



SUPREME AUDIT INSTITUTION OF INDIA  
लोकहितार्थं सत्यनिष्ठा  
Dedicated to Truth in Public Interest

**Report of the  
Comptroller and Auditor General of India  
on  
Construction and Operation  
of  
Lucknow Metro Rail Project**



**Government of Uttar Pradesh  
Report No. 12 of 2025  
(Performance Audit-Commercial)**



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## Preface

This Report has been prepared for submission to the Governor of Uttar Pradesh under Article 151 of the Constitution of India and Section 19A of the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971, as amended from time to time.

The Report contains the results of the Performance Audit on 'Construction and Operation of Lucknow Metro Rail Project', covering the period November 2013 to March 2023. The instances mentioned in this Report are those which came to notice in the course of test-audit for the period November 2013 to March 2023; matters subsequent to the year 2022-23 have also been included wherever necessary.

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



## **Executive Summary**



## Executive Summary

### Why did we take up this audit?

Government of Uttar Pradesh (GoUP) in the Budget for 2013-14 included an announcement for metro rail project in Lucknow. Delhi Metro Rail Corporation Ltd. (DMRCL) prepared Detailed Project Report (DPR) with two corridors i.e., North-South corridor covering 22.88 km and East-West corridor covering 11.10 km. The DPR was finally approved in October 2013 and in-principle approval of North-South corridor i.e., Phase-1A of the project was granted by Government of India (GoI) in December 2013.

Lucknow Metro Rail Corporation Limited (the Company) was incorporated in November 2013 to execute Lucknow Metro Rail Project. The work on North-South corridor of Lucknow Metro was commenced in September 2014 and completed in March 2019 with 22.88 km of length. Name of the Company was later changed to Uttar Pradesh Metro Rail Corporation Limited (UPMRCL) on 23 October 2019. This Company is a joint venture of GoI and GoUP with 50:50 equity contribution.

Performance Audit on Construction and Operation of Phase-1A of Lucknow Metro Rail Project was taken up with the objective to examine whether (i) effective planning was done to ensure economic viability and selection of the most appropriate technologies; (ii) implementation in terms of project execution and contract management was done with due care, economical, and in a timely and transparent manner; (iii) an adequate mechanism was in existence to monitor the project to ensure timely completion and conformity of works executed with laid down specifications; and (iv) the operation and maintenance were efficient, and the planned benefits were achieved after commercial operation.

The Performance Audit covered the activities of Phase-1A of the project for the period since its inception in November 2013 to March 2023. A total of 51 (21 major works and 30 minor works) contracts involving ₹ 4,987.21 crore out of total 144 contracts relating to civil, rolling stock, track, electrical, signalling & telecom, property development and operation & maintenance were covered in audit. The Indian Institute of Technology, Kanpur (IIT Kanpur) was engaged for providing technical consultancy during review of the technical aspects of the Phase-1A project.

### What have we found?

#### (A) Planning

The Company did not include 'Alternative Analysis' for evaluation of available technologies, in the DPR of Lucknow Metro Rail Project, as envisaged in the 'Guidelines for preparation of DPR for Integrated Mass Transit System Development Plans (Bus based/Rail based)' issued by Ministry of Urban Development, Government of India in November 2006. This guideline required detailed evaluation of various alternative technologies to solve the existing public transportation problems.

The GoI accorded in-principle approval (December 2013) for taking up the Phase-1A of Lucknow Metro Rail Project covering a total length of 22.88 km

stations in North-South corridor and excluded Mahanagar Metro station, which had second highest projected daily loading capacity in 2021 as per the DPR, from the project without approval from the concerned authority.

The Company did not comply with conditions contained in the in-principle approval of the GoI to the project such as periodic fare revision, setting up of District Urban Transport Fund and framing of advertising and parking policy.

For bulk extraction of ground water, any commercial organisation was mandatorily required to apply and obtain permission from Central Ground Water Authority (CGWA)/Ground Water Department, GoUP (GWD). Audit found that Company did not get registered in CGWA/GWD, UP for obtaining NOC during 2013-23.

### **(B) Contract and Project Management**

The company did not open the financial bid of M/s Gammon India Limited despite its name being recommended by the technical evaluation committee. In reply, the State Government stated that it was a conscious decision of the Board based on past performance of M/s Gammon India Limited at Delhi and Chennai metro project and lack of desirable safety measure and avoidable delay in these projects. The reply was not acceptable because if the Company had prior information about the unsatisfactory past performance of M/s Gammon India Limited, it should not have allowed M/s Gammon India Limited to participate in the technical bidding stage itself.

Government order for obtaining Additional Performance Guarantee (APG) was not followed for the execution of below to the departmental rates in the contract agreement of LKCC-07 and the Company did not obtain APG to safeguard its interest. Plant & Machinery advance was irregularly paid to the contractor for the plants and machineries already owned by him in violation of the contract agreement (LKCC-07). Similarly, another contractor was irregularly paid excess amount of advance for material at site contrary to the provisions of the contract conditions of LKCC-04 works.

A lump sum work of Schedule E (miscellaneous work under DSR-2014) of LKCC-07 was executed to ₹ 51.40 crore against the bonded cost of ₹ 15.75 crore. The Company provided the details of items of works of only ₹ 1.30 crore despite repeated requests were made for providing in Audit. The State Government did not respond on this issue.

The Company awarded (June 2017) a contract for advertisement rights in trains of Metro Phase-1A (N-S Corridor). Despite taking over 12 train sets, the licensee had not paid license fee to the Company. Moreover, the Company relieved the licensee from the license fee payment instead of acting as per provisions of the licensee agreement for recovery of license fee including Goods and Services Tax (GST). In reply, the State Government stated that license fee was not collected as the advertising agency had not utilised these train sets. The reply was not acceptable since the licensee was bound to pay license fee for these 12 train sets as per the license agreement.

The Project authorities of the Company neither collected Form MM-11 (transit pass) before making payment to the contractor nor ensured the deductions of

royalty and price of minerals amounting to ₹ 3.16 crore from the contractor. The Company did not obtain permit from Geology and Mining Department for extraction of ordinary soil during construction of underground stations and ramps. Further, the Company did not collect royalty from other Government departments for ordinary soil transferred to them and did not deposit the same in Government Account.

The Company procured 25.80 hectares of land for construction of depot of Lucknow Metro. However, 1.98 hectares (7.67 per cent) out of this land was disputed and already under litigation. The Company constructed depot on the acquired land including the disputed land. Audit noticed that the tripartite agreement among the Company, Additional District Magistrate (Land Acquisition), and parties related to disputed land lacked signatures of some of the related parties. This agreement was not registered also. As such, the agreement was not legally enforceable and may attract litigation in case of disagreement among the parties. In reply, the State Government stated that the tripartite agreement on stamp paper was not required as the ownership of disputed land was not clear. Needless expenditure on stamp duties and registration fee would have to be borne by the Company. The reply was not acceptable because construction of the depot on the disputed land was against the financial rules. Also, non-registered tripartite agreement was not legally enforceable.

### **(C) Operation & Maintenance**

The Company did not opt for open tender process for the engagement of security firm and awarded the contract to M/s G4S on nomination basis without any recorded justification as to why this particular security firm was selected. This was in violation of the Central Vigilance Commission (CVC) Guidelines and provisions of General Financial Rules (GFR).

The tests conducted by IIT, Kanpur on the rail samples provided by the Company to determine the hardness value of rails at depot area and mainline, revealed that the hardness value was less as compared to the Indian Railway Standard (IRS) specification issued in December 2009. In reply, the State Government stated that the tests have not been conducted by IIT in accordance with prescribed codal provisions. The earlier tests carried out during procurement demonstrated that the hardness measured satisfied the provisions enumerated in “IRS-T-12-2009”. In response, IIT Kanpur stated that testing procedures applied by it were as per the standards (IS 1500:2005) which was standard practice.

A certified cyber security agency for routine Vulnerability Assessment and Penetration Testing (VAPT) was not empanelled to examine the security and therefore, the metro system was susceptible to threat and malfunction.

The Company did not determine any benchmark for maintaining noise level within the permissible limit. Thus, the objective for providing comfortable environment inside the Metro trains and outside at the stations was not fulfilled.

The Interim Speed Certificate (ISC) was not renewed despite its requirement after expiry of five years from the date of its issue (March 2017). In absence of ISC, wear and tear in wheel of rolling stock and adjustment needed thereof could not be ascertained. By not renewing the Speed Certificate after expiry of five

years, the Company has taken unnecessary risk with the safety of passengers. In reply, the State Government stated that as per Procedure for Safety Certification and Technical Clearance of Metro System (PSTM)-2015, Interim Speed Certificate (ISC) shall remain valid till the issuance of the final speed certificate as no extension provision of ISC (such as 5 years) is defined. The reply was not factual because the PSTM-2015 does not state that ISC shall remain valid till the issuance of the Final Speed Certificate. Therefore, ISC issued to Lucknow metro was valid only for five years as specifically mentioned in ISC and was required to be renewed thereafter.

#### **(D) Revenue Management**

Revenue generation through Property Development by metro projects is a global practice as the metro projects are highly capital intensive and the only way to become financially sustainable without government subsidies, is by generating Non-Fare Box Revenue from property development activities viz. advertisements, retailing, real estate at metro stations, etc.

Operating revenue of the Company increased from ₹ 5.55 crore to ₹ 99.35 crore (1690.10 *per cent*) during the period 2017-18 to 2023-24 with average growth of 281.62 *per cent*. During this duration, operating expenses also increased from ₹ 16.17 crore to ₹ 76.11 crore. Nevertheless, it was encouraging for the Company that it earned operating revenue more than the operating expenses after five years of operations of Lucknow Metro Rail Project.

Further, the company could not achieve the year-wise footfall and revenue from operations anywhere near the projections envisaged in the DPR. In reply, the State Government stated that year-wise footfall and revenue operations projected in the DPR was made considering combined traffic from both North-south and East-West corridors, however, East-West corridor could not be made operational.

The Company did not insure its administrative office building taken from a Society on rent in violation of terms of the rent deed. The Company paid rent without payment of Service Tax/GST as the Society was not registered with Service Tax/GST authorities. This resulted in loss of Service Tax/GST revenue to the Government.

The Company was issued electricity energy bill by the DISCOM at the rate of ₹ 7.30 KVAh among other charges under HV-3B category. The Company collected electricity charges at higher rate of ₹ 8.75 KVAh from its commercial tenants resulting in higher collection of electricity duty also from July 2019 to August 2022. This higher collection of electricity duty was retained by the Company unauthorisedly and not remitted to the State Government or the DISCOM. In reply, the Company stated that it was charging higher tariff on its commercial tenants to recover the cost of maintenance of infrastructure built by it. The reply was not acceptable because the Company may collect higher tariffs to recover the cost incurred by it for construction and maintenance of transmission and distribution networks, but electricity duty collected by it should be remitted directly to the Government or through DISCOM.

