



सत्यमेव जयते

**Audit Report of the  
Comptroller and Auditor General of India  
(Performance & Compliance Audit)  
for the year ended 31 March 2020**



लोकहितार्थ सत्यनिष्ठा  
Dedicated to Truth in Public Interest



**Government of West Bengal  
Report No. 4 of the year 2021**

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Comptroller and Auditor General of India  
(Performance & Compliance Audit)**

**for the year ended 31 March 2020**

**Government of West Bengal**

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## TABLE OF CONTENT

	Reference to	
	Paragraph	Page
Preface		(v)
Overview		(vii)-(xi)
<b>CHAPTER I</b>		
<b>OVERVIEW OF AUDIT</b>		
Introduction	1.1	1
About this Report	1.2	1
Authority for Audit	1.3	1-2
Planning and Conduct of Audit	1.4	2
Response to Audit	1.5	2-3
<b>CHAPTER II</b>		
<b>FUNCTIONING OF STATE PUBLIC SECTOR ENTERPRISES (SPSEs)</b>		
Summary of financial performance of SPSEs	2.1	5-6
Investment in Government Companies and Statutory Corporations	2.2	6-13
Return from Government Companies and Statutory Corporations	2.3	13-18
Operating efficiency of Government Companies and Statutory Corporations	2.4	18-29
Winding up of Inactive SPSEs	2.5	29
Audit of Public Sector Enterprises	2.6	29-30
Appointment of Statutory Auditors of Public Sector Enterprises	2.7	30
Reconciliation with the Finance Accounts of the Government of West Bengal	2.8	30-31
Submission of accounts by SPSEs	2.9	31-33
Follow up action on Audit Reports	2.10	34
<b>CHAPTER III</b>		
<b>PERFORMANCE AUDIT RELATING TO POWER SECTOR ENTERPRISES</b>		
<b><i>West Bengal Power Development Corporation Limited and The Durgapur Projects Limited</i></b>		
Fuel Management in Thermal Power Stations of West Bengal	3	35-64
<b>CHAPTER IV</b>		
<b>COMPLIANCE AUDIT</b>		
<b><i>Environment Department</i></b>		
Detailed Compliance Audit of All Applicable Environmental Laws in South 24 Parganas District	4.1	65-114
<b><i>Public Works Department</i></b>		
Avoidable expenditure due to not using nearest available quality materials	4.2	115-116
Avoidable expenditure due to non-consideration of relevant Schedule of Rates	4.3	116-117
Avoidable Expenditure	4.4	117-122
Excess Expenditure	4.5	122-123

	Reference to	
	Paragraph	Page
<b>Micro, Small and Medium Enterprises &amp; Textiles Department</b>		
Inefficient cash management of surplus fund	4.6	124
Extra expenditure on VAT	4.7	125
<b>Land and Land Reforms Refugee Relief and Rehabilitation Department</b>		
Non-realisation of lease rent and interest	4.8	126
Non-settlement of long term lease	4.9	127-128
Non-renewal of long term lease	4.10	128-129

APPENDICES		
No.	Particulars	Pages
1.	Statement of list of Departments as of 31 March 2020	131
2.	Statement of list of Autonomous Bodies as of 31 March 2020	132-133
3.	Status of Tabling of Audit Reports	134
4.	Statement of Pending Replies to Audit paragraphs/ reviews	135
5.	Department-wise Statement of outstanding Inspection Reports and Paragraphs	136
6.	Statement showing particulars of up to date capital, budgetary outgo, loans given out of budget and loans outstanding as on 31 March 2020 in respect of Government Companies and Statutory Corporation	137-150
7.	Summarised financial position and working results of Government Companies and Statutory Corporations as per their latest finalised statements/ accounts for 2019-20 (30 September 2020)	151-168
8.	Statement showing working results of WBPDC and DPL during 2015-16 to 2019-20	169-171
9.	Statement showing coal procurement of WBPDC and DPL during the year 2015-16 to 2019-20	172
10.	Statement showing coal purchased against FSA quantity and excess/ short procurement during 2015-16 to 2019-20	173
10 A.	Statement showing loss of revenue due to amendment of order from rake to rake to weighted average basis (MSTC)	174
10 B.	Statement showing loss of revenue due to amendment of order from rake to rake to weighted average basis (WBMDTCL)	175
11.	Statement showing auxiliary consumption of WBPDC and DPL during 2015-16 to 2019-20	176-177
12.	Consolidated statement showing excess consumption of Oil (2015-16 to 2019-20 for SgTPs and KTPS) (2015-16 to 2018-19 for BTPS, STPS and BkTPS)	178
13.	Statement showing Transit Loss of coal during 2015-16 to 2019-20	179
14.	Frequencies and Parameters for analysis of surface water	180-181
15.	Water Quality of river Hooghly (Ganga) at Diamond Harbour (Surface Water)	182-183

<b>APPENDICES</b>		
<b>No.</b>	<b>Particulars</b>	<b>Pages</b>
<b>16.</b>	A. Rate analysis for shoulder construction using brick bats or stone chips	184
	B. Statement of extra expenditure along with liability due to not using local materials	185
<b>17.</b>	Statement showing excess expenditure due to use of bituminous macadam	186
<b>18.</b>	A. Statement showing extra expenditure of Work -1 and Work -2	187
	B. Statement showing extra expenditure of Work -3 and Work -4	
	C. Statement showing committed liability for extra expenditure	
<b>19.</b>	A. Statement showing extra expenditure of work pertains to Howrah Highway Division	188
	B. statement showing excess expenditure of Work-1 & Work-2	188
	C. Statement showing excess expenditure and committed liability of Work-3	189
<b>20.</b>	Statement showing extra expenditure for use of 30 mm BC instead of 25 mm SDBC	190
<b>21.</b>	Statement showing excess expenditure due to use of bituminous macadam	191
<b>22.</b>	A. Statement showing calculation of VAT on different types of contracts as per Rule 30 of West Bengal Value Added Tax Rules 2005	192
	B. Statement showing excess payment	193-197
<b>GLOSSARY OF ABBREVIATIONS</b>		
	Glossary of Abbreviations	199-204



## PREFACE

This Report for the year ended 31 March 2020 has been prepared for submission to the Governor of West Bengal under Article 151 of the Constitution of India.

This Report contains significant results of audit of 23 Departments, 43 Autonomous Bodies and 63 Government Companies and Statutory Corporations in West Bengal.

The instances mentioned in this Report are those, which came to notice in the course of test audit for the period 2019-20 as well as those which came to notice in earlier years, but could not be reported in the previous Audit Reports. Matters relating to the period subsequent to 2019-20 have also been included, wherever pertinent.

The audit has been conducted in accordance with the Auditing Standards issued by the Comptroller and Auditor General of India.





# Overview



## OVERVIEW

The Report contains four chapters:

**Chapter – I** deals with overview of Audit.

**Chapter – II** deals with functioning of Power and Non-Power sector SPSEs under the Govt. of West Bengal.

**Chapter – III** deals with Performance Audit.

**Chapter – IV** deals with Compliance Audit Observations.

A synopsis of the important findings contained in the Report is presented below:

### Chapter – I

#### Overview of Audit

##### Introduction

This Report covers matters arising out of audit of State Government Departments, Autonomous Bodies and State Public Sector Enterprises (SPSEs) under the audit jurisdiction of the Office of the Principal Accountant General (Audit-II) West Bengal. Out of 58 Departments, the Report covers functioning of 23 Departments, 43 Autonomous Bodies and 63 State PSEs.

*(Paragraph 1.1)*

### Chapter – II

#### Functioning of State Public Sector Enterprises (SPSEs)

As on 31 March 2020, there were 85 SPSEs (including 19 inactive SPSEs) in West Bengal. The working SPSEs registered an annual turnover of ₹ 55,642.34 crore. This turnover was equal to 4.23 *per cent* of Gross State Domestic Product (GSDP) for the year 2019-20 (₹ 13,14,529 crore). The SPSEs earned overall profit of ₹ 1,177.82 crore as per their latest financial accounts. As on 31 March 2020, the SPSEs had employed around 46,062 employees.

*(Paragraph 2.1)*

As per latest finalised accounts till September 2020, four Power Sector SPSEs earned total profit of ₹ 1,054.49 crore, while the remaining two SPSEs incurred losses of ₹ 166.60 crore. The top profit earning companies were West Bengal State Electricity Distribution Company Limited (₹ 567.37 crore) West Bengal State Electricity Transmission Company Limited (₹ 386.38 crore) and West Bengal Power Development Corporation Limited (₹ 99.61 crore), with maximum loss incurred by The Durgapur Projects Limited (₹ 166.58 crore).

As per latest finalised accounts of 59 working SPSEs till September 2020, 29 SPSEs earned aggregate profit of ₹ 1,332.69 crore and 30 SPSEs incurred aggregate losses of ₹ 778.10 crore. The remaining one<sup>1</sup> SPSE had not submitted its first accounts till September 2020. Besides West Bengal Industrial Development Corporation Limited (₹ 885.27 crore), the other top

<sup>1</sup> New Town Kolkata Green Smart City Corporation Limited has not submitted initial accounts till 30 September 2020.

profit earning company was West Bengal State Beverages Corporation Limited (₹ 80.30 crore). The major contributors to the losses, other than SBSTC, were West Bengal Transport Corporation Limited (₹ 188.92 crore) and West Bengal Surface Transport Corporation Limited (₹ 89.98 crore).

(Paragraph 2.3)

## Chapter – III

### Performance Audit

#### Fuel Management in Thermal Power stations of West Bengal

##### West Bengal Power Development Corporation Limited and Durgapur Projects Limited

###### Introduction

The West Bengal Power Development Corporation Limited (WBPDC) and The Durgapur Projects Limited (DPL), both Companies wholly owned by the Government of West Bengal (GoWB). WBPDC, a generating company as defined under section 2 (28) of the Electricity Act 2003, was incorporated in July 1985, while DPL was set-up in September 1961. Presently, WBPDC operates five Thermal Power Stations located at Kolaghat, Bakreswar, Bandel, Santaldih and Sagardighi with a total installed capacity of 4,745 MW<sup>2</sup>. Similarly, DPL operates one TPS at Durgapur with installed capacity of 550 MW.

(Paragraph 3.1)

###### Procurement of Coal/ Oil

During the period from 2015-16 to 2019-20, WBPDC paid incentive, amounting to ₹ 237.72 crore for excess procurement of coal ranging from 4.42 per cent to 45.67 per cent of FSA quantity. Similarly, during the period from 2017-18 to 2019-20, DPL paid incentive amounting to ₹ 3.86 crore for excess procurement of coal. Further, DPL paid compensation of ₹ 13.60 crore (2016-17 and 2017-18) for short lifting of coal.

(Paragraph 3.7.1.2)

Due to delay in placement of order by DPL for reasons not on record, the validity of the offer price had lapsed and HPCL increased the offer price. As a result, DPL incurred an extra expenditure of ₹ 2.02 crore for procurement of oil. Due to delay in dispatching order by oil companies, the price of LDO (at basic price) as per Letter of Order amounting to ₹ 717.62 crore was billed at ₹ 725.33 crore. As a result, WBPDC had to pay ₹ 7.71 crore in excess of ordered price due to delays in delivery by the oil companies.

(Paragraph 3.7.2)

###### Ungraded Coal

WBPDC had reviewed the grades of coal received and found it to be ungraded. Yet, it had made payment at the price of the declared grade. Since this coal was below the grade as mentioned in FSA, the payment should have been made at the rate of ₹ 1 per MT in line with the clause of FSA, i.e., ₹ 0.06 crore.

<sup>2</sup> KTPS:- 1,260 MW (6x210 MW); BkTPS:- 1,050 MW (5x210 MW); STPS:- 500 MW (2x250 MW); BTPS:- 335 MW {(2x60 MW)+(1x215 MW)}; SgTPS:- 1600 MW {(2x300 MW)+(2x500 MW)}

However, WBPDCCL made payments as per declared grade cost resulting in excess payment of ₹ 48.79 crore.

*(Paragraph 3.8.3)*

### **Unweighted Coal**

During 2015-2019, WBPDCCL failed to submit the associated electronic printouts to the seller within the stipulated norm of FSA, *i.e.*, 30 days from the date of Railway Receipts (RRs) as per the provisions of FSA for 4418.84 MT of unweighted coal in 13 cases. Consequently, WBPDCCL suffered a loss of ₹ 1.32 crore due to delay in registering claim of unweighted coal rakes.

During 2016-20 DPL received 15 rakes of coal from BCCL which was not weighted at loading end. DPL did not claim short receipt of coal for 1227.24 MT coal as per the above mentioned clause. As a result, DPL incurred a loss of ₹ 32.66 lakh.

*(Paragraph 3.9.3)*

### **Missing/ unconnected wagons**

WBPDCCL had not received 46.32 lakh MT coal valuing ₹ 1,722.37 crore due to missing wagons and 44.12 lakh MT coal valuing ₹ 1,620.20 crore was received through diverted/unconnected wagons during 2015-20. Thus, WBPDCCL did not realise ₹ 102.17 crore from Railways due to non-reconciliation of missing/diverted wagons in time.

Similarly, during 2015-20 DPL received 3.40 lakh MT of coal valuing ₹ 102.51 crore from diverted wagons while 1.44 lakh MT of coal valuing ₹ 35.92 crore was missing. The reconciliation of this had not yet been done and ₹ 66.59 crore was payable by DPL to Railways (February 2020).

*(Paragraph 3.9.9)*

## **Chapter – IV**

### **Compliance Audit Observations**

#### **Detailed Compliance Audit of All Applicable Environmental Laws in South 24 Parganas District**

The Department of Environment (DoE), GoWB, has the responsibility to ensure compliance of the various environmental laws in the State, through its various parastatal agencies like the West Bengal Pollution Control Board (WBPCB), West Bengal State Coastal Zone Management Authority (WBSCZMA) etc.

Audit of compliance of all applicable environmental laws in the selected district of South 24 Parganas was intended to check whether the DoE and its parastatals were effectively monitoring the application of laws and provisions on environment by the concerned stakeholders, including Government Departments and agencies, generating or handling substances that had damaging effects on the air, water, soil and the bio-diversity of the district.

It was observed that there were significant shortcomings in the compliance by stakeholders including general public, public authorities, local bodies, etc. The DoE and its parastatal bodies were slow to investigate or book violations of legal provisions and laws and when they did do so, it was rarely followed up with punitive action, even mild ones like imposition of fines.

Segregation of waste was not being enforced effectively, whether it was medical waste or household waste. In fact, several Health Care Facilities were found to have been operating without BMW authorisation. Basic facilities like STPs and solid waste treatment facilities were found to be lacking in this critical district, which also includes the Kolkata Municipal Corporation (KMC) area and several important industrial and *peri-urban* areas. As a result, untreated waste, waste water and sewage continued to pollute land and water bodies in the district, including the river Hooghly.

There were inadequate number of monitoring stations for measuring quality of air and water, given the large population of the district, rectificatory action to abate air or water pollution seems to have not been enforced, almost as if the monitoring stations were an end in itself. No action was seen to have been taken against industries violating Environmental Clearance conditions.

The district is home to the Sundarbans as well as the Ramsar site EKW. There were illegal constructions in EKW and CRZ areas in Sundarbans. However, such violations of rules even in these ecologically fragile areas were rarely found to have been penalised; on the couple of rare occasions they were done, it was in compliance of Kolkata High Court orders.

There appears to be a severe lack of coordination between the DoE and its parastatals and the stakeholders especially other Government Departments, which is evident from the fact that violations were not properly followed up with the concerned Departments. It is essential to ensure that requisite environmental issues are adequately addressed as a routine in the process of activities of the Departments. Stricter enforcement of compliance at all levels of Government, including local bodies, and effective monitoring by DoE and its parastatals is critical if treatment of environmental hazards and pollutants are to be made a priority for the sake of overall well-being of the environment and the bio-diversity it sustains, including the human population.

***(Paragraph 4.1)***

The Superintendent Engineer, Northern Circle, Public Works Department did not use nearest available quality stone materials in strengthening of road works. This led to an avoidable expenditure of ₹ 113.36 lakh along with committed liability of ₹ 46.81 lakh on carriage of stone materials.

***(Paragraph 4.2)***

Public Works Department in construction of concrete pavement considered the Schedule of Rates (SoR) for Building Works instead of SoR for Road & Bridge Works, which resulted in an avoidable expenditure of ₹ 0.89 crore.

***(Paragraph 4.3)***

Avoidable expenditure of ₹ 18.10 crore due to execution of unnecessary and excess thickness of BM and costlier bituminous wearing course.

***(Paragraph 4.4)***

Department, in construction of a concrete road, laid an extra sub-base layer of Water Mixed Macadam in violation of the Indian Roads Congress Guidelines which resulted in excess expenditure of ₹ 1.45 crore.

***(Paragraph 4.5)***

West Bengal Small Industries Development Corporation Limited (WBSIDCL) did not avail the auto swift facility of the current account and thereby lost the opportunity to earn interest of ₹ 3.50 crore.

**(Paragraph 4.6)**

West Bengal Khadi and Village Industries Board under MSME&T Department extended undue benefit of ₹ 85.50 lakh as VAT to the contractors in addition to payment of ₹ 1.53 crore towards GST.

**(Paragraph 4.7)**

Non-realisation of annual lease rent and interest of ₹ 3.96 crore in case of 33 lessees in possession of 2156.41 acres of land.

**(Paragraph 4.8)**

The L&LR RR&R Department failed to settle 67 cases of long-term leases involving 141.91 acres of land with the unauthorised occupants within the prescribed time limit; revenue of ₹ 51.75 crore, *salami* ₹ 50.51 crore and rent ₹ 1.24 crore was realisable in these cases.

**(Paragraph 4.9)**

In nine cases, lease rent of ₹ 64.15 lakh was not realised due to inaction of the Department to renew expired leases.

**(Paragraph 4.10)**





# Chapter I

## Overview of Audit



## Chapter-I

### Overview of Audit

#### 1.1 Introduction

This part of the Report covers matters arising out of audit of State Government Departments, State Public Sector Enterprises (SPSEs) and Autonomous Bodies (ABs) under the audit jurisdiction of the Office of the Principal Accountant General (Audit-II) West Bengal.

For the purpose of administration in West Bengal, as of 31 March 2020, there are 58 Administrative Departments headed by Additional Chief Secretaries/ Principal Secretaries/ Secretaries, who are assisted by Directors/ Commissioners/ Chief Engineers and other subordinate officers. This report covers the functioning of 23 Departments (*Appendix-1*) including two<sup>1</sup> Departments carved out in November 2019.

Of the total expenditure of ₹ 29,842.38 crore incurred by these Departments during 2019-20, a major portion (80.77 *per cent*) was incurred by Urban Development and Municipal Affairs (28.09 *per cent*), Public Works (23.74 *per cent*), Power (10.56 *per cent*), Disaster Management and Civil Defence (10.32 *per cent*) and Public Health Engineering Department (8.06 *per cent*).

This chapter provides the audited entity's profile, planning and extent of audit and response to Audit by various Departments.

#### 1.2 About this Report

Findings arising from Performance and Compliance audit of 23 Government Departments, 43 ABs (*Appendix-2*) and 63 SPSEs under the audit jurisdiction of the Office of the Principal Accountant General (Audit-II) West Bengal are presented in this Report of the Comptroller and Auditor General of India (CAG). Compliance Audit covers examination of transactions relating to expenditure of the audited entities to ascertain whether the provisions of applicable laws, rules, regulations and various orders and instructions issued by the competent authorities are being complied with. Performance Audit examines whether the objectives of the programme/activity/department are achieved economically, efficiently and effectively.

#### 1.3 Authority for Audit

The mandate for audit by the CAG is derived from Articles 149 and 151 of the Constitution of India and the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) (DPC) Act, 1971. The CAG conducts audit of expenditure of the Departments of Government of West Bengal under

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<sup>1</sup> *The Department of Non-Conventional and Renewable Energy Sources from the Department of Power and non-conventional Energy Sources as well as the Department of Public Enterprises and Industrial Reconstruction from the Department of Industry, Commerce & Enterprises, vide notification No. 858-Home (Cons)/R2R(Cons)-08/2016 dated 15 November 2019 of the Department of Home & Hill Affairs, Co-ord. Br., Govt. of West Bengal.*

Section 13<sup>2</sup> of the CAG's (DPC) Act. In addition, the CAG is the sole Auditor in respect of Autonomous Bodies which are audited under Sections 19 (2)<sup>3</sup>, 19(3)<sup>4</sup> and 20(1)<sup>5</sup> of the CAG's (DPC) Act. Moreover, CAG also conducts audit of other Autonomous Bodies, under Section 14<sup>6</sup> of CAG's (DPC) Act, which are substantially funded by the Government. Further, the CAG conducts audit of Government Companies and Statutory Corporations in West Bengal under sections 19 (1)<sup>7</sup>, 19 (2) of the CAG's (DPC) Act. Principles and methodologies for various audits are prescribed in the Auditing Standards and the Regulations on Audit and Accounts issued by the CAG.

#### 1.4 Planning and Conduct of Audit

The audit process starts with assessment of risks faced by various Departments of the Government based on expenditure incurred, criticality/ complexity of the activities, level of delegated financial powers, assessment of overall internal controls and concerns of the stakeholders. Previous audit findings are also considered in this exercise. Based on this risk assessment, the frequency and extent of audit are decided.

An Annual Audit Plan is formulated to conduct audit on the basis of such risk assessment. After completion of audit of each unit, Inspection Reports (IRs) containing audit findings are issued to the Heads of the entities. The entities are requested to furnish replies to the audit findings within one month of receipt of the IRs. Wherever replies are received, audit findings are either settled or further action for compliance is advised. The important audit observations included in the IRs are processed for inclusion in the Audit Report.

#### 1.5 Response to Audit

Ten compliance audit observations including one Detailed Compliance Audit and one Performance Audit proposed for inclusion in this report were forwarded (between July 2021 and August 2021) to Additional Chief Secretary/ Principal Secretaries/ Secretaries of the Departments concerned with the request to send their responses. Departmental replies in respect of one performance audit and two compliance audit observations have been received till date (October 2021). The responses of concerned Departments as well as replies to initial audit memos, wherever received, have been suitably incorporated in the Report.

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<sup>2</sup> Audit of (i) all transactions from the Consolidated Fund of the State, (ii) all transactions relating to the Contingency Fund and Public Accounts and (iii) all trading, manufacturing, profit and loss accounts, balance sheets and other subsidiary accounts.

<sup>3</sup> Audit of accounts of Corporation (not being companies) established by or under law made by Parliament in accordance with the provisions of the respective legislations.

<sup>4</sup> Audit of the accounts of corporations (not being companies) established by or under law made by the State Legislature at the request of the Governor.

<sup>5</sup> Audit of accounts of anybody or authority on the request of the Governor; on such terms and conditions as may be agreed upon between the CAG and the Government.

<sup>6</sup> Audit of (i) all receipts and expenditure of a body/authority substantially financed by grants or loans from the Consolidated Fund of the State and (ii) all receipts and expenditure of any body or authority where the grants or loans to such body or authority from the Consolidated fund of the State in a financial year is not less than ₹ one crore.

<sup>7</sup> Audit of the accounts of Government Companies in accordance with the provisions of the Companies Act, 2013 (18 of 2013), previously the Companies Act, 1956 (1 of 1956).

Audit Reports for the years 2014-15 to 2018-19 were sent to the State Government between February 2016 and May 2021 for tabling in the State Legislature. The Reports were laid in the State Legislative Assembly as detailed in **Appendix-3**.

Though the Audit Reports for the year 2006-07 to 2016-17 were presented to the State Legislature between March 2008 and July 2019, replies on 357 paragraphs are yet to be received from 15 Departments under the audit jurisdiction of this office. Status of the pending replies as on 31 July 2021 is given in **Appendix-4**.

As stipulated in the Rules of Procedure of the Committee on Public Accounts (PAC), the administrative Departments are required to take suitable action on the recommendations made in the Reports of PAC presented to the State Legislature and submit comments on the action taken or proposed to be taken on those recommendations within six months. Action Taken Notes on 21 paras contained in 14 Reports of the PAC, presented to the Legislature from July 1999 to June 2019 had not been submitted by four Departments to the Assembly Secretariat as of July 2021.

Inspection Reports issued till 31 July 2021 to 19 Departments were reviewed and it was found that 5,451 paragraphs relating to 1,180 IRs remained outstanding at the end of July 2021 (**Appendix-5**).



# **Chapter II**

## **Functioning of State Public Sector Enterprises (SPSEs)**





## Chapter-II

### Functioning of State Public Sector Enterprises (SPSEs)

#### 2.1 Summary of financial performance of SPSEs – Government of West Bengal

##### 2.1.1 Introduction

This Chapter presents the summary of financial performance of Government Companies, Statutory Corporations and Government controlled other Companies of the Government of West Bengal (GoWB) and within the audit jurisdiction of the Comptroller and Auditor General of India (CAG). These SPSEs were established to carry out the activities of commercial nature and to contribute in economic development of the State.

In the Chapter, the term State Public Sector Enterprises (SPSEs) encompasses those Government companies in which the direct holding of GoWB is 51 *per cent* or more and subsidiaries of such Government companies. The Statutory Corporations set up under Statutes enacted by the Parliament and the West Bengal Legislative Assembly as well as other companies owned or controlled, directly or indirectly by GoWB have also been categorised as SPSEs.

According to Section 2 (45) of the Companies Act, 2013, a Government Company is any company in which not less than 51 *per cent* of the paid-up share capital is held by the Central Government, or by any State Government/ Governments, or partly by the Central Government and partly by one or more State Governments. This includes a company which is a subsidiary company of such a Government Company. Further, a Government-controlled company is any other company<sup>8</sup> owned or controlled, directly or indirectly, by the Central Government, or by any State Government or Governments, or partly by the Central Government and partly by one or more State Governments.

##### 2.1.2 Mandate

A Government Company or any other Company owned or controlled, directly or indirectly, by the Central Government, or by any State Government or Governments or partly by Central Government and partly by one or more State Governments is subject to audit by the CAG.

##### 2.1.3 Number of SPSEs

As on 31 March 2020, there were 85 SPSEs (including 19 inactive SPSEs) in West Bengal. During the year 2019-20, two<sup>9</sup> SPSEs were added to the audit jurisdiction while one SPSE namely, Gluconate Health Limited was amalgamated with West Bengal Medical Services Corporation Limited under the administrative control of Department of Health & Family Welfare. The financial performance of the SPSEs has been drawn up on the basis of latest finalised accounts as on 30 September 2020 is covered in this section. The working SPSEs registered an

<sup>8</sup> *Companies (Removal of Difficulties) Seventh Order 2014 issued by Ministry of Corporate Affairs, Government of India vide Gazette Notification dated 04 September 2014.*

<sup>9</sup> *Incorporation of Banglar Dairy Limited in November 2015 and Newtown Green Smart City Corporation Limited in October 2018.*

annual turnover of ₹ 55,642.34 crore *i.e.* an increase of 5.08 *per cent* in 2019-20 over 2018-19<sup>10</sup>. This turnover was equal to 4.23 *per cent* of Gross State Domestic Product (GSDP) for the year 2019-20 (₹ 13,14,529 crore). The SPSEs earned overall profit of ₹ 1,177.82 crore as per their latest financial accounts. As on 31 March 2020, the SPSEs had employed around 46,062 employees. There were 19 SPSEs having an investment of ₹ 1,375.00 crore towards capital (₹ 164.32 crore) and long-term loans (₹ 1,210.68 crore), which were inactive for one to 18 years. This is a critical area as the investments in inactive SPSEs do not contribute to the economic growth of the State. The State Government may consider winding them up.

#### **2.1.4 Framework of Power Sector SPSEs**

Power is a core component to operate any industrial activities to boost the economy of any State. The Electricity Act 2003 repealed the erstwhile Electricity Act 1910, the Electricity (Supply) Act 1948 and the Electricity Regulatory Commissions Act 1998, with effect from 10 June 2003. To meet the requirements of the Electricity Act 2003, the Government of West Bengal, subsequently, brought out (January 2007) the West Bengal Power Sector Reforms Transfer Scheme 2007 to separate transmission and distribution activities to two Power Sector undertakings. As of 31 March 2020, there were six power-sector SPSEs in West Bengal, all of which were working. Besides, there was West Bengal Electricity Regulatory Commission (WBERC), a regulatory authority.

#### **2.1.5 Framework of Non-Power Sector SPSEs**

State Public Sector Undertakings (Non-Power Sector) consist of State Government Companies, Government-controlled other Companies, subsidiary Companies and Statutory Corporations as of 31 March 2020, operating in the Non-Power Sector. These included 42 working Government Companies, two working other Government-controlled Companies, eight working subsidiary companies, eight working Statutory Corporations, one inactive Statutory Corporation, 14 inactive Government Companies, three inactive subsidiary companies and one inactive SPSE namely, West Bengal Tea Development Corporation Limited which is under liquidation process (*Appendix-6*).

#### **2.1.6 Disinvestment and Restructuring of SPSEs**

The Government of West Bengal decided (February 2017) to restructure SPSEs for improving operational efficiency and optimally utilising their manpower/ assets. Accordingly, one SPSE namely, Gluconate Health Limited was amalgamated with one existing SPSE, *viz.*, West Bengal Medical Services Corporation Limited with effect from 01 April 2019 under the administrative control of Department of Health & Family Welfare.

### **2.2 Investment in Government Companies and Statutory Corporations**

#### **2.2.1 Investment by the Government of West Bengal**

The Government of West Bengal (GoWB) has financial stakes in the SPSEs, which is mainly comprised of:

<sup>10</sup> Turnover of working SPSEs as per their latest finalised accounts up to 30 September 2019 was ₹ 52,953.14 crore.

- **Share capital and loans**– In addition to the share capital contribution, GoWB also provides financial assistance by way of loans to the SPSEs from time to time.
- **Special financial support**– GoWB provides budgetary support by way of grants and subsidies to the SPSEs as and when required.
- **Guarantees**– GoWB also guarantees the repayment of loans, with interest, availed by the SPSEs from Financial Institutions.

### 2.2.2 Aggregate investment in SPSEs with sector-wise summary

As on 31 March 2020, the investment (capital and long-term loans) in 85 SPSEs was ₹ 45,111.51 crore as per accounts of 2019-20 or information from SPSEs (*Appendix-6*). This total investment consisted of 37.89 *per cent* towards paid-up capital and 62.11 *per cent* in long-term loans. The sector-wise summary of investment in the SPSEs as on 31 March 2020 is given at **Table 2.1**:

**Table 2.1: Sector-wise summary of investment in SPSEs**

Sector	Government Companies		Statutory Corporations		Total	Investment (₹ in crore)		
	Working	Inactive	Working	Inactive		Equity	Long-term Loans	Total
(1)	(2)	(3)	(4)	(5)	(6)=(2)+(3)+(4)+(5)	(7)	(8)	(9) = (7)+(8)
Power	06	-	-	-	06	12,871.05	19,555.96	32,427.01
Finance	06	01	03	-	10	1,510.64	3,930.72	5,441.36
Service	11	-	03	01	15	233.68	2,338.96	2,572.64
Manufacturing	10	16	-	-	26	434.59	1,789.31	2,223.90
Infrastructure	11	-	01	-	12	1,918.11	184.08	2,102.19
Agriculture & Allied	10	01	01	-	12	116.89	141.81	258.70
Others	04	-	-	-	04	6.59	79.12	85.71
<b>Total</b>	<b>58</b>	<b>18</b>	<b>08</b>	<b>01</b>	<b>85</b>	<b>17,091.55</b>	<b>28,019.96</b>	<b>45,111.51</b>

(Source: Compiled from information provided by SPSEs and accounts for 2019-20 received)

The Power Sector constituted the major share of equity at 75.31 *per cent* (₹ 12,871.05 crore) and loans at 69.79 *per cent* (₹ 19,555.96 crore) from the Government of West Bengal, banks and financial institutions.

### 2.2.3 Investment in Power Sector SPSEs

The activity-wise summary of investment in the Power Sector undertakings as on 31 March 2020 is given below:

**Table 2.2: Activity-wise investment in Power Sector SPSEs**

Activity	Number of Power Sector SPSEs	Investment (₹ in crore)		
		Equity	Long-term loans	Total
(1)	(2)	(3)	(4)	(5)=(3)+(4)
Generation	2	9,394.55	8,413.51	17,808.06
Transmission	1	1,105.52	2,942.71	4,078.23
Distribution	1	2,365.89	8,199.74	10,565.63

Activity	Number of Power Sector SPSEs	Investment (₹ in crore)		
		Equity	Long-term loans	Total
(1)	(2)	(3)	(4)	(5)=(3)+(4)
Others <sup>11</sup>	2	5.10	-	5.10
<b>Total</b>	<b>6</b>	<b>12,871.06</b>	<b>19,555.96</b>	<b>32,427.02</b>

(Source: Compiled based on information received from SPSEs)

As on 31 March 2020, the total investment (equity and long-term loans) in six Power Sector SPSEs was ₹ 32,427.02 crore. The investment consisted of ₹ 12,871.06 crore (39.69 per cent) towards equity and ₹ 19,555.96 crore (60.31 per cent) as long-term loans.

The aggregate investment in the Power Sector SPSEs over the period from 2015-16 to 2019-20 had marginally increased by 1.58 per cent. However, in the same period while paid-up capital had increased by 19.16 per cent, long-term loans had reduced by 7.42 per cent. This resulted in improvement in debt-equity ratio from 1.96:1 to 1.42:1 between 2015-16 and 2018-19, which again increased to 1.52:1 in 2019-20, as shown in **Table 2.3**.

**Table 2.3: Debt-Equity Ratios of Power Sector SPSEs**

Year	(₹ in crore)				
	2015-16	2016-17	2017-18	2018-19	2019-20
Debt	21,122.96	18,338.74	17,995.79	17,390.89	19,555.96
Equity	10,801.21	11,066.18	11,539.72	12,272.74	12,871.05
Debt-Equity Ratio	1.96:1	1.66:1	1.56:1	1.42:1	1.52:1

## 2.2.4 Investment in Non-Power Sector SPSEs

The sector-wise investment in all SPSEs (Non-Power Sector) as on 31 March 2020 is as follows:

**Table 2.4: Sector-wise investment in SPSEs (Non-Power Sector)**

Sector	Total number of SPSEs	Investment		
		Equity*	Long-term loans*	Total
Social Sector	24	2,035.00	325.89	2,360.89
Competitive Sector	41	668.27 <sup>12</sup>	4,128.27	4,796.54
Others	14	1,517.23	4,009.84	5,527.07
<b>Total</b>	<b>79</b>	<b>4,220.50</b>	<b>8,464.00</b>	<b>12,684.50</b>

(Source: Compiled based on information received from SPSEs.)

\* Includes paid-up capital, share application money and non-current component of principal amount of loans from the Central Government, State Governments and others including Public Financial Institutions and Commercial banks.

As on 31 March 2020, the total investment (equity and long-term loans) in 79 SPSEs (Non-Power Sector) was ₹ 12,684.50 crore. The investment consisted of ₹ 4,220.50 crore (33.27 per cent) towards equity and ₹ 8,464.00 crore (66.73 per cent) in long-term loans, as shown in **Appendix-6**.

<sup>11</sup> West Bengal Green Energy Development Corporation Limited and Bengal Birbhum Coalfields Limited.

<sup>12</sup> Excludes share capital of ₹ 54.38 crore of Gluconate Health Limited, merged with West Bengal Medical Services Corporation Limited from 01 April 2017. The scheme of merger has, however, not been given effect to in the accounts of the transferor company.

## 2.2.5 Budgetary support to SPSEs

The Government of West Bengal provides financial support to SPSEs in various forms through annual budget.

### 2.2.5.1 Power Sector SPSEs

The summarised details of budgetary outgo towards equity, loans, grants/subsidies, loans written off and loans converted into equity during the year in respect of Power Sector SPSEs for the last three years ending March 2020 are as follows in **Table 2.5**:

**Table 2.5: Details regarding budgetary support to Power Sector SPSEs**  
(₹ in crore)

(1)	Particulars <sup>13</sup>	2017-18		2018-19		2019-20	
		Nos. of SPSEs	Amount	Nos. of SPSEs	Amount	Nos. of SPSEs	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(i)	Equity capital	2	473.49	3	742.93	2	598.30
(ii)	Loans	-	-	2	518.80	2	362.07
(iii)	Grants/ Subsidy	3	1,215.94	2	79.20	3	38.28
(iv)	<b>Total outgo (i+ii+iii)</b>	<b>3*</b>	<b>1,689.43</b>	<b>5*</b>	<b>1,340.93</b>	<b>4*</b>	<b>998.65</b>
(v)	Loan repayment written off	1	26.59	1	84.89	-	-
(vi)	Loans converted into equity	-	-	-	-	-	-
(vii)	Guarantees issued <sup>14</sup>	-	-	1	2,160.00	-	-
(viii)	Guarantee commitment <sup>15</sup>	4	2,456.54	4	2,685.39	4	4,392.02

(Source: As per information furnished by SPSEs)

\* Some of the SPSEs received assistance from the State Budget under more than one of category.

The annual budgetary assistance to the Power Sector SPSEs decreased from ₹ 1,689.43 crore in 2017-18 to ₹ 998.65 crore in 2019-20. The budgetary assistance for the year 2019-20 included ₹ 598.30 crore in equity, ₹ 362.07 crore in loans and ₹ 38.28 crore in grants/ subsidy.

### 2.2.5.2 Non-Power Sector SPSEs

The summarised details of budgetary outgo towards equity, loans, grants/subsidies, loans written off and loans converted into equity during the year in respect of Non-Power Sector SPSEs for the last three years ending March 2020 are as follows in **Table 2.6**:

**Table 2.6: Details regarding budgetary support to SPSEs**  
(Non-Power Sector)

(₹ in crore)

(1)	Particulars	2017-18		2018-19		2019-20	
		Number of SPSEs	Amount	Number of SPSEs	Amount	Number of SPSEs	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(i)	Equity Capital	23	439.37	9	138.63	4	127.07
(ii)	Loans	24	453.39	21	321.80	23	478.72

<sup>13</sup> Amount represents outgo from State Budget only.

<sup>14</sup> Government guarantees issued to the SPSEs during a particular year.

<sup>15</sup> Closing balance of amount outstanding against Government guarantee at the end of a particular year in respect of SPSEs.

	Particulars	2017-18		2018-19		2019-20	
		Number of SPSEs	Amount	Number of SPSEs	Amount	Number of SPSEs	Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(iii)	Grants/ Subsidy	31	1,968.89	15	1,341.48	17	945.77
(iv)	<b>Total outgo (i+ii+iii)</b>	<b>38*</b>	<b>2,861.65</b>	<b>34*</b>	<b>1,801.91</b>	<b>27</b>	<b>1,551.56</b>
(v)	Loan repayment written off	2	3.77	11	334.29	-	-
(vi)	Loans converted into equity	1	13.24	-	-	-	-
(vii)	Guarantees issued	-	-	-	-	-	-
(viii)	Guarantee Commitment <sup>16</sup>	7	2,443.52	7	2,510.12	9	1,858.07

(Source: As per information furnished by SPSEs)

\*Some of the SPSEs received assistance from the State Budget under more than one of category.

The annual budgetary assistance to SPSEs declined from ₹ 2,861.65 crore 2017-18 to ₹ 1,551.56 crore in 2019-20. This included ₹ 127.07 crore as equity, ₹ 478.72 crore as loans and ₹ 945.77 crore as grants/ subsidy. The subsidy/ grants given by the State Government in 2019-20 were primarily to the Transport Sector (₹ 682.73 crore) for renovation of buses, purchase of spare parts, and other administrative expenses.

## 2.2.6 Guarantee Commission

The State Government provides guarantees to SPSEs to draw financial assistance from banks and financial institutions. The SPSEs are liable to pay guarantee commission to GoWB at the rate of one per cent per annum on the amount outstanding against guarantees issued.

### 2.2.6.1 Power Sector SPSEs

During the year, no fresh guarantee was issued. The outstanding dues towards guarantee commission of DPL and WBSEDCL was ₹ 45.09 crore and ₹ 15.98 crore, respectively, as on March 2020. Moreover, WBSETCL had not even charged guarantee commission of ₹ 5.40 crore in their financial statements up to 2019-20. Similar information for WBPDC was not available.

### 2.2.6.2 Non-Power Sector SPSEs

The State Government also provides guarantees to SPSEs to draw financial assistance from banks and financial institutions. The SPSEs are liable to pay guarantee commission to GoWB at the rate of one per cent per annum on the amount outstanding against guarantees issued. During the past three years, no fresh guarantee was issued. The guarantee commitments decreased by 23.96 per cent from ₹ 2,443.52 crore in 2017-18 to ₹ 1,858.07 crore in 2019-20. Further, the outstanding guarantees commission from nine Non-Power sector SPSEs stood at ₹ 18.58 crore, against which only ₹ 10.08 crore was included in the books of accounts as on March 2020.

## 2.2.7 Analysis of Long-term Loans of the SPSEs

Analysis of the long-term loans of the SPSEs which had leverage during 2015-16 to 2019-20 was carried out to assess the ability of the companies to service the debt owed by the companies to the Government, banks and other financial institutions. This is assessed through the interest coverage ratio and debt turnover ratio.

<sup>16</sup> Closing balance of Government guarantee in respect of PSUs at the end of a particular year

**2.2.7.1 Interest Coverage Ratio of Power Sector SPSEs**

Interest coverage ratio is used to determine the ability of a SPSE to pay interest on outstanding debt and is calculated by dividing earnings before interest and taxes (EBIT) of a SPSE by interest expenses of the same period. The lower the ratio, the lesser is the ability of the SPSE to pay interest on debt. An interest coverage ratio below one indicates that the SPSE is not generating sufficient revenues to meet its expenses on interest. The details of interest coverage ratio (ICR) in respect of Power Sector SPSEs having interest burden during the period from 2015-16 to 2019-20 are given in **Table 2.7**:

**Table 2.7: Interest Coverage Ratio relating to Power Sector SPSEs**

(₹ in crore)

Year	Earnings before interest and tax (EBIT)	Interest	Number of SPSEs having liability of loans from Government and Banks and other financial institutions	Number of SPSEs having interest coverage ratio more than 1	Number of SPSEs having interest coverage ratio less than 1
(1)	(2)	(3)	(4)	(5)	(6)
2015-16	2,766.65	2,612.27	4	3	1
2016-17	3,025.53	3,134.91	4	2	2
2017-18	3,014.95	3,117.14	4	2	2
2018-19	3,147.35	3,140.11	5	3	2
2019-20	4,146.80	3,127.31	5	4	1

(Source: Compiled based on latest available accounts of SPSEs for the respective years)

Of the five Power Sector SPSEs having liability of loans from Government as well as banks and other financial institutions during 2019-20, four SPSEs had interest coverage ratio of more than one. Remaining one SPSE had interest coverage ratio below one, indicating that it could not generate sufficient revenues to meet its expenses on interest during the period.

**2.2.7.2 Debt Turnover Ratio of Power Sector SPSEs**

During the last five years,<sup>17</sup> the compounded annual growth of debt was (-) 0.89 per cent while turnover of working Power Sector SPSEs recorded compounded annual growth of 5.81 per cent. Consequently, the debt turnover ratio improved from 0.84 in 2015-16 to 0.54 in 2019-20 as given in **Table 2.8**:

**Table 2.8: Debt Turnover Ratio relating to the State SPSEs**

(₹ in crore)

Particulars	2015-16	2016-17	2017-18	2018-19	2019-20
Debt from Government and others (Banks and Financial Institutions)	21,122.96	18,338.74	17,995.79	17,390.89	18,689.15
Turnover	25,158.28	29,348.48	31,773.99	33,310.76	34,558.17
Debt-Turnover Ratio	0.84:1	0.62:1	0.57:1	0.52:1	0.54:1

(Source: Compiled based on information received from SPSEs)

The debt-turnover ratio ranged between 0.84 and 0.52 during this period.

<sup>17</sup> Base year 2014-15 – debt: ₹ 19,544.71 crore, turnover: ₹ 26,056.63 crore.



### 2.2.7.3 Interest Coverage Ratio of Non-Power Sector SPSEs

Interest coverage ratio is used to determine the ability of a SPSE to pay interest on outstanding debt and is calculated by dividing earnings before interest and taxes (EBIT) of a SPSE by interest expenses of the same period. The lower the ratio, the lesser is the ability of the SPSE to pay interest on debt. An interest coverage ratio below one indicates that the SPSE is not generating sufficient revenues to meet its expenses on interest. The details of interest coverage ratio (ICR) in respect of Non-Power Sector SPSEs having interest burden during the period from 2015-16 to 2019-20 are given in **Table 2.9**:

**Table 2.9: Interest Coverage Ratio relating to SPSEs in the Non-Power Sector**

(₹ in crore)

Year	Earnings before interest and tax (EBIT)	Interest	Number of SPSEs having liability of loans from Government, Banks and other financial institutions	Number of SPSEs having interest coverage ratio more than 1	Number of SPSEs having interest coverage ratio less than 1
(1)	(2)	(3)	(4)	(5)	(6)
2015-16	830.20	526.93	43	26	17
2016-17	413.47	593.76	42	18	24
2017-18	67.73	559.37	37	17	20
2018-19	1,755.56	1,002.90	35	15	20
2019-20	858.04	1,123.36	35	20	15

(Source: Compiled based on latest finalised Accounts received from SPSEs)

Of the 35 working Non-Power SPSEs having liability of loans during 2019-20, 20 SPSEs had interest coverage ratio of more than one whereas remaining 15 SPSEs had interest coverage ratio below one. This indicates that these 15 SPSEs could not generate sufficient revenues to meet their expenses on interest during the period.

### 2.2.7.4 Debt Turnover Ratio

During the last five years, the turnover of the 39 working SPSEs with borrowings in Non-Power Sector recorded compounded annual growth of 8.35 per cent while the compounded annual growth of debt was (-) 10.71 per cent due to which the debt turnover ratio improved from 1.62 in 2015-16 to 0.28 in 2019-20 as given in **Table 2.10**:

**Table 2.10: Debt Turnover Ratio relating to the SPSEs in the Non-Power Sector**

(₹ in crore)

Particulars <sup>18</sup>	2015-16	2016-17	2017-18	2018-19	2019-20
Debt from Government and others (Banks and Financial Institutions)	6,731.11	4,122.03	4,229.80	5,143.22	5,407.65
Turnover	4,167.37	4,285.30	11,058.04	17,953.65	19,247.65
Debt-Turnover Ratio	1.62:1	0.96:1	0.38:1	0.29:1	0.28:1

(Source: Compiled based on latest finalised Accounts received from SPSEs)

<sup>18</sup> Turnover and debts of SPSEs having loan liability for the year 2014-15 is ₹ 12,883.63 crore and ₹ 9,528.64 crore.

The debt-turnover ratio ranged between 0.28 and 1.62 during this period.

## 2.3 Return from Government Companies and Statutory Corporations

### 2.3.1 Performance of Power Sector SPSEs

The financial position and working results of the six Power Sector SPSEs as per their latest finalised accounts as on 30 September 2020 are detailed in *Appendix-7*.

The performance of a company is traditionally assessed through percentage of turnover to Gross State Domestic Product (GSDP), return on investment, return on equity and return on capital employed.

#### 2.3.1.1 Percentage of turnover to GSDP

The details of turnover of Power Sector SPSEs as per their latest available accounts and GSDP of West Bengal for a period of five years ending March 2020 are shown in **Table 2.11**:

**Table 2.11: Details of Turnover of Power Sector SPSEs vis-à-vis GSDP of WB**

(₹ in crore)

Particulars	2015-16	2016-17	2017-18	2018-19	2019-20
(1)	(2)	(3)	(4)	(5)	(6)
Turnover of Power Sector SPSEs	25,158.28	29,348.48	31,773.99	33,310.76	34,558.17
Percentage change of turnover over previous year	(-) 3.45	16.66	8.26	4.84	3.74
GSDP of West Bengal	7,97,300	8,79,167	10,20,858	11,77,586	13,14,529
Percentage change of GSDP over previous year	11.03	10.27	16.12	15.35	11.63
Percentage of turnover to GSDP of West Bengal	3.16	3.34	3.11	2.83	2.63

(Source: Compiled based on turnover figures of SPSEs and GSDP figures as per information in previous Audit Report and the Finance Accounts, Volume-I, 2019-20, GoWB)

In 2019-20, the turnover of the SPSEs relative to GSDP was 2.63 per cent and had marginally decreased over the years 2015-20. The compounded annual growth<sup>19</sup> of GSDP was 12.85 per cent during last five years, while in the same period, the turnover of Power Sector SPSEs recorded lower compounded annual growth of 5.81 per cent, leading to decrease in share of turnover of these SPSEs to the GSDP from 3.16 per cent in 2015-16 to 2.63 per cent in 2019-20.

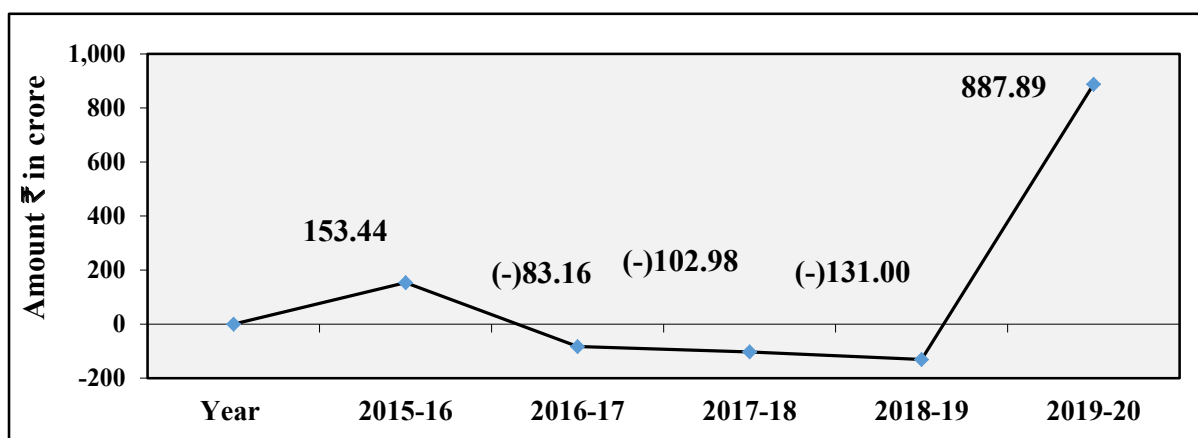
#### 2.3.1.2 Return on investment

The overall position of profits earned/ losses<sup>20</sup> incurred by the State SPSEs during 2015-16 to 2019-20, as per the latest finalised accounts till 30 September of the respective years, is depicted below in **Chart 2.1**:

<sup>19</sup> Rate of Compounded Annual Growth  $[\{(Value\ of\ 2019-20/Value\ of\ 2014-15)^{(1/5\ years)}\} - 1]*100]$  where turnover and GSDP for the year 2014-15 was ₹ 26,056.63 crore and ₹ 7,18,082 crore respectively.

<sup>20</sup> Figures are as per the latest financial statements of the respective years.

**Chart 2.1: Profit earned/ losses incurred by SPSEs during the years**



(Source: As per latest accounts as of 30 September following the respective financial years)

The aggregate profit of ₹ 153.44 crore earned by the Power Sector SPSEs in 2015-16 turned to losses during 2016-17 to 2019-20 and again returned to profits of ₹ 887.89 crore in 2019-20. This was mainly due to sharp rise in profits of West Bengal State Electricity Distribution Company Limited from loss of ₹ 45.22 crore in 2018-19 to profit of ₹ 567.37 crore in 2019-20. This was mainly due to accounting for ₹ 2,900.73 crore as “Income Receivable through Regulatory Mechanism” in 2019-20 as against ₹ 1,340.92 crore in the preceding year. These amounts were booked on the presumption that favourable orders for the full amount will be available. Further, The Durgapur Projects Limited reduced its losses from ₹ 591.22 crore in 2017-18 to ₹ 166.58 crore in 2018-19, as per latest finalised accounts till 30 September 2020.

As per latest finalised accounts till September 2020, four Power Sector SPSEs earned total profit of ₹ 1,054.49 crore, while the remaining two SPSEs incurred losses of ₹ 166.60 crore as detailed in *Appendix-7*. The top profit earning companies were West Bengal State Electricity Distribution Company Limited (₹ 567.37 crore) West Bengal State Electricity Transmission Company Limited (₹ 386.38 crore) and West Bengal Power Development Corporation Limited (₹ 99.61 crore), with maximum loss incurred by The Durgapur Projects Limited (₹ 166.58 crore).

### 2.3.1.3 Erosion of Net Worth/ capital

Net worth means the sum total of the paid-up capital and free reserves and surplus minus accumulated losses and deferred revenue expenditure. Essentially, it is a measure of what an entity is worth to the shareholders and is also referred to as shareholders’ funds. A negative net worth indicates that the entire investment by the shareholders has been wiped out by accumulated losses and deferred revenue expenditure. **Table 2.12** indicates total paid up capital, total free reserves, total surpluses, total accumulated losses and net worth of the working Power Sector SPSEs during the period 2015-16 to 2019-20:

**Table 2.12: Net Worth of working Power Sector SPSEs***(₹ in crore)*

Year	No. of SPSEs	Paid up Capital	Free Reserves & Surplus	Accumulated profits (+)/losses (-)	Net worth
(1)	(2)	(3)	(4)	(5)	(6)=(3)+(4)+(5)
2015-16	6	10,751.79	2,110.38	1,128.11	13,990.28
2016-17	7	11,066.18	2,286.00	1,277.41	14,629.59
2017-18	7	11,539.67	2,700.95	(-) 766.44	13,474.18
2018-19	6	11,583.45	3,125.74	(-) 1,764.89	12,944.30
2019-20	6	12,109.32	3,466.68	(-) 1,894.85	13,681.15

*(Source: Compiled based on latest available accounts of SPSEs)*

As can be seen, the combined net worth of the working SPSEs was positive during the five-year period. The net worth has decreased marginally from ₹ 13,990.28 crore in 2015-16 to ₹ 13,681.15 crore in 2019-20 due to increase in accumulated losses.

Moreover, the accumulated losses of three of the six Power Sector SPSEs aggregating to ₹ 3,182.69 crore as per their latest finalised accounts, exceeded their total paid-up capital of ₹ 1,820.38 crore. This resulted in negative net worth of ₹ 1,362.31 crore for The Durgapur Projects Limited, West Bengal Green Energy Development Corporation Limited and Bengal Birbhum Coalfields Limited.

#### 2.3.1.4 Payment of dividend by profit earning SPSEs

The GoWB has not formulated any dividend policy. None of the Power Sector SPSEs had declared dividends since incorporation, although two Power Sector SPSEs had earned profits in all five years from 2015-16 to 2019-20.

### 2.3.2 Performance of SPSEs (Non-Power Sector)

The financial position and working results of the 79 SPSEs (Non-Power Sector) as per their latest finalised accounts as on 30 September 2020 are detailed in *Appendix-7*. Their performance is analysed from the latest finalised accounts of SPSEs as of 30 September of the following year for each of the last five financial years ending 31 March 2020 and discussed hereafter.

The performance of a company is traditionally assessed through percentage of turnover to GSDP, return on investment, return on equity and return on capital employed.

#### 2.3.2.1 Percentage of turnover to GSDP

Table 2.13 provides the details of turnover of SPSEs (Non-Power Sector) and GSDP of West Bengal for a period of five years ending March 2020:

**Table 2.13: Details of Turnover of Non-Power SPSEs vis-à-vis GSDP of West Bengal***(₹ in crore)*

Particulars	2015-16	2016-17	2017-18	2018-19	2019-20
Turnover	5,202.68	5,923.62	12,126.13	19,642.308	21,126.21
Percentage change of turnover over previous year	(-) 62.22	13.86	104.71	61.98	7.55

Particulars	2015-16	2016-17	2017-18	2018-19	2019-20
GSDP of West Bengal	7,97,300	8,79,167	10,20,858	11,77,586	13,14,529
Percentage change of GSDP over previous year	11.03	10.27	16.12	15.35	11.63
Percentage of turnover to GSDP of West Bengal	0.65	0.67	1.19	1.67	1.61

(Source: Compiled based on turnover figures of SPSEs and GSDP figures as per information in previous Audit Reports and the Finance Accounts, Volume-I, 2019-20 GoWB)

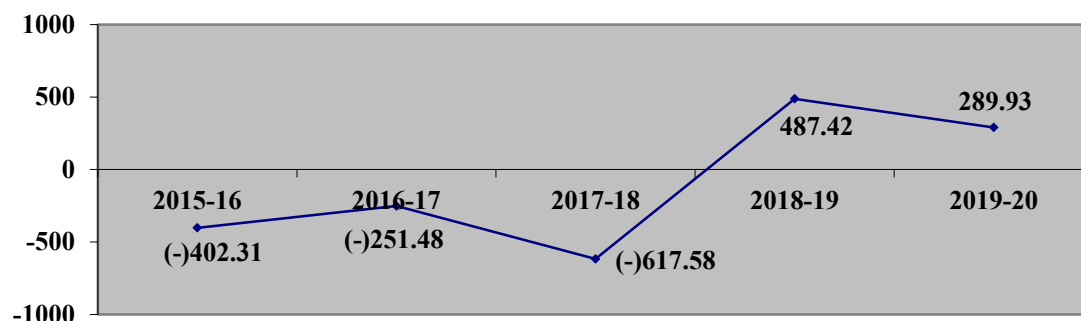
The turnover of these SPSEs increased significantly from 2015-16 to 2019-20 by 306.06 per cent mainly due to sharp rise in the turnover of West Bengal State Beverages Corporation Limited and West Bengal Essential Commodities Supply Corporation Limited of ₹ 13,541.45 crore and ₹ 2,814.04 crore, respectively. The Compounded Annual Growth Rate (CAGR)<sup>21</sup> of State GSDP was 12.85 per cent during last five years, while the corresponding CAGR for turnover of Non-Power SPSEs was 8.93 per cent.

### 2.3.2.2 Return on Investment

Rate of Real Return on Investment is the percentage of profit or loss to the Present Value (PV) of total investment. The overall position of profits earned/ losses incurred by all 79 SPSEs (Non-Power Sector) during 2015-16 to 2019-20 is depicted below in **Chart 2.2**:

**Chart 2.2: Profit/ Losses earned/ incurred by SPSEs (Non-Power Sector) during the years**

(₹ in crore)



(Source: As per latest Accounts as of 30 September for respective financial years)

The loss of ₹ 402.31 crore incurred by these SPSEs in 2015-16 turned into profit of ₹ 289.93 crore in 2019-20. The aggregate profits in 2019-20 decreased from the previous year (₹ 487.42 crore) mainly due to profit of ₹ 60.39 crore earned by South Bengal State Transport Corporation (SBSTC) in the previous year turning into loss of ₹ 94.93 crore in the current year.

As per latest finalised accounts of 59 working SPSEs till September 2020, 29 SPSEs earned aggregate profit of ₹ 1,332.69 crore and 30 SPSEs incurred aggregate losses of ₹ 778.10 crore. The remaining one<sup>22</sup> SPSE had not submitted

<sup>21</sup> Rate of Compounded Annual Growth  $((\text{value of 2019-20}/\text{value of 2014-15})^{1/5} - 1) * 100$  where turnover and GSDP for the year 2014-15 was ₹ 13,770.12 crore and ₹ 7,18,082 crore respectively.

<sup>22</sup> New Town Kolkata Green Smart City Corporation Limited has not submitted initial accounts till 30 September 2020.

its first accounts till September 2020. The working results of each SPSEs as per its latest available accounts is given in **Appendix-7**. Besides West Bengal Industrial Development Corporation Limited (₹ 885.27 crore), the other top profit earning company was West Bengal State Beverages Corporation Limited (₹ 80.30 crore). The major contributors to the losses, other than SBSTC, were West Bengal Transport Corporation Limited (₹ 188.92 crore) and West Bengal Surface Transport Corporation Limited (₹ 89.98 crore).

### 2.3.2.3 Erosion of Net worth/ capital

Net worth means the sum total of the paid-up capital and free reserves and surplus minus accumulated losses and deferred revenue expenditure. Essentially, it is a measure of what an entity is worth to the shareholders and is also referred to as shareholders' funds. A negative net worth indicates that the entire investment by the shareholders has been wiped out by accumulated losses and deferred revenue expenditure. The aggregate paid-up capital (including share application money), free reserves and surpluses of 59 working SPSEs in the Non-Power Sector as per their latest accounts were ₹ 3,860.87 crore and ₹ 81.65 crore, respectively while accumulated losses was ₹ 5,890.62 crore resulting in negative net worth of ₹ 1,948.10 crore. The net worth of each State SPSE (Non-Power) is given at **Appendix-7**.

**Table 2.14** below indicates total paid up capital, total free reserves, surpluses, accumulated losses and net worth of the working SPSEs during the period 2015-16 to 2019-20:

**Table 2.14: Net Worth of working SPSEs in Non-Power Sector**

(₹ in crore)

Year	No. of SPSEs*	Paid up Capital (including share application money)	Free Reserves	Surplus	Accumulated losses	Net Worth
(1)	(2)	(3)	(4)	(5)	(6)	7=(3)+(4)+(5)-(6)
2015-16	64	3,058.13	30.28	-	4,298.77	(-) 1,210.36
2016-17	65	3,376.93	35.20	-	4,834.09	(-) 1,421.96
2017-18	63	3,546.60	40.20	-	6,956.91	(-) 3,370.11
2018-19	58	3,570.91	68.16	-	5,854.81	(-) 2,215.74
2019-20	59	3,860.87	81.65	-	5,890.62	(-) 1,948.10

(Source: Compiled based on latest finalised Accounts received from SPSEs)

\* SPSEs which had not submitted their first accounts since inception have been excluded.

As can be seen from the table, the combined net worth of the working SPSEs was negative during the five-year period. The net worth has improved from 2017-18 to 2019-20; by (-) ₹ 1,422.01 crore, due to increase in share capital and profits of the Finance Sector.

### 2.3.2.4 Dividend Payout to Equity

The GoWB has not formulated any dividend policy. Out of 59 working SPSEs, 29 SPSEs earned profits during the year 2019-20, of which only two<sup>23</sup> SPSEs

<sup>23</sup> Saraswaty Press Limited (₹ 1.32 crore) and West Bengal Text Book Corporation (P) Limited (₹ 0.02 crore) a subsidiary of Saraswaty Press Limited.

paid dividend of ₹ 1.34 crore during 2019-20. Dividend Payout to Equity by working SPSEs is shown in following table.

