

Chapter 1
Introduction

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1.1 Introduction

Haryana Power Generation Corporation Limited (Company) a wholly owned Government Company incorporated (March 1997) to plan, commission and operate power generation plants to cater to the requirements of power in Haryana. As on 31 March 2021, the Company's total generation capacity was 2,582.4 Mega Watt (MW) comprising of three¹ thermal power plants (2,510 MW), one hydro power plant (62.4 MW) at Western Yamuna Canal (WYC), Yamuna Nagar and one Solar Power Plant (10 MW) at Panipat. The power produced by the Company is exclusively sold to Haryana State owned Power Distribution Companies² (DISCOMs). Energy charges for sale of power are decided every year by Haryana Electricity Regulatory Commission (HERC) on the basis of Annual Revenue Requirement of the Company. During the period of Performance Audit (PA), Unit-V (210 MW) of Panipat Thermal Power Station was phased out in March 2020 and a 10 MW solar power plant was commissioned during November 2016. The details of power plants and their units alongwith date of commissioning is given in Table below:

Name of plant and its capacity	Installed Capacity (in MW)	Date of commissioning
PTPS Panipat		
Unit-VI	210 MW	31 March 2001
Unit-VII	250 MW	28 September 2004
Unit-VII	250 MW	28 January 2005
DCRTPP, Yamuna Nagar		
Unit-I	300 MW	14 April 2008
Unit-II	300 MW	24 June 2008
RGTPP Khedar		
Unit-I	600 MW	24 August 2010
Unit-II	600 MW	1 March 2011

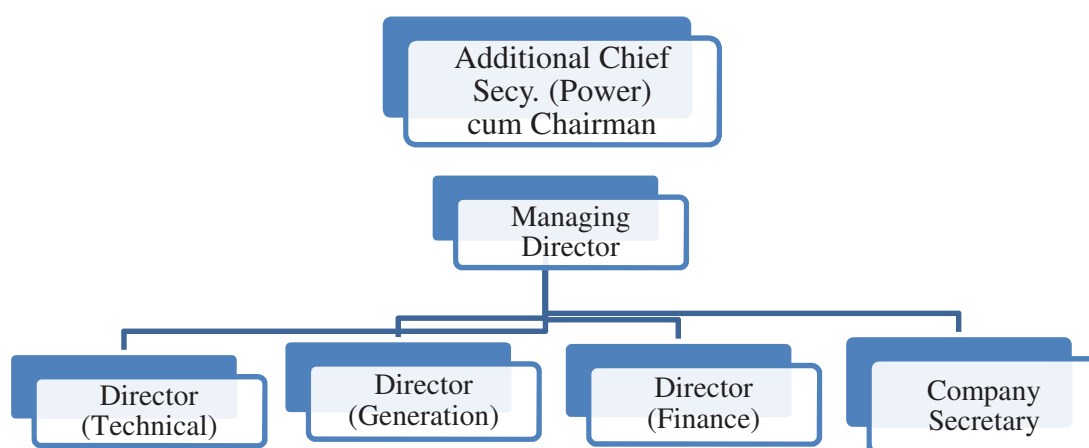
1.2 Organisational set up

The administrative control of the Company is with the Energy and Power Department of the State Government. Management of the Company is vested in Board of Directors comprising of a Chairman, a Managing Director (MD), three Whole Time Directors (WTDs) and six part time directors appointed by the State Government as on 31 March 2021. The organisation chart of the Company is given below:

¹ (i) Panipat Thermal Power Station (PTPS): 710 MW, (ii) Deen Bandhu Chhotu Ram Thermal Power Plant (DCRTPP), Yamuna Nagar: 600 MW and (iii) Rajiv Gandhi Thermal Power Plant (RGTPP), Hisar: 1200 MW.

² Uttar Hayana Bijli Vitran Nigam Limited and Dakshin Hayana Bijli Vitran Nigam Limited.

