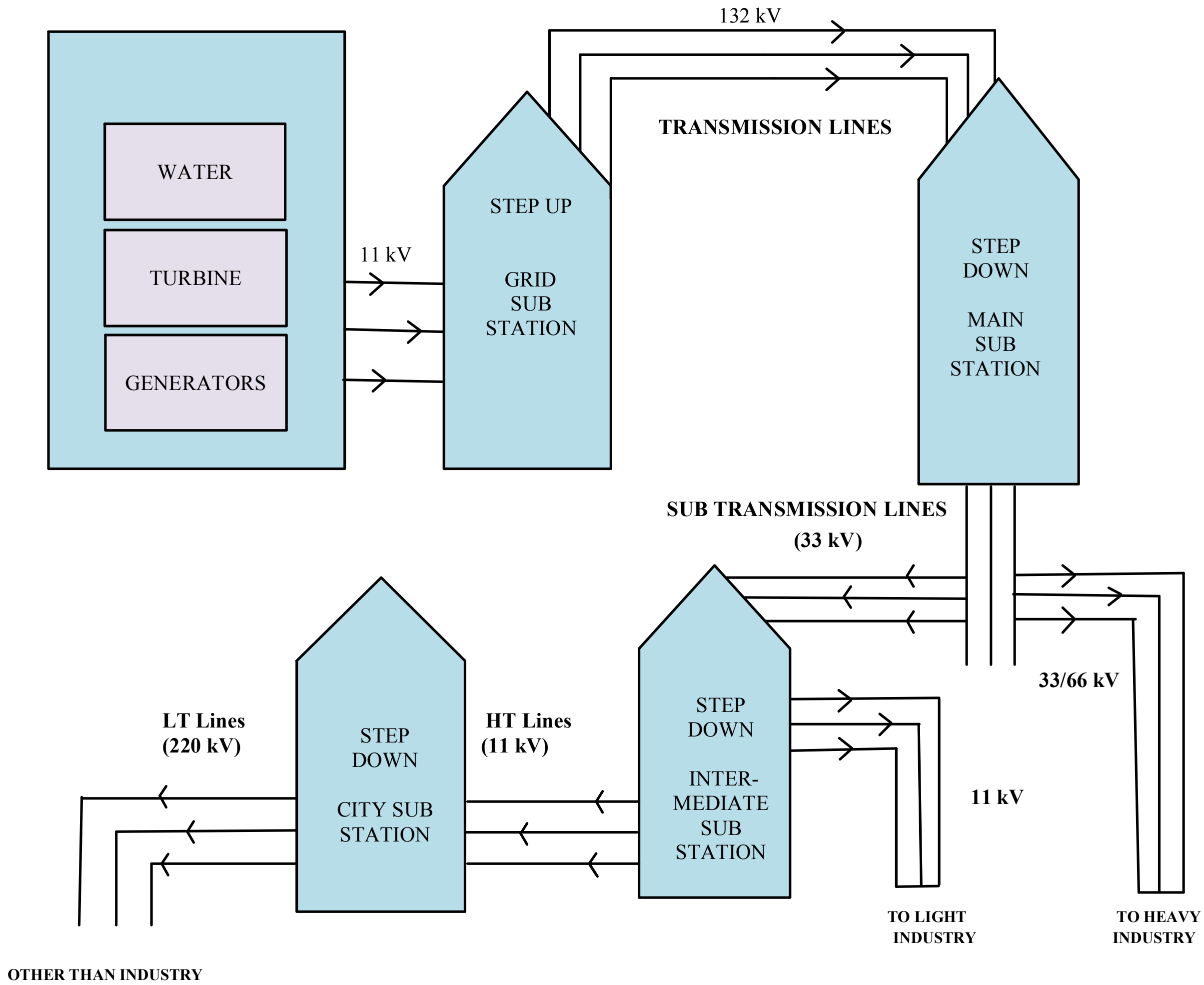
[Paragraph 7.2.35]

[22] Uttaranchal Seeds & Tarai Development Corporation Limited.

Introduction

Transmission & distribution of power

7.2.1 Power generated (11 kV) in a power station is stepped up for bulk transmission to 400 kV/220 kV/132 kV using a transformer. This is done to improve the transmission efficiency since at higher voltage, the loss of power is low. Power is carried through a transmission network of high voltage lines to a common power pool called the grid which is connected to load centres (cities) through a sub-transmission network of 33 kV/66 kV lines. These lines terminate into 33 kV/66 kV substations, where the voltage is stepped down to 11 kV for power distribution to load points through a distribution network of 11kV lines or feeders. Each such feeder provides the last mile connection through Low Tension (LT) feeders to individual customers, either at 220V (for single-phase supply) or at 415V (for three-phase supply). A feeder could be either an overhead line or an underground cable. Long feeders experience voltage drops requiring capacitors[23] or voltage regulators. Distribution feeders emanating from a substation are controlled by circuit breakers which trip (or open) when there is a fault on any section downstream, thus disconnecting power supply (outages) to the consumers on that section.



Transmission and Distribution Network

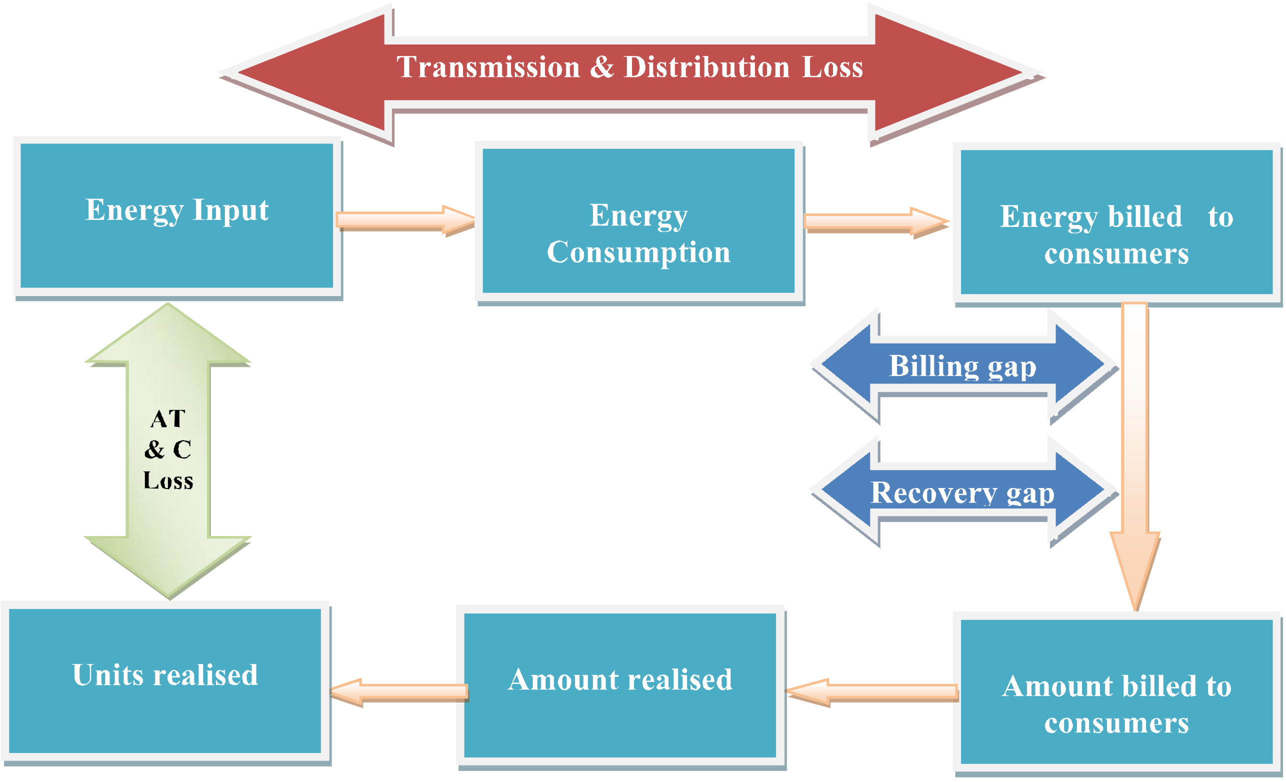
[23] Capacitors are storage devices which absorb excess voltage or boost up low voltage and reduce technical losses arising from reactive energy.

Loss of power

7.2.2 A substantial amount of energy is lost in the transmission & distribution (T&D) system by way of technical and commercial losses. In addition, outages prevent the delivery of energy to end consumers causing revenue loss. Technical loss is inherent in electrical systems, as all electrical devices have some resistance and the flow of currents causes a power loss. Commercial losses are caused by pilferage, theft and errors due to defective meters, errors in meter reading and non-realisation of billed units of energy.

The parameter to measure loss of power is the Aggregate Technical & Commercial (AT&C) Loss, which is considered the clearest measure of the overall efficiency of power distribution. It is the difference between units injected into the system and the units for which the payment is collected and is calculated as per following formula:

$$\frac{(\text{Energy Input} - \text{Energy realised}) \times 100}{\text{Energy Input}}$$



Energy realised= Energy billed × collection efficiency

Collection efficiency= amount realised/ amount billed

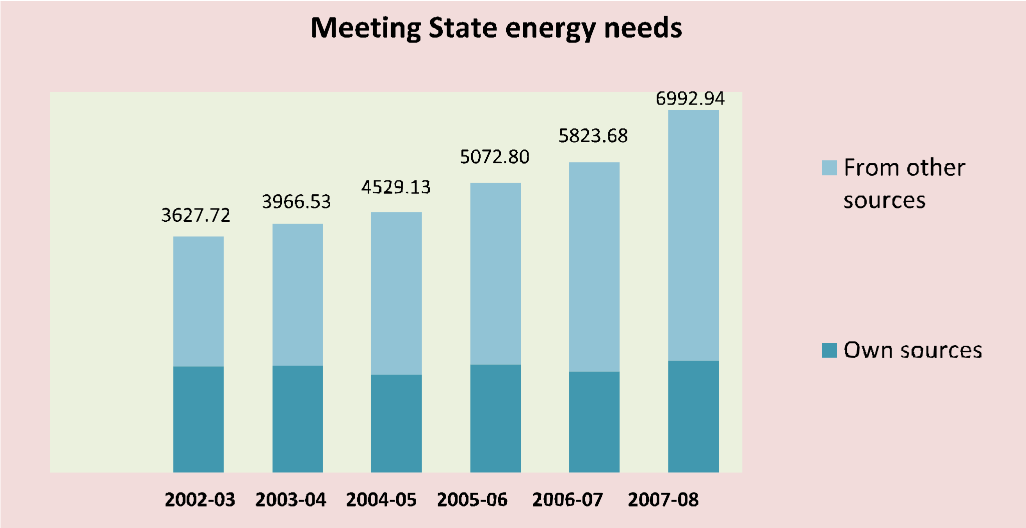
Power scenario in Uttarakhand

7.2.3 Uttarakhand manages 58 *per cent* of its power needs from its own resources, *i.e.,* through its own hydroelectric projects. Peak demand is met from purchases from other sources at rates fixed by Central Electricity Regulatory Commission (CERC). The consumption of power has increased more than five times in the last seven years (2002-08). Over the years, purchases from the central pool and from other sources have risen as could be seen from the table and bar chart below:

Table – 7.2.1: Energy consumed in Uttarakhand (MUs)

Year	Own sources[24]	Central pool	Other sources	Total
2001-02[25]	806.88	744.59	-	1551.47
2002-03	2954.19	661.61	11.92	3627.72
2003-04	2973.36	955.85	37.32	3966.53
2004-05	2725.78	1778.00	25.35	4529.13
2005-06	3014.44	2020.98	37.38	5072.80
2006-07	2827.91	2845.68	150.09	5823.68
2007-08	3122.86	3599.94	270.14	6992.94

(Source: Information provided by the UPCL)



Accelerated Power Development Programme

7.2.4 The Government of India (GOI) launched the Accelerated Power Development Programme (APDP) in February 2001 for renovation & modernisation of power plants and for upgrading & strengthening sub-transmission & distribution network. The programme was restructured (2002-03) as a tool to "incentivise" the State Governments for power sector reforms and renamed as Accelerated Power Development and Reform Programme (APDRP).

APDRP was performance-based and linked to the achievements of the State Government which were benchmarked to criteria laid down in the Memorandum of Understanding (MOU) between GOI and the Government of Uttarakhand in March 2001 and Memorandum of Agreement (MOA) between GOI and Uttarakhand Power Corporation Limited (UPCL) in December 2002. The MOA envisaged that:

- GOI will provide 90 *per cent* of the project costs as grant-in-aid[26] and the balance will be paid as loans. The UPCL will open a seperate bank

[24] Energy is purchased from Uttarakhand Jal Vidyut Nigam (UJVN) and the input is received at 33 KV substations of Uttarakhand Power Corporation Limited.

[25] November 2001-March 2002.

[26] Uttarakhand being a special category state (SCS), APDRP provided 100 *per cent* funding of project costs.

account to receive the funds.

- Incentives[27] will be provided against actual reduction in cash losses, calculated net of subsidies and receivables and with 2000-01 as the base year.

In order to access the funds, UPCL was required to prepare Detailed Project Reports (DPR) covering all the activities to be taken up under APDRP. Prior to the submission of DPRs for GOI's approval, they were to be scrutinised and vetted by the Lead Advisor cum Consultant (ACC). MECON[28] was the Lead ACC till June 2005 when it was replaced by NTPC[29]. GOI released the funds to the State Government to implement the scheme through UPCL. The programme was to be monitored by GOI, Lead ACC, State Government and the State level Distribution Reforms Committee.

Although the focus of APDRP was on dense urban areas, all the six[30] distribution circles of UPCL were covered and 114 projects were taken up. DPRs for the six circles were approved by GOI during the period August 2002 to October 2002. UPCL received Rs. 288.46 crore during 2001-06 under the APDRP as shown below. The flow of funds from GOI stopped after 2005-06 since the State Government did not claim funds thereafter.

Table– 7.2.2: Receipt of funds from GOI

(Rs. in crore)

Year	Funds received		
	Grant	**Loan**	**Total**
2001-02	2.40	2.40	4.80
2002-03	89.66	9.97	99.63
2003-04	67.50	7.50	75.00
2004-05	59.52	6.61	66.13
2005-06	39.00	3.90	42.90
Total	**258.08**	**30.38**	**288.46**

(Source: Information/Data provided by the UPCL)

Objectives of APDRP

7.2.5 The main objectives of APDRP were:

- reduction of AT&C losses to 15 *per cent* by March 2007;
- significant improvement in revenue realisation to make the State power sector viable;
- reduction in outages and ensuring good quality of supply of power; and
- improving consumer satisfaction.

APDRP envisaged six level intervention strategy encompassing initiatives at national, State, State Electricity Board, distribution circle, feeder and consumer levels. The focus was on accountability and performance to rejuvenate the distribution sector.

[27] Incentive will be upto 50 *per cent* of the cash losses.
[28] Metallurgical and Engineering Corporation of India Ltd, a GOI public sector undertaking.
[29] National Thermal Power Corporation Ltd, a GOI public sector undertaking.
[30] At the time of inception of the programme, there were six distribution circles. In 2004-05, Haldwani circle was formed taking the number of circles to seven.

Administrative intervention: Profit centered approach

- 11 KV feeder as a profit centre
- Superintending Engineer as Chief Operating Officer
- Junior Engineer as feeder manager

Technical intervention

- 100 per cent tamper-proof metering
- Installation of capacitors at the distribution end
- Computerised billing
- Reconfiguration of feeder lines to reduce the length of LT lines

Commercial intervention

- Energy meters at feeder, distribution transformer and consumer levels
- Consumer indexing
- IT enabled systems to identify overloading & unbilled consumers
- Energy accounting and Energy audit

Institutional reforms

- Formation of State Electricity Regulatory Commission
- Formation of special courts/ police stations

Management structure

7.2.6 Management of each project is vested with the Chief Executive Officer (CEO) *i.e.,* the Deputy General Manager of each circle. He is assisted by Executive Engineers of the implementing units, Sub-divisional Officers and Feeder Managers. Funds and material management are vested in the corporate office of UPCL.

Scope of Audit

7.2.7 The performance audit was conducted (March - July 2008) to evaluate the work financed from APDRP funds during 2001-08 and covers the implementation of the programme in the State. Four[31] out of seven[32] distribution circles were selected by adopting simple random sampling for detailed study.

Audit objectives

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

- comprehensive data to assess AT&C losses were collected and analysed by the UPCL to achieve targets set in APDRP;
- the UPCL ensured the installation of meters at all the levels of distribution network and regular readings recorded to ensure complete energy accounting and auditing;
- distribution network was upgraded to achieve greater reliability and quality of power supply to the consumers;
- strategies were adopted to improve profitability of its distribution circles and achieve recovery of cost of supply of power;

[31] Dehradun Urban, Ranikhet, Rudrapur and Srinagar.
[32] Dehradun Rural, Dehradun Urban, Haldwani, Ranikhet, Roorkee, Rudrapur and Srinagar.

- the APDRP accelerated the system improvements in the distribution network to reduce technical losses;
- the DPRs were drawn up keeping in view the priorities, reflecting the needs at the field level and the execution was in conformity to the targets set in DPRs;
- the funds were released in time and utilised as per the norms laid down in APDRP guidelines;
- the UPCL adopted effective procedures for procurement and issue of materials required for APDRP projects; and
- the UPCL provided for an effective monitoring mechanism at all levels and the adherence to such mechanism facilitated timely completion of APDRP objectives.

Audit criteria

7.2.9 The performance and effectiveness of APDRP scheme of UPCL was assessed with reference to:

- guidelines issued by the GOI /State Government and Uttarakhand Electricity Regulatory Commission (UERC);
- benchmarks against Key Performance Indicators (KPI) laid down in the MOU & MOA;
- projections /target set out in DPRs/APDRP; and
- conditions stipulated in various agreements and contracts.

Audit methodology

7.2.10 Audit methodology comprised the following:

- scrutiny of DPRs;
- analysis of reports relating to KPIs together with related supporting records/data;
- examination of agreements for procurement of materials and turnkey contracts; and
- examination of records relating to accounting of APDRP transactions.

Audit findings

7.2.11 The audit findings arising from the Performance Review were reported (August 2008) to the Management and the State Government. The audit findings were also discussed in the exit conference held on 22 August 2008 which was attended by Managing Director and other officers of UPCL. These findings are discussed in the succeeding paragraphs.

Reduction of losses

Audit objective 1: Whether comprehensive data to assess AT&C losses were collected and analysed by the UPCL to achieve targets set in APDRP.

7.2.12 Reduction in AT&C losses below 15 *per cent* upto March 2007 was the primary objective of APDRP. During 2001-08, the Company had available energy of 31,778.53 MUs costing Rs. 7,031.84 crore against which it billed 22,661.52 MUs and realised revenue of Rs. 5,232.58 crore leaving a gap of Rs. 1,799.26 crore. The following table indicates the year wise losses of the UPCL.

Table – 7.2.3: AT&C losses

Sl. No.	Particular	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
1.	Energy available (MUs)	3038.80	3482.12	3826.04	4311.96	4878.48	5512.50	6728.63
2.	Total billed (MUs)	2229.09	2465.32	2696.44	3160.16	3495.54	3879.18	4735.79
3.	Billing efficiency[33] (*per cent*)	73.35	70.80	70.48	73.29	71.65	70.37	70.38
4.	Revenue billed (Rs in crore)	658.59	710.94	846.82	846.48	947.38	1018.00	1285.76
5.	Revenue collected (Rs in crore)	495.45	541.37	565.01	723.57	862.63	895.35	1149.20
6.	Collection efficiency[34] (*per cent*)	75.23	76.15	66.72	85.48	91.05	87.95	89.38
7.	Energy realised[35] (MUs)	1676.94	1877.34	1799.06	2701.30	3182.69	3411.74	4232.85
8.	AT&C Losses[36] (*per cent*)	44.82	46.09	52.98	37.35	34.76	38.11	37.09

(Source: Bench mark & information provided by the UPCL)

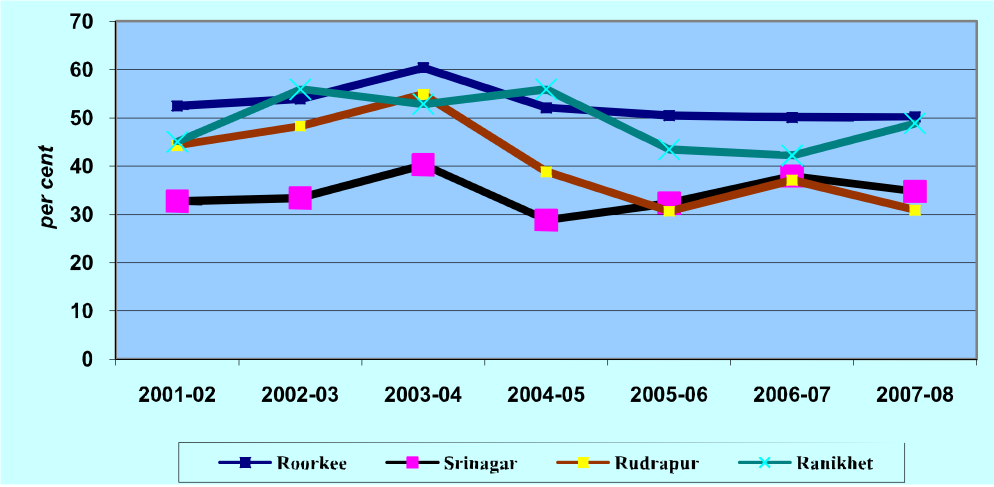
AT&C losses

Against the target of 15 *per cent*, AT&C losses were 37 *per cent.*

7.2.13 The AT&C losses reduced over the years from 44.82 *per cent* to 37.09 *per cent*, but the target of 15 *per cent* remains a long way off. Even so, the losses fluctuated during the period and reduction was not a steady one. The reasons for non achievement of target of AT&C losses below 15 *per cent* were not analysed by UPCL. There were sharp fluctuations in AT&C losses during 2002-05, which UPCL attributed (August 2008) to fluctuations in revenue realisation, particularly realisation of arrears from government departments. The data in support of this contention was not provided to Audit.