**Table 2.15: Dividend Payout to Equity of the SPSEs during 2015-16 to 2019-20**

(₹ in crore)

Year	Total working SPSEs with equity infused by GoWB, GoI and others		Working SPSEs which earned profits during the year		SPSEs which declared/ paid dividend during the year		Dividend Payout to Equity Ratio (in per cent)
	No. of SPSEs	Total Equity	No. of SPSEs	Total Equity	No. of SPSEs	Dividend declared/ paid by SPSEs	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(7)/(5)* 100
2015-16	64	3,058.13	37	2,602.89	4	0.62	0.02
2016-17	65	3,423.17	38	2,118.00	6	0.63	0.03
2017-18	63	3,546.60	36	1,643.31	4	0.71	0.04
2018-19	58	3,570.91	30	1,602.69	3	1.17	0.08
2019-20	59	3,860.87	29	1,773.51	2	1.34	0.08

(Source: Compiled based on latest finalised Accounts received from SPSEs)

The Dividend Payout to Equity Ratio during 2015-16 to 2019-20 was nominal at 0.02 per cent to 0.08 per cent only.

## 2.4 Operating efficiency of Government Companies and Statutory Corporations

The profitability of SPSEs is ascertained through three ratios, namely, Rate of Real Return (RORR) on Investment, Rate of Return on Equity or Shareholders' Funds and Rate of Return on Capital Employed as discussed below.

### 2.4.1 Profitability of Power Sector SPSEs

#### 2.4.1.1 Rate of Real Return (RORR) on the basis of historical cost of investment

Rate of Real Return on Investment is the percentage of profit or loss to the historical or Present Value (PV) of total investment. For the purpose of calculation of the RORR the total figure of investment in working Power Sector SPSEs by the Government of West Bengal, Government of India and others has been arrived at by considering equity, interest free loans and grants as well as subsidies for operational & management purpose.

As on 31 March 2020, equity of the GoWB, GoI and others in these six SPSEs aggregated to ₹ 12,871.06 crore and grants as well as subsidies for operational and management expenses adding up to ₹ 6,133.37 crore. The entire outstanding long-term loans of ₹ 19,555.96 crore were interest-bearing. Thus, the aggregate investment in these SPSEs on the basis of historical cost stood at ₹ 19,004.43 crore (₹ 12,871.06 crore + ₹ 6,133.37 crore). The rate of real return on investment on the basis of historical cost of investment in the Power Sector for the period 2015-16 to 2019-20 is given in **Table 2.16**:

**Table 2.16: Annual Rate of Real Return on Investment on historical cost basis**

(₹ in crore)

Year	Total Earnings for the year	Investment in the form of equity, interest free loans and grants/ subsidies for operational & management expenses on historical cost basis				Rate of Real Return on investment on historical cost basis (in per cent)
		Government of West Bengal	Government of India	Funds invested by others	Total	
(1)	(2)	(3)	(4)	(5)	(6)=(3)+(4)+(5)	(7)={(2)/(6)}* 100
2015-16	153.44	12,416.07	21.77	14.86	12,452.70	1.23
2016-17	(-) 83.16	16,259.07	21.77	14.86	16,295.70	(-) 0.51
2017-18	(-) 102.98	17,488.98	31.93	14.96	17,535.87	(-) 0.59
2018-19	(-) 131.00	18,307.48	55.25	5.10	18,367.83	(-) 0.71
2019-20	887.89	18,944.08	55.25	5.10	19,004.43	4.67

*(Source: Compiled based on information received from SPSEs)*

It would be seen from the above table that the rate of return in the Power Sector was positive in two years viz. 2015-16 and 2019-20. This was mostly due to jump in profits of WBSEDCL from loss of ₹ 25.29 crore in 2015-16 to profit of ₹ 567.37 crore in 2019-20.

In terms of the revised Tariff Policy of January 2016, under ‘business as usual’ conditions, no Regulatory Assets should be created. Moreover, outstanding Regulatory Assets along with their carrying cost should be recovered within seven years. It was seen that the regulatory assets<sup>24</sup> of WBSEDCL had risen from ₹ 4,439.29 crore as of 31 March 2016 to ₹ 15,519.14 crore as of 31 March 2020, i.e., an increase of almost 3.5 times. This led to stretched liquidity and rise in receivables, with health of WBSEDCL deteriorating.

#### 2.4.1.2 Return on Investment on the basis of Present Value of Investment

Traditional calculation of return based only on the basis of historical cost ignores the present value of money. Calculating RORR on the basis of PV is a more adequate assessment. During the five-year period from 2015-16 to 2019-20, these SPSEs had positive rate of real return on investment only in 2015-16 and 2019-20. Therefore, for the years 2015-16 and 2019-20, ROI could be calculated and depicted on the basis of PV.

The PV of the total investment in these six SPSEs was computed on the following assumptions:

- The equity infused minus disinvestment has been reckoned as investment for calculating the rate of real return on investments. Further, interest free long-term loans and assistance as grants/ subsidies have been considered as investment infusion. In case of either repayment of loans by the SPSEs or their subsequent conversion to equity/ interest bearing loans, the PV was calculated on the reduced balances of interest free loans over the period.

<sup>24</sup> Regulatory assets are recognized costs incurred by DISCOMs that are deferred for recovery through future tariff changes. Annual performance review (APR) of WBSEDCL for 2013-14 was approved by WBERC in July 2021, while approval of APRs for subsequent years from 2014-15 was pending.



- The average rate of interest on government borrowings for the financial year<sup>25</sup> concerned was adopted as compounded rate for arriving at present value since they represent the cost incurred towards investment of funds for the year and, therefore, considered as the minimum expected rate of return on investments.

The investment by the GoWB, GoI and others in the working Power Sector SPSEs at the end of the year 2019-20 was ₹ 19,004.43 crore consisting of equity (₹ 12,871.06 crore) and grants/ subsidies (₹ 6,133.37 crore). The PV of funds infused by the GoWB, GoI and others up to 31 March 2020 amounted to ₹ 69,213.50 crore.

As the working Power Sector SPSEs earned profits only during the years 2015-16 and 2019-20, comparison at historical cost and at present value is given in **Table 2.17**:

**Table 2.17: Real Rate of Return on total investment on Present Value**

(₹ in crore)

Year	Total Earnings for the year	Total Investment in the form of equity, interest free loans and grants/ subsidies for operational & management expenses on historical cost basis	RoRR on historical cost basis (in per cent)	Present value of the total investment at the end of the year	RoRR on present value of the investments (in per cent)
(1)	(2)	(3)	(4)={ (2)/(3) } *100	(5)	6)={ (2)/(5) } *100
2015-16	153.44	12,452.70	1.23	37,501.81	0.41
2016-17	(-) 83.16	16,295.70	(-) 0.51	45,143.47	(-) 0.18
2017-18	(-) 102.98	17,535.87	(-) 0.59	50,107.68	(-) 0.21
2018-19	(-) 131.00	18,367.83	(-) 0.71	63,652.60	(-) 0.21
2019-20	887.89	19,004.43	4.67	69,213.50	1.24

(Source: Compiled based on information received from SPSEs)

#### 2.4.1.3 Return on Equity

Shareholders' funds of a Company are calculated by adding paid-up capital including share application money and free reserves net of accumulated losses and deferred revenue expenditure. Shareholders' funds are also known as equity. A positive shareholders' fund implies that the company has enough assets to cover its liabilities while negative shareholder equity means that liabilities exceed assets.

RoE computed in respect of Power Sector SPSEs, which have earned profit or incurred loss, as per their latest annual financial statements is detailed in the **Table 2.18**:

<sup>25</sup> The average rate of interest on government borrowings was adopted from the Reports of the C&AG of India on State Finances (Government of West Bengal) for the concerned year wherein the average rate for interest paid = Interest Payment/ [(Amount of previous year's Fiscal Liabilities + Current year's Fiscal Liabilities)/2]\*100.

**Table 2.18: Profit and loss wise Return on Equity on Power Sector SPSEs**  
(₹ in crore)

	Year	No. of SPSEs	Net Profit/ (Loss) after tax	Shareholders' funds	RoE in per cent
	(1)	(2)	(3)	(4)	(5)={3}/(4)*100
<b>Profit earning</b>	2015-16	4	481.16	14,578.11	3.30
	2016-17	3	481.09	13,336.24	3.61
	2017-18	4	475.22	15,058.86	3.16
	2018-19	3	505.46	12,328.20	4.10
	2019-20	4	1,054.49	15,038.46	7.01
<b>Loss incurring</b>	2015-16	2	(-) 327.72	(-) 587.83	-
	2016-17	4	(-) 564.25	1,293.35	43.63
	2017-18	3	(-) 578.20	1,116.27	51.80
	2018-19	3	(-) 636.46	616.10	103.30
	2019-20	2	(-) 166.60	(-) 1,357.31	-
<b>Total</b>	2015-16	6	153.44	13,990.28	1.10
	2016-17	7	(-) 83.16	14,629.59	(-) 0.57
	2017-18	7	(-) 102.98	13,474.18	(-) 0.76
	2018-19	6	(-) 131.00	12,944.30	(-) 1.01
	2019-20	6	887.89	13,681.15	6.49

(Source: Compiled based on information received from SPSEs)

The Return on Equity of the loss incurring Power Sector SPSEs was not worked out for 2015-16 and 2019-20 as their net worth was negative. After 2015-16, SPSEs in Power Sector as a whole had posted significant profits in 2019-20.

#### 2.4.1.4 Return on Capital Employed

Return on Capital Employed (RoCE) is a ratio that measures a company's profitability and the efficiency with which its capital is employed. RoCE is calculated by dividing a company's earnings before interest and taxes (EBIT) by the capital employed.<sup>26</sup>

The details of total RoCE of all the profit earning and loss incurring State SPSEs during the period from 2015-16 to 2019-20 are given in **Table 2.19**:

**Table 2.19: Profit and Loss-wise Return on Capital Employed of Power Sector SPSEs**

(₹ in crore)

	Year	No. of SPSEs	EBIT	Capital Employed	RoCE (in per cent)
	(1)	(2)	(3)	(4)	(5)={3}/(4)*100
<b>Profit earning</b>	2015-16	4	2,769.12	39,783.32	6.96
	2016-17	3	1,557.10	22,882.98	6.80
	2017-18	4	1,709.54	21,575.18	7.92
	2018-19	3	1,977.24	21,435.85	9.22
	2019-20	4	3,976.36	30,661.82	12.97

<sup>26</sup> Capital employed = Paid up share capital + free reserves and surplus + long-term loans - accumulated losses - deferred revenue expenditure.

	Year	No. of SPSEs	EBIT	Capital Employed	RoCE (in per cent)
	(1)	(2)	(3)	(4)	(5)={3}/(4)*100
<b>Loss incurring</b>	2015-16	2	(-) 2.47	2,062.92	(-) 0.12
	2016-17	4	1,495.43	10,183.35	14.69
	2017-18	3	1,305.41	9,681.49	13.48
	2018-19	3	1,170.11	8,779.79	13.33
	2019-20	2	170.44	1,708.48	9.98
<b>Total</b>	2015-16	6	2,806.65	41,846.24	6.71
	2016-17	7	3,025.53	33,066.63	9.23
	2017-18	7	3,014.95	31,256.67	9.65
	2018-19	6	3,147.35	30,215.64	10.42
	2019-20	6	4,146.80	32,370.30	12.81

(Source: Compiled based on information received from SPSEs)

During 2015-16 to 2019-20, the RoCE of power-sector SPSEs steadily increased from 6.71 per cent to 12.81 per cent. The reason for improvement in RoCE was mainly increase in book profits.

## 2.4.2 Profitability of Non-Power Sector SPSEs

### 2.4.2.1 Rate of Real Return on the basis of historical cost of investment

For the purpose of calculation of the Rate of Real Return (RORR) the total figure of investment in working Non-Power Sector SPSEs by the Government of West Bengal, Government of India and others has been arrived by considering equity, interest free loans and grants as well as subsidies for operational and management purposes. As per the latest accounts finalised till September 2020 (**Appendix-7**), equity of the GoWB, GoI and others in these 79 Non-Power SPSEs, aggregated to ₹ 4,220.50 crore and grants as well as subsidies for operational and management expenses adding up to ₹ 19,872.93 crore. Out of the outstanding long-term loans of ₹ 6,553.63 crore, ₹ 546.30 crore was interest-free. Thus, the aggregate investment in these SPSEs on the basis of historical cost stood at ₹ 24,639.73, crore (₹ 4,220.50 crore + ₹ 19,872.93 crore + ₹ 546.30 crore). The sector-wise rate of real return on investment (RROI) on the basis of historical cost of investment for the period 2015-16 to 2019-20 is given in **Table 2.20**:

**Table 2.20 Sector wise Rate of Real Return on Investment on historical cost basis**

(₹ in crore)

Year wise	Total Earnings for the year	Investment in the form of equity, interest free loans and grants/ subsidies for operational & management expenses on historical cost basis				Rate of Real Return on investment on historical cost basis (in per cent)
		Govt. of WB	Govt. of India	Funds invested by others	Total	
Sector-wise break-up						
(1)	(2)	(3)	(4)	(5)	(6)=(3)+(4)+(5)	(7)
<b>2015-16</b>						
<b>Social Sector</b>	(-) 40.05	8,996.89	325.92	7.57	9,330.38	(-) 0.43

Year wise	Total Earnings for the year	Investment in the form of equity, interest free loans and grants/ subsidies for operational & management expenses on historical cost basis				Rate of Real Return on investment on historical cost basis (in per cent)
		Govt. of WB	Govt. of India	Funds invested by others	Total	
Sector-wise break-up						
(1)	(2)	(3)	(4)	(5)	(6)=(3)+(4)+(5)	(7)
<b>Competitive Sector</b>	(-) 547.99	6,210.72	50.15	48.62	6,309.49	(-) 8.68
<b>Others</b>	185.73	1,979.35	1,087.44	19.92	3,086.71	6.02
<b>Total</b>	<b>(-) 402.31</b>	<b>17,186.96</b>	<b>1,463.51</b>	<b>76.11</b>	<b>18,726.58</b>	<b>(-) 2.15</b>
<b>2016-17</b>						
<b>Social Sector</b>	87.09	9,576.28	325.92	7.57	9,909.77	0.88
<b>Competitive Sector</b>	(-) 486.11	7,047.38	50.15	48.62	7,146.15	(-) 6.80
<b>Others</b>	147.54	2,240.65	1,102.45	19.92	3,363.02	4.39
<b>Total</b>	<b>(-) 251.48</b>	<b>18,864.31</b>	<b>1,478.52</b>	<b>76.11</b>	<b>20,418.94</b>	<b>(-) 1.23</b>
<b>2017-18</b>						
<b>Social Sector</b>	30.62	10,414.25	319.17	7.62	10,741.04	0.28
<b>Competitive Sector</b>	(-) 765.39	8,349.11	55.29	46.59	8,450.99	(-) 9.06
<b>others</b>	117.19	2,361.23	1,105.20	8.32	3,474.75	3.37
<b>Total</b>	<b>(-) 617.58</b>	<b>21,124.59</b>	<b>1,479.66</b>	<b>62.53</b>	<b>22,666.78</b>	<b>(-) 2.72</b>
<b>2018-19</b>						
<b>Social Sector</b>	(-) 23.75	10,302.53	319.42	6.7	10,628.65	(-) 0.22
<b>Competitive Sector</b>	(-) 500.96	8,990.78	55.29	19.05	9,065.12	(-) 5.53
<b>Others</b>	1,012.13	2,453.97	1,115.45	8.32	3,577.74	28.29
<b>Total</b>	<b>487.42</b>	<b>21,747.28</b>	<b>1,490.16</b>	<b>34.07</b>	<b>23,271.51</b>	<b>2.09</b>
<b>2019-20</b>						
<b>Social Sector</b>	(-) 24.73	10,499.10	319.42	6.7	10,825.22	(-) 0.23
<b>Competitive Sector</b>	(-) 698.25	9,779.45	394	19.05	10192.5	(-) 6.85
<b>Others</b>	1,012.91	2,498.13	1115.45	8.43	3,622.01	27.97
<b>Total</b>	<b>289.93</b>	<b>22,776.68</b>	<b>1,828.87</b>	<b>34.18</b>	<b>24,639.73</b>	<b>1.18</b>

(Source: Compiled based on information received from SPSEs)

It would be seen from the table that while SPSEs in the competitive sector had a negative return in all five years, the social sector had a negative return in the last two years. Only the 'Others' sector had a positive return in all five years, with 2018-19 having a significant jump on account of profit earned (₹ 885.27 crore) by WBIDCL.

These 79 SPSEs included 19 inactive SPSEs and one<sup>27</sup> working SPSE that had not even submitted first account up to September 2020. Out of 60 working SPSEs, there were eight Statutory Corporations and 52 Government Companies. It was seen from earlier Audit Reports, that 13 out of these 52 Companies had continuously incurred losses for five or more years according to their latest

<sup>27</sup> New Town Kolkata Green Smart City Corporation Limited

available accounts. These Companies had, however, not undergone financial restructuring or re-capitalisation in the past five years.

#### 2.4.2.2 Return on Investment on the basis of Present Value of Investment

Traditional calculations of return based only on the basis of historical cost ignores the present value (PV) of money. Calculating RORR on the basis of PV is a more adequate assessment. These 79 Non-Power SPSEs as a whole, had a positive rate of real return on investment only in the years 2018-19 and 2019-20. The PV of the total investment in the working SPSEs (Non-Power Sector) was computed on the following assumptions:

- The equity infused minus disinvestment has been reckoned as investment for calculating the rate of real return on investments. Further, interest free long-term loans and assistance as grants/ subsidies have been considered as investment infusion. In case of either repayment of loans by the SPSEs or their subsequent conversion to equity/ interest bearing loans, the PV was calculated on the reduced balances of interest free loans over the period.
- The average rate of interest on government borrowings for the concerned financial year<sup>28</sup> was adopted as compounded rate for arriving at present value since they represent the cost incurred towards investment of funds for the year and therefore considered as the minimum expected rate of return on investments.

The investment by the GoWB, GoI and others in the Non-Power SPSEs at the end of the year 2019-20 was ₹ 24,693.73 crore consisting of equity (₹ 4,220.50 crore), interest free loans (₹ 546.30 crore) and grants/ subsidies (₹ 19,872.93 crore). The PV of funds infused by the GoWB, GoI and others up to 31 March 2020 amounted to ₹ 153,787.97 crore.

The sector-wise comparison of returns on funds at historical cost and at present value for the five years from 2015-16 to 2019-20 are given in **Table 2.21**:

**Table 2.21: Sector wise Real Rate of Return on Investment at Present Value**

(₹ in crore)

Year wise/ Sector-wise break-up	Total Earnings for the year	Total Investment in the form of equity, IFL and grants/ subsidies for operational & management expenses on historical cost basis	RRoI on historical cost basis (in per cent)	Present value of the total investment at the end of the year	RRoI on PV of the investments (in per cent)
(1)	(2)	(3)	(4)=(2)/(3)	(5)	(6)=(2)/(5)
<b>2015-16</b>					
<b>Social Sector</b>	(-) 40.05	9,330.38	0.43	13,572.52	(-) 0.29
<b>Competitive Sector</b>	(-) 547.99	6,309.49	(-) 8.68	66,895.97	(-) 0.81
<b>Others</b>	185.73	3,086.71	6.02	6,781.99	2.74

<sup>28</sup> The average rate of interest on government borrowings was adopted from the Reports of the C&AG of India on State Finances (Government of West Bengal) for the concerned year wherein the average rate for interest paid = Interest Payment/[Amount of previous year's Fiscal Liabilities + Current year's Fiscal Liabilities]/2]\*100.

Year wise/ Sector-wise break-up	Total Earnings for the year	Total Investment in the form of equity, IFL and grants/ subsidies for operational & management expenses on historical cost basis	RRoI on historical cost basis (in <i>per cent</i> )	Present value of the total investment at the end of the year	RRoI on PV of the investments (in <i>per cent</i> )
(1)	(2)	(3)	(4)=(2)/(3)	(5)	(6)=(2)/(5)
<b>Total</b>	<b>(-) 402.31</b>	<b>18,726.58</b>	<b>(-) 2.15</b>	<b>87,250.48</b>	<b>(-) 0.46</b>
<b>2016-17</b>					
<b>Social Sector</b>	87.09	9,909.77	0.88	16,572.21	0.53
<b>Competitive Sector</b>	(-) 486.11	7,146.15	(-) 6.80	79,048.78	(-) 0.61
<b>Others</b>	147.54	3,363.02	4.39	7,616.17	1.94
<b>Total</b>	<b>(-) 251.48</b>	<b>20,418.94</b>	<b>(-) 1.23</b>	<b>1,03,237.16</b>	<b>(-) 0.24</b>
<b>2017-18</b>					
<b>Social Sector</b>	30.62	10,741.0	0.28	20,329.02	0.15
<b>Competitive Sector</b>	(-) 765.39	8,450.99	(-) 9.06	93,542.13	(-) 0.81
<b>Others</b>	117.19	3,474.75	3.37	8,359.06	1.4
<b>Total</b>	<b>(-) 617.58</b>	<b>22,666.78</b>	<b>(-) 2.72</b>	<b>1,22,230.21</b>	<b>(-) 0.51</b>
<b>2018-19</b>					
<b>Social Sector</b>	(-) 23.75	10,628.65	(-) 0.22	24,071.81	(-) 0.10
<b>Competitive Sector</b>	(-) 500.96	9,065.12	(-) 5.53	1,09,673.94	(-) 0.46
<b>Others</b>	1,012.13	3,577.74	28.29	9,100.22	11.12
<b>Total</b>	<b>487.42</b>	<b>23,271.51</b>	<b>2.09</b>	<b>1,42,845.97</b>	<b>0.34</b>
<b>2019-20</b>					
<b>Social Sector</b>	(-)27.73	10,825.22	(-) 0.23	25,915.71	(-) 0.10
<b>Competitive Sector</b>	(-) 698.25	10,192.50	(-) 6.82	1,18,074.96	(-) 0.59
<b>Others</b>	1,012.91	3,622.01	27.97	9797.3	10.34
<b>Total</b>	<b>289.93</b>	<b>24,639.73</b>	<b>1.16</b>	<b>1,53,787.97</b>	<b>0.19</b>

(Source: Compiled based on latest finalised Accounts received from SPSEs)

The return earned on total investment on historical cost basis and present value was positive only in 2018-19 and 2019-20. Further, in 2019-20, the returns from 'Others' sector at present value was 10.34 *per cent* as against return of 27.97 *per cent* based on the historical cost of investment. Moreover, the Social and Competitive sectors incurred losses in 2018-19 and 2019-20.

#### 2.4.2.3 Return on Equity

Return on Equity (RoE) is a measure of financial performance to assess how effectively management is using shareholders' funds to earn profits and is calculated by dividing net income (*i.e.* net profit after taxes) by shareholders' funds, expressed as a percentage.

Shareholders' funds of a Company comprise of paid-up capital including share application money and free reserves net of accumulated losses and deferred revenue expenditure. A positive shareholders' fund implies that the company

has enough assets to cover its liabilities while negative shareholder equity means that liabilities exceed assets. It is also known as net worth.

Sector wise RoE computed in respect of all Non-Power SPSEs as per their latest annual financial accounts are detailed in **Table 2.22**:

**Table 2.22: Sector wise Return on Equity**

(₹ in crore)

Sector	Net Profit/ (Loss) after Tax	Shareholders' funds	RoE in per cent
(1)	(2)	(3)	(4)={2}*(3)/100
<b>2015-16</b>			
Social Sector	(-) 40.05	1,878.37	(-) 2.13
Competitive Sector	(-) 547.99	(-) 5,965.32	–
Others	185.73	2,033.07	9.14
<b>Total</b>	<b>(-) 402.31</b>	<b>(-) 2,053.88</b>	–
<b>2016-17</b>			
Social Sector	87.09	1,442.04	6.04
Competitive Sector	(-) 486.11	(-) 7,297.64	–
Others	147.54	2,289.94	6.44
<b>Total</b>	<b>(-) 251.48</b>	<b>(-) 3,565.66</b>	–
<b>2017-18</b>			
Social Sector	30.62	1,905.67	1.61
Competitive Sector	(-) 765.39	(-) 10,030.38	–
Others	117.19	1,896.56	6.18
<b>Total</b>	<b>(-) 617.58</b>	<b>(-) 6,228.15</b>	–
<b>2018-19</b>			
Social Sector	(-) 23.75	1,854.27	(-) 1.28
Competitive Sector	(-) 500.96	(-) 10,447.46	–
Others	1,012.13	3,226.15	31.37
<b>Total</b>	<b>487.42</b>	<b>(-) 5,367.04</b>	–
<b>2019-20</b>			
Social Sector	(-) 24.73	1,905.87	(-) 1.30
Competitive Sector	(-) 698.25	(-) 10,174.03	–
Others	1,012.91	3,599.92	28.14
<b>Total</b>	<b>289.93</b>	<b>(-) 4,668.24</b>	-

(Source: Compiled based on latest finalised Accounts received from SPSEs)

Between 2015-16 and 2019-20, the aggregate shareholders' funds (net worth) were negative for all years, hence RoE could not be worked out. Only in the Others sector, the RoE was positive for all years, ranging from 9.14 in 2015 -16 to 28.14 per cent in 2019-20.

ROE computed in respect of working SPSEs in Non-Power Sector, which have earned profit or incurred loss, as per their latest annual financial statements is detailed in the **Table 2.23**:

**Table 2.23: Return on Equity of Profit earning/ Loss incurring working SPSEs**

(₹ in crore)

	Year	No. of SPSEs	Net Profit/ Loss after tax	Shareholders' funds	RoE in per cent
	(1)	(2)	(3)	(4)	(5)={3}*4}/100
<b>Profit earning</b>	2015-16	37	342.54	4,055.62	8.45
	2016-17	38	344.82	3,310.56	10.42
	2017-18	36	325.15	3,191.66	10.19
	2018-19	30	1,314.22	4,005.91	32.81
	2019-20	29	1,332.69	5,252.10	25.37
<b>Loss incurring</b>	2015-16	27	(-) 478.83	(-) 5,265.98	-
	2016-17	27	(-) 451.55	(-) 4,732.52	-
	2017-18	27	(-) 758.05	(-) 6,561.77	-
	2018-19	28	(-) 573.08	(-) 6,221.65	-
	2019-20	30	(-) 778.10	(-) 7,200.20	-
<b>Total*</b>	2015-16	64	(-) 136.29	(-) 1,210.36	-
	2016-17	65	(-) 106.73	(-) 1,421.96	-
	2017-18	63	(-) 432.90	(-) 3,370.11	-
	2018-19	58	741.14	(-) 2,215.74	-
	2019-20	59	554.59	(-) 1,948.10	-

(Source: Compiled based on latest finalised Accounts received from SPSEs)

\* SPSEs which had not submitted their first accounts since inception have been excluded.

For each of the five years up to 2019-20, the aggregate shareholders' funds (net worth) was negative for Non-Power SPSEs. Therefore, the RoE was not worked out.

#### 2.4.2.4 Return on Capital Employed

Return on Capital Employed (RoCE) is a ratio that measures a company's profitability and the efficiency with which its capital is employed. RoCE is calculated by dividing a company's earnings before interest and taxes (EBIT) by the capital employed.

The details of sector wise RoCE in respect of 79 Non-Power SPSEs during the period from 2015-16 to 2019-20 are given in **Table 2.24**:

**Table 2.24: Sector wise Return on Capital Employed of all SPSEs in Non-Power Sector**

(₹ in crore)

Sector	EBIT	Capital Employed	RoCE (in per cent)
(1)	(2)	(3)	(4)={2}*3}/100
<b>2015-16</b>			
<b>Social Sector</b>	30.28	2,511.76	1.21
<b>Competitive Sector</b>	(-) 222.53	(-) 3,035.38	-
<b>Others</b>	658.71	7,925.24	8.31
<b>Total</b>	<b>466.56</b>	<b>7,401.62</b>	<b>6.30</b>
<b>2016-17</b>			
<b>Social Sector</b>	127.94	2,059.51	6.21



Sector	EBIT	Capital Employed	RoCE (in per cent)
(1)	(2)	(3)	(4)={2}*(3)/100
<b>Competitive Sector</b>	(-) 541.07	(-) 3,362.93	-
<b>Others</b>	489.69	5,052.95	9.69
<b>Total</b>	<b>76.56</b>	<b>3,749.53</b>	<b>2.04</b>
<b>2017-18</b>			
<b>Social Sector</b>	69.31	2,699.01	2.57
<b>Competitive Sector</b>	(-) 356.32	(-) 5,814.57	-
<b>Others</b>	350.22	4,943.92	7.08
<b>Total</b>	<b>63.21</b>	<b>1,828.36</b>	<b>3.46</b>
<b>2018-19</b>			
<b>Social Sector</b>	149.02	2,194.23	6.79
<b>Competitive Sector</b>	394.76	(-) 6,562.75	-
<b>Others</b>	1,266.57	5,403.17	31.37
<b>Total</b>	<b>1,810.35</b>	<b>1,034.65</b>	<b>174.97</b>
<b>2019-20</b>			
<b>Social Sector</b>	150.50	2,238.03	6.72
<b>Competitive Sector</b>	315.08	(-) 6,172.02	-
<b>Others</b>	1,262.07	5,819.38	21.69
<b>Total</b>	<b>1,727.65</b>	<b>1,885.39</b>	<b>91.63</b>

(Source: Compiled based on latest finalised Accounts received from SPSEs)

During 2015-16 to 2019-20, the aggregate Return on Capital Employed ranged between 2.04 per cent (2016-17) and 174.97 per cent (2018-19). However, RoCE of the competitive sector for the years 2015-16 to 2019-20 could not be worked out as capital employed was negative.

The details of total RoCE of the profit earning and loss incurring working SPSEs (Non-Power) during the period from 2015-16 to 2019-20 are given in **Table 2.25**:

**Table 2.25: RoCE of Profit earning/ Loss incurring working SPSEs  
(Non-Power Sector)**

(₹ in crore)

	Year	No. of SPSEs	EBIT	Capital Employed	RoCE (in per cent)
	(1)	(2)	(3)	(4)	(5)={3}*(4)/100
<b>Profit earning</b>	2015-16	37	843.36	10,052.21	8.39
	2016-17	38	702.42	6,723.50	10.45
	2017-18	36	521.43	6,285.34	8.30
	2018-19	30	1,741.97	6,176.92	28.20
	2019-20	29	1,727.65	7,248.27	23.84
<b>Loss incurring</b>	2015-16	27	(-) 213.14	(-) 2,300.83	-
	2016-17	27	(-) 188.94	(-) 1,803.99	-
	2017-18	27	(-) 394.99	(-) 2,845.39	-
	2018-19	28	177.96	(-) 3,249.44	-
	2019-20	30	121.49	(-) 3,788.72	-

	Year	No. of SPSEs	EBIT	Capital Employed	RoCE (in per cent)
	(1)	(2)	(3)	(4)	(5)={3*(4)}/100
<b>Total*</b>	2015-16	64	630.22	7,751.38	8.13
	2016-17	65	513.48	4,919.51	10.44
	2017-18	63	126.44	3,439.95	3.68
	2018-19	58	1,919.93	2,927.48	65.58
	2019-20	59	1,849.14	3,459.55	53.45

(Source: Compiled based on latest finalised Accounts received from SPSEs)

\* SPSEs which had not submitted their first accounts since inception have been excluded.

From 2015-16 to 2019-20, the working SPSEs in the Non-Power Sector as a whole had a positive Return on Capital Employed (RoCE) ranging from 3.68 per cent (2017-18) to 65.58 per cent (2018-19).

## 2.5 Winding up of Inactive SPSEs

Nineteen SPSEs were inactive for one to eighteen years as of 31 March 2020. The total investment, as per their latest finalised accounts up to September 2020, was ₹ 1,318.12 crore (equity: ₹ 172.14 crore, and loans: ₹ 1,145.98 crore). Their total negative net worth was ₹ 2,720.14 crore. The numbers of inactive SPSEs at the end of each year for the five years ended 31 March 2020 is given below:

**Table 2.26: Inactive SPSEs**

Particulars	2015-16	2016-17	2017-18	2018-19	2019-20
No. of inactive companies	18	18	21	19	19

(Source: Compiled from the information included in Audit Reports (SPSE), GoWB of respective years)

While Departments concerned had made efforts for disposal/ sale of land and other assets since closure of the SPSEs, it was not prioritised and several constraints remain unresolved. Therefore, the funds locked up in these inactive SPSEs could not be redeployed for use in more productive sectors.

## 2.6 Audit of Public Sector Enterprises

The process of audit of Government Companies is governed by relevant provisions of Sections 139 and 143 of the Companies Act, 2013 (the Act). Further, as per sub-section 7 of Section 143 of the Act, the CAG may, in case of any company covered under sub-section 5 or sub-section 7 of Section 139, by an order, conduct test audit on the accounts of such company, if considered necessary. The provisions of Section 19A of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971 shall apply to such Audit. An audit of the financial statements of a company in respect of the financial years that commenced on or before 31 March 2014 shall continue to be governed by the provisions of the Companies Act, 1956.

The CAG is also the sole auditor in respect of six of nine<sup>29</sup> Statutory Corporations and WBERC. Moreover, CAG also prepares Separate Audit Reports (SAR) for

<sup>29</sup> CAG is not entrusted with the statutory audit of the Great Eastern Hotel Authority, under the provisions of the applicable statute.

West Bengal Financial Corporation although not the statutory auditor, while preparing supplementary reports on West Bengal Warehousing Corporation.

## 2.7 Appointment of Statutory Auditors of Public Sector Enterprises

The financial statements of the Government Companies are audited by Statutory Auditors, appointed by CAG as per the provisions of Sections 139 (5) or 139 (7) of the Act, as applicable, who shall submit a copy of their audit report, including the financial statements of the Company, to the CAG, under Section 143(5) of the Act. These financial statements are subject to supplementary audit to be conducted by CAG within 60 days from the date of receipt of the audit report under the provisions of Section 143 (6) of the Act.

## 2.8 Reconciliation with the Finance Accounts of the Government of West Bengal

The figures in respect of equity, loans and guarantees outstanding as per records of Power Sector SPSEs should agree with the figures appearing in the Finance Accounts of the Government of West Bengal. In case the figures do not agree, the SPSEs concerned and the Finance Department should carry out reconciliation of the differences.

### 2.8.1 Power Sector SPSEs

The position in this regard for Power-Sector SPSES as on 31 March 2020 is stated in **Table 2.27**:

**Table 2.27: Equity, loans and guarantees outstanding as per Finance Accounts of GoWB for 2019-20 vis-à-vis records of SPSEs**

(₹ in crore)

Outstanding in respect of	Amount as per Finance Accounts	Amount as per records of State SPSEs	Total Difference in 2019-20	Total Difference in 2018-19
(1)	(2)	(3)	(4) = (2) – (3)	(5)
Equity	10,903.39	12,871.06	(-) 1,967.67	(-) 1,932.57
Loans	4,816.18	1,235.16	3,581.02	3,454.45
Guarantees	4,803.76	4,392.02	411.74	4,317.73

(Source: Information furnished by Power Sector SPSEs and SFAR for the year ended March 2020)

During the year 2019-20, the amount of Guarantees as per Finance Accounts was reconciled with the records of the SPSEs and as a result, the difference was brought down.

### 2.8.2 Non- Power Sector SPSEs

The position in this regard for Non-Power SPSEs as on 31 March 2020 is stated in the **Table 2.28**:

**Table 2.28: Equity, Loans and Guarantees outstanding as per Finance Accounts of Government of West Bengal for 2019-20 vis-à-vis records of SPSEs**

(₹ in crore)

Outstanding in respect of	Amount as per Finance Accounts	Amount as per SPSEs	Total Difference in 2019-20	Total Difference in 2018-19
(1)	(2)	(3)	(4) = (2) – (3)	(5)
<b>Equity</b>	5,488.55	4,220.50	1,268.05	1,494.78
<b>Loans</b>	4,325.92	4,573.04	(247.12)	(908.94)
<b>Guarantees Outstanding</b>	1,799.79	1,858.07	(58.28)	3,608.56

(Source: Information furnished by SPSEs and SFAR for the year ended March 2020)

Audit observed on comparing the figures of equity, loans and guarantees as per records of SPSEs was different from that in the State Finance Accounts; the differences were due to reconciliation pending for many years. During the year 2019-20, the amount of Guarantees as per Finance Accounts was reconciled with the records of the SPSEs and the difference brought down after necessary adjustments provided by GoWB.

## 2.9 Submission of accounts by SPSEs

Of the 85 SPSEs under the purview of CAG as on 31 March 2020, 66 were working and 19 were inactive. The status of timelines followed by the State SPSEs in preparation of accounts is as detailed under:

### 2.9.1 Age-wise analysis of arrears in submission of accounts

Accounts for the year 2019-20 were required to be submitted by all the 85 SPSEs by 30 September 2020. However, in view of the prevailing pandemic related restrictions, the Ministry of Corporate Affairs, Government of India directed all Registrars of Companies to liberally grant, against applications submitted by companies, extension for holding Annual General Meetings, at which the audited accounts are adopted, up to 31 December 2020. Seven out of the 76 Government Companies submitted their accounts for the year 2019-20 for audit by CAG on or before 30 September 2020. Further, details of age-wise arrears in submission of accounts of SPSEs as of 30 September of following year for each of the last three financial years ending 31 March 2020 are given at **Table 2.29**:

**Table 2.29: Accounts Position as on 30 September for the respective year**

Year	Upto date accounts		Accounts delayed Upto 1 year		Accounts delayed for 2-3 years		Accounts delayed for 4-5 years		Accounts delayed for more than 5 years		Total no. of SPSEs with arrear accounts	
	SPSEs	Accounts	SPSEs	Accounts	SPSEs	Accounts	SPSEs	Accounts	SPSEs	Accounts	SPSEs	Accounts
2017-18	41	41	33	33	9	19	5	21	6	57	53	130
2018-19	35	35	30	30	8	17	5	21	6	52	49	120
2019-20	7	7	53	53	14	32	5	23	6	58	78	166

(Source: Based on accounts of SPSEs received during the period from October 2019 to September 2020)

### 2.9.2 Timeliness in preparation of accounts by the Power Sector SPSEs

Accounts for the year 2019-20 were required to be submitted by all the Power Sector SPSEs by 30 September 2020. However, in view of the prevailing

pandemic related restrictions, the Ministry of Corporate Affairs, Government of India directed all Registrars of Companies to liberally grant, against applications submitted by companies, extension for holding Annual General Meetings, at which the audited accounts are adopted, up to 31 December 2020. Two out of the six Government Companies submitted their accounts for the year 2019-20 for audit by CAG on or before 30 September 2020. Further, details of arrears in submission of accounts of Power Sector SPSEs as of 30 September of following year for each of the last five financial years ending 31 March 2020 are given at **Table 2.30**:

**Table 2.30: Position relating to submission of accounts by the working State SPSEs**

Sl. No.	Particulars	2015-16	2016-17	2017-18	2018-19	2019-20 <sup>30</sup>
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Number of SPSEs	7	8	8	6	6
2.	Number of accounts submitted during current year	6	9	7	8	6
3.	Number of SPSEs which finalised accounts for the current year	6	7	4	5	2
4.	Number of previous year accounts finalised during current year	-	1	3	3	4
5.	Number of SPSEs with arrears in accounts	1	1	4	1	4
6.	Number of accounts in arrears	1	2	4	1	4
7.	Extent of arrears (in years)	1	2	1	1	1

(Source: Based on accounts of SPSEs received during the period October 2019 to September 2020)

During the period from 01 October 2019 to 30 September 2020, the Power Sector SPSEs had finalised six annual accounts comprising two accounts for 2019-20 and four accounts for previous years. The Chief Secretary to the Government of West Bengal is informed quarterly regarding arrears in accounts.

### 2.9.3 Timeliness in preparation of accounts by the Non- Power Sector SPSEs

Accounts for the year 2019-20 were required to be submitted by all the Non-Power Sector SPSEs by 30 September 2020. However, in view of the prevailing pandemic related restrictions, the Ministry of Corporate Affairs, Government of India directed all Registrars of Companies to liberally grant, against applications submitted by companies, extension for holding Annual General Meetings, at which the audited accounts are adopted, up to 31 December 2020. Five out of the 79 Government Companies submitted their accounts for the year 2019-20 for audit by CAG on or before 30 September 2020. Further, details of arrears in submission of accounts of Power Sector SPSEs as of 30 September of following year for each of the last five financial years ending 31 March 2020 are given at **Table 2.31**:

<sup>30</sup> General Circular No. 28/2020 (F. No. 2/4/2020-CL-V) of 17 August 2020.

**Table 2.31: Position relating to submission of accounts by the working SPSEs**

Sl. no.	Particulars	2015-16	2016-17	2017-18	2018-19	2019-20
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Number of SPSEs	82	84	86	78	79 <sup>31</sup>
2.	Number of accounts submitted during current year	80	78	96	84	37
3.	Number of SPSEs which finalised accounts for the current year	30	31	37	30	5
4.	Number of previous year accounts finalised during current year	50	47	59	54	32
5.	Number of SPSEs with arrears in accounts	52	53	49	48	74
6.	Number of accounts in arrears	123	138	126	119	162 <sup>32</sup>
7.	Extent of arrears (years)	1 to 10	1 to 11	1 to 12	1 to 13	1 to 14

(Source: Based on accounts of SPSEs received during the period October 2019 to September 2020)

During the period from 01 October 2019 to 30 September 2020, 59 of the 79 SPSEs had finalised 37 annual accounts which, included 5 accounts for the year 2019-20 and 32 accounts for previous years. Thus, 162 accounts of 74 SPSEs (working: 55, inactive: 19) were in arrears. The details of the latest accounts of the SPSEs received up to 30 September 2020 are given at **Appendix-7**. 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 SPSEs within the stipulated period. The Chief Secretary to the Government of West Bengal is informed quarterly regarding arrears in accounts. Fifteen SARs in respect of the seven Statutory Corporations were issued to Government during May 2015 to April 2021, these are yet to be placed in the State Legislature.

In absence of finalisation of accounts for 2019-20 as well as earlier years and their subsequent audit in 74 out of 79 SPSEs, no assurance could be given on whether the investments and expenditure incurred had been properly accounted for and the purpose for which the amount was invested was achieved. The GoWB investment in these SPSEs, therefore, remained outside the oversight of State Legislature to that extent.

**Recommendation:** Administrative Departments should strictly monitor and issue necessary directions to clear the arrears in accounts. The Government may also look into the constraints in preparing the accounts of the SPSEs and take necessary steps to clear the arrears in accounts.

<sup>31</sup> Incorporation of One SPSE namely, New Town Kolkata Green Smart City Corporation Limited.

<sup>32</sup> Including two accounts of New Town Kolkata Green Smart City Corporation Limited, for 201819.

## 2.10 Follow up action on Audit Reports

### 2.10.1 Power Sector SPSEs

#### 2.10.1.1 Discussion of Audit Reports by COPU

The status of discussion of Performance Audits and Paragraphs that appeared in Audit Reports (SPSEs) by the COPU as on 30 September 2020 was as under in Table 2.32:

**Table 2.32: Performance Audits/ Paragraphs on Power Sector SPSEs in Audit Reports vis-à-vis discussed as on 30 September 2020**

Period of Audit Report	Number of Performance Audits/ Paragraphs			
	Appeared in Audit Reports		Discussed	
	PAs	Paragraphs	PAs	Paragraphs
2011-2017	4	25	2	14

(Source: Database maintained in the PAG Office based on replies received and evidence taken)

#### 2.10.1.2 Compliance with Reports of COPU

According to rules of Procedure of COPU, Action Taken Notes (ATNs) on the recommendation contains in the COPU Reports are to be submitted by the Government within three months of their receipt. The eight COPU reports where Action Taken Notes were yet to be received from the Department of Power as on 30 September 2020 contain 15 recommendations in respect of paragraphs, which had appeared in the Reports of the CAG of India for the years 2010-11 to 2016-17.

### 2.10.2 Non- Power Sector SPSEs

#### 2.10.2.1 Discussion of Audit Reports by COPU

The status of discussion of Performance Audits and paragraphs that appeared in Audit Reports (SPSEs) by the COPU as on 30 September 2020 was as under in Table 2.33:

**Table 2.33: Performance Audits/ Paragraphs appeared in Audit Reports vis-à-vis discussed as on 30 September 2020**

Period of Audit Report	Number of Performance Audits/ Paragraphs			
	Appeared in Audit Reports		Discussed	
	PAs	Paragraphs	PAs	Paragraphs
2011-17	6	39	2	15

(Source: Database maintained in the Pr. AG's Office w.r.t. taking of evidence by COPU)

#### 2.10.2.2 Compliance with Reports of COPU

According to rules of Procedure of COPU, Action Taken Notes (ATNs) on the recommendation contains in the COPU Reports are to be submitted by the Government within three months of their receipt. The nine COPU reports where Action Taken Notes are yet to be received from the Departments as on 30 September 2020 contain 27 recommendations in respect of paragraphs pertaining to five Departments, which had either appeared in the Reports of the CAG of India for the years 2003-04 to 2014-15 or were taken up for *suo-motu* study.

# **Chapter III**

## **Performance Audit relating to Power Sector Enterprises**





## Chapter - III

### Performance Audit relating to Power Sector Enterprises

#### West Bengal Power Development Corporation Limited and The Durgapur Projects Limited

### 3 Fuel Management in Thermal Power Stations of West Bengal

#### 3.1 Introduction

Thermal Power Stations (TPS) convert fuels such as coal, natural gas *etc.* to electric power. In India, almost 90 *per cent* of thermal electricity is generated from coal.

Further, according to the Energy Plan and Action Plan for West Bengal (December 2019), coal-based capacity is expected to continue as the major source of electricity generation until 2040. The total installed generation capacity of thermal power plants in West Bengal was 14,691 MW [Central: 6913 MW (NTPC-2,100, DVC-4,813) State: 5,295 MW and Private Sector: 2,483 MW] as of March 2020.

In the State, there are six TPS, comprising 22 generating units<sup>33</sup> commissioned between September 1965 and December 2016, under The West Bengal Power Development Corporation Limited (WBPDC) and The Durgapur Projects Limited (DPL), both Companies wholly owned by the Government of West Bengal (GoWB). WBPDC, a generating company as defined under section 2 (28) of the Electricity Act 2003, was incorporated in July 1985, while DPL was set-up in September 1961. Presently, WBPDC operates five TPS located at Kolaghat, Bakreswar, Bandel, Santaldih and Sagardighi with a total installed capacity of 4,745 MW.<sup>34</sup> Similarly, DPL operates one TPS at Durgapur with installed capacity of 550 MW.<sup>35</sup> During 2015-20, these six TPS generated 1,21,694.46 million units<sup>36</sup> (MU) of electricity against target of 1,70,604.01 MU and available capacity of 1,84,528.51 MU.

Together, these six TPS generated 99,753.44 MU (50.16 *per cent*) of the 1,98,862.17 MU of total power requirement of the State during 2016-20.

#### 3.2 Organisational Structure

WBPDC and DPL are PSEs that function under the Department of Power and Non-Conventional Energy Sources (DPNCES), Government of West Bengal (GoWB). The management of WBPDC is vested with a Board of Directors (BoD) consisting of two Non-Executive Directors, five Independent Directors and seven Executive Directors, including the Chairman and Managing Director. The Chairman and Managing Director is the Chief Executive of the Company and is assisted by the Director (Regulatory Affairs), Director (Mining), Director (Finance and Accounts), Director (HR), Director

<sup>33</sup> Capacities of 60 MW – two, 210 MW – 11, 215 MW – one, 250 MW – three, 300 MW – three, 500 MW – two

<sup>34</sup> KTPS- 1,260 MW (6x210 MW); BkTPS- 1,050 MW (5 x 210 MW); STPS- 500 MW (2x250 MW); BTPS- 335MW {(2x60 MW)+(1x215 MW)}; SgTPS- 1600 MW {(2x300 MW)+(2x500 MW)}

<sup>35</sup> Unit 6 – 110 MW (Decommissioned), unit 7 – 300 MW and Unit 8 – 250 MW.

<sup>36</sup> Also known as million Kilowatt hours (mKwh)

(Projects) and Director (Operation and maintenance) *etc.* in managing day to day operations.

The Management of DPL is given to a BoD consisting of eight Directors, including the Chairman and the Managing Director. The General Manager heads the operations of the TPS and reports to the Director (Operations) at Kolkata who exercises overall supervision over the operation of the TPS. In December 2017, the GoWB decided that DPL would be a wholly owned subsidiary company of WBPDCCL, which became effective from April 2019.

### 3.3 Audit Objectives

Audit of Fuel Management in Thermal Power Stations would assess whether -

- i. All six TPSs had effectively ensured fuel security through long term fuel linkages/ fuel supply agreements (FSA) for procurement of fuel, *viz.*, coal and oil as well as their economic and efficient inventory management.
- ii. Proper procedures were adopted for assessing quality and quantity of coal/ fuel oil.
- iii. Proper controls existed for monitoring consumption of coal and ensuring that actual heat rate conformed to the norms fixed by WBERC and the thermal efficiency achieved was as per the design parameters.

### 3.4 Scope and Methodology of Audit

The pilot study on the Performance Audit (PA) on 'Fuel Management in Thermal Power Stations in West Bengal' was conducted for Kolaghat Thermal Power Station (KTPS) and DPL in January/February 2019. Thereafter, audit was conducted across six TPSs from March 2019 to March 2021 in different phases. The audit was expected to be completed by September 2019. However, at the request of WBPDCCL, audit was kept in abeyance from June 2019 to November 2019 due to the closing of annual accounts and audit certification process. Further, due to exigencies on account of COVID pandemic and West Bengal Assembly Elections 2021, the audit process became further delayed. The scope covered Fuel Management of the six TPSs for the five years from April 2015 to March 2020. Audit methodology involved scrutiny of agreements with coal companies and suppliers/Indian Railways, WBERC guidelines/orders, Coal Distribution Policy, Agenda/ Minutes of meetings of BoD and interaction with the Management.

An entry conference was held on 20 March 2019 with Department of Power (DoP), WBPDCCL and DPL to discuss the audit objectives, audit criteria, scope and methodology of PA. The audit findings were discussed at an Exit Conference held on 01 October 2021. It was attended by the Additional Chief Secretary to the Government of West Bengal, Department of Power; Chairman and Managing Director WBPDCCL, Managing Director DPL and other senior Officers/ Management of the Department and SPSEs. The responses have been suitably incorporated in this Report.

### 3.5 Audit Criteria

The audit criteria *inter-alia*, were derived from the following -

- a) National Electricity Policy (2005), New Coal Distribution Policy (2007) *etc.* issued by Government of India.

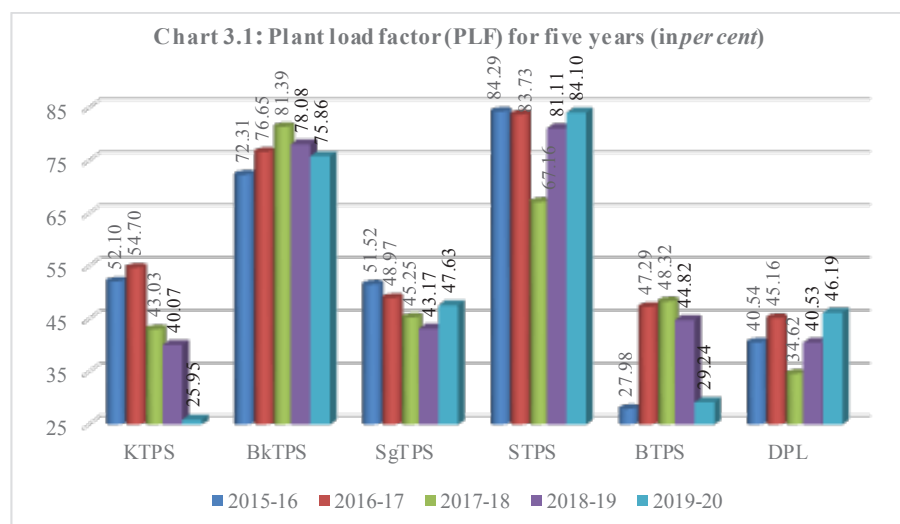
- b) Tariff regulations/ orders, fuel related guidelines and norms including the technical parameters for fuel consumption by WBERC.
- c) Central Electricity Authority (CEA) norms/guidelines. Energy Plan/ Energy Action Plan for West Bengal, Energy/ Fuel Audit Reports of WBPDC/ DPL, good practices followed by other generating companies.
- d) Agenda/ Minutes of meetings of Boards of Directors and Board level sub-committees.
- e) Fuel Supply Agreements (FSAs)<sup>37</sup> with coal/oil companies for supply of coal/ oil and agreements with Indian Railways for transportation of coal.
- f) Contracts/ agreements for import of coal and beneficiation (washing) of coal.

## 3.6 Operational Performance

### 3.6.1 Plant Load Factor

As per definition of Central Electricity Regulatory Commission, ‘Plant Load Factor’ or ‘(PLF)’ in relation to a thermal generating station or unit for a given period means the total sent out energy corresponding to scheduled generation during the period, expressed as a percentage of sent out energy corresponding to installed capacity in that period.

PLF is commonly considered as a measure of the capacity utilisation of a power plant. A low PLF indicates that the power station is not being used at its optimal capacity. This would increase the unit cost of the power produced, making it unattractive for purchase by DISCOMs. The Plant Load Factor of the six TPs for five years from 2015-16 to 2019-20 is summarised in **Chart 3.1** below:



As per WBERC regulations, normative PLFs are 80 per cent for Bakreswar Thermal Power Station (BkTPS), Santaldih Thermal Power Station (STPS), Sagardighi Thermal Power Station (SgTPS), 75 per cent for Durgapur Thermal Power Station (DPL), 72 per cent for Bandel Thermal Power Station (BTPS) and 70 per cent for Kolaghat Thermal Power Station (KTPS). STPS achieved the normative PLF in four out of five years, BkTPS in one out of five years

<sup>37</sup> FSA is a comprehensive coal supply agreement between coal producing company and power generating company. FSA also include terms and condition of coal quality and quantity, supply, payment, deductions etc.

whereas KTPS, SgTPS, BTPS and DPL did not achieve normative PLF in any of the years due to coal shortage, low system demand and lack of maintenance.

### 3.6.2. Working Results

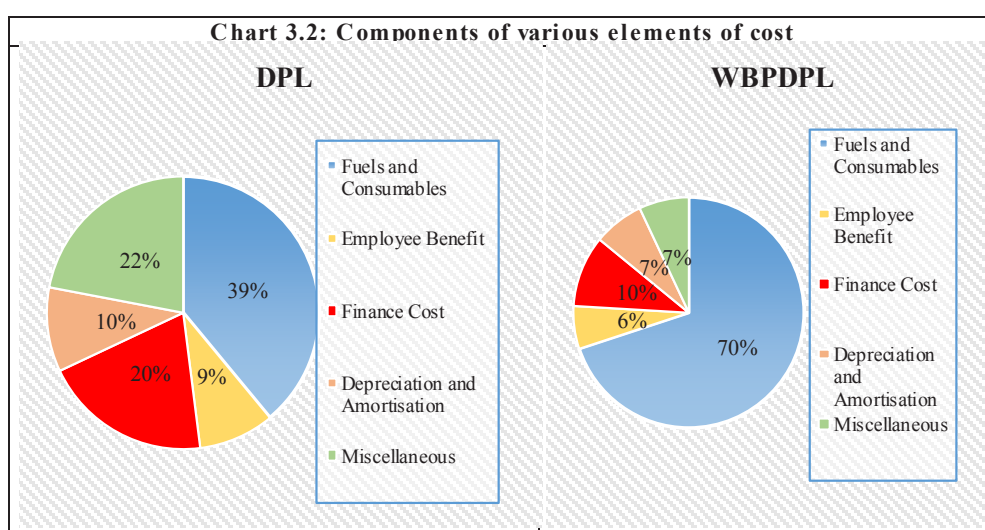
The details of working results like cost of generation of electricity, revenue realisation, net surplus/ loss and earnings and cost *per* unit of operation for WBDCL and DPL from 2015-16 to 2019-20, are given in **Appendix - 8**.

As may be seen from **Appendix – 8** in WBDCL the revenue realisation per unit increased from ₹ 3.83 to ₹ 5.04 per unit in 2015-16 to 2019-20. However, during the same period fixed cost per unit increased from ₹ 1.16 to ₹ 1.71 per unit, mainly due to increase in interest & finance charges, employees cost and depreciation. The variable cost per unit in WBDCL increased from ₹ 2.87 (2015-16) to ₹ 3.45 (2018-19) per unit during review period mainly due to excess consumption of coal and increase in price of coal; however, the unit variable cost decreased from ₹ 3.45 (2018-19) to ₹ 3.32 (2019-20) per unit due to production from captive coal mines.

In DPL the revenue realisation per unit decreased from ₹ 5.84 to ₹ 4.22 per unit in 2015-20. However, during the same period fixed cost per unit increased from ₹ 3.71 (2015-16) to ₹ 4.45 (2017-18) per unit mainly due to increase in interest & finance charges, employees cost and depreciation and again decreased to ₹ 3.84 (2019-20) due to decrease in finance cost and other expenses. The variable cost per unit in DPL decreased from ₹ 3.43 (2015-16) to ₹ 2.92 (2017-18) per unit during review period mainly due to decrease in production of energy and again increased to ₹ 3.15 (2019-20) per unit due to excess consumption of coal and increase in price of coal.

#### Elements of cost of power generation

Fuel & Consumables and interest & finance charges constitute the major elements of cost of generating power in respect of both DPL and WBDCL. The percentage break-up of costs for 2015-20 is given below:



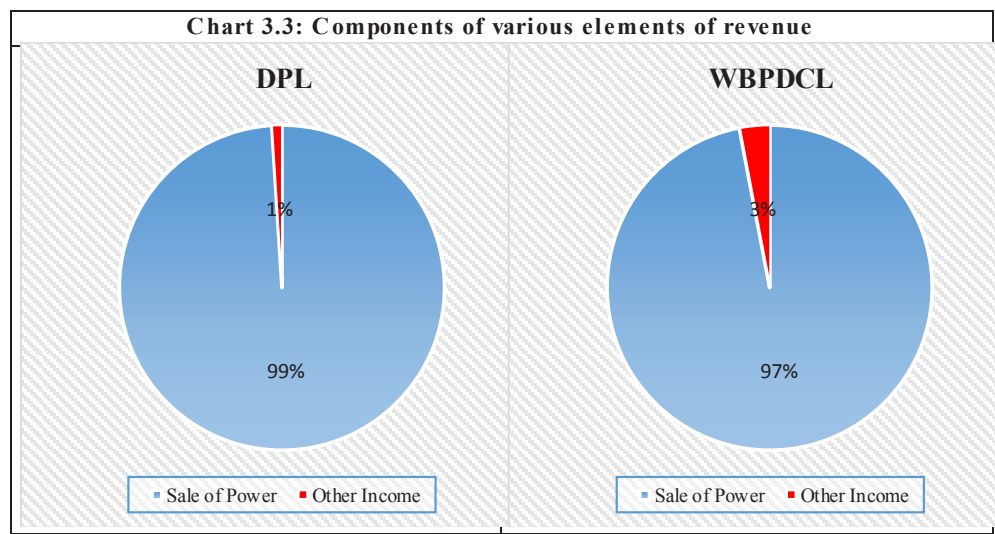
(Source: Annual Reports of WBDCL and DPL)

The Durgapur Projects Limited had three business segments namely, Power Station, Coke Oven Group of Plants and Water Works. Sub-segments of the Power Business comprised of Generation, Transmission and Distribution. Coke

Oven Group of Plant (COGP) was shut down (2015). DPL has to bear the employee cost of COGP. Further, Unit 8 (250 MW) was commissioned in 2014. Power demand did not increase during that period and the installed capacity was double of its generation (2016). Since, there was no Power Purchase Agreement between WBSEDCL and DPL for sale of surplus power of DPL to WBSEDCL, the DPL was forced to shut down the units. This led to huge finance cost to the company. Therefore, Miscellaneous Cost (21 per cent), Finance Cost (23 per cent) and Employee Benefit Cost (7 per cent) are accounted as major cost elements of DPL rather than fuel cost. Therefore, cost structure of WBPDCCL is more representative of power sector than DPL.