The revenue of Lucknow Metro mainly consists of fare box collection and non-fare box collection (property development, advertisement, parking, etc.). Audit

noticed that company could not explore the possibility of leasing out 54,196 sq. ft. available commercial spaces as of March 2025. Besides, bids for 15,984.54 sq. ft. available parking spaces were also not invited by the Company during 2017-24.

The GoUP identified (October 2013) land to be provided to the Company for property development but the same was handed over to the Company in April 2022 after lapse of more than eight years. Moreover, the Company did not utilise 86.10 acres of land for property development after lapse of almost three years since receipt of the same.

### **Way forward: What we recommend?**

#### **Audit recommends that the Company should:**

- *ensure that any change if required in metro station conceived under the Project is carried out only after the approval of the authority who had sanctioned the original Project.*
- *ensure obtaining No Objection Certificate from Ground Water Department, GoUP for extraction of ground water.*
- *ensure that terms of contract are adhered to and a system should be in place to recover dues and irregular/excess payment of advance.*
- *fix responsibility where variation & extra items are beyond limits in a contract without sanction from proper delegated authority, thus vitiating the contract integrity.*
- *obtain Form MM-11 (transit pass) from the contractors to ensure that the minerals used in the construction works of the metro have been procured from legal sources and royalties etc. are deposited in Government Account.*
- *ensure full compliance with the statutory provisions, rules, Central Vigilance Commission guidelines, Indian Railway Standards/specifications, agreements, etc.*
- *ensure to empanel a certified cyber security agency for routine vulnerability assessment and penetration testing to avoid susceptible threat and malfunctioning of the communication-based train control system.*
- *devise ways to attract commuters into the metro by providing end to end connectivity to increase the ridership and revenue.*
- *ensure timely development of land available for property development and also ensure realisation of optimal revenue from developed properties through timely leasing out of available commercial and parking spaces.*



## Chapter I

### **Introduction**



## Chapter-I

### Introduction

#### 1.1 Introduction to Lucknow Metro Rail Project

In view of the intra-city traffic volume in Lucknow and the urgent need for a full-fledged Integrated Multi Modal Mass Rapid Passenger System, Government entrusted the task for preparation of Detailed Project Report (DPR) to Delhi Metro Rail Corporation Ltd. (DMRCL) in 2009. The DMRCL submitted the draft DPR in April 2011.

Thereafter, the matter was taken up in right earnest w.e.f. January 2013 and the Budget of GoUP for 2013-14 included an announcement for Metro rail project in Lucknow. GoUP established a Metro Cell in May 2013 under the jurisdiction of Secretary, Housing and Urban Planning Department. DMRCL submitted (July 2013) the revised DPR with two corridors i.e. North-South and East-West. The DPR was finally approved in October 2013 and in-principle approval of the Phase-IA of the project i.e. North-South (N-S) corridor was granted by GoI in December 2013.

A Special Purpose Vehicle namely Lucknow Metro Rail Corporation Limited (the Company) was incorporated in November 2013 to execute and operate the metro rail in Lucknow. Subsequently, the need of various Metro rail projects was felt in the State and the name of the Company was changed to Uttar Pradesh Metro Rail Corporation Limited on 23 October 2019. The Company is a joint venture between the Government of India (GoI) and the Government of Uttar Pradesh (GoUP) with 50:50 equity participation. The Company is under the administrative control of Ministry of Housing and Urban Affairs (MoHUA), Government of India (GoI) and Housing and Urban Planning Department (HUPD), Government of Uttar Pradesh (GoUP).

The Board of Directors of the Company consists of 14 Directors. The Chairman of the Company is the nominee of the GoI while the Managing Director is the nominee of the GoUP. The Managing Director is assisted by four functional Directors viz., Director (Works & Infrastructure), Director (Finance), Director (Rolling Stock & Signalling) and Director (Operations). The Board of Directors of the Company also has four GoI nominee Directors and four GoUP nominee Directors.

The work on North-South corridor (Phase-IA) of Lucknow Metro was commenced in September 2014 and completed in March 2019 with 22.88 km of length.

#### 1.2 Agency-wise funds sanctioned for N-S corridor (Phase-IA)

The details of total sanctioned fund of ₹ 6,928.00 crore and details of total expenditure incurred of ₹ 6,868.75 crore for Phase-IA are depicted in **Table 1.1** and **Chart 1.1**:

**Table 1.1**

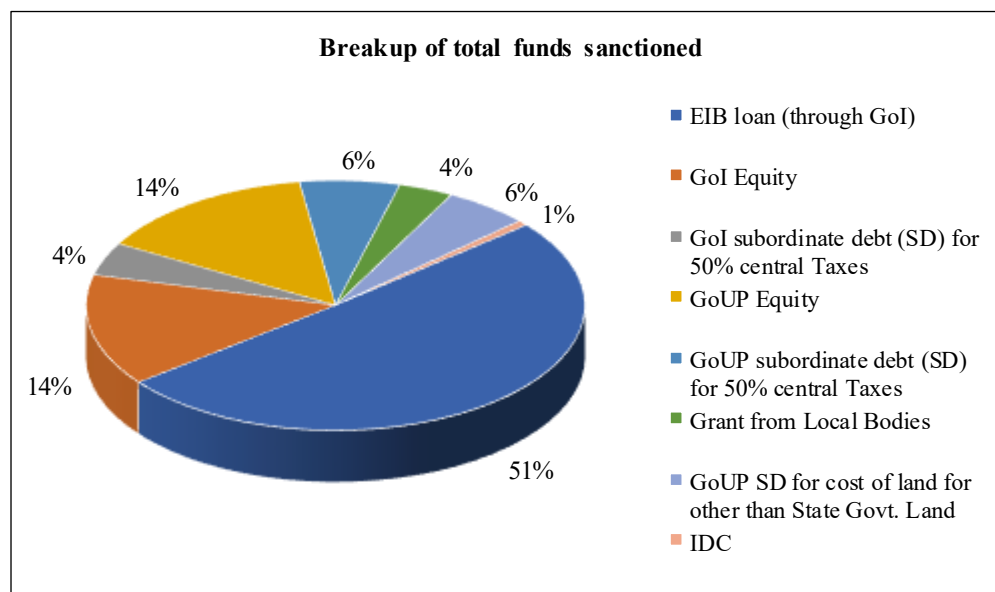
**Allocation of funds and expenditure incurred for N-S corridor (Phase-IA)  
as of 31 March 2024**

(₹ in crore)

Sl. No.	Sources of fund	Total funds sanctioned*	Total funds received	Expenditure incurred
1	EIB <sup>1</sup> loan (through GoI)	3,502.00	3,502.00	3,502.00
2	GoI Equity	1,003.00	1,003.00	1,003.00
3	GoI subordinate debt <sup>2</sup> (SD) for 50 per cent central Taxes	297.00	297.00	297.00
4	GoUP Equity	1,003.00	1,003.00	1,003.00
5	GoUP subordinate debt (SD) for 50 per cent central Taxes	449.00	449.00	449.00
6	Grant from Local Bodies	245.00	233.75	233.75
7	GoUP SD for cost of land for other than State Government Land	381.00	381.00	381.00
8	IDC <sup>3</sup>	48.00	0.00	0.00
	<b>Total</b>	<b>6,928.00</b>	<b>6,868.75</b>	<b>6,868.75</b>

(\*Share of sanctioned cost as approved by GoI vide letter dated January 2016)

**Chart 1.1**



### 1.3 Audit objectives

Performance Audit on “Construction and Operation of Lucknow Metro Rail Project” was conducted with the objectives to verify whether:

- Effective planning was done to ensure economic viability and selection of the most appropriate technologies;

<sup>1</sup> European Investment Bank.

<sup>2</sup> Type of loan with least repayment priority.

<sup>3</sup> Interest During Construction.

- Implementation in terms of project execution and contract management was done with due care, economical and in a timely and transparent manner;
- An adequate mechanism was in existence to monitor the project, to ensure timely completion and conformity of works executed with laid down specifications; and
- Operation and maintenance was efficient, and the planned benefits were achieved after commercial operation of the Phase-IA.

#### **1.4 Audit criteria**

The criteria for the Performance Audit were derived from the following sources:

- Agenda and Minutes of meetings of the Board of Directors (BoD) and other sub committees;
- Schedule of Powers (SoP);
- Detailed Project Reports;
- Applicable General Financial Rules (GFRs);
- Guidelines issued by the Central Vigilance Commission (CVC);
- Directions and guidelines issued by the Administrative Ministry;
- Policies, standards, directives and guidelines of the DMRC/UPMRC;
- General Conditions of Contracts (GCC) and Special Conditions of Contracts (SCC);
- National Urban Transport Policy, 2006; and
- The Metro Railways (Construction of Works) Act, 1978.

#### **1.5 Audit scope and methodology**

The Performance Audit covered planning, implementation, monitoring and operations and maintenance of North-South corridor (Phase-IA) of Lucknow Metro Rail Project and outcome of the activities of Phase-IA of the project for the period since its commencement in November 2013 to March 2023. The Performance Audit was conducted between April 2022 and October 2023.

Audit methodology included review and examination of the agenda and minutes of the meetings of the Board. Questionnaire, audit enquiries and audit requisitions were also issued to the Company for clarification, information and records. Besides, Indian Institute of Technology, Kanpur (IIT Kanpur) was appointed as Technical Consultant on 18 December 2023 to review the technical aspects of civil works, signalling and telecom, rolling stock, noise & vibrations, heating, ventilation & air conditioning and electrical works executed by the Company. The IIT, Kanpur submitted its findings in August 2024 and the same have been suitably incorporated in Chapter IV of this report.

The Entry Conference with Principal Secretary, Housing & Urban Planning Department, GoUP and the Company was held on 25 August 2022 wherein scope and coverage of audit, audit objectives and criteria, proposed techniques

of evidence collection, etc. were discussed. The draft Audit Report was issued to GoUP and the Company on 11 June 2024. Reply of the GoUP on the draft Audit Report was received in September 2024. An Exit Conference was held on 29 October 2024 with the Principal Secretary, Housing & Urban Planning Department, GoUP and the Company to discuss the audit observations. Replies of the Government have been duly considered and relevant portions have been incorporated in this Report. Besides, the draft Report was also issued in April 2025 to the Secretary, Ministry of Housing and Urban Affairs (HoHUA), GoI for their comments. A meeting was also held on 8 May 2025 with the Director, MRTS-II of MoHUA in the Office of the Comptroller and Auditor General of India for obtaining comments on the draft Report. However, no comments was received from the Ministry till May 2025.