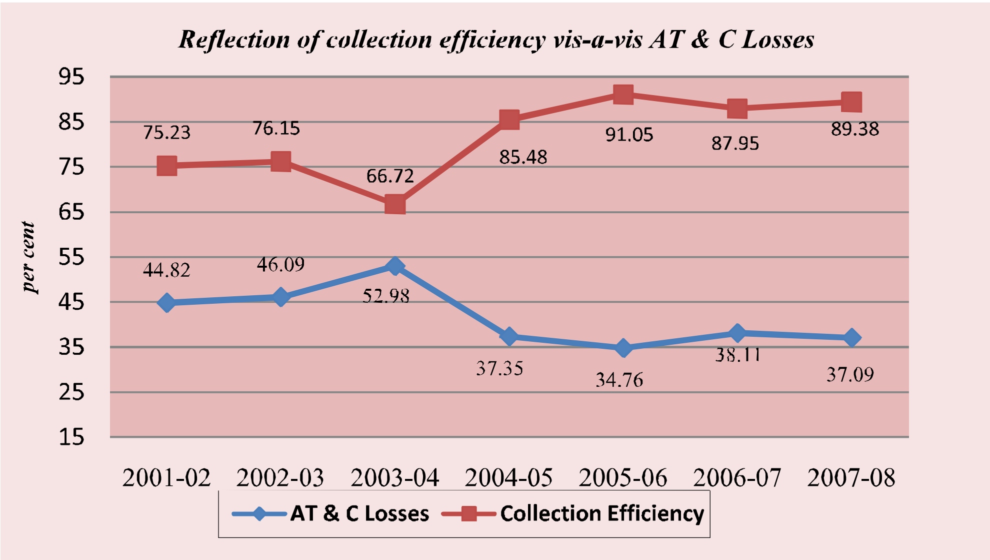
Fluctuations in AT&C losses were seen in the circles as shown in the graph below:

[33] Billing efficiency being energy billed/energy input*100.
[34] Collection efficiency = revenue collected during the year/ revenue billed*100.
[35] Energy realised = energy billed*collection efficiency.
[36] AT&C losses= (energy input-energy realised)/energy input*100.



The circle-wise data showed that in two circles at Ranikhet and Srinagar, the AT&C losses increased during the period under review. The losses in EDC, Roorkee were particularly high and stood at 50.26 *per cent*, a marginal improvement from that of the base year when the losses were 52.5 *per cent*.

The assessment of AT&C losses would be made meaningful if buttressed with analysis of data at different levels of distribution through metering at State, circle, feeder levels and at the level of distribution transformers. UPCL stated (August 2008) that the AT&C losses could not be brought down to the targeted 15 *per cent* mark due to incomplete metering, fluctuations in collections and because a targeted approach on loss reduction, by segregating consumers feeder wise to determine the areas of high losses, was not carried out.



The trends in AT&C losses exactly mirrored the trends in collection efficiency as can be seen from the graph. This shows that improving collection efficiency should be seen as a cornerstone to any strategy to reduce AT&C losses.

Billing efficiency

7.2.14 Billing for "public lamps" and "public water works" during the period of review were on assessed basis and not 100 *per cent* metered. In addition, there were 29,521 consumers whose consumption of energy was unmetered besides 63,994 consumers who had defective meters; billing of these consumers was also on assessed basis.

During 2001-08, the billing efficiency reduced from 73.4 *per cent* to 70.4 *per cent*, an average of 1302.43 MUs of energy remained unbilled every year. The circle-wise data showed that the incidence of unmetered and unbilled energy was high particularly in four circles and the position, instead of improving, had further deteriorated.

Table – 7.2.4: Circle-wise metering and billing efficiency

Circle	Billing efficiency *(per cent)*		Metering efficiency[37] *(per cent)*	
	2001-02	**2007-08**	**2001-02**	**2007-08**
EDC, Roorkee	63.6	62.1	43.6	56.4
EDC, Srinagar	81.9	72.5	70.6	66.7
EDC, Rudrapur	69.6	72.5	41.9	72.1
EDC Haldwani	--	75.5*	--	67.4*
EDC, Ranikhet	79.3	69.0	76.2	65.4
UPCL	73.4	70.4	56.7	66.8

(Source: Progress Report, Bench Mark and information provided by the UPCL)

** EDC, Haldwani was established by bifurcating EDC, Rudrapur in 2004-05.*

Management stated (August 2008) that due to defective meters (10 *per cent)* and shortage of staff, all meters were not being read. In event of shortage of staff, a more focused approach could have fetched UPCL better results with regard to AT&C losses. UPCL could have placed 4.21 *per cent* of its consumers who account for 81 *per cent* of energy consumption on priority in its billing & collection efforts.

It was further noticed that the energy input increased by 56 *per cent* but billed energy increased by 49 *per cent* only. However, the data from three distribution circles showed anomalies from this trend as shown in the table below. Billed energy showed a downward trend or was disproportionate to the increase in energy input in these circles. UPCL admitted (August 2008) that this was due to improper billing and focused action is being envisaged for high value energy consumers.

Table – 7.2.5: Energy consumption and billed energy out-of-step

Circles	2005-06		2006-07		2007-08	
	Percentage increase / decrease in					
	Energy input	Billed energy	Energy input	Billed energy	Energy input	Billed energy
Ranikhet	7.19	**-5.3**	4.82	**-8.1**	5.62	9.0
Srinagar	-0.68	14.3	-1.01	**-13.2**	9.33	**3.0**
Haldwani	6.25	**-12.2**	5.86	**-3.9**	12.11	16.7

Collection efficiency

7.2.15 Outstanding dues were 52.22 *per cent* to 62.93 *per cent* of the total billed amount during the period under review; the actual dues progressively increased from Rs. 749.47 crore in 2001-02 to Rs. 1319.59 crore in 2007-08. The collection efficiency of 89.38 *per cent* in 2007-08, though an improvement on 75.23 *per cent* in the base year (2001-02), was far from the targeted 100 *per cent* of the billing. Table below gives the details:

[37] Metering efficiency indicates the percentage of metered energy to energy input.

Table – 7.2.6: Collection efficiency in UPCL

Sl. No.	Particulars	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
	No. of consumers (in lakh)	8.41	8.68	9.01	9.70	10.57	11.47	12.31
2	Dues at the beginning of the year (Rs. in crore)	705.10	749.47	919.04	922.10	996.90	1077.11	1196.89
3	Bills raised during the year (Rs. in crore)	658.59	710.94	846.82	846.48	947.38	1018.00	1285.76
4	**Total dues (2+3) (Rs. in crore)**	**1363.69**	**1460.41**	**1765.86**	**1768.58**	**1944.28**	**2095.11**	**2482.65**
5 (a)	Revenue collected against current year billing (Rs. in crore)	495.45	541.37	529.02	596.68	743.21	835.96	1116.36
5 (b)	Revenue collected against previous year billing (Rs. in crore)	Figures are not available		35.99	126.89	119.42	59.39	32.84
5 (c)	Revenue collected during the year (Rs. in crore) 5(a)+ 5(b)	495.45	541.37	565.01	723.57	862.63	895.35	1149.20
5(d)	Bill correction/ revision/ dues waiver (Rs. in crore)	118.77	--	278.75	48.11	4.54	2.87	13.86
6	Outstanding revenue of the year (Rs. in crore) 4 – 5(c) – 5(d)	749.47	919.04	922.10	996.90	1077.11	1196.89	1319.59
7	Collection efficiency (*per cent*)	75.23	76.15	66.72	85.48	91.05	87.95	89.38
8	Outstanding dues as percentage of total dues	54.96	62.93	52.22	56.37	55.40	57.13	53.15

(Source: Bench Mark and information provided by the UPCL)

Individual initiative in the circles was most critical to improvement in collection efficiency. An illustrative example is the achievement of collection efficiency of 97.6 *per cent* in Distribution Division (North) Dehradun of Dehradun (Urban) Circle in 2004-05.

Conclusion: There has been a reduction in the State on AT&C losses and improvement in collection efficiency although the achievements are modest as compared to the targets set in the agreements signed with the GOI while accessing APDRP funds. The incidence of unbilled and unmetered consumption of energy is still high and in certain circles, these parameters have shown an upward trend. The sharp fluctuations in AT&C losses are a matter of concern.

Metering and Billing

Audit objective 2: Whether the UPCL ensured the installation of meters at all the levels of distribution network and regular readings recorded to ensure complete energy accounting and auditing.