**Elements of revenue**

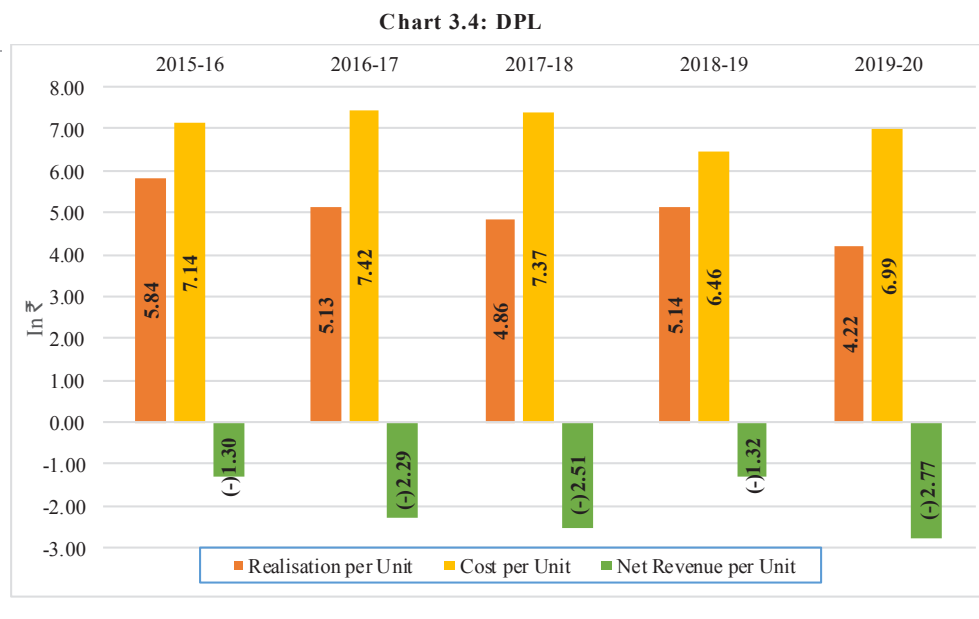
Sale of Power constitutes the main source of revenue. The percentage break-up of revenue for 2015-20 is given below:



(Source: Annual Reports of WBPDCCL and DPL)

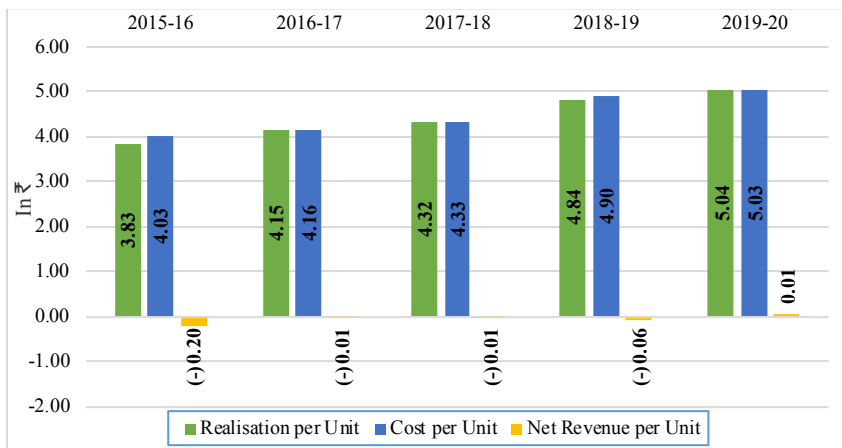
**Recovery of cost of operations**

The net revenue per unit of DPL and WBPDCCL are depicted below:



(Source: Annual Reports of DPL)

Chart 3.5 WBPDCCL



(Source: Annual Reports of WBPDCCL)

## 3.7 Procurement of Coal/ Oil

### 3.7.1 Procurement of coal

West Bengal Electricity Regulatory Commission (WBERC) fixes power generation targets for TPSs annually considering the capacity of plants, average PLF and past performance. Accordingly, each TPS works out coal requirement on the basis of generation targets and past coal consumption trends. The Ministry of Coal (MoC), GoI notified the New Coal Distribution Policy (NCDP) in October 2007, outlining the policy framework for distribution of coal to various categories of coal consumers, including power stations. Coal is primarily procured by WBPDCCL and DPL through Fuel Supply Agreements (FSAs) with Bharat Coking Coal Limited (BCCL), Eastern Coalfields Limited (ECL), Central Coalfields Limited (CCL) and Mahanadi Coalfields Limited (MCL), e-auction, imports and agencies such as Metal Scrap Trade Corporation Limited (MSTC) and West Bengal Mineral Development and Trading Corporation Limited (WBMDTCL). The details of coal procurement are depicted in **Appendix - 9**. The observations on procurement of coal are discussed below:

#### 3.7.1.1 Fuel Supply Agreements (FSA)

Execution of FSA between coal companies and consumers of coal became mandatory under NCDP 2007. FSA between coal companies and consumers of coal lays down conditions regarding contracted quantity and quality of coal to be supplied, procedure for checking quality of coal, sources of supply, commercial terms, provisions for short supply of coal by the coal companies to Generation Companies (GENCOs), short lifting of coal by GENCOs *etc.* Two versions of FSA were signed, one for stations commissioned prior to 31 March 2009 (regarded as existing consumers under NCDP) and another for stations commissioned after 31 March 2009 (called new consumers under NCDP). Subsequently for reducing the cost of power generation, Central Electricity Authority (CEA) issued (June 2016) methodology for optimal utilisation of domestic coal. According to this methodology, States would use their coal optimally in the power stations of the state power utility within the

aggregated limits of Annual Contracted Quantity (ACQs) as mentioned in FSAs. This process would not only ensure adequate availability of coal to all TPSs, but also reduce the transportation cost, thereby reducing the variable charges. Accordingly, WBPDC and DPL executed (April 2017) supplementary coal supply agreements with the subsidiaries of Coal India Limited (CIL) (i.e. BCCL, ECL, MCL and CCL) as sellers and CIL as a Coordinator for the said purpose. The FSAs, *inter-alia*, stipulated that the movement of coal would be through railways. In the event, movement of coal through railways is not feasible, review would be made jointly in the matter of road transport. DPL procured coal mainly through FSAs during 2015-20 while WBPDC besides FSAs, procured coal through imports, e-auction using MSTC e-auction platform and agencies *viz.* MSTC and WBMDTCL through tender.

In the Exit Conference, the Government, *inter alia*, stated that the coal companies are monopolies. In this connection, Audit noticed that WBPDC had, in Case No. 37 of 2013, contended before the Competition Commission of India (CCI) about the abuse by the coal companies of their dominant position with respect to imposing clauses of the FSAs on power stations and actual quality and quantity of coal supplied. However, WBPDC did not participate in the subsequent hearings of CCI for reasons not spelt out.

***Performance incentive/ compensation for excess/short lifting of coal paid under FSA***

WBPDC and DPL entered into FSAs with Coal companies for 20 years from 1 April 2009 covering all six TPS. These FSAs, *inter-alia*, provided that WBPDC/ DPL: -

- would pay incentive to the coal suppliers for lifting of coal in excess of ninety *per cent* of Annual Contracted Quantity (ACQ);
- would pay compensation for short lifting of coal less than ninety *per cent* of ACQ;
- could re-allocate the ACQ of one TPS among the remaining TPSs.

Receipt of coal against the principal FSA allotment during 2015-20 revealed that WBPDC paid incentive<sup>38</sup>, amounting to ₹ 237.72 crore for excess procurement of coal ranging from 4.42 *per cent* to 45.67 *per cent* of FSA quantity (**Appendix - 10**). However, WBPDC did not pay any compensation for short lifting of coal ranging from 3.49 *per cent* to 93.33<sup>39</sup> *per cent* of FSA quantity during 2015-20. Audit also observed that WBPDC did not impose penalty on CCL to the tune of ₹ 111.07 crore for short supply of coal for the years 2017-18 and 2018-19.

During 2015-16 to 2019-20, DPL short lifted coal from MCL ranging from 41.11 *per cent* to 67.78 *per cent* and paid compensation of ₹ 13.60 crore. DPL also paid incentive amounting to ₹ 3.86 crore due to excess procurement of coal from BCCL and ECL.

The Government stated (October 2021) that, in respect of WBPDC, there were no captive coal mines or coal linkages for 1,460 MW (30.77 *per cent* of aggregate installed capacity) from 2015-16 to 2017-18. To maintain generation,

<sup>38</sup> *Performance Incentive: - As per clause no 3.12 as per FSA.*

<sup>39</sup> *From CCL in 2016-17.*



coal beyond 90 per cent of ACQ was drawn, leading to payment of incentives. Moreover, due to acute cash flow problem, WBPDCCL was not able to make advance payments to the coal companies or maintain irrevocable revolving letters of credit with them, as required under the FSAs. Consequently, while there was short supply of coal, no penalty could be imposed on coal companies since payment conditions of FSA were not fulfilled. Government added that in respect of DPL, the amounts of incentive for 2017-18 and 2019-20 and compensation for 2016-17 and 2017-18 had not yet been reconciled with the coal companies. These delays of up to four years indicated the lackadaisical approach of the management. The reply also overlooks the fact that WBPDCCL failed to execute short-term bridge linkage as discussed at **Paragraph 3.7.1.3 (ii)**.

Further, at the Exit Conference, the Government also stated that fund constraints had occurred as WBERC had allowed only partial realisation of regulatory assets by power SPSEs .

### **3.7.1.2 Linkage with coal mines**

#### **(i) Stations having linkage with coal mines**

The Ministry of Coal (MoC), GoI allocated (March 2015/ May 2016), seven coal mines in favour of the WBPDCCL namely (i) Tara (E&W), Paschim Bardhaman (ii) Barjore, Birbhum (iii) Gangaramchawk & Gangaramchawk Bhadulia, Birbhum (iv) Kasta (East), Birbhum (v) Barjora (N), Bankura, (vi) Deocha Pachami (June 2018), Birbhum, all in West Bengal, and (vii) Panchhwara (N) in Jharkhand. Out of the above, Kasta (East) is a schedule III coal mine, which means that it is a coal mine that is not ready to operate.

WBPDCCL had selected (May 2016/ August 2016) Mine Developers & Operators (MDOs) through open tendering process (during October 2015 to February 2016) for operation of all the allotted mines excepting Kasta (East). Of these, mining operations commenced in three mines –Panchhwara (N), Jharkhand, Barjora (N), Bankura and Barjore, Birbhum. As per approved mine plan, schedule of coal production was to be commenced in 2017-18. However, actual coal production started in 2018-19. Actual coal produced in said three (3) mines was 22.76 lakh MT till March 2020.

In their reply (October 2021), the Government cited issues relating to Mining Plans, forest clearance and appointment of MDO and stated that the pre-mining work like removal of overburden, dewatering etc. created problems beyond the control of the WBPDCCL. At the Exit Conference also, the Government attributed the delays to the need to obtain fresh statutory clearances, contrary to the understanding that the existing clearances would remain valid. The Government's contention was not valid, since these issues should have been within WBPDCCL's knowledge as the previous MDO was a joint venture company in which both WBPDCCL and DPL were shareholders.

DPL was allotted (February 2015) Trans Damodar Coal mine at Barjora, Bankura district through e-auction. DPL appointed (March 2015) previous allottee, viz, WBMDTCL as Advisor-cum-Mining Agent for operation of the said coal block on payment of consultancy fee and reimbursement of actual expenses. However, mining operations did not commence till March 2020 due to delays in possessing land and in obtaining permission from Coal Controller,

crop compensation and rehabilitation issues, revision of land values etc. As per agreement between WBMDTCL and DPL, WBMDTCL would act as an agency of DPL and DPL would reimburse all expenses towards mining activities to WBMDTCL. DPL reimbursed ₹ 34.37 crore (₹ 26.85 crore for salary and wages of workers and ₹ 7.52 crore for other expenses) to WBMDTCL upto March 2020 as per the decision made (April 2015) by the Minister-in-Charge, Power and NES Department. At the Exit Conference, the Government stated that production had resumed in December 2020.

**(ii) Failure to execute short term Bridge Linkage**

Ministry of Coal, GoI issued (February 2016) policy guidelines for grant of Bridge Linkage to specified TPS of Central and State PSEs which had been allotted schedule-III coal mines under the Coal Mines Special Provisions Act, 2015 and coal blocks allotted under the Mines and Minerals Development and Regulation Act (MMDR Act). Bridge Linkage would act as a short-term linkage to bridge the gap between the coal requirement of Central and State PSEs and start of production from the allotted coal mine/ block. Linkage would come to an end after a period of three years from the date of allotment of coal mine/block. WBPDCCL was allotted one Schedule-III coal mine in May 2016 and hence bridge linkage would be valid upto April 2019.

Audit observed that WBPDCCL requested (June 2018) MoC, GoI for Bridge Linkage of 65 lakh MT per annum for three years till Kasta (East) and Deocha Pachami coal blocks become fully operational. Standing Linkage Committee for Power Sector (SLC), GoI observed (December 2018) that TPSs for which bridge linkage was requested by WBPDCCL were linked to six<sup>40</sup> other Schedule-II mines (i.e., operative coal mines) in addition to Kasta (East) Schedule III mine. As such SLC rejected the proposal and directed (December 2018) WBPDCCL to resubmit the proposal after linking specified capacity of the TPS to Schedule-III coal blocks only i.e., Kasta (East). Accordingly, WBPDCCL revised and submitted (January 2019) fresh linkage to MoC, GoI. In the meantime, the allotted Schedule- II coal mines became operational and the linkage period also lapsed. Thereafter, the management did not pursue further.

Audit observed that

- (i) WBPDCCL submitted (December 2017) their initial linkage proposal with a delay of 20 months from the date of allotment (May 2016) of Schedule-III coal mine.
- (ii) WBPDCCL did not submit the linkage proposal according to Bridge Linkage guidelines. Bridge linkage was available for Schedule-III coal blocks only, while WBPDCCL also included Schedule-II coal block in their application.

As such delay in appeal and non-quantification of coal requirement for Schedule-III coal blocks only resulted in deprivation of benefit of Bridge Linkage coal allotment for WBPDCCL. In the absence of bridge linkage, WBPDCCL had to procure coal through agencies by incurring extra expenditure. Consequently, against the total shortage of coal of 130 lakh MT (i.e. 65 lakh MT per annum for two years) during 2017-19, WBPDCCL procured 54.50 lakh MT through agencies (other than FSA) by incurring an extra expenditure of ₹ 1,226.09 crore

<sup>40</sup> Pachhwara North, Barjora North, Barjore, Gangaramchawk, Tara (East & West), and Deocha Pachami

for procurement of coal. This was calculated in audit as the difference between actual price paid for non-FSA coal and average FSA price of coal procured for 54.50 lakh MT.

The Government, in their reply, stated (October 2021) that there was constant persuasion and follow up by WBPDCCL and the Department of Power, Government of West Bengal to obtain coal through bridge linkage. They added that it was not clear how Audit determined that the Ministry of Coal would have provided bridge linkage for the entire application quantity of 65 lakh MT.

The reply was not tenable since WBPDCCL had, initially, submitted (December 2017) the linkage proposal belatedly after 20 months from the date of allotment (May 2016) of Kasta mine and even then had not submitted the proposal according to Bridge Linkage guidelines. Further, Audit calculated the loss on the quantum of coal procured from non-FSA sources and not on the bridge linkage quantity applied for by WBPDCCL.

### **3.7.1.3 E-auction of Coal**

To meet the shortage of coal stock due to absence of bridge linkage, WBPDCCL participated in spot e-auction of ECL through MSTC auction platform. Audit observed:

- a) ECL offered 35 rakes of G4 grade coal from Asansol area at a price of ₹ 6,180 per MT through spot e-auction. WBPDCCL bagged (November 2017) nine rakes for SgTPP and six rakes for BkTPP through the spot e-auction at a price of ₹ 7,512.19 per MT (Railway Receipt quantity: 30,731.22) and ₹ 7,890.09 per MT (RR quantity: 20,640.03 MT), respectively. The aggregate value of the sale was ₹ 46.48 crore, after deducting Earnest Money Deposit (EMD). It was observed that the average procurement cost of coal from different agencies (excluding FSA and e-auction) by WBPDCCL during 2017-18 for SgTPP and BkTPP were ₹4,671.52 per MT and ₹ 4,758.87 per MT respectively. Moreover, average procurement cost of imported coal was ₹ 5,818 per MT during 2017-18 which was far below the e-auction coal price during the same period. So, there was no justification for procuring coal at higher price through e-auction when imported coal was available from the same agency at lower cost. This led to payment of extra expenditure amounting to ₹ 15.19 crore.

Audit observed that WBPDCCL failed to conduct third party sampling by Central Institute of Mining and Fuel Research (CIMFR) for the above cases for determining the actual grade of e-auction coal even though ECL provided the said facility. Out of 15 rakes purchased (November 2017), SgTPP received G5 grade while BkTPP received G6 grade instead of G4 grade of coal. As a result, WBPDCCL suffered a loss of ₹ 9.07 crore on account of grade slippage for the two-spot e-auctions.

- b) Similarly, SgTPS received (March to May 2018) 42 rakes from ECL through the spot e-auction (February 2018) with aggregate RR quantity of 1,38,877.32 MT at an average e-auction price of ₹ 7,591.22 per MT. Audit observed that the average procurement cost of coal from different agencies by WBPDCCL (excluding FSA and e-auction) during 2017-19 for SgTPS was ₹ 4,911.02 per MT. This led to extra expenditure amounting

to ₹ 37.22 crore. WBPDCCL procured coal as there was no FSA for STPS unit-6, BkTPS unit-5 and SgTPS unit 3 & 4. Further, WBPDCCL failed to materialise the bridge linkage or procure imported coal in time.

The Government stated (October 2021) that it had permitted (August 2017) WBPDCCL to import only two lakh MT of coal against proposal for four lakh MT. To meet the shortfall, WBPDCCL went in for coal procurement through e-auction, which initially did not have provision for third party sampling. Subsequently, WBPDCCL engaged QCI, an approved agency for third party sampling.

The reply is not acceptable since WBPDCCL's proposal (July 2017) was for coal purchase of four lakh MT, consisting of 1.80 lakh MT imported coal through agencies and 2.20 lakh MT of indigenous coal through MSTC. Against proposal of 1.80 lakh MT, Government had approved purchase of two lakh MT of imported coal. Moreover, although ECL had notified (August 2017/ January 2018) buyers to undertake third party sampling at loading end, WBPDCCL was not able to avail the offer since the coal was urgently needed at the TPS. This indicates that WBPDCCL lacked an inventory policy to ensure availability of adequate coal of the desired quality to run the TPS, leading to purchases at higher rates through e-auction.

#### **3.7.1.4 Loss in fuel procurement from other sources**

##### ***Loss in coal procurement from MSTC and WBMDTCL***

In order to meet the gap between actual requirement and supply of coal from CIL, WBPDCCL placed (June 2017/September 2017/ November 2017) purchase orders on Metal Scrap Trade Corporation Limited (MSTC) for procurement of indigenous coal in three tranches. In the said orders, there was a clause which *inter-alia* stipulated that coal sampling and testing would be done on rake-to-rake basis and in case any coal supplied did not meet the mentioned grade specification, there shall be a penalty and payment shall be deducted accordingly.

Meanwhile, MSTC intimated (November 2017) WBPDCCL that a vendor had come with a suggestion in the tender and requested for change in the penalty clause on basis of average grade of entire quantity of all rakes to be supplied to a single plant instead of rake-to-rake basis. In accepting the proposal from MSTC, WBPDCCL changed (December 2017) the penalty clause without the approval of Board of Directors.

Subsequently, during the period from December 2017 to August 2019 WBPDCCL placed purchase orders on MSTC/WBMDTCL for procurement of 22.75 lakh MT of indigenous coal with changed penalty clause based on overall average grade quality of coal of all rakes despatched to a particular plant. It was observed in Audit that due to change in mode of calculation for penalty from rake-to-rake basis to overall average of all rakes basis, WBPDCCL suffered a loss of ₹ 49.19 crore (₹ 38.95 crore from MSTC and ₹ 10.24 crore from WBMDTCL) as detailed in **Appendix – 10A & 10B**.

The Government stated (October 2021) that no bid was received on the first auction date. MSTC advised WBPDCCL to extend validity of the tender and amend the penalty clause. Consequently, WBPDCCL had, with approval of the competent authority, extended the bid date and amended the penalty clause.

However, it is seen that the Board approved the purchase order on MSTC in November 2017 with sampling to be done on rake to rake basis; however, subsequent amendment of this clause was not found to be approved by the Board of Directors.

### 3.7.2 Procurement of Oil

Fuel oil is required at power stations to facilitate initial start-up of the boiler, stabilisation of flame at low load with pulverised coal as fuel. During the years 2015-20, WBPDC and DPL procured 2,01,109 KL and 10,817 KL of Light Diesel Oil (LDO) valuing ₹ 899 crore and ₹ 45.98 crore, respectively.

DPL procured fuel oil from Indian Oil Corporation Ltd (IOCL), Hindustan Petrochemical Corporation Ltd (HPCL) and Bharat Petroleum Corporation Ltd (BPCL) as and when required through tender without any standing contract or agreement with the oil companies. During 2015-18, DPL purchased three rakes of LDO from HPCL for power plants at a cost of ₹ 34.91 crore. Audit observed that at the time of tendering the offer price of HPCL was lower compared to other oil companies. Due to delay in placement of order by DPL for reasons not on record, the validity of the offer price had lapsed and HPCL increased the offer price. As a result, DPL incurred an extra expenditure to the tune of ₹ 2.02 crore for procurement of oil.

Procedure for LDO procurement by WBPDC included issuing of limited enquiry, receiving of quotation, selection of vendor, advance payment to vendors and placing of orders and receiving the LDO at respective plants. Scrutiny of records relating to LDO procurement revealed that, in WBPDC, it took 4 to 373 days from receiving the indent to actual delivery during the period 2015-20.

Audit observed that the rates of LDO (Basic price and Landed price) were revised fortnightly by the oil companies, and the rates prevalent during the loading date were considered for billing. In 69 out of 87 cases (*i.e.* 79.31 per cent) the oil companies had delivered oil after the scheduled delivery period ranging between one and 123 days during 2015-20. As the rates of LDO were revised fortnightly, there was an increase in basic price ranging between 0.72 per cent and 33.40 per cent. Due to delay in dispatching order by oil companies, the price of LDO (at basic price) as per Letter of Order amounting to ₹717.62 crore was billed at ₹ 725.33 crore. As a result, WBPDC had to pay ₹ 7.71 crore to the oil companies in excess of enquired/ ordered price.

Such repeated instances of delayed delivery may have been prevented had WBPDC executed agreements with oil companies rather than ad-hoc purchase.

At the Exit Conference, the Government stated that the possibility of entering into long-term agreements with oil companies will be explored.

#### **Recommendations**

##### **WBPDC and DPL may-**

- 1) monitor enforcement of the conditions and clauses of the FSAs so as to ensure adequate and timely supply of quality coal for power generation.**
- 2) review and rationalise the procedures for procurement of coal beyond FSA quantity and through e-auctions etc.**

### 3.8 Assessment of Quality and Quantity of coal/ fuel oil

In coal fired power stations, coal of appropriate quality is essential for proper combustion and operational efficiency of the boiler. Pricing of coal also depends on its quality or 'Grade'. Grade of Coal varies on the basis of Gross Calorific value<sup>41</sup> (GCV). Grade-wise GCV is notified by CIL. As per FSA, coal grades were defined from G5 (exceeding 5,800 Kcal/kg to 6,100 Kcal/kg) to G17 (2,200 Kcal/kg to 2,500 kcal/kg). Accurate assessment of quality and quantity of coal is crucial for appreciating the adequacy and efficiency of inputs of the power station.

#### 3.8.1 Quality of Coal and Grade slippage

Clause S. 6.0 of the tripartite agreement among GENCOs, suppliers and CIMFR for quality monitoring at loading end specified that Council of Scientific and Industrial Research (CSIR) – Central Institute of Mining and Fuel Research (CIMFR), Dhanbad would be wholly responsible for collection, preparation and analysis (Moisture, Ash and GCV on equilibrated basis) of coal in the context of FSA.

Audit observed that DPL (2017-18 to 2019-20) and BkTPS (2015-19) under WBPDCCL received coal rakes from BCCL, ECL and MCL, which were not analysed by the CSIR-CIMFR at loading points. The coal companies billed those coal rakes on the basis of the declared grade<sup>42</sup>. DPL and BkTPS made payments as per FSA against these un-analysed coal on the basis of declared grade.

From the unloading end sampling analysis reports, Audit observed that the actual grade of the coal supplied was below the declared grade of coal. Clause No. 4.7.6 of FSA stipulated that in the event of sample not being collected from despatches, the weighted average of the most recent results available in any preceding month against respective source and grade would be adopted. Assessment of Quality of Coal is the basis of raising bills. However, DPL/WBPDCCL did not take any action to inform coal companies for corrective action. In absence of detailed records from the management, audit calculated the loss on the basis of difference in rates of actual grade of coal and declared grade of coal. It was found that DPL and BkTPS had incurred a loss of ₹ 73.49 crore and ₹ 64.77 crore, respectively towards payment against the lower grade of coal received.

The Government stated (October 2021) that under the FSAs, coal companies raise invoices according to the GCV of coal at loading end. WBPDCCL had engaged CSIR-CIMFR for doing the sampling at loading end. Moreover, generation companies that challenge the invoiced grade, based on unloading end sampling, face counter measures from coal companies such as upgrading of the referee samples through third party sampling. Further, DPL maintained liaison with coal companies to obviate instances of non-sampling and made efforts to maximise gains during the reconciliation process. The reply does not address the issue of coal not being sampled at loading end and reasons thereof.

<sup>41</sup> "Gross Calorific Value" in relation to a thermal power generating station means the heat produced in Kilo Calorie by complete combustion of one Kg of solid fuel.

<sup>42</sup> Declared Grade means the particular grade(s) of Coal mined from any seam or section of a seam in the Seller's collieries from which Coal is produced and supplied under this Agreement, as declared by CI or the Seller.

### 3.8.2 Procurement of low-grade coal/grade slippage

Clause 11.2.2 of the FSA stipulated that the seller would issue regular credit notes on account of grade slippage<sup>43</sup> to the extent of difference in the base price of declared grade and analysed grade of coal within seven days of acceptance of results under joint signature. In case of analysed grade being higher than the declared grade, bonus/claim would be raised by the seller.

Each TPS has been designed for using a particular grade range of coal. Use of specified grade of coal ensures optimisation of power generation and cost economies. Audit observed that grades of coal received from collieries were often inferior or ungraded coal.

During 2016-18, DPL received coal from different collieries of ECL and BCCL, which was of inferior grade compared to billed grade. DPL claimed ₹ 29.08 crore towards grade differences during the period from 2016-17 to 2017-18, of which ₹ 28.84 crore was accepted on the basis of settlement of claim. Thus, the balance amount of ₹ 23.86 lakh was disallowed without any reason. BkTPS claimed ₹ 36.20 crore from BCCL during 2015-19, towards grade slippage against which ₹ 29.97 crore only was accepted by the BCCL, while balance amount of ₹ 6.23 crore was disallowed without citing any reasons. No further communication to realise the disallowed amount was found on records.

VAT, Cess are calculated on *ad-valorem* basis. Therefore, while claiming grade slippage, the component of VAT, Cess paid is also required to be claimed. It was observed that DPL during the period from April 2016 to June 2017 did not include five *per cent* VAT component while determining claim for grade slippage, while it included Goods and Service Tax (GST) component from July 2017 onwards. Resultantly, DPL had to suffer a loss to the tune of ₹ 47.06 lakh.

Moreover, CIL communicated (April 2017) to the Government of West Bengal (GoWB) that National Mineral Exploration Trust (NMET) cess, District Mineral Foundation (DMF) cess and GST are calculated on *ad valorem* basis and such dues required to be adjusted for grade slippage during final claim. Audit further observed that DPL and BkTPS did not claim other duties (i.e. royalty, NMET, DMF and GST) amounting to ₹ 4.92 crore and ₹ 3.60 crore on grade slippage. Therefore, the coal companies did not adjust other duties amounting to ₹ 4.92 crore and ₹ 3.60 crore while issuing credit notes on grade slippage to DPL and BkTPS respectively.

The Government agreed (October 2021) with the findings and stated that WBPDCCL had taken up with coal companies to finalise the reconciliation process. Moreover, as no specific reference to refund of taxes and duties was provided in the FSAs, realisation of the tax component for downgraded coal was difficult.

### 3.8.3 Ungraded Coal

Clause 4.1 and 4.2 of the FSA stipulated that the quality of coal delivered should conform to the specifications given in schedule-II (i.e., G5-G17) and the seller would make adequate arrangements to assess the quality of coal and monitor

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<sup>43</sup> Coal grade is declared each year by an independent scientific agency, when on sampling the coal grade is found to be lower than declared grade, it is called Grade Slippage.

the same to endeavour that un-graded coal was not loaded into the purchaser's containers. If the seller dispatched any quantity of such coal, the purchaser would limit the payment towards cost of such coal to ₹ 1/- (Rupee one only) per tonne. Royalty, cess, sales tax, etc. would, however, be paid as per the declared grade.

The details of ungraded coal received by WBPDCCL below the specification mentioned in the FSA (i.e. below 2,200 Kcal per Kg) from different subsidiaries of CIL are depicted in the **Table 3.1** below.

**Table 3.1: Statement showing excess payment made in spite of receipt of ungraded coal during 2015-20.**

Name of TPS	RR Weight (MT)	Actual Payment (₹in crore)	Payment @ Re. 1 (₹in crore)	Excess payment (₹in crore)
BkTPS	5,34,534.65	48.21	0.05	48.16
STPS	3,443.72	0.64	0.01	0.63
<b>Total</b>	<b>5,37,978.37</b>	<b>48.85</b>	<b>0.06</b>	<b>48.79</b>

It is evident from the above table that during the period 2015-20, two TPS of WBPDCCL received 5.38 lakh MT of ungraded coal with declared grade value was ₹ 48.85 crore. Audit observed that WBPDCCL had reviewed the grades of coal received and found it to be ungraded. Yet, it had made payment at the price of the declared grade. Since this coal was below the grade as mentioned in FSA, the payment should have been made at the rate of ₹ 1 per MT in line with the clause of FSA, i.e., ₹ 0.06 crore. However, WBPDCCL made payments as per declared grade cost resulting in excess payment of ₹ 48.79 crore.

The Government accepted (October 2021) the observation.

### 3.8.4 Efficiency of conversion of fuel to electricity

In a typical coal-fired thermal station, the steam turbine generator system converts only 36 *per cent* of the energy in the fuel to electrical energy. The efficiency of generation is further affected by variation in fuel consumption, variation in calorific value of coal, non-achievement of desired Station Heat Rate (SHR), departure of operational parameters from design values variation in fuel composition, inadequate maintenance, inaccuracies in control systems/instruments, etc. as discussed in subsequent paragraphs:

#### 3.8.4.1 Variation in consumption of fuel

##### (i) Excess Consumption of fuel

Fuel cost constitutes about 70 *per cent* of the total generation cost of a coal-based power station and has a major impact on cost of supply of power to consumers. Inefficiencies in fuel management raise the cost of power generation and consequently, the power tariff to consumers.

WBERC allowed ₹ 2.31 and ₹ 2.04 as fuel cost per kilo watt hour to WBPDCCL and DPL, respectively. The average fuel cost of WBPDCCL and DPL turned out to be ₹ 2.83 per kilo watt hour and ₹ 2.50 per kilo watt hour constituting 70.13 *per cent* and 39.51 *per cent* respectively of the revenue expenditure incurred during 2015-20. This excess cost beyond WBERC norms is attributed



to excess consumption of coal and oil over the norms, excess auxiliary power consumption beyond norms, high unburnt fuel due to low fineness of coal, etc. WBPDC and DPL booked the extra cost under regulatory assets while filing APR with WBERC. However, ultimately, any fuel cost escalation would have the impact of raising power tariff for the consumers.

**(ii) Electricity consumption by station auxiliaries in excess of norms**

WBERC issued (July 2013) specific normative parameters for auxiliary consumption of power at WBPDC and DPL and generation cost of the electricity used as auxiliary consumption would be allowed by the WBERC accordingly. During 2015-20, for all five TPS of WBPDC, WBERC allowed 9 to 9.95 per cent of the power generated to be used as auxiliary consumption. Against this norm, the actual auxiliary power consumption of five TPSs of WBPDC ranged between 8.50 and 11.85 per cent during 2015-20 resulting in consumption of 7.57 lakh MT of coal valued at ₹ 284.70 crore (**Appendix-11**) for such excess auxiliary power consumption.

Similarly, the actual auxiliary consumption of DPL ranged between 9.02 and 12.02 per cent during 2015-20, against the norms of 8.50 to 9 per cent allowed by WBERC resulting in excess auxiliary consumption of 0.33 lakh MT of coal valued at ₹ 34.38 crore (**Appendix-11**).

The reasons for excess auxiliary power consumption in TPS were attributed to poor maintenance leading to excessive power consumption by station auxiliaries, tube leakages, tabular Air pre-heater (APH) blockages etc. Poor coal quality resulting in forced outages leading to high number of start-ups also contributed to excess auxiliary power consumption.

At the Exit Conference, the Government stated that auxiliary consumption in WBPDC has been brought down in 2020-21 by improved overhauling, increased maintenance and replacement of existing motors with energy efficient motors in the auxiliary equipment like coal mills etc. The Government further stated (October 2021), in its reply, that DPL was operating as a generating company since January 2019 and had, therefore, approached (February 2021) to review the existing norms for auxiliary energy consumption. These responses showed that the auxiliary consumption was, indeed, controllable to within permissible norms.

**(iii) Unburnt coal**

Imperfect combustion leads to discharge of unfired pulverised coal along with ash, resulting in increase in volume of fly ash as well as high level of fuel consumption due to wastage. Pulverised coal fed into the furnace may not burn completely due to lack of adequate oxygen, lack of thorough mixing and improper size of coal particles after pulverisation (*i.e.* low fineness of coal). The partial combustion of coal and existence of unburnt carbon, due to excessive infiltration of air overloads the Induced Draft (ID) fans, resulting in lack of sufficient air for thorough mixing of coal in the furnace. Scrutiny in audit revealed that the coal cost for the excess unburnt carbon in fly and bottom ash amounted to ₹ 119.51 crore during 2015-20. The statement showing excess unburnt coal in fly ash and bottom ash at six TPS is tabled in **Table 3.2**.

**Table 3.2: Statement showing excess unburnt coal in fly and bottom ash at six TPS**

TPS	Year	Unit No	Design norm		Excess unburnt coal over norms		Amount of excess unburnt coal (₹ in crore)
			Fly Ash	Bottom Ash	Fly Ash	Bottom Ash	
DPL	2015-20	VII	1.43	1.43	0.07 to 0.87	2.87 to 4.67	13.56
		VIII	1.35	1.35	0.15 to 0.95	2.95 to 4.75	
KTPS	2015-20	I to VI	2.00	2.00	0.45 to 1.21	1.55 to 4.09	35.68
SgTPS	2015-20	I to IV	0.50	1.50	0.65 to 1.09	0.05 to 2.97	18.61
BTPS	2015-19	I to IV	2.33	9.90	8.97	10.40	9.07
		V	2.33	4.30	0.07 to 0.77	2.70 to 5.50	5.24
BkTPS	2015-19	I to VI	1.50	1.50	0.21 to 0.48	-	5.55
STPS	2015-19	V & VI	1.20	1.20	0.40 to 3.30	3.24 to 7.58	31.80
<b>Total</b>							<b>119.51</b>

Coal consumption during the year x [(% of Unburnt Coal)- [Design Norms unburnt coal] x average rate of coal.

It may be seen from the above table that the coal cost for the excess unburnt carbon in fly and bottom ash amounted to ₹ 119.51 crore during 2015-20. It was observed that in KTPS, the non-achievement of the required fineness of coal after pulverization mainly contributes to the unburnt coal in the fly ash and bottom ash. As per design parameters, the Coal Mills are required to achieve coal fineness of (i) 70 per cent pass through 200 MESH<sup>44</sup> and (ii) 93 per cent pass through 50 MESH. It was observed in KTPS that mills regularly failed to achieve 200 MESH fineness target during 2015-20.

Thus, the entire cost of excess unburnt coal (amounting to ₹ 119.51 crore during 2015-20) became a waste to the SPSEs. Reasons for excess unburnt coal was attributed to higher infiltration of air, poor coal mill performance, not taking up frequent coal mill maintenance, non-replacement of grinding ring and ball in due time, non-replacement of coal burners, nozzles etc.

The Government replied (October 2021) that WBPDCCL had already adopted methods like preventive maintenance, mill fines monitoring, checking of burner nozzles and mill overhauling for performance improvement. Moreover, with the availability of coal with high GCV, low volatile matter and low ash content to WBPDCCL and DPL from captive coal mines, their performance has now improved significantly. At KTPS and BTPS, however, the percentage of unburnt coal continued to remain high, since their generating units were almost 30 years old.

#### 3.8.4.2 Variation in calorific value of coal

The required GCV of coal varied according to the boiler design of the respective TPS. The details of coal grade required as per Boiler design vis-a-vis the GCV

<sup>44</sup> Higher the mesh number, smaller the size of the coal particles passing through the sieve. As per the Operating Manual of the Mill, coal should be pulverized in such small particles that 70 per cent of the pulverized coal should pass through the 200 MESH and 93 per cent of the pulverized coal should pass through the 50 MESH.

of coal received by the six TPS during 2015-20 is depicted in the **Table 3.3** below:

**Table 3.3: Statement showing GCV of coal as per Boiler design vis-a-vis GCV of coal received by the six TPS during 2015-20.**

Sl. No.	Name of TPS	Units	Year	GCV of coal as per boiler design (kcl/ kg)	Actual calorific value of coal received (kcl/ kg)
1.	DPL		2015-20	4,000-4,100	3,452.63-4,603.00
2.	BkTPS		2015-19	3,900-4,200	3,558.63-4,160.72
3.	KTPS		2015-20	4,445-4,450	3,110.36-3,419.75
4.	STPS		2015-19	3,900	3,501.99-4,233.08
5.	SgTPS	(I & II)	2015-20	4,100	3,490.04-4,450.22
	SgTPS	(III & IV)		3,300	3705.40-4,170.41
6.	BTPS	I to IV	2015-19	4,500	3,297.12-3,701.50
	BTPS	V		4,000	

The difference between calorific value of coal required (as per the boiler design) and the calorific value of coal received by the six TPSs led to excess coal consumption, poor thermal efficiency, consumption of fuel in excess of norms fixed by WBERC *etc.*

In their reply, the Government explained (October 2021) that FSA does not ensure supply of coal as per boiler design. Moreover, coal is received from multiple sources and hence, GCV varies widely. Further, blending of different varieties of coal is dependent on availability of coal stocks of good and bad quality at all times. This led to excess coal consumption and poor thermal efficiency.

The issues raised in the reply are prevalent in the coal sector which should have been taken into account in the operational processes.

#### 3.8.4.3 Non Achievement of designed thermal efficiency

Performance of a TPS is the aggregate of the performance of all its generating units. This is measured by Thermal Efficiency (TE) of each unit *i.e.*, efficiency of conversion of thermal energy to electrical energy. TE is the aggregate of boiler and turbine efficiencies. The manufacturer(s) of the boilers and turbo-generators declared specific design parameters and specified TE for each unit of the six TPS at the time of their construction. The unit-wise actual TE achieved against the TE as per design parameters for the five years from 2015-20 are as follows:

**Table 3.4: Statement showing achievement of TE by TPS against designed parameter**

TPS	Unit	TE as per design parameter	Actual TE achieved
DPL	VII	46.50	13.40 - 30.29
	VIII	44.17	
KTPS	I-IV	36.00	30.73 - 32.64
	V-VI	35.82	

TPS	Unit	TE as per design parameter	Actual TE achieved
BTPS	I-IV	28.21	26.21 - 30.87
	V	35.41	31.08 - 31.90
SgTPS	I-II	39.99	34.43 - 36.90
	III-IV	37.03	31.43 - 35.43
BkTPS	I-V	38.41	31.74 - 39.20
STPS	V-VI	38.39	34.76 - 35.36

From the above table, it was observed that except BkTPS and BTPS (I-IV) all the units in the remaining TPS failed to achieve the designed TE. The reasons attributed to the failure were incomplete combustion and radiation losses, decreased coal mill fineness, poor mill/burner performance, dry flue gas<sup>45</sup> loss, leakage in economiser tubes, fall in air ingress etc. All these factors led to higher consumption of coal. In case of BTPS (Unit-V) the reason for failure were higher equipment outages, deviation from designed coal, constraints of OEM spares etc.

The Government stated in reply (October 2021) that WBPDCCL had taken up internal energy audit, condition-based maintenance and monitoring, equipment overhauling and scheduled overhauling of units etc to improve thermal efficiency. The number of instances of tripping was also brought down in 2020-21. The reply showed that improvements in thermal efficiency were achievable through remedial measures that could have been implemented previously.

#### 3.8.4.4 Excess consumption of fuel

##### (i) Excess consumption of coal

Performance of a TPS is finally determined by the Station Heat Rate<sup>46</sup> (SHR). Scrutiny in audit revealed that during 2015-20, the value of the coal consumed in excess of norms fixed by WBERC by the six TPS amounted to ₹ 1,358.12 crore (Table 3.5).

**Table 3.5 : Statement showing excess consumption of coal by six TPS**

Year	Plant	Unit No	Normative SHR (kcal/kwh)	Actual SHR range	Excess Coal consumption (in lakh MT)	Value ₹ in crore
2015-20	DPL	VII	2,345	2,872.50 to 3,125.40	14.99	519.74
		VIII	2,425			
2015-18	BkTPS	I - V	2,470	2,387.92 to 2,505.72	1.02	39.04
2015-20	KTPS	I - VI	2,700	2,715.74 to 2,742.66	2.39	82.90
2015-20	STPS	V - VI	2,425	2,432.41 to 2,473.97	1.02	36.40
2015-19	BTPS	I - V	2,725 - 3,050	2,832.00 to 3,077.40	2.67	114.46
2015-20	SgTPS	V - VI	2,276 - 2,345	2,349.76 to 2,694.04	11.62	565.58
<b>Total</b>						<b>1,358.12</b>

<sup>45</sup> Flue gases are the mixture of gases that are produced from the combustion of coal.

<sup>46</sup> The energy required in Kilocalories to generate one Kilowatt hour (or unit) of electricity.

The main reasons for excess consumption of coal were frequent outages, partial load operation due to absence of standby mills, deviation from designed coal, OEM spares constraints etc.

The Government stated in their reply (October 2021) that, SHR was being monitored centrally by WBPDC. In addition, internal energy audit, condition-based maintenance and monitoring, equipment overhauling, scheduled overhauling of units, boiler tube replacement at various plants, decommissioning of old units, etc. had been undertaken recently to improve SHR, which confirms the audit observation that timely ameliorative steps would have reduced excess consumption of coal.

**(ii) Excess Oil consumption**

WBERC issued (July 2013) specific normative parameters for oil consumption at WBPDC and DPL. During 2015-20, for all five TPS of WBPDC, the actual consumption ranged between 1.71 ml/kwh to 7.47 ml/kwh against the norms of 1.00 ml/kwh to 2.15 ml/kwh, resulting in excess consumption of 73,255.46 KL oil valued at ₹ 332.25 crore (**Appendix-12**).

Similarly, actual consumption of oil in DPL varied between 0.54 ml/kwh and 238.96 ml/kwh against the norms of 1.00 ml/kwh to 2.7 ml/kwh resulting in excess consumption of 4,663.59 KL oil valued at ₹ 22.44 crore. Audit observed that the reasons for excess oil consumption in the TPSs were frequent tripping, poor coal stock requiring oil support for restarting, frequent outages, tube leakages, frequent coal feeder belt slippage, mill break down, furnace disturbance, improper maintenance etc.

The Government stated (October 2021) that WBPDC had monitored the reasons for specific oil consumption in excess of norms and eradicated the reasons. Consequently, there was steady improvement in oil consumption and all TPS achieved 0.45 ml/ kwh in 2020-21. Further, DPL had also reduced oil consumption through remedial measures such as bringing down breakdown of equipment. It is not clear why such steps to curb excess oil consumption were not being implemented by the TPS as a matter of due process.

**Recommendation**

**WBPDC and DPL may exercise proper controls for monitoring consumption of coal and oil in every TPS.**

## **3.9 Coal Supply Management**

### **3.9.1 Coal Stock at stations**

One of the important functions of fuel management is to ensure uninterrupted supply of coal so that generation loss due to coal shortage does not arise. Coal was required for 'declared capacity' (DC) of the station, even though the beneficiaries (power GENCOs) may not schedule the power from the station. TPS has to inform Declared Capacity to the State Load Despatch Centre regarding daily generation of power. Daily coal requirement is based on the maximum of the requirement for average actual consumption of the plant for last 7 days or requirement for installed capacity of plant at 55 per cent PLF, whichever

is higher. Daily coal stock at all six TPSs were monitored at Corporate Office through an online system where stations provided data relating to their daily consumption and the quantity as well the quality of stock maintained.

The new methodology for monitoring of coal stock at coal based thermal TPS proposed (November 2017) that the daily coal requirement of a plant will be the average coal consumption of previous seven days (rolling average), in order to capture precise consumption of the plant. As per this methodology, coal stock less than seven days consumption is considered as critical level and coal stock less than four days consumption is considered as super-critical.

Details of critical and super critical levels stock position during the period from 2015-16 to 2019-20 are given below in **Table 3.6**:

**Table 3.6: Critical and super-critical levels stock position during the period from 2015-16 to 2019-20**

Name of TPS	2015-16		2016-17		2017-18		2018-19		2019-20	
	Critical	Super critical	Critical	Super critical	Critical	Super critical	Critical	Super critical	Critical	Super critical
	(Number of days)									
BkTPS	73	33	82	15	42	142	32	219	NA	NA
KTPS	0	0	18	0	64	232	26	281	43	91
SgTPS	70	NA	153	NA	327	NA	317	NA	NA	NA
STPS	292	0	23	61	86	160	88	162	NA	NA
BTPS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DPL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

During 2015-16, the stock level was at super-critical level in BkTPS for 33 days. Similar situation prevailed in BkTPS, KTPS and STPS ranging from 15 days to 281 days during the years 2016-17 to 2019-20. Audit also observed that individual units under different power stations were shut down from time to time during the period from 2015-16 to 2019-20 due to poor coal stock.

Further, audit also observed that WBPDCCL had no inventory policy on fuel to aid unimpeded power generation despite having FSAs. The inventory assessment, planning and procurement were inadequate and ineffective and this resulted in loss of generation as discussed in the following paragraph:

### 3.9.2 Generation loss due to coal shortage

WBERC fixed normative Plant Availability Factor<sup>47</sup> (PAF) for the generating TPSs and allowed recovery of the capacity charges<sup>48</sup> on the basis of actual PAF through Annual Performance Review of the concerned year. The **Table 3.7** shows the PAF achieved against the PAF fixed by WBERC, forced outage (the period for which the plant was kept under unplanned shutdown) and loss of capacity charges by the six TPS during 2015-20.

<sup>47</sup> PAF means the average of the daily Declared Capacities (DCs) for all the days during the period expressed as percentage of the installed capacity in MW less the normative auxiliary energy consumption.

<sup>48</sup> Capacity charge is a fixed charge linked with scheduled energy generation.

**Table 3.7: Statement showing loss of capacity charges due to poor coal stock**

TPS	Unit Nos.	PAF as per WBERC norms (in percent)	Normative Plant availability based WBERC norms at Col. (3) (calculated in lakh hours)	Forced outage (in lakh hours)	Actual PAF (in lakh hours)	Actual PAF achieved (per cent)	Forced outage due to poor coal stock/quality (in lakh hours)	Loss of capacity charges due to poor coal stock /quality (₹ in crore)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
DPL	VII & VIII	85	0.75	0.33	0.42	31.82 - 69.17	0.17	586.69
BkTPS	I to V	85	1.49	0.22	1.27	54.68 - 84.26	0.07	130.20
BTPS	I to V	70 - 85	1.16	0.50	0.66	13.01 - 70.00	0.01	11.35
SgTPS	I to IV	85	1.34	0.55	0.79	20.87 - 74.31	0.23	1,012.42
KTPS	I to VI	75	1.97	1.16	0.81	22.36 - 75.00	0.10	122.61
STPS	V & VI	85	0.60	0.08	0.51	25.85 - 82.96	0.01	18.63
<b>Total</b>			<b>7.31</b>	<b>2.84</b>	<b>4.46</b>		<b>0.59</b>	<b>1,881.90</b>

From the above table it was observed that during 2015-20, out of 7.31 lakh aggregate available hours fixed by WBERC as PAF, the six TPS were not available for generation for 2.84 lakh hours (39 per cent of the norms), due to frequent forced outages. Out of 2.84 lakh hours, the TPS were shut down for 0.59 lakh hours due to poor coal stock/quality. As a result, though the TPS had not achieved the normative PAF fixed by WBERC, they had recovered excess capacity charges of ₹ 1,881.90 crore for 0.59 lakh hours while raising monthly power bills during 2015-20. This led to burdening consumers with higher electricity tariffs.

The reasons attributed to the forced outages were as follows:

- Unit Nos. VI of DPL had frequent forced outages and was in long forced outage from December 2013 to March 2017 due to replacement of boiler platen outlet heater. In June 2017, Unit No. VI was synchronised again but finally in November 2017 it tripped. The West Bengal Pollution Control Board (WBPCB) ordered not to run it and since then it remained shut down during the period covered under audit.
- Unit No. VII and VIII had frequent forced outages due to poor coal stock, poor coal quantity and low system demand as DPL has no agreement with Power Distribution Company for evacuation of power generated.
- Similarly, BkTPS, KTPS, STPS, BTPS and SgTPS had frequent forced outages due to poor coal stock, poor coal quality and inadequacy of coal. Further, these five TPS failed to achieve the normative PAF due to instances of water wall tube leakage, boiler tube leakages, economiser tube leakages, GT replacement work, flame failure, very high furnace pressure, platen super heater leakages, boiler water wall tube leakage, high turbine bearing vibrations, dust leakages from wind box, vacuum pump problem, bus change over, high shaft vibration, etc.

The Government accepted (October 2021) the observation. They added that since April 2015, WBPDCCL was entirely dependent on supplies of coal from coal companies. To maintain normative PLF, aggregate annual coal required by WBPDCCL was 24 MMT, while total ACQ quantity was only 14.08 MMT. While TPS were unable to generate electricity due to shortage of coal, loss on account of fixed charges were unavoidable. However, as the cost of keeping machinery idle would have had greater adverse effects on WBPDCCL's finances coal procurement at higher prices was preferred. Also, DPL lacked the funds to stockpile coal during the summer months to compensate poor coal supplies by coal companies during the monsoon months.

The reply is not tenable, since WBPDCCL had not applied for bridge linkage of 6.50 MMT in the prescribed manner and in due time, which could have reduced the need for coal from non-FSA sources.

### 3.9.3 Unweighed Coal

Clause 5.2 of Fuel Supply Agreement (FSA) stated that only in the absence of weighing of coal on electric weighbridge at the loading end, the weight recorded at the purchaser's electronic weighbridge with an electronic printout facility at the unloading point, would be taken as final. In that case the purchaser would have to submit the associated electronic printout to the seller within thirty (30) days from the date of Railway Receipt (RR), beyond which time, the weight of consignment would be considered on RR basis.

It was observed that WBPDCCL had received (as per RR quantity) unweighed coal from the coal companies to the tune of 10.87 lakh MT. However, at unloading end, weight of the said unweighed rakes was 9.69 lakh MT. Subsequently, WBPDCCL claimed shortage quantity of coal from the coal companies for 1.18 lakh MT valuing ₹ 40.72 crore as per FSA. Out of this, coal valuing only ₹ 10.55 crore was adjusted through joint reconciliation with the coal companies and the remaining coal valuing ₹ 30.17 crore (of which ₹ 29.96 crore *i.e.* 99 per cent pertained to earlier period) was not adjusted/refunded due to lack of persuasion and follow up.

Further, during 2015-19, WBPDCCL failed to submit the associated electronic printouts to the seller within the stipulated norm of FSA, *i.e.* thirty (30) days from the date of Railway Receipts (RRs) as per the provisions of FSA for 4,418.84 MT of unweighted coal in 13 cases. Consequently, WBPDCCL suffered a loss of ₹ 1.32 crore due to delay in registering claim of unweighted coal rakes.

During 2016-20, DPL received 15 rakes of coal from BCCL which was not weighted at loading end. DPL did not claim short receipt of coal for 1,227.24 MT coal as per the above mentioned clause. As a result, DPL incurred a loss of ₹ 32.66 lakh.

The Government stated (October 2021) that WBPDCCL's unsettled claims of ₹ 30.17 crore towards unweighted wagons appear as disputed amounts in the periodic reconciliation with coal companies. At DPL, the rakes could not be weighed at the unloading end, since, there were problems with the in-motion weighbridge at DPL. The reply is not acceptable, as 99 per cent of unsettled claims pertain to earlier period, which have not been accepted by the coal companies.



### 3.9.4 Loading of wagons with optimum capacity

Railways charge tariffs according to the carrying capacity of the wagons even if the wagon is loaded below their carrying capacity. Hence, to optimise costs, it is important to load coal wagons to their full carrying capacity. Clause 10.1/10.2 of FSA stipulated that any penal freight for overloading charged by the Railways for any consignment should be payable by the purchaser. However, if overloading was detected from any particular colliery, consistently during three succeeding months, on due intimation from the purchaser to that effect, the seller should undertake remedial measures. Further, in case of under loading below the permissible carrying capacity of a wagon (stencilled carrying capacity or carrying capacity based on actual tare weight), the seller would bear the difference in freight charges between the permissible carrying capacity plus an extra two tonnes less the freight payable as per actual recorded weight of coal loaded.

Audit observed that during 2015-20, six<sup>49</sup> TPSs incurred over-loading charges of ₹ 27.96 crore. Further, DPL incurred under-loading charges of ₹1.84 crore during 2017- 20. WBPDCCL and DPL should have intimated the coal companies to take a note of the same for future compliance as per the above mentioned clause. However, the management did not take any action in this regard.

The Government stated (October 2021) that WBPDCCL had engaged a liaising agency to prevent overloading with a penalty clause included in the contract with liaising agency for any incidence of overloading; DPL, however, still had no control over deviations in load weight.

Audit observed that WBPDCCL had engaged a liaising agency in July 2019, while DPL had still not taken any remedial action. Analysis of incidence of overloading between August 2019 and March 2020, did not show any improvements. Improvements, if any, will be seen in subsequent audit.

### 3.9.5 Excess expenditure towards coal freight due to non-execution of agreement with BCCL

WBPDCCL had signed (November 2016) FSA with Central Coalfields Limited (CCL) for an Annual Contracted Quantity (ACQ) of 12 lakh MT coal per annum. Thereafter, WBPDCCL noticed that the coal movement from CCL was very dismal and irregular i.e. not a single rake was despatched during March 2017. During the last four months of 2016-17, only 18 per cent of ACQ was despatched. Accordingly, WBPDCCL requested (April 2017) Coal India Limited (CIL) to shift of 12 lakh MT coal in ACQ to Bharat Coking Coal Limited (BCCL), another subsidiary of CIL from CCL due to (i) irregular supply of coal from CCL, (ii) coal movement from BCCL being satisfactory and (iii) to arrest the incentive payment that otherwise would have to be paid to BCCL for excess supply of coal beyond the existing BCCL ACQ quantity. In response, CIL approved (May 2017) the same.

Audit observed that despite repeated requests (June/ September 2017) from BCCL, WBPDCCL did not execute the agreement for shifting of the CCL ACQ quantity to BCCL for reasons not on record. The coal movement of CCL was still poor as a result WBPDCCL was bound to procure their quota of CCL coal

<sup>49</sup> DPL: ₹ 2.75 crore, KTPS ₹ 7.78 crore, BkTPS: ₹ 7.94 crore, BTPS: ₹ 6.13 crore, SgTPS 1.78 crore, STPS: ₹1.58 crore

from other subsidiary companies resulting in excess expenditure towards freight cost (BCCL's coal mines was nearer to the power plants than CCL's coal mines) on coal to the tune of ₹ 5.84 crore (₹ 3.50 crore for KTPS and ₹ 2.34 crore for BkTPS) for the period 2017-19. Further, during the year 2017-18 and 2018-19, WBPDCCL received lesser quantity of coal i.e. 15.33 lakh tonnes<sup>50</sup> from CCL against its ACQ. To meet this short supply of coal, WBPDCCL had to procure costlier coal from MSTC and WBMDTCL<sup>51</sup> which resulted in excess expenditure to the tune of ₹ 235.95 crore. Moreover, WBPDCCL had not imposed penalty of ₹ 111.07 crore on CCL as mentioned in **Paragraph 3.7.1.2**.

The Government explained (October 2021) that while the supply from CCL improved, the supply from BCCL had reduced. Therefore, the ACQ in the FSAs was not revised. However, this is at variance with the audit observation that BCCL had offered (June/ September 2017) to supply additional coal, if ACQ quantity was shifted from CCL to BCCL, on which no action was taken.

### 3.9.6 Oversized Coal

Clause 4.6.1 of FSA stipulated that the purchaser should inform the seller all incidents of receipt/presence of oversized coal, as compared to specifications laid down in Schedule-II (top size of coal- 250 mm), for any specific consignments, immediately on its detection at the delivery point and/or unloading point and the seller should take all reasonable steps to prevent the loading of oversize coal at their end.

During 2015-20, three TPS<sup>52</sup> of WBPDCCL received 1.59 lakh MT of oversized coal from the coal companies and incurred avoidable crushing charges amounting to ₹ 2.87 crore. DPL did not maintain records of receipt of oversized coal.

The Government accepted (October 2021) and stated that WBPDCCL had lodged complaints and taken up the issue with the colliery. Developments were awaited (October 2021).

### 3.9.7 Stones and Shales

In the supply of coal, some quantities of stones/shales are unavoidable. Such stones/shales are segregated by the plant authority and discarded after weighing. Refund claims are subsequently lodged with the coal companies in line with Clause 9.1 of the FSA which stipulates that the seller should adjust, the entire quantity of stones and shales supplied, through regular credit notes to the purchaser at 100 *per cent* of the entire weighted average base price of the analysed grade of coal applicable for the month in which stones and shales were supplied.

During 2015-20, WBPDCCL and DPL had received stone/shale boulders from the coal suppliers which were segregated/discarded by the plant authority after weighing. Details of stone/ shale boulders received by WBPDCCL and DPL and amount reconciled there against are as following:

<sup>50</sup> This quantity is also included in the quantity of coal referred to under bridge linkage at **Paragraph 3.7.1.3**.

<sup>51</sup> West Bengal Mineral Development Trading Corporation Limited.

<sup>52</sup> BkTPS (11,426.73 MT), KTPS (1.48 lakh MT) and SgTPS (36,645) incurred crushing charges amounting to ₹ 0.29 crore, ₹ 1.48 crore and ₹ 1.10 crore, respectively.

**Table 3.8: Stones/Shale/ Boulders received during 2015-20**

Name of TPS	Stone Received (MT)	To be Reconciled (₹ in crore)	Reconciled (₹ in crore)	Difference (₹ in crore)
<b>WBPDC</b>	<b>55,814.21</b>	<b>19.57</b>	<b>5.40</b>	<b>14.18</b>
BkTPS	11,229.40	3.49	1.98	1.52
STPS	28,856.38	10.16	2.22	7.94
KTPS	7,945.41	2.67	0.48	2.20
BTPS	1,112.76	0.49	0.04	0.44
SgTPS	6,670.26	2.76	0.68	2.08
<b>DPL</b>	<b>18,507.29</b>	<b>4.84</b>	<b>2.45</b>	<b>2.39</b>
<b>Total</b>	<b>74,321.50</b>	<b>24.41</b>	<b>7.85</b>	<b>16.57</b>

Audit observed that an amount of ₹ 16.57 crore was still due for settlement with the coal companies. WBPDC and DPL should initiate steps for settlement of the same.

The Government stated in their reply (October 2021) that WBPDC would follow-up for settlement of the differential amount while DPL would settle the matter through joint reconciliation with coal companies.

### 3.9.8 Demurrage

Ministry of Railways (MoR), GoI issued (December 2005) a circular which allowed free time for loading and unloading of different types of wagons at goods sheds and siding allowing seven hours permissible free time for unloading of BOXN<sup>53</sup> wagons and two and half hours permissible free time for unloading of BOBR<sup>54</sup> wagons. The detention of wagons beyond the free permissible time would attract demurrage charges to be paid to railway authorities.

The demurrage charges levied by MoR, GoI and paid by WBPDC and DPL during 2015-20 is tabulated below:

**Table 3.9: Demurrage paid to Railways during 2015-20**

Name of plant	Demurrage Charges levied by Railways	Demurrage Charges waived by Railways	Demurrage Charges paid
BkTPS	13.30	4.23	9.07
STPS	5.67	1.13	4.54
KTPS	54.29	9.33	44.96
SgTPS	9.64	1.59	8.05
BTPS	13.80	1.71	12.09
<b>DPL</b>	<b>10.54</b>	<b>2.47</b>	<b>8.08</b>
<b>Total</b>	<b>107.24</b>	<b>20.66</b>	<b>86.79</b>

Audit observed that the reasons of payment of demurrage were attributed to internal issues of TPS viz, inefficient working of coal unloading units of the power plants, insufficient illumination, non-functioning of old wagon tippler, time consumed in manual unloading, shortage of manpower, hopper jam

<sup>53</sup> A type of open wagon.

<sup>54</sup> Bogie Open Bottom Rapid Discharge Hopper. These wagons are built exclusively for movement of coal with unique feature of unloading from bottom.

problem and power house problems. Further, issues relating to non-availability of loco engine, unplanned release of wagons, defective wagons, etc. were not taken up with railways.

Further, audit observed that during the year 2015-16, BkTPS paid service tax on gross demurrage charges without considering waiver received by the Railway Authority on gross demurrage charges, which resulted in excess payment of service tax on waiver portion of demurrage charges to the tune of ₹ 40.82 lakh.

It was also observed that the Railway Authorities computed demurrage charges considering two hours free unloading time instead of two and half hours for BOBR wagons at BkTPS which was not in line with the circular. The local management of BkTPS without verifying the demurrage bills, made an excess payment of demurrage charges amounting to ₹ 31.83 lakh (2015-19) to the Railways.

The Government stated (October 2021) that WBPDCCL had brought down demurrage in 2020-21 with regular monitoring. Similarly, DPL had taken internal measures to bring down demurrage. It appears that ineffective monitoring was a major reason for payment of avoidable demurrage charges by TPS.

### 3.9.9 Missing/Unconnected Wagons

Rakes which were originally assigned to any TPS but diverted elsewhere are referred to as missing wagons. Similarly, the rakes meant for other destinations are also received occasionally by TPS which are referred to as unconnected wagons. Clause 11.4/ 11.5 of the FSA stipulated that in case of diversion of rakes en-route or missing wagons, bills should be paid to the coal companies by the original consignee. Further the parties (WBPDCCL/DPL and coal suppliers) should jointly reconcile all payments made for the monthly coal supplies during the year and should issue credit/debit notes for the amount falling due, if any, as assessed during reconciliation.

During 2015-20, WBPDCCL and DPL had missing and diverted wagons, details of which are as follows:

**Table 3.10: Diverted and Missing Coal wagons during 2015-20**

TPS	Quantity (lakh MT)	Value (₹ in crore)	Quantity (lakh MT)	Value (₹ in crore)	Payable(+)/Receivable(-) (₹ in Crore)
	<b>Diverted</b>		<b>Missing</b>		
BkTPS	12.41	441.56	21.38	697.66	(-) 256.10
STPS	1.23	39.89	0.79	33.55	6.34
KTPS	10.67	409.03	5.21	180.48	228.55
SgTPS	4.53	169.89	14.15	623.50	(-) 453.61
BTPS	15.28	559.83	4.79	187.18	372.65
<b>Total WBPDCCL</b>	<b>44.12</b>	<b>1,620.20</b>	<b>46.32</b>	<b>1,722.37</b>	<b>(-)102.17</b>
<b>DPL</b>	<b>3.40</b>	<b>102.51</b>	<b>1.44</b>	<b>35.92</b>	<b>66.59</b>

From the above table, it was observed that WBPDCCL had not received 46.32 lakh MT coal valuing ₹ 1,722.37 crore due to missing wagons and 44.12 lakh MT

coal valuing ₹ 1,620.20 crore was received through diverted/unconnected wagons during 2015-20. Thus, WBPDCCL did not realise ₹ 102.17 crore from Railways due to non-reconciliation of missing/diverted wagons in time.

Similarly, during 2015-20, DPL received 3.40 lakh MT of coal valuing ₹ 102.51 crore from diverted wagons while 1.44 lakh MT of coal valuing ₹ 35.92 crore was missing. The reconciliation of this had not yet been done and ₹ 66.59 crore was payable by DPL to Railways (February 2020).

The Government stated (October 2021) that WBPDCCL periodically took up reconciliation with both Eastern and South Eastern Railways, subject to availability and deputation of manpower by Railways. In both WBPDCCL and DPL, the process of reconciliation was completed for different years for each TPS. Audit, however, observed that reconciliation was taken up by TPS for periods ranging from upto March 2015 to March 2019 and no TPS had taken up the exercise for 2019-20.

