Chapter-2
Performance Audit

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Performance Audit of Government Companies

Punjab Water Resources Management & Development Corporation Limited

2.1 Working of Punjab Water Resources Management & Development Corporation Limited

Highlights

The Punjab Water Resources Management & Development Corporation Limited was incorporated in December 1970 to provide irrigation facilities to the farmers by installation of deep tube wells**.** A performance audit of the working of the Corporation for the period 2011-16 brought out, *inter alia*, the following important audit findings:

NABARD and Government of India had released ₹ 1101.09 crore to the State Government for installation of tube wells and lining of water courses projects. The State Government in turn released only ₹ 940.98 crore to the Company with delays ranging from three to 973 days which resulted in delay in execution of projects.

(Paragraph 2.1.6)

The Company had not framed procedure for identification of beneficiaries, selection of sites, prioritisations of project sites and for ensuring involvement of local governing bodies and beneficiaries at the time of project planning.

(Paragraph 2.1.7)

Competitiveness was not ensured as purchases worth ₹ 5.73 crore were made through placing repeat orders without undertaking the process of discovering fresh rates.

(Paragraph 2.1.9)

The operation and maintenance (O & M) of 112 tube wells was outsourced and not handed over to the WUAs as envisaged which resulted in avoidable committed expenditure of ₹ 34.41 crore.

(Paragraph 2.1.10.2)

During 2011-16, the Company handed over 1,291 water courses (covering 4.01 lakh hectares) to WUAs and an amount of ₹ 36.07 crore became due for release to the Associations as one time functional grant (OTFG) but such amount was neither asked from GoI (central share) nor released to the WUAs.

(Paragraph 2.1.12.1)

Introduction

2.1.1. The Punjab Water Resources Management & Development Corporation Limited[1] (Company) was incorporated in December 1970 to provide irrigation facilities to farmers by installation of deep tube wells. The Company is engaged in installation, operation and maintenance of tube wells under State Government schemes and lining of watercourses by executing projects approved by the Government of India (GoI) under the Command Area Development and Water Management (CADWM) programme and State Government schemes through financial assistance from the National Bank for Agriculture and Rural Development (NABARD).

Organisational Set-up

2.1.2. The management of the Company is vested with a Board of Directors (BOD). As on 31 March 2016, there were nine directors. The Managing Director is the Chief Executive Officer of the Company and is assisted by one Superintending Engineer at the Head Office and four Superintending Engineers in field offices.

Audit Objectives

2.1.3. The audit objectives of the performance audit were to ascertain whether:

- the planning process was comprehensive and consistent with the policies of the State Government and the Government of India (GoI);
- installation, operation and maintenance of tube wells was carried out in an efficient, effective and economical manner;
- functions relating to lining of water courses were carried out as per priorities and norms prescribed by the State Government and GoI;
- the funds were arranged timely and utilised efficiently and economically; and
- internal control and internal audit mechanisms in the Company were adequate and effective.

Scope of Audit

2.1.4. The working of the Company for the period 2005-09 was reviewed in the Report of the Comptroller and Auditor General of India, Government of Punjab (Commercial) for the year 2009-10. The Committee on Public Undertakings (COPU) had given recommendations which have been taken into account during this performance audit.

The present performance audit, conducted during December 2015 to April 2016, assessed the performance of the Company for the period 2011-16. The

[1] Formerly known as Punjab State Tubewell Corporation Limited and was renamed as Punjab Water Resources Management & Development Corporation Limited in February 2008.

audit examination involved scrutiny of records of the head office, circle offices, and nine[2] out of 16 divisional offices of the Company selected on the basis of Probability Proportional to Size (PPS) method of sampling. The selected divisional offices covered 74 *per cent* of expenditure on installation of tube wells and 51 *per cent* of the expenditure on lining of water courses incurred during 2011-15. Entry Conference was held in January 2016. The audit findings were reported to the Company and the State Government (May/ June 2016) and discussed in the Exit Conference (July 2016) which was attended by the representatives of the Company. The views expressed by the Company along with the replies received from Management have been considered while finalising this performance report. The reply of Government was awaited (September 2016).

We acknowledge the co-operation and assistance extended by the Company at the various stages of conducting this performance audit.

Audit Criteria

2.1.5. The audit findings were evaluated against audit criteria sourced from the following:

- annual plans of the Company;
- project reports for various schemes for installation of tube wells and lining of watercourses; and
- rules and regulations framed/adopted by the Company.

Audit Findings

Financial Management

2.1.6. Financial position and working results

The Company has finalised its accounts upto 2012-13. The accounts for the years 2013-14 and 2014-15 are in arrears. The financial position and working results for the four years ending 31 March 2015[3] are given in ***Annexure 3.*** The Company had continuously incurred losses during the period 2011-15. The accumulated losses increased from ₹ 88.86 crore as on 31 March 2012 to ₹ 101.57 crore as on 31 March 2015.

We observed delay in release of funds by the State Government which resulted in delay in execution of various schemes as detailed below:

- NABARD released ₹ 114.81 crore to the State Government for 280 tubewell scheme during the period 2010-16, out of which the State Government released ₹ 110.10 crore to the Company upto 31 March 2016 after a delay of 30 to 826 days. Audit noticed that the State Government

[2] Lining Divisions : Bathinda- 8 division, Bathinda-7 division, Ludhiana and Mansa; Tube well Divisions: Hoshiarpur L/F, Hoshiarpur OPM, Mohali, Pathankot and Jallandhar.
[3] Including provisional figures for the year 2013-14 and 2014-15.

released only ₹ 5.80 crore of its share upto 31.03.2016 against the due amount of ₹ 6.04[4] crore.

- The State Government released ₹ 594.14 crore out of ₹ 701.73 crore released by GoI and NABARD for CADWM schemes for lining projects to the Company during 2008-16 after a delay of three to 973 days.
- NABARD released ₹ 284.55 crore to the State Government for State Government Schemes for lining projects[5] out of which the State Government released only ₹ 236.74 crore to the Company with delays ranging from 22 to 644 days.

The Management stated (July 2016) that the progress of installation of tubewells was not affected due to late release of funds. The delay in release of funds was only a procedural delay and it did not affect the progress of lining of watercourses as works were executed through contractors and payments were released after completion of work. The reply is not tenable as the Company itself had informed BOD that delay in release of funds by the State Government was one of the reasons for delay in execution of projects and the GoI guidelines (July 2010) on CADWM provide that the grant component along with the State share must be released to the project authorities by the State Government within 15 days of its release by the GoI.

Planning process

2.1.7 According to the National Water Policy-2012, planning, development and management of water resources should reflect a common integrated perspective factoring in local, regional, state and national context as well as environmental concerns and social and economic needs.

We reviewed the planning process and implementation of the National Water Policy in the Company and observed that while the Company had prepared (July 2013) a master plan for irrigation works containing details of ongoing projects and projects to be undertaken in future, it did not include any strategy for achievement of the plans. We also noted that:

- The Company did not have any comprehensive data base indicating area-wise availability of water resources in the State in terms of irrigation potential which can be tapped, irrigation assets created by other departments/organisations and gap between the irrigation assets created and utilised which could have helped it to devise comprehensive plans; and
- The Company had not codified the procedure to be adopted for identification of beneficiaries, selection of sites, prioritisation of project sites and social and environmental aspects in addition to techno-economic considerations so as to ensure involvement of local governing bodies like Village Panchayats, Water User Associations (WUAs) and beneficiaries at the time of planning and finalisation of any project.

[4] ₹ 114.81 crore *5/95= ₹ 6.04 crore.
[5] Ninety five *per cent* of the State share of cost of project has been financed by the NABARD under RIDF programme.