Metering

7.2.16 One of the targets in the MOA was that UPCL will achieve 100 *per cent* metering by April 2007. Meters are required at feeder level, distribution transformer and consumer level. Since the bulk purchases were made at the feeder level, both input and output energy is recorded at the feeder level. It was envisaged that by linking each feeder to the distribution transformers and down to the meter at the consumer level, the losses of energy at each level could be recorded in order to plug losses. Following table indicates the progress on metering in the State as on 30 September 2008:

Table – 7.2.7: Meter Installation

	Level	Required	Installed	Unmetered *(per cent)*
1.	Feeder metering	1,278	1,278	-
2.	DT metering	34,219	13,895	20,324 (59.4)
3.	Consumer metering	12,33,431	12,03,910	29,521 (2.4)

(Source: DPRs, Progress Report and information provided by the UPCL)

While UPCL achieved 100 *per cent* metering at feeder level (meter readings were also being taken regularly), the gap in DT metering could not be filled. Against the requirement of 34,219 DT meters, UPCL procured (February 2005) only 13,895 DT meters at a cost of Rs. 11.64 crore. Where the DT meters were installed, these were not being read. Management stated (August 2008) that it was due to shortage of staff that the meter readings were not being taken. The fact remains that the objective of installation of DT meters could not be achieved.

MOA made it mandatory that tamper-proof and high precision electronic energy meters would be provided to all consumers by 1 April 2007. However, 74 *per cent* of the consumers continued to use mechanical meters and only 24 *per cent* had been provided electronic meters. 63,994 mechanical meters installed in the consumer premises representing 5.2 *per cent* of the meters were not functional as of March 2008. Only 3.55 lakh electronic meters were purchased (June 2004-September 2005) against a requirement of 12.33 lakh. It was found that UPCL did not make adequate provision of funds on metering in the DPRs for APDRP. In the four circles test-checked in Audit, the provision was only 29 *per cent* of the actual requirement under this head indicating poor planning.

Circle-wise data showed that 28,723 unmetered consumers representing 97 *per cent* of total unmetered consumers were from Roorkee circle alone. The matter regarding unmetered supply of energy was viewed seriously by the Uttarakhand Electricity Regulatory Commission (UERC) which imposed penalty[38] on UPCL. A sum of Rs. 42 lakh was paid against the penalty due amounting to Rs. 49.50 lakh till October 2007; an additional Rs. 7.50 lakh is due as of March 2008. Thus the UPCL was suffering losses on two fronts, loss of revenue (since billing was done on assessed basis and not by meter readings) and loss due to penalties imposed by UERC. Management stated (August 2008) that the meters could not be installed due to consumers' protest and resistance.

Due to non completion of DT metering and consumer indexing, the accounting & auditing of energy has not been taken up.

Consumer indexing

7.2.17 It was envisaged that all consumers will be indexed[39] by March 2007; consumer indexing will capture all users of electricity and connect them upto the respective DT and feeder. This would help identify overloading of equipment, thus ensuring better load management and maintenance of equipment. When linked to the billing system, the indexing would also identify unbilled consumers thus helping in better billing and revenue

[38] Rupee one lakh and additional penalty of Rs. 5,000 per day till 100 *per cent* metering is achieved.

[39] Consumer indexing is a physical survey of consumers premises, segregating them into identified categories and linking them upto the DT to which they are connected.

collection. Any new connection would be given to the consumer through consumer indexing, so that the data would be automatically updated.

UPCL projected (October 2002) a target of indexing of 6.64 lakh consumers in six circles by April 2004 through contractor. The progress on the work as of March 2008 is tabled below:

Table – 7.2.8: Consumer indexing in UPCL & Status

(Cost: Rs. in crore)

Circle	Targets			Achievements		Remarks
	Date	Number	Cost	Number	Cost	
Rudrapur	Aug 05	1,24,529	0.33	73,114	0.60	59 *per cent* complete; consumer base is 1.41 lakh (March 2008). Cost overrun due to time overrun (two years seven months).
Roorkee	Aug 05	1,33,551	0.36	1,33,551	0.45	Work completed (March 2006) but new connections not being linked to indexing; not linked to DTs; consumer base is 1.54 lakh (March 2008). Cost overrun due to time overrun.
Dehradun (U)	Nov 05	1,09,869	0.29	1,04,929	0.41	Still incomplete; consumer base is 1.28 lakh (March 2008). Cost overrun due to time overrun (two years five months).
Ranikhet	June 06	1,04,000	0.25	46,093	0.18	44 *per cent* complete; the number of consumers in the circle is 1.67 lakh (March 2008). Cost overrun due to time overrun (one year nine months).
Haldwani	Mar 07	91,902	0.24	55,398	0.30	The contractor abandoned the work in March 2007 after 60 *per cent* completion; the consumer base is 1.16 lakh (March 2008). Cost overrun due to time overrun (one year).
Dehradun (R)	N.A.	1,00,000	0.25	Nil	Nil	Work not started; consumer base is 1.37 lakh (March 2008).
Srinagar	-	-	-	-	-	Work not planned in DPRs; consumer base in the circle is 2.19 lakh (March 2008).
	Total	**6,63,851**	**1.72**	**4,13,085**	**1.94**	

(Source:- Progress Report, Bench Mark and information provided by the UPCL)

The work was running behind schedule in four circles (Ranikhet, Haldwani, EDC (U) & EDC, Rudrapur); and in two circles (EDC, Srinagar & EDC (R), Dehradun) with a consumer base of 3.56 lakh, the work had not been taken up. In EDC Roorkee where the consumer indexing was completed, it was not linked to the respective DTs. Management attributed (August 2008) the non-operationalisation on indexing to delay in reconciliation of figures for number of consumers reported by the contractor. Besides, DT metering was still incomplete.

Meanwhile, the number of consumers is increasing and new connections are being given without updating the index. The objectives of consumer indexing are yet to be met.

Data-logging

7.2.18 Energy accounting was an important deliverable in the APDRP by which energy flow and consumption to various segments would be charted. It was essential that not only meters should be installed at all levels, meter readings would be taken regularly and reconciled[40]. Data loggers at all the sub-stations in the distribution network would log the flow of energy along the network. An IT enabled system, called Supervisory Control and Data Acquisition (SCADA) would give centralised, real time data on the health of the system as well as the energy supply and consumption upto the consumer level. Automatic meter readers would read meters at arm's length as well as

[40] The meter readings at feeders would be reconciled with that at DTs and at the level of consumers.

provide a two-way intervention facilitating disconnections as well. Analysis of the data provided in SCADA would help identify the consumption across various categories of consumers, the loads at each point of delivery as well as prepare exception reports without human intervention.

Installation of the system, envisaged in the DPRs to be completed by April 2004, was not taken up by UPCL in right earnest. A provision of Rs. 5.28 crore was made from APDRP funds for installation of 115 data logging systems in four circles[41]. As of March 2008, only minor works costing Rs. 11 lakh were taken up in Dehradun (U) Circle. No progress was made in other circles. The balance fund of Rs. 5.17 crore remained unutilised as of March 2008. Although meters had been installed on all feeders, the readings were not being reconciled with the meter readings at consumer level, in the absence of which energy accounting and auditing could not be done.

Management while accepting the facts, stated (August 2008) that data logging system would be implemented in APDRP-II.

Billing and collection

7.2.19 Spot billing centres were to be established upto December 2003 in seven circles; DPR provided for a provision of Rs. 0.32 crore for eight centres in EDC Srinagar only. It was planned that the centres could download the data and would bill and collect revenue from consumers. No centres were established as of March 2008 and no expenditure was incurred against this object.

Bill collection centres for consumers were also to be established upto December 2001. Subsequently (September 2005) UERC had also made it mandatory. Although planned in the DPRs, UPCL did not establish the bill collection centres. UERC imposed (September 2005) penalty of Rs. 25.27 lakh on UPCL for its failure on this count. A sum of Rs. 21.00 lakh was paid as penalty as of March 2008.

Mobile vans were to be deployed upto August 2006 which would download bills, distribute them and collect revenue besides providing other facilities like giving connections and disconnecting energy to defaulters. Six mobile vans were purchased (March 2006) at a total cost of Rs. 28 lakh. But the vans were not equipped in order to operationalise them. These are currently being used for transportation only.

Billing cycle has been fixed for different categories of consumers and is being followed in UPCL.

Conclusion: Feeder metering was completed; only 41 *per cent* of the requirement for DT meters was met and the DT meters installed were not being read. Energy accounting and auditing could be possible only if meters are installed at all levels of the distribution network and are regularly read and readings are reconciled, which was not done. UPCL spent Rs. 1.94 crore on consumer indexing in various circles where the work was either behind schedule or where completed, it was not linked to the DTs, thus defeating the objectives of the work. Automatic meter

[41] Data loggers were to be installed at Haldwani (33 nos; Rs. 0.58 crore), Roorkee (35 nos; Rs. 2.18 crore), Dehradun –Urban (14 nos; Rs. 0.87 crore) and Rudrapur (33 nos; Rs. 1.65 crore).

reading instruments for metering at arm's length are yet to be installed. In all, UPCL lagged far behind the targets in metering, which were to be achieved by December 2001.

Consumer satisfaction

Audit objective 3: Whether distribution network was upgraded to achieve greater reliability and quality of power supply to the consumers.

7.2.20 One of the expected outcomes of APDRP was improved quality of power supply and greater reliability, which would encourage use of energy efficient equipment and lead to improvement in availability of energy. The achievements against this objective would be monitored through the frequency and duration of feeder outages, failure rate of DTs, redressal of consumer grievances as discussed below:

Feeder outages

7.2.21 The target fixed by GOI (January 2006) was to reduce outages (feeder interruption but excluding planned shut-downs and load shedding) to be less than one per feeder per month. The status of feeder outages in UPCL during 2001-08 is as shown below:

Table – 7.2.9: Frequency of outages per month per feeder: circle-wise data

Circle	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Dehradun (R)	03	03	04	04	03	20	14
Roorkee	02	02	02	02	34	32	24
Srinagar	03	04	03	03	16	17	14
Rudrapur	05	05	05	10	**60**	**60**	**34**
Haldwani	-	-	-	**75**	**67**	**81**	**81**
Ranikhet	13	14	12	17	**43**	**61**	**60**
Dehradun(U)	-	-	6	3	14	10	11
Total	**26**	**28**	**32**	**114**	**237**	**281**	**238**

(Source: Progress Report, Bench Mark and information provided by the UPCL)

The frequency of outages in UPCL increased nine times (2005-06) over that of the base year (2001-02). Three circles at Rudrapur, Haldwani and Ranikhet registered the highest number of outages. The duration of outages (in minutes) per outage showed a spiraling trend in all the circles with a sudden spurt from 2005-06 onwards, as shown in the table below.

Table – 7.2.10: Duration of outages: circle-wise data

Consumer satisfaction was affected adversely due to increase in frequency of outages and their durations.