### 3.9.10 Transit Shortage

As per clause 5 of FSA, for dispatch of coal by rail, all the wagons loaded for the purchaser would be weighed at the loading end at the electronic weigh-bridge of the seller and electronic printout of the actual weight recorded would be provided. Such weighment would be final and binding for determination of the quantity delivered. The purchaser, however, would have the right to witness the weighment of the wagons at the weigh-bridge, if desired.

WBERC allowed the transit loss of 0.50 *per cent* for BkTPS and DPL, and 0.80 *per cent* for other four TPS. Audit observed that during 2015-20, WBPDCCL had received less quantity of coal against the Railway Receipt (RR) quantity at unloading end for BkTPS, KTPS, BTPS, SgTPS and STPS. This exceeded the admissible transit loss by 1.69 *per cent*, 1.78 *per cent*, 1.57 *per cent*, 0.98 *per cent* and 3.03 *per cent*, respectively. As per the said clause, WBPDCCL could not claim for transit shortage, over and above the WBERC norms, in fuel cost through the tariff, but could have made arrangements to reduce the transit shortage of coal. As a result, during 2015-20 in five TPS, WBPDCCL suffered an aggregate loss of ₹ 307.57 crore due to non-recovery of excess transit shortage through tariff (*Appendix-13*).

Similarly, the shortage of coal received by DPL during 2015-18 varied between 0.79 *per cent* and 3.25 *per cent* against the RR quantity. Thus, DPL suffered a loss of ₹ 32.55 crore towards transit loss over and above the standard norm of 0.50 *per cent* allowed by WBERC.

The Government accepted (October 2021) the findings and stated that WBPDCCL had taken corrective action to bring down transit shortages by subsequently engaging liaison agents from August 2020. Moreover, DPL was also exploring the same option.

### 3.9.11 Use of washed coal

The WBPDCCL engaged (March 2016), Global Coal and Mining Private Limited (GCMPL) for beneficiation of coal<sup>55</sup> from Mahanadi Coalfields Limited (MCL). The scope of work included taking delivery of G13/ G14 grade raw coal from

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<sup>55</sup>Beneficiation of coal is a process by which the quality of raw coal is improved.

the mines at IB valley area and Lakhanpur area of MCL, transportation of the raw coal to washery, beneficiation of the raw coal etc. to meet the required parameters. It was also stipulated that recovery/yield of washed coal should be minimum 72 *per cent* in comparison with raw coal. However, the recovery/yield of washed coal was changed from 72 *per cent* to 69.61 *per cent* from 1 April 2017 in subsequent amendment order dated 24 September 2018. Apart from this, the delivery of coal from MCL was also changed from G-13 to G-14 from the same date.

In this connection, Audit observed that :-

1. During August 2016 to August 2019, WBPDCCL issued Delivery Order (DO) to GCMPL for lifting of 43,34,799 MT raw coal, against which GCMPL actually lifted 42,47,549.38 MT of raw coal *i.e.*, a short lifting of 87,249.62 MT raw coal. Clause no. 14.4 of the work order stipulates that the party must be able to lift the entire DO quantity without fail, otherwise penalty at the rate of five *per cent* of notified basic price of raw coal shall be applicable on unlifted quantity. However, WBPDCCL did not impose any penalty on GCMPL for the short lifting of raw coal, which resulted in loss of ₹ 29.20 lakh.
2. The work order allowed (i) minimum 72/ 69.61 *per cent* yielding/recovery of washed coal from raw coal (ii) one *per cent* transit loss in terms of equivalent quantity of raw coal to GCMPL. However, during the period of entire contract WBPDCCL received 29,23,746.44 MT washed coal from GCMPL which was equivalent to 41,75,335.88 MT of raw coal. So, in terms of raw coal, GCMPL failed to supply 72,344.07 MT (42,47,567.19 MT- 41,75,223.12 MT) coal to the WBPDCCL valuing ₹ 11.46 crore (72344.07 MT x ₹1,583.87).
3. WBERC allowed transit loss of coal at the rate of 0.50 *per cent* for BkTPS, 0.80 *per cent* for BTPS and 0.80 *per cent* for KTPS whereas WBPDCCL allowed the transit loss at the rate of one *per cent* to GCMPL. As a result, WBPDCCL incurred a loss to the tune of ₹ 1.64 crore.

The Government stated (October 2021) that some of the issues were not yet settled and the contract was yet to be closed. Moreover, there was no penalty clause in the contract for short delivery of washed coal. Due to this, the loss on account of short delivery of washed coal cannot be made good.

#### **Recommendations**

##### **WBPCDL and DPL may**

- 1) **take proper and prompt persuasion with coal companies and railways in claiming adjustments/ settlement of bills towards grade slippage, ungraded coal, un-weighted coal, stone/ boulders, wagons etc.**
- 2) **introduce an efficient system for unloading of wagons to avoid demurrage.**

### **3.10 Conclusion**

WBPDCCL and DPL together produce just over 50 *per cent* of the power requirement of the State. Between them they operate six coal based TPS with

aggregate capacity of over 5,000 MW. The primary cost component of power generation is fuel cost, which is about 70 *per cent* for WBPDCCL whereas it is only 39 *per cent* in DPL. Other costs are higher in case of DPL as the unit was to shut down frequently due to surplus power.

Procurement of coal through long term bilateral Fuel Supply Agreements (FSAs) with coal companies at fixed prices became mandatory as per the New Coal Distribution Policy 2007. Accordingly, 88 *per cent* of coal in these PSUs was bought under FSAs. The balance is procured through e-auction from other agencies like MSTC Limited and West Bengal Mineral Development and Trading Corporation Limited.

WBPDCCL has been allotted seven captive coal mines (2015/2016), three of which have just started production in 2018-19 and the coal mine linked with DPL is yet to start production.

Audit observed that in several cases the power companies made payments on declared grade of coal instead of actual grade of coal supplied under FSAs and thereby incurred losses by paying more for lower grade of coal. Use of lower grade of coal in TPS also led to lower thermal efficiency. WBPDCCL also had to procure coal from other agencies at higher cost because it could not avail bridge linkage of coal offered by GoI, in the interim period, before the captive coal mines allotted started production.

The TPS were also not able to monitor supply of oversize coal and thereby incurred extra cost on their crushing. Further, they did not claim for refund on account of stones and shales in the coal stock as permitted in FSAs.

Coal stock at the TPS in WBPDCCL were not efficiently monitored and it was found that coal stocks were critical (less than seven days consumption) and super-critical levels (less than four days consumption). Shortage of coal was one of the main reasons for frequent forced outage for which TPS had recovered excess capacity charges, to that extent, under tariff orders of WBERC for 2015-20.

The Power SPSEs also had to pay demurrage to the railways due to manpower shortage and logistic problems at the unloading sites of the power stations. Reconciliation with railways on account of missing coal wagons was also pending.

The TPS were facing issues of imperfect combustion of coal in their furnaces, non-achievement of thermal efficiency, excess consumption of auxiliary power and excess consumption of oil. These were attributed to frequent outages, improper coal milling, use of lower grade coal and inadequate maintenance of plants. As a result, consumption of coal was higher than WBERC norms which added to the overall cost of power.

Audit observed various inefficiencies of the Power SPSEs, including those that were the result of ineffective monitoring of due processes, which resulted into higher generation cost of power and ultimately, the burden of higher cost was passed to the consumer by way of higher electricity tariffs.

# Chapter IV

## Compliance Audit





## Chapter-IV

### Compliance Audit

#### Environment Department

#### 4.1 Detailed Compliance Audit of All Applicable Environmental Laws in South 24 Parganas District

##### 4.1.1 Introduction

As per the Environment (Protection) Act, 1986, 'environment' includes water, air and land and their inter-relationship with human beings, other living creatures, plants and micro-organisms. Environmental pollutant means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be, injurious to environment. Some of the major causes of degradation in the environment are human processes and activities such as deforestation, urbanisation, industrialisation and improper waste management. As per Article 48A of the Constitution of India the State shall endeavour to protect and improve the environment.

West Bengal has 23 districts of which South 24 Parganas district having an area of 8,165.05 sq. km and population of 81.62 lakh was selected for audit of compliance of all applicable environmental laws. There were 7,740 factories in seven industrial areas<sup>56</sup> and 7,678 Micro and Small Scale Enterprises in the district. The district has 986 sq km of very dense forest, 745 sq. km of moderately dense forest and 1,061 sq km of open forest. The Sundarbans, the largest mangrove forests on earth, are spread over 13 of the 29 development blocks in the district and covers an area of about 4,260 sq. km. Moreover, East Kolkata Wetlands under Ramsar convention<sup>57</sup> also lies in the district.

Thus, diversified relationship among flora and fauna coupled with industrialisation and urbanisation in South 24 Parganas district, make this district an appropriate selection for audit.

##### 4.1.2 Audit Objectives:

The objectives of the detailed compliance audit (DCA) of "All Environment Laws Applicable in South 24 Parganas District" were to evaluate whether the Environment Department and its parastatal agencies could ensure that all stakeholders complied with the Acts, Rules, Government policies, instructions for prevention, control and abatement of environmental pollution.

##### 4.1.3 Audit Criteria

The audit criteria include all the environmental laws, rules, norms and standards applicable to a district and include the following:

- The Water (Prevention and Control Pollution) Act, 1974
- The Air (Prevention and Control of Pollution) Act, 1981 and National Ambient Air Standards fixed from time to time

<sup>56</sup> *Namely-Behala, Baruipur, Santoshpur, Falta Phase-I & II, Falta SEZ and Santoshpur Food Park.*

<sup>57</sup> *Convention on Wetlands is also known as the Ramsar Convention.*

- The Environment (Protection) Act, 1986 and various rules made there under as indicated below:-
  - The Municipal Solid Waste (Management and Handling) Rules, 2000 as amended
  - The Bio Medical Waste (Management & Handling) Rules, 1998
  - The Hazardous Waste (Management, Handling & Trans-boundary Movement) Rules, 2016
  - Plastic Waste (Management and Handling) Rules, 2011
  - The Batteries (Management & Handling) Rules, 2001
  - E-Waste (Management and Handling) Rules, 2011
- Coastal Regulation Zone Notification, 2011
- National Environment Policy, 2006
- Biological Diversity Act, 2002,
- Wetlands (Conservation and Management) Rules, 2010
- Central Motor Vehicles Rules, 1989.
- Orders, instructions, guidelines, standards issued by State Government, Central Pollution Control Board (CPCB) and Hon'ble Courts *etc.*

#### 4.1.4 Scope and Methodology of Audit

Detailed Compliance Audit of all applicable “Environmental Laws in South 24 Parganas District” was conducted between December 2019 to March 2020 and again from December 2020 to February 2021 by the offices of the Pr. Accountant General (Audit-I), West Bengal (WB) and Pr. Accountant General (Audit-II), WB. Records were examined in the offices of the Environment Department, WBPCB and its Regional Offices, West Bengal State Coastal Zone Management Authority (WBSCZMA), West Bengal Bio-Diversity Board, East Kolkata Wetland Management Authority (EKWMA), Institute of Environmental Studies and Wetland Management, State Transport Utilities, Health and Family Welfare Department (HFWD), Animal Resources Development Department (ARDD) and selected Municipalities within the district.

The audit methodology involved collection of data through document analysis, response to audit queries, questionnaires, photographic evidence and joint physical verifications of 10 industrial units<sup>58</sup>, two Municipalities<sup>59</sup>, 12 Health Care Facilities and four Block Livestock Development Offices (BLDOs), which were selected through random sampling without replacement.

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<sup>58</sup> 1. M/s BNM Organics (P) Ltd. 2. 5 Star Hotel & Serviced apartment 3. Residential Complex at Bagherghole 4. M/s BESCO Ltd. 5. M/s Pepsico India Holding Pvt. Ltd. 6. CETP at Calcutta Leather Complex 7. CESC Ltd. (Budge-Budge) 8. IOCL Indane Bottling Plant 9. Lubrina Recycling (P) Ltd. 10. Bristol Petroleum Pvt. Ltd.

<sup>59</sup> Maheshtala Municipalities and Budge-Budge Municipalities (ULBs).

### 4.1.5 Institutional Mechanism

As per West Bengal Rules of Business, Department of Environment, GoWB, henceforth referred to as Department, is responsible for protection of environment & ecology, prevention and control of the pollution of air, water and land, co-ordination between Departments and agencies of the State and Union Government. The Department executes all its major activities with the assistance of six parastatal organisations viz. West Bengal Pollution Control Board, EKWMA, WBSCZMA, Institute of Environment Studies and Wetland Management, West Bengal Biodiversity Board and State Environment Impact Assessment Authority.

Audit observed following non-adherence of the Acts/Rules/orders/ directions relating to protection of environment in the South 24 Parganas district as discussed in the subsequent paragraphs.

### 4.1.6 Water Pollution

According to the Water (Prevention and Control of Pollution) Act, 1974 (Water Act), water pollution means contamination of water or alteration of the physical, chemical or biological properties of water. Water pollution occurs when untreated sewage, trade effluents, etc. discharged into the water render it harmful or injurious to the life and health of public, animals, plant or aquatic organisms. WBPCB is the nodal agency responsible for collection and dissemination of information relating to water pollution and the prevention, control or abatement thereof.

#### 4.1.6.1 National Water Quality Monitoring Programme

Central Pollution Control Board (CPCB) in association with State Pollution Control Boards (SPCBs) has established National Water Quality Monitoring Programme (NWQMP) for uniform monitoring of surface as well as underground water across the country for the purpose of making a rational plan for controlling water pollution. Under the NWQMP, WBPCB monitors water quality across the State through 105 monitoring stations including one surface water monitoring station at Diamond Harbour on river Hooghly and three<sup>60</sup> ground water monitoring stations in the district. Audit observed following irregularities in monitoring of water quality by WBPCB:

#### a) Surface as well as Ground Water Quality Monitoring Stations

i) As per guidelines on Water Quality Monitoring (WQM) 2017, the surface water monitoring stations were to be classified as Baseline<sup>61</sup>, Trend<sup>62</sup>, Flux<sup>63</sup> and Hotspot<sup>64</sup> stations and the ground water monitoring stations were to be classified as baseline stations which were to be further re-classified as Trend and Hotspot stations. Such categorisation is essential for fixing the

<sup>60</sup> Sonarpur Residential Area, Amtola and Budge Budge (Budge-Budge was functional from 2019-20).

<sup>61</sup> Where there is no influence of human activities on water quality.

<sup>62</sup> Monitoring station designed to show how a particular point on a water course varies over time due to the influence of human activities.

<sup>63</sup> Station located for measuring the mass of particular pollutant on main river stem for measuring the extent of pollution due to human interference or geological feature at any point of time and is necessary for measuring impact of pollution control measures adopted.

<sup>64</sup> Means location/site where concentration of a particular parameter or a group of parameters except bacteriological particulars are beyond the permissible limits of drinking water quality.

parameters to be monitored and the frequency thereof as it minimises the cost of monitoring without sacrificing the desired level of information. The parameters and frequency of monitoring of each parameter under each classification is given in the **Appendix-14**.

Audit observed that the WBPCB failed to classify the monitoring stations even after a lapse of four years from issuance of the WQM guidelines. As a result, WBPCB was not able to take corrective action on water quality, wherever necessary, and minimise the cost of monitoring.

- ii) Analysis of parameters monitored *vis-à-vis* parameters required to be monitored as per guidelines on WQM-2017 in the only surface water and two ground water monitoring stations (Sonarpur Residential Area and Amtala) in the district for the years 2017-18 to 2019-20 is shown in **Table 4.1** below:

**Table 4.1: Status of parameters required to be monitored *vis-à-vis* those actually monitored in ground and surface water stations**

Categories of Parameters	No. of parameters to be monitored	No. of Parameters monitored	No. of parameters not monitored (%)
Pesticides	22	09	13 (59%)
Toxic Metals	15	10	05 (33.3%)
Poly-nuclear Aromatic Hydrocarbons, Polychlorinated Biphenyls and Trihalomethane	03	Nil	03 (100%)

Non-monitoring of harmful pollutants like pesticides and toxic metals present in water may cause chronic diseases like cancer, damage of liver and kidney, immune disorders, and even progressive physical, muscular, and neurological degenerative processes to humans in the long run. It would also bring the local flora, fauna and the aquatic life under threat.

**b) Incorrect classification of designated best use of surface water**

The Water Act, 1974 stipulates to maintain and restore the ‘wholesomeness’ of our aquatic resources. According to guidelines for WQM 2007-08, if a water body or its part has multipurpose usage, then the use which demands highest quality of water is classified as ‘designated best use’.

The water at the only one surface monitoring station in the district was classified as “C” (drinking water source with conventional treatment) having permissible Biological Oxygen Demand<sup>65</sup> (BOD) value 3 mg/l or less and Total Coliform (TC) value less than 5000 MPN/100 ml among others.

Scrutiny, however, revealed that out of 84 water sample tests carried out between 2014-15 & 2019-20 by WBPCB, the level of BOD exceeded 3mg/l (ranging between 3.1 and 12.18 mg/l) in 34 (40.48 *per cent*) occasions (**Appendix-15**). Further, in 75 (89.29 *per cent*) occasions (**Appendix-15**), the level of TC exceeded 5,000 (ranging between 6,000 and 5,00,000).

This indicates that the classification of water was erroneous and quality of water was unfit for human consumption even with conventional treatment and intensive physical and chemical treatment was required before it could be used safely.

<sup>65</sup> the amount of dissolved oxygen needed by aerobic biological organisms to break down organic material present in a given water sample at certain temperature over a specific time period.

#### 4.1.6.2 Water pollution by industries

Section 25/26 of the Water Act says that no industry can discharge sewage or trade effluent into a stream or well or sewer or land beyond the permissible standards prescribed by CPCB. Whoever contravenes the provisions of the Act shall be punishable with imprisonment or fine under section 43/44 of the Act. The WBPCB can issue directions for closure of industry and disconnection of electricity in case of persistent defiance by any polluting industry under section 33-A of the Water Act.

Ten projects<sup>66</sup> (from grossly polluting industries) were selected in audit for detailed scrutiny and joint physical inspections were conducted with the officials of WBPCB. In three<sup>67</sup> out of 10 projects, following observations were made relating to water pollution:

##### a) *Budge Budge Thermal Power Plant under Calcutta Electricity Supply Corporation*

When coal is burnt in thermal power plants, the mercury (trace amount 0.04 – 0.7mg/kg) available in coal is released. Once released, part of the mercury either evaporates in the atmosphere, some part is trapped in pollution control instruments like electrostatic precipitator, bag *etc* and the rest goes with the fly ash. As per study<sup>68</sup>, a typical 100 MW thermal power plant can emit over 10 kg of mercury in a single year. As per notification<sup>69</sup> of Ministry of Environment, Forests and Climate Change (MoEF&CC), any thermal power plant having capacity of 500 MW & more and installed before 31 December 2003, is required to monitor the level of mercury. However, during joint site visit (February 2021) with WBPCB, Audit noticed that CESC, Budge-Budge unit having installed capacity of 500 MW, set up prior to December 2003 (installed in 1995), was not monitoring the level of mercury. Permissible limit for release of mercury was 0.03mg/Nm<sup>3</sup> as per MoEF&CC guidelines. Mercury is a highly mobile pollutant that is toxic to humans and animals. Exposure to mercury even in small amounts is dangerous to humans, since it acts as a neurotoxin in the body. Therefore, non-monitoring of mercury poses serious health risk to the local inhabitants. Mercury may also contaminate the local water bodies and get into the food chain through contaminated fish and water usage.

##### b) *BNM Organics*

BNM Organics (P) Ltd. (BNM) was established in April 2004 and is engaged in the production of various drugs<sup>70</sup>. As per clause (xii) of the Environmental Clearance (EC) given by State Environment Impact Assessment Authority (SEIAA), BNM had to set up an Effluent Treatment Plant (ETP) consisting of

<sup>66</sup> 1) M/s BNM Organics (P) Ltd., 2) 5 Star Hotel & Serviced apartment, 3) Residential Complex at Bagherghole, 4) M/s BESCO Ltd. 5) M/s Pepsico India Holding Pvt. Ltd., 6) CETP at Calcutta Leather Complex, 7) CESC Ltd. (Budge-Budge), 8) IOCL Indane Bottling Plant, 9) Lubrina Recycling (P) Ltd. and 10) Bristol Petroleum Pvt. Ltd.

<sup>67</sup> Kohinoor Paper Mill, Calcutta Electricity Supply Corporation and Water Canals of Calcutta Leather Complex.

<sup>68</sup> A study National Environmental Engineering Research Institute, Nagpur-2013.

<sup>69</sup> No.S.O.3305(E) dated 07 December 2015

<sup>70</sup> like L-Clopidogrel Hydrogen Sulphate, Carvedilol, Glimepiride etc.

physical, chemical, biological and tertiary treatment systems to treat effluents generated from its production/ manufacturing process. However, during the joint physical inspection with the representatives of WBPCB, it was observed that there was no biological treatment system in the ETP and partially treated effluents were disposed in their open ground. Thus, in absence of biological treatment system, the microbial pathogens may remain in the effluents, which may contaminate the ground and surface water.

### c) Storm Water Canals in Calcutta Leather Complex

Para no. 3.7 of the CAG's Performance Audit report on "Pollution by Industries in West Bengal" (2018) highlighted that 250 tanneries of Calcutta Leather Complex (CLC) were not given connection to Common Effluent Treatment Plant (CETP) and were discharging effluents indiscriminately on the road and in the storm water canals. Besides, it was also pointed out that the quality of water discharge from three storm water canals in CLC and at outlet point of CETP failed to meet the permissible limits fixed by CPCB. The storm water canals drained into the Kulpi River flowing nearby.

As of March 2021 all the tanneries were connected to CETP, however, even after two years, audit observed persisting irregularities during the joint inspection (February 2021) of the CLC as detailed below:

i) In reply to previous PA Report on indiscriminate discharge of effluents in storm water canals, Department stated (December 2017) that the tanneries were regularly monitored by WBPCB. However, analysis of test results (51 samples) of the quality of water of three storm water canals in CLC by WBPCB between April 2017 and June 2019 revealed that pollutants like chloride, Oil & Grease (O&G) and sulphide exceeded the permissible standards in almost all cases as shown in **Table 4.2** below. Thus, the monitoring by WBPCB remained grossly ineffective as the quality of water in the storm water canals did not meet the prescribed standards.

**Table 4.2: Status of quality of water of the three storm water canals inside the CLC during April 2017 to June 2019**

Pollutants (Permissible limit)	Ammonical Nitrogen (50 mg/l)	BOD (30 mg/l)	Chloride (1000 mg/l)	O&G (10 mg/l)	Sulphide (1mg/l)	Total Dissolved Solids (TDS) (2100 mg/l)	Total Chromium (2 mg/l)	Total Suspended Solid (100 mg/l)
<b>Compliant with standards (in number of tests)</b>	1	1	0	0	0	1	9	2
<b>Non – Compliant(NC) with standards (in number of tests)</b>	50	50	51	51	51	50	42	49
<b>Range of results beyond permissible limits</b>	91-510	118- 3375	1249-4248	51-7558	7-178	3864-8496	3-184	50-1710

ii) In reply to previous PA Report on standards of discharge from CETP, the Department stated (December 2017) that regular monitoring of CETP was conducted and regulatory actions were taken by WBPCB. Audit, however, observed that between April 2017 and March 2020, the waste water in the

outlet of CETP was tested 31 times by WBPCB and in majority occasions the discharge failed to meet the prescribed standards as shown in the **Table 4.3** below:

**Table 4.3: Status of quality of water outlet of CETP  
(April 2017 to March 2020)**

Parameters (permissible limits)	Ammonical Nitrogen (50)	BOD (30)	Chloride (1000)	COD (Chemical Oxygen Demand) (250)	Sulphide (1)	TDS (2100)
<b>Compliant</b>	6	23	0	28	25	1
<b>Non-Compliant</b>	25	8	31	3	6	30
<b>Range of NC</b>	71-259	38-200	1749-9497	277-770	9-66	3396-9946

The results clearly indicate that the effluent treatment at the CETP was not effective and the treated water failed to meet permissible limits of pollutants in most tests conducted during the period.

Therefore, CLC continued to add to the pollution of the Kulpi River through both untreated effluents of tanneries and the ineffectively treated CETP discharge of the CLC.

Between March and December 2019, WBPCB issued three (March, September and December 2019) show cause notices to CLC as the effluents exceeded permissible limits. However, the indiscriminate discharge of untreated wastewater at various locations of CLC in the storm water drains and through CETP continued unabated. WBPCB, however, did not resort to strict action like imposition of fines, closure of industries, etc. as provided in the Water Act.

#### 4.1.7 Air Pollution

Air Pollution occurs when the air is contaminated by unwanted substances which have a harmful effect on both the living and the non-living things. Substances that are generally identified as air pollutants include Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM/PM<sub>10</sub>), Sulphur Dioxide (SO<sub>2</sub>), Nitrogen Dioxide (NO<sub>2</sub>), Carbon Monoxide (CO), Carbon Dioxide (CO<sub>2</sub>), ozone depleting substances such as Chloro-fluro carbons (CFC) *etc.* The most common causes of air pollution are emissions from vehicles, industries *etc.*

##### 4.1.7.1 Regulation of Air Pollution

Government of India enacted the Air (Prevention and Control of Pollution) Act 1981 (Air Act) which provides for prevention, control and abatement of air pollution. Besides, CPCB notified (2009) National Ambient Air Quality Standard (NAAQS) with identified 12 pollutants<sup>71</sup> in order to indicate necessary air quality levels and appropriate margins required to ensure the protection of vegetation, health and property as well as to provide a uniform yardstick for the assessment of air quality at the national level. The basis of development of standards is to provide a rationale for protecting public health from adverse effects of air pollutants, to eliminate or reduce exposure to hazardous air pollutants and to guide national/local authorities for pollution control decisions.

<sup>71</sup> Sulphur Dioxide, Nitrogen Dioxide, PM<sub>10</sub>, PM<sub>2.5</sub>, Ozone, Lead, Carbon Monoxide, Ammonia, Benzene, Benzo(a)pyrene, Arsenic and Nickel.



Under section 17(3) of the Air Act, one of the functions of the WBPCB is to collect and disseminate information relating to air pollution. The air quality of the entire State is monitored by WBPCB through 79 Semi-Automatic Ambient Air Quality Monitoring Stations (SAAQMS) and 14 Continuous Ambient Air Quality Monitoring Stations (CAAQMS). There are two SAAQMS (Amtala and Baruipur) but no CAAQMS in South 24 Parganas district.

#### 4.1.7.2 Inadequate number of monitoring stations in the district

Guidelines for Ambient Air Quality Monitoring, 2003 provide that the required minimum number of stations and its distribution needed for monitoring trends of common pollutants like SPM in urban areas were based on population of the area. The formula for deciding the number of stations in a city is shown in the Table 4.4 below:

**Table 4.4: Population vis-à-vis number of Air quality monitoring stations required for SPM.**

Population	Minimum no. of monitoring stations
Less than 1 lakh	4
1 lakh to 10 lakh	4 + 0.6 per 1 lakh population
10 lakh to 50 lakh	7.5 + 0.25 per 1 lakh population
More than 50 Lakh	12+ 0.16 per 1 lakh population

Accordingly, the number of stations required in the district of South 24 Parganas with an urban population of 20.88 lakh (Census 2011) should be at least 12 and optimally 24. Against that, there were only two monitoring stations in the district as of March 2020. No proposal for increase in monitoring stations was sent to CPCB by the WBPCB for the district. In South 24 Parganas, there are seven<sup>72</sup> industrial areas having 6876 registered industrial unit. Further, the district is contiguous to Kolkata and large part of the district is included in the greater Kolkata areas. However, except in Baruipur, WBPCB had not set up station in the remaining six industrial areas for monitoring the air quality.

#### 4.1.7.3 Inadequate monitoring of air pollutants

The air quality of South 24 Parganas district was monitored (2014-15 to 2019-20) through two SAAQMS. Scrutiny of records revealed that these two SAAQMS were monitoring only three<sup>73</sup> out of the required 12 pollutants. Audit observed that in absence of information on the remaining nine<sup>74</sup> pollutants, there was no assessment nor any mitigation measures possible in respect of those nine air pollutants in the district.

#### 4.1.7.4 Presence of PM<sub>10</sub> beyond permissible limits

PM<sub>10</sub><sup>75</sup> is an important air pollutant. It is small enough to enter lungs and cause health problems like asthma, bronchitis and pneumonia. NAAQSs 2009 set the concentration of PM<sub>10</sub> as 60 µg/m<sup>3</sup>(annual average) in ambient air. Analysis

<sup>72</sup> Behala, Baruipur, Santoshpur-I, Falta-I, Falta-II, Falta SEZ and Santoshpur-II

<sup>73</sup> PM<sub>10</sub>, Sulphur Dioxide and Nitrogen Dioxide

<sup>74</sup> PM<sub>2.5</sub>, Ozone, lead, Carbon Monoxide, Ammonia, Benzene, Benzo(a)pyrene, Arsenic and Nickel

<sup>75</sup> PM<sub>10</sub> describes inhalable particles in air with diameters 10 micrometers and smaller.

of generated data (2014-15 to 2019-20) from the two SAAQMS (Amtala and Baruipur) in the district revealed that the level of PM<sub>10</sub> remained consistently beyond the prescribed permissible limits in all the years as shown in the **Table 4.5** below:

**Table 4.5: Concentration of PM<sub>10</sub> in SAAQMS at Amtala and Baruipur**  
(Units in  $\mu\text{m}^3$ )

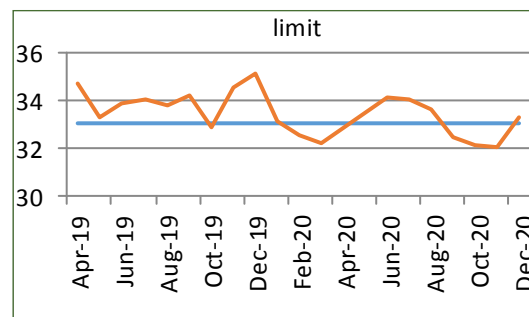
Year	Permissible limit of PM <sub>10</sub>	Concentration of PM <sub>10</sub> at Amtala (Annual Avg.)	Concentration of PM <sub>10</sub> at Baruipur (Annual Avg.)	Maximum concentration of PM <sub>10</sub> during the year (Amtala/ Baruipur)
2015-16	60	100.31	101.69	224/249
2016-17		105.33	115.33	189/ 232
2017-18		101.71	103.89	204/ 214
2018-19		83.45	97.40	184/ 205
2019-20		78.15	98.30	120/ 214

Thus, WBPCB was required to plan a comprehensive programme to bring the concentration of PM<sub>10</sub> within the permissible limit as per Air Act 1981. However, no action has been initiated by WBPCB other than disseminating the air quality data.

#### 4.1.7.5 Air pollution in Budge Budge Thermal Power plant under Calcutta Electricity Supply Corporation (CESC)

- a) Total power generating capacity of Budge Budge Thermal Power Plant (BBTPP) was 750 MW<sup>76</sup> (3 units X 250 MW). During joint physical inspection of BBTPP in February 2021, Audit observed the following non-compliance with the conditions of Environment Clearance (EC). As per conditions of EC granted by WBPCB in December 2005, percentage of ash in coal should be less than 33 *per cent*. Scrutiny of available test reports of ash content of coal used for the period from April 2019 to March 2020 and from June 2020 to December 2020 revealed that the average ash content of coal exceeded 33 *per cent* in majority of months as depicted in the line Chart 4.1. Further, as per EC, the content of sulphur in the coal in thermal power stations should not be more than 0.38 *per cent*. Test reports for the period from June 2020 to December 2020 revealed that there were instances of coal containing sulphur more than 0.38 *per cent* (ranges between 0.39 and 0.41 *per cent*) used in all three units of the thermal power station as shown in the **Table 4.6** below:

**Chart 4.1 Showing average ash content of Coal**



<sup>76</sup> The third unit of 250 MW was installed in 2005.

**Table 4.6: Instances of violations of coal containing more than the prescribed percentage of sulphur**

Month & Year	Month-wise instances of violations/ number of tests conducted during the month		
	Unit-1	Unit-2	Unit-3
June 2020	09/30	09/30	07/30
July 2020	13/31	11/31	09/31
August 2020	17/31	13/31	14/31
September 2020	18/30	24/30	21/30
October 2020	25/31	24/31	28/31
November 2020	21/30	20/30	19/30
December 2020	18/31	09/31	11/31

b) As per special conditions of the EC, a dust extraction and dust suppression system should be installed for suppression of fugitive dust from the coal handling area. However, audit observed during joint verification (February 2021) with WBPCB officials that huge heaps of coal were stored in the coal stackyard without installation of any dust extraction system which may cause respiratory problems to the local inhabitants.



**Figure 4.1: Coal handling area at the stackyard**

c) According to the Environment (Protection) Amendment Rules, 2015, permissible limit for SO<sub>2</sub>, NO<sub>x</sub> and PM<sub>10</sub> was 600 mg/Nm<sup>3</sup>, 300 mg/Nm<sup>3</sup> and 50 mg/Nm<sup>3</sup> respectively. Between June 2017 and January 2020, WBPCB had tested the emission of each of the three chimneys of BBTPP 30 times. Analysis of the test results revealed that PM<sub>10</sub> was within the prescribed limit. However, SO<sub>2</sub> and NO<sub>x</sub> exceeded the permissible limits in 26 to 29 occasions as shown in Table 4.7 given below:

**Table 4.7: Number of times SO<sub>2</sub> and NO<sub>x</sub> in BBTPP exceeded the permissible limits between June 2017 and January 2020**

Pollutants	Boiler 1		Boiler 2		Boiler 3	
	SO <sub>2</sub>	NO <sub>x</sub>	SO <sub>2</sub>	NO <sub>x</sub>	SO <sub>2</sub>	NO <sub>x</sub>
Permissible limits (mg/Nm <sup>3</sup> )	600	300	600	300	600	300
No. of violations (out of 30 tests)	26	29	27	29	28	26

Audit observed that inspite of serious lapses in compliance to the EC and Consent to Operate (CTO) by the industries, WBPCB did not initiate any action like issuing show cause notice, imposing penalty *etc.* against the BBTPP as per the provisions of the Act.

#### 4.1.7.6 Vehicular emission

According to the CPCB, the transport sector contributes to 70 per cent of total pollution in metros. As per report of the West Bengal State Action Plan on Climate Change 2017-20, CO<sub>2</sub> emission from the transport sector in West Bengal is estimated to be about 12,000 units of Greenhouse Gases (GHG)/ year.

There are four depots of two STUs located in the district, viz., three depots of Calcutta State Transport Corporation (CSTC) at Kasba, Garia and Thakurpukur with average bus strength of 356, 440 and 407, respectively and South Bengal Transport Corporation (SBSTC) Falta depot with average bus strength of 53 during the period under Audit. All the four depots were covered for detailed checking in this audit including physical verification.

##### a) Improper maintenance of buses led to adverse effects on emission performance

Emission performance of a vehicle is entirely dependent on proper maintenance of vehicles after a specified kilometer (KM) run. The entire maintenance work in CSTC was carried out in-house or through private contractors. However, none of the depots in the district maintained proper records showing schedule of vehicle specific preventive maintenance programme carried out during the period covered in audit.

Maintenance jobs of buses in CSTC and SBSTC is termed as ‘docking’. The STUs prescribed ‘A’ docking on daily basis and ‘B’ docking after run of certain gross km for BS-III and IV buses.

Detailed checking of records at three depots<sup>77</sup> of CSTC in South 24 Parganas district during 2014 to 2019 revealed that there was a shortfall of 437 (25 per cent) scheduled dockings based on gross km operated. Further, records of Falta depot of SBSTC for the same period revealed that there was shortfall of 47 (64 per cent) scheduled dockings with respect to gross km operated.

Further, scrutiny of records on maintenance of buses in the four<sup>78</sup> depots revealed that management did not ensure change of engine oil, diesel filter, gear oil and Differential Bar (DB) oil as per the standard norms, as shown in **Table 4.8** below:

**Table 4.8: Percentage deficit in changing engine oil, diesel, filter, gear oil and DB oil**

Name of the Depot	% of deficit in changing engine oil	% of deficit in changing diesel filter	% of deficit in changing gear oil	% of deficit in changing DB oil
Kasba Depot, CSTC	38.11	27.47	Nil	Nil
Garia Depot, CSTC	63.47	70.83	Nil	Nil
Thakurpukur Depot, CSTC	31.49	54.78	Nil	Nil
Falta Depot, SBSTC	75.35	56.86	85.21	96.30

Audit observed that the non-compliance was mainly due to unavailability of technical manpower, monitoring at management level and non-availability of buses (due to busy schedule) at the time of docking. Thus, improper maintenance of buses which affect their emission performance by STUs added to vehicular emissions and air pollution.

<sup>77</sup> Kasba Depot (KD), Garia Depot(GD) and Thakurpukur Depot (TPD) of CSTC.

<sup>78</sup> Kasba, Garia, Thakurpukur and Falta Depot.

**b) Emission of NO<sub>x</sub> gases in the environment due to non-working of SCR System**

The Selective Catalytic Reduction (SCR) system is provided to treat engine exhaust of buses to meet BS-IV emission norms by reducing oxides of nitrogen through dosing of the reducing agent *AdBlue*<sup>79</sup> with fuel. *AdBlue* generates ammonia from heating that reacts with the harmful nitrogen oxides and converts them into harmless nitrogen and water.

According to original equipment manufacturer, minimum four litres of *AdBlue* additive is required for every 100 litres of HSD. During April 2014 to March 2019, CSTC (in KD, GD and TPD) operated 401 BS-IV buses daily on an average and consumed 2.63 lakh litres of *AdBlue*, which could purify only 65.77 lakh litres of HSD, out of total consumption of 168.39 lakh litres of HSD during the same period. Thus, the remaining 102.63 lakh litres of HSD was burnt without *AdBlue* and noxious nitrogen oxides emitted in the environment. Further, it was seen that the SCR system of 36 vehicles out of 152 buses in two selected depots<sup>80</sup> were not functioning properly due to defect in dosing units in such buses. There were no buses using this technology in SBSTC.

Thus, sub-optimal use of *AdBlue* and non-functioning of SCR system in buses resulted in emission of NO<sub>x</sub> gases in the environment, which are harmful for humans and cause lung diseases.

**c) Pollution under Control (PUC) Certificate**

According to Rule 116 (7) of the Central Motor Vehicles Rules, 1988, after expiry of one year from the date of registration, every vehicle shall obtain Pollution Under Control” (PUC) certificate every six month and obtain re-registration certificate after 15 years. Operation of vehicles without PUC certificate is liable to a penalty of ₹ 1,000 for first offence and ₹ 2,000 for subsequent offences as specified in section 190 (2) of the Motor Vehicles Act.

Test check of records relating to pollution test in three depots of CSTC (KD, GD and TPD) and Falta Depot of SBSTC for the period 2014-19 is shown in **Table 4.9** below:

**Table 4.9: Status of Pollution Test of Buses of CSTC**

Depot	Buses held <sup>81</sup>	Smoke Test to be conducted twice a year <sup>82</sup>	Smoke Emission Test actually done	Percentage of Smoke Test done on average
CSTC Kasba	71	710	124	17.46
CSTC Garia	88	880	197	22.39
CSTC, Thakurpukur	82	820	255	31.10
SBSTC Falta	11	110	0	0
<b>Total</b>	<b>252</b>	<b>2,520</b>	<b>576</b>	<b>17.74</b>

(Source: Data provided by management)

<sup>79</sup> It is the trade name of non-toxic colorless and odourless 32.5 per cent aqueous urea solution.

<sup>80</sup> KD-16 and TPD-20

<sup>81</sup> Average number of buses held during five years.

<sup>82</sup> Smoke Test required during 2014-19.

GoWB authorised (August 1999) all the STUs to inspect and annually grant/renew certificates of fitness<sup>83</sup> (CF) for their buses. In November 2016, KD, GD and TPD of CSTC were provided with Smoke Testing Machines. During joint physical verification (December 2020), it was observed that the smoke testing machine of the TPD was not in order and the depot authority was in process of starting auto emission testing centre at the depot premises, which was yet to be installed.

#### **d) Consent to Establish and Consent to Operate**

Section 21 of the Air (Prevention and Control of Pollution) Act, 1981, specified that no person shall except with the previous consent of SPCB, establish or operate any industrial plant. Further, sections 24, 25 and 26 of the Water (Prevention and Control of Pollution) Act, 1974 provide that no person shall knowingly cause or permit flow of any poisonous, toxic or polluting matter into any stream, well, sewer or land without treating it. Audit observed that all the four of depots in the District continued to operate without obtaining “Consent to Operate” from WBPCB.

Further, according to Rules 3(c) and 5(5) of the Hazardous Waste (Management and Handling) Rules, 1989, the depots require authorisation from WBPCB for storage and disposal of hazardous waste. The bus depots generate hazardous waste like used/waste lubricants, engine oil *etc.* However, it was observed that in case of three depots<sup>84</sup> of CSTC, WBPCB authorisation was available upto December 2013 and in case of SBSTC depot at Falta, no authorisation was available.

Further, it was seen that the GD and TPD had submitted annual return (Form-IV) about magnitude of hazardous waste generated and its disposal to the WBPCB at regular intervals but KD had not submitted any returns to WBPCB during 2015-16 and 2018-19.

The STUs operated bus depots without valid CTO or hazardous waste authorisation which was in disregard to the provisions of the Air Act, 1981. Further, due to lack of regular maintenance of buses, non-functioning of smoke testing machines and SCR system and sub-optimal use of *Adblue*, the STUs failed to take effective measures in reducing emission of harmful gases in the environment from its buses.

### **4.1.8 Noise pollution**

Noise is an unwanted sound that causes annoyance. Noise of sufficient intensity and duration can induce temporary or permanent hearing loss. Beginning with the technological expansion of the industrial growth, environmental noise in India has been gradually and steadily increasing. Proper monitoring and control of noise at its source would require to create general awareness regarding the hazardous effects of noise pollution.

For controlling the menace of noise in the country, MoEF&CC had enacted the Noise Pollution (Regulation and Control) Rules, 2000 (Noise Rules, 2000) under The Environment (Protection) Act, 1986. Central Pollution Control Board (CPCB) established (2011) a network of noise quality monitoring stations under

<sup>83</sup> Based on compliance of 18 aspects of operational fitness including nine associated with environmental pollution.

<sup>84</sup> Kasba, Garia and Thakurpukur.

National Ambient Noise Monitoring Network (NANMN) covering 10 locations in West Bengal including Patuli residential area in South 24 Parganas district. According to the Noise Rules, 2000, the noise levels in the Patuli residential area should be less than 55 dB (A) during day and 45 dB(A) during night.

Audit compiled the monthly data of noise pollution available in CPCB Envis website for the years 2014 to 2019. Analysis of the information showed that out of 72 months, the noise levels of the area during daytime exceeded permissible limits in 64 months while the night sound levels exceeded the permissible limits in all 72 months as given in the **Chart 4.2**.

**Chart 4.2: Showing noise level exceeded permissible limits during day and night time**



For controlling the menace of noise, WBPCB conducts noise pollution monitoring during major festivals. Audit, however, observed that the initiatives of WBPCB were restricted to the festival periods only. Though the noise in Patuli regularly exceeded the permissible limits, WBPCB, however, had not identified the sources of noise in the area and had not taken any steps to control the noise pollution. Thus in absence of proper monitoring and control of the noise at its source, the hazardous effects of noise pollution continued to cause ill effects on human and its natural environment in the Patuli area of South 24 Parganas.

Audit compiled the daily noise pollution level for the years 2014-17 from Status of Ambient Noise Level in India report published by CPCB. The results of analysis of the information is produced in the **Table 4.10** below:

**Table 4.10: Status of Ambient Noise Level at Patuli from 2014-17**

Analysis of daily noise level in Patuli area								
	Day	Night	Day	Night	Day	Night	Day	Night
Years	2014		2015		2016		2017	
<b>Standard (in dB(A) Leq)</b>	55	45	55	45	55	45	55	45
<b>No of Observations</b>	309	283	364	364	365	365	365	364
<b>No of Exceedance</b>	142	276	248	362	365	365	349	363
<b>Percentage of Exceedance</b>	46	98	68	99	100	100	96	100

At Patuli station, noise exceedance observed during day time ranged between 46 and 100 *per cent* while during night time it was between 98 and 100 *per cent*. The maximum recorded noise level during day ranged between 79 dB (A) and 89 dB (A) while during night the noise level ranged between 77 dB(A) and 88 dB(A).

### 4.1.9 Bio-Medical Waste Management

Bio-medical waste (BMW) means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities or in the production or testing of biological or in health camps. In order to save the environment from adverse effects, Ministry of Environment, Forests and Climate Change (MoEF&CC), framed a 'Bio-Medical Waste Management (BMWM) Rules, 2016 which were amended in February 2019. Records of Health and Family Welfare Department (HFWD), WBPCB and one Regional Offices in South 24 Parganas were scrutinised in audit. Besides, coverage was extended to ARDD and Correctional Service Department (CSD), as these Departments also operated Health Care Facilities (HCFs) and contributed to generation of BMW in the district. Under the HFWD, 12 out of 100 HCFs under the two Health Districts (Diamond Harbour and South 24 Parganas) of South 24 Parganas district were covered. Five out of 55 Animal Health Care Facilities (AHCFs) under the ARDD and the sole HCF, i.e., Presidency Correctional Home Hospital under the CSD were covered in Audit. This apart, the sole Common Bio-medical Waste Treatment Facility (CBWTF) assigned for the district of South 24 Parganas was covered in audit. Joint inspections were also conducted in all the selected HCFs and the CBWTF.

#### 4.1.9.1 Non-inventorisation of HCFs and data on BMW generation

In terms of the BMWM Rules 2016, WBPCB is responsible for inventorisation of occupiers<sup>85</sup> and data on bio-medical waste generation, treatment and disposal. Audit observed that WBPCB awarded (August 2019) the work of inventorisation of HCFs to an agency with due date of submission being April 2020. Final report of inventorisation of HCFs not yet been (March 2020) submitted by the agency. Thus, even after four years of enactment of the Rules, inventorisation of HCFs could not be done. As per inventory of WBPCB, there were 26 HCFs, against 100 Government HCFs in the South 24 Parganas district (as per list provided by Health and Family Welfare Department), indicating that the inventory of the WBPCB was incomplete, resulting in BMW generation in the District remaining unassessed. As per Annual Report of WBPCB 2018, 973.64 MT of bio-medical waste was generated in the district.

#### 4.1.9.2 Handling and Management of BMWs without valid authorisation

Under BMWM Rules, 2016, every HCF handling BMW shall apply to WBPCB for grant of authorization for generation, collection, storage, transportation, treatment processing and disposal of bio-medical wastes. WBPCB grants authorisation with validity of five years for bedded and for one time in case of non-bedded HCFs. Audit observed that out of 100 HCFs under H&FW Department, GoWB, in the two Health District of South 24 Parganas District only 10 HCFs had valid BMW authorisation.

WBPCB stated (February 2020) that it had developed an online system for receiving applications for BMW authorisation from the HCFs. However, the

<sup>85</sup> Occupier means a person having administrative control over the institution like hospital, nursing home, clinic etc for both humans and animals.



Superintendent, Bijoygarh State Government Hospital (SGH) and Presidency Correctional Home in their replies (February 2020) stated that they could not submit online applications for obtaining BMW authorisation from WBPCB in the absence of land records (records of rights). No response was offered by other test checked Government HCFs. Thus, majority of the HCFs in the district were functioning without any authorisation and remain outside the monitoring ambit of the WBPCB.

#### **4.1.9.3 Non-submission of Annual Reports**

BMWM Rules, 2016 specify that every HCF shall submit Annual Report to WBPCB in Form-IV on or before 30 June every year about generation and disposal of BMW. The WBPCB was to compile, review and analyse the information received and send the same to the CPCB on or before 31 July every year.

Audit observed that 75 to 94 per cent of HCFs in the category of “upto 50 and non-bedded”, did not submit Annual Reports. Non-submission of Annual Reports by HCFs implies that WBPCB has no information on the BMW generated or treated. This implied that there was practically no means of monitoring the generation and treatment of BMW by HCFs in the district by WBPCB. The data transmission process to the CPCB was also impacted.

#### **4.1.9.4 Lack of Training programme**

As per BMWM Rules, 2016 WBPCB was to organise training programmes on segregation, collection, storage, transportation, treatment and disposal of bio-medical wastes for staff of HCFs.

Scrutiny of records revealed that no Calendar of Training programme was framed by WBPCB to ensure coverage of staff of all HCFs. Since promulgation of BMWM Rules, WBPCB organised only three training programme in 2018-19 for staff of HCFs under HFWD. HFWD also provided training to 16 staff of HCFs only during March 2019. No training on BMW to staff under CSD and ARDD was provided during the period under audit.

#### **4.1.9.5 Non-execution of agreement by the ARDD and CSD with the CBWTF**

BMWM Rules, 2016 provides that HCFs shall hand over segregated wastes as prescribed to CBWTF for treatment, processing and final disposal.

Records of HFWD indicated that the only one CBWTF (Greentech Environ Management Pvt Ltd.) was selected (January 2016) for treatment and disposal of BMWs generated in all HCFs of South 24 Parganas District. Accordingly, all HCFs of the District were bound by contract with the same CBWTF. However, neither CSD nor ARDD entered into any agreement with CBWTF for treatment and final disposal of BMWs. In reply, Deputy Director, ARD, South 24 Parganas stated (March 2020) that approval from the Directorate for the agreement was not yet obtained. The Superintendent, Presidency Correctional Home replied (February 2020) that steps were being taken to dispose the BMW through the authorised agency. Thus, veterinary and other BMW relating to ARDD and CSD remained untreated.

#### 4.1.9.6 Compliance to provisions of BMW Management Rule

HCFs are primarily responsible for segregation, collection, in-house transportation, pre-treatment and storage of BMW before such waste is collected by the CBWTF. Irregularities observed during audit in this process are discussed in the subsequent paragraphs.

##### *i) Improper Segregation of BMW*

BMWM Rules specify that BMW generated from HCFs is required to be segregated at the point of generation as per stipulated colour coding into four categories (Yellow<sup>86</sup>, Red<sup>87</sup>, White<sup>88</sup> and Blue<sup>89</sup>). It also specifies that untreated BMW should not be mixed with other general wastes. Scrutiny of records of test checked HCFs disclosed the following violations of provisions of BMWM Rules:

- BMW wastes were being disposed along with general waste in coloured plastic bags in all the test checked HCFs of HFWD, resulting in mixing of BMW with other waste.
- BMW was not segregated in specified coloured plastic bags. Black coloured bags meant for disposal of municipal waste were also used for BMW in seven<sup>90</sup> test checked HCFs. This allowed disposal of BMW along with municipal waste, contaminating municipal solid waste, which have potential to cause serious adverse effects on human health and the environment. In Diamond Harbour District Hospital and Bijoygarh State General Hospital BMW was being disposed in containers instead of specified coloured plastic bags or puncture proof containers.
- Provisions of BMWM Rules for segregation and collection of BMW generated in the sole HCF under CSD was yet to be implemented.

##### *ii) Use of chlorinated plastic bags/containers*

BMWM Rules mandates use of non-chlorinated specific coloured plastic bags for collection of wastes generated in HCFs. These Rules also specify that use of chlorinated plastic bags, gloves and blood bags are to be phased out within two years from the date of notification (March 2016) of these Rules. Burning of chlorinated bags in the incinerator releases gas which are carcinogenic in nature.

Audit observed that in seven test checked HCFs chlorinated plastic bags were used (supplied from district office to HCFs in November 2018) for collecting BMWs even after two years of the Notification. Similarly, chlorinated plastic bags for collection of BMWs were used in all the test checked HCFs under ARDD.

<sup>86</sup> Yellow: Human and animal anatomical waste, soiled waste, expired or discarded medicines, chemical waste, Microbiology, Biotechnology and other clinical laboratory waste.

<sup>87</sup> Red: Contaminated waste (recyclable).

<sup>88</sup> Waste sharps including Metal.

<sup>89</sup> Glassware and Metallic body implants.

<sup>90</sup> Diamond Harbour DH & MCH, Vidyasagar SGH, Samali RH, Sagar RH, Nalmuri RH, Belpukur PHC and Kalikapur PHC.

**iii) Central Waste Collection Room or Common Collection Point for storing BMWs**

BMWM Rules specify that occupier was to make provision for Common Collection Point (CCP) within the premises for storage of BMW segregated in specific coloured plastic bags or containers. This was to ensure that there was no incidence of secondary handling, pilferage of recyclables or inadvertent scattering or spillage by animals. As per CPCB guidelines, the location of CCP was to be away from the public/visitors access.

Audit observed that in two PHCs (Kalikapur and Sirakole) under HFDW, there was no designated CCP in their premises<sup>91</sup> for storage of BMW. Further, in respect of Nalmuri Rural Hospital and Belpukur PHC, location of CCPs was near the visitors' access. The area around the CCP of Diamond Harbour DH was scattered with BMW.

Lack of storage of BMWs in HCFs, increases the risks of secondary handling, pilferage as well as pose health hazards to the neighbourhood and the public visiting the health facilities.

**iv) Inadequate pre-treatment of Laboratory wastes**

BMWM Rules mandate pre-treatment of laboratory waste, microbiological waste, blood samples and blood bags through on-site disinfection with one to two *per cent* hypochlorite solution before final disposal to the CBWTF.

Audit observed that on-site disinfection before handing over of waste to CBWTF was not done by four out of 12 test checked HCFs under HFWD and none of the test checked HCFs under ARDD and CSD. Besides, five HCFs under HFWD did not maintain records of pre-treatment or disinfection procedure of laboratory wastes and microbiological wastes. Thus, chances of spreading diseases during transportation of wastes cannot be ruled out.

**v) Non-neutralisation of liquid chemical wastes before mixing with other effluents**

BMWM Rules prescribe segregation of liquid chemical waste from HCFs at source and ensuring their pre-treatment or neutralisation prior to mixing with other generated effluents.

Audit observed that no pre-treatment was done in four of the test checked HCFs and such waste was disposed directly in the drains. Further, compliance to this provision was not found in the test checked HCFs under ARDD and CSD. Such discharge of waste, without treatment, had the potential of polluting surface and ground water and spreading contamination to human beings through fish and other aquatic plants/ animals.

**vi) Non-quantification of BMW generated in HCFs**

As per BMWM Rules, a weighing machine should be kept at CCP of an HCF having 30 or more beds. HCFs having less than 30 beds should obtain printed receipts regarding quantity of BMW handed over to CBWTF. Besides, every HCF needs to maintain record of category-wise quantity of BMW generated

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<sup>91</sup> Kalikapur PHC stored BMW plastic bags in buckets and Sirakole PHC stored in open place attached to Bathroom.

and its treatment/disposal through CBWTF on daily basis. Scrutiny of records revealed the following:

- Weighing arrangements were available only in Vidyasagar SGH out of eight test checked HCFs having 30 or more beds under HFWD.
- Printed receipts issued by CBWTF to HCFs (under HFWD) mentioned the number of 'coloured packets' collected and 'weight generated from each HCF'. A joint inspection of vehicles collecting BMW disclosed that there was no weighing facility in vehicles of CBWTF lifting BMW. The weight was seen to be inserted on the basis of assumption and this fact was also admitted by the respective HCF authorities in their replies.

This indicated that there was no system to assess the quantity of BMW generated at source.

**vii) Non-labelling of packaged BMWs**

As per Schedule IV of BMWM Rules and CPCB guidelines, specific coloured containers/bags were to be sealed and be labelled with symbol for bio hazard.

Audit observed that none of the 12 test checked HCFs under HFWD complied with this provision of sealing and labelling coloured containers/bags containing BMW with bio-hazard symbols, before handing over to CBWTF for treatment and final disposal.

**viii) Non-adopting of barcode system for bags and containers transporting BMW**

BMWM Rules stipulate HCFs to establish a barcode system for each bag and container of BMW to be dispatched from the premises for treatment and disposal. Compliance with this stipulation was to be in place within one year from the notification (March 2016) of BMWM Rules, for tracking of lifted BMW from source of generation to intended destination. None of the 12 test checked HCFs under HFWD complied with this provision, even after three years of the stipulated time-frame getting over.

**ix) Non-compliance with provision for in-house transportation of BMW**

CPCB guidelines stipulate that in-house transportation of BMW from site of waste generation/interim storage to CCP within the premises of the hospital must be done in closed trolleys/containers, preferably fitted with wheels for easy mobility to avoid any adverse effects to human health and environment. Such trolleys or carts may be designated for purpose of BMW collection only.

Audit observed that in four test checked HCFs under HFWD, either there were no closed trolleys for transportation of BMW from ward to common storage point or closed trolleys were lying non-operational. Transportation of BMW was done in open trolleys, thereby leaving scope for BMWs to adversely affect human health and environment.

**4.1.9.7 Irregular disposal of BMW from HCFs without involvement of CBWTF**

Rule 7 (3) prohibits occupiers from establishment of on-site treatment and disposal facility of BMW if CBWTF is available within a distance of 75 km. Under BMWM Rules, disposal by deep burial is permitted only in rural or remote areas where there is no access to CBWTF.

**a) Disposal of BMW instead of handing over to CBWTF**

BMWM Rules stipulates that HCFs hand over segregated BMW to CBWTF for treatment and final disposal. These Rules also included that the category of expired medicines of BMW was to be collected in yellow coloured packets for disposal through CBWTF. Further, no untreated BMW was to be mixed with other wastes.

It was observed that in three test checked HCFs, BMW (including expired medicines) were dumped in the backyard and expired medicines were burnt with other general wastes in a pit near the hospital premises of Nalmuri Rural Hospital without handing over to CBWTF.

**b) Disposal of BMW through Deep Burial Method**

BMWM Rules stipulate that disposal by deep burial is permitted only in rural or remote areas where there is no access to CBWTF. This will be carried out with prior approval from the WBPCB and as per the standards specified in Schedule II of BMWM Rules. As stipulated in BMW Rules, pits for disposal of BMW for deep burial method were to be prepared by digging earth with the use of baked earthen ring instead of concrete. Covers of galvanized iron or wire meshes may be used. On each occasion when waste are added to the pit, a layer of soil of 10 cm would be added to cover the wastes. Audit, however, observed following irregularities in disposal of BMW:

- Despite availability of CBWTF, the Deputy Director, ARDD South 24 Parganas decided (October 2018) to dispose BMWs through burial pit without authorisation from WBPCB. BMW (including needles with syringes) were disposed in pits, in all five test checked AHCFs.
- In four of the test checked AHCFs, pits were constructed with baked earthen rings, but ‘covers of galvanised iron or wire meshes’, as was stipulated in the BMWM Rules, were not used.
- In three HCFs (Budge Budge-I, Sonarpur and Diamond Harbour-I), pits were located near habitation, in violation of BMWM Rules.
- Pits used by three test checked HCFs under ARDD were found to be filled with water along with discarded BMW. This indicated that no arrangement was made to construct a relatively impermeable pit in violation of BMWM Rules, 2016.
- None of the five test checked HCFs under ARDD, added a layer of soil of 10 cm to cover the wastes, in deviation of stipulation of BMWM Rules.

**4.1.9.8 Occupational safety in handling BMW**

BMWM Rules stipulate that HCFs are to ensure occupational safety of all their health workers and other staff involved in handling of BMW by providing appropriate and adequate personal protective equipment (PPE).

Audit observed that only in six out of 12 test checked HCFs under HFWD, PPE kits were issued to workers handling BMW. In two of the five test checked AHCFs, under the ARDD, only masks and gloves were given to the staff. In the sole HCF under CSD, no PPE kits were given.

In reply, Deputy Director, ARDD of the district admitting the fact stated (March 2020) that no PPE kits were issued to the officials handling BMW. The Superintendent of the HCF, under CSD, stated (February 2020) that steps would be taken to supply the same.

Without protection of immunisation of PPE, health and safety of personnel handling BMW in the district is being put at risk every single day and needs to be urgently addressed.

#### **4.1.9.9 Inadequate immunisation and health check-up of staff in HCFs**

BMWM Rules stipulate that HCFs were to conduct health check-up at the time of induction and at least once in a year for all health care workers involved in handling BMW. The Rules also stipulate immunisation against diseases including Hepatitis B and Tetanus that are likely to be transmitted from handling of BMW.

Audit observed that no health check-up was done in five test checked HCFs and no immunisation was done in two HCFs (Sirakole and Belpukur PHC) under HFWD. Health check-up and immunisation of staff were also not undertaken in any of the test checked AHCFs under ARDD and HCF under CSD. Thus, health workers handling BMWs remained under threat of infection.

Deputy Director ARD under ARDD, stated (March 2020) that no policy was framed for periodical health check-up and immunisation of the staff handling BMW in HCFs. The reply is not tenable as HFWD itself adopted BMWM Rule, 2016 in their different orders/notifications.

#### **4.1.9.10 Common Bio-Medical Waste Treatment and Disposal Facility**

Revised Guidelines for Common Bio-medical Waste Treatment and Disposal Facilities (CBWTF) issued (December 2016) by CPCB stipulate that municipal body or any private entrepreneur would set up a CBWTF based on the need for ensuring environmentally sound management of BMW. The CBWTF would be set up keeping in view the techno-economic feasibility and viable operation of the facility with minimal impact on human health and environment. WBPCB implements the guidelines issued by the CPCB for CBWTF in the State. Accordingly, WBPCB submits annual reports on BMW management indicating individual functioning of CBWTF of the State to CPCB.

During the period covered under audit, M/s Greentech Environ Management Private Ltd (GEMPL) at Mograhat, South 24 Parganas was assigned by the WBPCB to function as CBWTF (initially selected for one year from January 2016 and thereafter renewed from time to time by HFWD during the period under audit) for treatment and final disposal of BMWs generated in all HCFs of South 24 Parganas.

Scrutiny of records of CBWTF disclosed the following:

##### **i) Infrastructural Deficiencies in CBWTF**

CPCB guidelines (December 2016) specifies infrastructure to be set up in a CBWTF. The entire set up is conceptualised, based on the requirement that in the entire process of functioning of the CBWTF from collection of BMW to its disposal, no adverse effect to human health and environment occurs.

Audit, during the joint physical inspection of CBWTF with WBPCB official on February 2019, observed that the CBWTF did not comply with the requirements of infrastructure set up *viz.* smooth and fine floor and wall surfaces for minimising sticking/harboured of micro-organisms, separate rooms for each treatment equipment (such as incinerator, autoclave, microwave etc.), clear demarcation of main waste storage room with arrangements of stacking BMWs (as per colour codification), provision of vehicle parking areas, *etc.*



**Figure 4.2: Packets/containers with BMW are piled in open area**

Audit observed that untreated BMW was heaped in the open (**Figure 4.2**) instead of waste storage rooms and untreated expired medicines piled in huge quantities in one room. Such non-compliance in terms of infrastructure set up was compromised the vital aspects of prevention of adverse effects to human health and environment.