Chart 1: Organisational Chart of the Company



1.3 Generation of power by the Company for Haryana

The table below indicates the share of the Company in the total power requirements of the State:

Table 1.1: Share of Power Generation by the Company in total power requirement of Haryana

Year	Total power supply in Haryana in Million Units (MUs)	Power supplied by HPGCL Plants (in MUs)	HPGCL's share in total power supply (in per cent)
2016-17	51,264	8,885	17.33
2017-18	54,735	10,084	18.42
2018-19	56,994	9,983	17.52
2019-20	55,160	6,766	12.27
2020-21	53,762	5,268	9.80

Source: Information supplied by the Company and Haryana Power Purchase Centre (HPPC)

The supplies from Company's power plants decreased from 10,084 Million Units to 5,268 Million Units in absolute terms and in percentage terms from 18.42 per cent to 9.80 per cent of total power supplied in Haryana between 2017-18 and 2020-21.

1.4 Financial Position and working results

The summarised Financial Position and working results of the Company for the last five years from 2016-17 to 2020-21 are as under:

Table 1.2: Financial position and working results of the Company for the last five years up to 2020-21

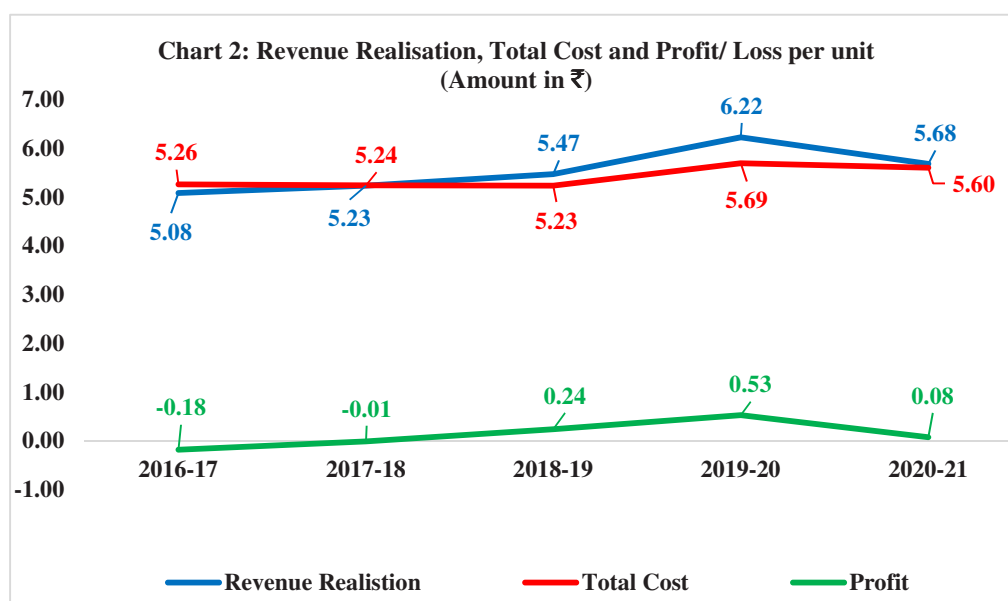
(₹ in crore)

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21
Equity Share Capital	2916.05	3004.86	3039.61	3069.34	3153.67
Net Property, Plant and equipment	5473.96	5077.66	4741.29	4363.14	4092.80
Capital work-in-progress	32.00	25.76	17.19	19.58	20.03
Generation Revenue	4,513.39	5,277.48	5,462.60	4,206.60	2,992.03

Particulars	2016-17	2017-18	2018-19	2019-20	2020-21
Fixed cost					
Employee cost	747.19	746.14	993.38	641.36	637.86
Administrative & General cost	20.58	25.85	21.31	25.08	45.27
Depreciation	430.53	412.29	385.96	388.31	336.58
Interest and finance charges	408.47	306.72	252.89	183.41	174.86
Repair and maintenance	123.16	138.68	107.54	147.62	91.75
Total Fixed cost	1729.93	1629.68	1761.08	1385.78	1286.32
Variable cost					
Fuel cost					
(a) Coal	2,897.51	3,573.09	3,401.75	2,417.42	1,623.12
(b) Oil	16.10	31.15	33.13	22.62	15.27
(c) Other fuel related cost	29.81	52.00	29.18	22.18	27.76
Total variable cost	2,943.42	3,656.24	3,464.06	2,462.22	1,666.15
Total cost	4,550.19	5,147.24	5,117.60	3,700.38	2,860.72
Revenue Realisation (per unit)	5.08	5.23	5.47	6.22	5.68
Fixed cost (per unit)	1.95	1.62	1.76	2.05	2.44
Variable cost (per unit)	3.31	3.63	3.47	3.64	3.16
Total cost per unit	5.26	5.24	5.23	5.69	5.60
Profit/ Loss per unit	-0.18	-0.01	0.24	0.53	0.08

Source: Annual Accounts of the Company.