Management stated (July 2016) that the priority for installation of tube wells was being given in areas with erratic and inadequate rain fall where other sources of irrigation were not available. Management agreed to codify procedure for identification of beneficiaries.

The reply is not adequate as lack of a data base indicating area wise availability of water resources would undermine its efforts to properly plan and prioritise deployment of resources.

Installation of tube wells

2.1.8. Installation of a tube well involves identification of site, collection of geological and hydrogeological data followed by drilling and development, construction of pump house, installation of pump set, laying of underground pipe line for distribution of water and energisation of tube well.

Installation of deep tube wells in Kandi Area

2.1.8.1 To mitigate the hardships of agriculturists in the backward Kandi area[6], the Company prepared (March 2009) project estimates for installation of 280 deep tube wells (101 alternative[7] tube wells and 179 new tube wells) at a total cost of ₹ 130.06 crore. The primary objective of the project was to restore the irrigation potential of 12,500 acres and to create an additional irrigation potential of 22,000 acres approximately. NABARD sanctioned (October 2009) a loan of ₹ 123.56 crore under RIDF-XV[8] and the balance amount ₹ 6.50 crore was to be contributed by the State Government.

2.1.8.1(a) Deficient project planning

We observed the following deficiencies in preparation of the project report:

- The Company prepared (March 2009) project estimates based on classification of blocks (safe / critical/ over-exploited zones[9]) made by the Central Ground Water Board (CGWB) as on March 2004. No fresh details were subsequently collected to update the category classification before actual commencement of the project. As a result, 78 tube wells were installed/ being installed in over-exploited zones without any effort to recharge the ground water. COPU had recommended (March 2013) to install alternative tube wells in over-exploited zones only after making arrangement of recharge of the ground water.
- Detailed surveys were not conducted before selection of sites, preparation of Detailed Project Report (DPR)/ project estimate. There were 73 cases where sites had to be changed either due to non-clearance of sites by

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[6] Kandi area is semi- mountainous area which runs along the Shivalik foothills ranges of Himalayas.

[7] Tube wells installed/ to be installed in place of abandoned tube wells.

[8] Rural Infrastructure Development Fund (RIDF) was instituted in NABARD with the sole objective of giving low cost fund support to State Govts. and State Owned Corporations.

[9] Safe – areas which have ground water potential for development. Semi-critical – areas where cautious ground water development is recommended. Critical areas and Over exploited areas where there should be intensive monitoring and evaluation and future ground water development to be linked with water conservation measures.

hydrological wing after resistivity survey or due to non-provision of land by the farmers.

- COPU had recommended (March 2013) that panchayat of the concerned villages should be involved in planning of tube wells. The involvement of local governing bodies like panchayats, WUAs and beneficiaries was not ensured.

- Out of 232 tube wells in selected divisional offices, 101 tube wells were installed/ being installed in non - kandi areas though the project was meant for Kandi area only. Resultantly, farmers of the Kandi areas were deprived of the development of irrigation benefit to that extent.

Management stated (July 2016) that CGWB did not prohibit the installation of deep tube wells in over exploited areas. It added that the main thrust was given to install tube wells in both Kandi and non-Kandi areas where same topography exists. The contention of Management was not acceptable as deep tube wells would serve no purpose in over exploited area without any plan for ground water recharging. Further, funds under this project was for kandi area only and hence tube wells installed in non-kandi area was irregular.

2.1.8.1(b) Delays in execution

The plan (approved by NABARD in October 2009) envisaged completion by 31 March 2012. The Company, however, could not complete the installation of even a single tube well up to March 2012. We observed delays in approval of estimates (of 53 to 555 days in 118 tube wells), in calling of tenders (of 344 to 601 days in 29 tube wells) and in approval of tenders (of 165 to 336 days in 129 tube wells) involving expenditure of ₹ 38.52 crore.

In comparison to the target of completion of work by March 2012, the year-wise progress in installation of tube wells is given in table 2.1 below:

Table 2.1: Stage wise/ year wise installation of tube wells

Sr. No.	Component of work	Progress during the year (figures in number of tube well sites)						
		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	Total
1.	Drilling	18	68	52	24	79	27	268
2.	Development	4	79	49	26	83	23	264
3.	Construction of Pump House and Delivery Tank	Nil	27	64	55	66	42	254
4.	Underground pipeline	Nil	5	28	64	50	84	231
5.	Energisation	Nil	Nil	19	24	41	55	139

Source: Progress reports and information as provided by the Company

Against the target of installation of 280 deep tube wells by the end of March 2012, only 139 tube wells (49.64 *per cent*) could be energised by March 2016.

We observed the following:

- Though the project was approved in October 2009, the first tender for Drilling and Development work was floated in December 2010 and work taken up in January 2011;

- The Chairman of the BOD desired (August 2009) that installation of deep tube wells in some areas be outsourced to avoid delay in their installation. However, the Company could finalise the "Expression of Interest" document containing detailed terms and conditions, eligibility criteria etc., for outsourcing of installation work of tube wells only in June 2013 i.e. after a lapse of over three years;
- In addition to the delay in execution of works attributable to the change of sites as discussed in para 2.1.8.1(a) above, there were delays by contractors in execution of work of construction of pump house and delivery tank, laying of underground pipe line for distribution of water ranging from one to 1,331 days in respect of 179 tube wells;
- Delays of upto 625[10] days in compliance of demand notices of PSPCL and delays upto 545[11] days in submission of test reports for energisation of tube wells in selected divisional offices.

In March 2014, the National Green Tribunal imposed a stay on energisation of new tube wells in the State. The stay was vacated in July 2015 and 55 tube wells were energised thereafter upto March 2016.

It was also noticed that in contravention of General Conditions[12] and the terms of the contracts, extension of time was granted in 87 cases though the contractors applied for extension much after (one to 979 days) the expiry of the contract. Consequently, the Company had to forgo liquidated damages of ₹ 98.18 lakh[13] from the defaulting contractors.

Management, while admitting (July 2016) the facts, stated that water balance was not available on some of the sites proposed in the project estimate and there was refusal by the farmers to provide land which resulted in change of potential tube well sites.

Thus, delays at each stage of planning and execution of works coupled with laxity in enforcing contractual terms relating to timely execution of works had a cascading effect resulting in denial of irrigation facilities to the beneficiary areas.

2.1.8.1(c) Outsourcing of installation of tube wells

In order to expedite the work, the Company invited (January 2014) tenders for installation of 75[14] tube wells in Hoshiarpur and S.A.S. Nagar districts on turnkey basis in two parts. Part-I was related to drilling and development of tube wells (including material) while Part-II related to construction of pump houses, delivery tank, fencing, installation of pump sets and control panels and laying of pipelines (including material) and operation and maintenance of tube wells for seven years.

[10] Calculated after giving margin of 15 days.
[11] Calculated after giving margin of 15 days.
[12] The contractors were liable to pay liquidated damages in case of delay in completion of works. Further, the contractor were to request extension within one month of the cause of delay and in any case before expiry of the contract period.
[13] Hoshiapur L/F: ₹ 39.46 lakh, Hoshiarpur OPM: ₹ 51.26 lakh and Pathankot: ₹ 7.46 lakh.
[14] Part of 280 tube well scheme.

We observed the following:

- Against the estimated cost of ₹ 18 crore for Part I and ₹ 25 crore for Part II, the work of part I was awarded in February 2014 for ₹ 28.69 crore while work relating to part-II was awarded in the same month for ₹ 38.22 crore. This resulted in an overall escalation in estimated cost by ₹ 23.91 crore.

- The cost awarded for Part-II was on the higher side as operation of tube wells for 24 hours a day and posting of two operators was considered against the Company's own approved norm of operation of tube wells for 1,500 hours a year and one operator per tube well. The departure from the norm while awarding the tender was not apprised to BOD.