#### ***ii) Operation of Effluent Treatment Plant in CBWTF***

As per CPCB guidelines, a CBWTF shall have a suitable Effluent Treatment Plant (ETP) to ensure liquid effluent generated during the process of washing containers, vehicles, floors *etc.* is treated and reused after treatment. The ETP should have pH meter to measure pH level of treated effluent which is re-circulated in Air Pollution Control Device<sup>92</sup> (APCD) attached with the incinerator. A ‘magnetic flow meter’ is also to be installed at all water supply extraction points of the CBWTF and in the outlet to check quantity of waste water treated. Scrutiny, however, revealed that neither pH meter nor magnetic flow meter was installed in the ETP.

As such, there was no mechanism to assess the quality and quantity of waste water treated by CBWTF.

#### ***iii) Disposal of contaminated liquid outside the premises of CBWTF***

WBPCB issued (November 2017) “Consent to Operate” to the CBWTF on condition that “fugitive emissions from the activity are controlled so as to maintain clean and safe environment around the factory premises”.

In course of joint physical inspection (January 2020) it was observed that liquid effluent was discharged (**Figure 4.3**) outside the premises of CBWTF in the open agricultural field in violation of the condition of the ‘Consent to Operate’. The discharge of untreated liquid waste in the open contaminates the ground water and environment and is also detrimental to human health.



**Figure 4.3: Leakage of liquid waste outside the boundary wall of the CBWTF**

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<sup>92</sup> A type of scrubber.

**iv) Non-maintenance of records of Health Check-up and shortfall in immunisation of staff of the CBWTF**

BMWM Rules stipulate that CBWTF was to undertake appropriate medical examination at the time of induction and at least once in a year and immunise all its workers involved in handling of BMW for protection against diseases, including Hepatitis B, Tetanus, etc.

Scrutiny in this regard disclosed the following:

- nothing was on record to indicate that the annual health check-up of workers was conducted. CBWTF stated that they arranged for check-ups, but did not maintain records in support.
- regarding immunisation of staff, it was seen that during 2017-18 and 2018-19, Hepatitis B vaccine was not administered to any of its workers. Tetanus vaccine was administered to 87 per cent (2017-18) and 48 per cent (2018-19) of its staff.

Such shortfall, especially in the immunisation process, exposed handlers of BMW to infection.

**v) Non-maintenance of records of training to workers and assistance to HCFs**

BMWM Rules stipulate that the CBWTF was to provide training for all its workers involved in handling of BMW at the time of induction and at least once a year thereafter. It was also to assist HCFs in conduct of training for handling of BMW.

There was nothing on record to indicate that the CBWTF organised training programmes for its staff and assisted HCFs in conducting training programmes. CBWTF stated that though they arranged for training and assisted HCFs, records in support were not maintained.

**vi) Irregular Collection/Lifting of BMW from HCFs by CBWTF**

BMWM Rules stipulate that the CBWTF should take all necessary steps to ensure that the collected BMW is transported, handled, stored, treated and disposed of without any adverse effect to human health and environment. The Rules also stipulate that un-treated BMWs shall not be stored by HCFs beyond a period of 48 hours. Records of 12 test checked HCFs under HFWD revealed the following:

- Collection of BMW was irregular in Matherdighi RH, Nalmuri RH and Belpukur PHC, where collection were done after two-five days, resulting in foul smell from Common Collection Points of these HCFs.
- BMW was collected twice a week in Sagar RH and Kalikapur PHC.
- Collection was very irregular in Sirakole PHC. Gap between collections ranged between one to nine days and on occasions, it was more than nine days.
- Partial lifting of BMWs from the test checked HCFs also came to notice.

Therefore, the functioning of the CBWTF was found deficient with respect to extant norms and there appeared to be no monitoring of its functioning to address these deficiencies.



#### **4.1.9.11 Monitoring the compliance to BMWM Rule 2016**

##### **a) District Level Monitoring Committee**

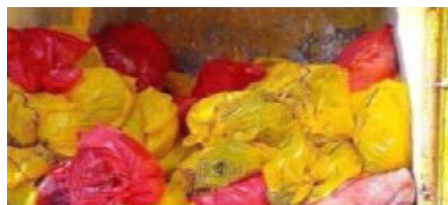
BMWM Rules stipulate that every State Government shall constitute District Level Monitoring Committee (DLMC) under the chairmanship of District Magistrate to monitor the compliance of the provisions of the Rules in the HCFs generating BMW and in CBWTFs. The Rules also stipulate that DLMC so constituted shall submit its report once in six months to the State Advisory Committee headed by Secretary of HFWD with a copy to the WBPCB for taking further necessary action.

Examination of records revealed that HFWD constituted (December 2017) the DLMC under the Chairmanship of the District Magistrate in compliance with provision of BMWM Rules, for each of the two health districts (HDs) (including South 24 Parganas and Diamond Harbour) of the selected district. However, there was no representation of any district level official either from ARDD or CSD.

There was nothing on record to indicate that the DLMC for the HD of Diamond Harbour held any meeting, since formation. HD of South 24 Parganas held only one meeting in July 2018 during the period under audit.

##### **b) BMW Committee at HCF level**

BMWM Rules stipulate that HCFs (having more than 30 beds) were to form a Committee and in case of HCFs having less than 30 beds to designate a qualified person to review and monitor the activities related to BMW management within the establishment. The Rules also specify that the Committee shall meet once in every six months and proceedings of meetings of the Committee shall be submitted to WBPCB along with the Annual Report of HCFs.



**Figure 4.4: Accumulation of BMWs in CCP of Sagar**

Records of test checked HCFs under HFWD, CSD and ARDD showed that

- No committee was formed in Sagar RH having more than 30 beds and no designated official was placed to monitor the compliance of BMWM Rules in four HCFs under HFWD having less than 30 beds.
- No committee was formed in any of the selected HCFs under ARDD nor in the sole HCF under CSD to monitor the compliance of the provisions under these Rules.

In absence of any meeting of DLMC and non-constitution of BMW Committees, review and monitoring of compliance of BMW Rules could not be ensured by WBPCB. The concerned departments (HFWD, ARDD and CSD) also did not take proactive steps to ensure compliance with BMW disposal which continued to be disposed unsafely causing environmental pollution and creating health risks to personnel handling BMW as well as the general public.

#### **4.1.10 Solid Waste Management**

In terms of the Environment (Protection) Act, 1986, the MoEF&CC introduced the Municipal Solid Waste (Management and Handling) Rules, 2000, which

were subsequently amended by the Solid Waste Management (SWM) Rules, 2016. The management of waste generated from households and commercial establishments, remains the responsibility of elected local self-governments.

In South 24 Parganas District, out of seven municipalities, Maheshtala and Budge Budge were selected for audit.

### ***Framing of Solid Waste Management Plan***

SWM Rules, 2016 stipulate preparation of Solid Waste Management Plan (SWMP) by the local authorities.

Audit observed that neither of the two-test checked Municipalities had prepared a SWMP. SUDA (State Urban Development Agency) engaged (September 2019) a micro planning organisation, 'BITAN' (Non-Government Organisation) to undertake a survey and assessment of waste generated within the cities, study and plan the collection, transportation and processing mechanism of waste alongwith training and capacity building of different stake holders.

'BITAN' was required to submit the report along with detailed operational plan within 75 days of its engagement. However, the plan is yet (February 2020) to be submitted to the two Municipalities. The Municipalities did not take any action for early submission of plans by 'BITAN'.

### ***Door to door collection and segregation of Solid Waste, storage facility and training***

SWM Rules stipulate arrangements for door to door collection of segregated solid waste from all households, including slums and informal settlements, commercial, institutional and other residential premises. Quantities of waste generated by Maheshtala and Budge-Budge Municipality were 180 MT/day and 30-35 MT/day respectively.

Audit observed that door to door collection of solid waste was being done in all 35 wards of Maheshtala Municipality and only three of the 20 wards of Budge Budge Municipality (February 2020).

However, segregation of waste into bio-degradable, non-bio-degradable and domestic hazardous waste<sup>93</sup>, has been taken up as a pilot project in four out of 35 wards of Maheshtala Municipality as per decision (February 2020) of the task force set up by the Municipality. Segregation has not been implemented in any of the wards of Budge Budge Municipality.

Further, SWM Rules, 2016 stipulate setting up of secondary storage facilities with sufficient space for sorting of recyclable materials and domestic hazardous waste. However, no such facilities were established by either of the two test checked Municipalities.

Arrangements are to be made by the municipalities for providing training on awareness of SWM to waste pickers and waste collectors as per SWM Rules, 2016. Audit observed that while training had been imparted to staff of Budge Budge Municipality, training is yet to be imparted by the Maheshtala Municipality (February 2020).

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<sup>93</sup> Means discarded paint drums, pesticides cans, CFL bulbs, tube lights, expired medicines, batteries etc.

Thus, in absence of door-to-door collection in 17 wards of Budge Budge Municipality and non-segregation of wastes in 31 and 17 wards in Mahestala Municipality and Budge Budge respectively, proper disposal and recycling of waste is not being done in those areas.

### ***Construction of solid waste processing facility***

As per SWM Rules, 2016 municipalities should facilitate construction, operation and maintenance of solid waste processing facility on their own or with private sector participation for economic and scientific disposal of solid waste.

No such solid waste processing facility was found to have been set up in either of the two Municipalities. In absence of such facilities, all wastes (including plastic wastes) collected were compressed using compactor machines and dumped in open grounds, causing environmental pollution and health hazard in the area. Further, segregation of wastes in four wards of the Mahestala Municipality taken up as a pilot project was also not a fruitful exercise due to absence of processing facility.



**Figure 4.5: Dumping ground of Budge Budge Municipality**



**Figure 4.6: Dumping ground of Maheshtala Municipality**

### ***Discharge of Municipal Waste Water***

As per The Water (Prevention and Control of Pollution) Act, 1974, no person shall knowingly cause or permit any poisonous, noxious or polluting matter, determined in accordance with such standards as may be laid down by the State Board, to enter (whether directly or indirectly) into any stream or well or sewer or on land.

Neither Budge Budge nor Maheshtala Municipalities had assessed the quantum of sewage water generated and neither of the Municipalities has any facility for treating such water. Budge Budge Municipality has three<sup>94</sup> and Maheshtala Municipality six<sup>95</sup> canals through which untreated sewage water is discharged into the Hooghly River.

Screens have been placed on all the outfalls to intercept plastic and other solid wastes. However, in some cases they are totally or partially damaged and unable to control the flow of pollutants.

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<sup>94</sup> Canal at Balughat, Canal at Thanaghat and Irrigation Canal.

<sup>95</sup> ChoerMaa Hana Canal, NangiAbadi Canal, Mirpur Canal, Old Monikhali Canal, NayaBastiMithaitala Canal, Bhanga Kali Canal.

### ***Sewerage Treatment Plant (STP)***

As of March 2020, Budge Budge Municipality had no STP. However, an STP with a capacity of 9.3 Million Litres per Day (MLD) was under construction by Kolkata Metropolitan Development Authority (KMDA).

Mahestala Municipality had a STP with capacity of 4.25 MLD, which was found to be non-functional during joint inspection (February 2020). The Municipality could not provide the date from which it was non-functional. The chambers of the STP were in poor condition and let out to the Fisheries Department for Pisciculture.

In absence of any STP in these Municipalities, the generated waste water continued to flow unabated to the river Hooghly. Releasing untreated waste water into the river Hooghly adds to water pollution, effects of which has not been assessed.

#### ***4.1.10.1 Plastic Waste***

MoEF&CC also notified the Plastic Waste (Management and Handling) Rules, 2011 in February 2011, which were subsequently replaced by the Plastic Waste Management (PWM) Rules, 2016 in March 2016. The State also formulated (January 2018) a Policy and Strategy on plastic waste management for urban areas of the State.

#### ***Use of banned Plastic***

As per PWM Rules, 2016, carry bags made of virgin<sup>96</sup> or recycled plastic shall not be less than 50 microns. Further, West Bengal Municipal Act, 1993, prohibits use of plastic bags of below 50 microns.

Examination of records in the two test checked Municipalities revealed the following:

- Budge Budge Municipality has not imposed any fine for use of such plastics despite having a Board of Councillors (BoC) resolution (December 2019) whereby it was adopted to impose penalty of ₹ 50 and ₹ 500 upon the user of single use plastic below 50 microns and the seller of such plastic, respectively.
- Maheshtala Municipality had formed (December 2017) a vigilance squad to visit the manufacturing units to ensure strict compliance with the provision of PWM Rules, 2016 and members of the squad are duly authorised to seize carry bags below 50 microns after giving a seizure list to persons from whom such prohibited items were seized. The Municipality also issued (October 2018) instructions to all the market committees under its jurisdiction banning the use of plastic carry bags having density less than 50 microns. Any shopkeeper who intends to use plastic carry bags having density 50 micron or above, is required to make a deposit ₹ 48,000 yearly (₹ 4,000 per month) with the Municipality. However, no such realisation was seen to have been made till February 2020.
- In neither of the two test checked Municipalities, details relating to raids conducted, banned plastics seized, were found in available records.

<sup>96</sup> *plastic material which has not been subjected to use earlier and has also not been blended with scrap or waste*

### ***Status of compliance to PWM Rules, 2016***

PWM Rules, 2016 spells out the responsibility of the municipal authority/local body for plastic waste management. The status of compliance to these provisions in the test checked Budge-Budge and Maheshtala Municipalities are discussed below:

- ***Segregation of Plastic waste***

PWM Rules, 2016 stipulate that municipalities should ensure segregation, collection, storage, transportation, processing and disposal of plastic waste.

No segregation of plastic waste was observed in either of the two selected Municipalities which were collecting and transporting plastic waste mixed with other waste and disposing to the landfill sites.

Maheshtala Municipality issued (October 2018) directives to ceremony houses to compulsorily segregate bio-degradable and non-bio degradable waste. Non-compliance of directives could lead to cancellation of license of such ceremony houses and imposition of fine of ₹ 5,000 for each violation. Available records though did not indicate any action taken by the Municipality for inspection of such premises, fines imposed or realised and/or cancellation of licence orders if any.

- ***Setting up of system for plastic waste management and framing of bye-laws incorporating the provisions of PMW Rules***

According to PWM Rules 2016, Municipalities may seek assistance from producers of plastic carry bags/plastic sheets, for setting up a system for plastic waste management within one year from the date of final publication of PWM Rules. Also, the local body should frame bye-laws incorporating the provisions of these rules.

It was, however, observed that neither plastic waste management system had been set up nor any bye-laws framed for plastic waste management by either of the two Municipalities

- ***Non-usage of plastic in formation of roads/energy recovery***

PWM Rules, 2016 state that local bodies are to encourage the use of plastic waste (preferably the waste which cannot be further recycled) for road construction as per Indian Road Congress guidelines or energy recovery or waste to oil *etc.* in compliance with the standards and pollution control norms prescribed by the specified authority.

Scrutiny of records revealed that none of the Municipalities adopted the use of plastic waste in roads/energy recovery.

Thus, failure of these Urban Local Bodies (ULBs) to perform the prescribed responsibilities and devise methods of utilisation of plastic in roads resulted in mismanagement of plastic waste, besides, leading to environmental degradation. The regulation of use of plastic bags and disposal and recycling of plastic waste was seen to have not been comprehensively addressed by either of the test checked municipalities and to that extent plastic waste continued to pollute the environment.

### 4.1.10.2 Hazardous Waste

Hazardous Waste (HW) means any waste which by reason of characteristics such as physical, chemical, biological, reactive, toxic, flammable, explosive or corrosive, causes danger or is likely to cause danger to health or environment, whether alone or in contact with other wastes or substances. MoEF&CC issued Hazardous Waste (Management & Handling) Rules in July 1989 to ensure management of such waste. These rules were superseded by Hazardous Wastes (Management, Handling and Trans-boundary Movement) Rules, 2003 and 2008 and subsequently superseded by Hazardous and Other Wastes (Management and Tran boundary Movement) Rules, 2016 (HOWM Rules) and as amended. These Rules lay down the steps to be followed for management of hazardous and other wastes including their (a) prevention (b) minimisation (c) reuse (d) recycling (e) recovery, utilisation including co-processing, and (f) safe disposal

In South 24 Parganas district, there are five authorised recyclers and four authorised utilisers of Hazardous Wastes. Among the recyclers and utilisers, two recyclers<sup>97</sup> and one utiliser<sup>98</sup> were selected (random sampling) for review of records and joint inspection. The audit findings were discussed in the subsequent paragraphs: -

#### **Audit Findings**

##### **i) Monitoring of Hazardous waste**

HOWM Rules (2016) provide that WBPCB is responsible to grant and renew authorisation of occupiers<sup>99</sup> generating hazardous wastes. Further, the Rules also provide that the occupier shall submit annual return to WBPCB. In case of failure to comply, penal action under section 5 and 15 of Environment (Protection) Act 1986 may be initiated. The status of authorised hazardous waste generating units and non-submission of annual returns during the year 2016-20 are shown in the **Table 4.11** below:

**Table 4.11: Non-submission of annual returns**

Year	Units possessing authorisation	No. of units submitted annual returns	
		No.	In (per cent)
2016-17	122	82	67
2017-18	122	88	72
2018-19	63	53	84
2019-20	63	43	68

(Source: Annual reports prepared by WBPCB)

WBPCB had no information about the magnitude of generation and extent of disposal of hazardous wastes of such units which had not submitted their annual return. Although WBPCB issued show cause notices to defaulting units from time to time, no penal action was taken against the units as provided in HOWM Rules.

<sup>97</sup> M/s Bristol Petroleum Pvt. Ltd & Lubrina Recycling (P) Ltd.

<sup>98</sup> Lubrina Recycling (P) Ltd.

<sup>99</sup> As per HOWM Rules, "occupier" in relation to any factory or premises, means a person who has, control over the affairs of the factory or the premises and includes in relation to any hazardous waste the person in possession of the hazardous waste.

### **ii) Irregular storing of HW beyond permissible period**

Rule 4(3) of HOWM Rules (2016) provides that the hazardous and other wastes generated in the establishment of an occupier would be sent or sold to an authorised actual user or would be disposed of in an authorised disposal facility. Rule 8(1) of the HOWM Rules (2016) also provides that onsite storage of hazardous waste is not permitted beyond 90 days and this period may be extended upto 180 days maximum in case hazardous waste generation is upto ten tonnes per annum.

Audit observed from the HW records of South 24 Parganas submitted (November 2017) by CHWTSDF (RAMKY), Haldia, to the WBPCB that:-

- two units, namely CLC and Varun Beverages had generated 993.16 MT and 16.56 MT of HW respectively during 2016-17 but stored for more than 90 days within their premises.
- 42 units generated HW below 10 tonnes per annum and stored it for more than 180 days in their premises.
- 39 units generating hazardous waste had become members of CHWTSDF but had never sent waste to the facility.

Incidence of non-compliance with the provisions of HW Rules, irregular storage of hazardous waste may contaminate soil, groundwater and surface water bodies due to spillage and leachate.

### **iii) Hazardous Wastes Management by Industries**

During the audit period, four<sup>100</sup> units which deal mainly with hazardous wastes were selected for joint physical inspection. In two out of the four units, following irregularities were observed by the audit as discussed below:-

#### **M/s Bristol Petroleum Pvt. Ltd.**

M/s Bristol Petroleum Pvt. Ltd. located at Budge-Budge, is engaged in the production of reclaimed oil/recycled fuel oil from the used oil/waste oil etc. through recycling process.

- As per conditions of Consent to Operate, M/s Bristol cannot expand/modify without prior permission from WBPCB. However, during joint physical inspection in February 2021, it was found that M/s Bristol without obtaining permission from WBPCB, had constructed three storage tanks having aggregating capacity of 900 MT for storing reclaimed oil/ recycled oil on land adjacent to the plant.
- As per conditions of HW Authorisation issued by WBPCB the unit would store the HW under shade in an environment friendly safe manner within the premises at designated places. However, during inspection, it was found that hazardous waste of oil was stored indiscriminately in open in adjacent land. It was also noticed that hazardous oil had spilled on the ground and its seepage may contaminate the soil. There is



<sup>100</sup> 1. M/s BNM Organics (P) Ltd. 2. M/s Lubrina Recycling Private Limited 3. Calcutta Leather Complex 4. M/s Bristol Petroleum (P) Ltd.

also chance of fire hazards as the reclaimed oil/recycled fuel oil is highly inflammable.

- Further, as per the Rules, the unit should dispose-off the incinerator ash to the CHWTSDF, Haldia (RAMKY). However, it was found that M/s Bristol had dumped the incinerator ash within the premises. Besides, it was also found that WBPCB had conducted inspection (February 2019) of the unit but nothing was mentioned about this aspect in their inspection report. Further, no penal action was also taken by WBPCB as per the Environment (Protection) Act.

### ***Lubrina Recycling Private Limited (Lubrina)***

Lubrina is a used oil, waste oil recycling unit also having a cleaning facility for chemically contaminated drums/containers. It generates different types of hazardous wastes like ETP sludge, spent clay process waste *etc.*

According to HOWM Rules (2016), HW may be stored for a period not exceeding 90 days. The State Pollution Control Board may allow small generators to store up to 10 tonnes per annum for up to 180 days.

Audit observed, from annual return on HW submitted to WBPCB that at the end of each financial year during 2016-17 to 2019-20, Lubrina stored HW more than its permissible limit for more than 180 days as shown in the **Table 4.12** below:

**Table 4.12: Year wise different type of hazardous waste stored**

Year	ETP Sludge	Spent clay	Process waste	Waste oil/used oil	Total
<b>Stock of Hazardous waste (MT) at the end of the year</b>					
<b>2016-17</b>	4.03	7.21	10.33	34.03	55.60
<b>2017-18</b>	1.17	7.51	8.50	32.04	49.22
<b>2018-19</b>	2.93	3.76	8.90	87.45	103.04
<b>2019-20</b>	0.46	2.83	7.52	50.83	61.64

WBPCB did not take any action against the units storing HW unauthorisedly. In the absence of timely disposal and excess storage of HW, it may contaminate soil and ground water due to spillage.

#### ***4.1.10.3 Battery Waste***

Lead-acid batteries are the most recyclable (98 *per cent*) of all batteries but are made up of chemically active components like lead and sulphuric acid. Improper handling and disposal of lead acid batteries poses a serious threat to human health and hence they are considered as hazardous waste. The main source of exposure to lead from lead-acid batteries arise from environmental emissions which can be inhaled and are also deposited onto soil, water bodies and other surfaces. The concentration of lead in human blood above the threshold level (40 µg/dl) can cause hypertension, difficulties with memory, headache and reproductive problems *etc.* Therefore, disposal and recycling of lead-acid batteries should be done in units possessing sound technology.

The Batteries Management and Handling Rules (2001) as amended in 2010 were notified with the objective of channelising the used lead-acid batteries for environmentally sound recycling.



### ***Delay in submission of Annual Compliance Status Reports***

Rule 12 of Batteries Rules provides that WBPCB is responsible for ensuring compliance to the provisions of the rules and submit Annual Compliance Status Reports (ACSR) to CPCB by 30<sup>th</sup> April every year. However, scrutiny of relevant records revealed that WBPCB, during the period 2014-15 to 2019-20, failed to ensure timely submission of ACSRs and submitted returns with delays ranging from three months to two years. The delay was mainly due to delayed submission of ACSRs by the concerned stakeholders of battery wastes.

The non-compliance of the stipulated time of submission of ACSRs resulted in late compilation of data by CPCB and late review of compliance of the rules to improve the collection and recycling of used lead batteries in the State.

### ***Poor authorisation of battery dealers and non-submission of returns***

Rule 7 (vii) (a) of Batteries Rules stipulates that every dealer of lead acid batteries should get registered with the State Pollution Control Board for five years. It also has a provision for cancellation of registration for failure to collect the required number<sup>101</sup> of used batteries as per the said Rules and/or non- submission of timely half yearly returns to the WBPCB. However, scrutiny of records relating to registration for dealers of lead acid batteries revealed that WBPCB had issued registration to 664 dealers including 24 in South 24 Parganas district during the period under audit. However, none of the dealers of the South 24 Parganas district had submitted their half yearly/annual returns nor given any details of the collection/sale of the used batteries to WBPCB.

Further, in order to ensure effective implementation of Batteries Rules, CPCB issued directions (April 2017) to all SPCBs for preparation of inventory of all stakeholders<sup>102</sup>. However, scrutiny of records revealed that the WBPCB had not prepared any such inventory. As a result, WBPCB failed to track distribution, collection, sale, buy-back and recycling of lead batteries in the district.

Moreover, as per provision 4 (iii) of Batteries Rule, it is the responsibility of all stakeholders to file half-yearly return of sales and buy-back to WBPCB latest by 30 June and 31 December of every year. However, scrutiny of annual compliance status report for the year 2014-20 revealed that of 75 in South 24 Parganas district, only six stakeholders had submitted their ACSRs to the WBPCB

The WBPCB, instead of cancelling the registration as per provision 7 (vii)(a) of Batteries Rules, issued only show cause notice to the defaulters for non-submission of ACSRs. As a result, WBPCB failed to track distribution, collection, sale, buy-back and recycling of lead batteries in the district. Besides, the primary objective of the batteries rules to channelise the used lead acid batteries for environmentally sound recycling was not met for the district.

#### ***4.1.10.4 E- Waste***

E-waste refers to waste relating to electrical and electronic equipment including reject from manufacturing, refurbishment and repair processes. It is classified

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<sup>101</sup> 1st year- 50 % of the battery sold, 2nd year- 75 % of the battery sold and 3rd year- 90 % of the battery sold.

<sup>102</sup> manufacturers, importers, dealers, bulk-consumers, auctioneers, assemblers, re-conditioners and registered recyclers.

as a hazardous waste because of the presence of elements like lead, mercury, arsenic, cadmium, selenium, hexavalent chromium, *etc.* India generated (2016) two million tonnes of e-waste, 95 *per cent* of which was recycled by the informal sector and only five *per cent* by the formal sector.

In order to control the threats caused by the unscientific disposal of e-waste, MoEF&CC enacted E-waste (Management & Handling) Rules, 2011 which were subsequently superseded by E-waste (Management) Rules, 2016. The designated authority for ensuring compliance with the provisions of E-waste Rules are WBPCB and the Departments of Industry and Labour.

In the State, there were four dismantlers / recyclers<sup>103</sup> of whom two, Lubrina Recycling (P) Ltd and M/s Old N Furniture were located in South 24 Parganas district.

### ***Failure to prepare Inventory of e-waste and integrated plan***

As per schedule IV of rule 17 of E-waste (Management) Rules, 2016 WBPCB had to prepare an inventory of E-waste in the State. Though CPCB instructed (June 2017) to complete inventorisation of e-waste within December 2017, WBPCB selected (November 2020) West Bengal Electronics Industry Development Corporation (WBEIDCL) for preparing the inventory, which was not completed till March 2021.

Rule 12(3) of E-waste (Management) Rules, 2016 require that the Department of Environment would prepare an Integrated Plan for effective implementation of E-waste Rules (with feedback of Departments of Labour, Industry and Commerce and Information Technology and Electronics). Study<sup>104</sup> revealed around 1,400 stakeholders in Kolkata and South 24 Parganas district were engaged in e-waste recycling, which involved maximum risk to the environment and health of the workers. To address this, Labour Department would recognise and register the workers involved in dismantling and recycling of e-wastes and ensure their safety and health through regular monitoring. Audit observed (March 2021) that the Integrated Plan for e-waste had not been prepared. Besides, the registration and health monitoring of the unorganised labour involved in e-waste recycling was not initiated till date.

### ***Monitoring and compliance of dismantlers, recyclers and refurbishers***

According to the guidelines issued (2017) by CPCB for dismantling and recycling of e-waste, manual dismantling operations should be carried out over the dismantling table with de-dusting system<sup>105</sup> and other pollution control equipment<sup>106</sup> to control emission. These operations should be under acoustic enclosure for noise reduction. Besides, recyclers should install fume hoods connected with bag dust collectors followed by wet (chemical) scrubbers and

<sup>103</sup> 1. Lubrina Recycling (P) Ltd 2. J.S Pigments Pvt Ltd. 3. P U Steel & Electro Process Pvt Ltd. 4. M/s Old N Furniture.

<sup>104</sup> *Assessment of e-Waste in West Bengal by Ministry of Electronics and Information, Government of India, 2010.*

<sup>105</sup> *Dedusting is a process that mainly involves using screening and other pneumatic means to remove fine impurities such as dust.*

<sup>106</sup> *The de-dusting system to consist of suction hoods connected with a cyclone, bag filter and a chimney of three-meter height above roof level.*

carbon filters for control of fugitive emissions from furnaces or reactor. Noise control arrangement for equipment like crusher, grinder and shredder needs to be provided.

Scrutiny of records at WBPCB and joint inspection (February 2021) with representatives of WBPCB revealed that both the recycling units in South 24 Parganas were operating without the prescribed air and noise pollution control equipment as discussed below:

**a) Old and Furniture Pvt Ltd.**

Audit observed that Old and Furniture Pvt. Ltd. was operating without air pollution control device. Besides, the staffs engaged in the dismantling process did not use personal protective gears. It was also observed that the dismantling table did not have any equipment like cable strippers, *etc.* as prescribed in the guidelines. Also, it did not have wheel barrows for movement of dismantled e-waste which was done manually by the staff. Thus, the staffs were exposed to health hazards. The unit did not maintain record of the E-waste material received or of inventory and material recovered from dismantling/recycling.

**b) M/s Lubrina Recycling (P) Ltd.**

In Lubrina Recycling (P) Ltd, it was observed during physical verification (February 2021) that the recycler did not have any air pollution control devices. Further, in deviation to the prescribed guidelines there was no tube light crusher, compressor cutting machines, cable strippers, fumes collector, wheelbarrow, *etc.* Further, the unit did not maintain any record of dismantled items and recycled materials.

Though WBPCB inspected the dismantlers/ recyclers, it had not taken any action against the violators to restrict the environmental pollution. Besides, WBPCB failed to bring the e-waste generators, dismantlers and recyclers in the district under its monitoring and control and remained largely unregulated in the district contributing to environmental pollution and health risks for the persons engaged in recycling of the waste.

#### **4.1.11 Bio Diversity**

Biodiversity refers to all aspects of variability in the living world, including diversity within and between individuals, populations, species, communities and ecosystems. The Sundarbans area in the southern part of the South 24 Parganas district is one of the richest biodiversity hotspots in India. This UNESCO World Heritage site is known for its mangroves, coastal forests that serve as a biological buffer between the land and sea. The unique ecosystem is famous for the royal Bengal tiger, Gangetic dolphin, and estuarine crocodile. It also provides shelter to a large variety of birds, fishes, spiders, reptiles, oysters, and crabs. The forest forms a part of the Ganga Brahmaputra delta, spread across 26,000 square kilometers and distributed amongst 104 islands of South 24 Parganas district.

#### **Regulation and framework regulating State Bio-diversity**

Government of India enacted the Biological Diversity Act, 2002 (BD Act 2002) for the protection of biodiversity and to provide conservation, sustainable utilisation and equitable sharing of the benefits of its genetic resources. Besides,

the State has also framed West Bengal Biological Diversity (WBB) Rules 2006 under the provision of the BD Act 2002. The State has constituted West Bengal Bio-diversity Board (WBBB) in September 2004 as per provisions of the BD Act 2002. The functions of the WBBB are to advise the State Government on matters relating to the conservation of biodiversity and its sustainable use, regulate commercial utilisation or bio-survey and bio-utilisation<sup>107</sup> of any biological resource and perform such other functions as may be prescribed by the State Government.

Scrutiny of relevant files of WBBB, following irregularities were observed by the audit:-

### ***Constitution of Bio-diversity Management Committee (BMC)***

As per section 41 (1) of the BD Act, 2002, every local body shall constitute a Biodiversity Management Committee (BMC) within its area. A BMC is the third tier to implement the strategies of biodiversity conservation and are to be constituted in Notified Area Authority, Blocks, Municipalities and Municipal Corporations. Objectives include promoting conservation, sustainable use and documentation of biological diversity (People's Biodiversity Register<sup>108</sup>) (PBR), including preservation of habitats, conservation of land races<sup>109</sup>, folk varieties and cultivars, domesticated stocks and breeds of animals and microorganisms and chronicling of knowledge relating to biological diversity.

There are 29 blocks, seven municipalities and 312 Gram Panchayats (GPs) in the South 24 Parganas district. Audit observed that while BMCs were constituted (February 2020) in all 29 blocks and seven municipalities of the district, only 33 (10.57 percent) out of the 312 GPs had constituted BMCs.

Further, only one<sup>110</sup> block (out of total 29 blocks), one<sup>111</sup> municipality (out of total seven municipalities) and 21 GPs (out of total 312 GPs) of the district had prepared the PBR. Thus, in the absence of such documentation, information on biodiversity remained incomplete and their conservation and sustainable use could not be effectively promoted.

#### **4.1.12 East Kolkata Wetlands**

East Kolkata Wetlands (EKW) is a unique peri-urban ecosystem. It lies on the eastern fringes of Kolkata, covering an area of about 12,500 hectares<sup>112</sup> spread over 37 mouzas of South and North 24 Parganas districts. EKW was designated as a 'Wetland of International Importance' and also recognised (2002) as a

<sup>107</sup> "bio-survey and bio-utilisation" means survey or collection of species, subspecies, genes, components and extracts of biological resource for any purpose and includes characterisation, inventorisation and bioassay.

<sup>108</sup> PBR contains comprehensive information on availability and knowledge of local biological resources, their medicinal or any other use or any other traditional knowledge associated with them.

<sup>109</sup> Dynamic population of a cultivated plant with a historical origin distinct identity and associated with set farmers practices of seed selection and field management.

<sup>110</sup> Basanti block.

<sup>111</sup> JoynagarMajilpur Municipality.

<sup>112</sup> 5,852.14 ha is primarily water body oriented area, 4,718.56 ha is agricultural land, 602.78 ha is productive farming area and 1,326.52 ha is urban / rural settlement area.

Ramsar site<sup>113</sup>. EKW comprises of 35 mouzas in South 24 Parganas and two mouzas in North 24 parganas districts and has more than 250 water bodies of varying sizes ranging from 2 ha to over 20 ha. It also supports a resident population of over 1.30 lakh.

The area has traditionally been used as dumping ground where the city sewage is dumped by Kolkata Municipal Corporation and is treated naturally in the water bodies, which offers a unique system of sewage treatment. Besides, the sewage fed water bodies are also used for pisci-culture and produce an estimated 10,500 MT of fish annually.

The East Kolkata Wetlands Management Authority (EKWMA) consist of 13 members, was constituted under section 3 of the EKW (Conservation and Management) Act, 2006 (henceforth referred as EKW Act) for conservation and management of the area and for matters connected therewith and incidental thereto.

### ***Boundaries, maps and action plans***

#### ***a) Failure to delineate boundaries***

As per section 4 (1) of the EKW Act 2006, EKWMA would demarcate the boundaries of the East Kolkata Wetlands. The area was under intense pressure due to urban development and unauthorised development activities. EKWMA decided (September 2012) that the EKW area would be demarcated using 2,540 boundary pillars at a cost of ₹ 29.25 lakh to prevent encroachment using satellite data and GIS. Before installing the pillars, each point would be geo-referenced and plotted on the map.

Chief Technical Officer (CTO), EKWMA proposed (April 2014) that each of the 2,540 points must be verified through inspection with District Land and Land Reforms Officer (DL & LRO). The survey was commenced in October 2014, but the work stopped in July 2015 due to rain and water logging, by the time ground truthing<sup>114</sup> of only 1,036 points had been completed. Subsequently, due to objection (February 2016) by local people, the survey work was suspended and was not taken up thereafter (March 2021).

Meanwhile, CTO, EKWMA proposed (February 2018) to Environment Department (DoE), GoWB to demarcate the boundary of EKW using 1,793 monolith pillars at an estimated cost of ₹ 49.80 lakh which DOE sanctioned in April 2018. DOE entrusted (May 2018) the work to Land and Land Reforms and Refugee Relief and Rehabilitation Department to be implemented by Director of Land Reforms (DLR). However, DLR did not initiate the work till March 2021, EKWMA did not take up the inaction of DLR with higher authority and failed to demarcate the boundary even after 15 years from the enactment of the EKW Act in 2006 and could not restrict illegal encroachment of the area.

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<sup>113</sup> *Ramsar sites are wetlands of international importance that have been designated under the criteria of the Ramsar Convention on Wetlands for containing representative, rare or unique wetland types or for their importance in conserving biological diversity.*

<sup>114</sup> *Ground truthing and the collection of ground-truth data on location enables calibration of remote-sensing data, and aids in the interpretation and analysis of what is being sensed.*

### **b) Preparation of Land Use and Land Cover maps of EKW**

EKWMA proposed (July 2016) to prepare current Land Use and Land Cover<sup>115</sup> (LULC) map of EKW using multispectral high resolution satellite imagery. Accordingly, EKWMA requested Department of Science and Technology (DS&T), GoWB to prepare the maps. DS&T, GoWB, ordered (August 2016) high resolution multispectral satellite data of the year 2016 for commencement of the work. Thereafter, EKWMA procured (April 2017) satellite data of 273 square km of EKW from National Remote Sensing Agency at a cost of ₹ 2.09 lakh. However, it had not completed the work of LULC maps till March 2021 due to lack of in-house technical expertise.

## **Action Plans and Policies**

### **4.1.12.1 Management Plan not prepared**

According to section 4 (1) (f) of the EKW Act, 2006, EKWMA would prepare action plan and update the land use maps of the East Kolkata wetlands and implement and monitor the activities specified in the action plan.

EKWMA proposed (July 2017) to prepare a Management Plan for EKW and constituted a Steering Committee headed by Additional Chief Secretary for the same. The Steering Committee met thrice (November 2017, December 2017 and June 2018) to select an agency for preparation of the Plan. EKWMA offered (July 2018) the work to Wetlands International South Asia (WISA) including the work of identification of illegal construction and encroachment at an outlay of ₹ 15 lakh, to be completed within five months. However, EKWMA could not award the work to WISA as it had not observed extant norms (e-tendering process) in the selection process.

Thereafter, EKWMA invited (September 2018) tender for the preparation of the Plan in which only one bidder participated. The Chief Technical Officer directed (November 2018) for re-tendering, EKWMA, however, cancelled (November 2018) the tender without any recorded reason.

Meanwhile, Jawaharlal Nehru University (JNU) expressed (October 2018) its interest to update the EKW Management Plan (prepared in 2011) without any financial implication. DOE offered (November 2018) the work to JNU who submitted the draft Management Plan in February 2019. The Steering Committee evaluating the Management Plan observed (February 2019) that the JNU has updated the plans using old land use maps and data of 2009 and requested JNU to procure latest satellite data and prepare present LULC map and complete the management plan by May 2019. JNU submitted (March 2019) an estimate of ₹ 89.60 lakh for the work. However, EKWMA did not revert to JNU. Instead, it invited (October 2019) Expression of Interest for the work of preparation of Management Plan in which two agencies<sup>116</sup> participated. Audit, however, observed that EKWMA had not processed further the work of preparation of Management Plan which remained incomplete till March 2021. Resultantly, the subsequent works of conservation and management remained unattended.

<sup>115</sup> Land cover indicates the physical land type such as forest, water body etc. whereas land use documents how people are using the land.

<sup>116</sup> Beyond Built Pvt. Ltd and Geovitech Research and Consultancy Pvt. Ltd

#### 4.1.12.2 Functioning of Expert Committees

According to section 4 (1)(o) of the EKW Act, EKWMA constituted (November 2005) four expert committees with following duties as shown in **Table 4.13** below:

**Table 4.13: Responsibilities of the Expert Committees**

Expert Committee	Responsibilities
Standing Committee on Sewage and Fisheries	Develop an immediate action plan for smooth flow of storm water and development of fisheries.
Standing Committee on Land Management	To carry out detailed enumeration of the households in the settlement areas and list out unauthorised constructions in EKW since 1992
Standing Committee on Hygiene, Sanitation and Welfare	To promote solid waste management in the rural and urban settlements in EKW, sanitation and potable drinking water, etc.
Standing Committee on Biodiversity Conservation	To prepare an action plan for bio diversity and wildlife conservation in EKW area.

Besides, it also constituted a local level committee to advice on the implementation of conservation and monitoring activities in EKW.

Audit, however, observed that neither the standing committees nor the local level committees ever met or expressed opinion on any wetland issue. As such, the intended purpose of the committees to assist the EKWMA to discharge its functions as envisaged in the EKW Act, 2006 remained frustrated.

#### 4.1.12.3 Prevention & control of unauthorised use of EKW

##### i) Uncontrolled transfer of land resulted in change of character of EKW

According to DoE, GoWB, EKWMA was not empowered to grant sanction for change of character or mode of use of a land, unless the change was for improvement or upkeep of the local environment and surroundings. The Wetlands (C&M) Rules, 2010 issued by GoI also prohibited any construction of permanent nature. DoE, GoWB issued (March 2008) an order which prohibited any occupier of EKW area from transferring land without obtaining prior clearance from EKWMA.

To identify the current owners of plots where violation was reported, Chief Secretary directed (May 2013) EKWMA to prepare a map of the existing water bodies within the EKW and provide the police with GPS coordinates to prevent filling up. Besides, EKWMA should verify the status of the land near the urban / rural settlement area where the possibility of encroachment / violation cases was highest. EKWMA observed (22<sup>nd</sup> meeting dated February 2014) that registration and mutations were prevalent in nine mouzas<sup>117</sup> without the permission of EKWMA and building plans were approved by local panchayat bodies. EKWMA did not take any action in the nine mouzas to prohibit the sale of land. Though EKWMA was directed to identify the present owners of plots where violation was reported, it had not undertaken the process.

<sup>117</sup> sale of land was prevalent in nine mouzas namely Hatgacha, Tardaha Kapasati, Kheyadaha, Bhagabanpur, Kulberia, Jagatipota, Karimpur, Chowbagha, etc.

**ii) Lack of effective action by EKWMA**

According to section 4 (1) (b) of the EKW Act, 2006, EKWMA would take measures to prevent any unauthorised development project in EKW area. Further, section 18 (1) of the Act, 2006 provides that whoever fails to comply with any provision of this Act shall be guilty of an offence and be punished with imprisonment for a term which may extend to three years or with fine which may extend to one lakh rupees or with both and, in case such failure or contravention continues, with an additional fine which may extend upto five thousand rupees for every day.

EKWMA conducts inspections to identify unauthorised constructions in EKW area. After any unauthorised construction is identified, EKWMA issues show cause notice and registers FIR with the police. From the available records, it was seen that between 2007 and 2019, 357 cases of violation were identified against which EKWMA registered FIRs with police stations.

EKWMA proposed (April 2013) to conduct joint inspections with Police (Home Department) and DM South 24 Parganas and initiate legal action. To expedite the action, EKWMA requested (December 2019) police of the North and South 24 Parganas to expedite the processing of FIRs and administration to take initiative for demolition and restoration work.

However, audit observed that

- a) the process of identification of violators had not progressed. It was also observed that EKW had restricted its punitive measures to complaints with police and had not imposed fines or appealed in any court of law.
- b) In absence of effective measures by EKWMA, water bodies were dried up and filled illegally. Since 2007, EKWMA had identified 357 cases of violation out of which 101 cases were identified between December 2015 and March 2020. On scrutiny of show cause notices issued to the 101 violators, audit observed that 51 cases were of construction of unauthorised two / three storied buildings, marble godowns, motorbike and car showrooms, 23 cases of drying up and filling of water bodies and 27 cases of construction of boundary walls in the EKW area; these altered the ecological character of the wetlands and therefore, were in gross violation of the EKW Act.

**iii) Illegal constructions in the EKW area****a) Real Estate**

EKWMA had accorded permission (2013) for only vegetative fencing of land earmarked for seven (07) ecotourism projects<sup>118</sup>, though the projects were not approved. However, EKWMA noticed that instead of vegetative fencing the project proponents had undertaken construction of permanent nature and so cancelled (February 2014) the permission and issued orders for stopping the construction. Subsequent inspection (September 2014) by EKWMA revealed that four project proponents<sup>119</sup> started constructional activities. Further one of the members of the EKWMA informed (September 2015) that colleges namely

<sup>118</sup> Bengal Sunny Rock Estates Housing, Unnayan Developers, Greentech farm and Agro, Green Concretex, Shyam Greenfield Developers, Sankalp Vanijya, Kalyan Bharati Foundation.

<sup>119</sup> Unnayan Developers, Shyam Greenfields, Sankalp Vanijya and Kalyan Bharati.



Megnadh Saha Institute, Heritage College, Rupa College and Netaji Subhash Engineering College were under construction (during 2014-15) by illegally filling up water bodies (bheels) and without permission of EKWMA. The member requested EKWMA for initiating legal process and demolishing the illegal structures. However, no action has been initiated by the EKWMA in this regard.

**b) Religious centres in EKW**

EKWMA initially observed (July 2011) that a religious society called Sant Nirankari Mandal (SNM) had undertaken unauthorised construction in EKW and lodged FIR and issued show cause notice (February 2012) for such unauthorised construction. Despite the show cause, EKWMA observed (January 2014) that the SNM continued its activities in the area. SNM proposed (December 2014) to commercially develop its 143.95 acres of EKW land by building educational and health facilities, vocational training centres, parks, modern swimming pool, playground, solid waste management facilities, water treatment facilities, etc. The organisation proposed to develop the area by filling up existing water bodies with earth and fly ash.

EKWMA permitted (February 2015) SNM to fence the land. Subsequently SNM again applied (January 2016) for levelling of land, gardening, construction of park, development of health and educational facilities, etc. EKWMA observed that SNM had dried up two water bodies and filled (February 2017) those with soil and sand and issued notice to SNM to stop constructional work. EKWMA also requested (November 2017) District Administration (DM, South 24 Parganas) for initiating action, however, no action was taken. Meanwhile, the SNM continued the development work unabated.

Audit observed that EKWMA was aware of all the constructional activity; however, it had not pursued the matter with Department of Environment or initiated any legal action against the violators.

**iv) Encroachments of wetlands by plastic industries**

EKWMA entrusted (February 2014) Kolkata Municipal Corporation (KMC) for the removal of the illegal plastic and rubber factories in the wetland adjoining Basanti highway. In compliance, KMC completed (June 2014) identification of 380 illegal plastic, rubber and leather factories along the Basanti Highway through joint inspection with police and proposed to initiate eviction with immediate plantation of trees in the evicted sites. However, KMC postponed (September 2014) the removal of illegal plastic, rubber and leather factories in EKW without any recorded reason.

Subsequently, KMC formed (November 2014) a committee for undertaking the removal of illegal factories and requested WBPCB to assess the air pollution along Basanti Highway. WBPCB also observed air pollution in the area due to illegal fertilizer manufacturing unit which were using leather cutting, trimming, etc. as fuel. WBPCB (June 2015 to July 2015) tested ambient air quality in three<sup>120</sup> locations. Test results revealed that in one location<sup>121</sup> both PM<sub>10</sub> and

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<sup>120</sup> Basanti Highway, Chowbagha and Kolkata Leather Complex.

<sup>121</sup> Basanti Highway.

PM<sub>2.5</sub> exceeded the limits while in two<sup>122</sup> other stations PM<sub>10</sub> values exceeded the limits during night hours.

KMC planned (March 2016) to rehabilitate the illegal factories within EKW on suitable land along the Basanti Highway, to which Chief Secretary directed to submit a detailed plan within three months (June 2016). Thereafter neither the detailed plan of relocation was submitted, nor the evictions done. During the last four years, the issue was not discussed any further.

Audit observed that EKWMA had not filed FIRs, issued show cause notices or taken up the matter with WBPCB for shutting down of these illegally operating industries within EKW along the Basanti Highway. Besides, it had not initiated any legal action against the encroaching industries.

#### **4.1.12.4 Conservation of wetland**

##### **a) Failure to preserve the wetlands in the Bhagabanpur mouza**

According to section 4 (1) (k) of EKW Act, EKWMA would enforce land use control in the substantially water body oriented areas and other areas in the EKW.

An Expert (Ecology) member of EKWMA had undertaken (January 2017) a research to compare the conversion of water body over 2002 to 2016. The study was undertaken in Bhagabanpur mouza of the EKW. According to the research, 88 *per cent* water area (2002) was reduced to 16 per cent in 2016 and the population grew from 3,126 (2001) to 11,777 (2011), out of which large population had migrated from other areas and were not related to wetland activities.

Analysis of the change (2002-16) in land use pattern in Bhagabanpur mouza based on the study revealed the following:

- Areas under full water bodies and embankments decreased from 522.94 ha in 2002 to 116.07 ha in 2016 due to encroachment. Study further revealed that in the mouza, out of 47 bheries (fish ponds) functional in 1998, only 10 bheries were left in 2017. Thus, EKWMA had failed to preserve the wetlands in the Bhagabanpur mouza.

##### **b) Avoidable expenditure of ₹ 47.38 lakh due to inaction of EKWMA**

An owner of a land in EKW complained (January 2015) to EKWMA that an adjacent water body was filled up illegally, divided into small plots and sold out. EKWMA was requested to take prompt action against wrong doers to maintain the character of the area.

After two months EKWMA conducted (March 2015) a field inspection and observed that the water body was filled up and was cultivated. Besides, a temporary room was also constructed on the filled up water body. EKWMA lodged (March 2015) a complaint with police against the violation. No



further action was initiated by the EKWMA and subsequently the temporary room was converted into a two storied building. The owner of the adjacent plot

<sup>122</sup> Chowbagha and Kolkata Leather Complex.

lodged a writ petition in the High Court of Calcutta, which directed (May 2017) to restore the water body. In compliance with the directions of High Court, Environment Department demolished the construction (July 2018) incurring an expenditure of ₹ 47.38 lakh.

Thus, EKWMA failed to protect the water body by restricting the constructional activity, which led to avoidable expenditure of ₹ 47.38 lakh on demolition. It was further observed that though the constructions were demolished and cleared, the water body was not restored till date (February 2020).

#### **4.1.13 State Wetland Authority**

MoEF&CC, Government of India enacted (26 September 2017) the Wetlands (Conservation and Management) Rules, 2017 (henceforth referred to as the Rules, 2017) and constituted (September 2017) the State Wetlands Authority (SWA) in each State. These rules were applicable on wetlands categorised under the Ramsar Convention and those notified by the Central or State Government. The infirmities observed in the functioning of SWA are discussed in the following paragraphs:

##### **4.1.13.1 Inventory of wetlands**

According to the Rules, 2017, the SWA would prepare a list of all wetlands in the State within three months (December 2017) and notify them within six months (March 2018). Besides, within one year (September 2018), SWA would prepare a comprehensive digital library of all wetlands under Rule 4 (d).

SWA decided (November 2017) that Fisheries Department would prepare a list of wetlands with areas upto 20 ha. SWA had requested (July 2019) Institute of Environmental Studies and Wetlands Management (a sister organisation under DoE, GoWB) to share Survey of India topological maps (scale 1:50000) of the State for preparation of database of wetlands. Replying to a query (July 2019) of MoEF&CC about the progress, SWA informed (August 2019) that preparation of list and digital library were complete while the brief documents and list of wetlands to be notified were under progress. Audit observed that Fisheries Department had not provided any list of wetlands and SWA had also not pursued the case with Fisheries Department. It was further observed that between September 2017 and March 2021, SWA had not undertaken any exercise to update digital inventory of the wetlands or prepare a list of wetlands.

Thus, even after four years of the promulgation of the Act, SWA failed to update the database and digitise the library of wetlands.

##### **4.1.13.2 100 Wetlands program of MoEF&CC**

MoEF&CC initiated (August 2019) a programme for restoration of 100 wetlands including wetlands of East Kolkata and Sundarbans in West Bengal. SWA was to prepare brief document, health card and Integrated Management Plan for restoration of wetland and constitution of Wetland Mitra<sup>123</sup> within September 2019 for taking care of the identified wetlands across the State. Management Plan so prepared was to be implemented from October 2019.

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<sup>123</sup> *Wetland Mitra is the citizens network to enable participation of local stakeholder in wetland conservation and its wise use.*

In a meeting conducted by Zoological Survey of India, Forest Department, GoWB submitted (September 2019) to MoEF&CC health card, brief document and integrated management plan (IMP) for Sundarban while EKWMA for East Kolkata Wetlands.

Audit observed that SWA had not constituted Wetland Mitra (citizens network) till March 2020. As such, the local stakeholders could not be engaged in conservation and wise use.

#### **4.1.13.3 National Wetland Inventory and Assessment (NWIA) project not taken up**

Space Application Centre (SAC) was engaged by MoEF&CC for National Wetland Inventory and Assessment (NWIA) project<sup>124</sup>, (2017-18) for decadal change detection of the wetlands with respect to 2006-07 status. In this connection, SAC requested (May 2019) SWA to take up the work for the State.

The project was to be carried out over two years (February 2019 - March 2021) with fund amounting to ₹ 22.60 lakh earmarked for the State. SAC forwarded (June 2019) the Work Plan for confirmation by SWA. According to the schedule of works of the project, SWA was to update the maps, analyse the changes in the wetlands, inventories the wetlands by drawing up maps and conduct field verification to be completed by January 2020.

Audit observed that SWA had neither sent its confirmation to undertake the work till March 2020 nor initiated the project.

#### **4.1.14 West Bengal State Coastal Zone Management Authority**

The length of the coastline in West Bengal is 280 km which includes Hooghly estuarine plain characterised by a network of creeks encompassing small islands with mangrove vegetation and off-shore linear tidal shoals from Sagar Island to the border of Bangladesh.

##### **4.1.14.1 Delay in preparation of CZMP**

According to the CRZ Notification, 2011, Environment Department, GoWB would prepare a Coastal Zone Management Plan (CZMP) of the coastal areas of the State. CZMP encompassed preparation of CZM maps (1:25000 scale) and local level CZM maps (1:4000 scale) by the SCZMAs. Local level CZM maps were to be prepared for use of local bodies for determining the Coastal Regulation Zone<sup>125</sup> (CRZ) and to enable them to facilitate implementation of the CZMP. Further the CZMP should comprise of classification of CRZ areas including land use plan, fishing villages, water areas, existing authorised developments, road networks *etc.* All developmental activities listed in CRZ Notification 2011 were to be regulated by State Government/ the local authority/ West Bengal State Coastal Zone Management Authority (WBSCZMA) within

<sup>124</sup> *Updating Wetland inventory (WI) of West Bengal (1:50000 scale) of 2006-07 and creation of WI GIS database for 2017-18, change analysis between WI of 2017-18 and 2006-07, Preparation of WI of West Bengal (1:25000 scale) of 2017-18 and creation of WI GIS database for 2017-18 and Preparation of state level project report and Atlas.*

<sup>125</sup> *CRZ is the land area from High Tide Line to 500 mts on the landward side along the sea front. All development activity in the CRZ shall be regulated by the government.*

the framework of such approved CZMPs as the case may be in accordance with provisions of this notification;

According to CRZ Notification, 2011 GoWB was required to prepare and submit its CZMP by January 2013 to MoEF&CC for approval. GoWB entrusted (November 2012) Institute of Environmental Studies and Wetland Management (IESWM), an autonomous body under Department of Environment (DoE), GoWB to prepare the CZMP (CZM maps and local level maps), which was approved by MoEF&CC in October 2018.

Audit observed that the preparation of local level CZM maps and classification of CRZ areas as envisaged in the CRZ Notification remained incomplete till March 2020. As a result, there were instances of violations in CRZ areas.

#### 4.1.14.2 Irregularities in Project appraisals and approvals

According to CRZ 2011, project proponents<sup>126</sup> were to apply and submit various documents<sup>127</sup> to WBSCZMA for prior clearance of permitted activities for projects in designated CRZ areas.

WBSCZMA was to examine the documents in accordance with the approved CZMP and in compliance with CRZ Notification and make recommendations within a period of 60 days from the date of receipt of application. WBSCZMA was to forward recommendations to MoEF&CC or State Environmental Impact Assessment Authority (SEIAA) for projects attracting provisions of Environment Impact Assessment Notification, 2006. MoEF&CC/SEIAA was to consider such projects for clearance, based on the recommendations of WBSCZMA.

Audit observed that between April 2014 and March 2020, WBSCZMA had given CRZ clearances to five projects in the selected district.

Sl. No.	Name of the Projects	WBSCZMA recommendation	Para No.
1	Eco-tourism project in Sagar Island (ICZM)	Feb-Mar 2014	-
2A	25 Multi-Purpose Cyclone Shelters (MPCS)	September 2014	Refer to Para 14.2.a.i
2B	86 sites of MPCS under NCRMP-II	September 2014	Refer to Para 14.2.a.ii
3	Marine Cluster in Kulpi	May 2017	Refer to Para 14.2.b
4	Hovercraft station of Indian Coast Guard	June 2018	Refer to Para 14.2.c
5	Helipad Project in Sagar islands	February 2020	Refer to Para 14.2.d

Discrepancies noticed in Audit regarding project appraisal by WBSCZMA are discussed below:

#### a) Multipurpose Cyclone Shelters (MPCS)

i) Disaster Management Department (DMD) submitted (July 2014) application to WBSCZMA for CRZ clearance for construction of 25 MPCS at different

<sup>126</sup> parties interested to undertake any activities in CRZ

<sup>127</sup> i) Rapid EIA Report, ii) Comprehensive EIA, iii) Disaster Management Report, iv) Risk Assessment Report and Management Plan, v) CRZ map indicating HTL and LTL, vi) Project layout superimposed on the map, vii) CRZ map covering seven km radius around the project site, viii) CRZ map indicating the CRZ I, II, III and IV areas including other notified ecologically sensitive areas and ix) No Objection Certificate from the concerned SPCB for the projects involving discharge of effluents, solid wastes, sewage etc.

sites of South 24 Parganas district for construction of cyclone shelters. DMD submitted along with Form I, a CRZ report and five sheets of maps containing five sites each prepared by IESWM in 1:25000 scale. WBSCZMA informed (September 2014) DMD that map in 1:4000 scale was mandatory as per CRZ Notification, 2011 Act. However, without obtaining such map, WBSCZMA accorded (September 2014) CRZ clearance for 25 cyclone shelters. CRZ clearance, in absence of 1:4000 scale map was irregular and resulted in non-compliance of the CRZ notification.

- ii) DMD again approached (August 2014) DoE, GoWB for clearance of another 86 MPCs. WBSCZMA intimated (16 September 2014) DMD that for CRZ clearance, submission of Form I, EIA report, Social Impact Assessment<sup>128</sup> (SIA) report and CRZ maps were mandatory. DMD submitted (September 2014) one Form I for all 86 sites including 24 sites of South 24 Parganas. WBSCZMA again requested (25 September 2014) that though Form I was submitted by proponent, the EIA and SIA reports and maps were not furnished. Besides, the permission for extracting ground water was not submitted. WBSCZMA in its meeting (September 2014) observed that due to want of time the maps were not prepared and approved 86 sites of MPCs on the grounds of exigency in construction of the shelters. CRZ clearance to 86 cases without the requisite documents was irregular. Audit further observed that, 57 (including all 24 sites of South 24 Parganas) out of 86 sites were in CRZ-I, which include Ecologically Sensitive Areas (ESA). In absence of maps, WBSCZMA was unable to judge whether ESAs like mangroves etc. were sacrificed.

#### **b) Marine Industrial Cluster at Kulpi**

CRZ Notification, 2011 prohibited (i) setting up of new industries and expansion of existing industries within CRZ, (ii) disturbing the natural course of seawater by land reclamation (iii) reclamation of sea for commercial purposes *etc.* Besides, the Notification classifies the ecologically sensitive areas like mangroves as CRZ-I and prohibits new construction.

Bengal Shipyards limited (BSL) applied (January 2017) to WBSCZMA for CRZ clearance for a Marine Industrial Cluster project in Kulpi, South 24 Parganas. According to the EIA report, the proponent would construct shipyard for ship building, repair and recycling, cargo handling facility, building large machines for marine industry, logistics and support services and other allied marine industries over 554 acres. WBSCZMA granted (May 2017) CRZ clearance to the project.

Audit observed the following lapses on the part of WBSCZMA in recommending the project:

- i) The project area included 13,976.26 sq m of mangroves which was considered ecologically sensitive and to be classified as CRZ I where no construction was permissible. However, WBSCZMA, had recommended new residential and industrial construction, sacrificing the large mangrove area, which was irregular.

<sup>128</sup> *Social impact assessment (SIA) reviews the social effects of infrastructure projects in relationships between local communities, project proponents and states.*

- ii) According to the EIA report, the site comprised of a tidal influenced natural drainage channel (Manteshwar channel). Reclamation of the tidal influenced natural drainage channel for construction of industry was prohibited by CRZ 2011 and transfer of land was in violation of the CRZ Notification.
- iii) Land and Land Reforms Department had transferred the land, which lay within the CRZ area for construction of industry without consulting DoE regarding the transfer of CRZ land prior to sale. This revealed lack of coordination among the Departments, which resulted in sale of ecologically sensitive area within CRZ and violation of provisions of CRZ Notification.

**c) Hovercraft Station in Frazerganj**

According to CRZ Notification, 2011, manufacture or handling oil storage and facilities for receipt and storage of petroleum products was prohibited in CRZ. Further, area up to 200 mts from High Tide Level (HTL) on the landward side in case of seafront was “No Development Zone” (NDZ) in which no construction of buildings was permissible.

Indian Coast Guard (ICG) applied (September 2017) for CRZ clearance for setting up a hovercraft station in Frazerganj. According to the site plan, ICG would construct guard room, officers mess and accommodation, park, fuel bunk, sailors institute, holiday home, playground, married officers’ accommodation, etc. WBSCZMA recommended (June 2018) the project to MoEF&CC who accorded CRZ clearance in July 2019.

Audit observed that WBSCZMA had recommended the project in violation of the CRZ notification on following issues:-

- i) Though storage of petroleum was prohibited in CRZ area, WBSCZMA had allowed permission for the same.
- ii) According to CRZ Notification, 2011, area upto 200 mts from High Tide Line on the landward side in case of seafront was to be earmarked as No Development Zone (NDZ) and no construction was permitted within NDZ. According to the CRZ maps, the entire project site lay within the NDZ and the proposal for setting up pump house within NDZ was in violation to the CRZ provisions. Besides, sinking of bore well in NDZ may lead to ingress of saline water in the land.
- iii) Though CRZ Notification disallows construction of residential buildings in NDZ, yet CRZ clearance by WBSCZMA for construction of the buildings for accommodation, parks and security facilities was against the Notification.

**d) Construction of three Helipads and VIP Rest-house in CRZ-I area**

According to CRZ Notification, 2019, CRZ-I areas are environmentally most critical as those areas constitute ecologically sensitive areas (ESAs) like mangroves, corals and coral reefs, etc. The geo-morphological features of these areas play an important role in maintaining the integrity of the coast. No new construction shall be permitted in CRZ-I.