It would be seen from the above that the fixed cost per unit for the last five years has increased from ₹ 1.95 per unit to ₹ 2.44 per unit due to reduction in power generation from 8,885 MUs to 5,268 MUs during 2016-21. During 2016-17 and 2017-18, there was loss of ₹ 0.18 per unit and ₹ 0.01 per unit respectively on account of higher interest and finance charges. There was reduction in profit during 2020-21 due to higher finance cost and non-recovery of fixed cost due to damage of High Intermediate Pressure (HIP) rotor of Unit-II of Rajiv Gandhi Thermal Power Plant (RGTPP) Hisar (as discussed subsequently in Para 2.6.2 of Chapter-2). The graphical presentation of per unit revenue realisation, total cost of generation and profit/loss is as under:



1.5 Audit objectives

The performance audit was carried out to ascertain whether:

- (i) Generating units were operated and maintained efficiently to optimize output;
- (ii) Procurement, transportation and consumption of fuel and other inventory items were economic, efficient and effective;
- (iii) Effective and efficient financial management at plant and Company level existed;
- (iv) Environmental norms notified by Ministry of Environment Forests and Climate Change, Central Pollution Control Board (CPCB) and Haryana State Pollution Control Board (HSPCB) for power plants were complied; and
- (v) Adequate steps were taken to develop generation capacity through clean energy sources.

1.6 Scope of Audit and Sampling

The Functioning of Company's two Plants (Deen Bandhu Chhotu Ram Thermal Power Plant, Yamuna Nagar and Rajiv Gandhi Thermal Power Plant Hisar) was last reviewed in the Report of the Comptroller and Auditor General of India (Public Sector Undertakings), Government of Haryana, for the year 2014-15. The recommendations of the Committee on Public Undertakings (COPU) thereon are contained in its 65th Report presented to State Legislature on 27 February 2019 and all three recommendations made by the COPU are still (December 2021) pending being the recoveries outstanding on account of Arbitration cases.

The present Performance Audit was conducted during May 2021 to November 2021 and assessed performance of the Company during the period 2016-17 to 2020-21. Audit examination involved scrutiny of records relating to 307 work orders/purchase orders valuing ₹ 874.11 crore selected through stratified sampling technique by using Interactive Data Extraction and Analysis (IDEA) i.e. an Information Technology tool. Detail of total population and sample selected is tabulated below.

Table 1.3: Statement showing total number of Purchase /work orders issued during 2016-21 and sample selected

(₹ in crore)

More than or equal to	Less than or equal to	Total		Selected Sample	
		Number	Value	Number	Value
₹0.20 crore and below		8,220	196.80	84	2.49
₹0.20 crore	₹0.50 crore	573	180.58	58	18.82
₹0.50 crore	₹1.00 crore	117	77.62	59	38.20
₹1.00 crore	₹5.00 crore	89	210.03	67	164.64
	₹5.00 crore and above	39	649.96	39	649.96
Total		9,038	1,314.99	307	874.11

Source: Information supplied by the Company

For examination of the expenditure on consumption of coal, one quarter of each year 2016-17 to 2020-21 was selected through stratified random sampling by using IDEA in all the three thermal power plants of the Company. The value of total coal consumed during April 2016 to March 2021 was ₹ 13,952.49 crore of which consumption amounting to ₹ 3,333.67 crore (i.e., 23.89 per cent) was selected for detailed scrutiny.