- The Company allowed about two weeks period for opening of tenders in violation of guidelines of Central Vigilance Commission (CVC) of four to six weeks and tender of single qualified bidder in both Part-I and Part-II was accepted in the first instance.
- The Company had not codified instructions to ensure reasonableness of rates. Despite the rates of single qualified bidder (Part-I) of ₹ 28.69 crore being higher than the estimated cost of ₹ 18 crore, the Company did not analyse the market rates. For instance, the rates of V-wire wound screen pipes[15] were more than double of the rates approved for the same item by Director General, Supplies and Disposal (DGS&D), Haryana.

The Company awarded (November 2015) the work of installation of remaining 37 tube wells[16] on turnkey basis under two part system. The work for part-I was awarded for ₹ 11.16 crore against estimated cost of ₹ 9.10 crore and the work relating to part-II was awarded for ₹ 19.67 crore against updated estimated cost of ₹ 18.04 crore.

Management stated (July 2016) that comparison of rates quoted by the agency was made with the estimated cost and worked out in a realistic and objective manner and the rates were not on higher side. The reply is not acceptable as work was awarded on much higher rates than the cost as per project estimates without a justified analysis.

2.1.8.1(d) Deficiencies in monitoring

To ensure the quality of works undertaken, the DPR provided for appointment of an Independent Quality Assurance Consultant (IQAC) in the interest of efficiency, cost reduction, quality and timely completion of works and projects. We observed that IQAC was not engaged by the Company to ensure the quality of works though an amount of ₹ 1.17 crore was provided for in the project estimate.

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[15] ₹ 15750 against ₹ 7200 in case of 200*8*0.50 size and ₹ 14750 against ₹ 6807 in case of 200*8*0.75 size.

[16] Under 280 tube well scheme in Ropar, S.B.S. Nagar, Gurdaspur and Pathankot Districts.

Installation of 10 deep tube wells in Talwara block

2.1.8.2 The Company started (2011-12) work for installation of 10 deep tube wells in Talwara block of district Hoshiarpur under State Plan at an estimated cost of ₹ 6.05 crore for irrigating an area of 1,000 acres. Though the Company had incurred expenditure of ₹ 2.92 crore, only one tube well could be energised upto 31 March 2016 against the scheduled date of completion of 31 March 2012.

Audit analysis revealed that non-completion of the project was attributable to:

- delay in submission of site selection papers and non-suitability of selected sites;
- delay in drilling and development work ranging from three to 662 days[17] in respect of six tube wells; and
- delay in construction of pump house and delivery tank, laying of underground pipe line for distribution of water ranging from 163 to 539[18] days.

Further, delays of 44 to 304 days to comply with demand notices of PSPCL for energisation in respect of two tube wells and delays of 308 days in submission of test reports in respect of one tube well were also noticed.

Thus, deficient selection of sites coupled with delay in execution of work ultimately resulted in depriving the farmers of envisaged irrigation benefits.

Management stated (July 2016) that work of selection of sites for installation of tube wells was delayed due to topography of the area and shortage of staff. The reply is not tenable as selection of sites and availability of manpower should have been factored in at the time of preparation of project estimate.

2.1.9 Purchase of Material

The Company procured items valuing ₹ 9.87 crores viz. PVC pipes and fittings valuing ₹ 7.33 crore and V-wire wound screens valued at ₹ 2.54 crores during 2012-14 and 2011-12 respectively through short term tenders and repeat orders without inviting fresh tenders. All the purchase orders for the PVC pipes and fittings as well as that of V-wire screens were placed on single qualified bidders.

Audit observed the following:

(i) The guidelines issued by the Central Vigilance Commission (CVC) in April 2008 stated *inter alia* that in order to have fair and adequate competition, sufficient time of about four to six weeks should be allowed in case of

[17] Period of delay in Drilling and Development has been calculated after giving a margin of 45 days.

[18] Period of delay in construction of Pump House and Delivery Tank (including laying of underground PVC pipeline) work has been calculated after a margin of 75 days.

advertised tenders and three to four weeks in case of limited tenders except in cases of recorded emergencies. However, the Company allowed time of only two weeks for responding to the tenders for procurement of both the PVC pipes and V-wire screens.

(ii) Out of the total purchases of ₹ 7.33 crore for pipes and fittings, the Company purchased material valuing ₹ 3.19 crore through repeat orders. The reason cited for not inviting fresh tenders was imposition of code of conduct for Assembly elections. The reply was not tenable as purchases of ₹ 2.07 crores were made between October 2012 to April 2013 after the elections to the Punjab Assembly were over and the model code of conduct had been withdrawn on 6 March 2012.

(iii) The Company inserted a new clause in the tender notice dated 1 November 2013 for procurement of the PVC pipes providing for purchase preference to be given to Punjab based small scale units. By adding such a clause, all non-State based firms were rendered ineligible for participation in the tendering process and supply order valuing ₹ 2.40 crore was again placed on the same firm.

Management stated (July 2016) that to avoid delays in laying of underground pipe lines, it was decided to place the supply orders on already approved rates. The reply is not tenable as the procedures adopted deprived the Company of the benefit of competitive rates.

Running and maintenance of the tube wells

2.1.10.1 Operation of tube wells

As per norm, a tube well is required to be used for approximately 1,500 hours a year. The year wise operational performance of tube wells is given in table 2.2 below:

Table 2.2 : Year wise operational performance of tube wells

Particulars	2011-12	2012-13	2013-14	2014-15	2015-16
Number of tube wells available for operation (cumulative figure)	1587	1587	1551	1581	1686
Operational hours as per norms	2380500	2380500	2326500	2371500	2529000
Actual operation in hours	1210454	1168105	849435	1046471	1892283
Percentage of actual operation to norm	50.85	49.07	36.51	44.13	74.82
Hours operated per tube well	763	736	548	662	1122

Source: Progress reports of running tube wells

We observed that the operation of tube wells ranged between 37 *per cent* and about 75 per cent during the period under report. Further, the Company had not evolved any regime of preventive maintenance of the tube wells in the absence of which uninterrupted operation of tube wells could not be ensured.

Management stated (July 2016) that less operation of tube wells was due to less demand. The Management contention is not acceptable in audit as there were no records maintained regarding demands received from the farmers.

2.1.10.2 Maintenance of tube wells

A Water Users Association (WUA) comprising of all beneficiary farmers was to be formed by the Company for maintenance of the tube wells. The State Government decided (November 1995) to hand over the operation and maintenance (O&M) of tube wells to the WUA. The project report of 280 tube wells scheme also envisaged the formation of WUAs and handing over of running and maintenance work of tube wells to WUAs.

We observed that the Company had not formed WUAs for maintenance of tube wells and instead outsourced the work of O&M of 112[19] tube wells installed/ to be installed under the scheme for ₹ 34.41 crore for seven years period despite undertakings/affidavits given by the beneficiaries regarding their willingness for formation of WUAs and to incur all expenditure on the salary of operators, payment of electricity bills and all types of repairs. Thus, outsourcing the work of O&M resulted in avoidable committed expenditure of ₹ 34.41 crore.

We further noticed that the Company had incurred an expenditure of ₹ 8.82[20] crore during 2012-15 on O&M of 1,579 tube wells by not forming WUAs despite the willingness given by beneficiary to bear all expenses relating to running and maintenance including salary of operators.

Construction of field channels - Lining of watercourses

2.1.11.1 GoI provided (July 2010) 50 *per cent* of the cost of lining of field channels[21] as grant while the State Government was to contribute 40 *per cent* of the cost. The remaining 10 *per cent* was to be contributed by the beneficiary farmers. The financing pattern was changed in December 2013 with the GoI and the State Government contributing in the ratio of 50:50. The estimated cost as per guidelines issued by GoI in July 2010, December 2013 and September 2015 was ₹ 15,000, ₹ 25,050 and ₹ 35,000 per hectare respectively.