GoWB submitted the Coastal Zone Management Plan in April 1996. MoEF, GoI approved (September 1996) the CZMP subject to specific conditions. MoEF in the approval directed that Gangasagar island be categorised as CRZ-I, thus any new construction was prohibited there.

PWD (Roads) Department proposed (12.09.2019) to construct three helipads and VIP accommodation in Sagar Island. According to report furnished by IESWM, 24,961 sq m of tidal waterbody was to be developed in the project. Besides, more than 1,000 sq m of mangrove area (designated as ecologically sensitive area) was also to be developed for the project.

In a meeting (December 2019) with the project proponent, WBSCZMA decided to categorise the project under dock, jetty/processing plant/ storage category which was permissible in the CRZ notification and subsequently gave CRZ clearance (February 2020) to the project.

Thus, approval of constructional activity in CRZ-I area compromising mangroves and categorisation of helipads and VIP rooms as dock, jetty/processing plant/ storage was irregular and in violation of extant provisions of laws governing CRZ areas.

#### **4.1.14.3 Enforcement and compliance of CRZ regulations**

As per CRZ 2011, development or construction activities in different categories of CRZ were to be regulated by the concerned CZMA in accordance with features, regulations or norms as on February 1991 and development/ re-development in CRZ areas without clearance of WBSCZMA were to be treated as violations. WBSCZMA was to inquire into cases of alleged violations, issue specific directions, file complaints, review cases, and refer such cases with comments to NCZMA. WBSCZMA could also take up cases suo-motu or on the basis of complaints made by individual/ representative bodies/ organisations/ DLCs, and take action to verify the facts concerning the issues.

#### **4.1.14.4 Violations of CRZ Norms in Sundarban**

##### **i) Eco-tourism project at Jharkhali**

GoWB had undertaken (October 2015) a project of Eco-tourism Hub at Jharkhali in Sunderbans after clearing 69 acres of mangrove. Even the river channel, breeding place of crocodiles, was claimed in the project. According to Forest Department Report, in 2014, 70 baby crocodiles were rescued from the channel. The same channel was closed down to build new roads to the tourism hub. The eco-tourism project was undertaken jointly by GoWB and Techno India Group, where construction of hotels, motels, cottages, university campus, golf club, food court, etc. was undertaken.

CRZ Notification, 2011 designated Sunderbans as Critically Vulnerable Coastal Area (CVCA) and any development in Sundarban requires permission of WBSCZMA. Audit observed that no permission of WBSCZMA was taken before construction of the eco-tourism hub at Jharkhali. Besides, the project had resulted in the destruction of mangroves, riverine channels and natural habitats of wildlife.



**ii) Tiger Rescue Centre/Children's park**

Forest Department had established (December 2014) a Tiger Rescue Centre (TRC) on the banks of Harobhanga River in Sundarbans by cutting down mangroves. The TRC was made to provide immediate medical relief to injured tigers and other animals of Sundarbans.

A watch tower, a sulabh shauchalaya (public toilet), cottages, sitting arrangements, stairways and footbridges were also constructed. Besides, a Butterfly Park and a children's park were also created inside the Tiger Rescue Centre, which were visited by tourists daily.

Audit observed that the TRC, Butterfly Park and the Children's Park were not permissible activities as per CRZ Notification, 2011 and Forest Department had not taken permission of WBSCZMA. Further, the development of Butterfly Garden, Children's Park and Tourist Centre contradicted the rationale for the establishment of the TRC.

**iii) Avoidable expenditure of ₹ 5.27 crore due on construction of Gadkhali Tourist Lodge in CRZ-I area.**

Tourism Department had taken up the construction of Gadkhali Tourist Lodge (GTL) in Sunderbans in September 2012 with Central Financial Assistance. An expenditure of ₹ 3.67 crore was incurred till July 2015. National Green Tribunal (NGT) observed (March 2016) that the GTL was constructed in CRZ-I area where no construction was permissible and also in the buffer zone of Sunderban in violation of the CRZ notification. It directed the State Government to demolish the illegal structure. Chief Secretary, GoWB requested (April 2016) that the GTL was constructed at a huge cost to promote tourism in Sunderbans and the demolition of the GTL would lead to wastage of public money requesting that the said buildings be allowed to be converted into a desalination plant. Tribunal directed (February 2018) that the work of conversion of the tourist lodge into desalination plant should be expedited. However, Tribunal in March 2019 observed that the project was not a desalination plant as stated by the Chief Secretary but a "RO Filtration Plant" and imposed Performance Guarantee (PG) of ₹ 50 Lakh for inconsistent and contradictory stand of the Government. Since the State Government failed to complete the work on the desalination plant after several extension of time, NGT directed (October 2018) to forfeit the PG of ₹ 50 lakh and further imposed ₹ 10 lakh PG and extended the completion period till February 2019. Finally, observing non-compliance of its directions, NGT ordered (July 2019) the State Government to demolish GTL within one month and also forfeited the PG of ₹ 10 lakh and imposed environmental compensation of ₹ 1 crore. Thus, the State exchequer had to bear avoidable burden of ₹ 5.27 crore<sup>129</sup> due to demolition of illegal construction of GTL.

**4.1.14.5 Discharge of untreated effluents/ management of solid wastes in the coastal areas**

DoE, GoWB notified (25.03.2009) that vessels plying in coastal waters should abide by the guidelines dealing with prevention and containment of pollution

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<sup>129</sup> Cost of construction of GTL-₹ 3.67 crore), PG of ₹ 0.60 crore and environmental compensation of ₹ 1 crore.

of sea by oil. It directed the licensing authorities issuing permission for plying of vessels to identify the vessels which did not conform to the standards and restrain those from plying.

As per CRZ Notification 2011, no untreated sewage, effluent, ballast water, ship washes, fly ash or solid waste from any activity, including from aquaculture operations was to be let off or dumped near the sea. Pollution from oil and gas exploration and drilling, mining, boat house and shipping activities were also to be regulated.

The Monitoring Committee on Sunderbans headed by Chief Secretary directed (July 2015) WBPCB to check adulterated fuel and set up the necessary infrastructure required for testing samples of fuel.

WBPCB had conducted (in December 2017) two inspections of three government owned marine vessels, namely MV Paramhansa, MV Chitrelekha and MV Sarbajaya used for tourism in Sunderbans. It was seen that the three vessels ran on engines and generators using diesel. In none of the vessels, the engines and generators had emission control devices and acoustic enclosures to control emission and noise pollution, respectively. The noise of the engines ranged between 103 dB(A) and 106.6 dB(A), which exceeded the ambient limits of 62 dB(A). Besides, the liquid effluents and solid wastes of the vessels were discharged directly into the river. It was also seen that two (MV Chitrelekha and MV Sarbajaya) out of three vessels did not have requisite environmental clearance (EC) and were operating without registration of Inland Vessel Act. MV Paramhansa though received EC in 2006, had not complied with any of the applicable environment laws as mentioned.

Audit observed that WBPCB after conducting inspection in December 2017, had neither conducted any check of adulterated fuel nor had set up necessary infrastructure required for testing samples of fuel as per Chief Secretary order. Besides, WBPCB had also not monitored the noise pollution caused by the engines of the vessels.

#### **4.1.14.6 Post clearance monitoring**

According to CRZ Notification, 2011, it is mandatory for the project proponents to submit half-yearly compliance to WBSCZMA on 1 June and 31 December every year and host the report on the website of WBSCZMA. Audit observed that none of the project proponents had submitted half-yearly compliance reports to WBSCZMA. Between April 2014 and February 2020, Disaster Management Department had submitted a compliance report in December 2017 for the MPCS. Except this stray case, none of the project proponents of South 24 Parganas had submitted compliance report. Audit observed that WBSCZMA had however not issued instructions to the project proponents for submission of such reports.

#### **4.1.15 Conclusion**

The Department of Environment (DoE), GoWB, has the responsibility to ensure compliance of the various environmental laws in the State, through its various parastatal agencies like the West Bengal Pollution Control Board (WBPCB), West Bengal State Coastal Zone Management Authority (WBSCZMA), etc.

Audit of the status of compliance of all applicable environmental laws in the selected district of South 24 Parganas was intended to check whether the DoE and its parastatals were effectively monitoring the application of laws and provisions on environment by the concerned stakeholders, including Government Departments and agencies, generating or handling substances that had damaging effects on the air, water, soil and the bio-diversity of the district.

It was observed that there were significant shortcomings in the compliance by stakeholders including general public, public authorities, local bodies, etc. The DoE and its parastatal bodies were slow to investigate or book violations of legal provisions and laws and when they did do so, it was rarely followed up with punitive action, even mild ones like imposition of fines.

Segregation of waste was not being enforced effectively, whether it was medical waste or household waste. In fact, several Health Care Facilities were found to have been operating without BMW authorisation. Basic facilities like STPs and solid waste treatment facilities were found to be lacking in this critical district, which also includes the Kolkata Municipal Corporation (KMC) area and several important industrial and peri-urban areas. As a result, untreated waste, waste water and sewage continued to pollute land and water bodies in the district, including the river Hooghly.

There were inadequate number of monitoring stations for measuring quality of air and water, given the large population of the district and where there were, rectificatory action to abate air or water pollution seems to have not been enforced, almost as if the monitoring stations were an end in itself. No action was seen to have been taken against industries violating EC conditions.

The district is home to the Sundarbans as well as the Ramsar site EKW. There were illegal constructions in EKW and CRZ areas in Sundarbans. However, such violations of rules even in these ecologically fragile areas were rarely found to have been penalised; on the couple of rare occasions they were done, it was in compliance of Kolkata High Court orders.

There appears to be a severe lack of coordination between the DoE and its parastatals and the stakeholders especially other Government Departments, which is evident from the fact that violations were not properly followed up with the concerned Departments. It is essential to ensure that requisite environmental issues are adequately addressed as a routine in the process of activities of the Departments. Stricter enforcement of compliance at all levels of Government, including local bodies, and effective monitoring by DoE and its parastatals is critical if treatment of environmental hazards and pollutants are to be made a priority for the sake of overall well-being of the environment and the bio-diversity it sustains, including the human population.

## Public Works Department

### 4.2 Avoidable expenditure due to not using nearest available quality materials

**The Superintendent Engineer, Northern Circle, Public Works Department did not use nearest available quality stone materials in strengthening of road works. This led to an avoidable expenditure of ₹113.36 lakh along with committed liability of ₹46.81 lakh on carriage of stone materials.**

As per rule 21 of General Financial Rules (GFR) 2005, every officer incurring or authorising expenditure from public money should be guided by high standards of financial propriety. Every officer should also enforce financial order and strict economy and ensure that all relevant financial rules and regulations are observed, by his own office and by subordinate disbursing officers. Every officer is expected to exercise the same vigilance in respect of expenditure incurred from public moneys as a person of ordinary prudence would exercise in respect of expenditure of his own money.

As per para 9.2 of Indian Roads Congress (IRC): SP:72-2015, for successful performance of a rural road pavement, it is necessary that adequate lateral support be provided by roadside shoulders. The shoulder material should be selected using the same principles as for gravel roads or a sub-base to carry construction traffic. Further, as per clause 401 of Ministry of Road Transport & Highways (MORT&H) and para 2.16.2 of Schedule of Rates - 2015, Public Works Department (PWD), the materials to be used for the sub-base as well as shoulder work shall be natural sand, crushed gravel, crushed stone, crushed slag, or a combination thereof, depending upon the grading required. Use of materials like brick metal, Kankar and crushed concrete shall be permitted in the lower sub-base.

The Superintendent Engineer, Northern Circle, Public Works Department (PWD) awarded (February, 2018) strengthening works of two roads<sup>130</sup> to two contractors at a tendered cost of ₹ 10.78 crore and ₹ 7.81 crore for completion by October 2018 and July 2018, respectively. The Division paid ₹ 12.16 crore in respect of the 1<sup>st</sup> work and ₹ 3.64 crore in respect of the 2<sup>nd</sup> work. The works were still ongoing.

The works, *inter alia*, consisted of construction of one metre width shoulder on each side of the road with North Bengal variety River Bed Materials (RBM) of thickness 325 mm. The North Bengal variety RBM were to be transported from a quarry at Balasoon River Bed, distanced more than 190 km from the work sites. Audit observed that the Pakur quarry was at a distance of 54.50 km (in respect of 1<sup>st</sup> work) and 50.00 km (in respect of 2<sup>nd</sup> work) from the work sites while the quarry from which North Bengal variety RBM was used for construction of shoulders were 198.50 km and 194.00 km away from the work

<sup>130</sup> 1st work: Strengthening to Road from Pirgachi (Dostir More at NH-34) to Kunor via Malgaon chainage from 0.00 Kmp to 15.40 kmp. during the year 2017-18 under RIDF-XXIII.  
2nd work : Strengthening of road from FCI more to Bangalbari More via Ghulghuli more from from 0.00 kmp to 11.10 kmp during the year 2017-18 under RIDF-XXIII.

sites. Therefore, due to longer carriage, the cost of North Bengal variety RBM used in the works were higher compared to Pakur stones. The quality of stone materials from Pakur are also far more superior to that of North Bengal variety RBM.

Thus, by not using local and nearest available quality stone materials from Pakur quarry for construction of shoulder, the Division incurred an avoidable expenditure of ₹ 113.36 lakh along with committed liability of ₹ 46.81 lakh (**Appendix-16**).

Chief Engineer, North Zone, PWD replied (December 2019) that “huge quantity of Pakur variety stone was required for that project which was not easily available due to Farakka Barrage issue and Quarry Problem (GST Problem)”. The reply is not tenable as the Department vide notifications dated July 2016 and July 2018 strictly directed all the Divisions to use pakur/panchami varieties stone aggregates instead of North Bengal variety stone materials<sup>131</sup> in construction works due to inferior quality of North Bengal variety RBM against Pakur stone materials. Further, the contention of the Department regarding non-availability of the pakur stone materials was also not tenable as in the instant work, pakur quarry stone materials were used for laying 17,240 cum of bituminous and non-bituminous items, whereas quantity of North Bengal variety RBM used was only 5,437 cum.

### **4.3 Avoidable expenditure due to non-consideration of relevant Schedule of Rates**

**Public Works Department in construction of concrete pavement considered the Schedule of Rates (SoR) for Building Works instead of SoR for Road & Bridge Works, which resulted in an avoidable expenditure of ₹ 0.89 crore.**

The Ministry of Road Transport & Highway (MORTH) in its Guidelines<sup>132</sup> recommends laying Dry Lean Concrete (DLC) as sub-base course and Cement Concrete Pavement as base course in a Concrete Pavement. Further, as per general conditions of Schedule of Rates (SoR) of Public Works Department (PWD) with effect from 1<sup>st</sup> July 2014, for contracts made specifically for Building works, only PWD Schedule Volume I (Building Works) & Volume II (Sanitary & Plumbing Works) will be operative. For contracts in respect of Road works, Volume III (Roads & Bridges Works) will be applied.

The Chief Engineer (South Zone), Public Works Directorate technically sanctioned (August 2015) the work of ‘Improvement of riding surface of Amtala-Baruipur Road from 0.280 kmp to 1.550 kmp. The Superintending Engineer (SE), Southern Highway Circle awarded (November 2015) the work to an agency at a tendered cost of ₹ 4.82 crore (at 2.99 percentage above rate) for completion within May 2016. The work *inter-alia* consisted of laying of 150 mm ordinary cement concrete as sub base and 300 mm M-40 grade concrete as base course.

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<sup>131</sup> Consists of stone chips, stone aggregate, shingles, gravels, bazree, boulder, river bed materials, river grit etc.

<sup>132</sup> under Section 600 related to Concrete pavement.

Scrutiny of estimate of the work revealed that the proposed concrete pavement was constructed with ordinary cement concrete,<sup>133</sup> followed by Ready mix concrete<sup>134</sup> of M-40 Grade<sup>135</sup>. Both the items were found to be taken from PWD, SoR Volume-I (Building Works), which is applicable for building works only. However, as per PWD, SoR Volume III (Roads & Bridges Works), which is applicable for road works, there are items for concrete pavement namely Dry lean concrete<sup>136</sup> (DLC) as sub base course and Cement concrete pavement as base course, which are also recommended by MORTH. Further, it was observed that the cost for concrete pavement from Volume III (Roads & Bridges Works) is more economical compared to Volume I (Building Works). This led to an avoidable expenditure of ₹ 0.89 crore as shown in the table below:

**Table 4.14: Difference in rates between items in PWD, SoR Volume I and Volume III**

Items from SoR for Building Works (Vol.- I)	Rate/m <sup>3</sup>	Items from SoR for Roads & Bridge Works (Vol.-III)	Rate /m <sup>3</sup>	Difference in rate/m <sup>3</sup>	Quantity executed in m <sup>3</sup>	Avoidable expenditure incl. contractual percentage of 2.99%
Ordinary Cement Concrete	₹ 6,234.21	Dry Lean Cement Concrete	₹3,603.36	₹ 2,630.85	1,411.87	₹ 3,82,5479.29
Ready Mix Concrete of M-40 Grade	₹ 8,904.80	Cement Concrete Pavement (M-40 Grade)	₹ 7,039.57	₹ 1,865.23	2,671.20	₹ 51,31,376.21
<b>Total</b>						<b>₹ 89,56,855.50</b>

Thus, the Department incurred an avoidable expenditure of ₹ 0.89 crore in construction of a concrete pavement due to non-consideration of relevant SoR.

In reply, the concerned SE stated (July 2017) that for speedy completion of the work within the scheduled period in the congested bazaar area, the Ready Mix Concrete item available in Building schedule was used in the estimate; as DLC requires batching plant with electronic sensor paver for rolling it could not be used considering small volume of DLC in the work. The reply was not tenable as the Department was required to execute cement concrete road works as per extant SoR of PWD, Volume III (Roads & Bridges Works). Further, the contention of the Department regarding speedy completion of the work was unfounded as the said work was delayed for eight months from the scheduled time of completion.

#### 4.4 Avoidable expenditure

**Avoidable expenditure of ₹18.10 crore due to execution of unnecessary and excess thickness of BM and costlier bituminous wearing course.**

Indian Roads Congress (IRC) guidelines (IRC: 37 - 2012) include the pavement design catalogue to be used for determination of design pavement thickness for

<sup>133</sup> Cement content 314.3 kg /m<sup>3</sup> of concrete.

<sup>134</sup> Concrete produced in computerised batching plant using designing concrete mix and the mix is transported with agitation in transit mixer to work site.

<sup>135</sup> Cement content 450 kg/m<sup>3</sup> of concrete.

<sup>136</sup> Cement content 150 kg/m<sup>3</sup> of concrete.

road construction. The guidelines stipulate thickness of road and specification of each layer of road pavement to be constructed on the basis of strength of soil (CBR<sup>137</sup>) and projected traffic volume (*msa*<sup>138</sup>) during the design life of the road. Further, Note (a) under clause 10 of the guidelines also stipulate that for traffic below two *msa*, IRC: SP: 72 – 2007 should be referred to. Moreover, the guidelines recommend bituminous wearing course of 25 mm Semi-Dense Bituminous Concrete (SDBC) for design traffic from two *msa* to five *msa* and Bituminous Concrete (BC) for design traffic more than five *msa*. The design traffic parameter has been expressed in terms of the cumulative Equivalent Standard Axle Load (ESAL)<sup>139</sup>. As per provision of IRC: SP: 72-2015, the value of cumulative ESAL above 15,00,000 only warrants the use of Bituminous Macadam (BM).

#### 4.4.1 Unnecessary use of Bituminous Macadam in roads of low volume traffic

Superintending Engineer (SE), Central Circle, Public Works Department (PWD) and SE, Western Highway Circle-I, Public Works (Roads) Directorate executed two road works<sup>140</sup> under Nadia Division, PWD and Asansol Highway Division, PWRD at a tendered cost of ₹ 5.23 crore (estimated amount ₹ 5.44 crore) and ₹ 16.99 crore (estimated amount ₹ 16.51 crore), respectively. The works were completed in June 2020 and January 2017 at a cost of ₹ 5.22 crore and ₹ 16.86 crore, respectively. The works *inter alia* consist of laying 50 mm BM on both the roads.

Applying IRC SP: 72-2015, Nadia Division, PWD calculated cumulative ESAL of the road as 15,06,080 considering ESAL per day as 314.09. Audit, however, observed that actual ESAL per day of the road was 117.95 and accordingly, the actual value of cumulative ESAL of the road would be 5,67,451. As the road had a cumulative ESAL value less than 15,00,000, BM layer should not have been laid; Audit, however, observed that the Division laid 50 mm BM layer.

Similarly, in Asansol Highway Division, PWRD, *msa* of the road was calculated as 1.22. The road being a low volume traffic load having *msa* below 2, IRC: SP-72 should have been referred to for design of the road, where there was no requirement of BM layer. However, the Department laid 50 mm BM along the entire stretch of the road.

As per provision of IRC SP: 72-2015 (Fig.4, pavement design catalogues), instead of laying BM on both the roads, Open Grade Premix Carpet (OGPC) was sufficient to cater to the traffic.

Thus, the Department incurred an excess expenditure of ₹ 4.66 crore due to use of bituminous macadam in the low volume roads as detailed in **Appendix-17**.

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<sup>137</sup> California Bearing Ratio.

<sup>138</sup> Million Standard Axles.

<sup>139</sup> The estimated or projected magnitude and occurrence of the various traffic loading are converted to the total number of passes of equivalent standard axle loading (ESAL),

<sup>140</sup> 1. Strengthening work of Haripur Bazar to Kanainagar Ghat Road from 0.00 km to 10.80 km of PWD, Nadia Division,  
2. Widening & strengthening of Bhedia Chora from 0.00 km to 16.80 km of Asansol Highway Division.

#### 4.4.2 Avoidable use of Bituminous Macadam and costlier wearing course beyond the scope of IRC

The Superintending Engineer (SE), Northern Highway Circle, P.W. (Roads) Directorate executed four<sup>141</sup> Strengthening works in 2017-18 at an aggregate tendered cost of ₹ 28.84 crore and SE, Central Highway Circle, P.W. (Roads) Directorate executed one Widening and Strengthening work<sup>142</sup> in 2018-19 at a cost of ₹ 5.96 crore, respectively. The Department incurred an aggregate expenditure of ₹ 21.04 crore in respect of the five works. All the five works were in progress (between June and December 2019). The works *inter alia* consisted of laying 50 mm BM as base course and 25 mm SDBC/OGPC as wearing course.

Granular Sub-base and base courses were designed considering design life of the road of 15 years and the bituminous binder and wearing courses were designed considering five years design life. All the five roads were designed considering IRC: 37 – 2012 and accordingly, *msa* of the roads for five-year design period was calculated as 1.17, 1.20, 1.20, 1.30 and 0.904. As all the roads have *msa* below 2, the design of the roads should have been done as per IRC: SP-72-2015, wherein there is no provision for laying BM and SDBC.

The Department laid 50 mm BM and costlier wearing course SDBC violating the IRC guidelines which resulted in an avoidable expenditure of ₹ 6.37 crore including committed liability of ₹ 1.07 crore as shown in **Appendix-18**.

Department in reply stated (September 2021) that as per IRC SP:72-2015 (Clause 1.5), rural roads are to be designed for 10 years and in such case the calculated *msa* for each road would be more than 2. The Department further stated that as per IRC:37-2018, the design traffic for stage construction would be 1.67 times the design traffic estimated for five years. However, the fact remains that for *msa* below 2, IRC: 37-2012 prescribes use of catalogue of SP: 72-2007 for designing road pavement. Further, Department's intention to calculate traffic for 10 years as per IRC: 72-2015 for constructing bituminous course was against its order dated June 2017 wherein it was stated that design of bituminous layers should be for five years. Further, IRC: 37-2018 was not relevant as it was effective from November 2018 and the present work was technically sanctioned in October 2017.

#### 4.4.3 Laying of excess thickness of Bituminous Macadam and costlier wearing course

The Superintending Engineer (SE), Southern Highway Circle, P.W. (Roads) Directorate awarded (September 2017) Strengthening works<sup>143</sup> of a road under Howrah Highway Division to a contractor at a tendered cost of ₹ 6.40 crore (estimated amount ₹ 8.32 crore) for completion by February 2018. The work

<sup>141</sup> 1. Strengthening work of Maharajahat-Bhatol Road from 0.00 km to 11.70 km,  
2. Strengthening work of Kamlabari to Kachinmuha Road via Ghulghuli more from 0.00 km to 11.00 km,  
3. Strengthening work of Jantahat to Bhulki Road from 0.00 km to 13.40 km and  
4. Strengthening work of Rampur-Chakulia Road from 0.00 km to 7.33 km.

<sup>142</sup> 1. Strengthening of Bethuadahari Agradwip Ferryghat Road from 0.00 to 5.00 kmp

<sup>143</sup> 1. Strengthening of Bagnan-Bainan-Gaighata road from 0.00 km to 4.80 km



was completed in April 2018 and ₹ 8.12 crore was paid to the contractor. Similarly, SE, Western Highway Circle-II, P.W. (Roads) Directorate executed three different Widening & Strengthening works<sup>144</sup> under Bankura Highway Division at a tendered cost of ₹ 29.96 crore, ₹ 18.20 crore and ₹ 17.60 crore respectively in 2018-19. The first two works were completed in August 2019 and May 2019 at a cost of ₹ 30.53 crore and ₹ 19.01 crore, respectively whereas remaining one work was still in progress and up-to-date expenditure incurred on the work was ₹ 7.71 crore.

Audit observed that Granular Sub-base and base courses were made considering design life of road of 10/15 years and the bituminous binder and wearing courses were made considering five years design life. As per IRC: 37-2012, *msa* of the roads were calculated in the estimates as shown in the **Table 4.15** below:

**Table 4.15: Calculation of *msa* of the roads**

Howrah Highway Division		Bankura Highway Division					
		Work -I		Work -II		Work -III	
<i>msa</i> for 10 years	<i>msa</i> for 5 years	<i>msa</i> for 15 years	<i>msa</i> for 5 years	<i>msa</i> for 15 years	<i>msa</i> for 5 years	<i>msa</i> for 15 years	<i>msa</i> for 5 years
3.18	1.4	6.85	1.75	6.99	1.79	7.6	1.90

As per IRC: 37-2012, laying of 50 mm BM and 20 mm Open Graded Premix Carpet (OGPC) was sufficient for the works of Bankura Division as the *msa* value of the roads ranged between 1.5 and 2. Similarly, for the road work under Howrah Division, PWD the value of *msa* was close to 1.5 (i.e. 1.4). Therefore, the Divisions should have laid 50 mm BM and 20 mm OGPC as per relevant IRC guidelines.

However, Audit observed that Bankura Highway Division, PWD, laid 50 mm DBM and 25 mm SDBC/30 mm BC on the three road works, beyond the scope of IRC for traffic below 2 *msa*. Whereas, Howrah Division, PWD laid 75 mm BM and 25 mm SDBC without any justification on record, though there was no provision for laying BM on the road for *msa* of 1.40 as per the IRC guidelines.

Thus, the Divisions executed excess thickness/costlier grade of bituminous base course (75 mm BM/50 mm DBM instead of 50 mm BM) and costlier bituminous wearing course (25 mm SDBC/30 mm BC instead of 20 mm OGPC) beyond the scope of the IRC without giving any justification. This resulted in avoidable extra expenditure of ₹ 3.15 crore as shown in **Appendix- 19**.

The Department in reply stated (September 2021) that as per SP:72-2015, stage construction is only relevant to very low volume rural road. Accordingly, if SP:72-2015 was to be used, design life of 10 years was to be considered and accordingly use of 75 mm BM and 25 mm SDBC is justified. However, the fact remains that for *msa* below 2, IRC: 37-2012 prescribes use of catalogue of SP: 72-2007 for designing road pavement. Further, Department's intention to calculate traffic for 10 years as per IRC:72-2015 for constructing bituminous

<sup>144</sup> 1. Widening & Strengthening of Jhatipahari-Kashipur (Purulia Boarder) Road from 0.00 km to 12.10 km,  
2. Widening & Strengthening of Mejia to Kusthal Road from 0.00 km to 11.20 km and  
3. Widening & Strengthening of Ranibandh-Barikul Road from 0.00 km to 14.50 km

course was against its order dated June 2017 wherein it was stated that design of bituminous layers should be for five years.

#### 4.4.4 Unnecessary laying of costlier wearing courses

The Superintending Engineer, Southern Highway Circle, P.W.(Roads) Directorate awarded (in May 2018 and June 2018) two works<sup>145</sup> to two different contractors at a cost of ₹ 6.91 crore and ₹ 6.78 crore. Pavement compositions of the works were designed following IRC: 37-2012. The design traffic of both the roads were calculated for five years design life with *msa* of 2.05 and 3.37. Bituminous wearing course of 30 mm BC was laid on both the roads instead of 25 mm SDBC as recommended by the IRC for traffic below 5 *msa* without any justification on record. As a result, the Division incurred total extra expenditure of ₹ 45.81 lakh, which was avoidable (**Appendix-20**).

Department in reply stated (September 2021) that due to occurrence of drizzling rain for long duration impervious wearing course of BC was used instead of semi permeable/permeable surface layer like SDBC on impervious layer of DBM considering the past experience. The reply was, however, not tenable as the IRC guidelines prescribed use of SDBC for designing roads considering all the aspects. Further, it was also noticed that almost all the divisions were following the IRC provision and laid SDBC without facing any difficulties. It was also noticed that there was no justification placed in the project report for deviating the IRC clause. Moreover, Audit observed that in earlier occasion (2016-17), the SE, SHC laid SDBC as wearing course over DBM in Munshirhat-Penro-Khila-Rajapur Road.

#### 4.4.5 Consideration of higher value of lane distribution factor

As per para 4.5.1 (ii) of IRC: 37-2012, the design for two lane single carriageway roads should be based on 50 *per cent* of the total number of commercial vehicles in both directions.

The Superintending Engineer, South Western Highway Circle, P.W. (Roads) Directorate took up (February 2017) strengthening work on Dharsa-Belpahari Road from 0.00 kmp to 3.00 kmp at a tendered cost of ₹ 5.44 crore (estimated cost ₹ 7.37 crore). The work was completed in February 2018 at a cost of ₹ 6.74 crore. The work *inter alia* consisted of laying 70 mm BM.

Audit observed that the pavement thickness of the road was designed as per IRC: 37-2012. The Division considered lane distribution factor of the road as 1 instead of 0.50 for two lane single carriageway road and calculated the cumulative number of standard axles as 2.35 *msa*. Audit calculated that actual *msa* of the road was 1.19, considering the lane distribution factor as 0.50.

<sup>145</sup> 1. “Strengthening of Dhundulia – Shyampur road from 0.00 km to 9.40 km” and  
2. Improvement of riding quality of Patihal – Khadarghat road from 0.00 km to 6.987 km and widening and strengthening from 6.987 km to 7.780 km

As the *msa* of the road is lower than 2, IRC: SP: 72-2007 should have been used for pavement design wherein there is no provision for laying BM below 1.5 *msa*. Thus, the Division incurred an avoidable expenditure of ₹ 76.11 lakh (**Appendix-21**) due to laying of 70 mm BM violating the provision of IRC.

The Department accepted the audit contention on lane distribution factor and also stated (December 2018) that the road being important connecting different NHs, the pavement of the road was designed as per IRC: 37-2012. However, the reply is not tenable as the projected *msa* of the road for the design life of the road was below 2, which warrants consideration of IRC: SP: 72-2007.

#### 4.4.6 Consideration of higher value of Vehicle Damage Factor

The flexible pavement of a road is designed on the basis of its projected traffic (in *msa*), i.e, cumulative number of standard axles which *inter alia* depends on 'Vehicle Damage Factor'<sup>146</sup> (VDF). IRC: 37-2012 guidelines provide indicative values of VDF for plain and hilly areas on the basis of commercial vehicles per day.

The Superintending Engineer (SE), North Bengal Construction Circle-II, PWD awarded (September 2014) the work of a road<sup>147</sup> in a hilly area to a contractor at a tendered cost of ₹ 11.30 crore for completion within February 2015. The work was completed in October 2015 and ₹ 11.26 crore was paid to the contractor.

Scrutiny of sanctioned estimate of the work revealed that the Division calculated the *msa* as 4.6 against the corresponding number of commercial vehicles per day by taking into consideration the VDF applicable for plain area (here 3.5) instead of the VDF for hilly area (here 1.5). As a result the value of *msa* was inflated against the actual value of 1.94 *msa*<sup>148</sup>. Accordingly, only one layer of 50 mm BM was required as base course whereas, in the name of Profile Corrective Course a full thickness of 50 mm BM along with a separate 50 mm BM layer *i.e* total 100 mm BM was laid by the Division.

Thus, by considering higher value of VDF, the Department had to incur an avoidable expenditure of ₹ 2.70 crore on laying of extra layer of 50 mm BM.

#### 4.5 Excess expenditure

**Department, in construction of a concrete road, laid an extra sub-base layer of Water Mixed Macadam in violation of the Indian Roads Congress Guidelines which resulted in excess expenditure of ₹ 1.45 crore.**

Indian Roads Congress (IRC) Guidelines 58 - 2011 for Design of Plain Jointed Rigid Pavements for Highways stipulate that Pavement Quality Concrete

<sup>146</sup> It is defined as equivalent number of standard axles per commercial vehicle.

<sup>147</sup> Improvement of upper Rishi road from 17.00 kmp to 30.00 kmp of Darjeeling Division, PWD.

<sup>148</sup>  $N (msa) = [365 \times \{(1+r)^n - 1\} \times A \times f \times F] / r \times 10^6$  where,  $r$ =traffic growth rate,  $n$ =design life in years,  $A$ =initial traffic in the year of completion of construction,  $f$ =lane distribution factor;  $F$ =Vehicle Damage Factor Here,  $N (msa) = [365 \times \{(1+0.05)^{10} - 1\} \times 572 \times 0.05 \times 1.5] / 0.05 \times 10^6 = 1.94$  *msa*.

(PQC) shall be laid over a Dry Lean Concrete<sup>149</sup> (DLC) sub-base<sup>150</sup>. Further, the guidelines<sup>151</sup> for the use of DLC as sub-base for rigid pavement recommends that, to facilitate quick disposal of water that is likely to enter the sub-grade<sup>152</sup>, a drainage layer of Granular Sub-Base (GSB) shall be provided below the sub-base throughout the road width.

Barasat Highway Division-I under Public Works Roads Directorate (PWRD) took up (in February 2018) the work of construction of rigid pavement in a Village Road<sup>153</sup> by Superintending Engineer (SE) of Eastern Highway Circle at a tendered cost of ₹ 26.36 crore for completion by August 2019. The work was completed in November 2019, and ₹ 31.47 crore was paid to the contractor.

Audit observed that 150 mm Granular Sub-Base (GSB) was laid over the prepared sub-grade followed by 150 mm Water Mixed Macadam (WMM) and 150 mm Dry Lean Concrete (DLC) as sub-base and 300 mm Pavement Quality Concrete (PQC) as base course. The relevant IRC Guidelines<sup>154</sup> recommend laying of GSB as drainage layer over the sub-grade followed by DLC as sub-base and PQC as base course; there is no provision for laying WMM between GSB and DLC.

Thus, the Department in violation of the Indian Road Congress guidelines executed an unnecessary sub-base layer of 150 mm WMM, which resulted in an excess expenditure of ₹ 1.45 crore.

Department replied (September 2021) that IRC 58 recommends laying of not only drainage layer but also filter layer, as WMM is porous will serve the purpose of drainage layer. Besides, only GSB cannot sustain the load and to keep the road traffic worthy during construction 150 mm thickness of each layers (GSB and WMM) is preferred. The reply is not acceptable as MoRTH's specification recommends that GSB should be used as drainage cum filter layer and not WMM. Further, laying of 150 mm WMM to sustain the traffic load was not backed by any guidelines.

<sup>149</sup> Dry Lean Concrete (DLC) is a plain concrete with a large ratio of aggregate to cement than conventional concrete and generally used as a base/ sub base of rigid pavement.

<sup>150</sup> Sub-base is the layer of aggregate material laid on the sub-grade (the native material underneath a constructed road), on which the base course layer is laid.

<sup>151</sup> IRC-SP:49-2014.

<sup>152</sup> The native material underneath a constructed road.

<sup>153</sup> Haroa Auto Stand to Natunhat Road (0.00 kmp to 9.50 kmp).

<sup>154</sup> IRC-58: 2011 and IRC-SP:49-2014.

## Micro, Small & Medium Enterprises & Textiles Department

### 4.6 Inefficient cash management of surplus fund

**West Bengal Small Industries Development Corporation Limited (WBSIDCL) did not avail the auto swift facility of the current account and thereby lost the opportunity to earn interest of ₹ 3.50 crore.**

Comprehensive guidelines for management of funds were issued<sup>155</sup> by the Finance Department, Government of West Bengal (GoWB). As per the guidelines, Departmental Controlling Officer and officers operating bank accounts in Government Departments, Directorates, Regional and District Offices, Companies, Corporation, Autonomous/Statutory/Local Bodies should exercise prudence while depositing money in the bank account or fixed deposit and be cautious enough not to be carried away by unreasonably high rates of interest, however, alluring the rates may be.

The West Bengal Small Industries Development Corporation Limited (WBSIDCL) develops business hubs, industrial area development work; entrepreneur stalls *etc.*, which are funded by Government of West Bengal through capital grants. Besides this, WBSIDCL also allots plots or stalls to small industries on lease or rent basis and realises amount as fixed by its Board of Directors from time to time. The WBSIDCL parks the funds so collected in its bank accounts in order to facilitate release of various payments to contractors, suppliers, salaries to employees *etc.* Prudent management of funds entails maintenance of adequate liquidity to meet the expenses and optimal return on surplus funds. Importance of fund management of WBSIDCL was observed by the fact that an official was assigned in April 2019, exclusively to look into the matter of short term deposits and its renewal.

Audit observed that the management of WBSIDCL kept surplus funds ranging from ₹ 4.43 crore to ₹ 127.87 crore during 2016-17 to 2020-21 in current accounts with four leading banks<sup>156</sup>. Although such huge amounts were kept in the banks, the WBSIDCL did not earn any interest as the funds were kept in current accounts which fetch no interest. The Management did not avail of auto sweep facility for those current accounts which would earn interest on the surplus fund at the rate ranging from 2.5 *per cent* to 5.50 *per cent* during the said period. This resulted in loss of ₹ 1.71 crore.

Further, Audit observed that 33 Fixed Deposits (FDs) valuing ₹ 41.11 crore matured between October 2019 to February 2020 at Indian Bank, Central Avenue Branch. The amount was parked with no interest for 224 to 347 days in a current account having no auto sweep facility till 23 September 2021, leading to loss of ₹ 1.79 crore towards interest.

Thus, by parking unutilised/ surplus funds in current accounts without auto sweep facility, the WBSIDCL lost interest income of ₹ 3.50 crore.

The matter was issued to Government (August 2021), reply not yet (October 2021) received.

<sup>155</sup> *vide memo no. 585-F(Y) dated 21 January 2013 read with 2261F(Y) dated 15 March 2013.*

<sup>156</sup> *Indian Bank, HDFC Bank, ICICI Bank and Axis Bank.*

## 4.7 Extra expenditure on VAT

**West Bengal Khadi and Village Industries Board under MSME&T Department extended undue benefit of ₹ 85.50 lakh as VAT to the contractors in addition to payment of ₹ 1.53 crore towards GST.**

The Goods and Service Tax (GST), which has replaced most of the Central and State indirect taxes such as Value Added Tax (VAT), excise duty, service tax, etc. was implemented from 1st July 2017 to ensure common indirect tax rates and its structures across the country, thereby increasing certainty and for ease of doing business irrespective of the choice of place.

West Bengal Khadi and Village Industries Board<sup>157</sup> (WBKVIB) under Micro, Small & Medium Enterprises and Textiles (MSME&T) Department had taken up (during June 2017 to March 2019) 34 different infrastructural works. The contractors submitted bill of ₹ 12.52 crore for the works done and also claimed of ₹ 1.53 crore towards GST. The payments were made (between September 2017 and March 2020) accordingly to the contractors including amount of ₹ 1.53 crore for GST.

Audit observed that estimates of the works were prepared based on the Schedule of Rates (SoR) of Public Works Department (PWD) effective from April 2014 and 2015, including latest corrigenda. The item rates in the contract documents were taken from the SoR, PWD, which included taxes like VAT. Audit calculated that the amount of VAT payable by the contractors for the work done was ₹ 85.51 lakh as per Rule 30 of West Bengal VAT Rules 2005. Audit observed that while making payment not only was this VAT amount included in the bills but WBKVIB, in addition paid a sum of ₹ 1.53 crore towards GST. Payment of both VAT and GST to the contractor for the same work was irregular, as only GST was applicable from July 2017. Therefore, WBKVIB, before making payment of GST to the contractors was required to deduct the amount of VAT already included in the bills of the contractors.

Thus, payment of ₹ 85.50 lakh as VAT, in addition to GST to the contractors led to extra expenditure as shown in *Appendix-22*.

The matter was referred to Government in August 2021, the reply is still awaited (October 2021).

<sup>157</sup> *An autonomous body set up to generate large employment opportunities in the rural areas at a low capital cost as well as to create entrepreneurship development through local initiatives, cooperation and spirit of self-reliance and at the same time help in utilisation of available manpower in rural areas for processing locally available raw materials by adoption of simple techniques.*

## Land and Land Reforms Refugee Relief & Rehabilitation Department

### 4.8 Non-realisation of lease rent and interest

#### **Non-realisation of annual lease rent and interest of ₹ 3.96 crore in case of 33 lessees in possession of 2,156.41 acres of land.**

Rule 235 of the “The West Bengal Land and Land Reforms (WBL & LR) Manual, 1991 provides that the rent on short-term lease on land shall be payable annually according to the Bengali calendar year (BS)<sup>158</sup>. The rent falls due on the last day of the year in respect of which it is to be paid. Rule 303 prescribes interest at the rate of 6.25 *per cent* per annum on delayed payment. Further, as per rule 227, leases should be entered in a separate Register ‘X’ by Block Land and Land Reforms Officers (BL&LROs). BL&LROs shall periodically review the register X and take appropriate action for timely realisation of rent.

Out of 1,048 lease registers and case records in seven District Land and Land Reforms Offices (DL and LROs)<sup>159</sup>, Audit test checked<sup>160</sup> 453 lease registers and case records of lessees. Audit found that annual lease rent and interest of ₹ 3.96 crore in respect of periods between 1414 BS (2007-08) and 1426 BS (2019-20) was not realised in 43 cases from 33 lessees in possession of 2,156.41 acres of land. The BL & LROs did not take any action for timely realisation of lease rent, which resulted in non-realisation of annual lease rent and interest of ₹ 3.96 crore (annual lease rent ₹ 3.60 crore and interest ₹ 0.36 crore).

After this was pointed out, six DL&LROs<sup>161</sup> accepted (between September 2019 and March 2021) the audit observations in 40 cases involving ₹ 3.91 crore and stated that:

- BL&LROs would be instructed to realise the rent in 31 cases involving ₹1.96 crore and
- Demand notices would be issued to realise the rent in nine cases involving ₹ 1.95 crore.

In the remaining three cases, involving ₹ 4.63 lakh, DL&LRO, Hooghly did not furnish any specific reply (July 2021).

The matter was reported to the Government between October 2019 and May 2021, the reply was awaited (October 2021).

<sup>158</sup> Bengali year (Bengali Saka-BS) commences on the first day of Baisakh i.e. 14/15 April each year.

<sup>159</sup> Coochbehar, Darjeeling, Hoogly, Howrah, Paschim Bardhaman, Paschim Medinipur and South 24 Parganas.

<sup>160</sup> Between September 2019 and March 2021.

<sup>161</sup> Coochbehar, Darjeeling, Howrah, Paschim Bardhaman, Paschim Medinipur and South 24 Parganas.

## 4.9 Non-settlement of long term lease

**The L&LR RR&R Department failed to settle 67 cases of long-term leases involving 141.91 acres of land with the unauthorised occupants within the prescribed time limit; Revenue of ₹ 51.75 crore (*salami* ₹ 50.51 crore and rent ₹ 1.24 crore) was realisable in these cases.**

Rule 238 of the West Bengal Land & Land Reforms (WBL&LR) Manual, 1991 provides that Government land remaining in the possession of a person(s), though unauthorisedly, may be offered to such person(s) on long term settlement for non-agricultural purpose on realisation of rent and *salami*<sup>162</sup> at the prescribed rates. Further, rule 225 of the Manual prescribes that the procedure of long term settlement (LTS) should be completed by the Department within five months from the date of its initiation.

Audit checked<sup>163</sup> 800 out of 2,736 case records relating to LTS cases in eight test checked District Land and Land Reforms Offices (DL&LROs)<sup>164</sup>. It was found that 141.91 acres of land was under unauthorised occupation in 67 cases. The occupants had applied between December 2000 and February 2019<sup>165</sup> for long term settlement of the land for non-agricultural purposes. It was observed that:

- In 46 cases, the proposals for long term lease were not forwarded by the concerned DL&LROs<sup>166</sup> for approval to the Land and Land Reforms Refugee Relief and Rehabilitation (L&LR RR& R) Department, involving ₹ 32.53 crore, on account of realisation of rent and *salami*.
- In the remaining 21 cases involving ₹ 19.22 crore, proposals were pending with the L&LR RR& R Department from January 2015 to December 2020.

Thus, the L&LR RR&R Department failed to settle the land through lease agreement with the unauthorised occupants within the prescribed time limit. Audit calculated that revenue of ₹ 51.75 crore<sup>167</sup> (*salami* ₹ 50.51 crore and rent ₹ 1.24 crore) was realisable from such unauthorised occupants.

No specific reasons, however, were found on record for delay in finalisation of long term lease cases.

Six<sup>168</sup> out of eight test checked DL&LROs accepted the audit observations in 62 cases involving ₹ 49.56 crore. Report on finalisation of the leases was, however, not furnished. In the remaining five cases, the DL&LROs did not furnish any specific reply (July 2021).

<sup>162</sup> *Salami* means the lump sum amount payable by the lessee in the case of settlement of Government land.

<sup>163</sup> Between December 2019 and March 2021

<sup>164</sup> Coochbehar, Darjeeling, Howrah, Hooghly, Murshidabad, Paschim Bardhman, Paschim Medinipur and Purba Medinipur

<sup>165</sup> In four cases, the process of LTS was found to have been initiated; however, the date of application for LTS was not available in case records.

<sup>166</sup> Coochbehar, Darjeeling, Howrah, Hooghly, Paschim Medinipur and Purba Medinipur.

<sup>167</sup> In the absence of the current market value, the realisable revenue was calculated based upon the old figures noted in departmental records.

<sup>168</sup> Coochbehar, Darjeeling, Howrah, Paschim Bardhman, Paschim Medinipur and Purba Medinipur.



The matter was reported to the State Government between January 2020 and May 2021. Their reply was awaited (October 2021).

#### 4.10 Non-renewal of long term lease

**In nine cases, lease rent of ₹ 64.15 lakh was not realised due to inaction of the Department to renew expired leases.**

Rule 219 of the West Bengal Land & Land Reforms Manual, 1991 provides that a Long Term Lease (LTL) shall ordinarily be for a period of 30 years and on expiry of the period, the lessee shall be entitled to opt for successive renewal of the lease for the same duration. Further, rule 226(i) provides that rent shall be realised at the rate of four *per cent* of the market price of the land at the time of the renewal of the lease for industrial or commercial purposes and 15 times the annual rent previously payable or four *per cent* of the market price of the land at the time of renewal of the lease, whichever is less, for homestead or residential purposes.

Out of 826 files relating to renewal of LTL cases in seven District Land and Land Reforms Offices (DL and LROs)<sup>169</sup>, Audit test checked<sup>170</sup> 197 case records of lessees. It was observed that in nine cases, 3.57 acres of land had been settled on long term basis between April 1963 and January 1989. The period of leases expired between April 1993 and April 2018. Though the occupants had applied between December 1992 and May 2018 for renewal of LTL, it was observed that:

- In four cases involving ₹ 56.65 lakh, the proposal for renewal of the leases were pending with the Land and Land Reforms Refugee Relief and Rehabilitation (L&LR RR&R) Department from March 2011 to April 2021; and
- In remaining five cases involving ₹ 7.50 lakh, the proposals (received between November 2012 to November 2019) for renewal of leases were not forwarded by the concerned DL&LROs to the L&LR RR&R Department.

Thus, in absence of any action on the expired leases by the L&LR RR&R Department, the leases were not renewed. As a result, rent of ₹ 64.15 lakh could not be levied and realised.

After this was pointed out, six DL&LROs<sup>171</sup> accepted (between December 2019 and February 2021) the audit observations in eight cases involving ₹ 54.92 lakh. Report on finalisation of renewal of the leases was, however, not furnished.

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<sup>169</sup> Coochbehar, Darjeeling, Hoogly, Murshidabad, Nadia, Paschim Medinipur and Purba Medinipur.

<sup>170</sup> Between December 2019 and March 2021.

<sup>171</sup> Coochbehar, Darjeeling, Murshidabad, Nadia, Paschim Medinipur and Purba Medinipur.

In the remaining one case, involving ₹ 9.23 lakh, DL&LRO, Hooghly did not furnish any specific reply (July 2021).

The matter was reported to the Government in August 2021. Reply was awaited (October 2021).

**KOLKATA**

**The**

**(REENA SAHA)**

**Principal Accountant General**

**(Audit-II)**

**West Bengal**

**Countersigned**

**NEW DELHI**

**The**

**(GIRISH CHANDRA MURMU)**

**Comptroller and Auditor General of India**



# Appendices



## Appendices

### Appendix –1

#### Chapter –I (Overview of Audit)

*(Refer paragraph - 1.1, Page-1)*

#### Statement of list of Departments as of 31 March 2020

**{Under audit jurisdiction of O/o the Principal Accountant General  
(Audit-II) West Bengal}**

Sl. No.	Name of the Department
1.	Disaster Management and Civil Defence
2.	Environment
3.	Fire & Emergency Services
4.	Forest
5.	Governor's Secretariat
6.	Housing
7.	Industry, Commerce and Enterprises
8.	Information & Cultural Affairs
9.	Information Technology & Electronics
10.	Land & Land Reforms and Refugee Relief & Rehabilitation
11.	Legislative Assembly Secretariat
12.	Micro, Small & Medium Enterprises and Textiles
13.	Non-Conventional and Renewable Energy Sources
14.	Parliamentary Affairs
15.	Personnel & Administrative Reforms and e-Governance
16.	Power
17.	Public Enterprises and Industrial Reconstruction
18.	Public Health Engineering
19.	Public Works
20.	Science and Technology and Biotechnology
21.	Tourism
22.	Transport
23.	Urban Development and Municipal affairs

**Appendix –2**

*(Refer paragraph - 1.2, Page-1)*

**Statement of list of Autonomous Bodies as of 31 March 2020**

**{Under audit jurisdiction of O/o Principal Accountant General (Audit-II)  
West Bengal}**

Sl no.	Department	Name of the Autonomous Bodies
1.	Environment	(i) East Kolkata Wetland Management Authority
		(ii) Institute of Environmental Studies and Wetland Management
		(iii) West Bengal Pollution Control Board
		(iv) West Bengal Bio-Diversity Board
2.	Forest	(v) Compensatory Afforestation Fund Management and Planning Authority
		(vi) West Bengal State Forest Development Agency
3.	Housing	(vii) West Bengal Housing Board
4.	Information & Cultural Affairs	(viii) Paschimbanga Bangla Academy
		(ix) Folk & Tribal Centre
		(x) Roopkala Kendra
		(xi) Minerva Natya Sanskriti Charcha Kendra
		(xii) Shishu Kishore Academy
		(xiii) West Bengal Heritage Commission
		(xiv) Centre for Archaeological Studies & Training, Eastern India
5.	Micro, Small & Medium Enterprises and Textiles	(xv) West Bengal State Export Promotion Society
		(xvi) West Bengal Khadi & Village Industries Board
6.	Power & Non-Conventional Energy Sources	(xvii) West Bengal Renewable Energy Development Agency
		(xviii) West Bengal Electricity Regulatory Commission
7.	Public Works	(xix) Commissioners for the Rabindra Setu
8.	Science and Technology and Biotechnology	(xx) West Bengal State Council of Science & Technology
9.	Tourism	(xxi) Food Craft Institute
10.	Transport	(xxii) Hooghly River Bridge Commissioners
11.	Urban Development and Municipal affairs	(xxiii) Digha-Sankarpur Development Authority
		(xxiv) Midnapore Kharagpur Development Authority
		(xxv) West Bengal State NGRBA (National Ganga River Basin Authority) Programme Management Group
		(xxvi) Haldia Development Authority
		(xxvii) Jaigaon Development Officer Authority
		(xxviii) Sriniketan-Santiniketan Development Authority
		(xxix) New-Town Kolkata Development Authority
		(xxx) Siliguri Jalpaiguri Development Authority
		(xxxi) Kolkata Metropolitan Development Authority

		(xxxii) Burdwan Development Authority (xxxiii) Asansol Durgapur Development Authority (xxxiv) West Bengal State Urban Development (xxxv) Agency Tarakeswar Development Authority (xxxvi) Changrabandha Development Authority (xxxvii) Gangasagar Bakkhali Development Authority (xxxviii) Bakreswar Development Authority (xxxix) Patharchapuri Development Authority (xl) Gajoldoba Development Authority (xli) Mukutmanipur Development Authority (xlii) Tarapith Rampurhat Development Authority (xliii) Furfura Sharif Development Authority
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**Appendix – 3**

**(Refer paragraph - 1.5, Page-3)**

**Status of Tabling of Audit Reports**

<b>Audit Report for the Year</b>	<b>Number of the Audit Report</b>	<b>Title of the Audit Report</b>	<b>Date on which the Audit Report was sent to the Government</b>	<b>Date on which the Audit Report was tabled in the State Assembly</b>	<b>Time taken for laying in the Assembly</b>
2014-15	Report No. 5 of 2015	Audit Report on Revenue Sector for the year 2014-15	08 February 2016	04 July 2016	Five Months
	Report No. 2 of 2016	Audit Report on Public Sector Undertakings for the year 2014-15	02 March 2016	04 July 2016	Four Months
	Report No. 1 of 2016	Audit Report on Economic Sector for the year 2014-15	03 March 2016	04 July 2016	
2015-16	Report No. 5 of 2016	Audit Report on Revenue Sector for the year 2015-16	06 February 2017	07 March 2018	1 year and 2 Months
	Report No. 1 of 2017	Audit Report on Economic Sector for the year 2015-16	27 February 2017	07 March 2018	1 Year and 1 Month
	Report No. 2 of 2017	Audit Report on Public Sector Undertakings for the year 2015-16	27 February 2017	07 March 2018	
2016-17	Report No. 2 of 2018	Audit Report on Public Sector Undertakings for the year 2016-17	17 May 2018	11 July 2019	1 year and 2 Months
	Report No. 3 of 2018	Audit Report on Revenue Sector for the year 2016-17	29 May 2018	11 July 2019	1 year and 2 Months
	Report No. 4 of 2018	Audit Report on Economic Sector for the year 2016-17	20 June 2018	11 July 2019	1 year and 1 Month
	Report No. 5 of 2018	Performance Audit of Pollution by Industries, for the year 2016-17	20 June 2018	11 July 2019	
2017-18	Report No. 3 of 2020	Audit Report on Public Sector Undertakings for the year 2017-18	13 August 2020	Not tabled	-
	Report No. 2 of 2019	Performance Audit of Flood Control Programme in West Bengal , for the year 2017-18	03 February 2020		-
	Report No. 2 of 2020	Audit Report on Revenue Sector for the year 2017-18	11 August 2020		-
	Report No. 1 of 2019	Audit Report on Economic Sector for the year 2017-18	20 December 2019		-
2018-19	Report No. 2 of 2021	Audit Report on Economic Sector, Revenue Sector and Public Sector Undertakings for the year 2018-19	06 May 2021	Not tabled	-

## Appendix – 4

(Refer paragraph - 1.5, Page-3)

## Statement of Pending Replies to Audit paragraphs/ reviews

Sl. no.	Name of the Department	Number of paras/ reviews involved in reports for the years				
		from 2006-07 to 2013-14	2014-15	2015-16	2016-17	Total
1.	Disaster Management and Civil Defence	2	1	-	-	3
2.	Environment			1	1 (SAR)*	2
3.	Fire & Emergency Services	1	-	-	-	1
4.	Forest	3	-	-	-	3
5.	Housing	6	-	1	-	7
6.	Industry, Commerce and Enterprises	3	-	-	-	3
7.	Information & Cultural Affairs	6	-	-	-	6
8.	Land & Land Reforms and Refugee Relief & Rehabilitation	106	25	8	4	143
9.	Micro, Small & Medium Enterprises and Textiles	-	-	-	2	2
10.	Power & Non-Conventional Energy Sources	3	-	-	1	4
11.	Public Health Engineering	6	1	-	1	8
12.	Public Works	9	4	1	6	20
13.	Science and Technology and Biotechnology	-	1	-	-	1
14.	Transport	86	11	8	13	118
15.	Urban Development and Municipal affairs	26	4	-	6	36
	<b>Total</b>	<b>257</b>	<b>47</b>	<b>19</b>	<b>34</b>	<b>357</b>

\* Standalone Audit Report

**Appendix – 5**

*(Refer paragraph 1.5, Page-3)*

**Department-wise Statement of outstanding Inspection Reports and Paragraphs**

Sl. No.	Name of the Department	number of IRs/ Paragraphs pending as of 31 July 2021	
		IRs	Paragraphs
1.	Disaster Management and Civil Defence	105	392
2.	Environment	7	14
3.	Fire & Emergency Services	8	25
4.	Forest	10	38
5.	Housing	33	79
6.	Industry, Commerce and Enterprises	3	10
7.	Information & Cultural Affairs	24	69
8.	Information Technology & Electronics	5	13
9.	Land & Land Reforms and Refugee Relief & Rehabilitation	400	2,767
10.	Micro, Small & Medium Enterprises and Textiles	4	11
11.	Parliamentary Affairs	3	11
12.	Personnel & Administrative Reforms and e-Governance	7	27
13.	Power & Non-Conventional Energy Sources	254	848
14.	Public Health Engineering	33	106
15.	Public Works	39	132
16.	Science and Technology and Biotechnology	9	19
17.	Tourism	2	9
18.	Transport	102	409
19.	Urban Development and Municipal affairs	132	472
	<b>Total</b>	<b>1,180</b>	<b>5,451</b>

## Appendix-6

(Refer paragraph 2.1.5, 2.2.2, 2.2.4, Pages-6, 7 and 8)

Statement showing particulars of up to date capital, budgetary outgo, loans given out of budget and loans outstanding as on 31 March 2020 in respect of Government Companies and Statutory Corporation

(Figures in col no 5(a) to 6(d) are ₹ in crore)

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$			Loans** outstanding as at the close of 2019-20			Manpower (No. of employees as on 31.03.2020)	
				State	Central	Others	State	Central	Others		Total
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
<b>A. Working Government companies</b>											
<b>AGRICULTURE AND ALLIED</b>											
1	The State Fisheries Development Corporation Limited	Fisheries	March 1980	2.00	0.00	0.00	2.00	0.00	0.00	0.30	232
2	West Bengal Agro Industries Corporation Limited	Water Resources Investigation & Development	August 1968	8.41	0.00	0.00	8.41	0.00	0.00	2.00	322
3	West Bengal State Minor Irrigation Corporation Limited	Water Resources Investigation & Development	January 1974	11.65	0.00	0.00	11.65	0.00	0.00	0.00	153
4	The West Bengal Livestock Development Corporation Limited	Animal Resources Development	April 1974	15.38	0.25	0.00	15.63	0.57	0.00	0.57	494

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)	
				State 5 (a)	Central 5 (b)	Others 5 (c)	Total 5 (d)	State 6 (a)	Central 6 (b)	Others 6 (c)	Total 6 (d)		
(1)	(2)	(3)	(4)										(7)
5	West Bengal Forest Development Corporation Limited	Forest	July 1974	5.53	0.70	0.00	6.23	0.00	0.00	0.00	0.00	0.00	770
6	West Bengal State Food Processing and Horticulture Development Corporation Limited	Food Processing and Horticulture	April 1986	0.97	0.00	0.00	0.97	2.21	0.00	0.00	2.21	2.21	29
7	West Bengal State Seed Corporation Limited	Agriculture	November 1980	2.50	0.00	0.00	2.50	0.00	0.00	0.00	0.00	0.00	161
8	Paschimanga Agri Marketing Corporation Limited	Agricultural Marketing	November 2011	4.62	0.00	0.00	4.62	29.00	0.00	0.00	29.00	29.00	7
9	Banglar Dairy Limited	Animal Resources Development	November 2015	10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	
10	West Bengal Biotech Development Corporation Limited	Bio-technology and Science & technology	June 2009	0.05	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0
<b>Sector wise Total</b>				<b>61.11</b>	<b>0.95</b>	<b>0.00</b>	<b>62.06</b>	<b>34.08</b>	<b>0.00</b>	<b>0.00</b>	<b>34.08</b>	<b>34.08</b>	<b>2,168</b>
<b>FINANCING</b>													
11	West Bengal Industrial Development Corporation Limited (WBIDC Limited)	Industry, Commerce & Enterprises	January 1967	435.93	0.00	0.00	435.93	108.18	0.00	0.00	108.18	108.18	87
12	West Bengal Handicrafts Development Corporation Limited	Micro Small & Medium Enterprises and Textiles	June 1976	45.82	0.78	0.00	46.60	1.50	1.00	0.00	2.50	2.50	84

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
13	West Bengal Film Development Corporation Limited	Information & Cultural Affairs	July 1980	5.20	0.00	0.00	5.20	39.66	0.00	0.00	39.66	6
14	West Bengal Women Development Undertaking	Women & Child Development and Social Welfare	August 1993	0.10	0.00	0.00	0.10	0.00	0.00	0.00	0.00	12
15	West Bengal Infrastructure Development Finance Corporation Limited	Finance	May 1997	225.30	0.00	0.00	225.30	0.00	0.00	2,584.29	2,584.29	39
16	Webe! Venture Capital Limited (Subsidiary of WBEIDC Limited)	Information Technology	February 2007	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00	1
<b>Sector wise Total</b>				<b>712.35</b>	<b>0.78</b>	<b>0.05</b>	<b>713.18</b>	<b>149.34</b>	<b>1.00</b>	<b>2,584.29</b>	<b>2,734.63</b>	<b>229</b>
<b>INFRASTRUCTURE</b>												
17	The West Bengal Small Industries Development Corporation Limited (WBSIDC Limited)	Micro & Small Scale Enterprises and Textiles	March 1961	188.14	0.00	0.00	188.14	12.79	0.00	0.00	12.79	133
18	West Bengal Electronic Industry Development Corporation Limited (WBEIDC Limited)	Information Technology	February 1974	235.67	0.00	0.00	235.67	22.10	0.00	0.00	22.10	132
19	West Bengal Police Housing & Infrastructure Development Corporation Limited	Home & Hill Affairs	March 1993	10.40	0.00	0.00	10.40	0.00	0.00	0.00	0.00	133