## **1.6 Sample selection**

A total of 51 contracts (consist of 21 major works and 30 minor works) were selected using stratified random sampling methodology. The details of the selected contracts are given in *Appendix-I (a & b)*. The Audit coverage in terms of number of contracts was 61.76 per cent<sup>4</sup> for major contracts and 27.27 per cent<sup>5</sup> for miscellaneous contracts (in terms of monetary value it was 87.32 per cent<sup>6</sup> for major contracts and 37.97 per cent<sup>7</sup> for miscellaneous contracts) executed for the Phase-IA project.

## **1.7 Structure of the Report**

The Report consists of five chapters. Chapter-I of the Report gives the background information of the Company, the need for North-South corridor project (Phase-IA), audit objectives, scope of audit, audit criteria, audit methodology, sample selection, etc. Audit findings have been broadly categorised into four chapters aligning with four audit objectives.

Chapter-II relates to Planning and contains audit findings on the first audit objective and brings out inefficiencies in planning. Chapter-III on Contract and Project Management contains audit findings on the second and third audit objective which indicate deficiencies in project execution and contract management. Chapter-IV on Operation and Maintenance contains audit findings on the fourth audit objective and highlights deficiencies in operation and maintenance leading to shortfall in achievement of planned benefits after commercial operation. Chapter-V on Revenue Management contains audit findings also on the fourth audit objective and highlights deficiencies in revenue generation.

## **1.8 Limitations due to records not produced**

Documents which were not provided to audit by the Company is attached as *Appendix-II*. Hence, audit could not form an opinion on the related issues.

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<sup>4</sup> Total 21 contracts selected out of 34 major contracts.

<sup>5</sup> Total 30 contracts selected out of 110 miscellaneous contracts.

<sup>6</sup> ₹ 4,962.09 crore out of ₹ 5,682.72 crore for major contracts.

<sup>7</sup> ₹ 25.12 crore out of ₹ 66.15 crore for miscellaneous contracts.

## **1.9 Acknowledgement**

The assistance provided by the Technical Consultant (IIT Kanpur) and the cooperation extended by the Company, Housing and Urban Planning Department, GoUP, during the conduct of this audit is appreciated and acknowledged.



## Chapter II

# Planning



## Chapter-II

### Planning

#### **Brief snapshot of the chapter:**

- The Company did not include ‘Alternative Analysis’ for evaluation of various alternative technologies in the Detailed Project Report, as required in the guidelines issued by Ministry of Urban Development.
- The State Government/Company did not comply with conditions contained in the in-principle approval of GoI of the project such as periodic fare revision, setting up of District Urban Transport Fund and framing of advertising and parking policy.
- The Company did not obtain No Objection Certificate for extraction of groundwater since commencement for bulk commercial use of groundwater either from Central Ground Water Authority or Ground Water Department, GoUP.

#### **2.1 Policy framework**

Policy is a deliberate system of principles to guide decisions and achieve rational outcomes. A statement of intent, it usually assists senior management with decisions that must be based on the relative merits of several factors.

Audit reviewed the approval of the initial Phase-IA (North-South corridor) of Lucknow Metro Rail Project and assessed whether effective planning was in place and observed deficiencies as brought out in the following paragraphs:

#### **2.2 Alternative Analysis not included in DPR as required in the guidelines of Ministry of Urban Development (MoUD), GoI**

MoUD issued (November 2006) common guidelines for preparation of DPR for Integrated Mass Transit System Development Plans as Project Reports for Mass Transit System were not being prepared in line with the National Urban Transport Policy, approved by the GoI in April 2006.

Audit observed that Para 4.3 ‘Alternative Analysis’ of the above guidelines stipulated that evaluation of various alternative technologies to solve the existing problems with cost benefit analysis, technical feasibility including evaluation of lowest cost options like traffic management, rationalization, etc. for choosing a particular technology/system concept was to be included in the DPR. However, no such para was included in the DPR of Lucknow Metro Rail Project.

In reply, the State Government stated (September 2024) that Alternative Analysis Report was not mentioned in the National Urban Transport Policy, approved by the GoI in April 2006.

The reply was not acceptable because the detailed guidelines issued in November 2006 for preparation of DPR for integrated mass transit system development plans was based on the National Urban Transport Policy, 2006 and conducting 'Alternative Analysis' was part of the guidelines.

### **2.3 Exclusion of Mahanagar Metro Station without approval from competent authority**

The GoI accorded in-principle approval (December 2013) for taking up the Phase-1A (N-S corridor) of Lucknow Metro Rail Project covering a total length of 22.88 kilometres with 22 stations. The DPR of the Project, MoU signed between GoI and GoUP, Finance Contract executed between GoI and European Investment Bank (EIB) and the Project Agreement executed between EIB and the Company mentioned in their documents for construction of 22 metro stations in N-S corridor. One of the metro stations named Mahanagar in the DPR was ranked third in terms of daily loading capacity in 2015 and subsequently in 2020 this was to be second in terms of daily loading capacity.

Audit noticed that the Company constructed only 21 metro stations in N-S corridor and excluded Mahanagar Metro station from the project. As mentioned above, Mahanagar station, which was to have the second highest daily loading capacity<sup>8</sup> in 2020, was not constructed. No record was submitted to show that the proposal for exclusion of Mahanagar station was forwarded to GoI and GoUP, and whether approval was taken from the concerned authority. Thus, the Company had excluded Mahanagar station from approved project without approval. This resulted in violation of the provisions of DPR, MoU, the Finance Contract and the Project Agreement and non-achievement of the metro facility to the locality as well.

In reply, the State Government stated (September 2024) that the matter was not hidden from the GoI as MoHUA has notified the alignment of N-S corridor with 21 stations only after comparison with the originally sanctioned DPR.

Reply was not convincing. The Company had submitted index plan of Lucknow metro for notification to the GoI. On verification of the letter sent to the OSD (Urban Transport), MoHUA, it was seen that the management had clearly stated about other major changes in plan like construction of an underground station at Chaudhary Charan Singh airport in place of elevated station as proposed in the DPR. However, the management did not mention the omission of the Mahanagar metro station which was approved in the DPR, in the letter. Further, a separate approval for variation from DPR should have been sought from GoI with justification.

### **2.4 Conditions of in-principle approval of GoI not adhered to**

In-principle approval to the North-South corridor of the Lucknow Metro Rail Project was granted by GoI on 27 December 2013 subject to 18 conditions. Audit noticed that the State Government/the Company did not comply with the following conditions:

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<sup>8</sup> Boarding on both directions (Up & Down).

Table 2.1

**Conditions of in-principle approval of GoI not complied**

Clause	Compliance by the State Government/the Company
Clause 2 N (iv) provided for periodic fare revision for the Metro rail as well as other competing modes.	No such arrangement was put in place by GoUP.
As per Clause 2 N (vi), a Dedicated Urban Transport Fund (DUTF) was to be set up at the State level as well as at the City level.	Dedicated Urban Transport Fund was not set up at City level.
As per Clause 2 N (xi), the State Government should come up with an advertisement policy which taps advertisement revenue.	No such advertisement policy was put in place by GoUP.
As per Clause 2 N (xii), the State Government should come up with a parking policy.	No such parking policy was put in place by GoUP.

In reply, the State Government stated (September 2024) that the revenue operation in full corridor commenced from March 2019. The increasing trend of ridership was drastically affected due to COVID-19. But now it has recovered and being periodically reviewed. As there is no time frame for revision of fare, proposal for the same would be sent when needed. DUTF has already been established at the State level in February 2014. In line with Metro Act, Non-fare box earning is mainly through advertisement.

Reply was not acceptable because a time frame should have been fixed for review of the fare as per the clause 2N(iv). DUTF was not established at the city level. The Company should also frame an advertising policy as per clause 2 N(xi). With regard to parking policy, no reply has been furnished by the State Government.

**2.5 No Objection Certificate for ground water extraction not obtained**

In exercise of the powers conferred by sub-section (3) of Section 3 of the Environment (Protection) Act, 1986, Central Ground Water Authority (CGWA) was constituted (January 1997) to regulate and control management and development of ground water resources in the country. CGWA issues necessary regulatory directions for this purpose, including grant of No Objection Certificates (NOC) for extraction of ground water to industries/infrastructure projects/Mining Projects, etc. Similarly, Uttar Pradesh Ground Water (Management and Regulation) Act, 2019 provides that commercial/industrial/infrastructure or bulk user of groundwater who has sunk or desires to sunk a well for extracting ground water shall have to be registered in the Ground Water Department, GoUP and obtain a valid NOC.

Audit observed that the Company did not get registered in CGWA or Ground Water Department, GoUP and did not obtain NOC for extraction of ground water during 2013-23.

In reply, the State Government stated (September 2024) that the application for water connections at Metro stations was processed in 2016 itself.

The reply was not acceptable because the Company did not apply for extraction of ground water since commencement to till date for bulk commercial use of groundwater either to CGWA or Ground Water Department, GoUP after enactment of Ground Water (Management and Regulation) Act, 2019.

## **2.6 Conclusion**

The Company did not include Alternative Analysis for evaluation of various alternative technologies in the DPR as required under MoUD Guidelines of 2006. Mahanagar Metro Station was excluded without approval of the competent Authority. Four out of 18 conditions of in-principle approval of GoI were not followed by the GoUP/the Company. The Company did not get registered in Central Ground Water Authority/Ground Water Department of GoUP and did not obtain NOC for extraction of ground water during 2013-23.