The Company undertook ten projects of water lining of field channel costing a total of ₹ 2,357.44 crores that was to benefit 12,76,719 hectares. As on 31 March 2016, the Company had incurred an expenditure of ₹ 1,295.26 crore on the ten ongoing schemes **(*Annexure 4*).**

Audit noticed that the Company had not conducted any survey to identify the priority areas for lining of the watercourses. COPU had also recommended (March 2014) that Company should give priority to the areas where farmers are purely dependent upon the canal water or those not having any other source of irrigation.

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[19] Operation and maintenance of 75 tube wells outsourced for ₹ 22.86 crore in February 2014 and 37 tube wells for ₹ 11.55 crore in November 2015.

[20] 2011-12: ₹ 2.19 crore, 2012-13: ₹ 2.50 crore, 2013-14: ₹ 1.95 crore and 2014-15: ₹ 2.18 crore.

[21] Field channels convey water from the outlet of the Government controlled distributaries to the individual farmer's land. The field channels are lined to avoid seepage, leakage in conveyance system, evaporation losses and water loss through cuts and breaches which creates water logging in adjoining lands reducing their production capacity.

2.1.11.2 Cost escalation due to delays in execution

A detailed review of three of the ten schemes viz. lining of watercourses of (i) Sirhind Feeder Part II, (ii) Bathinda Branch part II and (iii) Bhakra Main Branch brought out cost escalation of ₹ 236.79 crore and delays ranging from 24 to 72 months as brought out in table 2.3 below:

Table 2.3 : Statement showing time and cost over runs of projects reviewed

(Amount : ₹ in crore)

Name of Scheme	Original Cost	Stipulated Completion Date	Expenditure Now Projected	Expenditure Now Incurred (upto March 2016)	Additional Cost (upto March 2016)	Extent of Delay (upto March 2016)	Extent of Coverage (upto March 2016)
Sirhind Feeder Part II	412.74	31.03.2010	856.39	416.22	154.83	6 years	63.33 %
Bathinda Branch Part II	241.72	31.03.2011	505.74	193.00	74.92	5 years	48.85 %
Bhakhra Branch Part II	209.55	31.03.2014	Not Available	118.78	7.04	2 years	53.32 %
Total					**236.79**		

The reasons for the time and cost over-runs were analysed to be as under:

- Estimates for 37 works of ₹ 5.76 crore were approved after delays ranging from four to 336[22] days for reasons not found on records.

- Tenders for 82 works of ₹ 13.01 crore were invited after approval of estimates with delays ranging from three to 220[23] days and also tenders rates for works amounting to ₹ 6.83 crore were approved after a delay of one to 204[24] days.

- Divisional Office, Ludhiana, commenced 87 works of ₹ 17.56 crore after delays ranging from 32 to 733 days and 19 number of works of ₹ 3.57 crore on which expenditure of ₹ 2.70 crore have been incurred (January 2016), had not been completed yet.

Management stated (July 2016) that necessary approvals would be taken in time in future.

Maintenance of water courses

2.1.12.1 Government of India (GoI) guidelines on CADWM (July 2010) provide for One Time Functional Grant (OTFG) to registered water user associations (WUAs) at the rate of ₹1,000 per hectare (₹ 1,200 per hectare from December 2013) in the ratio of 45:45:10 to be contributed by the GoI, the State Government and the beneficiaries for maintenance of constructed water courses. The amount is to be kept in the fixed deposit account of WUAs

[22] Calculated after giving margin of 30 days.
[23] Calculated after giving margin of 30 days.
[24] Calculated after giving margin of 45 days.

in the bank and interest accrued thereon is to be used for maintenance of water courses.

During 2011-16, the Company handed over 1,291 water courses (covering 4.01 lakh hectares) to WUAs and an amount of ₹ 36.07 crore (90 per cent of ₹ 1000 per hectare for 4.01 lakh hectare) became due for release to the Associations as OTFG. However, such amount was neither sought from GoI (central share) nor released to the WUAs.

A test check of records relating to OTFG at selected division offices brought out that three selected division offices submitted demand of ₹6.92[25]crore (upto 31 March 2014) to head office but the head office did not raise demand with the State Government and GoI. The Bathinda- 8 division office did not also have details of scheme wise/ outlet wise amount of OTFG due. Resultantly, no work of repair and maintenance of watercourses was undertaken in the selected division offices during 2012-15.

Management stated (July 2016) that no project pertaining to Command Area Development Programme had been completed during 2011-16 and hence no funds had been demanded. The reply is not tenable as 1,291 water courses had been handed over to WUAs and the Company as such should have raised demand for funds and not wait for their completion to enable their maintenance.

Monitoring and Oversight mechanism

2.1.13.1 Internal Control

Internal control is a management tool used to provide reasonable assurance that objectives are being achieved in an economical, efficient and orderly manner. The internal control in the Company was deficient in regard to the following:

- The head office as well as division offices do not keep scheme wise accounts and head office also does not send scheme wise funds to the division offices. Hence, it could not be vouchsafed that the funds of a particular scheme were spent on that scheme. The Company while accepting the audit contention stated (July 2016) that instructions would be sent to divisional offices to maintain accounts according to expenditure incurred scheme wise.
- The Company booked works expenditure on tube well schemes which were already completed and closed.
- The expenditure incurred on lining of watercourses reported to the Chief Engineer (Planning), Department of Irrigation and reported in the annual accounts were not reconciled.

[25] Mansa : ₹ 92.03 lakh, Ludhiana : ₹ 182.34 lakh and Bathinda 7 : ₹ 417.31 lakh.

2.1.13.2 Internal Audit

Internal Audit is recognised as an independent appraisal activity within an organisation to examine and evaluate the activity of the organisation. Besides assisting in financial control, it is expected to help in the achievement of organisational objectives by improving the effectiveness of control and governance processes within the organisation.

We observed that the Company has not framed any Internal Audit Manual. The internal audit of the Company was last conducted upto 2011-12 by a firm of chartered accountants. Though the Reports of the internal audit for the years 2010-11 and 2011-12 pointed out irregularities of high risk categories like non-maintenance of control registers, wrong classification, negative balances, non-compliance with the provisions of Income Tax Act, 1961 and those of the Companies Act, 1956, these reports were yet to be presented to BOD as of March 2016.

The Management stated (July 2016) that framing of internal audit manual would be considered by competent authority in due course and internal audit for the year 2014-15 was in progress.

Corporate Governance issues

2.1.14.1 Corporate Governance is a system of structuring, operating and controlling an organisation with a view to achieve long term strategic goals to satisfy the stakeholder and comply with the legal and regulatory requirements. We noticed:

- the Government of Punjab is yet to nominate directors as per provisions of the Companies Act, 2013.
- the audit committee meetings for approval of Financial Statements were not attended by the auditors and the Financial Advisor as required under Section 292 A of Companies Act 1956. The Management while accepting the audit contention, assured (July 2016) for future compliance of the same.

Conclusion

The Company suffered from delay in release of funds by the State Government for tube well schemes and projects for lining of water courses. The planning process was deficient as there was no procedure for identification of beneficiaries, selection of sites, prioritisation of projects or for ensuring involvement of beneficiaries at the time of project planning. Poor project implementation and delays in installation of tube wells resulted in cost escalations and deprived the farmers of the envisaged irrigational benefits. A detailed review of three out of 10 schemes brought out cost escalation of ₹ 236.79 crore and delays ranging from two to six years at various stages of project definition and implementation. The operation and maintenance of tube wells was outsourced despite willingness of the beneficiaries to incur all expenditure related which resulted in avoidable committed expenditure of ₹ 34.41 crore. Lastly, the monitoring mechanism, internal control and internal audit systems were weak.