1.7 Audit Methodology

The performance audit was carried out through examination of records of different wings at Head Office of the Company at Panchkula and its power plants i.e., Panipat Thermal Power Station (PTPS), Panipat, Deen Bandhu Chhotu Ram Thermal Power Plant (DCRTPP), Yamuna Nagar and Rajiv Gandhi Thermal Power Plant (RGTPP), Hisar. The audit objectives, scope, sample and timeline were discussed with the Management during entry conference held on 14 August 2020. Preliminary observations in the form of Audit memos were issued at unit level and consolidated draft report after incorporating management replies, wherever received, was issued to the Management and State Government through this Performance Audit report.

1.8 Audit criteria

The audit criteria adopted for this performance audit included:

- (i) Electricity Act, 2003;
- (ii) Guidelines/Norms issued by Central Electricity Authority (CEA)/Haryana State Electricity Regulatory Commission (HERC);
- (iii) Norms/schedule for preventive and capital maintenance of boiler and turbine;
- (iv) Agenda and minutes of Board of Directors and its sub-committees;
- (v) Procurement policy & manuals and delegation of power in the Company;
- (vi) Agreements with coal companies, Railways and other contractors;
- (vii) Environmental norms notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC), Central Pollution Control Board (CPCB) and Haryana State Pollution Control Board (HSPCB); and
- (viii) Coal distribution Policy as amended from time to time.

1.9 Structure of Report

Chapter 1 of the Report gives the information of the Company in respect of its total power generation and financial position and working results of the Company for the last five years up to 31 March 2021, Audit Objectives, Scope

of Audit, Audit Criteria, Audit Methodology, Sample Selection etc. The Audit findings have been broadly categorised into six Chapters aligning with the audit objectives.

Chapter 2 on Operation and maintenance of generating plants covers performance of the plants evaluated on various operational parameters viz. Generation, Plant Load Factor (PLF), Auxiliary Consumption and Station Heat Rate (SHR) besides backing down of plants due to higher variable cost, planning in execution of capital overhauling works and resultant prolonged shutdown of power plants. Besides it covers delay in overhauling work of machines at Western Yamuna Canal Hydel Project due to acceptance of non-interchangeable blades resulting into loss of green energy.

Chapter 3 on Fuel and Inventory Management covers the aspects of excess consumption of coal and secondary fuel, unsettled quantity and quality claims with coal supply companies, non-recovery of compensation for short supplies by coal companies and non-receipt of quality claims of rakes which were not subject to checks on samples, etc. Besides the points relating to inventory management and deficiencies in procurement process have been included.

Chapter 4 on Financial Management covers the aspects of under recovery of energy charges through fuel price adjustment, excess recovery of fixed cost and interest on working capital and Improper financial management due to use of fly ash fund in contravention to those prescribed by the Ministry of Environment Forest and Climate Change guidelines.

Chapter 5 on Compliance of Environmental norms and Generation of clean energy covers the aspects of violations of Emission limits, non-installation of equipment to control Sulfur Dioxides (SO₂), Non-utilisation of dry fly ash and dry fly ash fund, Failure to add Capacity in green/ solar energy and Failure in safeguarding financial interest of the Company while finalising the terms and conditions of Power Purchase Agreement of Solar Power Plant.

Chapter 6 on Power Procurement on the basis of Merit Order Dispatch by Haryana Power Purchase Centre for Haryana State covers the concept of Preparation of Merit Order Dispatch (MOD) on the basis of variable cost including Point of Connection (POC) losses and scheduling of power, Analysis of Demand and Purchase of Power, Comparative analysis of Scheduling of power by preparing MOD and on the basis of Landed cost (fixed cost, transmission cost and POC losses), Comparative analysis of Scheduling of power by preparing MOD and by considering transmission cost as a part of variable cost.

The overall conclusion of the Report based on the major audit findings on the five audit objectives is brought out in the Chapter 7. Audit recommendations on the key audit findings have also been included for each audit objective.

An exit conference for the performance audit to discuss the audit findings was held (May 2022) which was attended by Additional Chief Secretary to Government of Haryana, Department of Power; Managing Director of HPGCL and other senior functionaries. The replies/views of Government and HPGCL to the audit issues have been incorporated in the performance audit appropriately.