## **2.7 Recommendations**

- 1. The Company should ensure that any change if required in metro station conceived under the Project is carried out only after approval of the authority who had sanctioned the original Project.*
- 2. The Company should ensure obtaining No Objection Certificate from Ground Water Department, GoUP for extraction of ground water.*

## **Chapter III**

# **Contract and Project Management**



#### Brief snapshot of the chapter:

- The Company did not take cognizance of the Government order for obtaining additional performance guarantee and therefore, did not collect additional performance guarantee amounting to ₹ 75.30 crore for a contract executed below 11.5 *per cent* of the estimated cost.
- Plant & Machineries advance amounting to ₹ 31.74 crore was irregularly disbursed to the contractor though the contractor already owned these plant & machineries.
- The contractor was irregularly paid excess amount of ₹ 14.01 crore at a time as provisional payment for material at site under the contract agreement of LKCC-04 overlooking the conditions contained in the contract.
- The Company relieved the licensee towards payment of licence fee of ₹ 115.92 lakh (including GST) despite breach of contract by the licensee.
- The Company approved quantity variations beyond the permissible limit of 15 *per cent* without referring it to the administrative department of the Government.
- A lump sum works of Schedule E (miscellaneous work) costing ₹ 15.75 crore under LKCC-07 was concluded to ₹ 51.40 crore. However, the Company provided the details of items only of ₹ 1.30 crore despite repeated requests made in Audit.
- The Project authorities neither collected valid transit pass before making payment to the contractor nor ensured the deductions of royalty and price of minerals amounting to ₹ 3.16 crore from the contractor.
- The Company did not obtain permit from Geology and Mining Department for extraction of ordinary soil during construction of underground stations and ramps. Further, the Company did not collect royalty from other Government departments for ordinary soil transferred to them and did not deposit the same in Government Account.
- The Company constructed depot on 1.983 hectares of land which was disputed and under litigation without adopting proper safeguards.

Compliance to rules and procedures for tendering and contract management is essential for execution of works in an economic, efficient, effective and transparent manner.

Audit analysed procurement of goods and services at the pre-tender<sup>9</sup>, tender<sup>10</sup> and execution stages by reviewing 21 major work contracts valuing ₹ 4,962.09 crore and 30 miscellaneous work contracts valuing ₹ 25.12 crore related to construction and operation of North-South corridor to assess whether project

<sup>9</sup> Pre-tender stage includes cost estimation, finalisation of bidding criteria, preparation of Notice Inviting Tender etc.

<sup>10</sup> Tender stage includes opening of bids, evaluation of bids, award of work etc.

execution and contract management was done with due care, economical and in a timely and transparent manner. The significant deficiencies noticed are brought out in the following paragraphs:

### **3.1 Exclusion of a technically qualified bidder (M/s Gammon India Limited) from financial bid**

Audit observed that the Company invited (June 2014) open tender through Interim Consultant DMRC, for contract agreement LKCC-01<sup>11</sup> in two packages namely Technical Package and Financial Package. The estimated cost of this work was ₹ 541.00 crore inclusive of all taxes. Twenty-four firms purchased the tender documents, out of which eight firms submitted the bids within the stipulated time.

During the perusal of the minutes of the evaluation committee meeting (9 September 2014), Audit noticed that out of eight bids received, five were considered substantially responsive and generally compliant to technical requirements of the tender conditions as detailed below:

1. M/s Larsen & Toubro Limited
2. M/s Afcons Infrastructure Limited
3. M/s Gammon India Limited
4. M/s Simplex Infrastructures Limited
5. M/s PLL-CR19B (JV)

The above recommendations of the Evaluation Committee on technical bids were accepted by the Managing Director also. Thereafter, minutes of meeting of the Evaluation Committee (September 2014) which met to open the financial offers of the technically responsive bidders, revealed that Board of the Company had approved the opening of financial packages of only four tenderers, out of the five recommended by the Evaluation Committee. M/s Larsen and Toubro Limited got the contract on being found the lowest bidder in the financial bidding.

Audit in this respect further observed that M/s Gammon India Limited was excluded from the tender process at this late stage. The file related to the correspondence between the Company, Interim Consultant (DMRC) and M/s Gammon India Limited on this issue was not provided to Audit.

In reply, the State Government stated (September 2024) that it was a conscious decision of the Board based on past performance of M/s Gammon India Limited at Delhi and Chennai metro project and lack of desirable safety measure and avoidable delay occurred in these projects.

The reply was not acceptable because if the Company had prior information about the unsatisfactory past performance of M/s Gammon India Limited,

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<sup>11</sup> Construction of elevated viaduct, 8 elevated stations viz. Transport Nagar, Krishna Nagar, Singar nagar, Alambagh, Alambagh Bus Station, Maviaya, Durgapuri and Charbagh Railway Station from chainage 687.140 m to 9171.440 m (excluding construction of special span of approx. 230 m at Maviaya Railway Crossing) and connecting elevated viaduct and ramp to Depot at PAC ground Transport Nagar on North South Corridor of Lucknow Metro at Lucknow.

it should not have allowed M/s Gammon India Limited to participate in the technical bidding stage itself. The required eligibility condition should have been suitably built in the eligibility criteria. Moreover, on being asked by Audit to provide relevant documents in support of the claim that the past performance of M/s Gammon India Limited was not satisfactory, the Company provided (April 2025) clippings of different newspapers containing news regarding collapse of structure of a flyover in 2007 being built by M/s Gammon India Limited in Hyderabad and collapse of a bridge in 2009 being built for DMRCL in Delhi. Thus, the Company relied on the newspapers clippings instead of trying to get direct confirmation from the DMRCL and from concerned authority in Hyderabad. It is pertinent to point out that DMRCL had banned (November 2010) M/s Gammon India Limited for a period of only two years.

### 3.2 Provision for additional performance guarantee not included in notice inviting tender (NIT)

GoUP Order (June 2012) specifies the provision for taking up the additional performance guarantee from the qualified contractor @ 0.5% per per cent for the contracts executed below 10 per cent of the departmental rates and the additional performance guarantee shall be taken up from the qualified contractor for the contracts executed 10 per cent or more below to the departmental rates, @ 1% per per cent, to safeguard the works.

Scrutiny revealed that the contract agreement LKCC-07 was executed 11.15 per cent below the departmental rates and the work was awarded to M/s L&T Ltd. in November 2016. Performance security along with additional performance guarantee amounting to ₹ 142.83 crore<sup>12</sup> was required to be collected from the contractor before execution of the agreement. The Company received only performance security of ₹ 67.53 crore<sup>13</sup> in the form of bank guarantee from the contractor before start of work. Audit observed that the Company had not included the provisions of obtaining additional performance guarantee in the contract conditions and notice inviting tender. The details of additional performance guarantee due from the contractor is given in the table-3.1 below:

Table-3.1

#### Details of additional performance guarantee due from the contractor

Bonded cost <sup>14</sup> (₹ in crore)	Rates quoted by the contractor Below (%)	Calculation of required additional performance guarantee @ 1% per per cent below (₹ in crore)
675.33	11.15	675.33 X 11.15% = 75.30 crore

(Source: Information provided by UPMRCL)

As evident from above table, ₹ 75.30 crore additional performance guarantee for the contract finalised below the departmental rates 11.15 per cent, was not taken up before signing the contract to safeguard the government interest.

In reply, State Government stated (September 2024) that the Company is a Special Purpose Vehicle (SPV) incorporated under the Companies Act, 1956 as a 50:50 joint venture between the GoI and the GoUP. Therefore, the said circular

<sup>12</sup> Performance guarantee: ₹ 67.53 crore and Additional Performance Guarantee: ₹ 75.30 crore.

<sup>13</sup> 10 per cent of the contract value ₹ 675.33 crore.

<sup>14</sup> Bonded cost of a work is the cost of the work as per contract/agreement.

was not binding on the Company and contract conditions were same as being followed by all other metro companies. Moreover, the contract has been successfully completed by the contractor.

The reply was not acceptable because the clause 14.17 of the MoU made with the GoI and GoUP emphasized that the Company shall follow CVC guidelines and the procurement policies/guidelines of GoUP for tenders and contracts. Thus, taking cognizance of the said Government order, the Company should have included the provisions for obtaining additional performance guarantee in their notice inviting tenders for those contracts which were executed below the departmental rates, to safeguard the Government interest.

### **3.3 Irregular grant of Plant and Machinery advance**

As per clause 11.2.2 of GCC and SCC of the contract agreement (LKCC-07), interest free Plant and Machinery advance<sup>15</sup> limited to five *per cent* of the original contract value was payable to the contractor for the plant, equipment and machinery provided the same have reached the site, or in the case of new items meant specifically for the work, firm purchase order has been placed and the invoices received. Clause 11.2.2 of GCC provides that the advance will be given only if the plant/ machinery has been purchased for this contract and not for those which are already in the books of the contractor. Clause 11.2.6 of GCC stipulates that the advances shall be used by the contractor strictly for the purpose of the contract and for the purpose for which they are paid. Under no circumstances, the advances shall be diverted for other purposes. Any such diversion shall be construed as a breach of contract and the contractor shall be asked to return the advances at once and pay interest at 15 *per cent* per annum till the advance is recovered back from him. The contractor shall return the advance and pay the interest in one go without demur.

Scrutiny of records revealed that the project authorities of the Company executed a contract agreement (LKCC-07) valuing ₹ 675.33 crore with M/s L&T Ltd. in November 2016. The contractor applied (March 2017) for plant & machinery advance of ₹ 31.74 crore for machineries/equipment within the prescribed limit of five *per cent* of the contract value as detailed in the table below:

**Table-3.2**  
**Details of Plant & Machinery advance to the contractor**

(₹ in crore)

Description of machinery	Old/New machinery	Assessed Value	Claimed amount of machinery advance by the contractor (80 <i>per cent</i> of assessed value)
Weigh Bridge-100T-02 No.	New	0.25	-
Certified Assess Value of P&M old equipment as on March 2016	Old	39.42	-
<b>Total amount of old and new Plant &amp; Machinery</b>		<b>39.67</b>	<b>31.74</b>

(Source: Information provided by UPMRCL)

<sup>15</sup> The new plant and machinery shall be valued by the engineer at 80 *per cent* of purchase price, or for old items in working order 80 *per cent* of the depreciated value as assessed by the engineer.

Audit, however, observed that invoices/bills were not made available by the contractor to support the evidence of procurement of plant & machineries. The contractor merely produced assessment certificate of Chartered Accountant (23 March 2017) with respect to machineries/equipment valuing ₹ 39.67 crore available as per books of accounts of the contractor. It indicated that the advances were paid to the contractor for already owned plant & machineries and the advances paid to the contractor was either diverted or utilised for other purposes. Thus, the contractor was extended undue favours for providing plant and machinery advance by the Company.

In reply, the State Government stated (September 2024) that advance was given in accordance with SCC. Under clause 1.5 of GCC, SCC of Contract is above GCC of Contract in order of priority. Thus, there was no violation of contract clause.

The reply was not acceptable though SCC says that plant and machinery advance could have been granted to the contractor but the term of SCC was to be read in conjunction with GCC for granting the advance. Entire clause of GCC was not replaced unless specifically mentioned in SCC against the relevant clause. The disbursement of plant & machineries advances of ₹ 31.74 crore was irregular and undue advantage given to the contractor. Interest @ 15 per cent per annum amounting to ₹ 4.32 crore (*Appendix-III*) is thus recoverable from the contractor.