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)	
				State 5 (a)	Central 5 (b)	Others 5 (c)	Total 5 (d)	State 6 (a)	Central 6 (b)	Others 6 (c)	Total 6 (d)		
(1)	(2)	(3)	(4)										(7)
20	West Bengal Transport Infrastructure Development Corporation Limited	Transport	September 1996	7.60	0.00	0.00	7.60	0.00	0.00	0.00	0.00	0.00	91
21	West Bengal Housing Infrastructure Development Corporation Limited (WBHIDCO Limited)	Urban Development & Municipal Affairs	April 1999	258.00	0.00	1.65	259.65	0.00	0.00	0.00	0.00	0.00	465
22	New Town Telecom Infrastructure Development Company Limited (Subsidiary of WBHIDCO Limited)	Urban Development & Municipal Affairs	May 2006	0.00	0.00	1.05	1.05	0.00	0.00	1.25	1.25	1.25	9
23	Sundarban Infrastructure Development Corporation Limited	Sundarban Affairs	May 2007	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	6
24	Mackintosh Burn Limited	Public Works	April 1913	0.16	0.00	0.15	0.31	1.57	0.00	0.03	1.60	1.60	565
25	West Bengal Highway Development Corporation Limited	Public Works	April 2012	1,213.24	0.00	0.00	1,213.24	50.00	0.00	0.00	50.00	50.00	33
26	Webel Electronics Infrastructure Development limited	Information Technology & Electronics	May 2015	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0.00	0
27	Newtown Kolkata Green Smart City Corporation Limited	Urban Development & Municipal Affairs	October-2018	0.45	0.00	0.55	1.00	0.00	0.00	0.00	0.00	0.00	0
<b>Sector wise Total</b>				<b>1,914.66</b>	<b>0.00</b>	<b>3.45</b>	<b>1,918.11</b>	<b>86.46</b>	<b>0.00</b>	<b>1.28</b>	<b>87.74</b>	<b>1,567</b>	

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capitals\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
				5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
<b>MANUFACTURING</b>												
28	Westinghouse Saxby Farmer Limited	Public Works	May 1923	7.74	0.00	0.00	7.74	79.26	0.00	13.00	92.26	316
29	Britannia Engineering Limited	Public Works	April 1986	11.29	0.00	0.00	11.29	56.82	0.00	0.00	56.82	292
30	Durgapur Chemicals Limited	Industry, Commerce & Enterprises	July 1963	236.10	0.00	0.00	236.10	3.00	0.00	0.00	3.00	202
31	West Bengal Mineral Development and Trading Corporation Limited	Industry, Commerce & Enterprises	February 1973	4.43	0.00	0.00	4.43	101.36	0.00	0.00	101.36	192
32	West Bengal Pharmaceutical and Phytochemical Development Corporation Limited	Industry, Commerce & Enterprises	March 1974	24.56	0.00	0.00	24.56	11.44	0.00	0.00	11.44	42
33	WEBFIL Limited	Industry, Commerce & Enterprises	May 1979	4.22	0.29	6.06	10.57	7.58	0.00	2.95	10.53	99
34	Greater Calcutta Gas Supply Corporation Limited	Industry, Commerce & Enterprises	December 1987	41.15	0.00	0.00	41.15	197.40	0.00	0.00	197.40	225
35	The Shalimar Works (1980) Limited	Transport	January 1981	1.26	0.00	0.00	1.26	143.74	0.00	10.98	154.72	156
36	Mayurakshi Cotton Mills (1990) Limited	Micro & Small Scale Enterprises and Textiles	February 1990	10.75	0.00	0.00	10.75	43.76	0.00	0.00	43.76	126



Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
37	The Electro Medical and Allied Industries Limited	Health & Family Welfare	June 1961	16.40	0.00	0.00	16.40	36.87	0.00	0.00	36.87	24
	<b>Sector wise Total</b>			<b>357.90</b>	<b>0.29</b>	<b>6.06</b>	<b>364.25</b>	<b>681.23</b>	<b>0.00</b>	<b>26.93</b>	<b>708.16</b>	<b>1,674</b>
<b>POWER</b>												
38	The Durgapur Projects Limited	Power & Non-Conventional Energy Sources	September 1961	1,815.29	0.00	0.00	1,815.29	391.69	0.00	2,374.87	2,766.56	1,927
39	The West Bengal Power Development Corporation Limited	Power & Non-Conventional Energy Sources	July 1985	7,579.26	0.00	0.00	7,579.26	193.54	0.00	5,453.41	5,646.95	4,470
40	West Bengal State Electricity Distribution Company Limited	Power & Non-Conventional Energy Sources	February 2007	2,365.89	0.00	0.00	2,365.89	98.80	0.00	8,100.94	8,199.74	13,438
41	West Bengal State Electricity Transmission Company Limited	Power & Non-Conventional Energy Sources	February 2007	1,105.52	0.00	0.00	1,105.52	551.13	0.00	2,391.58	2,942.71	2,420
42	Bengal Birbhum Coalfields Limited	Power & Non-Conventional Energy Sources	September 2015	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00	1

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capitals\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
43	West Bengal Green Energy Development Corporation Limited	Power & Non-Conventional Energy Sources	December 2007	0.00	0.00	4.99	4.99	0.00	0.00	0.00	0.00	7
<b>Sector wise Total</b>				<b>12,865.96</b>	<b>0.00</b>	<b>5.09</b>	<b>12,871.05</b>	<b>1,235.16</b>	<b>0.00</b>	<b>18,320.80</b>	<b>19,555.96</b>	<b>22,263</b>
<b>SERVICE</b>												
44	Biswa Bangla Marketing Corporation Limited	Micro & Small Scale Enterprises and Textiles	December 2014	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	11
45	Webel Technology Limited	PAR & e-Governance	February 2001	1.20	0.00	0.00	1.20	0.00	0.00	0.00	0.00	72
46	West Bengal Transport Corporation limited (Formerly The Calcutta Tramways Company (1978) Limited)	Transport	October 1982	20.40	0.00	0.00	20.40	341.26	0.00	0.00	341.26	4,154
47	West Bengal Surface Transport Corporation Limited	Transport	February 1989	1.01	0.00	0.00	1.01	343.26	0.00	0.00	343.26	808
48	West Bengal Trade Promotion Organisation (Subsidiary of WBIDC Limited)	Industries, Commerce and Enterprises	November 2003	0.00	0.00	0.60	0.60	0.00	0.00	0.00	0.00	6
49	West Bengal Essential Commodities Supply Corporation Limited	Food & Supplies	March 1974	1.08	0.00	0.00	1.08	96.00	0.00	0.00	96.00	98

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
50	West Bengal Tourism Development Corporation Limited	Tourism	April 1974	18.00	0.00	0.00	18.00	4.38	0.00	0.70	5.08	588
51	West Bengal Medical Services Corporation Limited	Health and Family Welfare	June 2008	10.00	0.00	0.00	10.00	95.00	0.00	0.00	95.00	179
52	West Bengal Swarojgar Corporation Limited	Self Help Group and Self Employment	November 2009	130.00	0.00	0.00	130.00	0.00	0.00	0.00	0.00	126
53	Webel Electronics Manufacturing Clusters Limited	Information Technology & Electronics	April 2015	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00	0
54	West Bengal State Beverages Corporation Limited	Finance	January 2017	20.00	0.00	0.00	20.00	3.00	0.00	0.00	3.00	469
<b>Sector wise Total</b>				<b>201.70</b>	<b>0.00</b>	<b>0.65</b>	<b>202.35</b>	<b>882.90</b>	<b>0.00</b>	<b>0.70</b>	<b>883.60</b>	<b>6,511</b>
<b>MISCELLANEOUS</b>												
55	Basumati Corporation Limited	Information and Culture Affairs	February 1975	0.10	0.00	0.00	0.10	75.67	0.00	0.00	75.67	76
56	Silpabarta Printing Press Limited (subsidiary of WBSIDC Limited)	Micro & Small Scale Enterprises and Textiles	September 1982	0.18	0.00	0.71	0.89	3.45	0.00	0.00	3.45	26

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)		
				State 5 (a)	Central 5 (b)	Others 5 (c)	Total 5 (d)	State 6 (a)	Central 6 (b)	Others 6 (c)	Total 6 (d)			
(1)	(2)	(3)	(4)										(7)	
57	Saraswaty Press Limited	Industries, Commerce and Enterprises	January 1987	5.50	0.00	0.00	5.50	0.00	0.00	0.00	0.00	0.00	0.00	272
58	West Bengal Text Book Corporation (P) Limited (subsidiary of Saraswaty Press Limited)	Industries, Commerce and Enterprises	December 2006	0.00	0.00	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0
	<b>Sector wise Total</b>			5.78	0.00	0.81	6.59	79.12	0.00	0.00	0.00	79.12	374	
	<b>Total- A (All sector wise Government companies)</b>			16,119.46	2.02	16.11	16,137.59	3,148.29	1.00	20,934.00	24,083.29	34,786		
<b>B.</b>	<b>Working Statutory Corporations</b>													
	<b>AGRICULTURE AND ALLIED</b>													
1	West Bengal State Warehousing Corporation	Food & Supplies	February 1958	3.81	0.00	3.80	7.61	0.00	0.00	0.00	0.00	0.00	185	
	<b>Sector wise Total</b>			3.81	0.00	3.80	7.61	0.00	0.00	0.00	0.00	0.00	185	
	<b>FINANCING</b>													
2	West Bengal Financial Corporation	Finance	March 1954	275.35	0.00	0.00	275.35	0.76	0.00	543.32	544.08	112		
3	West Bengal Scheduled Castes, Scheduled Tribes and Other Backward Classes Development & Finance Corporation	Backward Classes Welfare	September 2017	197.65	127.70	0.00	325.35	0.00	109.59	0.00	109.59	153		

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
4	West Bengal Minorities Development & Finance Corporation	Minorities Development & Madrasah Education	January 1996	150.00	0.00	0.00	150.00	0.00	0.00	536.96	536.96	64
	<b>Sector wise Total</b>			<b>623.00</b>	<b>127.70</b>	<b>0.00</b>	<b>750.70</b>	<b>0.76</b>	<b>109.59</b>	<b>1,080.28</b>	<b>1,190.63</b>	<b>329</b>
	<b>INFRASTRUCTURE</b>											
5	West Bengal Industrial Infrastructure Development Corporation	Industries, Commerce and Enterprises	November 1973	0.00	0.00	0.00	0.00	96.34	0.00	0.00	96.34	78
	<b>Sector wise Total</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>96.34</b>	<b>0.00</b>	<b>0.00</b>	<b>96.34</b>	<b>78</b>
	<b>SERVICE</b>											
6	North Bengal State Transport Corporation	Transport	April 1960	5.87	4.83	0.00	10.70	464.37	0.00	2.72	467.09	3,122
7	Calcutta State Transport Corporation	Transport	June 1960	8.62	1.00	0.00	9.62	531.84	0.16	53.97	585.97	3,986
8	South Bengal State Transport Corporation	Transport	August 1963	11.01	0.00	0.00	11.01	385.96	0.00	0.00	385.96	2,095
	<b>Sector wise Total</b>			<b>25.50</b>	<b>5.83</b>	<b>0.00</b>	<b>31.33</b>	<b>1,382.17</b>	<b>0.16</b>	<b>56.69</b>	<b>1,439.02</b>	<b>9,203</b>
	<b>Total - B (All sector-wise Statutory corporations)</b>											
				<b>652.31</b>	<b>133.53</b>	<b>3.80</b>	<b>789.64</b>	<b>1,479.27</b>	<b>109.75</b>	<b>1,136.97</b>	<b>2,725.99</b>	<b>9,795</b>
	<b>Grand Total (A+B)</b>											
				<b>16,771.77</b>	<b>135.55</b>	<b>19.91</b>	<b>16,927.23</b>	<b>4,627.56</b>	<b>110.75</b>	<b>22,070.97</b>	<b>26,809.28</b>	<b>44,581</b>

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capitals\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
<b>C. Inactive Government companies</b>												
<b>AGRICULTURE AND ALLIED</b>												
1	West Bengal Tea Development Corporation Limited	Industries, Commerce and Enterprises	August 1976	47.22	0.00	0.00	47.22	107.45	0.20	0.08	107.73	11
<b>Sector wise Total</b>				<b>47.22</b>	<b>0.00</b>	<b>0.00</b>	<b>47.22</b>	<b>107.45</b>	<b>0.20</b>	<b>0.08</b>	<b>107.73</b>	<b>11</b>
<b>FINANCING</b>												
2	West Bengal Handloom and Power loom Development Corporation Limited	Micro & Small Scale Enterprises and Textiles	September 1973	43.01	3.73	0.02	46.76	5.46	0.00	0.00	5.46	9
<b>Sector wise Total</b>				<b>43.01</b>	<b>3.73</b>	<b>0.02</b>	<b>46.76</b>	<b>5.46</b>	<b>0.00</b>	<b>0.00</b>	<b>5.46</b>	<b>9</b>
<b>MANUFACTURING</b>												
3	Neo Pipes and Tubes Company Limited	Industry, Commerce & Enterprises	January 1983	2.20	0.00	0.00	2.20	5.15	0.00	0.00	5.15	66
4	National Iron and Steel Company (1984) Limited	Industry, Commerce & Enterprises	July 1986	12.00	0.00	0.00	12.00	7.67	0.00	0.00	7.67	52
5	Eastern Distilleries and Chemicals Limited	Finance	April 1986	0.20	0.00	0.00	0.20	28.37	0.00	0.00	28.37	32
6	The Kalyani Spinning Mills Limited	Micro & Small Scale Enterprises and Textiles	January 1960	14.63	0.00	0.00	14.63	494.99	0.00	0.00	494.99	876

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)		
				State 5 (a)	Central 5 (b)	Others 5 (c)	Total 5 (d)	State 6 (a)	Central 6 (b)	Others 6 (c)	Total 6 (d)			
(1)	(2)	(3)	(4)										(7)	
7	The West Dinajpur Spinning Mills Limited	Micro & Small Scale Enterprises and Textiles	August 1975	12.75	0.00	0.00	12.75	201.88	0.00	0.00	201.88	0.00	0.00	339
8	West Bengal Ceramic Development Corporation Limited	Micro & Small Scale Enterprises and Textiles	March 1976	2.93	0.00	0.00	2.93	26.00	0.00	0.00	26.00	0.00	0.00	1
9	The West Bengal State Leather Industries Development Corporation Limited	Micro & Small Scale Enterprises and Textiles	March 1976	3.95	0.00	0.00	3.95	2.34	0.00	0.00	2.34	0.00	0.00	3
10	The West Bengal Projects Limited (subsidiary of WBSIDC Limited)	Micro & Small Scale Enterprises and Textiles	February 1984	0.78	0.00	1.11	1.89	0.00	0.00	0.00	0.00	0.00	0.00	3
11	Pulver Ash Projects Limited (subsidiary of WBSIDC Limited)	Micro & Small Scale Enterprises and Textiles	August 1984	0.00	0.00	2.15	2.15	0.00	0.00	13.00	13.00	0.00	0.00	1
12	The Infusions (India) Limited	Industries, Commerce and Enterprises	December 1976	1.02	0.00	0.02	1.04	15.31	0.00	0.00	15.31	0.00	0.00	23

Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
13	West Bengal Sugar Industries Development Corporation Limited	Industries, Commerce and Enterprises	May 1973	15.17	0.00	0.07	15.24	47.01	0.00	0.00	47.01	4
14	West Bengal Industrial Land Holding Private Limited (subsidiary of WBIDC Ltd)	Industries, Commerce and Enterprises	October 2006	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0
15	The Carter Pooler Engineering Company Limited	Public Enterprises	June 1987	0.95	0.00	0.00	0.95	20.69	0.00	0.00	20.69	0
16	West Bengal Plywood and Allied Products Limited	Public Enterprises	October 1989	0.09	0.00	0.00	0.09	52.77	0.00	0.00	52.77	0
17	Krishna Silicates and Glass (1987) Limited	Public Enterprises	October 1998	0.30	0.00	0.00	0.30	98.33	0.00	0.00	98.33	1
18	Lily Products Limited	Industries, Commerce and Enterprises	April 2004	0.01	0.00	0.00	0.01	67.22	0.00	0.42	67.64	57
Sector wise total				66.98	0.00	3.36	70.34	1,067.73	0.00	13.42	1,081.15	1,458
Total C (All sector wise non working Government companies)				157.21	3.73	3.38	164.32	1,180.64	0.20	13.50	1,194.34	1,478



Sl. No.	Sector & Name of the Company	Name of the Department	Month & year of Incorporation	Paid Up Capital\$				Loans** outstanding as at the close of 2019-20				Manpower (No. of employees as on 31.03.2020)
				State	Central	Others	Total	State	Central	Others	Total	
(1)	(2)	(3)	(4)	5 (a)	5 (b)	5 (c)	5 (d)	6 (a)	6 (b)	6 (c)	6 (d)	(7)
<b>D. Inactive Statutory corporations</b>												
<b>SERVICE</b>												
19	Great Eastern Hotel Authority	Tourism	July 1980	0.00	0.00	0.00	0.00	0.00	0.00	16.34	16.34	3
	<b>Sector wise total</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>16.34</b>	<b>16.34</b>	<b>3</b>
	<b>Total D (All sector wise Inactive Statutory Corporations)</b>			<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>16.34</b>	<b>16.34</b>	<b>3</b>
	<b>Grand total(C+D)</b>			<b>157.21</b>	<b>3.73</b>	<b>3.38</b>	<b>164.32</b>	<b>1,180.64</b>	<b>0.20</b>	<b>29.84</b>	<b>1,210.68</b>	<b>1,481</b>
	<b>Grand total(A+B+C+D)</b>			<b>16,928.98</b>	<b>139.28</b>	<b>23.29</b>	<b>17,091.55</b>	<b>5,808.20</b>	<b>110.95</b>	<b>22,100.81</b>	<b>28,019.96</b>	<b>46,062</b>
	<b>Non-power PSEs</b>			<b>4,063.02</b>	<b>139.28</b>	<b>18.20</b>	<b>4,220.50</b>	<b>4,573.04</b>	<b>110.95</b>	<b>3,780.01</b>	<b>8,464.00</b>	<b>23,799</b>

\$ Paid-up capital includes share application money.

\*\* Loans outstanding at the close of 2018-19 represent Long-term Loans only.

New Town Kolkata Green Smart City Corporation Limited

## Appendix-7

(Referred to in paragraphs 2.3.1, 2.3.1.1, 2.3.1.2, 2.3.2, 2.3.2.1, 2.3.2.2, 2.3.2.3, 2.4.2.1, 2.9.3, Pages-13, 14, 15, 17, 22 and 33)

Summarised financial position and working results of Government Companies and Statutory Corporations as per their latest finalised statements/ accounts for 2019-20 (as on 30 Sep 2020)

(Figures in Col. (5) to (14) are ₹ in crore)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) /Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
	<b>POWER PSEs</b>													
1	The Durgapur Projects Limited	2018-19	2019-20	1,815.29	3,065.79	337.04	0.00	(-) 3,171.30	1,085.47	(-) 166.58	(-) 1,356.01	1,709.78	170.46	0.00
2	The West Bengal Power Development Corporation Limited	2018-19	2019-20	6,817.53	6,149.99	1,061.81	0.00	1,284.41	9,853.68	99.61	8,101.94	14,251.93	1,188.78	8.34
3	West Bengal State Electricity Distribution Company Limited	2019-20	2020-21	2,365.89	6,525.48	1,456.09	0.00	3.43	22,205.94	567.37	2,369.32	8,894.80	2,045.90	23.00
4	West Bengal State Electricity Transmission Company Limited	2019-20	2020-21	1,105.52	2,942.71	272.35	3,466.68	0.00	1,408.17	386.38	4,572.20	7,514.91	740.53	9.85

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	
5	West Bengal Green Energy Development Corporation Limited	2018-19	2019-20	4.99	5.18	0.02	0.00	(-) 9.99	4.91	1.13	(-) 5.00	0.18	1.15	638.89	
6	Bengal Birbhum Coalfields Limited	2018-19	2019-20	0.10	0.00	0.00	0.00	(-) 1.40	0.00	(-) 0.02	(-) 1.30	(-) 1.30	(-) 0.02	0.00	
	<b>Sector wise Total</b>			<b>12,109.32</b>	<b>18,689.15</b>	<b>3,127.31</b>	<b>3,466.68</b>	<b>(-) 1,894.85</b>	<b>34,558.17</b>	<b>887.89</b>	<b>13,681.15</b>	<b>32,370.30</b>	<b>4,146.80</b>	<b>12.81</b>	
	<b>NON-POWER PSEs</b>														
	<b>Working Government Companies</b>														
	<b>AGRICULTURE AND ALLIED</b>														
1	West Bengal Agro Industries Corporation Limited	2018-19	2019-20	8.41	2.00	22.32	0.00	(-) 166.58	132.87	(-) 13.32	(-) 158.17	(-) 156.17	9.00	0.00	
2	The State Fisheries Development Corporation Limited	2018-19	2020-21	2.70	2.64	0.00	0.00	1.77	24.43	2.20	4.47	7.11	2.20	30.94	
3	West Bengal Forest Development Corporation Limited	2018-19	2019-20	6.30	0.00	0.00	0.82	126.48	70.23	14.96	133.60	133.60	14.96	11.20	

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
4	West Bengal State Seed Corporation Limited	2018-19	2019-20	2.50	0.00	0.00	0.00	155.72	264.81	23.77	158.22	158.22	33.77	21.34
5	Pachimbanga Agri Marketing Corporation Limited	2018-19	2019-20	4.62	31.00	0.00	0.00	0.92	0.08	0.29	5.54	36.54	0.29	0.79
6	West Bengal State Minor Irrigation Corporation Limited	2016-17	2017-18	11.65	0.00	0.00	0.00	(-) 100.8	1.22	(-) 1.72	(-) 89.15	(-) 89.15	(-) 1.75	0.00
7	The West Bengal Livestock Development Corporation Limited	2018-19	2019-20	15.64	0.56	1.79	0.00	15.06	70.78	(-) 1.16	30.70	31.26	0.70	2.24
8	West Bengal State Food Processing and Horticulture Development Corporation Limited	2015-16	2018-19	0.97	2.33	0.30	0.00	3.03	10.47	0.63	4.00	6.33	1.46	23.06

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
9	Banglar Dairy Limited	2017-18	2018-19	10.00	0.00	0.00	0.00	0.94	0.00	0.51	10.94	10.94	0.68	6.22
10	West Bengal Biotech Development Corporation Limited	2012-13	2016-17	0.05	0.00	0.00	0.00	(-) 3.40	0.00	(-) 1.73	(-) 3.35	(-) 3.35	(-) 1.73	0.00
<b>Sector wise Total</b>				<b>62.84</b>	<b>38.53</b>	<b>24.41</b>	<b>0.82</b>	<b>33.14</b>	<b>574.89</b>	<b>24.43</b>	<b>96.80</b>	<b>135.33</b>	<b>59.58</b>	<b>44.03</b>
<b>FINANCING</b>														
11	West Bengal Infrastructure Development Finance Corporation Limited	2018-19	2019-20	225.30	708.36	128.67	0.00	883.84	211.25	46.54	1,109.14	1,817.50	198.93	10.95
12	Webel Venture Capital Limited (Subsidiary of WBEIDC Limited)	2019-20	2020-21	0.05	4.05	0.00	0.00	0.75	0.03	(-) 0.02	0.80	4.85	0.00	0.00
13	West Bengal Handicrafts Development Corporation Limited	2018-19	2019-20	43.60	5.09	0.23	0.00	(-) 12.91	124.73	7.04	30.69	35.78	10.35	28.93

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
14	West Bengal Women Development Undertaking	2018-19	2019-20	0.10	0.00	0.00	0.00	0.75	0.63	(-) 0.10	0.85	0.85	(-) 0.10	0.00
15	West Bengal Industrial Development Corporation Limited (WBIDC Limited)	2018-19	2019-20	435.93	108.21	0.00	0.00	1,072.53	5.44	885.27	1,508.46	1,616.67	885.25	54.76
16	West Bengal Film Development Corporation Limited	2017-18	2020-21	5.20	39.66	5.45	0.00	(-) 109.26	0.00	(-) 7.37	(-) 104.06	(-) 64.40	(-) 1.90	0.00
<b>Sector wise Total</b>				<b>710.18</b>	<b>865.37</b>	<b>134.35</b>	<b>0.00</b>	<b>1,835.70</b>	<b>342.08</b>	<b>931.36</b>	<b>2,545.88</b>	<b>3,411.25</b>	<b>1,092.53</b>	<b>32.03</b>
<b>INFRASTRUCTURE</b>														
17	West Bengal Housing Infrastructure Development Corporation Limited (WBHIDCO Limited)	2017-18	2018-19	199.65	0.00	0.00	0.00	75.74	219.44	(-) 39.33	275.39	275.39	(-) 39.08	0.00

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) /Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
18	West Bengal Police Housing & Infrastructure Development Corporation Limited	2018-19	2019-20	10.40	0.00	0.00	0.00	24.16	223.33	6.98	34.56	34.56	9.77	28.27
19	New Town Telecom Infrastructure Development Company Limited (Subsidiary of WBHIDCO Limited)	2018-19	2019-20	1.05	1.25	0.22	0.00	19.61	8.46	5.32	20.66	21.91	7.59	34.64
20	Sundarban Infrastructure Development Corporation Limited	2017-18	2018-19	1.00	0.00	0.00	0.00	15.78	0.10	1.52	16.78	16.78	2.10	12.51
21	West Bengal Highway Development Corporation Limited	2018-19	2019-20	1,163.24	50.00	0.00	0.00	(-) 51.84	0.00	(-) 60.77	1,111.40	1,161.40	(-) 55.68	0.00

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
22	West Bengal Transport Infrastructure Development Corporation Limited	2018-19	2019-20	7.60	0.00	0.72	0.00	25.99	0.00	7.61	33.59	33.59	11.44	34.06
23	The West Bengal Small Industries Development Corporation Limited (WBSIDC Limited)	2017-18	2018-19	119.81	12.79	1.36	0.00	10.61	146.00	5.74	130.42	143.21	18.07	12.62
24	West Bengal Electronic Industry Development Corporation Limited (WBEIDC Limited)	2018-19	2019-20	235.67	23.92	4.01	0.00	(-) 57.34	291.30	4.74	178.33	202.25	10.33	5.11
25	Mackintosh Burn Limited	2018-19	2019-20	0.31	1.60	6.64	9.03	221.42	551.62	6.12	230.76	232.36	16.39	7.05



Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
26	New Town Kolkata Green Smart City Corporation Limited													
<b>First accounts not submitted after incorporation in October 2018.</b>														
27	Webel Electronic Infrastructure Development Limited (Subsidiary of WBEIDC)	2019-20	2020-21	0.05	0.00	0.00	0.00	(-) 0.05	0.00	(-) 0.01	0.00	0.00	(-) 0.01	0.00
	<b>Sector wise Total</b>			<b>1,738.78</b>	<b>89.56</b>	<b>12.95</b>	<b>9.03</b>	<b>284.08</b>	<b>1,440.25</b>	<b>(-) 62.08</b>	<b>2,031.89</b>	<b>2,121.45</b>	<b>(-) 19.08</b>	<b>(-) 0.90</b>
	<b>MANUFACTURING</b>													
28	Britannia Engineering Limited	2017-18	2018-19	11.29	39.52	5.88	0.00	(-) 79.73	19.59	(-) 16.54	(-) 68.44	(-) 28.92	(-) 10.66	0.00
29	Durgapur Chemicals Limited	2018-19	2019-20	236.10	5.93	0.49	0.00	(-) 213.49	69.27	(-) 16.41	22.61	28.54	(-) 15.92	0.00
30	West Bengal Mineral Development and Trading Corporation Limited	2018-19	2019-20	4.43	86.85	8.76	0.00	(-) 71.64	301.61	0.70	(-) 67.21	19.64	10.24	52.14

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) /Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
31	WEBFIL Limited	2019-20	2020-21	8.53	5.75	1.67	2.36	(-) 5.31	51.05	2.91	5.58	11.33	4.92	43.42
32	The Shalimar Works (1980) Limited	2018-19	2019-20	1.25	138.95	18.94	0.00	(-) 336.45	20.16	(-) 26.92	(-) 335.20	(-) 196.25	(-) 7.98	0.00
33	Mayurakshi Cotton Mills (1990) Limited	2019-20	2020-21	10.75	43.75	0.00	0.00	(-) 78.72	1.70	(-) 3.17	(-) 67.97	(-) 24.22	(-) 3.17	0.00
34	West Bengal Pharmaceutical and Phytochemical Development Corporation Limited	2017-18	2018-19	26.23	11.44	1.49	0.00	(-) 32.08	4.56	(-) 4.13	(-) 5.85	5.59	(-) 2.64	0.00
35	Greater Calcutta Gas Supply Corporation Limited	2018-19	2019-20	41.15	177.10	21.87	0.00	(-) 449.38	1.94	(-) 31.45	(-) 408.23	(-) 231.13	(-) 9.58	0.00
36	The Electro Medical and Allied Industries Limited	2018-19	2019-20	16.40	36.42	4.37	0.00	(-) 93.60	19.88	0.84	(-) 77.20	(-) 40.78	5.21	0.00

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) /Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
37	Westinghouse Saxby Farmer Limited	2017-18	2018-19	7.74	74.99	8.43	0.01	(-) 93.91	68.75	(-) 14.36	(-) 86.16	(-) 11.17	(-) 4.85	0.00
	<b>Sector wise Total</b>			<b>363.87</b>	<b>620.70</b>	<b>71.90</b>	<b>2.37</b>	<b>(-) 1,454.31</b>	<b>558.51</b>	<b>(-) 108.53</b>	<b>(-) 1,088.07</b>	<b>(-) 467.37</b>	<b>(-) 34.43</b>	<b>0.00</b>
<b>SERVICE</b>														
38	Webel Technology Limited (Subsidiary of WBEIDC)	2018-19	2019-20	1.00	0.00	0.00	45.20	60.04	276.65	9.29	106.24	106.24	12.68	11.94
39	Webel Electronic Manufacturing Clusters Limited (Subsidiary of WBEIDC)	2019-20	2020-21	0.05	0.00	0.00	0.00	(-) 0.04	0.00	(-) 0.02	0.01	0.01	(-) 0.02	0.00
40	West Bengal Transport Corporation Limited {Formerly The Calcutta Tramways Company (1978) Limited}	2018-19	2019-20	20.40	292.02	54.77	0.00	(-) 1,938.90	69.99	(-) 188.92	(-) 1,918.50	(-) 1,626.48	(-) 134.15	0.00

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
41	West Bengal Medical Services Corporation Limited	2018-19	2019-20	10.00	0.00	0.00	0.00	86.75	23.21	14.28	96.75	96.75	20.73	21.43
42	West Bengal Trade Promotion Organisation (Subsidiary of WBIDC Limited)	2018-19	2019-20	0.60	0.00	0.00	0.00	26.74	0.00	(-) 0.20	27.34	27.34	(-) 0.20	0.00
43	West Bengal Swarajgar Corporation Limited	2018-19	2019-20	130.00	0.00	0.00	0.00	45.41	0.00	2.00	175.41	175.41	2.78	1.58
44	Biswa Bangla Marketing Corporation Limited	2018-19	2019-20	0.01	0.00	0.00	0.00	0.53	22.95	(-) 0.30	0.54	0.54	(-) 0.30	0.00
45	West Bengal Surface Transport Corporation Limited	2018-19	2019-20	1.01	274.06	39.16	0.00	(-) 627.37	40.07	(-) 89.98	(-) 626.36	(-) 352.30	(-) 50.82	0.00

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
46	West Bengal Tourism Development Corporation Limited	2018-19	2019-20	17.99	1.08	0.03	0.00	(-) 5.41	47.37	(-) 2.75	12.58	13.66	(-) 2.54	0.00
47	West Bengal Essential Commodities Supply Corporation Limited	2015-16	2019-20	1.08	311.29	19.37	0.00	(-) 17.53	2,814.04	(-) 0.67	(-) 16.45	294.84	18.70	0.00
48	West Bengal State Beverages Corporation Limited	2018-19	2019-20	20.00	3.00	0.33	0.00	106.44	13,541.45	80.30	126.44	129.44	123.58	95.47
<b>Sector wise Total</b>				<b>202.14</b>	<b>881.45</b>	<b>113.66</b>	<b>45.20</b>	<b>(-) 2,263.34</b>	<b>16,835.73</b>	<b>(-) 176.97</b>	<b>(-) 2,016.00</b>	<b>(-) 1,134.55</b>	<b>(-) 9.56</b>	<b>0.00</b>
<b>Miscellaneous</b>														
49	Basumati Corporation Limited	2018-19	2019-20	0.10	73.87	10.40	0.00	(-) 193.75	14.00	(-) 11.52	(-) 193.65	(-) 119.78	(-) 1.12	0.00
50	Silpabarta Printing Press Limited (subsidiary of WBSIDC Limited)	2018-19	2019-20	0.89	3.58	0.07	0.00	(-) 1.93	0.27	(-) 2.55	(-) 1.04	2.54	(-) 2.48	0.00
51	Saraswati Press Limited	2018-19	2019-20	5.50	0.00	0.24	4.02	62.71	165.55	25.73	72.23	72.23	36.30	50.26

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
52	West Bengal Text Book Corporation (P) Limited (subsidiary of Saraswati of Press Limited)	2018-19	2019-20	0.10	0.00	1.71	8.18	100.65	490.00	35.51	108.93	108.93	56.78	52.13
	<b>Sector wise Total</b>			<b>6.59</b>	<b>77.45</b>	<b>12.42</b>	<b>12.20</b>	<b>(-) 32.32</b>	<b>669.82</b>	<b>47.17</b>	<b>(-) 13.53</b>	<b>63.92</b>	<b>89.48</b>	<b>139.99</b>
	<b>Total A (All Sector wise Government Companies)</b>			<b>3,084.40</b>	<b>2,573.06</b>	<b>369.69</b>	<b>69.62</b>	<b>(-) 1,597.05</b>	<b>20,421.28</b>	<b>655.38</b>	<b>1,556.97</b>	<b>4,130.03</b>	<b>1,178.52</b>	<b>28.54</b>
<b>B. Working Statutory Corporations</b>														
<b>AGRICULTURE AND ALLIED</b>														
1	West Bengal State Warehousing Corporation	2016-17	2019-20	7.61	0.00	0.00	12.03	39.04	78.40	54.17	58.68	58.68	75.57	128.78
	<b>Sector wise Total</b>			<b>7.61</b>	<b>0.00</b>	<b>0.00</b>	<b>12.03</b>	<b>39.04</b>	<b>78.40</b>	<b>54.17</b>	<b>58.68</b>	<b>58.68</b>	<b>75.57</b>	<b>128.78</b>
<b>FINANCING</b>														
2	West Bengal Financial Corporation	2018-19	2019-20	275.35	397.75	44.03	0.00	(-) 136.98	58.58	(-) 42.69	138.37	536.12	(-) 5.72	(-) 1.07
3	West Bengal Scheduled Castes & Scheduled Tribes and Other Backward Classes Development & Finance Corporation	2018-19	2020-21	312.18	125.50	0.00	0.00	251.70	0.00	32.36	563.88	689.38	32.36	4.69

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) /Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
4	West Bengal Minorities Development & Finance Corporation	2016-17	2019-20	150.00	745.12	8.56	0.00	224.32	28.27	45.02	374.32	1,119.44	53.58	4.79
	<b>Sector wise Total</b>			<b>737.53</b>	<b>1,268.37</b>	<b>52.59</b>	<b>0.00</b>	<b>339.04</b>	<b>86.85</b>	<b>34.69</b>	<b>1,076.57</b>	<b>2,344.94</b>	<b>80.22</b>	<b>3.42</b>
	<b>Infrastructure</b>													
5	West Bengal Industrial Infrastructure Development Corporation	2017-18	2018-19	0.00	96.34	55.60	0.00	97.89	33.87	10.34	97.89	194.23	69.34	35.70
	<b>Sector wise Total</b>			<b>0.00</b>	<b>96.34</b>	<b>55.60</b>	<b>0.00</b>	<b>97.89</b>	<b>33.87</b>	<b>10.34</b>	<b>97.89</b>	<b>194.23</b>	<b>69.34</b>	<b>35.70</b>
	<b>SERVICE</b>													
6	South Bengal State Transport Corporation	2018-19	2019-20	11.01	353.43	41.86	0.00	(-) 761.28	171.61	(-) 94.93	(-) 750.27	(-) 396.84	(-) 53.07	0.00
7	Calcutta State Transport Corporation	2018-19	2019-20	9.62	550.76	6.62	0.00	(-) 3,066.29	122.81	(-) 68.00	(-) 3,056.67	(-) 2,505.91	(-) 61.38	0.00
8	North Bengal State Transport Corporation	2018-19	2019-20	10.70	565.69	597.00	0.00	(-) 941.97	169.35	(-) 37.06	(-) 931.27	(-) 365.58	559.94	0.00
	<b>Sector wise total</b>			<b>31.33</b>	<b>1,469.88</b>	<b>645.48</b>	<b>0.00</b>	<b>(-) 4,769.54</b>	<b>463.77</b>	<b>(-) 199.99</b>	<b>(-) 4,738.21</b>	<b>(-) 3,268.33</b>	<b>445.49</b>	<b>0.00</b>
	<b>Total B (All Sector-wise Statutory Corporations)</b>			<b>776.47</b>	<b>2,834.59</b>	<b>753.67</b>	<b>12.03</b>	<b>(-) 4,293.57</b>	<b>662.89</b>	<b>(-) 100.79</b>	<b>(-) 3,505.07</b>	<b>(-) 670.48</b>	<b>670.62</b>	<b>0.00</b>
	<b>Grand Total (A+B)</b>			<b>3,860.87</b>	<b>5,407.65</b>	<b>1,123.36</b>	<b>81.65</b>	<b>(-) 5,890.62</b>	<b>21,084.17</b>	<b>554.59</b>	<b>(-) 1,948.10</b>	<b>3,459.55</b>	<b>1,849.14</b>	<b>53.45</b>

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
<b>C. Inactive Government Companies</b>														
<b>AGRICULTURE AND ALLIED</b>														
1	West Bengal Tea Development Corporation Limited	2018-19	2019-20	47.22	107.73	16.68	0.00	(-) 426.61	0.00	(-) 51.59	(-) 379.39	(-) 271.66	(-) 34.91	0.00
	<b>Sector wise Total</b>			<b>47.22</b>	<b>107.73</b>	<b>16.68</b>	<b>0.00</b>	<b>(-) 426.61</b>	<b>0.00</b>	<b>(-) 51.59</b>	<b>(-) 379.39</b>	<b>(-) 271.66</b>	<b>(-) 34.91</b>	<b>0.00</b>
<b>FINANCING</b>														
2	West Bengal Handloom and Power loom Development Corporation Limited	2014-15	2018-19	46.76	8.27	0.15	0.00	(-) 55.76	0.23	(-) 0.31	(-) 9.00	(-) 0.73	(-) 0.16	0.00
	<b>Sector wise Total</b>			<b>46.76</b>	<b>8.27</b>	<b>0.15</b>	<b>0.00</b>	<b>(-) 55.76</b>	<b>0.23</b>	<b>(-) 0.31</b>	<b>(-) 9.00</b>	<b>(-) 0.73</b>	<b>(-) 0.16</b>	<b>0.00</b>
<b>MANUFACTURING</b>														
3	Neo Pipes and Tubes Company Limited	2018-19	2019-20	2.20	4.29	5.98	0.00	(-) 20.53	0.06	(-) 9.93	(-) 18.33	(-) 14.04	(-) 3.95	0.00
4	National Iron and Steel Company (1984) Limited	2018-19	2019-20	12.00	6.44	14.72	0.00	(-) 43.24	0.00	(-) 19.07	(-) 31.24	(-) 24.80	(-) 4.35	0.00
5	West Bengal Sugar Industries Development Corporation Limited	2018-19	2019-20	15.24	47.01	6.30	0.00	(-) 195.19	0.00	(-) 12.47	(-) 179.95	(-) 132.94	(-) 6.17	0.00



(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
6	Lily Products Limited	2018-19	2020-21	0.01	65.99	12.89	0.00	(-) 260.44	0.00	(-) 18.93	(-) 260.43	(-) 194.44	(-) 6.04	0.00
7	The West Dinajpur Spinning Mills Limited	2018-19	2019-20	12.75	184.40	25.81	0.00	(-) 415.17	0.00	(-) 42.81	(-) 402.42	(-) 218.02	(-) 17.00	0.00
8	Pulver Ash Projects Limited (subsidiary of WBSIDC Limited)	2018-19	2019-20	3.31	13.00	0.00	0.00	(-) 15.39	0.00	(-) 0.08	(-) 12.08	0.92	(-) 0.08	0.00
9	West Bengal Industrial Land Holding Private Limited (subsidiary of WBIDC Ltd)	2018-19	2019-20	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00
10	The Kalyani Spinning Mills Limited	2018-19	2019-20	14.63	456.19	58.56	0.00	(-) 1,099.23	0.00	(-) 94.49	(-) 1,084.60	(-) 628.41	(-) 35.93	0.00
11	The Infusions (India) Limited	2014-15	2018-19	8.00	7.27	1.16	0.00	(-) 21.68	0.00	(-) 2.55	(-) 13.68	(-) 6.41	(-) 1.39	0.00
12	The West Bengal Projects Limited (subsidiary of WBSIDC Limited)	2014-15	2018-19	1.89	0.00	0.01	0.00	(-) 2.67	0.00	(-) 0.11	(-) 0.78	(-) 0.78	(-) 0.10	0.00
13	West Bengal Plywood and Allied Products Limited	2011-12	2013-14	0.09	52.77	0.00	0.00	(-) 53.39	0.00	(-) 0.10	(-) 53.30	(-) 0.53	(-) 0.10	0.00

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
14	The West Bengal State Leather Industries Development Corporation Limited	2009-10	2018-19	3.95	2.34	0.00	0.00	(-) 22.81	0.00	(-) 1.66	(-) 18.86	(-) 16.52	(-) 1.66	0.00
15	The Carter Pooler Engineering Company Limited	2007-08	2008-09	0.95	20.69	0.00	0.00	(-) 49.76	0.00	(-) 3.08	(-) 48.81	(-) 28.12	(-) 3.08	0.00
16	West Bengal Ceramic Development Corporation Limited	2018-19	2019-20	2.93	72.84	0.00	0.00	(-) 76.81	0.00	0.00	(-) 73.88	(-) 1.04	0.00	0.00
17	Krishna Silicates and Glass (1987) Limited	2005-06	2008-09	0.00	52.92	0.00	0.00	(-) 91.19	0.00	(-) 7.28	(-) 91.19	(-) 38.27	(-) 7.28	0.00
18	Eastern Distilleries and Chemicals Limited	2012-13	2015-16	0.20	27.49	0.88	0.00	(-) 5.33	41.75	(-) 0.20	(-) 5.13	22.36	0.68	0.00
<b>Sector wise Total</b>				<b>78.16</b>	<b>1,013.64</b>	<b>126.31</b>	<b>0.00</b>	<b>(-) 2,372.83</b>	<b>41.81</b>	<b>(-) 212.76</b>	<b>(-) 2,294.67</b>	<b>(-) 1,281.03</b>	<b>(-) 86.45</b>	<b>0.00</b>
<b>Total C (Sector wise Inactive Government Companies)</b>				<b>172.14</b>	<b>1,129.64</b>	<b>143.14</b>	<b>0.00</b>	<b>(-) 2,855.20</b>	<b>42.04</b>	<b>(-) 264.66</b>	<b>(-) 2,683.06</b>	<b>(-) 1,553.42</b>	<b>(-) 121.52</b>	<b>0.00</b>

Sl. No.	Sector/ Name of the Company	Period of Accounts	Year in which accounts finalised (up to Sep 2020)	Paid-up Capital as per latest finalised accounts	Loans outstanding at the end of year	Finance Cost/ Interest Payment	Free reserves	Accumulated Profit (+)/ Loss (-)	Turnover	Net Profit (+) / Loss (-)	Networth/ Shareholders' funds	Capital Employed	(EBIT) RoCE	Percentage of RoCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
<b>D. Inactive Statutory Corporations</b>														
<b>SERVICE</b>														
1	Great Eastern Hotel Authority	2016-17	2017-18	0.00	16.34	0.03	0.00	(-) 37.08	0.00	0.00	(-) 37.08	(-) 20.74	0.03	0.00
	Sector wise total			0.00	16.34	0.03	0.00	(-) 37.08	0.00	0.00	(-) 37.08	(-) 20.74	0.03	0.00
	Total D (All sector wise Inactive Statutory Corporations)			0.00	16.34	0.03	0.00	(-) 37.08	0.00	0.00	(-) 37.08	(-) 20.74	0.03	0.00
	Grand total(C+D)			172.14	1,145.98	143.17	0.00	(-) 2,892.28	42.04	(-) 264.66	(-) 2,720.14	(-) 1,574.16	(-) 121.49	0.00
	Grand total (A+B+C+D)			4,033.01	6,553.63	1,266.53	81.65	(-) 8,782.90	21,126.21	289.93	(-) 4,668.24	1,885.39	1,727.65	91.63

**Appendix-8**  
(Refer Paragraph 3.6.2, Page-38)  
**Statement showing working results of WBPDC and DPL during 2015-16 to 2019-20**

**A) WBPDC**

Sl. No.	Description	2015-16	2016-17	2017-18	2018-19	2019-20	Total 5 years	Average	Percentage to Total Revenue/ Expenses
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<b>1</b>	<b>Income</b>								
a	Generation Revenue	6,821.73	8,718.32	9,133.45	9,853.68	9,626.79	44,153.97	8,830.79	97
b	Other income including interest/ subsidy	372.87	149.40	144.39	253.23	232.85	1,152.74	230.55	3
	<b>Total Income</b>	<b>7,194.60</b>	<b>8,867.72</b>	<b>9,277.84</b>	<b>10,106.91</b>	<b>9,859.64</b>	<b>45,306.71</b>	<b>9,061.34</b>	<b>-</b>
<b>2</b>	<b>Generation</b>								
(a)	Total Generation (In MU)	19,962.98	23,423.92	23,445.64	22,523.99	21,117.63	1,10,474.16	-	-
(b)	Less: Auxiliary consumption (in MU)	2,166.50	2,428.29	2,325.21	2,163.63	1,989.82	11,073.45	-	-
(c)	Less: Deviation settlement mechanism (in MU)	(-) 1.89	(-) 4.86	(-) 14.75	(-) 12.78	10.19	(-) 24.09	-	-
<b>3</b>	<b>Total generation available for transmission and Distribution (In MU) {2(a) - 2 (b) -2(c) }</b>	<b>17,798.37</b>	<b>21,000.49</b>	<b>21,135.18</b>	<b>20,373.14</b>	<b>19,117.62</b>	<b>99,424.80</b>	<b>-</b>	<b>-</b>
<b>4</b>	<b>Total generation available for transmission and Distribution (In crore unit) (Sl. No. 3/10)</b>	<b>1,779.84</b>	<b>2,100.05</b>	<b>2,113.52</b>	<b>2,037.31</b>	<b>1,911.76</b>	<b>9,942.48</b>	<b>-</b>	<b>-</b>
<b>5</b>	<b>Expenditures</b>								
a	<b>Fixed Cost</b>								
(i)	Employee Benefit Expenses	474.05	470.01	467.18	497.22	854.13	2,762.59	552.52	6
(ii)	Finance Cost	614.83	837.45	989.22	1,061.81	1,060.77	4,564.08	912.82	10
(iii)	Depreciation / Amortisation Expenses	429.81	557.91	651.93	664.90	680.95	2,985.50	597.10	7
(iv)	Other Expenses	543.06	543.73	588.95	723.66	674.05	3,073.45	614.69	7
	<b>Total Fixed Cost</b>	<b>2,061.75</b>	<b>2,409.10</b>	<b>2,697.28</b>	<b>2,947.59</b>	<b>3,269.90</b>	<b>13,385.62</b>	<b>2,677.12</b>	<b>-</b>

Sl. No.	Description	2015-16	2016-17	2017-18	2018-19	2019-20	Total 5 years	Average	Percentage to Total Revenue/ Expenses	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
b	<b>Variable Cost</b>									
	Fuel Cost	5,106.65	6,321.51	6,447.78	7,032.34	6,354.95	31,263.23	6,252.65	70	
	<b>Total Variable Cost</b>	<b>5,106.65</b>	<b>6,321.51</b>	<b>6,447.78</b>	<b>7,032.34</b>	<b>6,354.95</b>	<b>31,263.23</b>	<b>6,252.65</b>	<b>-</b>	
c	<b>Total cost {5(a) + 5(b)}</b>	<b>7,168.40</b>	<b>8,730.61</b>	<b>9,145.06</b>	<b>9,979.93</b>	<b>9,624.85</b>	<b>44,648.85</b>	<b>8,929.77</b>	<b>-</b>	
6	<b>Realisation (per unit) {1(a) / 4}</b>	3.83	4.15	4.32	4.84	5.04	-	-	-	
7	<b>Fixed cost per unit {5(a) / 4}</b>	1.16	1.15	1.28	1.45	1.71	-	-	-	
8	<b>Variable cost per unit {5(b) / 4}</b>	2.87	3.01	3.05	3.45	3.32	-	-	-	
9	<b>Total cost (per unit) {5(c) / 4}</b>	4.03	4.16	4.33	4.90	5.03	-	-	-	
10	<b>Contribution per unit {(6) - (8)}</b>	0.96	1.14	1.27	1.38	1.71	-	-	-	
11	<b>Profit (+) / Loss (-) {(6) - (9)}</b>	(-) 0.20	(-) 0.01	(-) 0.01	(-) 0.06	0.01	-	-	-	
12	Percentage of Fuel Cost to Total Cost	71.24	72.41	70.51	70.46	66.03	-	-	-	
13	<b>Avg Fuel Cost to Total Cost (in %)</b>	<b>70.13</b>								

Source: Annual Reports of WBPDC

**B) DPL**

1	<b>Income</b>								
a	Generation Revenue	1,031.14	999.72	1,116.34	1,080.09	835.81	5,063.10	1,012.62	99.41
b	Other income including interest/ subsidy	17.21	0.80	6.09	1.15	4.81	30.06	6.01	0.59
	<b>Total Income</b>	<b>1,048.35</b>	<b>1,000.52</b>	<b>1,122.43</b>	<b>1,081.24</b>	<b>840.62</b>	<b>5,093.16</b>	<b>1,018.63</b>	<b>100.00</b>
2	<b>Generation</b>								
(a)	Total Generation (In MUs)	1,979.52	2,143.39	2,524.46	2,343.22	2,231.73	11,222.32	-	-
(b)	Less: Auxiliary consumption (in MUs)	212.72	193.33	228.27	242.11	248.99	1,125.42	-	-
3	<b>Total generation available for transmission and Distribution (In MU) {2(a) - 2 (b)}</b>	<b>1,766.80</b>	<b>1,950.06</b>	<b>2,296.19</b>	<b>2,101.11</b>	<b>1,982.74</b>	<b>10,096.90</b>	<b>-</b>	<b>-</b>

Sl. No.	Description	2015-16	2016-17	2017-18	2018-19	2019-20	Total 5 years	Average	Percentage to Total Revenue/ Expenses
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4	Total generation available for transmission and Distribution (In crore unit) {Sl. No. 3/10}	176.68	195.01	229.62	210.11	198.27	1,009.69	-	-
5	Expenses								
a	Fixed Cost								
(i)	Employee Benefit Expenses	82.46	82.54	97.66	75.55	187.56	525.77	105.15	7
(ii)	Finance Cost	311.79	327.23	347.15	323.56	330.79	1,640.52	328.10	23
(iii)	Depreciation / Amortisation Expenses	132.9	217.88	133.59	134.84	129.23	748.44	149.69	10
(iv)	Other Expenses	129.06	195.67	443.37	190.88	114.62	1,073.60	214.72	15
	<b>Total Fixed Cost</b>	<b>656.21</b>	<b>823.32</b>	<b>1,021.77</b>	<b>724.83</b>	<b>762.2</b>	<b>3,988.33</b>	<b>797.67</b>	<b>-</b>
b	Variable Cost								
(i)	Cost of Material Consumed	479.92	524.07	585.10	593.30	623.84	2,806.23	561.25	39
(ii)	Purchase of Energy	125.50	100.29	86.14	38.57	0	350.5	70.10	5
	<b>Total Variable Cost</b>	<b>605.42</b>	<b>624.36</b>	<b>671.24</b>	<b>631.87</b>	<b>623.84</b>	<b>3,156.73</b>	<b>631.35</b>	<b>-</b>
c	<b>Total cost {5(a) + 5(b)}</b>	<b>1,261.63</b>	<b>1,447.68</b>	<b>1,693.01</b>	<b>1,356.70</b>	<b>1,386.04</b>	<b>7,145.06</b>	<b>1,429.01</b>	<b>100</b>
6	Realisation (per unit) {1(a) / 4}	5.84	5.13	4.86	5.14	4.22	-	-	-
7	Fixed cost per unit {5(a) / 4}	3.71	4.22	4.45	3.45	3.84	-	-	-
8	Variable cost per unit {5(b) / 4}	3.43	3.20	2.92	3.01	3.15	-	-	-
9	Total cost (per unit) {5(c) / 4}	7.14	7.42	7.37	6.46	6.99	-	-	-
10	Contribution per unit {(6) - (8)}	2.41	1.92	1.94	2.13	1.07	-	-	-
11	Profit (+) / Loss (-) {(6) - (9)}	(-1)3.0	(-)2.29	(-)2.51	(-)1.32	(-)2.77	-	-	-
	Percentage of Fuel Cost to Total Cost	38.04	36.20	34.56	43.73	45.01	-	-	-
	<b>Avg. Fuel Cost to Total Cost (in %)</b>			<b>39.51</b>					

Source: Annual Reports of DPL

Appendix-9  
(Refer Paragraph 3.7.1, Page-40)

Statement showing coal procurement of WBPDCCL and DPL during the year 2015-16 to 2019-20

Quantity in MMT and ₹ in crore

Year	2015-16		2016-17		2017-18		2018-19		2019-20		Total	
	Quantity Purchased	Purchased Amount	Quantity Purchased	Purchased Amount	Quantity Purchased	Purchased Amount	Quantity Purchased	Purchased Amount	Quantity Purchased	Purchased Amount	Quantity Purchased	Purchased Amount
WBPDCCL												
FSA	15.64	3,924.73	15.62	4,768.59	13.07	4,342.70	11.82	3,995.64	9.76	3,662.34	65.91	20,694.01
Agencies	0.00	0.00	0.00	0.00	1.12	513.96	2.10	1,084.99	1.37	724.07	4.59	2,323.03
E-auction	0.17	33.24	0.80	229.26	0.52	243.74	1.47	1,060.82	1.30	665.14	4.26	2,232.20
Captive	0.00	0.00	0.00	0.00	0.00	0.00	0.33	104.37	1.94	385.45	2.27	489.82
Imported	0.00	0.00	0.00	0.00	0.19	110.41	0.06	43.56	0.41	276.58	0.66	430.56
<b>Total</b>	<b>15.81</b>	<b>3,957.97</b>	<b>16.42</b>	<b>4,997.85</b>	<b>14.90</b>	<b>5,210.82</b>	<b>15.78</b>	<b>6,289.39</b>	<b>14.78</b>	<b>5,713.58</b>	<b>77.69</b>	<b>26,169.61</b>
<b>DPL</b>												
FSA	1.44	388.42	1.42	431.87	1.55	448.75	1.63	470.26	1.68	553.20	7.72	2,292.50
<b>Total</b>	<b>17.25</b>	<b>4,346.39</b>	<b>17.84</b>	<b>5,429.72</b>	<b>16.45</b>	<b>5,659.57</b>	<b>17.41</b>	<b>6,759.65</b>	<b>16.46</b>	<b>6,266.78</b>	<b>85.41</b>	<b>28,462.11</b>

**Appendix -10**  
**(Refer Paragraph 3.7.1.1, Page-41)**  
**Statement showing coal purchased against FSA quantity and excess/ short procurement during 2015-16 to 2019-20**

WBPDCL	2015-16				2016-17				2017-18				2018-19				2019-20			
	FSA Quantity	Purchased against FSA	Excess/ (Short) Purchase	Percentage of Excess/ (Shortfall)	FSA Quantity	Purchased against FSA	Excess/ (Short) Purchase	Percentage of Excess/ (Shortfall)	FSA Quantity	Purchased against FSA	Excess/ (Short) Purchase	Percentage of Excess/ (Shortfall)	FSA Quantity	Purchased against FSA	Excess/ (Short) Purchase	Percentage of Excess/ (Shortfall)	FSA Quantity	Purchased against FSA	Excess/ (Short) Purchase	Percentage of Excess/ (Shortfall)
ECL	4.15	4.77	0.62	14.94	5.65	5.90	0.25	4.42	5.45	5.94	0.49	8.99	5.45	5.26	(-0.19)	(-) 3.49	5.45	4.68	(-) 0.77	(-) 14.13
BCCL	4.00	4.71	0.71	17.75	3.35	4.88	1.53	45.67	3.68	3.42	(-) 0.26	(-) 7.07	3.68	3.12	(-) 0.56	(-) 15.22	3.68	2.67	(-) 1.01	(-) 27.45
MCL	6.45	6.15	(-) 0.30	(-) 4.65	4.40	4.76	0.36	8.18	3.75	3.19	(-) 0.56	(-) 14.93	3.75	3.10	(-) 0.65	(-) 17.33	3.75	1.61	(-) 2.14	(-) 57.07
CCL	0.00	0.00	0.00	0.00	1.20	0.08	(-) 1.12	(-) 93.33	1.20	0.52	(-) 0.68	(-) 56.67	1.20	0.35	(-) 0.85	(-) 70.83	1.20	0.79	(-) 0.41	(-) 34.17
<b>DPL</b>																				
ECL	0.30	0.27	(-) 0.03	(-) 10.00	0.30	0.27	(-) 0.03	(-) 10.00	0.30	0.30	0.00	0.00	0.30	0.36	0.06	20.00	0.30	0.46	0.16	53.33
BCCL	1.00	0.86	(-) 0.14	(-) 14.00	1.00	0.76	(-) 0.24	(-) 24.00	1.00	0.76	(-) 0.24	(-) 24.00	1.00	0.70	(-) 0.30	(-) 30.00	1.00	0.89	(-) 0.11	(-) 11.00
MCL	0.90	0.30	(-) 0.60	(-) 66.67	0.90	0.29	(-) 0.61	(-) 67.78	0.90	0.43	(-) 0.47	(-) 52.22	0.90	0.53	(-) 0.37	(-) 41.11	0.90	0.34	(-) 0.56	(-) 62.22



**Appendix -10A**  
**(Refer Paragraph 3.7.1.4, Page-45)**  
**Statement showing loss of revenue due to amendment of order from rake to rake to weighted average basis (MSTC)**

Sl no.	Order no and date	Penalty as calculated by Audit on Rake to Rake basis (₹)	Penalty deducted by WBPDCI as per weighted average basis (₹)	Difference (₹)
1	Order No: WBPDCI/GM(M&C)/S241/225, Dtd. 22.12.2017. (28 nos. RAKES of KTPS)	21,532,527.19	7,831,517.52	13,701,009.67
2	Order No. : WBPDCI/GM(M&C)/S241/225, Dtd. 22/12/2017. (45 Nos. RAKES OF SgTPS)	51,618,634.74	0.00	51,618,634.74
3	Order No. : WBPDCI/GM(M&C)/S241/265 , Dtd. 03/04/2018. (For 45 Nos. RAKES OF SgTPS)	32,154,839.86	0.00	32,154,839.86
4	Repeat Order No: WBPDCI/GM(M&C)/S241/265 , Dtd. 03.04.2018 (KTPS - 28 RAKES)	13,737,892.20	1,848,230.11	11,889,662.09
5	Order No. : WBPDCI/GM(M&C)/S241/225, Dtd. 22.12.2017. (28 Nos. RAKES)	37,844,911.76	2,650,517.70	35,194,394.05
6	Order No: WBPDCI/GM(M&C)/S241/295, Dtd. 10.07.2018 (45 Nos. RAKES FOR BkTPS)	45,818,869.37	0.00	45,818,869.37
7	Order No: WBPDCI/GM(M&C)/S241/225, Dtd. 22.12.2017. (45 Nos. RAKES FOR BkTPS)	13,496,278.25	0.00	13,496,278.25
8	Order No : WBPDCI/GM(M&C)/S241/225, Dtd. 22.12.2017. (14 Nos. RAKES)	2,536,333.00	0.00	2,536,333.00
9	Repeat Order No : WBPDCI/GM(M&C)/S241/268, Dtd. 12.04.2018. (For BTPS 14 Nos. RAKES)	1,651,231.24	0.00	1,651,231.24
10	Order No. : WBPDCI/GM(M&C)/S261/271, Dtd. 19/04/2018. (50 Nos. RAKES FOR SgTPS) [ PENALTY CALCULATION ON WEIGHTED AVERAGE BASIS ]	25,968,154.49	0.00	25,968,154.49
11	Order No : WBPDCI/GM(M&C)/S301/311, Dtd. 12.10.2018. (30 Nos. RAKES FOR BTPS - M/s. MSTCL)	64,131,612.15	0.00	64,131,612.15
12	Repeat Order No. : WBPDCI/GM(M&C)/S301/330, Dtd. 01/03/2019. (50 Nos. RAKES) [ WEIGHTED AVERAGE BASIS ]	56,504,150.90	0.00	56,504,150.90
13	Repeat Order No : WBPDCI/GM(M&C)/S301/330, Dtd. 01.03.2019. (30 Nos. RAKES FOR BTPS - PENALTY CALCULATION ON WEIGHTED AVERAGE BASIS)	34,833,498.51	0.00	34,833,498.51
<b>Total</b>		<b>401,828,933.66</b>	<b>12,330,265.34</b>	<b>389,498,668.32</b>

**Appendix -10B**  
**(Refer Paragraph 3.7.1.4, Page-45)**  
**Statement showing loss of revenue due to amendment of order from rake to rake to weighted average basis (WBMDTCL)**