Recommendations

In light of the audit findings, it is recommended that the Company and Government consider:

- Codifying procedure for identification of beneficiaries, selection of sites, prioritisations of project sites and for ensuring involvement of beneficiaries at the time of project planning;
- Ensuring proper planning and timely project execution of installation of tube wells;
- Form water users associations for maintenance of tube wells and constructed water courses; and
- Strengthen the monitoring mechanism, internal controls and audit system.

Chapter-2.2

Punjab State Power Corporation Limited

Billing and Collection of Revenue

Highlights

Sale of power by Punjab State Power Corporation Limited (Company) is regulated with reference to the tariff approved by the Punjab State Electricity Regulatory Commission (PSERC) from time to time. A performance audit of the activities of the Company relating to billing and collection of revenue during 2011-16 brought out, *inter alia*, the following:

Mandatory replacement of electro-mechanical meters was not completed in violation of provisions of Electricity Act, 2003 and defective/ burnt meters were not replaced within prescribed time.

(Paragraphs 2.2.9.1 and 2.2.9.2)

Prescribed time periods for issue and for payment of energy bills were not being adhered to leading to loss of interest of ₹ 24.32 crore during 2011-16.

(Paragraphs 2.2.9.3 to 2.2.9.6)

Consumers were not paid interest on their security deposits. This short payment was to the extent of ₹ 385.26 crore during 2011-15.

(Paragraph 2.2.9.8)

Company had not completed 100 *per cent* metering of agricultural pump sets consumers though this was required under the Electricity Act, 2003. This resulted in the PSERC disallowing □ 10 crore in its tariff orders for the years 2014-16.

(Paragraph 2.2.10.1)

Outstanding dues against the defaulting consumers had increased from ₹ 705.67 crore to ₹ 1,083.56 crore during 2012-16.

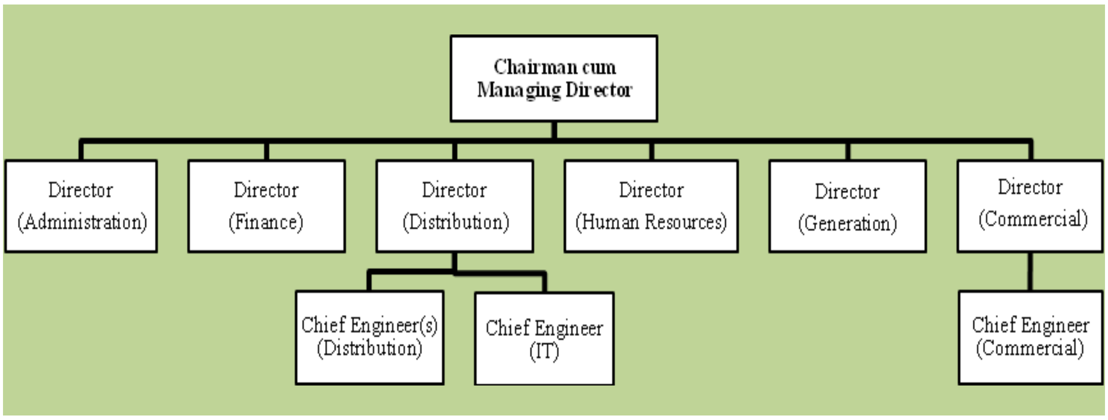
(Paragraph 2.2.10.3)

Introduction

2.2.1. Sale of power by the Punjab State Power Corporation Limited (Company) is regulated with reference to tariff approved by the Punjab State Electricity Regulatory Commission (PSERC) from time to time. The procedure for issue, delivery of bills to consumers[1] and payment thereof is laid down in the PSERC's (Electricity Supply Code and Related Matters) Regulations, 2007 (Supply Code, 2007) and Supply Code, 2014.

Organisation set-up

2.2.2. The organisational hierarchy of the Company is given below:



Audit Objectives

2.2.3. The objectives of the performance audit were to ascertain whether:

- tariff orders and commercial circulars were issued timely and with the approval of competent authority i.e. PSERC;
- billing was done timely and accurately;
- collection and accounting of revenue against energy billed was prompt and efficient;
- efforts were made to realise and reduce the revenue arrear/losses; and
- internal audit and internal control system was efficient and effective.

Scope and Methodology of Audit

2.2.4. The performance audit covering the Company's activities relating to billing and collection of revenue from all the categories of consumers against energy sold during 2011-16 was conducted during October 2015 to May 2016. The performance audit assessed areas of outstanding arrears of consumers, non-overhauling of consumer's accounts, delay in billing, incorrect

[1] Consumers are categorised as Agriculture Pump-sets (AP), Large Supply (LS), Bulk Supply (BS), Medium Supply (MS), Small Power (SP), Public Lighting (PL), Railway Traction (RT), Domestic Supply (DS) and Non Residential Supply (NRS) consumers.

implementation of tariff orders, non-downloading of data and non-observance of codal procedures. Entry Conference was held in February 2016. The audit findings were conveyed to the Company and the State Government (June 2016) and discussed in the exit conference (July 2016) which was attended by senior management of the Company. The views expressed in the exit conference/ replies received from the Company have been considered while finalising this performance audit report. The reply of Government was awaited (September 2016).

2.2.5. Besides examining the records maintained at the Head Office of the Company, records of two circles from each zone (total 10 circles out of 21 circles) selected through simple random sampling without replacement (SRSWOR) method, 25 per cent operation divisions falling under each selected circle (total 12 divisions) through probability proportion to size without replacement (PPSWOR) method, then 25 per cent sub-divisions falling under each selected operation division (total 15 sub-divisions) selected through SRSWOR method were examined. In addition, two centralised billing cells (CBCs) *viz.* CBC, Ludhiana (being highest billing/ revenue centre) and CBC, Patiala (being lowest billing/revenue center) were also selected.

We acknowledge the co-operation and assistance extended by the Company at the various stages of conducting this performance audit.

Audit Criteria

2.2.6. The audit criteria adopted for assessing the achievement of audit objectives was derived from the following:

- The Electricity Act, 2003;
- Tariff orders issued by the PSERC;
- Guidelines/ instructions/circulars issued by the State Government and PSERC;
- Electricity Supply Instructions Manual (ESIM), Supply Code and General Conditions of Tariff and Schedules of Tariff; and
- Instructions/Commercial/Sale circulars issued by the Company.

Audit Findings

Excessive sub transmission and distribution losses

2.2.7. When energy is carried from the generation sources to the consumers, some energy is lost in the network. The losses at 33/66 KV transmission stations and lines are termed as sub-transmission losses while those at 11 KV and below are termed as distribution losses. The losses are computed based on the difference between the energy received by the Company and energy sold to the consumers. The percentage of losses to power available indicates the effectiveness of distribution system. Table 2.4 below depicts energy losses vis-à-vis losses allowed by PSERC during 2011-12 to 2015-16.

Table No. 2.4 – Sub Transmission and Distribution Losses

(in MUs)

Sl. No	Particulars	2011-12	2012-13	2013-14	2014-15	2015-16
1.	Power/energy available for sale	41,532.30	43,548.21	44,966.76	47,640.25	48,413.85
2.	Metered sale	24,051.55	25,462.48	27,123.23	29,761.42	29,815.78
3.	Un-metered /assessed sale	10,248.63	10,779.03	10,223.57	10,641.40	11,513.88
4.	Total sale/energy sold (2+3)	34,295.18	36,241.51	37,346.80	40,402.82	41,329.66
5.	Energy losses (1-4)	7,235.12	7,306.70	7,619.96	7,237.43	7,084.15
6.	Percentage of losses to energy available for sale (5/4*100)	17.42	16.78	16.95	15.19	14.63
7.	Percentage of losses allowed by PSERC	16.92	15.90	15.22	14.08	13.51
8.	Excess losses	207.65	382.53	776.02	529.68	542.23
9.	Average realisation rate per unit (in ₹)	2.93	3.41	4.09	4.01	4.01#
10.	Value of excess losses (₹ in crore)	60.84	130.55	317.31	212.38	217.44
11.	Percentage of unmetered sale to energy sold (3/4*100)	29.88	29.74	27.37	26.34	27.88

Source: Statistical data provided by the Company and Tariff orders.