### 3.4 Irregular payment for material at site

As per clause 11.3.1 of GCC of contract agreement LKCC-04, a provisional payment on account of main construction materials required for the permanent works, shall be paid on request of the contractor after these materials are brought to site. The payment shall be limited to 80 per cent of the actual value or assessed value of these materials and the total of such provisional payment on account of construction materials at a time shall be limited to three per cent of original contract value or likely average consumption of such materials for three months, whichever is less and at any time the total outstanding provisional payment against materials at site shall not exceed four per cent of the original contract value.

Scrutiny of records revealed that the Company executed (September 2015) a contract agreement (LKCC-04) with M/s Canon Fasteners valuing ₹ 85.55 crore for civil architectural finishes, water supply, sanitary installation, drainage, external development, firefighting, fire detection and E&M works for eight number elevated stations from Transport Nagar to Charbagh on priority section of N-S Corridor. Audit observed that the Company made provisional payment of ₹ 20.86 crore (80 per cent of the value of works executed) which included payment of ₹ 14.03 crore for the material at site<sup>16</sup> to the contractor as per 4<sup>th</sup> running bill. However, the maximum admissible provisional payment for material at site to the contractor for the works was only ₹ 3.42 crore (four per cent of the original contract value of ₹ 85.55 crore) and limited to three per cent (₹ 2.57 crore) of contract value at a time as per terms & conditions of

<sup>16</sup> ₹ 6.93 crore for material at site as per BOQ items and ₹ 7.10 crore for material at site as per extra items.

the contract agreement. Audit observed that the contractor was irregularly paid excess amount of ₹ 14.01 crore at a time which was contrary to the provisions of contract conditions of LKCC-04 works (*Appendix-IV*).

In reply, the State Government stated (September 2024) that Clause 17.2 deals with the claim. The payment was not for material at site but part payment of material component of finished item to avoid further litigation for legitimate payment of contractor. The payment was not made under Clause 11.3.1 but under Clause 17.2. The audit was erroneously interpreting that Clause 17 was only for claims to be settled in case of disputes, conciliation and arbitration. Clause 17.1 states that if the contractor intends to claim any additional payment under any clause of these Conditions or otherwise, the Contractor shall give notice to the Engineer and in any event within 28 days of the start of the event giving rise to the claim. Thus, Clause 17.2 is not only for claims to be settled in case of disputes, conciliation and arbitration but in any event within 28 days of the start of the event giving rise to the claim. As payment was made for material component of finished item and payment for remaining component made after completion of finished item, there is no excess payment.

The reply was not acceptable because Clause 17.2 of GCC did not provide for payment of material at site. The clause states the procedure for claims to be settled in case of disputes, conciliation and arbitration. Whereas, the Clause 11.3.1 of GCC stipulates the provision for payment of material at site. The Government contention was not correct because in 4<sup>th</sup> running bill the payment was made for the material component and not for the finished items. As per clause 11.3.1 maximum upto four *per cent* of the original contract at any time or limited to three *per cent* of contract value, at a time was allowed to be paid to the contractor for the work as provisional payment for material at site. Thus, the contractor was irregularly paid excess amount of ₹ 14.01 crore<sup>17</sup> at a time which was contrary to the provisions of contract conditions.

### **3.5 Loss due to short recovery of license fee**

The Company awarded (June 2017) a contract for advertisement rights in trains of Metro Phase-1A (N-S Corridor) comprising of 22.88 kilometres and 21 stations to M/s Abhi Advertising, Godaulia, Varanasi (the Licensee) at a license fee of ₹ 1,25,555 per train set (consisting four coaches) per month. License fee was payable in advance on quarterly basis, 15 days prior to the end of running quarter as per Clause 6.5 of the contract agreement. Licensee was to pay interest of 24 *per cent* per annum in case of payment of license fee and other dues after due date. As per Clause 6.9.1 of the contract agreement, interest was to be charged for the full month if payment by due date was defaulted and would continue to accrue on compounding basis until license fee and other dues were finally paid.

As per clause 6.2 of the contract agreement, the trains from depot shall be handed over after due acknowledgment from the concerned depot in-charge as

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<sup>17</sup> Payment of material at site advance was made in 1<sup>st</sup> and 2<sup>nd</sup> running bill of ₹ 2.50 crore and ₹ 2.57 crore respectively (as per the provisions in each time) and recoveries (₹ 1.67 crore) with outstanding (₹ 3.40 crore) were made by the Company before 4<sup>th</sup> running bill. The contractor was eligible for the advance only ₹ 0.02 crore.

per the prescribed pro-forma. Clause 3.5 of the agreement provided that there may be maximum 20 trains in the depot for availability of advertisement spaces.

The Company handed over 12 train sets in February 2019<sup>18</sup> to the Licensee. The trains were taken over (March 2019) by Licensee from depot without payment of licence fee in advance. The Company invoiced<sup>19</sup> ₹ 115.92 lakh license fee with GST for advertising rights of 12 train sets for the period April 2019 to October 2019. However, the Licensee did not pay the license fee and informed (September 2019) the Company that market scenario was not encouraging enough to cater the advertisement inventory of all these 20 train sets and requested to hand over 12 train sets with effect from the taking over date. The Company did not accept (October 2019) request of the licensee as no such clause provisioned in the license agreement and advised the licensee to clear all pending dues as per invoices issued on the basis of billing cycle of the contract. Later, the Company terminated (October 2019) the agreement and forfeited security deposit amounting to ₹ 22.60 lakh of the licensee. On the other hand, it agreed (May 2021) with the contention of the licensee as well that 12 train sets were not utilised for advertising purpose and decided to issue credit notes<sup>20</sup> worth ₹ 98.24 lakh to the Licensee excluding GST. Thus, the Licensee was relieved towards payment of ₹ 115.92 lakh license fee including GST.

The Company should have recovered remaining ₹ 93.32 (₹115.92 - ₹22.60) lakh license fee including GST with 24 *per cent* per annum interest as per agreement provisions to save its revenue instead of relieving the licensee by issuing credit notes.

In reply, the State Government stated (September 2024) that the advertising agency was utilizing 08 train sets, being run in priority section of N-S corridor of Lucknow Metro, out of the total 20 train sets. Hence, credit notes were issued for train sets 09 to 20.

The reply was not acceptable since as per the license agreement, the licensee was supposed to utilise the full 20 train sets for advertising. Even if the licensee was unable to utilise 12 train sets due to lack of market for advertisement, the licensee was bound to pay license fee for these 12 train sets as per the agreement. Undue benefit was extended by the Company to the licensee by not taking further action to recover remaining amount of the license fee.

## 3.6 Change in scope of works

### 3.6.1 Variation

Paragraph 318 of Financial Handbook Vol-VI of GoUP provides that detailed estimates must be prepared for every work proposed to be carried out, followed by Technical Sanction (TS) to the detailed estimate by the competent authority which gives guarantee that the proposals are structurally sound, and the estimates are accurately calculated and based on adequate data. Besides, the

<sup>18</sup> Train sets 1 to 8 were already handed over to the Licensee prior to this.

<sup>19</sup> Invoices Nos. LMRC/PD/2018/147 dated 25 March 2019 & LMRC/PD/2019/58 dated 18 July 2019.

<sup>20</sup> A credit note is a note issued by the Company to the licensee, in order to settle the liabilities in the account of the company. (Voucher Nos. LKO/JV/May21/128-129 dated 31 May 2021).

state government issued an order in June 1995, which, among other things stipulates that cases involving variations in the original cost estimates exceeding 15 per cent should be forwarded to the administrative department for approval.

Scrutiny of records of test check contracts revealed that the MD of the company had approved quantity variations/extra items during the construction of following works:

**Table-3.3**

**Details of variations in the quantities and extra items**

(₹ in crore)							
Sl. No.	Name of the work	Estimated cost of the work	Bonded cost of the work	Cost of the variations/ extra items	Actual cost of the work Col. (4+5)	Variation against bonded cost (in per cent)	Variation against estimated cost (in per cent)
1	2	3	4	5	6	7	8
1	LKCC-03	145.60	130.51	44.97	175.48	34.46	30.89
2	LKCC-04	96.85	85.55	25.86	111.41	30.23	26.76
3	LKCC-09	95.25	80.94	26.04	106.98	32.18	27.34
<b>Total</b>		<b>337.70</b>	<b>297</b>	<b>96.87</b>	<b>393.87</b>		

(Source: correspondence files of the contract agreements)

It was evident from above table that the cost of work increased by 27 to 31 per cent to the estimated cost (total estimated cost: ₹ 337.70 crore; increased cost: ₹ 393.87 crore). However, cases of such variations (above 15 per cent to estimated cost) were not forwarded to the administrative department which in case of the Company is Housing & Urban Planning Department, GoUP, for approval. Variations in all three cases were approved by MD of the Company. It is also pertinent to mention that the circumstances or justifications under which these variations occurred in all three contracts were neither documented in the records of Company nor elaborated upon by the MD while sanctioning such substantial deviations beyond the estimated costs. As a result, the rationale behind the approval of the MD of these variations could not be verified.

Scrutiny further revealed that the contract agreement (LKCC-04) executed with M/s Canon Fastner was valuing ₹ 85.55 crore. The works of LKCC-04 were distributed in three schedules<sup>21</sup>. Audit observed that 87 items of work valuing ₹ 19.66 crore were to be executed under Schedule-A. The project authorities of the Company approved variations in the quantities of 28 items valuing ₹ 1.96 crore which were substantially increased ranging between 29 to 2362 per cent. As a result, the cost of these works was also increased more than three times (₹ 6.57 crore) as detailed in *Appendix-V(a)*.

Furthermore, a contract agreement (LKCC-07) was also executed with M/s L&T Ltd. (September 2016) costing ₹ 675.33 crore. The work was distributed in six parts<sup>22</sup>. Audit analysed and found that there were 112 items of

<sup>21</sup> Schedule A: bonded cost ₹ 19.66 crore, schedule B: bonded cost ₹ 39.09 crore and schedule C: bonded cost ₹ 26.79 crore.

<sup>22</sup> Schedule A: Bonded cost ₹ 15.59 crore, Schedule B: Bonded cost ₹ 506.32 crore, Schedule C: Bonded cost ₹ 86.21 crore, Schedule D: Bonded cost ₹ 24.76 crore, Schedule E: Bonded cost ₹ 15.75 crore and Schedule F: Bonded cost ₹ 26.70 crore.

works to be executed under Schedules A to C. In 30 out of 112 item of works costing ₹ 31.54 crore the variations in quantities were approved by the Company ranging between 26 to 1860 *per cent*. Resultantly, the cost of 30 item of works was increased to ₹ 63.63 crore<sup>23</sup> as detailed in **Appendix-V(b)**. Audit also observed that the estimated and bonded cost<sup>24</sup> of the lump sum works of Schedule E (miscellaneous work under DSR-14) was ₹ 15.00 crore and ₹ 15.75 crore respectively. However, the work of Schedule E was concluded to ₹ 51.40 crore and the variations/extra items were approved by the Company. The Company provided the details of items of works of only ₹ 1.30 crore executed under the Schedule E against the final payment of bill of ₹ 51.40 crore despite repeated requests by Audit. Therefore, audit could not ascertain the reasons for huge increase in the cost without complete details of item of works actually executed.