(Minutes per outage)

Circle	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
DDN (R)	-	-	-	-	80	60	55
Roorkee	2	2	1	14	89	81	67
Srinagar	3	3	3	4	94	102	68
Rudrapur	55	51	51	6	91	94	94
Haldwani	-	-	-	6	59	71	66
Ranikhet	8	8	6	7	36	56	43
Dehradun (U)			5	87	14	19	20

(Source: Progress Report, Bench Mark and information provided by the UPCL)

The main reason for increase in outages and its duration was the increased coverage and spurt in consumption of energy in all the circles. This could have been reduced by synchronising the length of 11 kV lines by installation of more 33 kV sub-stations.

Failure of DT transformers

7.2.22 The Distribution Transformer is a key component of the distribution network. Its failure not only results in financial loss but also adversely affects consumer satisfaction due to interruption in supply. GOI had fixed (Jan 2006) failure norm of less than 1.5 *per cent* (percentage of failed DTs to the total installed) to ensure reliability of power supply.

UPCL spent Rs. 40.33 crore on installation of new DTs, augmentation[42] of DTs and addition of capacity against scheme provision of Rs. 37.10 crore to meet the increased requirement of energy. Although the DTs failure rate reduced over the years, it was substantially higher than the targets. Ranikhet Circle improved on this factor by reducing the failure rate from 13.56 *per cent* in 2001-02 to 2.1 *per cent* in 2007-08. Roorkee and Rudrapur circles, however, reported failure rate of over 14 *per cent* throughout the period.

Table – 7.2.11: Failure of DT transformers (*per cent*)

Circle	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Ranikhet	13.6	16.6	15.1	14.5	12.7	7.5	2.1
Srinagar	18.0	17.4	17.6	17.2	11.9	10.8	9.2
Dehradun (R)	23.3	22.4	31.5	30.4	19.2	9.6	9.3
Haldwani	-	-	-	12.1	10.7	9.0	7.4
Roorkee	20.6	15.7	19.1	24.3	23.5	23.3	15.1
Dehradun (U)	13.2	13.4	13.7	12.7	10.3	1.8	5.3
Rudrapur	17.0	18.1	17.0	19.6	18.9	15.2	14.2
State as a whole	17.8	17.3	18.4	19.2	16.2	13.0	12.5

(Source: Progress Report, Bench Mark and information provided by the UPCL)

Management stated (August 2008) that the excess failure rate of DTs was due to over-loading of DTs particularly in EDC, Roorkee. Since UPCL did not capture data on the average load on transformers and feeders, Audit could not analyse the impact of over loading on failure of DTs.

Redressal of grievances

7.2.23 MOA provided that a system of recording consumers' complaints shall be developed for each circle and the corrective & preventive action recorded, a monthly summary of such complaints shall be maintained. Only one pilot project on centralised call centre was started (December 2005) for Dehradun (Urban) Circle only. Complaints are being recorded in registers in the other circles. The number of complaints reduced from 3.01 lakh in 2001-02 to 1.19 lakh in 2007-08. The time taken to attend complaints (disposal time) also reduced from 9.91 hours in 2001-02 to 1.92 hours in 2007-08.

Conclusion: An upward trend in feeder tripping and in the duration of outages was a feature across the seven circles of UPCL. Though there has been an improvement with regard to incidence of DT failure, yet it is nowhere close to the targets set in APDRP. The administrative mechanism as envisaged for attending consumer complaints is not in place. The number of complaints and disposal time were reported as having come down which raises doubts since the number of outages had increased substantially during the same period.

[42] Installation of lightening arrestors, insulators, fuse sets and circuit breakers.

Improving profitability

Audit objective 4: Whether strategies were adopted to improve profitability of its distribution circles and achieve recovery of cost of supply of power.

7.2.24 APDRP was aimed to narrow and ultimately eliminate the gap between the unit cost of supply and revenue realisation within a specified time frame. Progress in reduction of losses was to be monitored by following parameters:

Average revenue realisation (ARR) and the average cost of supply (ACS)
ARR is the ratio of gross collection of revenue to the net energy input while ACS is the ratio of cost of supply (including generation/purchase cost and overhead costs) to the net energy input. GOI had prescribed (January 2006) that the ratio of ARR to ACS should be greater than one. There was no improvement in the ratio in UPCL as ACS was, on an average, 1.7 times the ARR throughout the period of review. Bar chart below shows relationship of ACS and ARR during 2001-08.

Circle-wise analysis showed that in Roorkee and Ranikhet circles, the cost of supply was twice the revenue realised as shown in the table below. The poor performance of the two circles was due to poor billing and metering inefficiency as mentioned in para 7.2.12.

Table – 7.2.12: Ratio of ARR to ACS: circle-wise data

Circle	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Dehradun (U)	0.59	0.67	0.63	0.71	0.83	0.59	0.67
Dehradun (R)	0.71	0.59	0.67	0.71	0.50	0.56	0.56
Roorkee	0.45	0.42	0.40	0.56	0.59	0.45	0.50
Srinagar	0.77	0.83	0.71	0.91	1.00	0.67	0.71
Rudrapur	0.50	0.48	0.45	0.56	0.67	0.53	0.67
Haldwani	-	-	-	0.63	0.63	0.53	0.53
Ranikhet	0.56	0.48	0.48	0.53	0.59	0.43	0.42
UPCL	0.59	0.56	0.53	0.67	0.71	0.53	0.59

(Source: Progress Report, Bench Mark and information provided by the UPCL)

Productivity

7.2.25 Productivity is measured in terms of the ratio of the metered energy to the total manpower increased from 0.37 MUs to 0.94 MUs during 2001-02 to 2007-08. This was due to increase in energy sales and the continuous decrease in manpower across all circles.

Few administrative measures required to improve realisation and increase the profitability were as follows:

Profit centred approach

7.2.26 MOA provided that DGM of the circles had to be designated (by April 2003) as Chief Executive officer (CEOs) and Junior Engineer (JEs) as feeder manager, in order to fix responsibility for achievement of targets on key performance indicators (KPI) fixed by GOI. Further, MOAs were to be signed between UPCL and CEOs; CEOs and Executive Engineers (EEs); EEs and sub-divisional officers (SDOs); and SDOs and feeder managers (JEs.). Audit analysis revealed that UPCL designated (February 2005) the DGMs and JEs as CEOs and feeder managers respectively. MOAs were signed between UPCL and CEOs of the circle, but except in Srinagar circle, no MOAs were signed down the levels. In any case, in the absence of energy accounting, the profitability at each level could not be ascertained to fix accountability.

Improving vigilance

7.2.27 MOA signed with GOI provided that UPCL will strengthen vigilance squads for theft detection. The summary of achievements of these squads shall be put to the General Manager of the zone on monthly basis and to the State Level Distribution Reforms Committee (DRC) on quarterly basis. Audit analysis revealed that two vigilance squads[43], one each for Garwal and for Kumaon, started functioning in February 2005. The vigilance squads reported 7,171 cases as of March 2008, against which 662 FIRs were lodged; supply of electricity to 3,112 consumers was disconnected, Rs. 5.99 crore was realised and 23 consumers were convicted by the court. However, the impact of vigilance action on AT&C losses could not be established in audit as the amount realised (Rs. 5.99 crore) by the vigilance is only 0.18 *per cent* of total realisation (Rs. 3249.68 crore) during the last four years which is negligible.

Conclusion: APDRP has had little impact on recovery of the cost of supply of energy from consumers. Profit-centered approach, a key component of APDRP to ensure accountability at operational levels, is yet to be institutionalised in UPCL.

System improvement

Audit objective 5: Whether the APDRP accelerated the system improvements in the distribution network to reduce technical losses.

7.2.28 In order to reduce technical losses, the following system improvements were envisaged by March 2007:

[43] The squads are headed by an officer of the rank of Superintendent of Police, along with Dy. SP each.

- Augment the capacity of the transformers at all levels; increase the number of feeder lines in order to rationalise the load on each feeder; and laying of new LT lines to increase the consumer base.
- Install capacitors at all levels.
- Distribution of energy should be HT lines oriented as losses are lower if energy is conducted at higher voltages. Thus the HT/LT ratio, which is the ratio of length of 11 kV lines to that of lower LT lines, should be higher than one.

The APDRP programme in Uttarakhand was mainly focused on strengthening the system and several projects for system improvements were taken to increase the capacity of the network to meet the increasing demand for energy as shown in the table below. The targets were more or less achieved except that of replacement of 33 kV conductor.

Table – 7.2.13: System Improvement in APDRP in Uttarakhand

Items	Targets in DPR	Achievement
New 33 kV substations	37 Nos	37 Nos
Additional capacity in 33 kV substations	330 MVA	369.5 MVA
Renovation of 33/11 kV substation	90 Nos	55 Nos
Replacement of conductor:		
33 kV	681.74 Km	390.57 Km
11 Kv	929.71 Km	947.22 Km
New 11 kV lines	408.72Km	359.12 Km
New 11 kV Transformers	627 Nos	617 Nos
Additional capacity in 11 kV substations	95558 MVA	94039 MVA
Renovation of 11/0.4 kV Transformers	19162 Nos	17140 Nos
Installation of LT capacitor at DT	11085 Nos	10926 Nos
Renovation of LT lines	3957.79 Km	3313.62 Km
New LT lines	56.60 Km	57.68 Km

(Source: DPRs, Progress Report and information provided by the UPCL)

The increase in capacity of 33 kV substations was 45 *per cent* against the capacity addition at 11 kV substation of 434 *per cent* from the base year (2001-02). Similarly 416.8 Km length was added to 11 kV and LT lines, without increasing the length of the 33 kV lines. The increase in demand was met by extending the 11 kV/LT network without strengthening the 33 kV network, thus placing disproportionate burden at the lower ends of the distribution network, resulting in higher number of outages. In all, the capacity addition did not match the spurt in demand, being 220 *per cent*, indicating that projections in DPRs were considerably off the mark.

Installation of capacitors

7.2.29 Augmentation of capacitors on DTs was (April 2003) included in the DPRs for five circles[44] by which 11,085 capacitors were to be installed by October 2003 to provide an additional 135.13 KVA to the system; 10,926 capacitors were installed as of June 2008.

MOA also required mandatory installation of capacitor by consumers with a connected load of more than five HP was to be completed upto October 2003. In order to monitor progress on the work, each circle was required to maintain

[44] EDC (U), Dehradun; EDC, Roorkee; EDC (R), Dehradun; EDC, Rudrapur; EDC, Haldwani.

a monthly report on installation of capacitors by the consumers and average power factor[45] at the point of energy input also to record.