As average realisation rate per unit for year 2015-16 was not available, hence the same rate of 2014-15 was considered for 2015-16.

The energy losses ranged between 14.63 *per cent* and 17.42 *per cent* during 2011-16 which were higher than those approved by the PSERC. The excess loss aggregated to 2,438.11 MUs valued at ₹ 938.52 crore during 2011-16.

Management stated (July 2016) that distribution losses were lower than the losses allowed by PSERC. The reply is not tenable as transmission losses (2.5 *per cent*) allowed by PSERC in tariff orders[2], wrongly taken credit of by the Company for comparison are transmission losses approved by PSERC for Punjab State Transmission Corporation Limited (PSTCL) and hence are not applicable to the Company.

Compliance of tariff orders and related regulations

2.2.8. Delay in raising arrear bills on revision of tariff

While approving (August 2014) the revision of tariff for the year 2014-15 effective from 1st of April 2014 for supply of power, PSERC instructed the Company to effect the recovery of arrears on this account in suitable installments.

[2] For the year 2011-12 – True up in tariff order 2014-15 (22 August 2014), For 2012-13 & 2013-14 – True up in tariff order 2016-17 (27 July 2016), For 2014-15 – review in tariff order 2015-16 (5 May 2015) and 2015-16 – review in tariff order 2016-17 (27 July 2016).

Audit observed that energy bills prepared at CBC Ludhiana and Patiala as per revised tariff were issued from October 2014. However, the Company took six months to decide (March 2015) on method of effecting recovery of arrears in six equal monthly installments. An amount of ₹ 35.08 crore was recoverable from various consumers which was raised in bills from March 2015 onwards. The delay of six months in taking decision of commencing the recovery of arrears resulted in loss of interest of ₹ 2.05 crore.[3]

Management replied (July 2016) that it had started charging arrear in bills after amending changes in software during October 2014. However, based on consumer's demand to not charge arrears in one go, it had decided (March 2015) to recover arrear in six installments. The fact remains that the delay in effecting recovery of arrears was against its financial interest when it is dependent on working capital loans for running its day to day operations.

Billing of energy supplied

2.2.9.1 Non-replacement of electro-mechanical meters with static meters

The Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, provide that all interface meters, consumer meters and energy accounting and audit meters shall be of static type (commonly known as electronic meters) and meters not complying with these regulations shall be replaced by the licensee on his own or on request of the consumer or as per the directions of the appropriate Commission.

It was observed that despite receiving regular directives from PSERC for completing the replacement of existing electro-mechanical meters with the static meters in a time bound manner, the Company had failed to complete the work of replacement. Out of 73.33 lakh consumer meters (excluding agriculture pumpset (AP) consumers) installed as on 31 March 2016, 7.14 lakh electro mechanical meters (ten *per cent*) were yet to be replaced with static meters. The electronic meters are intelligent meters known for sustained accuracy, anti tamper features, wide current range and low effects of influence parameters. Thus, the replacement of electro-mechanical meters would help the Company in earning more revenue through a more precise accounting of energy consumption.

Management replied (July 2016) that owing to huge financial implications, the work of replacement had been regulated in a phased manner. The reply of phased replacement was not acceptable as the Company has regularly defaulted in adhering with the time schedule laid down by PSERC despite repeated extensions due to which the work directed to be completed by March 2013 in the tariff order for the year 2012-13 (July 2012), was not yet completed (March 2016).

2.2.9.2 Non replacement of defective/ burnt meters in time

The Supply Code, 2007 and 2014 provides for replacement of defective/burnt meter within ten/five working days respectively. Audit observed that

[3] Calculated @ 11.71 *per cent* per annum (rate allowed by PSERC for 2014-15).

percentage of defective and burnt meters ranged from 0.71 *per cent* to 2.91 *per cent* during 2011-16. Consequently, bills of around 0.73 lakh consumers (average consumers with defective/burnt meters) were being prepared on average basis during this period.

Audit observed that the defective/burnt meters were not being replaced within the prescribed time and the percentage of defective and burnt meters lying un-replaced for more than three months ranged from 22 *per cent* to 78 *per cent* of the total defective/burnt meters during 2011-16. PSERC had also expressed concerns on Company's failure to meet the time frame for replacing such meters.

Management replied (July 2016) that the replacement of defective/ burnt meters within the stipulated period depended upon the availability of meters. The reply was not acceptable as it was incumbent upon Management to ensure sufficient availability of meters to enable replacement of defective/ burnt meters within the prescribed time frame.

2.2.9.3 Non adherence to the billing periodicity

Regulation 30 (Electricity Bills) of the Supply Code 2007, provides for issuance of monthly bills to Large Supply (LS) consumers and bi-monthly bills to Domestic Supply (DS) and Non-Residential Supply (NRS) consumers with loads less than 50KW. Further, when supply to a new consumer is commenced in the middle of a billing cycle, all fixed charges including minimum charges, are to be levied on pro rata basis for the number of days for which supply is given during the billing cycle. Adherence to the billing periodicity is imperative for timely realisation of energy charges.

2.2.9.3(a) Audit observed that bill duration for 0.70 lakh bills (twenty six *per cent*[4]) valuing ₹ 7,128.12 crore, ranged between 32 to 500 days indicating that the meter readings were not taken regularly. Delayed preparation of these bills resulted in loss of interest of ₹ 3.70 crore[5]and affected the cash flow of the Company.

Management replied (July 2016) that billing periodicity exceeded one month period mostly in case of new connections and where readings were sent late for billing. The reply is not acceptable as only 457 of the above bills pertained to new connections.

2.2.9.3(b) The Company prepares bills of DS and NRS categories of consumers with connected load upto 20 KW through spot billing machines whereby the bills are prepared and delivered on the spot after recording meter reading by meter readers/outsourcing agency staff.

Audit observed that bill duration for 8.02 lakh bills (thirty one *per cent*[6]) valuing ₹ 216.61 crore, ranged from 63 to 99 days, implying that the meter readings were not taken regularly. The delayed preparation of these bills affected the cash flow and resulted in loss of interest of ₹ 0.26 crore[5].

[4] Out of 2.69 lakh bills prepared by CBC Ludhiana and Patiala during 2011-16.
[5] Calculated @ 10.67 *per cent* per annum (rate allowed by PSERC in true up for 2011-12).
[6] Out of 26.07 lakh bills of DS/NRS consumers prepared in nine sub-divisions during 2011-15.

Management replied (July 2016) that excess bill period was only for accounting actual reading date where previous period average bill issued on bi-monthly basis was adjusted when reading was available. The reply is not acceptable as adjustment of bi-monthly bills issued on average basis**,** as per Managements' contention, would produce bills with a minimum period of 120 days and not in the range of 63 to 99 days.

2.2.9.4 Delay in issuance of bills

2.2.9.4(a) The Manual of Instructions, Sale of Power of the Company provides for preparation of energy bills of LS Consumers (connected load in excess of 100 KW) immediately after taking the meter reading.

Audit observed that a period of six to 128 days[7] had been taken for issuance of 1.23 lakh bills (forty six *per cent*[4]) amounting to ₹ 13,423.33 crore. The delay in issuance of these bills resulted in loss of interest of ₹ 15.04 crore[5].