In reply, the State Government stated (September 2024) that the reasonable variations in quantities can be allowed during the execution in terms of the contract. Most of variations mentioned are due to change in Bill of Quantity (BOQ) quantity due to site conditions, where tendered & accepted contractual BOQ rates were used. Further, after execution of work, variation in individual items or the group of items has been dealt as per clause 12.5(ii) (f). The delegation of power under Schedule of Power for all the Metros in India is derived as per General Financial Rules. An MoU was executed (March 2016) between GoI, GoUP and Company. As per Para 15.1 of MoU, the management of the Company vests entirely with the Board of Directors as it is neither a central PSU nor a state PSU, but a board governed company. Thus, all variation were dealt as per guidelines issued by Ministry of Finance, GoI, contractual provisions and SOPs and MoU executed between GoI & GoUP.

The reply was not acceptable because clause 12.5(ii)(f) of the respective contract conditions elaborate the procedure of determining the rates of the quantity executed over and above the contracted quantity. It did not have any relation with the power of sanctioning the variation in the estimated quantity. Further, any variation in the estimated quantity should have been supported by the rationale. However, the MD who had originally approved the estimates later, exercising its delegated power, sanctioned cost variations ranging from 27 *per cent* to 31 *per cent* without providing any rationale. Also, the cumulative variations of 27 *per cent* to 31 *per cent* across the three contracts included variations in certain individual items of work, which were as high as 2362 *per cent*. This was contrary to the principles of transparency and accountability in contract management.

### 3.6.2 Extra Items

CPWD works manual defines the extra items that are completely new and are in addition to the items contained in the schedule of quantities of the contract. Clause 7.1 of technical standards (for track structure for Metro Railway/MRTS Systems issued by the Railway Board in December 2011) states that the

<sup>23</sup> Bonded cost: ₹ 31.54 crore + variation approved ₹ 32.09 crore = ₹ 63.63 crore.

<sup>24</sup> An estimated cost is an approximate calculation of how much something might cost and bonded cost is an agreed cost on which the contractor will execute the work.

derailment guard should be provided inside/outside of running rail on viaduct as well as tunnel and at grade section locations as specified by metro railway. The procedure for safety certification and technical clearance of metro system (February 2015) also envisaged the same provision.

(i) A contract agreement (LKT-5) costing ₹ 99.34 crore and € 0.13 crore was executed (January 2016) with M/s Kalindee Rail Nirman (Engineers) Ltd. for supply, installation, testing and commissioning of Ballastless track of standard gauge of N-S corridor in elevated and underground sections along with ballasted/ballastless tracks in Transport Nagar depot of Lucknow Metro Rail Project Phase-IA. Scrutiny of records revealed that the contractor requested (October 2017) the Company for inclusion of new item viz. 'casting of derailment guard' in tunnel portion of the track. The contractor requested (April 2018) that the derailment guard was not included in the tendered BoQ, hence, the Company may approve the derailment guard work as extra item costing ₹ 3.89 crore<sup>25</sup>. On recommendation of the General Consultant, the Company agreed upon execution of the casting of derailment guard work as per the technical standard<sup>26</sup> issued in December 2011. The Company approved the casting of derailment guard work as extra item which was already known and necessary for execution and paid ₹ 2.00 crore<sup>27</sup> to the contractor. Thus, exclusion of the provision of casting of derailment guard in the tendered BoQ deprives the Company from getting, more competitive rates for the work.

In reply, the State Government stated (September 2024) that the estimated quantity of derailment guard could not be worked out during tendering stage in the absence of detailed guidelines which was issued in December 2015 which duly stipulates the locations where the derailment guard is to be provided whereas last date of submission of tender document was 30 September 2015 and thus, could not be incorporated in the schedule of quantity as an item.

The reply was not acceptable because in respect of providing the derailment guard, the metro authorities were required to follow the technical standard for track structure for Metro Railway/MRTS systems as per order issued by Railway Board in December 2011. Besides, in February 2015, Research Designs & Standards Organisation, Ministry of Railways, GoI (RDSO) also issued procedure for safety certification and technical clearance of Metro system which *inter alia* included provision (Para 8) for providing for the derailment guard. In December 2015, RDSO reiterated the provision for derailment guard and included provision for the location of the derailment guard. Hence, provision for providing derailment guard was available even at the time of inviting tenders which should have been included in the original contract.

(ii) Similarly, the project authorities executed (September 2015) a contract agreement with Canon Fasteners (LKCC-04) for civil architectural finishes, water supply sanitary installation, drainage, external development, firefighting, fire-detection and E&M works for eight elevated stations<sup>28</sup>. The bonded cost of the entire work was ₹ 85.55 crore against the estimated cost of ₹ 96.85 crore.).

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<sup>25</sup> Contractor offered for laying of 6275 track meters at the rate of ₹ 6196 per track meter.

<sup>26</sup> Issued by Railway Board dated 23.12.2011 which envisages the derailment guard should be provided inside/outside of running rail on viaduct as well as tunnel sections which was specified by the Metro Railway.

<sup>27</sup> For actual execution of derailment guard 4728.549 track meter at the rate of ₹ 4242.47 per track meter.

<sup>28</sup> From Transport Nagar station to Charbagh station.

Audit observed that the entire works valuing ₹ 76.00 crore only was executed against the bonded cost of ₹ 85.55 crore and the works valuing ₹ 35.35 crore (41 per cent of the bonded cost) was executed as extra item. The details are given in the *Appendix-VI*.

In reply, the State Government stated (September 2024) that the tender document was prepared on the basis of estimate and an estimate was an approximate calculation or judgment of the value, number, quantity, or extent of something. Estimate was typically based on available information but not exact, serving as an educated guess or rough assessment. It was the first work of organisation for the station finishing work and estimate was prepared on the basis of available information. The variations have been dealt as per contract clause 12.5 of GCC and payment has been made after approval of competent authority.

The reply was not acceptable because a large number of works sanctioned and executed as extra item indicates that the project authorities of the Company did not determine the specifications of these works correctly, leading to increased cost by ₹ 25.80 crore<sup>29</sup>.

### 3.7 Works executed on quotation basis

GCC clause 12.5 (g) of LKCC-06 and LKCC-09 states that in case Engineer introduces an item for which the contract does not contain any rates or prices applicable to the varied works, the rate of such items shall be derived, wherever possible, from rate for similar items available in the Bill of Quantities of the accepted tender. In case this is not possible, the rate may be decided on the basis of cost of materials at current market price.

Test-check of the records disclosed that the non-DSR items/new items of works under contract agreements LKCC-06 and LKCC-09 were carried out by obtaining quotations valuing ₹ 5.34 crore<sup>30</sup> (*Appendix-VII*). Audit noticed that these quotations were collected by the contractors themselves and the lowest rate of the quotations were allowed by project authorities of the Company. The Company only ascertained the genuineness of contractor's profit, overhead charges, etc. without verifying the rates at their own level and the rates mentioned in quotation remained same as received from the contractor.

In reply, State Government stated (September 2024) that the Company followed the clause 12.5 (g) of GCC of LKCC-06 and LKCC-09. Thus, the rate for items which were not available in BOQ was determined on the basis of current market rate of material, hire charges of plant & machinery, labour etc. Accordingly, contractor had to submit the supporting documents in support of his claimed rate for Non-DSR items. All the cost proposals submitted by the contractor were independently verified by the executing authorities of the Company for the genuineness of rates and modification were done in analysis of rates if it were found on higher side. The verification of genuineness of rates by Company was same as collection of separate quotation.

<sup>29</sup> ₹ 76.00 crore + ₹ 35.35 crore - ₹ 85.55 crore = ₹ 25.80 crore.

<sup>30</sup> LKCC-6: ₹ 2.02 crore and LKCC-9: ₹ 3.32 crore.

The fact remains that the company adopted the same rate which was provided by the contractor itself and did not obtain the rates through a market survey or independent assessment in order to ensure the genuineness of the rates. The Company only ascertained the genuineness of contractor's profit, overhead charges, etc.

### **3.8 Payment of royalty on minerals**

#### **3.8.1 Form MM-11 not obtained from contractors**

The Uttar Pradesh Minor Minerals Concession Rules, 1963 and the Uttar Pradesh Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2002 and 2018 stipulate that no person shall transport any mineral without a valid transit pass (Form MM-11). The Government of Uttar Pradesh, in its order dated 15 October 2015 stated that apart from royalty, the price of mineral (ordinarily five times of royalty) be deducted from the contractor's bill and deposited into the treasury, if the contractors do not produce Form MM-11.

Scrutiny of records pertaining to the works under contract agreement LKT-05 revealed that the contractor<sup>31</sup> brought 24,062.59 cum loose quantities of track ballast material for laying of ballasted track in depot and was paid ₹ 5.90 crore<sup>32</sup> for the supplies of ballast made till March 2019. Similarly, 76,102.72 cum concrete works were executed for construction of eight elevated stations under the contract agreement LKCC-07. Audit observed that the project authorities of the Company neither obtained copies of MM-11 of the material consumed for the project to ascertain the minerals brought from the legal quarries nor imposed/deducted royalty and price of minerals as provisioned in the Government order of October 2015. As consumption statement were not provided by the Company, audit could not work out the amount of royalty and price of minerals involved.

Apart from above, 36,611.20 cum coarse sand and sand involving royalty of ₹ 52.59 lakh were also consumed in the LKCC-07 work. However, neither MM-11 forms were obtained from the contractor nor royalty and price of minerals amounting to ₹ 3.16 crore was deducted from the bills of the contractor by the project authorities of the Company, as detailed in the table below:

**Table-3.4**

**Calculation of royalties and price of minerals to be levied for use of coarse sand and sand without submission of Form MM-11**

(Amount in ₹)

Item of work in LKCC-07	Name of minerals	Executed quantities (in cu.m.)	Rate of royalty per cu.m.	Royalty amount	Royalty along with five times penalty
Schedule B 13 (a)	Coarse Sand	34,161.62	150.00	51,24,243.00	3,07,45,458.00
Schedule C 1 (a)	Sand	2,449.58	55.00	1,34,726.90	8,08,361.40
<b>Total</b>		<b>36,611.20</b>		<b>52,58,969.90</b>	<b>3,15,53,819.40</b>

(Source: Information provided by UPMRCL)

<sup>31</sup> Kalindee Rail Nirman (Engineers) Ltd.