Sl no.	Order no and date	Penalty as calculated by Audit on Rake to Rake basis (₹)	Penalty deducted by WBPDCCL as per weighted average basis (₹)	Difference (₹)
1	Order No. : WBPDCCL/GM(M&C)/S323/345, Dtd. 16/08/2019 (25 NOS. RAKE FOR BkTPS)	23,788,775.56	0.00	23,788,775.56
2	Order No. : WBPDCCL/GM(M&C)/S243/247, Dtd. 26/02/2018. ( for 25 Nos. RAKES of SgTPS) [PENALTY CALCULATION ON WEIGHTED AVERAGE BASIS]	4,686,990.55	0.00	4,686,990.55
3	Order No. : WBPDCCL/GM(M&C)/S243/227, Dtd. 05/01/2018-(25 Nos. RAKES FOR SgTPS)	13,133,996.73	0.00	13,133,996.73
4	Repeat Order No. : WBPDCCL/GM(M&C)/S243/280, Dtd. 27/04/2018. (25 Nos. RAKES BkTPS) [CALCULATION ON WEIGHTED AVERAGE BASIS]	16,491,893.46	0.00	16,491,893.46
5	Order No. : WBPDCCL/GM(M&C)/S274/294, Dtd. 15/06/2018. (30 Nos. RAKES FOR BTPS) [WEIGHTED AVERAGE BASIS]	9,314,265.08	0.00	9,314,265.08
6	Repeat Order No. : WBPDCCL/GM(M&C)/S274/301, Dtd. 24/08/2018. (30 Nos. RAKES FOR BTPS)	34,993,943.61	0.00	34,993,943.61
	<b>Total</b>	<b>102,409,864.99</b>	<b>0.00</b>	<b>102,409,864.99</b>

**Appendix-II**  
**(Refer Paragraph 3.8.4.1 (ii), Page-50)**  
**Statement Showing Auxiliary Consumption Of WBPCDL And DPL During 2015-16 To 2019-20**

**a) DPL**

Sl.No	Particulars	2015-16		2016-17		2017-18		2018-19		2019-20 Unit VII and Unit VIII (combined)
		Unit(VII)	Unit (VIII)	Unit(VII)	Unit (VIII)	Unit(VII)	Unit (VIII)	Unit(VII)	Unit (VIII)	
<b>i</b>	Generation (MU)	1,195.64	783.88	993.50	1,149.89	1,517.09	1,005.38	1,018.47	1,324.75	2,231.73
<b>ii</b>	Auxiliary Consumption (MU)	128.48	84.24	89.61	103.72	137.59	90.68	122.38	119.73	248.99
<b>iii</b>	Actual Percentage (sl. no.ii*100/sl. no.i)	10.75	10.75	9.02	9.02	9.07	9.02	12.02	9.04	11.16
<b>iv</b>	Percentage of Auxiliary consumption allowed by WBERC	8.50	9.00	8.50	9.00	8.50	9.00	8.50	9.00	9.00
<b>v</b>	Excess (per cent) (sl . No. iii- sl no.iv)	2.25	1.75	0.52	0.02	0.57	0.02	3.52	0.04	2.16
<b>vi</b>	Excess (MU) (Sl no.ii/sl.no. iii*sl.no.v)	26.85	13.69	5.16	0.23	8.64	0.20	35.81	0.50	48.13
<b>vii</b>	coal consumption (MT)	8,60,754.00	5,61,299.00	7,10,516.00	7,31,697.00	9,73,125.88	6,34,430.53	7,31,762.00	8,88,612.00	15,48,849.00
<b>viii</b>	Excess consumption of coal (MT) (sl.no.vii/sl.no.i*sl. no.vi)	19,330.03	9,803.33	3,692.04	146.29	5,540.36	123.56	25,729.22	337.07	33,405.82

Sl No	Particulars	2015-16		2016-17		2017-18		2018-19		2019-20 Unit VII and Unit VIII (combined)
		Unit(VII)	Unit (VIII)	Unit(VII)	Unit (VIII)	Unit(VII)	Unit (VIII)	Unit(VII)	Unit (VIII)	
ix	Rate /MT (In Rs.)	3100.30	3100.30	3448.00	3448.00	3434.61	3434.61	3505.66	3505.66	3873.40
x	Excess consumption in value (Rs. In crore)	5.99	3.04	1.27	0.05	1.90	0.04	9.02	0.12	12.94
	Total(Rs. In crore)	9.03		1.32		1.95		9.14		12.94
	TOTAL (2015-20)	34.38								

**b) WBPDCCL**

**Auxiliary consumption Consolidated figures (2015-16 to 2019-20 for SgTPS, KTPS) (2015-16 to 2018-19 for BTPS, BkTPS, STPS)**

Sl. No.	Particulars	SgTPS	BTPS	BkTPS	KTPS	STPS	Total excluding STPS
i	Generation (MU)	19,890.71	6,236.40	28,388.76	23,848.59	13,863.49	
ii	Auxiliary Consumption (MU)	2,095.46	739.28	2,750.78	2,667.65	1,178.48	
iii	Actual Percentage (100*SL ii/SL i)	10.56	11.85	9.71	11.19	8.50	
iv	Percentage of Auxiliary consumption allowed by WBERC	9.00	9.70 to 9.95	9.00	9.60	9.00	
v	Excess (per cent) (SL iii-SL iv)	1.56	2.27	0.71	1.59	(-) 0.50	
vi	Excess (MU) (SL i*SL v%)	305.30	126.86	195.79	378.18	(-) 69.23	
vii	coal consumption (MT)	1,22,63,632.00	50,54,305.15	1,79,65,712.86	2,05,92,076.64	91,77,214.10	
viii	Excess consumption of coal (MT) (SL vii/SL i *SL vi)	1,94,450.60	1,05,552.00	1,29,883.22	3,27,130.65	(-) 45,193.84	7,57,016.47
ix	Excess consumption in value (Rs. In crore) (SL viii * SL ix/1000000)	81.03	43.85	45.88	113.94	(-) 15.78	284.70

Appendix - 12

{Refer Paragraph 3.8.4.4(ii), Page-54},

Consolidated statement showing excess consumption of Oil (2015-16 to 2019-20 for SgTPS and KTPS) (2015-16 to 2018-19 for BTPS, STPS and BkTPS)

Sl. No.	Particulars	SgTPS	BTPS	STPS	KTPS	BkTPS	Total
1	Generation (MU)	19,890.71	5,973.37	3,552.62	14,675.87	6,669.45	
2	Consumption of Oil (KL)	46,120.09	44,606.00	6,070.43	36,153.60	14,364.65	
3	OIL consumption (MI/Kwh) (Sl.no. 2/sl.no1)	2.32	7.47	1.71	2.54	2.15	
4	Norms fixed by WBERC (MI/Kwh)	1.00	2.15	1.00	2.00	1.30	
5	Excess consumption of Oil (KL)	1.32	5.32	0.71	0.54	0.85	
6	Excess consumption of Oil (KL)	26,229.38	32,012.05	2,517.81	6,801.85	5,694.37	73,255.46
7	Value of excess Oil (₹ In crore)	113.70	138.72	13.76	40.02	26.05	332.25

Note: Data of BkTPS - only 2015-16- as no excess oil consumption in other years

**Appendix-13**  
**(Refer Paragraph 3.9.10, Page-62)**

**Statement showing Transit Loss of coal during 2015-16 to 2019-20**  
(BkTPS, STPS and BTPS during 2015-16 to 2018-19) (KTPS, SgTPS and DPL during 2015-16 to 2019-20)

Thermal Power Station	RR Weight (in MT)	Unloading end Weight (in MT)	Shortage of coal (in MT)	Shortage of coal (in percentage)	As per norm of WBERC (in %)	Transit shortage over norm of WBERC (in %)	Shortage of coal over norm of WBERC (in MT)	Transit loss (in ₹)
1	2	3	4=2-3	5=(4/2) X 100	6	7=(5-6)	8	9
KTPS	90,47,467	88,13,738	2,33,729	2.58	0.80	1.78	1,61,349	59,56,08,232
BkTPS	93,04,205	91,00,104	2,04,101	2.19	0.50	1.69	1,57,580	59,02,48,182
SgTPS	1,70,05,261	1,67,03,157	3,02,104	1.78	0.80	0.98	1,66,062	72,41,32,235
STPS	93,60,624	90,02,306	3,58,318	3.83	0.80	3.03	2,83,433	99,00,39,111
BTPS	26,40,393	25,77,897	62,496	2.37	0.80	1.57	41,373	17,56,40,644
<b>WBPDCCL</b>	<b>4,73,57,950</b>	<b>4,61,97,202</b>	<b>11,60,748</b>				<b>8,09,797</b>	<b>3,07,56,68,404</b>
DPL	44,14,892	42,94,309	1,20,583	2.73	0.50	2.23	98,509	32,54,57,054
<b>Total</b>	<b>5,17,72,842</b>	<b>5,04,91,511</b>	<b>12,81,331</b>				<b>9,08,306</b>	<b>3,40,11,25,458</b>

(Source: RR weight and Plant weight of individual thermal power station)

**Appendix – 14**

**[Refer paragraph 4.1.6.1 a(i), Page-68]**

**Frequencies and Parameters for analysis of surface water**

Type of Station	Frequency	Parameters
<b>Baseline</b>	Perennial rivers and lakes/ reservoirs: 06 times a year Season rivers: 06 times (at equal spacing) during the flow period	<p><b>A. Pre-monsoon: Once a year</b> Analyse 25 Parameters as listed below:- 1.Colour 2.Odour. 3.Temperature 4.pH 5.Electrical Conductivity (EC) 6.Dissolved Oxygen(DO) 7.Turbidity 8.Total Dissolved Solid 9.Ammoniacal Nitrogen 10.Nitrate Nitrogen 11.Total Phosphate 12.Bio-chemical Oxygen Demand (BOD) 13.Chemical Oxygen Demand 14.Sodium Ions 15.Potassium Ions 16.Calcium Ions 17.Magnesium Ions 18.Carbonate Ions 19.Bicarbonate Ions 20.Chloride Ions 21.Sulphate Ions 22.Fluoride 23. Boron 24.Total Coliform(TC) 25.Faecal Coliform (FC)</p> <p><b>B. Rest of the Year</b> After the pre-monsoon sampling, at every two months interval analyse only 11 parameters as listed below:- 1. Colour 2. Odour 3. Temperature 4. pH 5. EC 6.DO 7.NO<sub>2</sub> 8.NO<sub>3</sub> 9.BOD 10.TC 11.FC</p>
Trend, Flux/ Impact and Hot Spot	Trend: As indicated in Column (3)  Flux/Impact: As indicated in Column (3)  Hot Spot: As indicated in Column (3)	<p>A. (1) For Trend Stations:- Analyse 25 parameters as listed for baseline stations once every month i.e. 12 times a year (2) For Flux/Impact Stations:- Analyse 25 parameters as listed for baseline stations twice every month i.e. 24 times a year. (3) For Hotspot Stations:- Analyse 25 parameters as listed for baseline stations twice every month i.e. 24 times a year.</p> <p><b>B. Micropollutants:- For Trend, Flux/Impact and Hotspot stations</b></p> <p>(a) <b>Pesticides:-</b> Analyse 22 pesticides once a year during pre-monsoon period 1. Alachlor 2.Atrazine 3.Aldrin/Dieldrin 4. Alpha- HCH 5. Beta-HCH 6.gama-HCH(Lindane) 7.delta-HCH 8.Butachlor 9.Chloropyriphos 10.(2,4-Dichlorophenoxyacetic acid) 11. o,p and p,p-isomers of DDT 12. o,p and p,p-isomers of DDE 13. o,p and p,p-isomers of DDD 14. alpha Endosulfan 15. beta Endosulfan 16. sulphate Endosulfan 17. Ethion 18.Isoproturon 19. Malathion 20. Methyl Parathion 21.Monocrotophos 22.Phorate</p> <p>(b) <b>Toxic Metals:-</b> Analyse 15 toxic metals twice a year during pre-monsoon and post monsoon periods 1.Arsenic (As) 2.Aluminium(Al) 3.Silver(Ag) 4.Cadmium(Cd) 5.Cobalt(Co) 6.Copper(Cu) 7.Chromium(Cr) 8.Ferrous(Fe) 9.Lead (Pb) 10.Manganese(Mn) 11.Mercury (Hg) 12.Molybdenum(Mo) 13.Nickel (Ni) 14.Selenium(Se) 15.Zinc(Zn)</p> <p><b>(Parameters may be selected on local needs)</b></p> <p>(c) Polynuclear Aromatic Hydrocarbon (PAH), Polychlorinated Biphenyls (PCB) and Trihalomethanes</p> <p><b>(Analyse as per site requirement)</b></p>

Frequencies and Parameters for analysis of ground water		
Type of Station	Frequency	Parameters
Baseline	Twice a year (Pre and post monsoon season)	<p><b>A. Pre and Post monsoon season</b></p> <p>Analyse 22 Parameters as listed below:-</p> <p>1. Colour 2. Odour. 3. Temperature 4.pH 5.Electrical Conductivity (EC) 6. Total Dissolved Solid (TDS) 7. NO<sub>2</sub><sup>-</sup> 8. NO<sub>3</sub><sup>-</sup> 9. Orthophosphate 10. Chemical Oxygen Demand (COD) 11. Sodium Ions 12.Potassium Ions 13. Calcium Ions 14.Magnesium Ions 15.Carbonate Ions 16.Bicarbonate Ions 17.Chloride Ions 18. Sulphate Ions 19. Fluoride (F) 20. Boron (B) 21. Total Coliform 22.Faecal Coliform</p> <p><b>B. Micropollutants:-</b></p> <p>(a) <b>Pesticides:-</b> Analyse 22 pesticides once a year during pre-monsoon period</p> <p>1. Alachlor 2.Atrazine 3.Aldrin/Dieldrin 4. Alpha-HCH 5. beta-HCH 6.gama-HCH (Lindane) 7.delta-HCH 8.Butachlor 9.Chloropyriphos 10.(2,4-Dichlorophenoxyacetic acid) 11. o,p and p,p-isomers of DDT 12. o,p and p,p-isomers of DDE 13. o,p and p,p-isomers of DDD 14. alpha Endosulfan 15. beta Endosulfan 16. sulphate Endosulfan 17. Ethion 18.Isoproturon 19. Malathion 20. Methyl Parathion 21.Monocrotophos 22.Phorate</p> <p>(b) <b>Toxic Metals:-</b> Analyse 15 toxic metals twice a year during pre-monsoon and post monsoon periods</p> <p>1. Arsenic (As) 2.Aluminium (Al) 3.Silver (Ag) 4.Cadmium(Cd)5.Cobalt(Co)6.Copper(Cu)7.Chromium (Cr) 8.Ferrous (Fe) 9.Lead (Pb) 10.Manganese (Mn) 11.Mercury (Hg) 12. Molybdenum (Mo) 13.Nickel (Ni) 14.Selenium (Se) 15. Zinc(Zn)</p> <p><b>(Parameters may be selected on local needs)</b></p>
Trend, and Hot- spot	Twice a year (Pre and post monsoon season and other times, if required)	<p>A. Pre and Post Monsoon Season: - Analyse all the parameters including micropollutants as listed for baseline stations.</p> <p>B. Other times (if required):- Analyse 15 parameters as listed below:-</p> <p>(a) General: - 1. Color 2. Odor. 3. Temperature 4.pH 5.Electrical Conductivity (EC) 6. Total Dissolved Solid (TDS)</p> <p>(b) Nutrients:- NO<sub>2</sub><sup>-</sup>, NO<sub>3</sub><sup>-</sup>, Orthophosphate</p> <p>(c) Demand Parameter :- Chemical Oxygen Demand</p> <p>(d) Major Ions:- Cl<sup>-</sup></p> <p>(e) Other inorganics :- F, B and other location specific parameters if any,</p> <p>(f) Microbiological :- Total Coliform and Faecal Coliform</p> <p>(g) Micropollutants:- As per site specific requirement</p>



**Appendix – 15**  
**(Refer paragraph 4.1.6.1 b, Page-68)**

**Water Quality of river Hooghly (Ganga) at Diamond Harbour  
(Surface Water)**

Sl. No.	Date	Total Coliform (MPN/100ml)	Biological Oxygen Demand (mg/l)	Dissolved Oxygen (mg/l)	Fluoride
1.	March-14	50,000	3.65	6.6	0.145
2.	April-14	5,00,000	3.5	6.5	0.41
3.	May-14	26,000	6.2	6.8	0.353
4.	June-14	17,000	3.25	NTD	0.34
5.	July-14	2,20,000	2.65	5.8	0.244
6.	August-14	80,000	4.25	8.4	0.329
7.	September-14	33,000	5.3	6.1	0.264
8.	October-14	17,000	5.5	6.4	0.244
9.	November-14	50,000	1.55	7.8	0.215
10.	December-14	22,000	1.6	7.4	0.246
11.	January-15	34,000	1.3	8.1	0.204
12.	February-15	13,000	3.4	8.1	0.282
13.	March-15	8,000	3.1	7.7	0.213
14.	April-15	22,000	1.2	6.6	0.337
15.	May-15	1,70,000	5.23	5.5	0.399
16.	June-15	1,40,000	3.19	6.3	0.314
17.	July-15	70,000	1.25	5	0.289
18.	August-15	80,000	5.18	4.2	0.201
19.	September-15	70,000	11	5.1	0
20.	October-15	70,000	4.2	5.2	0.411
21.	November-15	22,000	4.25	6.1	0.191
22.	December-15	17,000	2	5.9	0.221
23.	January-16	13,000	2.85	7	0.194
24.	February-16	22,000	1.5	7.4	0.231
25.	March-16	33,000	3	5.9	0.186
26.	April-16	27,000	5.7	6	0.307
27.	May-16	30,000	4.6	6.3	0.412
28.	June-16	33,000	2.2	6.3	0.302
29.	July-16	13,000	12.18	6.1	0.28
30.	August-16	11,000	3.8	4.9	0.289
31.	September-16	8,000	1.55	4.4	0.204
32.	October-16	13,000	2.2	5.3	0.217
33.	November-16	50,000	3.1	6.6	0.203
34.	December-16	17,000	2	7.3	0.28
35.	January-17	22,000	2.35	7.4	0.259
36.	February-17	50,000	4.55	6.5	0.264
37.	March-17	80,000	1.35	6.1	0.231
38.	April-17	17,000	1.9	6.9	0.288
39.	May-17	22,000	4.1	7.3	0.336
40.	June-17	8,000	2.2	6.3	0.335

Sl. No.	Date	Total Coliform (MPN/100ml)	Biological Oxygen Demand (mg/l)	Dissolved Oxygen (mg/l)	Fluoride
41.	July-17	22,000	2.1	5.8	0.32
42.	August-17	17,000	3.8	4.2	0.208
43.	September-17	30,000	1.05	5.5	0.41
44.	October-17	13,000	2.6	4.7	0.34
45.	November-17	34,000	5.6	6.5	0.31
46.	December-17	23,000	1.6	7	0.31
47.	January-18	27,000	5.45	8.1	0.28
48.	February-18	50,000	2	7	0.34
49.	March-18	30,000	1.25	6.5	0.34
50.	April-18	30,000	2.5	6.5	0.31
51.	May-18	33,000	1.2	6	0.53
52.	June-18	7,000	2	6.2	0.34
53.	July-18	8,000	2.7	5.9	0.3
54.	August-18	9,000	4.65	5.2	0.26
55.	September-18	13,000	3.1	5.9	0.4
56.	October-18	7,000	5.1	5.3	0.43
57.	November-18	9,000	1.95	6.9	0.29
58.	December-18	4,000	1.7	6.1	0.35
59.	January-19	6,000	3.6	7.8	0.22
60.	February-19	4,000	1.4	7.2	0.35
61.	March-19	13,000	3.8	6.5	0.31
62.	April-19	3,000	1.9	6.2	0.42
63.	April-19	1,700	2.6	6.3	0.4
64.	May-19	1,100	2.9	6	0.31
65.	May-19	1,400	2.3	6.1	0.28
66.	June-19	2,600	1.5	6.2	0.38
67.	June-19	13,000	4.05	6.2	0.33
68.	July-19	13,000	3.15	6.4	0.33
69.	July-19	11,000	1.4	4.6	0.33
70.	August-19	11,000	1.95	6.6	0.18
71.	August-19	2,20,000	2	6.8	0.27
72.	September-19	11,000	2.05	4.3	0.31
73.	September-19	9,000	2.35	5.8	0.28
74.	October-19	7,000	1.6	6.5	0.27
75.	October-19	8,000	1.4	5.6	0.34
76.	November-19	7,000	1.35	5.2	0.37
77.	November-19	12,000	2.9	5.6	0.32
78.	December-19	14,000	1.2	7	0.14
79.	December-19	1,700	1.45	6.6	0.12
80.	January-20	1,300	1.45	7.4	0.33
81.	January-20	11,000	1.95	6.3	0.32
82.	February-20	17,000	2.4	7.5	0.3
83.	February-20	13,000	2.1	6.7	0.3
84.	March-20	1,70,000	1.75	5	0.33

**Appendix – 16**

*(Refer paragraph 4.2, Page-116)*

**A. Rate analysis for shoulder construction using brick bats or stone chips**

T.I.14 Construction of Sub base using (I) brick bats, sand ; (II) stone chips & sand spreading in uniform layer with Motor grade... etc.	With bricks & sand	Shoulder with pakur stone chips & sand	Shoulder with pakur stone chips & sand
	For Work A & Work B (₹)	Work A (₹)	Work B (₹)
(I) (a) Labour rate	317.00	-	-
(b) 0.90 m <sup>3</sup> of brick bats at ₹1050 per cum &	945.00		
(c) 0.48 m <sup>3</sup> of medium sand at ₹700 per cum	336.00		
(II) (a) Labour rate		199.00	199.00
(b) 0.51 m <sup>3</sup> of 5.6 mm of stone chips (Pakur)			
1 <sup>st</sup> work: ₹1,596.85 per cum		814.39	797.26
2 <sup>nd</sup> work: ₹1,563.25 per cum. &		539.00	539.00
(c) 0.77 m <sup>3</sup> of medium sand at ₹ 700 per cum			
<b>Sub Total :</b>	<b>1,598.00</b>	<b>1,552.39</b>	<b>1,535.26</b>
Add Labour Welfare Cess @ 1%	15.98	15.52	15.35
<b>Rate per cum</b>	<b>1,613.98</b>	<b>1,567.91</b>	<b>1,550.61</b>
<b>Note:</b> The rate of commonly used material Jhama metal & moorum was not arrived as moorum quarry was not available in the district of Uttar Dinajpur and other nearby districts. Hence, The rate of moorum was not available in the PW(Rd), SOR for Uttar Dinajpur District.			

**B. Statement of extra expenditure along with liability due to not using local materials**

Particulars	T.I. No.	Executed Quantity (cum)	Qty. to be executed (cum)	Gross rate of shoulder constn. using RBM (₹ per cum)	Gross rate of shoulder constn. using Pakur Stone Chips & sand (₹ per cum)	Extra rate i.e. diff. between two rates (₹ per cum)	Extra Expdr. (in ₹)	Net Extra Expd. (in ₹)	Liability (in ₹)	Net Liability (in ₹)
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7 = (5-6)</i>	<i>8 = (7*3)</i>	<i>9 = (8-CP%)</i>	<i>10=(7*4)</i>	<i>11 = (10-CP%)</i>
Work A	14	8,871.00	-	2,744.24	1,567.91	1,176.33	1,04,35,223.43	86,33,060.34	-	-
Work B	14	2,693.875	4,665.43	2,698.28	1,550.61	1,147.67	30,91,679.52	27,03,055.40	53,54,374.04	46,81,329.23
<b>Total</b>								<b>1,13,36,115.74</b> ≈ 113.36 lakh		<b>46,81,329.23</b> ≈ 46.81 lakh

**Appendix – 17**  
**(Refer paragraph 4.4.1, Page-118)**

**Statement showing excess expenditure due to use of bituminous macadam**

Name of Divn.	Tender Item No. & items of works	Item rate (₹/m <sup>3</sup> )	Executed Quantity	Bill value of the item (₹)	CP (In %)	Excess Expenditure (₹)
1	2	3	4	5 = 4 X 3	6	7
Nadia PWD	1.08: Laying of bituminous macadam	7,501.59	2,067.594 m <sup>3</sup>	1,55,10,242.47	3.89 less	14,906,894.04
Asansol Highway	9.00: Laying of bituminous macadam	6,863.43	4,486.35 m <sup>3</sup>	3,07,91,749.18	2.90 above	3,16,84,709.91
<b>Total excess expenditure (In ₹)</b>						<b>4,65,91,603.95</b>

**Appendix – 18**  
**(Refer paragraph 4.4.2, Page-119)**

**A. Statement showing extra expenditure of Work -1 and Work -2**

Sl. No.	Particulars	Work -1			Work -2		
		Quantity	Rate (₹)	Amount (₹)	Quantity	Rate (₹)	Amount (₹)
1	Expenditure incurred for 50 mm BM	2,413.591 m <sup>3</sup> (TI-12)	6,743.46 per m <sup>3</sup>	16,27,59,54.36	2,215.303 m <sup>3</sup> (TI-5)	6,753.00 per m <sup>3</sup>	1,49,59,941.16
2	Expenditure incurred for 25 mm SDBC	1,015.430 m <sup>3</sup> (TI-13)	8,129.46 per m <sup>3</sup>	82,54,897.57	792.258 m <sup>3</sup> (TI-6)	7,800.00 per m <sup>3</sup>	61,79,612.40
3	Required cost for 20 mm Premix Surfacing	(1,015.43 / 0.025) = 40,617.20 m <sup>2</sup>	132.46 per m <sup>2</sup>	53,80,154	(792.258 / 0.025) = 31,690.32 m <sup>2</sup>	132.65 per m <sup>2</sup>	42,03,720.95
4	Required cost of Seal Coat (Type – B)	40,617.20 m <sup>2</sup>	42.72 per m <sup>2</sup>	17,35,167	31,690.32 m <sup>2</sup>	42.68 per m <sup>2</sup>	13,52,542.86
5	Extra expenditure (1+2-3-4)			1,74,15,531			1,55,83,289.75
6	Less: Contractual per cent (20.00%)			34,83,106	(1.19%)		1,85,441.15
	<b>Net extra expenditure (5-6) (In ₹)</b>			<b>1,39,32,425</b>			<b>1,53,97,848.60</b>

**B. Statement showing extra expenditure of Work -3 & Work -4**

Sl. No	Particulars	Work -3			Work -4		
		Quantity	Rate (₹)	Amount (₹)	Quantity	Rate (₹)	Amount (₹)
1	Expenditure incurred for 50 mm BM	2,491.151 m <sup>3</sup> (TI-7)	6,000.00 per m <sup>3</sup>	1,49,46,906.00	1,596.912 m <sup>3</sup> (TI-5)	6,100.00 per m <sup>3</sup>	97,41,163.20
2	Expenditure incurred for 25 mm SDBC	239.0625 m <sup>3</sup> (TI-9)	7,400.00 per m <sup>3</sup>	17,69,062.50	-	-	-
3	Required cost for 20 mm Premix Surfacing	(239.0625 / 0.025) = 9,562.50 m <sup>2</sup>	122.82 per m <sup>2</sup>	11,74,466.25	-	-	-
4	Required cost of Seal Coat (Type – B)	9,562.50 m <sup>2</sup>	40.57 per m <sup>2</sup>	3,87,950.63	-	-	-
5	Extra expenditure (1+2-3-4)			1,51,53,551.62	-		97,41,163.20
6	Less: Contractual per cent (1.21%)			1,83,357.97	(10.51%)		10,23,796.25
	<b>Net extra expenditure (5-6) (In ₹)</b>			<b>1,49,70,193.65</b>			<b>87,17,366.95</b>

**C. Statement showing committed liability for extra expenditure**

Particulars	Rate allowed	Quantity to be executed	Liability	CP	Net liability
1	2	3	4 = 2 X 3	5	6
Tendered quantity for 50 mm BM (TI-4)	6,336.55	1,767.50	1,11,99,852.13	4.22% less	<b>1,07,27,218.37</b>

**Gross extra expenditure including committed liability = 1,39,32,425 + 1,53,97,848.60 + 1,49,70,193.65 + 87,17,366.95 + 1,07,27,218.37 = ₹ 6,37,46,052.57**

**Appendix – 19**  
**(Refer paragraph 4.4.3, Page-120)**

**A. Statement showing extra expenditure pertains to Howrah Highway Division**

Sl. No.	Particulars	Quantity	Rate (₹)	Amount (₹)
1	Expenditure incurred for 75 mm BM (TI-9)	2,034.85 m <sup>3</sup>	6,732.78 per m <sup>3</sup>	1,37,00,197
2	Expenditure incurred for 25 mm SDBC (TI-10)	555.50 m <sup>3</sup>	8,045.58 per m <sup>3</sup>	44,69,320
3	Required cost for 50 mm BM	{(2,034.85/0.075) X 0.050} = 1,356.57 m <sup>3</sup>	6,732.78 per m <sup>3</sup>	91,33,487
4	Required cost for 20 mm Premix Surfacing	(555.50/0.025) = 22,220.00 m <sup>2</sup>	132.68 per m <sup>2</sup>	29,48,150
5	Required cost of Seal Coat (Type – B)	22,220.00 m <sup>2</sup>	41.65 per m <sup>2</sup>	9,25,463
6	Extra expenditure (1+2-3-4-5)			51,62,417
7	Less: Contractual per cent (23.11%)			11,93,035
	<b>Net extra expenditure (6-7) (In ₹)</b>			<b>39,69,382</b>

**B. Statement showing excess expenditure of Work -1 & Work -2**

Sl. No.	Particulars	Work -1			Work -2		
		Quantity	Rate (₹ / m <sup>3</sup> or m <sup>2</sup> )	Amount (in ₹)	Quantity	Rate (₹ / m <sup>3</sup> or m <sup>2</sup> )	Amount (in ₹)
1	Cost of 50 mm DBM	3,764.03 (TI.No.1.08)	7,648.24	2,87,88,204.81	3,971.798 (TI.No.1.11)	7,114.36	2,82,56,800.82
2	Cost of 25 mm SDBC/BC	1,910.72 m <sup>3</sup>	7,487.84	1,43,07,165.64	2,182.635 m <sup>3</sup>	7,904.19	1,72,51,961.74
3	Required cost of 50 mm BM	3,764.03 m <sup>3</sup>	6,171.25	2,32,28,770.14	3,971.798 m <sup>3</sup>	5,655.90	2,24,64,092.31
4	Required cost of 20 mm Premix Surfacing	(1,910.72/0.025) = 76,428.80 m <sup>2</sup>	121.65	92,97,563.52	(2,182.635/ 0.03) = 72,754.50 m <sup>2</sup>	111.81	81,34,680.65
5	Cost of Seal coat	76,428.80 m <sup>2</sup>	38.68	29,56,265.98	72,754.50 m <sup>2</sup>	36.56	26,59,904.52
6	Excess expenditure (1+2-3-4)			76,12,767.81			1,22,50,085.08
7	Add GST(@12%)			9,13,532.14			14,70,010.21
8	Excess expenditure including GST			85,26,299.95			1,37,20,095.29
9	Add cess 1%			85,263.00			1,37,200.95
10	Total excess expenditure			86,11,562.95			1,38,57,296.24
11	Less Contractual percent (14.98%)			12,90,012.13		(7.86%)	10,89,183.48
12	<b>Net extra expenditure (10 - 11) (In ₹)</b>			<b>73,21,550.82</b>			<b>1,27,68,112.76</b>

**C. Statement showing excess expenditure and committed liability of Work -3**

Sl. No.	Particulars	Executed amount		
		Executed Quantity	Rate (₹ / m <sup>3</sup> or m <sup>2</sup> )	Amount (in ₹)
1	Cost of 50 mm DBM	3,727.080 (TI. No.1.11)	8,314.22	3,09,87,763.08
2	Cost of 25 mm SDBC	1,888.284 m <sup>3</sup>	8,144.44	1,53,79,015.74
3	Required cost of 50 mm BM	3,727.080 m <sup>3</sup>	6,902.246	2,57,25,223.02
4	Required cost of 20 mm Premix Surfacing	(1,888.284/0.025) =75,531.36 m <sup>2</sup>	133.1698	1,00,58,496.10
5	Cost of Seal coat	75,531.36 m <sup>2</sup>	42.4263	32,04,516.14
6	Excess expenditure (1+2-3-4)			73,78,543.56
7	Add GST(@12%			8,85,425.23
8	Excess expenditure including GST			82,63,968.79
9	Add cess 1%			82,639.69
10	Total excess expenditure			83,46,608.48
11	Less Contractual percent (10.26%)			8,56,362.03
12	Net extra expenditure (10 - 11) (In ₹)			74,90,246.45

Gross extra expenditure = 39,69,382 + 73,21,550.82 + 1,27,68,112.76 + 74,90,246.45  
= ₹ 3,15,49,292.03



**Appendix – 20**  
**(Refer paragraph 4.4.4, Page-121)**

**Statement showing extra expenditure for use of 30 mm BC instead of  
25 mm SDBC**

Work-1		Work-2	
Particulars	Amount	Particulars	Amount
Up-to-date expenditure incurred for 30 mm BC (1,305.02 m <sup>3</sup> @ ₹ 7,878.90 per m <sup>3</sup> (T.I. – 10)	1,02,82,122	Up-to-date expenditure incurred for 30 mm BC (1142.01 m <sup>3</sup> @ ₹ 8,587.24 per m <sup>3</sup> (T.I. – 1.14)	98,06,714
Required expenditure for 25 mm SDBC (1,305.02/0.030) X 0.025 = 1,087.52 m <sup>3</sup> @ ₹ 7,072.94 per m <sup>3</sup>	76,91,964	Required expenditure for 25 mm SDBC (1,142.01/0.030) X 0.025 = 951.675 m <sup>3</sup> @ ₹ 7,733.66 per m <sup>3</sup>	73,59,931
Extra expenditure	25,90,158	Extra expenditure	24,46,783
Add: GST @ 12%	3,10,819	Add: GST @ 12%	2,93,614
Total	29,00,977	Total	27,40,397
Add: Cess @ 1% on total	29,010	Add: Cess @ 1% on total	27,404
Total extra expenditure	29,29,987	Total extra expenditure	27,67,801
Less: Contractual per cent (19.25%)	5,64,022	Less: Contractual per cent (20.00%)	5,53,560
<b>Net extra expenditure (In ₹)</b>	<b>23,65,965</b>	<b>Net extra expenditure (In ₹)</b>	<b>22,14,241</b>
<b>Extra expenditure 23,65,965 + 22,14,241 = ₹ 45,80,206.00</b>			

## Appendix – 21

(Refer paragraph 4.4.5, Page-122)

## Statement showing excess expenditure due to use of bituminous macadam

Sl. No.	Tender Item No. & items of works	Item rate (₹/m <sup>3</sup> )	Executed Quantity	Bill value of the item (₹)	CP (In %)	Excess Expenditure (₹)
	1	2	3	4 = 3 X 2	5	6
1	11.00: Laying of bituminous macadam	6,794.88	1,492.02 m <sup>3</sup>	1,01,38,096.86	26.26 less	74,75,832.62
2	Tack coat (b) Over bituminous surface using emulsion @ 0.25 kg/sqm	8.61	21,332.00 m <sup>2</sup>	1,83,668.52	26.26 less	1,35,437.17
<b>Total excess expenditure</b>						<b>76,11,269.79</b>

**Appendix – 22**

*(Refer paragraph 4.7, Page-125)*

**A. Statement showing calculation of VAT on different types of contracts as per Rule 30 of West Bengal Value Added Tax Rules 2005**

Serial No. as per VAT Rules	Type of Contract	Deduction towards labour, service and other like charges	Percentage of the balance intra-State contractual transfer price after deductions as in clause (i) above, taxable at the rate of		
			4 %	13.5 %	Average rate on the contract
6	Civil works like construction of building, bridge, roads, dams, barrages, canals and diversions	25	40	35	6.325 %
7	Installation of doors, door frames, windows, frames and grills.	20	10	70	9.85 %
8	Supply and fixing of tiles, slabs, stones and sheets.	20	NIL	80	10.80 %
11	Supply and fitting of electrical goods, supply and installation of electrical equipment including transformers.	20	50	30	6.05 %
15	Sanitary fitting for plumbing drainage or sewerage	25	15	60	8.70 %
21	All other contracts not specified from serial no. 1 to 20	20	30	50	7.95 %

## B. Statement showing excess payment

Sl. No.	Name of work (Status)	Name of agency	Bill No. & Date	R/A Bill no.	Amount of bill as per RA bill (in ₹)	Date of Work Order	GST Paid (in ₹)
1	Construction of CFC of Sathi Seva Sandeshkhali Elaka Guicha Samity at P.O.-Darijjangal, Sandeshkhali (Completed on 14.03.2018)	K.B. Associates	1031/17-18 & 11.01.2018	1 <sup>st</sup>	8,87,700.26	No.1947 Dated 16.08.17	1,06,524.00
			1282/17-18 & 26.02.2018	2 <sup>nd</sup>	13,06,835.21		1,56,820.00
			1563/17-18 & 29.03.2018	3 <sup>rd</sup>	6,16,590.60		73,991.00
2	Construction of CFC building of Project Khesh under PPP model at Bakul, Lavpur, Dist-Birbhum (Completed on 06.02.2019)	Sarcar Traders Pvt LTD	345/18-19 & 06.07.2018	1 <sup>st</sup>	40,24,991.11	Memo No.603 Dated 27.03.18	4,82,999.00
			56/18-19 & 05.12.2018	2 <sup>nd</sup>	29,81,295.00		3,57,756.00
			530/18-19 & 11.03.2019	3 <sup>rd</sup> & Final	45,18,683.99		5,42,242.00
3	Construction of CPC building of Adarsh Khadi Pratistan under project Muslim at Simulia, District-Murshidabad (Completed on 24.05.2019)	Paul Enterprises	97/18-19 & 11.12.2018	1 <sup>st</sup>	51,41,121.46	No.735 Dated 13.04.18	6,16,934.00
			952/19-20 & 21.03.2020	2 <sup>nd</sup> & Final	40,54,114.95		4,86,494.00
4	Construction of Interior Decoration of Centre of Excellence of Sabai at Jhargram (Phase-II), Paschim Medinipur (Completed on 12.12.2018)	Impression India	117/18-19 & 11.12.2018	1 <sup>st</sup>	1,24,64,437.23	No. 949 Dated 10.05.18	14,95,732.00
			422/18-19 & 01.02.2019	2 <sup>nd</sup>	1,00,88,710.54		12,10,645.00
5	Construction of CPC building under Project Muslim of Gaza Tantubay samity Ltd at Udaynarayanpur, Dist-Howrah (Completed on 14.12.2018)	M. B. Associates	343/18-19 & 06.07.18	1 <sup>st</sup>	42,38,037.23	No. 523 Dated 20.03.18	5,08,564.00
			484/18-19 & 21.02.2018	2 <sup>nd</sup>	20,14,226.45		2,41,707.00
6	Construction of CPC building at Giaganj Resham Khadi Sangha Murshidabad under Project Muslim (Completed on 27.04.2018)	R. P. Engineering Co.	1272/17-18 & 22.02.18	1 <sup>st</sup>	14,34,719.18	No.2403 Dated 25.10.17	1,72,166.00
			519/17-18 & 29.03.2018	2 <sup>nd</sup>	19,96,448.03		2,39,574.00
			08/18-19 & 01.12.2018	3 <sup>rd</sup>	4,08,010.26		48,961.00
7	Construction of CPC Malda Khadi Pratistan, Village-Selimpur, P.O- Jalalpur (Completed on 14.03.2018)	Paul Enterprises	1260/17-18 & 22.02.2018	1 <sup>st</sup>	32,15,987.91	No.2451 Dated 01.11.17	3,85,919.00
			1521/17-18 & 22.03.2018	2 <sup>nd</sup>	14,41,204.06		1,72,944.00
8	Construction of CFC building of Muslim of Mahila Silk and cotton Khadu trust at Simulia, District-Murshidabad (Completed on 30.01.2019)	Paul Enterprises	99/18-19 & 11.12.2018	1 <sup>st</sup>	33,47,208.35	No.925 Dated 04.05.18	4,01,665.00
			146/18-19 & 28.06.2018	2 <sup>nd</sup>	54,84,269.55		6,58,112.00
9	Construction of CFC building of Project Sabai at Jhilimili, Ranibandh, Dist.-Bankura (Completed on 22.03.2019)	Impression India	229/18-19 & 21.12.2018	1 <sup>st</sup>	41,02,260.07	No.605 Dated 27.03.18	4,92,271.00
			144/19-20 & 28.06.2019	2 <sup>nd</sup>	47,45,195.22		5,69,424.00

Sl. No.	Name of work (Status)	Name of agency	Bill No. & Date	R/A Bill no.	Amount of bill as per RA bill (in ₹)	Date of Work Order	GST Paid (in ₹)
10	Construction of RCCH Project building at Hariharpara Boul, Murshidabad (Completed on 22.01.2019)	Kanan Construction Enterprise	232/18-19 & 21.12.2018	1 <sup>st</sup>	49,07,117.60	No.876 Dated 26.04.18	5,88,854.00
			559/18-19 & 14.03.2019	2 <sup>nd</sup>	48,38,425.86		5,80,611.00
11	Construction of CPC Building of Muslim at Masruddin Resham Khadi Samity at Kalichak, Malda (Completed on 04.09.2019)	Singha Roy Construction	349/18-19 & 14.01.2019	1 <sup>st</sup>	18,45,314.43	No.842 Dated 25.04.18	2,21,438.00
			185/19-20 & 10.07.2019	2 <sup>nd</sup>	17,55,511.21		2,10,662.00
			811/19-20 & 14.02.2020	3 <sup>rd</sup>	4,73,715.00		56,846.00
12	Construction of CFC Building of Project Sal pata and Sabai at Jagannathpur, Simplapai, Bankura (Completed on 04.01.2019)	Sai Con	227/18-19 & 20.12.2018	1 <sup>st</sup>	39,38,769.31	No.604 Dated 27.03.18	4,72,652.00
13	Construction of CPC Stone cutting, curving & Engraving at Susunia, Chhatna, Bankura (Completed on 05.04.2019)	Paul Enterprises	130/18-19 & 12.12.2018	1 <sup>st</sup>	59,40,616.12	No.1838 Dated 01.08.17	7,12,874.00
14	Construction of CPC Building at Bhuniakhali Gramvikash kendra, Bhuniakhali, District- East Midnapore (Completed on 05.12.2018)	K. B. Associates	NA	1 <sup>st</sup>	25,83,505.46	No.525 Dated 20.03.19	3,10,020.00
			NA	2 <sup>nd</sup>	13,28,488.92		1,59,419.00
15	Construction of Footlevel extra tie beam and extra brickwork at Bhuniakhali Gramvikash kendra, Bhuniakhali, District- East Midnapore, (Completed on 03.04.2019)	K. B. Associates	177/19-20 & 10.07.2019	1 <sup>st</sup> & final	4,76,317.27	No.549 Dated 08.03.19	57,158.00
16	Construction of Rooftop pedestal pleanth protection work around the building at Bhuniakhali Gramvikash kendra, Bhuniakhali, District- East Midnapore (Completed on 30.04.2019)	K. B. Associates	179/19-20 & 10.07.2019	1 <sup>st</sup> & final	4,76,325.22	No.610 Dated 19.03.19	57,159.00
17	Construction of CPC of Mantam Mahila Khadi Samity, Gandhorbogram, PO-Jamirghata, PS-Kalichak, District-Malda (Completed on 14.03.2018)	Laha Enterprises	1257/17-18 & 21.02.2018	1 <sup>st</sup>	12,36,336.26	No.2452 Dated 01.11.17	1,48,360.00
			1544/17-18 & 28.03.2018	2 <sup>nd</sup>	25,70,693.26		3,08,483.00

Sl. No.	Name of work (Status)	Name of agency	Bill No. & Date	R/A Bill no.	Amount of bill as per RA bill (in ₹)	Date of Work Order	GST Paid (in ₹)
18	Construction of Guest Rooms and Store room (Concrete work) at 1 <sup>st</sup> floor of CFC of Mantam Mahila Khadi Samity at Sujapur, Malda (Completed on 20.09.2018)	Do	546/18-19 & 13.03.2019	1 <sup>st</sup> & final	4,92,455.96	No.1739 Dated 16.08.18	59,095.00
19	Construction of Guest Rooms and Store room at 1 <sup>st</sup> floor of CFC of Mantam Mahila Khadi Samity at Sujapur Malda (Completed on 20.09.2018)	Do	544/18-19 & 13.03.2019	1 <sup>st</sup> & final	4,97,355.44	No.1740 Dated 16.08.18	59,683.00
20	Construction of CFC of Joygopalpur youth Development Centre, Joygopalpur at Joygopalpur Sandeshkhali (Completed on 14.03.2018)	K.B. Associates	1033/17-18 & 11.01.2018	1 <sup>st</sup>	10,78,522.22	No.1950 Dated 16.08.17	1,29,423.00
			1284/17-18 & 26.02.2018	2 <sup>nd</sup>	3,17,163.95		38,060.00
			1555/17-18 & 28.03.2018	3 <sup>rd</sup>	7,88,687.71		94,642.00
21	Gate & Other ancillary works at CFC Joygopalpur Youth Development Centre at Sandeshkhali (Completed on 30.08.2018)	Do	194/18-19 & 18.12.2018	1 <sup>st</sup> & final	4,97,118.37	No.1243 Dated 13.06.18	59,654.00
22	Guest Room of CFC Joygopalpur Youth Development Centre at Sandeshkhali (Completed on 14.08.2018)	Do	188/18-19 & 18.12.2018	1 <sup>st</sup> & final	4,95,744.59	No.1096 Dated 30.05.18	59,489.00
					<b>11,50,50,231.00</b>		<b>1,38,06,026.00</b>
As per Sl. No. 6 of the above table, Average VAT= 6.325 % Total Bill value = 11,50,50,231.00, Bill value excluding VAT = 11,50,50,231.00 X 100/106.325= 1,08,206,189.51 Contractors should be paid= 10,82,06,189.51 + GST = 10,82,06,189.51 X 112/100 = 12,11,90,932.25 -----I Excess payment = ( Bill value + GST paid) - I = 12,88,56,257.00 - 12,11,90,932.25 = 76,65,324.75 ----- (A)							
23	Wood work and filling work of CFC of Mantam Mahila Khadi Samity at Sujapur Malda (Completed on 20.09.2018)	Do	541/18-19 & 13.03.2019	1 <sup>st</sup> & final	3,99,850.42	No.1738 Dated 16.08.18	47,982.00
As per Sl. No. 7 of the above table, Average VAT= 9.85 % Total Bill value = 3,99,850.42, Bill value excluding VAT = 3,99,850.42 X 100/109.85= 3,63,996.74 Contractors to be paid= 3,63,996.74+ GST = 3,63,996.74 X 112/100 = ₹ 4,07,676.35 -----I Excess payment = (Bill value + GST paid) - I = 4,47,832.42 - 4,07,676.35 = ₹ 40,156.07 ----- (B)							

Sl. No.	Name of work (Status)	Name of agency	Bill No. & Date	R/A Bill no.	Amount of bill as per RA bill (in ₹)	Date of Work Order	GST Paid (in ₹)
24	Extra work for carrying and filling of silver sand including saturation and additional order for floor tiles for office room at Bhuniakhali Gramvikash Kendra, Bhuniakhali, District- East Midnapore <b>(Completed on 03.04.2019)</b>	K. B. Associates	181/19-20 & 10.07.2019	1 <sup>st</sup> & final	3,42,707.27	No.459 Dated 22.02.19	41,125.00
25	Decoration work for floor finishing by vitrified tile of CFC of Mantam Mahila Khadi Samity at Sujapur Malda <b>(Completed on 18.09.2018)</b>	Do	542/18-19 & 13.03.2019	1 <sup>st</sup> & final	4,82,781.58	No.1734 Dated 14.08.18	57,934.00
26	Works for floor finishing by vitrified tiles of CPC Joygopalpur Youth Development Centre at Sandeshkhali <b>(Completed on 24.08.2018)</b>	Do	186/18-19 & 18.12.2018	1 <sup>st</sup> & final	4,92,273.47	No.1244 Dated 13.06.18	59,073.00
<p>As per Sl. No. 8 of the above table, Average VAT= 10.80 % Total Bill value = 1317762.32, Bill value excluding VAT = 1317762.32 X 100/110.80 = 1189316.17 Contractors to be paid= 1189316.17+ GST = 1189316.17 X 112/100 = 1332034.11 -----I Excess payment = ( Bill value + GST paid) – I = 1475894.32 – 1332034.11 = 143860.21 ----- (C)</p>							
27	Electrical wiring and Fitting & fixure for the Guest room, stair case, submersible and others at CFC of Mantam Mahila Khadi Samity at Sujapur, Malda <b>(Completed on 16.09.2018)</b>	Do	550/18-19 & 13.03.2019	1 <sup>st</sup> & final	4,70,823.13	No.1733 Dated 14.08.18	56,500.00
28	Electrical wiring and fitting & fixure at the office, work shop and Guest Room at Joygopalpur Youth Development Centre at Joygopalpur, Block-Sandeshkhali <b>(Completed on 27.07.2018)</b>	Do	528/18-19 & 11.03.2019	1 <sup>st</sup> & final	4,76,918.99	No.1738 Dated 16.08.18	57,230.00
<p>As per Sl. No. 11 of the above table, Average VAT= 6.05 % Total Bill value = 947742.12, Bill value excluding VAT = 947742.12 X 100/106.05 = 893674.79 Contractors to be paid= 893674.79 + GST = 893674.79 X 112/100 = 1000915.77 -----I Excess payment = ( Bill value + GST paid) – I = 1061472.12 – 1000915.77 = 60556.35 ----- (D)</p>							
29	Extra work for Plumbing, Sanitary and Painting work at Bhuniakhali Gramvikash kendra, Bhuniakhali, District- East Midnapore <b>(Completed on 03.04.2019)</b>	K. B. Associates	183/19-20 & 10.07.2019	1 <sup>st</sup> & final	444664.95	No.436 Dated 20.02.19	53,360.00

Sl. No.	Name of work (Status)	Name of agency	Bill No. & Date	R/A Bill no.	Amount of bill as per RA bill (in ₹)	Date of Work Order	GST Paid (in ₹)
<p>As per Sl. No. 15 of the above table, Average VAT= 8.70 % Total Bill value = 444664.95, Bill value excluding VAT = 444664.95 X 100/108.70 = 409075.39                      Contractors should be paid= 409075.39 X 112/100 = 458164.44 -----I                      Excess payment = ( Bill value + GST paid) - I = 498024.95 - 458164.44 = 39860.51 ----- (E)</p>							
30	Construction of Boundary Wall of CFC of Mantam Mahila Khadi Samity, at Sujapur, Malda (Completed on 16.09.2018)	Do	548/18-19 & 13.03.2019	1 <sup>st</sup> & final	4,91,299.91	No.1732 Dated 14.08.18	58,956.00
31	Roof Trass of CFC Joygopalpur Youth Development Centre at Sandeshkhali(Completed on 29.06.2018)	Do	193/18-19 & 18.12.2019	1 <sup>st</sup> & final	4,93,250.44	No.1153 Dated 06.06.18	59,190.00
32	Decorative Gate and ancillary works at CFC Joygopalpur Youth Development Centre at Sandeshkhali (Completed on 14.08.2018)	Do	190/18-19 & 18.12.2018	1 <sup>st</sup> & final	4,70,921.26	No.1098 Dated 30.06.18	56,511.00
33	Construction of showrooms for Joygopalpur Youth Development Centre at Sandeshkhali (Completed on 30.08.2018)	Do	184/18-19 & 18.12.2018	1 <sup>st</sup> & final	4,97,190.34	No.1152 Dated 06.06.18	59,663.00
<p>As per Sl. No. 20 of the above table, Average VAT= 7.95 % Total Bill value = 19,52,661.95, Bill value excluding VAT = 19,52,661.95 X 100/107.95 = 18,08,857.76                      Contractors should be paid= 18,08,857.76 + GST = 18,08,857.76 X 112/100 = 20,25,920.69 -----I                      Excess payment = ( Bill value + GST paid) - I = 21,86,981.95 - 20,25,920.69 = 1,61,061.26 ----- (F)</p>							
34	Construction of CFC tube packed Nalen Gur at vill & P.O.-Bhajanghat, Krisnaganj, Majdia, District-Nadia (Rs.79,52,889.42 on 15.05.17, In progress)	Kanan Construction Enterprise.	599/17-18 & 21.09.2017 900/17-18 & 15.12.2017	1 <sup>st</sup> 2 <sup>nd</sup>	38,12,179.02 12,48,863.44	Memo No.1288 Dated 06.06.17	6,86,192.00 2,24,796.00
<p>As per Sl. No. 20 of the above table, Average VAT= 7.95 % Total Bill value = 50,61,042.46, Bill value excluding VAT = 50,61,042.46 X 100/107.95 = 46,88,320.94                      Contractors should be paid= 46,88,320.94 + GST = 46,88,320.94 X 118/100 = 55,32,218.71 -----I                      Excess payment = ( Bill value + GST paid) - I = 59,72,030.46 - 55,32,218.71 = 4,39,811.75 ----- (G)</p>							
<p>Total Excess Payment = A + B + C + D + E + F + G = 76,65,324.75 + 40,156.07 + 1,43,860.21 + 60,556.35 + 39,860.51 + 1,61,061.26 + 4,39,811.75 = 85,50,630.90                      Total bill value = 11,50,50,231.00 + 3,99,850.42 + 13,17,762.32 + 9,47,742.12 + 4,44,664.95 + 19,52,661.95 + 50,61,042.46 = 12,51,73,955.06                      Total GST paid = 1,38,06,026.00 + 47,982.00 + 1,58,132.00 + 1,13,730.00 + 53,360.00 + 2,34,320.00 + 9,10,988.00 = 1,53,24,538.00</p>							





# **Glossary of Abbreviations**



## Glossary of Abbreviations

Abbreviation	Full form
ABs	Autonomous Bodies
ACQ	Annual Contracted Quantity
ACSR	Annual Compliance Status Reports
AHCFs	Animal Health Care Facilities
APCD	Air Pollution Control Device
APH	Air Pre-Heater
ARDD	Animal Resources Development Department
ATN	Action Taken Notes
BBTPP	Budge Budge Thermal Power Plant
BC	Bituminous Concrete
BCCL	Bharat Coking Coal Limited
BIS	Bureau of Indian Standards
BkTPS	Bakreswar Thermal Power Station
BL&LRO	Block Land and Land Reforms Officer
BLDOs	Block Livestock Development Offices
BM	Bituminous Macadam
BMC	Biodiversity Management Committee
BMW	Bio-Medical Waste
BMWM	Bio-Medical Waste Management
BNM	BNM Organic (P) Limited
BOBR	Bogie Open Bottom Rapid Discharge Hopper
BoC	Board of Councillors
BOD	Biological Oxygen Demand
BoD	Board of Directors
BPCL	Bharat Petroleum Corporation Limited
BSL	Bengal Shipyards Limited
BTPS	Bandel Thermal Power Station
CAAQMS	Continuous Ambient Air Quality Monitoring Stations
CAG	Comptroller and Auditor General of India
CAGR	Compounded Annual Growth Rate
CBR	California Bearing Ratio
CBWTF	Common Bio-Medical Waste Treatment and Disposal Facilities
CBWTF	Common Bio-Medical Waste Treatment Facility
CCL	Central Coalfield Limited
CCP	Common Collection Point
CE	Chief Engineer
CEA	Central Electricity Authority
CESC	Calcutta Electricity Supply Corporation
CETP	Common Effluent Treatment Plant
CF	Certificate of Fitness

Abbreviation	Full form
CFC	Chloro Fluro Carbon
CHWTSDF	Common Hazardous Waste Treatment Storage and Disposal Facility
CIMFR	Central Institute of Mining and Fuel Research
CLC	Calcutta Leather Complex
COGP	Coke Oven Group of Plant
COPU	Committee on Public Undertakings
CPCB	Central Pollution Control Board
CRZ	Costal Regulation Zone
CSD	Correctional Service Department
CSIR	Council of Scientific and Industrial Research
CSTC	Calcutta State Transport Corporation
CTO	Chief Technical Officer
CTO	Consent to Operate
CVCA	Critically Vulnerable Coastal Area
CZMP	Coastal Zone Management Plan
DB	Differential Bar
DBM	Dense Bituminous Macadam
DC	Declared Capacity
DCA	Detailed Compliance Audit
DH	District Hospital
DL&LRO	District Land and Land Reforms Officer
DLC	Dry Lean Concrete
DLMC	District Level Monitoring Committee
DLR	Director of Land Reforms
DMD	Disaster Management Department
DMF	District Mineral Foundation
DoE	Department of Environment
DoP	Department of Power
DPC	Duties, Powers and Conditions of Service
DPL	Durgapur Project Limited
DPNCES	Department of Power and Non-Conventional Energy Sources
DPR	Detailed Project Report
DS&T	Department of Science and Technology
EAR	Energy Audit Report
EBIT	Earnings Before Interest And Taxes
EC	Environmental Clearance
ECL	Eastern Coalfield Limited
EE	Executive Engineers
EKW	East Kolkata Wetland
EKWMA	East Kolkata Wetland Management Authority
EMD	Earnest Money Deposit

Abbreviation	Full form
ESA	Ecologically Sensitive Area
ESAL	Equivalent Standard Axle Load
ETP	Effluent Treatment Plant
FSA	Fuel Supply Agreements
GCMLP	Global Coal and Mining Private Limited
GCV	Gross Calorific Value
GD	Garia Depot
GDP	Gross Domestic Product
GEMPL	Greentech Environ Management Private Limited
GENCOs	Generation Companies
GFR	General Financial Rules
GHG	Green House Gas
GoI	Government of India
GoWB	Government of West Bengal
GP	Gram Panchayat
GSB	Granular Sub-Base
GSDP	Gross State Domestic Product
GST	Goods and Services Tax
GTL	Gadkhali Tourist Lodge
HCFs	Health Care Facilities
HD	Health District
HFWD	Health and Family Welfare Department
HOWM RULES	Hazardous and Other Wastes (Management and Trans Boundary Movement) Rules
HPCL	Hindustan Petroleum Corporation Limited
HRBC	Hooghly River Bridge Commissioners
HTL	High Tide Level
HW	Hazardous Waste
ICG	Indian Coast Guard
ICR	Interest Coverage Ratio
ID	Induced Draft
IESWM	Institute of Environmental Studies and Wetland Management
IMP	Integrated Management Plan
IOCL	Indian Oil Corporation Limited
IR	Inspection Report
IRC	Indian Roads Congress
JNU	Jawaharlal Nehru University
KD	Kosba Depot
KMC	Kolkata Municipal Corporation
KMDA	Kolkata Metropolitan Development Authority
KTPS	Kolaghat Thermal Power Station

Abbreviation	Full form
L&LR RR& RD	Land and Land Reforms Refugee Relief and Rehabilitation Department
LDO	Light Diesel Oil
LTL	Long Term Lease
LTS	Long Term Settlement
LULC	Land Use and Land Cover
MCL	Mahanadi Coalfield Limited
MDO	Mine Developer and Operator
MKWH	Million Kilowatt Hours
MLD	Million Litres Per Day
MMDR Act	Mines and Minerals Development and Regulation Act
MoC	Ministry of Coal
MoEF&CC	Ministry of Environment, Forests and Climate Change
MoR	Ministry of Railways
MoRT&H	Ministry of Road Transport & Highway
MPCS	Multipurpose Cyclone Shelters
MSA	Million Standard Axles
MSME&T	Micro, Small And Medium Enterprises & Textiles
MSS	Mixed Seal Surfacing
MSTC	Metal Scrap Trade Corporation Limited
MV	Motor Vehicles
NAAQS	National Ambient Air Quality Standard
NANMN	National Ambient Noise Monitoring Network
NCDP	New Coal Distribution Policy
NDZ	No Development Zone
NGT	National Green Tribunal
NMET	National Mineral Exploration Trust
NWIA	National Wetland Inventory and Assessment
NWQMP	National Water Quality Monitoring Programme
O&G	Oil & Grease
OGPC	Open Graded Premix Carpet
PA	Performance Audit
PAC	Public Accounts Committee
PAF	Plant Availability Factor
PAG	Principal Accountant General
PBR	People's Biodiversity Register
PG	Performance Guarantee
PHC	Primary Health Centre
PLF	Plant Load Factor
PPE	Personal Protective Equipment
PQC	Pavement Quality Concrete

Abbreviation	Full form
PSEs	Public Sector Enterprises
PUC	Pollution Under Control
PV	Present Value
PWD	Public Works Department
PWM	Plastic Waste Management
PWRD	Public Works (Roads) Directorate
RBM	River Bed Materials
RH	Rural Hospital
RoCE	Return on Capital Employed
RoE	Return on Equity
RoI	Return on Investment
RoRR	Rate of Real Return
RRs	Railway Receipts
RSPM	Respirable Suspended Particulate Matter
SAAQMS	Semi-Automatic Ambient Air Quality Monitoring Stations
SAC	Space Application Centre
SAR	Separate Audit Report
SBSTC	South Bengal State Transport Corporation
SCR	Selective Catalytic Reduction
SDBC	Semi Dense Bituminous Concrete
SE	Superintending Engineer
SEIAA	State Environment Impact Assessment Authority
SGH	State Government Hospital
SgTPS	Sagardighi Thermal Power Station
SHR	Station Heat Rate
SIA	Social Impact Assessment
SNM	Sant Nirankari Mandal
SoR	Schedule of Rates
SPCBs	State Pollution Control Boards
SPM	Suspended Particulate Matter
SPSEs	State Public Sector Enterprises
STP	Sewerage Treatment Plant
STPS	Santaldih Thermal Power Station
STUs	State Transport Undertakings
SUDA	State Urban Development Agency
SWA	State Wetlands Authority
SWMP	Solid Waste Management Plan
TC	Total Coliform
TDS	Total Dissolved Solids
TE	Thermal Efficiency
TPD	Thakurpukur Depot



<b>Abbreviation</b>	<b>Full form</b>
TPS	Thermal Power Station
TRC	Tiger Rescue Centre
ULBs	Urban Local Bodies
VAT	Value Added Tax
VDF	Vehicle Damage Factor
WB	West Bengal
WBBB	West Bengal Bio-Diversity Board
WBBD	West Bengal Biological Diversity
WBEIDCL	West Bengal Electronics Industry Development Corporation Limited
WBERC	West Bengal Electricity Regulatory Commission
WBIDCL	West Bengal Industrial Development Corporation Limited
WBKVIB	West Bengal Khadi and Village Industries Board
WBL&LR	West Bengal Land and Land Reforms
WBMDTCL	West Bengal Mineral Development and Trading Corporation Limited
WBPCB	West Bengal Pollution Control Board
WBPDC	West Bengal Power Development Corporation Limited
WBSCZMA	West Bengal State Coastal Zone Management Authority
WBSEDCL	West Bengal State Electricity Distribution Company Limited
WBSETCL	West Bengal State Electricity Transmission Company Limited
WBSIDCL	West Bengal Small Industries Development Corporation Limited
WISA	Wetlands International South Asia
WMM	Wet Mix Macadam
WQM	Water Quality Monitoring

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