Management replied (July 2016) that bills were generally prepared by CBCs within two to three days of receipt of billing data from sub-divisions and most of the bills had been issued within 15 days of meter reading. The reply is not acceptable as the delay has been calculated after allowing a period of five days from reading date for bills which are to be prepared immediately.

2.2.9.4(b) Regulation 30 (Electricity Bills) of the Supply Code 2014, provides for delivery of bills to consumers within fifteen days from the date of meter reading (excluding cases of spot billing).

Audit observed that a period of 16 to 121 days had been taken for issuance of 1.16 lakh bills (seventy seven *per cent*[8]) amounting to ₹ 200.61 crore. The delay in issuance of these bills resulted in loss of interest of ₹ 0.29 crore[5].

2.2.9.5 Excess time allowed for payment of bills

Regulation 31 (Payment of Electricity Bills) of the Supply Code 2007 provides for payment of bills to be effected within a period of ten days in case of Large Supply (LS), Medium Supply (MS) and Small Power (SP) industrial consumers; twenty one days in case of Railways and fifteen days in case of all other categories of consumers, from the date of delivery of the bills. If the due date indicated in the bill is a holiday, the succeeding working day is to be treated as the due date.

Audit observed that in violation of the prescribed time period allowed for payment of bills, a period of:

- 13 to 26 days was given to LS consumers for payment of 0.93 lakh bills (42 *per cent*) amounting to ₹ 9,930.39 crore,

[7] Calculated after allowing a period of five days for preparation of the electricity bill.
[8] Out of 1.51 lakh bills of DS/NRS/SP/MS consumers prepared in nine sub-divisions during 2011-15.

- 24 to 27 days had been given to Railways for payment of 115 bills (41 *per cent*) amounting to ₹ 114.64 crore, and
- 18 to 28 days had been given to DS, NRS and BS consumers for payment of 0.20 lakh bills (43 *per cent*) amounting to ₹ 620.48 crore.

The excess time allowed for payment of these 1.13 lakh bills[4] resulted in a loss of interest of ₹ 5.03 crore[5].

Management replied (July 2016) that the holidays falling on last date resulted in enhancing due date beyond the stipulated period. The reply is not acceptable as excess time period ranging up to 14 days cannot be attributed to holidays on the last due date alone. Further, Supply Code stipulates automatically treating the succeeding working day as due date when the due date indicated in the bill for payment is a holiday which in no way allows Company to unilaterally extend due date on its own.

2.2.9.6 Issuance of back dated bills

The bills of consumers with connected load in excess of 100 KW being prepared at CBCs were being generated based on server date and time of preparation of bill. However, the date of issue of bill was being entered manually into the system.

Audit observed that the issue dates in 0.60 lakh bills (twenty two *per cent*[4]) valuing ₹ 8,369.79 crore were prior to generation dates by a period ranging from one to 305 days. We further observed instances of errors in manual entry of dates as under:

- in 16 bills valuing ₹ 0.59 crore, the bill issue date had been entered prior to the new reading date by one to 27 days,
- in 10 bills valuing ₹ 0.34 crore, the date of connection was found to be later to the date of previous meter reading by four to 61 days, and
- in 16 bills valuing ₹ 0.25 crore, the year had been wrongly entered as 2103 and 2130 in place of 2013 in the bill issue date.

The above instances indicated a lack of validation checks and input controls in the system, exposing the system to risk of manipulation.

Management replied (July 2016) that back dated bills were issued to adjust monthly revenue targets. The reply is not acceptable as it results in allowing less time for payment to consumers.

2.2.9.7 Incorrect application of tariff.

As per General Conditions of Tariff and Schedules of Tariff contained in Electricity Supply Instructions Manual (ESIM), supply to Government hospitals and dispensaries would be classified as domestic supply and tariff be charged accordingly. It was observed at CBC, Patiala that 22 Government hospitals/ dispensaries were classified under NRS category by the Company. As the tariff rate for NRS category was higher than DS category by ₹ 0.13 to

₹ 0.41 per unit during 2011-16, these consumers were charged in excess due to incorrect classification.

Management while admitting the audit point, stated (July 2016) that the category of consumers could only be changed on receipt of advice from the concerned sub-division.

2.2.9.8 Short payment of interest on security to consumers

Regulation 17 (Interest on Security) of the Supply Code, 2007, as amended (December 2011) provides for payment of interest[9] on Security (Consumption) by licensee.

Audit observed that the interest on security deposit of consumers was not being fully paid to all the consumers (***Annexure 5***) and there was short payment of ₹ 385.26 crore on this account during the period 2011-15.

We further observed that interest on security to consumers had also not been paid from six *per cent* to 16 *per cent* of consumers at CBC, Ludhiana due to non-updation of the amount of security in the system during 2011-16. The short/ non-payment of interest on security to a large number of consumers made the Company liable to pay penal interest for the actual period of delay.

PSERC had also, while finalising tariff petitions for the years 2014-15 (August 2014) and 2015-16 (May 2015), directed the Company to ensure updation of consumer's security register and to submit a certificate that annual interest on security payable up to financial year 2014-15 had been paid to all consumers. However, on continued violations by the Company, PSERC while finalising (July 2016) tariff petition for the year 2016-17, directed the Company to ensure up to date payment of interest to all the consumers and submit certificate within one month failing which proceedings under relevant sections of the Act would be initiated.

Management admitted the facts and stated (July 2016) that an exercise to update the security of consumers was underway.

Collection of Revenue

2.2.10.1 Non-metering of agricultural pump-set (AP) supply consumers

Sale of energy to consumers of the Company consists of two parts *viz.* metered units and assessed units. The assessed units refer to the units billed to consumers without meter reading i.e. unmetered supply to AP consumers. Audit observed that during 2011-16, the unmetered supply to AP consumers ranged from 26.34 *per cent* to 29.88 *per cent* of electricity supplied as brought out in Table No. 2.4 above.

[9] At State Bank of India's base rate prevalent on first April of relevant year plus two *per cent.*

As on 31st March 2016, out of 12.46 lakh agriculture pump-set consumers, only 1.15 lakh (9.23 *per cent*) connections had been metered while the remaining 11.31 lakh (90.77 *per cent*) consumers had unmetered connections. While finalising (August 2014) tariff order for the year 2014-15, PSERC directed the Company to submit its plan to achieve 100 *per cent* metering of AP consumers, within three months. At the same time, the PSERC decided to disallow ₹ 5.00 crore on this account each during 2013-14 and 2014-15 which would continue till the Company achieved 100 *per cent* metering as mandated under the Electricity Act (Act), 2003. It also stated that Company was violating the provisions of the Act by citing financial and administrative constraints. Failure to achieve 100 *per cent* metering of AP consumers thus led to disallowance of ₹ 10.00 crore in tariff orders 2014-16, besides the Company continuing to be in violation of Electricity Act, 2003.

Management replied (July 2016) that 100 *per cent* metering of AP consumers was neither practically feasible nor financially viable. The fact remains that this was a violation of Electricity Act, 2003, besides leading to disallowance of ₹ 10.00 crore in tariff during 2014-16.

2.2.10.2 Realisation of outstanding dues

ESIM provides that every consumer is expected to make the payment of dues by the 'due date'. In case he does not discharge the liability, his premise is liable for disconnection. The amount outstanding to be collected from consumers at the close of 2011-12 was ₹ 2,467.47 crore which increased to ₹ 3,646.65 crore at the close of 2014-15 representing an increase of 48 *per cent* over a period of three years[10].