<sup>32</sup> At the rate of ₹ 2450 per cum for 24062.59 cum quantity.

Thus, project authorities of the Company did not ensure that minerals consumed in the metro works were procured from legitimate source after payment of royalty.

In reply, the State Government stated (September 2014) that as per clause 5.8 of GCC, the contractor shall pay all traffic surcharges and other royalties, licence fees, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials. As the responsibility of payment of duties and royalties lies with contractor, Form MM-11 was not required on part of the Company as it was under the ambit of contractor to supply at location specified by the Company. Further, there are a lot of transactions done by contractor for completion of project, however, all those transactions do not come under purview of the Company as there are separate government departments for ensuring legality and compliance of all those transactions.

The reply was not acceptable because the engineers-in-charge were required to ensure that minerals brought by the contractors and consumed in the works were royalty paid minerals and obtained from legal sources. The project authorities should have deducted royalty and price of minerals from the contractor's bill in cases of non-submission of MM-11 forms by the contractor.

### 3.8.2 Mining permit not obtained for extraction of ordinary soil

Rule 3 of the Uttar Pradesh Minor Minerals (Concession) Rules, 1963 envisaged that no person shall undertake mining operations in any area within the State of any minor mineral to which these rules are applicable except under and in accordance with the terms and conditions of mining lease or mining permit granted under these Rules. Royalties on extraction of ordinary soil is payable to Government account at the rate of ₹ 30 per cubic meter as per GoUP notification of January 2016.

Scrutiny of records revealed that four underground stations<sup>33</sup> were constructed under N-S corridor. Audit observed that the Company did not obtain permit for extraction of ordinary soil from Geology and Mining Department of GoUP and excavated 6,39,277.50 cubic meter ordinary soil during construction of underground stations and ramps. The Company disposed off 4,63,054.50 cubic meter excavated ordinary soils on demand made by other Government departments<sup>34</sup> after utilizing 1,76,223 cubic meter ordinary soils in Lucknow Metro Rail Project. The disposal plan for excavated ordinary soil was not included in the approved DPR. Audit further noticed that the Company did not collect royalty of ₹ 1.39 crore<sup>35</sup> from other Government departments for 4,63,054.50 cubic meter ordinary soil transferred to them and did not deposit the same in Government Account.

In reply, the State Government stated (September 2024) that as per clause 10.4 of the MoU between GoUP and GoI, GoUP exempted Company from its state/local taxes and duties/levies or reimburse the same. Audit is rightly interpreting that royalties for earth are to be paid to the Government but shall be

<sup>33</sup> Chaudhary Charan Singh Airport, Hussainganj, Sachivalaya and Hazratganj.

<sup>34</sup> Irrigation Department, Lucknow Development Authority, Lucknow Cantonment Board, etc.

<sup>35</sup> 4,63,054.50 cum x ₹ 30 per cum.

the case when Company or its contractor was involved in selling of earth to third party. Here earth was used either by the Company for its own use to reduce the cost of project funded by the Government or given to other Government department to reduce the cost of earth filling to save the cost of Government in filling the Government land. Even if the Company collects the royalties from other Government department, it was to be borne by the Government and again deposited in Government account.

The reply was not acceptable as the excavation of soil was taken up by the Company without obtaining permit from the Geology and Mining Department. Further, as other Government departments were not exempted from payment of royalty, the Company should have collected royalty from them and deposited in Government account.

### **3.9 Construction of depot on disputed land**

Section 378 of Financial Handbook, Vol-VI of GoUP envisaged that no work should be commenced in the land which has not been duly made over by the responsible civil officers.

Scrutiny revealed that the Company procured (August 2016) 21.983 hectares of Government land and 3.813 hectares of private land for construction of depot of Lucknow Metro (N-S Corridor). The GoUP instructed District Magistrate, Lucknow (February 2015) for providing private land to the Company through negotiation with the landowner(s). Audit observed that five private lands measuring 1.983 hectares were disputed and already under litigation. Audit noticed that the Company constructed depot on the acquired land including the disputed lands. Audit further noticed that a tripartite agreement<sup>36</sup> was prepared (March 2016) for acquisition of the disputed land with a view to complete Lucknow Metro project timely. Conditions included in the tripartite agreement articulated that the payment would be made to those landowner(s) in whose favour Hon'ble courts shall give decision.

Audit further observed that the tripartite agreement was not registered and not prepared on stamp papers to ensure legal bindings on the concerned parties. The tripartite agreement contained that ₹ 15.78 crore has been deposited in the accounts of Additional District Magistrate (Land Acquisition), Lucknow for compensation of land and would be disbursed to the party after final decision of Hon'ble court. Audit noticed that the tripartite agreement did not possess the signature of all members involved in disputed land as detailed in table below:

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<sup>36</sup> Additional District Magistrate (Land Acquisition), the Company and all parties related to disputed land.

**Table-3.5**  
**Details of tripartite agreement**

<b>Gata No.</b>	<b>Area of land (in hectare)</b>	<b>Claimant of land ownership</b>	<b>Amount (₹ in crore)</b>	<b>Signature of disagreed parties on tripartite agreement</b>	<b>Cases in the court</b>
92	0.392	1. Bhurabhai representative of Sant Asharam Ashram 2(a) Rakesh Pal 2(b) Smt. Munni Devi 3(c) Smt. Saroj Agrawal	3.12	Shri Bhurabhai	Civil Court, Lucknow
150/1	0.418	1. Bharabhai 2. Gagan Gurnani	3.32	Bharabhai Gagan Gurnani	Civil Court, Lucknow
150/2	0.506	1. Ambarish 2. Kamlesh	4.03	None of the parties	Board of revenue, Lucknow
150/3	0.506	1. Ambarish 2. Kamlesh	4.03	None of the parties	Board of revenue, Lucknow
119	0.161	1. Ambarish 2. Kamlesh	1.28	None of the parties	Board of revenue, Lucknow
<b>Total</b>	<b>1.983</b>		<b>15.78</b>		

(Source: Information provided by UPMRCL)

As evident from the above table, the tripartite agreement was not legally enforceable on the claimant(s) who did not sign the agreement. In case of disagreement with the terms & conditions and to receive amount as determined by the Company, it may further attract litigations.

In reply, the State Government stated (September 2024) that the tripartite agreement was executed by Additional District Magistrate (Land Acquisition), Lucknow. The agreement was executed between Additional District Magistrate (Land Acquisition), the Company and the party who possesses the disputed land. The tripartite agreement on stamp paper was not required as the ownership of disputed land was not clear. Needless expenditure on stamp duties and registration fee would have to be borne by the Company.

The reply was not acceptable because construction of the depot on the disputed land, which was not properly acquired by the Company, was against the financial rules. Also, the need for preparing agreement was felt due to unclear ownership of disputed land. The tripartite agreement contained that all persons claiming ownership of disputed land would be a party. Hence, a legitimate agreement was to be ensured by the Company for effective legal bindings on the parties to avoid further occurrence of litigation.

### **3.10 Conclusion**

A number of deficiencies in contract management and project execution were noticed. Government orders for obtaining Additional Performance Guarantee was not followed for the execution of below the departmental rates contract to

safeguard the interest of the Company. Irregular payment of plant & machinery advance was made to the contractor for already owned plant & machineries based on assessment certificate prepared by Chartered Accountant. The contractor was irregularly paid excess amount of advance for material at site contrary to the provisions of the contract conditions. Licensee for advertisement rights in trains was relieved from paying license fee. The instances of sanctioning of variations over the estimated cost of works without justifying the circumstances under which these variations had taken place. Variations and extra items were allowed beyond limits. The project authorities did not ensure submission of Form MM-11 by the contractors to ensure that minerals consumed in the metro works were royalty paid and procured from legal sources. The Company constructed depot on 1.983 hectares of land which was disputed and under litigation without adopting proper safeguards.

### **3.11 Recommendations**

3. *The Company should ensure that terms of contract are adhered to and system should be in place to recover dues and irregular/excess payment of advance.*
4. *Responsibility should be fixed where variation & extra items are beyond limits in a contract without sanction from proper delegated authority, thus vitiating the contract integrity.*
5. *The Company should obtain Form MM-11 (transit pass) from the contractors to ensure that the minerals used in the construction works of the metro have been procured from legal sources and royalties etc. are deposited in Government Account.*

## Chapter IV

# Operation and Maintenance



## Chapter IV

### Operation and Maintenance

#### Brief snapshot of the chapter:

- The firm M/s G4S Secure Solutions was appointed for security arrangements at the Metro stations on direct negotiation basis without tendering and without any recorded justification as to why this particular security firm was selected, violating the CVC guidelines (May 2006) and General Financial Rules, 2005.
- A certified cyber security agency for routine Vulnerability Assessment and Penetration Testing (VAPT) was not empanelled to examine the security thus, the metro system was always susceptible to threat and malfunction.
- The hardness value of rail samples was less as compared to the Indian Railway Standard specification which may lead to higher rate of wear and tear of the rail reducing the rail life.
- The Company did not determine any benchmark for maintaining noise level within the permissible limit. Thus, the goal for providing comfortable environment inside the Metro trains and outside at the stations was not achieved.

The Company follows a mix approach for operation and maintenance where the core operation and maintenance of major assets are done in-house with the regular staff specially recruited and trained for this purpose. The non-core and offline activities<sup>37</sup> are generally outsourced though some of them are managed in-house.

Audit reviewed the operational efficiency of the Company and findings thereof have been brought out in the succeeding paragraphs.

#### 4.1 Irregular appointment of private security firm

Central Vigilance Commission (CVC) guidelines (May 2006) provide that the preferred mode of awarding contracts is through open competitive bidding. Further, Rule 181 of the General Financial Rules (GFR), 2005 provided that the Ministry or Department should issue advertised tender enquiry for estimated value of works or service above ₹ 10 lakh. Rule 184 of the GFR, 2005 provided that in case of outsourcing by choice, detailed justification including the circumstances leading to such choice should be recorded.

The Company decided<sup>38</sup> (June 2016) to appoint M/s G4S Secure Solutions (G4S) for security arrangements on direct negotiation basis to set the right systems in place from beginning. A contract for guarding services was entered (September 2016) between M/s G4S and the Company for three years which was continuing till March 2023. The initial monthly cost to be paid to M/s G4S was ₹ 32.72 lakh.