Audit noticed that monthly reports of installation of capacitors were not being maintained. The average power factor at the input point was also not recorded by the circles as provided in the MOA. UPCL did not take any initiative to incentivise consumers to install capacitors or penalise those who did not install them. The management did not provide to Audit the number of consumers who were required to and eventually installed the capacitors.

HT/LT ratio

7.2.30 To reduce the transmission losses, ratio of HT/LT should be maintained at 1:1 as higher voltage will result in less power loss. However, in all circles, HT/LT ratio was below the norm of minimum of one as it averaged around 0.7 as shown below. In Dehradun (U) circle, it was abnormally low at 0.18. Management stated (August 2008) that this was due to high density of population in Dehradun (U) Circle.

Table – 7.2.14: HT/LT ratio in circles

Circle	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Dehradun (U)	0.16	0.17	0.20	0.20	0.18	0.18	0.18
Dehradun (R)	0.67	0.69	0.69	0.71	0.70	0.71	0.72
Roorkee	0.65	0.65	0.66	0.68	0.67	0.69	0.71
Srinagar	0.63	0.63	0.68	0.74	0.75	0.78	0.77
Rudrapur	-	0.86	0.71	0.70	0.71	0.72	0.73
Haldwani	-	-	--	0.67	0.58	-	0.59
Ranikhet	0.74	0.74	0.73	0.72	0.72	0.73	0.73
Overall average	-	-	0.65	0.67	0.67	0.63	0.68

(Source: Progress Report, Bench Mark and information provided by the UPCL)

Conclusion: The focus of the DPRs was on system improvements. The increase in demand was met by extending the 11 kV/LT network without strengthening the 33 kV network, thus placing disproportionate burden at the lower ends of the distribution network, resulting in higher number of outages. The capacity addition also did not match the spurt in demand for energy. HT/LT ratio required correction to reduce the technical losses.

Project planning and execution

Audit objective 6: Whether the DPRs were drawn up keeping in view the priorities, reflecting the needs at the field level and the execution was in conformity to the targets set in DPRs.

[45] Power factor is the ratio of active energy to the energy input. The standard power factor is 0.85; in case the power factor less than the norm, the losses due to reactive energy would be high. Capacitors help in reducing these losses.

7.2.31 UPCL and the Lead Advisor cum Consultant (MECON) prepared[46] DPRs (August-October 2002) which made a comprehensive assessment of the projects needed to be taken up under APDRP in each circle. A total of 114 projects costing Rs. 310 crores were to be taken up by UPCL in APDRP to be completed by March 2007. As against this 107 projects with an estimated cost of Rs 311.08 crore were taken up, of which 88 were completed and 19 were ongoing as of March 2008.

In a review meeting held (August 2003) between UPCL and Ministry of power, GOI, it was decided that no work should be carried out beyond provisions made in the DPR. In case any work that was not included in approved DPR and was now considered unavoidable, a separate DPR for such additional work would be prepared and approved by GOI. In case additional works are carried out without approval of DPR, the expenditure incurred on such work would be treated as loan.

Audit scrutiny revealed the following deficiencies in project planning and execution.

Short provisioning

7.2.32 It was estimated that installation of and replacement of mechanical meters with electronic meters would bring an annual return of 42 *per cent* on investment. Against the requirement of 5.22 lakh meters, the DPRs in four circles[47], provided for only 1.51 lakh meters representing 29 *per cent* of the requirement. DPRs of two other circles[48] excluded this item completely.

Consumer indexing, an important part of APDRP strategies, was not included in the DPR of Srinagar circle. Spot billing centres found mention only in the DPR for Srinagar circle.

Plans prepared without survey

7.2.33 Out of 15 works taken up on laying 33 kV lines to connect newly constructed sub-stations in Srinagar circle at an estimated cost of Rs. 17.72 crore, 12 works were stopped after spending Rs. 11.89 crore, due to non-availability of clearance for use of forest land. The plans were prepared without taking the site conditions into consideration.

Excess expenditure

7.2.34 It was found that on 83 works with estimated cost of Rs. 173.84 crore, a sum of Rs. 53.32 crore was spent in excess of the DPRs provisions in the seven circles. Out of this amount, Rs. 4.62 crore was on work in excess of the targets fixed in the DPRs and Rs. 48.70 crore was due to cost overrun on the DPR projects as shown below. Management stated (August 2008) that the excess expenditure was met from its own internal resources.

[46] Consultancy charges of Rs. 38 lakh was paid by UPCL to MECON for preparation of DPRs of three circles- Rudrapur, Roorkee and Dehradun (U)

[47] Circles at Rudrapur, Ranikhet, Dehradun and Roorkee

[48] Circles at Srinagar with a consumer base of 2.62 lakhs and at Dehradun (R) with a consumer base of 1.63 lakhs

Table – 7.2.15: Expenditure on projects executed in APDRP

(Rs. in crore)

Circle	No. of works	Financial target as per DPR	Actuals as of March 2008	Excess expenditure		
				Due to work in excess of targets fixed in DPR	Due to cost over run on DPR projects	Total
Ranikhet	10	13.59	23.69	0.25	9.85	10.10
Srinagar	08	27.27	34.57	2.43	4.87	7.30
Dehradun (R)	11	21.06	32.51	0.45	11.00	11.45
Haldwani	10	13.38	18.87	0.06	5.43	5.49
Roorkee	14	49.27	55.47	1.12	5.08	6.20
Dehradun (U)	15	19.86	23.14	0.19	3.09	3.28
Rudrapur	15	29.41	38.91	0.12	9.38	9.50
Total	**83**	**173.84**	**227.16**	**4.62**	**48.70**	**53.32**

(Source: Progress Report, Bench Mark and information provided by the UPCL)

The company diverted funds of Rs. 13.84 crore to the works not included in DPRs.

Further, test check of expenditure revealed that in seven works valued Rs. 13.84 crore executed which were not included in the DPRs and no separate DPRs were prepared and sent for approval to GOI as required under APDRP guides as mentioned in the table below.

Table – 7.2.16: Analysis of items of excess expenditure

Circle	Excess expenditure (Rs. in crore)	Reasons
Dehradun(R)	1.99	The amount was paid for clearance from Forest Department for lines which were to pass through forest land. This was not provided in the DPRs.
Haldwani	0.69	The amount was spent on purchase of land for construction of three sub-stations for which there was no provision.
Dehradun(R)	5.04	The amount was spent on leveling of land for construction of 14 substations, not factored in the DPRs.
Rudrapur	1.74	The circle took up 109 sub-works which were not included in the DPRs.
Roorkee	0.39	The amount was spent for outsourcing of bill distribution and meter reading which was not allowed under APDRP.
Ranikhet	1.56	The DPR provided only for renovation of an old 11kV Oil Circuit Breaker at 33 kV substations. The circle renovated the entire sub-stations, leading to excess expenditure.
Srinagar	2.43	DPR provided for construction of six sub-stations. But twelve numbers of 3MVA transformers were purchased for the Srinagar circle resulting in excess expenditure of Rs. 2.43 crore.
Total	**13.84**	

(Source: Audit findings and information provided by the UPCL)

Works not taken up

Works worth Rs. 13.28 crore included in the DPRs were not executed.

7.2.35 Test-check in four circles[49] showed that works worth Rs. 13.28 crore included in the DPRs were not executed. Dehradun (U) Circle did not take up projects worth Rs. 5.35 crore because some of these were not required and some others had been executed earlier through other sources. EDC, Haldwani planned erection of 33 kV lines at a cost of Rs. 1.70 crores in the DPRs. In the meanwhile, the Circle constructed a 132 kV substation, rendering the laying of

[49] EDC (R), Dehradun; EDC (U), Dehradun; EDC, Haldwani; EDC, Roorkee.

33 kV lines no longer necessary. Another project of data logging systems in five circles for which Rs. 5.28 crore was set aside was not taken up at all.

Compliance to guidelines: turnkey projects

7.2.36 APDRP guidelines provided that the circles would implement the works on turnkey basis to maintain a rigid completion schedule and for single point accountability for each work; besides, the turnkey mode would also ensure high quality of construction as well as prevent cost escalation. Audit scrutiny revealed that out of total expenditure of Rs. 311.17 crore on projects, only four contracts worth Rs. 75.67 crore (24.3 *per cent* of the total cost), were on turnkey basis. By and large, the contracts which were not on turnkey basis had open-ended schedules for completion since these were linked to the last date of supply of material by UPCL. Extensions were granted without recording reasons. UPCL did not compile data on progress of work with reference to the scheduled dates of completion, as a result of which Audit could not quantify the delays and time overrun on works taken up under APDRP.

Out of the four turnkey contracts, three had contractual conditions by which UPCL committed itself to supply of materials, thus, denying the company of the advantages of turnkey projects. Two works were scheduled to be completed by September 2005 and two others by June 2005; all four works were not completed as of June 2008. The following illustrate the deficiencies in these contracts:

- Two contracts were signed (February 2005) for one composite work- one for supply & installation of DT meters at a cost of Rs. 8.92 crore and another for supply & installation of LT distribution boxes along with meter cubic circuit breakers at a cost of Rs. 25.58 crore. In fact, one of the clauses in the first contract was that "since same type of turnkey job has been assigned (to the second contractor), proper co-ordination is prerequisite". The reasons for splitting the work in two parts were not found on record. In addition, UPCL supplied cables to the contractors which were contrary to the conditions of turnkey project. The scheduled date of completion was September 2005 (extended to December 2005) but the works were incomplete as of June 2008.
- The work on construction of 33 kV line connecting substations at Nanakmatta and Sitarganj was awarded (March 2005) to a contractor. It was to be completed within 90 days from issue of last material. UPCL provided material worth Rs. 50 lakh during 2005-08 to the contractor without obtaining bank guarantee or indemnity bond. During local inspection (April 2008), it was noticed that only 1.5 Km line was constructed and poles were erected and that material valued at Rs. 25 lakh was missing. No FIR has been lodged as of June 2008. Circle accepted the audit observation.
- The work of renovation of 32 existing 33/11 kV substation in Rudrapur was awarded (December 2004) to a contractor. As per the terms and

conditions of the agreement, the work was to be completed within six months and material was to be provided by UPCL. Audit noticed that the work could not be completed (March 2008) because the material was not provided by UPCL.

Other points of interest

Payment of mobilisation advance

The company paid interest free mobilisation advance of Rs. 7.73 crore.