2.2.10.3 Huge accumulation of defaulting amount

An analysis of the increasing outstanding dues during 2011-14 showed that around 23 *per cent* to 33 *per cent* of the arrears were recoverable from defaulting consumers. Further analysis based on category and nature of consumers (***Annexure 6***) showed that the amounts due against defaulting consumers increased from ₹ 705.67 crore to ₹ 1,083.56 crore during 2012-16. The dues against defaulting Government Departments increased sharply from ₹ 58.86 crore to ₹ 530.14 crore during 2011-16. The increase was also attributable to the industrial consumers whose dues had increased from ₹ 229.66 crore to ₹ 705.00 crore during 2011-16.

Further, test check of records showed that due to default in payment of electricity dues of ₹ 10.92 crore, the Company had permanently disconnected the electricity supply of five defaulting firms of Ludhiana East and Khanna Distribution Circles during December 1999 to May 2002. Civil suits for recovery were filed (May 2000 to September 2010) against these firms after a delay of five to 36 months and the execution petitions for recovery were filed after a delay of three to 43 months (November 2009 to March 2016) from the respective decisions (October 2008 to April 2015) in favour of the Company. The above delays indicated laxity in following up of outstanding amounts.

10 Annual accounts finalised upto 2014-15.

Management replied (July 2016) that executions were pending and no case had been dismissed due to delay of the Company. The reply is not acceptable as non-dismissal of execution petitions cannot be taken as justification for continuing delays in follow up of recoverable amounts.

2.2.10.4 Revenue collection modes

The Company provides multiple bill payment options to consumers viz. e-payment, bill payment machines, Easy Bill Collection Suvidha facility, collection at cash counter and door to door collection by spot billing staff. Audit observed that the total revenue received through 35 bill payment machines ranged between 4.56 *per cent* and 6.56 *per cent* of the total revenue realised during 2013-16. Due to lower average monthly transactions ranging from 27 to 1811, the average cost per transaction was between ₹ 12.26 and ₹ 809.73 during 2014-15. The same was attributed to installation of machines at inconvenient sites and lack of publicity/awareness. Further, collection of bill payment through e-payment mode also remained on lower side (1.24 *per cent* to 6.31 *per cent*) during 2011-16 due to non-uploading of billing data to e-payment server, resulting in difficulty in making payment by the consumers.

Management, while accepting the facts, stated that (July 2016) it had shifted the locations of two machines in the years 2014-16 and efforts were being made to shift the machines to locations which would attract maximum consumers. It had also taken various steps regarding uploading of billing data for making e-payments.

2.2.10.5 Periodical checking of connections

The ESIM of the Company had prescribed a quantum of checks[11] for its field officers to check the consumer premises (bi-annually/annually) to ensure that the consumers were not indulging in unauthorised use/ theft of energy. The quantum and the level of checks to be undertaken vary as per nature of connection.

A review of the inspections conducted by operation and enforcement staff during 2011-16 (***Annexure 7***) showed that the percentage of checking of consumer premises conducted by operation staff had reduced from 22 *per cent* to 14 *per cent* during 2011-16. Similarly, the percentage of inspections by enforcement staff ranged between three *per cent* and seven *per cent* during 2011-16. The percentage of amount realised against the amount assessed on account of theft of energy, and unauthorised use of electricity ranged from 46 *per cent* to 69 *per cent* during 2011-16 which indicated ineffective follow up of the cases detected.

Management replied (July 2016) that as random checking without identifying doubtful consumers causes unnecessary harassment to the innocent consumers, it was decided not to carry out the checking of domestic consumers. The reply is not acceptable as ESIM instructions for checking of

[11] Please refer ***Annexure 7***.

connected load of consumers have not been followed in all categories of consumers.

2.2.10.6 Non monitoring of free electricity facility

In compliance with the instructions of State Government, the Company provides free electricity of up to 200 units per month to Scheduled Caste (SC) DS consumers and non-SC DS consumers belonging to below poverty line (BPL) with connected load up to one KW. PSERC allowed ₹ 3,411.25 crore as subsidy on this account in tariff orders for the years 2011-16.

In order to check the misuse of free electricity, 100 *per cent* checking of connections by employees of the Company was prescribed. Further, surprise/ random checking by technical audit/ enforcement was also required to be carried out and if any consumer was found utilising more than one KW load, free electricity facility was to be withdrawn.

Supply Code, 2007 and 2014 provides the calculation formula (Connected Load x Number of Days x Supply Hours x Demand Factor) for assessment of electricity consumption wherein the demand factor for domestic consumers was taken as 30 *per cent*. We noticed that even by considering the demand factor at 100 *per cent*, the maximum bi-monthly consumption at one KW connected load would be 480 units only (1 KW x 60 days x 8 hours x 100 *per cent*).

Audit observed that out of 11.26 lakh electricity bills of 3.71 lakh consumers in 47 towns during October 2015 to March 2016, the bi-monthly consumption in 1.10 lakh bills (10 *per cent* bills) of 0.85 lakh consumers (23 *per cent* consumers) was higher than 480 units which was not commensurate with the sanctioned load of the consumers. Further, the prescribed checking of connected load of SC/ Non SC BPL consumers was not on record due to which extension of free electricity facility to ineligible consumers could not be ruled out.

Management replied (July 2016) that random checking without identifying doubtful consumers causes unnecessary harassment to the innocent consumers and it was decided not to carry out the checking of domestic consumers. The reply is not acceptable as even the instructions cited also state that the connected load of DS category consumers shall be checked where energy consumption is higher than the consumption commensurate with the sanctioned load of the consumer.

Internal Control System

2.2.11. Internal control is a management tool used to provide reasonable assurance that objectives are being achieved in an economic, efficient and effective manner. Audit observed that:

- The variations in energy consumption of consumers were not being monitored/ examined by maintaining ‘energy variation register’ as required[12] in ESIM due to which the chances of unauthorised use/ theft remaining undetected could not be ruled out.

- The consumer security registers required for monitoring the adequacy of security deposited by the consumers were not being properly maintained.
- Cross checking of work done by the outsourcing spot billing agencies by getting the reading of each consumer/status of meter checked, once a year by the Company was not found on record in selected sub-divisions.
- Internal Audit Manual of the Company prescribes 100 *per cent* checking of bills of Industrial, Bulk Supply and Public Lighting consumers; 50 *per cent* of NRS consumers; 8.33 *per cent* of DS consumers and 16.66 *per cent* of AP consumers. However, manpower in internal audit wing had decreased from 248 to 179 during 2011-16 with vacancy percentage increasing from 20 *per cent* to 42 *per cent* during 2011-16. Further, there was no internal audit staff in four operation divisions and only one person each in 36 operation divisions affecting the quality of audit.

Conclusion

The performance audit thus brings out the need for greater operational efficiency with T&D losses being outside the range approved by PSERC during 2011-16. The Company had not completed replacement of electro-mechanical meters required under the provisions of Electricity Act, 2003. Delay in issuing energy bills and not enforcing the time period for payment of bills led to loss of ₹ 24.32 crore[13] during 2011-16. The interest on security deposits of consumers was not fully paid resulting in short payment of ₹ 385.26 crore during 2011-15. The outstanding dues against the defaulting consumers had increased from ₹ 705.67 crore to ₹ 1,083.56 crore during 2012-16.

Recommendations

We recommend that the Company:

- Incorporate adequate IT controls and validation checks in the billing software for accurate and timely issuance of energy bills;
- Update the consumer security registers for payment of interest to all consumers;
- Complete 100 *per cent* metering of agricultural pump set consumers;
- Take steps for effective monitoring and follow up of recovery of outstanding dues; and

[12] ±10 *per cent* in case of LS/BS consumer, ± 20 *per cent* in case of MS/SP/Street Lighting and ± 25 *per cent* in case of GSC consumers.
[13] for 30.26 lakh energy bills test checked in audit.

- Take steps to increase periodical checking of connections so as to reduce theft and unauthorised use of electricity.

The matter was referred to the Government (July 2016); its reply was awaited (September 2016).