7.2.37 There exists no provision for payment of mobilisation advance to the contractors in the State Financial Rules, DPRs or guidelines issued by the GOI. Guidelines of Central Vigilance Commission (April 2007) stipulate that mobilisation advances should be interest-bearing. Audit found that UPCL granted (March 2004-January 2005) *interest free* mobilisation advances amounting to Rs. 7.73 crore to contractors for 15 works. The loss of interest to UPCL was Rs. 77 lakh calculated at the rate of 10[50] *per cent* per annum on the unadjusted balances.

Installation of repaired transformer

7.2.38 APDRP scheme provides that only new transformer, properly indexed would be procured and installed. Haldwani Circle installed 19 repaired/ old DTs and the expenditure was booked in the APDRP scheme. The matter came to light during an inspection (August 2004) by the Lead ACC and the circle replaced the transformers. No action was taken against the officials responsible for this lapse. There was no further investigation into whether such an instance had occurred in other circles either.

Conclusion: DPRs did not make adequate provision for work on priority areas. Works worth Rs. 5.35 crore were planned in the DPRs but were not taken up because these were not required. There was cost overrun of Rs. 48.70 crore on 83 projects. On seven works, the circles spent Rs. 13.84 crore in excess of the scope planned in DPRs. APDRP guidelines laid down that works would be taken up on turnkey basis; but only four contracts accounting for 24.3 *per cent* of the total costs, were taken up on turnkey basis. The contractual clauses in the turnkey projects were defective thus compromising the interests of the company. Mobilisation advances amounting to Rs 7.73 crore were paid irregularly.

Fund management

Audit objective 7: Whether the funds were released in time and utilised as per the norms laid down in APDRP guidelines

7.2.39 The details of funds received by UPCL under the programme and its release to units during 2001-08 are as under:

50 Average rate of borrowing from nationlised bank.

Table – 7.2.17: Utilisation of funds

(Rs. in crore)

Year	Opening balance	Funds received from GOI	Funds released to field units	Closing balance
2001-02	Nil	4.80	-	4.80
2002-03	4.80	99.63	10.12	94.31
2003-04	94.31	75.00	31.21	138.10
2004-05	138.10	66.13	92.27	111.96
2005-06	111.96	42.90	127.72	27.14
2006-07	27.14	-	42.33	-15.19
2007-08	-15.19	-	7.52	-22.71
Total	**-**	**288.46**	**311.17**	**-**

(Source: Information/Data provided by the UPCL)

Utilisation of funds picked up only in 2003-04 and there was an average of Rs. 46.03 crore of unutilised funds with UPCL[51] every year during 2001-04. Further analysis of the expenditure showed the following lacunae in fund management:

- As per the guidelines of GOI, State Government was required to transfer funds within a week of its receipt to the utility. In case of delay, the funds would be treated as diverted from the project and an equivalent amount would be recovered/adjusted along with 10 *per cent* penal interest from the next installment of central plan assistance to be released to the State Government in that year or in subsequent year. Audit found delays ranging from 15 to 277 days in transferring funds aggregating to Rs. 283.66 crore to UPCL.
- UPCL earned interest of Rs. 13.93 crore on unutilised fund kept in fixed deposits from time to time but did not transfer the interest amount to APDRP fund. UPCL agreed (August 2008) with this contention.
- GOI decided (August 2005) that consultancy charges and supervision charges on works executed under APDRP would be disallowed and that if they were allowed earlier, the same would be withdrawn. However, UPCL charged centage charges (18.45 *per cent*) towards supervision and consultancy charges paid for preparation of DPRs. In all, Rs. 36.54[52] crore was charged to APDRP funds in violation of directions issued by GOI.
- A sum of Rs. 2.72 crore was booked in excess of expenditure incurred by the Srinagar and Dehradun (U) Circles. The Circles could not provide documents to Audit to justify the booking. The Lead ACC had also objected to the excess booking of expenditure. In reply, management stated (May 2008) that the figures would be reconciled.

Conclusion: The State Government delayed release of APDRP funds to UPCL. Utilisation of funds picked up only by 2003-04. Inadmissible

[51] The surplus funds lay with the Corporate office since funds were being transferred to the Circles on the basis of actual bills raised by them, the Circles did not have surplus funds.

[52] Centage charges Rs. 36.16 crore and consultancy charges paid to MECON - Rs. 0.38 crore.

charges were loaded on to the scheme and interest earned on surplus funds was kept out of the scheme funds. There were no instances of delay in transfer of funds from headquarters to the circles. Booking of expenditure without supporting documents was a matter of concern.

Material management

7.2.40 Audit Objective 8: Whether the UPCL adopted effective procedures for procurement and issue of materials required for APDRP projects.

There are two store divisions in UPCL situated at Dehradun and Haldwani under the control of DGM (MM). Audit found the following irregularities:

The company diverted material worth Rs. 5.98 crore to other

- Against the sum of Rs. 187.08 crore released to the stores divisions under APDRP, the divisions purchased stores worth Rs. 181.10 crore as of March 2008. The balance of Rs. 5.98 crore was utilised for procurement for other works.
- The Lead ACC directed (July 2005) that only landed cost of material should be included in APDRP but the divisions issued material at stock issue rate. This resulted in overvaluation of store issued by five circles[53] for APDRP by Rs. 1.70 crore as of March 2008.
- UPCL purchased (June 2004 to September 2005) 3.55 lakh electric meters from five firms. One of the firms was contracted to supply 2.1 lakh meters at a total cost of Rs. 14 crore. Of these 34,316 (16 *per cent*) meters costing Rs. 1.81 crore were found defective and were lying dumped in divisions for 1-3 years. UPCL took no action for replacement or repair of these meters.

Conclusion: The store divisions issued materials charged on APDRP funds to other works. Purchase of defective meters hampered achievement of the objective of 100 *per cent* metering.

Monitoring and evaluation

Audit objective 9: Whether the UPCL provided for an effective monitoring mechanism at all levels and the adherence to such mechanism facilitated timely completion of APDRP objectives.

7.2.41 The lead ACC monitored the programme regularly with regard to the progress on works, the costs and the quality of work. A State Level Distribution Reforms Committee was to be constituted by January 2003 to review the performance of APDRP once in every three months. Audit noticed that the Committee was constituted in January 2005, two years after the due date and only two meetings were held. The APDRP has not been evaluated by an independent agency as yet.

[53] EDC (R) Dehradun , EDC (U) Dehradun, EDC Haldwani, EDC Roorkee, EDC Rudrapur.

Conclusion

The projects undertaken by UPCL were focused on augmenting the capacity of the distribution network to meet the increasing energy needs of the newly formed state. The Corporation managed to increase the consumer base, however in this process, the primary objective of APDRP which was reduction of AT&C losses did not receive the priority attention as envisaged. The losses reduced but marginally to 37 *per cent*, which was far higher than the required 15 *per cent*. Sharp fluctuations in AT&C losses, which mirrored the performance in collection efficiency, were a cause of concern. IT-enabled applications to improve metering and billing, did not take off. Initiatives envisaged in the APDRP with regard to energy accounting were taken in isolation and their integration to achieve higher objective of greater monitoring of collections and thus reduction of losses, was lacking. Consumer-indexing was taken up in piece meal, progress on the work was slow, and new consumers were not being updated on the data, rendering the exercise less effective. DT failure rate reduced to levels ranging from 5 to 15 *per cent* in the various circles, against tolerance limit of 1.5 *per cent*. Reliability of power supply was a casualty in the expansion of the network by extending the 11kV/LT lines without strengthening the 33kV network; frequency of outages and the duration of outages increased sharply during the period. Accountability for billing and collection efficiency was not fixed at all levels. Profit-centered approach that was a cornerstone of the scheme was not adopted by UPCL.

There were significant deviations from DPRs, partly arising from the fact that the DPRs themselves were deficient. APDRP guidelines that works will be executed on a turnkey mode was violated widely leading to delays in work and cost overrun. Instances of loading inadmissible costs on APDRP were noticed.

Recommendations

- **There is a need to focus on the primary objective of the scheme *i.e.;* reduction of AT&C losses. IT enabled systems of metering and billing, linked to consumer indexing, will facilitate effective energy accounting and enable UPCL to devise viable strategies specific to various categories of consumers.**
- **There is need to sensitise the personnel to build a sense of ownership of the company.**
- **Profit-centered approach that will fix responsibility at all levels and recognise individual initiatives and leadership, will have salutary effect on collection efficiency and reduction of losses and hence should be effectively implemented.**
- **An automatic system for recording of complaints, disposal time of complaint and relevant reports should be developed to cater to the consumers round the clock.**
- **Reconciliation of meter reading should be made mandatory at all levels to identify and minimise the losses.**

- **DPRs should be based on field survey and on a realistic estimation of costs and time frames for execution. What is currently lacking is the overall integration of the projects towards the priority goals, which need to be corrected.**
- **Contract management needs to be strengthened. The Headquarters could devise standardised documents for this purpose and arrange workshops to build capacity of the personnel in handling turnkey projects.**
- **Data collection should be standardised, its authentication and regular analysis should be institutionalised.**
- **There should be greater emphasis on adherence to financial procedures; internal audit to detect and prevent deviations should be strengthened.**

The matter was referred to the company and the Government (July2008); their reply was awaited (October 2008).

MISCELLENEOUS TOPICS OF INTEREST RELATING TO GOVERNMENT COMPANIES

UTTARAKHAND POWER CORPORATION LIMITED

7.3 Unfruitful expenditure

Company awarded a contract without obtaining clearance for diversion of forest land, resulting in unfruitful expenditure of Rs. 5.07 crore.

Uttarakhand Power Corporation Limited (company) entered into an agreement (March 2004) with W.S. Industries (India) Limited, New Delhi (contractor) for construction of two 33/11 kV sub-stations and 62.5 Kms associated 33 kV lines in Pithoragarh and at Munsiyari on turnkey basis.

Scrutiny of records (October 2007) revealed that the contractor completed the work in Pithoragarh sub-station (including 2.5 km of associated lines) which was energised in June 2006. It was found that instead of conducting prior route survey the company included the same as one of the items in the scope of the work of the contractor. At the time of survey (April 2004) by the contractor, it was found that out of 60 km of transmission lines for Munsiyari sub-station that were to be erected, 46 km fell on reserved forest area (Askote Kastori Mirug Vihar).

Forest Conservation Act, 1980 prohibits the use of any forest land for non-forest purposes unless prior approval of the Government of India is obtained. Moreover, any diversion of land in a reserved forest requires the approval of the Hon'ble Supreme Court for which instructions had already been issued by the State Government in April 2000. The approval of the Union Government for diversion of forest land for erection of the Munsiyari sub-station and 14 km transmission lines was received (November 2005) and the work completed (March 2006). However, the Forest Department rejected (June 2006) the request for transfer of land for erecting 46 km of transmission line that fell in the reserved forest area. The remaining work was stopped (June 2006). In the meanwhile, the contractor had already supplied (December 2005 to April 2006) material for remaining associated lines valued Rs. 1.74 crore, against full payment (by October 2006). The clauses in the contract envisaged payment of only 80 per cent payment, the balance 20 per cent to be paid on commissioning and handing over the project. The material was lying unutilised in the open at the site as of June 2008.

On being pointed out in audit (October 2007), the Executive Engineer stated (June 2008) that the division would divert the material to other sites and that the sub-station and transmission lines already constructed at Munsiyari would be energised from Seraghat Hydel Power Station which is under construction. The reply overlooks the fact that the contract was awarded without prior route survey on forest land including reserved forest area. Further, even as the matter regarding transfer of land in reserved forest area was pending, material worth Rs. 1.74 crore was procured. As a result, the completed portion of the works at the Munsiyari (sub-station and lines Rs. 3.33 crore) and the materials (Rs. 1.74 crore) could not be put to use since April/October 2006.

Thus lack of planning at every stage of work resulted in unfruitful expenditure of Rs. 5.07 crore.

The matter was referred to the Management and Government (March 2008); their reply was awaited (October 2008).

7.4 Non recovery of security deposit

The company suffered extra financial burden of Rs. 2.29 crore due to non-recovery of security deposit.

Instructions[54] issued by the Uttarakhand Power Corporation Limited (company) provided that initial security deposit at the rate of Rs. 300 per KVA had to be levied before releasing a connection and it would be reviewed at the end of every financial year as it should not be less than two months' average bill of previous financial year. Any differential amount should be recovered as additional security from all consumers including Government Departments by giving one month's notice.

A test check of records (May 2008) of Electricity Distribution Division, Haridwar revealed that the company agreed (May 2000) to supply 34,000 KVA electricity to a factory and 5,000 KVA to township of Bharat Heavy Electricals Limited (BHEL). But the company did not collect initial security of Rs. 1.17 crore and additional security of Rs. 3.65 crore from BHEL. The division did not raise the demand for the security either. Even as the security amount was foregone, the company took (November 2001) a loan of Rs. 15.20 crore at an interest rate of 13.5 per cent from State Government. Had

[54] Circular No. 617-CU-V/S-8 dated: 07-03-1994 issued by Uttar Pradesh State Electricity Board and adopted by Uttarakhand Power Corporation Limited.

the security been recovered, the company could have saved Rs. 2.29 crore[55] of interest.

Management (Haridwar division) stated (May 2008) that BHEL was regular in payment of electricity bills and that the matter of recovery of initial security/additional security was pending in headquarters' office. The fact remains that the company suffered extra financial burden of Rs. 2.29 crore due to non recovery of security deposit as per its rules.

The matter was brought to the notice of the Management and Government (March 2008); their reply was awaited (October 2008).

7.5 Collusion in theft of electricity

Collusion by divisional officers provided undue favour of Rs. 28.90 lakh to a unit detected for unauthorised use of electricity.

Section 126 (5) of the Electricity Act, 2003 provides that in the event of theft or unauthorised use of electricity, the impugned entity will be billed at a rate of 1.5 times the normal tariff. Further, the consumption of electricity will be assessed on the presumption that the unauthorised use of electricity was continuing for a period of six months prior to the date of inspection and that unit consumed electricity for 24 hours during this period.

Scrutiny of records (March 2008) of Electricity Distribution Division, Uttarakhand Power Corporation Limited (UPCL), Uttarkashi revealed that a 182 KW stone crusher[56] (unit) at Chinyalisaur, Uttarkashi was reported (April 2005) to be unauthorisedly using electricity since 18 January 2005. The following decisions point to a collusion between the Division and the impugned unit:

No action was taken on the report (April 2005) of the JE/SDO to Executive Engineer (EE) indicating theft by the unit. The Division installed (4 June 2005) a meter in the premises of the unit although supporting documents that would have formed the basis of providing the connection[57] were not found on file.

Assistant Engineer (AE/ Revenue) raised a bill of Rs. 13.64 lakh for 136 days (19 January to 3 June 2005) at the penal rates; this constituted a deviation from the provision for 180 days billing under the Electricity Act. The assessment worked out by Audit was Rs. 28.90 lakh[58]. The last date for payment was not mentioned in the bill and the unit did not make any payment against the bill.

Another bill was raised (undated) for Rs. 17 lakh which included Rs. 13.64 lakh as arrears and Rs. 3.36 lakh for the metered consumption (Rs. 1.12 lakh

[55] Calculated as difference of rate of interest payable on the loan (13.5 *per cent*) and interest payable on security deposit (5 to 6 *per cent*).

[56] Owned by Vishwa Nath Associates, Chinyalisaur, Uttarkashi.

[57] Rules prescribe that a power connection will be provided to a unit on the basis of an application submitted in the prescribed proforma along with proof of identity and ownership of premises and a no-objection certificate from Pollution Control Board.

[58] Six months prior to date of inspection (20th April 2005) & up to 3rd June 2005 at the rate of 1.5 times of the tariff applicable as per Electricity Act 2003.

per month) for the subsequent period from 4 June 2005 to 31 August 2005. Thereafter, a revised bill of only Rs. 3.89 lakh was issued (November 2005) by the EE for the period 4 June 2005 to 31 October 2005. There was no recorded basis for exclusion in the revised bill, of arrears for the period of unauthorised use; under-billing for the subsequent period at the rate of Rs. 0.78 lakh per month against the metered consumption pattern of Rs. 1.2 lakh per month was also unjustified.

A report submitted (September 2005) by the Assistant Engineer (AE), accused that although he had disconnected the lines "several times" during the period it was in unauthorised use (January-June 2005), it was reconnected on the verbal orders of the EE. It was also found that subsequent bills (till February 2006) did not show the arrears in payment for the period the consumption was found to be unauthorised. In fact, the bills prepared by the clerk were not routed through the AE or the accountant and were directly signed by the EE.

The collusion led to a loss of Rs. 28.90 lakh to UPCL. The unit was sealed (May 2007) by Sub-Divisional Magistrate (SDM) for non-possession of pollution certificate. Electricity supply was also disconnected (May 2007) under SDM's orders; thus chances of recovery are remote.

When Audit reported (June 2008) the matter to the Management, it replied (July 2008) that the case has been referred for departmental enquiry committee for initiating action against the concerned EE. However, the reply of Government was awaited (October 2008).

POWER TRANSMISSION CORPORATION OF UTTARAKHAND LIMITED

7.6 Short recovery of liquidated damages

The company failed to recover Rs. 1.53 crore as liquidated damages from a contractor despite enabling provision in the agreement.

Uttarakhand Power Corporation Limited (UPCL) entered into a contract (February 2003)[59] with Bharat Heavy Electricals Limited, Haridwar (Contractor) for construction of 220 kV substation and extension of 132 kV substation, at Roorkee on turnkey basis at a total cost of Rs. 13.80 crore. The contract cost was amended (September 2003) to Rs. 15.64 crore as per provision of the contract. Transmission work was hived off (June 2004) from UPCL to a separate Power Transmission Corporation of Uttarakhand Limited (company).

Scrutiny of records (July 2007) revealed that the contractor failed to complete the works within the stipulated time (April 2004) and its request for extension of time was turned down by the company. The work was actually completed on 11 June 2005.

[59] The agreement was deemed to have into force w.e.f. 19 October, 2002.

Clause 5 of the terms and conditions of the agreement provided that for any delay in completion, the contractor was liable for reduction of 0.5 per cent of the contract cost per week subject to maximum of 10 per cent as liquidated damages (LD). The delay of 55 weeks made the contractor liable for LD of Rs. 1.56 crore. However, the division recovered only Rs. 3.43 lakh, calculated on the contract value of only those items of work that were incomplete as on the scheduled date of completion.

On being pointed out, the Executive Engineer of the Division replied (July 2007) that the balance as pointed by audit would be recovered from the final bill and performance security of the contractor. However, unpaid balance payable to the contractor was Rs. 10 lakh and the security deposit was Rs. 15.60 lakh; which are clearly insufficient for recovery of the balance LD of Rs. 1.53 crore. Further, the company had not raised a demand for recovery of the balance LD (March 2008).

Thus the company failed to levy and recover Rs. 1.53 crore as liquidated damages from a contractor despite enabling provision in the agreement.

The matter was reported to the Management and Government (March 2008); their reply was awaited (October 2008).

7.7 Non-recovery of cost of lost electrical units

Failure of the company to raise a demand on the contractor for the abnormal energy used during testing resulted in a loss of Rs. 40.88 lakh.

Uttarakhand Power Corporation Limited (UPCL) entered into a contract (February 2003)[60] with Bharat Heavy Electricals Limited, Haridwar (Contractor) for construction of 220 kV substation and extension of 132 kV substation at Roorkee on turnkey basis at a total cost of Rs. 13.80 crore. The contract cost was amended (September 2003) to Rs. 15.64 crore as per provision of the contract. Transmission work was hived off (June 2004) from UPCL to a separate company named Power Transmission Corporation of Uttarakhand Limited (company) and the above said work was also transferred to it.

Scrutiny of records (July 2007) revealed that the contractor installed/ commissioned two transformers (November 2004) but 1168 MWh of energy valued at Rs. 40.88 lakh[61] was lost while testing (January 2005) due to defect in the transformers. The agreement inter-alia provided that the contractor shall "repay to the purchaser all reasonable expenses to which he may be put by such test." The Company did not raise the claim on the contractor and the amount remains unrecovered as of date.

The Management (Roorkee division) stated (July 2007) that while it was not possible to recover the amount from the contractor as the balance payable under the contract was only Rs. 10 lakh; efforts would be made to recover the

[60] As per a clause in the agreement, it was deemed to have into force from 19 October, 2002.
[61] Cost of 1168000 units as per prevailing tariff of Rs. 3.50 per unit was Rs. 40.88 lakh.

balance amount from the bills of the other divisions. The fact remains that the company had not even raised the demand for recovery despite it being first pointed out in July 2005.

Thus due to failure to raise the demand on the contractor for the loss suffered during testing despite enabling clauses in the agreement, the company suffered a loss of Rs. 40.88 lakh.

The matter was reported to the Management and Government (March 2008); their reply was awaited (October 2008).

Dehradun
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