<sup>37</sup> Housekeeping, maintenance of office building, etc.

<sup>38</sup> Board of Directors (BoD) of the Company in its 25<sup>th</sup> meeting (June 2016).

The Board of Directors (BoD) did not resort to open tendering process for engagement of security personnel and awarded the contract to M/s G4S on nomination basis without any recorded justification as to why this particular security firm was selected. This was in violation of the CVC guidelines and provisions of GFR. The contract was renewed thereafter and payment of ₹ 76.04 crore was made to the contractor G4S during the period November 2016 to March 2022.

In reply, the State Government stated (September 2024) that Metro security in India is considered highly critical and all metros are having airport like security in line with categorisation specified by Intelligence Bureau (IB). In view of extremely high cost of security by CISF, it was decided to go for hybrid model of security for the first time in country, where crucial security will be managed by U.P. Police and assistance will be provided by private security. There is past history of assisting CISF at DMRC or airport security. On the basis of above, Lucknow metro had entered into a contract with G4S Secure Solution (I) Limited. Over the period, with maturity of private security agencies in recent time with large number of agencies assisting at airport security and implementation of the Private Security Agencies (Regulation) Act, 2005, Lucknow metro has also appointed a new security contractor through open tender process since March 2023.

The reply was not acceptable. The contract should have been executed through open tendering by following the Rules and CVC guidelines keeping in view the security service requirements. Moreover, there was no recorded justification as to why the particular security firm M/s G4S was selected in September 2016. Thus, propriety rules were completely ignored. Responsibility needs to be fixed.

## **4.2 Technical evaluation by the IIT, Kanpur**

During the course of audit various construction contracts and contracts related to track installation, signalling, rolling stock, noise and vibration, etc. were studied. To evaluate the technical parameter and issues related to these contracts, identified by the Audit, IIT, Kanpur was engaged. IIT, Kanpur examined these issues, and the findings thereof are discussed in the following paragraphs.

### **4.2.1 Vulnerability of the CBTCS to malfunction**

Communication Based Train Control (CBTC) system utilizes telecommunications between trackside equipment and trains to optimize track space utilization. CBTC system represents a new era in real-time train transit control, offering benefits such as reduced maintenance costs, increased flexibility, and enhanced interoperability with centralized control system. By employing a moving block system, CBTC system enables trains to operate in closer proximity, allowing for a higher frequency of train movements without compromising safety. This system can dynamically adjust train speeds to prevent congestion and recover from delays, resulting in smoother rides and energy savings.

IIT, Kanpur, while assessing vulnerability of the CBTC system to interference and jamming, observed that currently, the security was being examined by Intelligence Bureau only. As a standard practice, it was necessary to empanel a certified cyber security agency for routine Vulnerability Assessment and Penetration Testing (VAPT) and generate security audit reports. IIT, Kanpur specified that without VAPT, the system was susceptible to threat and malfunction which may lead to immediate shutdown of the entire metro system. If such downtime occurs during working hours, it may be difficult to remedy.

In reply, the State Government stated (September 2024) that CBTC System was stand-alone proven system across the globe and designed on failsafe principle. The CBTC System provided by M/s Alstom was internationally approved and was in use in various metros globally. VAPT is a new concept and same has not been incorporated by any other metro in India till now. No such testing is known so far at any metro. Considering the global scenarios on cyber security, the Company itself has taken lead to initiate the VAPT to ensure the security of the CBTC System at large.

#### 4.2.2 Quality issues of rails of Rolling Stock

As per Indian Railway Standards IRS-T-12-2009, Hardness value of rail should not be less than 260 BHN for HH 880 rail head (Depot area) and hardness value should be in the range of 340-390 BHN for HH 1080 (main Line).

Hardness testing was carried out by the IIT Kanpur at Advance Centre for Materials Science (ACMS), Material Testing Laboratory of IIT, Kanpur by using Universal Hardness Testing Machine FH-10; Tinius-Olsen Ltd. The tests were carried out for three times on each sample provided by the Company. The test on both rails revealed following results:

SAIL 880	Nippon 1080
At 31.25 Kgf, 229.07 BHN	At 31.25 Kgf, 291.78 BHN
At 62.5 Kgf, 242.52 BHN	At 62.5 Kgf, 308.79 BHN

(Note: Dwell time (duration) for each test was 10 Second)

IIT, Kanpur observed that for both the samples, the hardness value was less as compared to the Indian Railway Standard Specification. Actual hardness values measured were in the range of 229.07 to 242.52 BHN (Depot area) and 291.78 to 308.79 BHN (main Line). This indicates that the Company has used rails of relatively less hardness. This may result in increased maintenance cost for the Company due to decreased life of rails and wheels.

The State Government stated (September 2024) that Brinell Hardness test was required to be carried out as per Clause 19 of IRS-T-12-2009 (including ACS 1 to 5) and IS:1500. As per table- 2 and 3 of IS: 1500, Force-diameter ratio should be 30 and load to be applied should be 187.5 Kgf for 2.5 mm ball diameter. But, the load applied on samples by IIT, Kanpur is 1/6<sup>th</sup> and 1/3<sup>rd</sup> of the standard load to be applied as per the provision of “Method for Brinell Hardness Test for Metallic Materials” (IS:1500). Thus, the tests have not been conducted in accordance with prescribed codal provisions. Tests earlier carried out during procurement demonstrated that the hardness measured satisfied the provisions enumerated in “IRS-T-12-2009”.

In response, IIT, Kanpur showed its disagreement with the State Government reply and stated that the technical team of IIT, Kanpur had reviewed the earlier submitted test report to the Company and found that testing procedures were as per the standards (IS 1500:2005). IIT, Kanpur has followed the Force-Diameter Ratio Table and accordingly modified the applied load as per the code. This is a standard practice.

IIT, Kanpur did the hardness tests as follows:

<b>SAIL 880</b>	<b>Nippon 1080</b>
At 5 mm indenter and 750 Kgf, 226 BHN	At 5 mm indenter and 750 Kgf, 254 BHN
At 10 mm indenter and 3000 Kgf, 241 BHN	At 10 mm indenter and 3000 Kgf, 270 BHN

In this context it was noted that the comment that “load applied on samples is 1/6<sup>th</sup> and 1/3<sup>rd</sup> of the standard load to be applied” was misleading. The IS:1500 standard requires the test to maintain a specific Force-Diameter ratio. IIT, Kanpur had conducted repeated test and stated that the smaller value of hardness than recommended obtained from the repeated experiments indicate there may be higher rate of wear and tear of the rail which will reduce the rail life faster. Further, if the wheel hardness does not match with the rail hardness, there would be possibility of the wheel deformation which will affect the stability of the rolling stocks.

#### **4.2.3 Noise level found higher than the permissible limits**

For conducting tests for measurement of noise level inside and outside the trains, IIT, Kanpur reported that the Guidelines and Principles for the Design of Rapid Transit Facilities (1973) issued by the Institute for Rapid Transit, Washington DC stipulates that to ensure passenger comfort, the sound level should remain in the range of the permissible limit 65 dB to 75 dB during the normal operation at specified speeds. As per the guidelines, the main goal of the rapid transit system was to control noise and vibration by providing system patrons with an acoustically comfortable environment through maintaining noise levels in vehicles and stations within the acceptable limits.

To measure the noise levels within the metro and at the platform for ensuring passenger’s comfort, the technical team of IIT, Kanpur conducted tests at a uniform metro speed of 40 kmph at different tracks (elevated and tunnels). IIT, Kanpur found that by and large the sound intensity was not very high, yet they were generally higher dB than the internationally accepted sound level as detailed in *table-4.1 below*:

Table-4.1

## Position of test results of noise of metro vis-à-vis accepted level

Sl. No.	Name/place of metro station	Elevated/ Under ground Station	Test condition (Static/ Dynamic)	(Interior/ Exterior) of Metro	Accepted level of noise (in dB)	Test result found by IIT, Kanpur (in dB) (Max. & Min.)
1	Munshipulia	Elevated	Static & door open	Interior	65	76.1 to 74.9
2	Munshipulia	Elevated	Static & door closing	Interior	65	76.2 to 73.5
3	Munshipulia to KD Singh Babu Stadium	Elevated	Dynamic	Interior	75	83.4 to 62.4
4	Munshipulia	Elevated	Static& door open	Exterior	60	81.7 to 80.0
5	Munshipulia	Elevated	Metro leaving from platform	Exterior	75	82.4 to 79.4
6	Hazratganj	Under ground	Static	Exterior	67	81.3 to 78.0

(Source: Test report of IIT, Kanpur)

As evident from table above, in static condition of metro, interior noise level was measured at *Munshipulia* stations inside the Metro train where the test result was found higher ranging from 76.1 dB to 76.2 dB against the internationally best practices adopted value of 65 dB. The interior noise level was also measured inside the metro on dynamic condition on elevated and tunnel stations<sup>39</sup> where test results found higher 83.4 dB against the internationally best practices adopted value of 75 dB from *Munshipulia* to *KD Singh Babu Stadium*. Similarly, exterior noise tests were conducted at seven places<sup>40</sup> for measurement of exterior noise. The test result on static and leaving conditions of Metro was found higher at 81.7 to 82.4 dB against the internationally best practices adopted value of 60 dB to 75 dB respectively. In one out of four places selected<sup>41</sup> for measurement of noise level on exterior of metro, the test result found higher 81.3 dB against the permissible limit of 67 dB at stationery condition. All tests were carried out during non-revenue hours<sup>42</sup> on the request of Metro Authorities to minimize external noise factors.

In reply, State Government stated (September 2024) that the “Guidelines and Principles for the Design of Rapid Transit Facilities” issued by “Institute for Rapid Transit”, Washington, D.C. is not a Standard and is only a guideline. These guidelines acknowledge that it is impossible to set a universal standard applicable to all transit systems and that each transit system is governed by its own authorising statutes and regulations. Consequently, these guidelines are not binding to the rolling stock of Lucknow Metro.

<sup>39</sup> From Munshi Pulia to KD Singh Babu Stadium station and KD Singh Babu Stadium station to Hazratganj station.

<sup>40</sup> Three places at Munshi Pulia Metro station and four places at Hazratganj underground Metro Station.

<sup>41</sup> At underground station Hazratganj.

<sup>42</sup> Metro not available for general public.

The reply may be seen in view of the fact that the guidelines and principles issued by the 'Institute' recommended for acceptance of the best practice for design and construction of new rapid transit systems. Moreover, the Company did not determine any benchmark for maintaining noise level within the permissible limit. Thus, the goals for providing comfortable environment inside the Metro trains and outside the stations was not fully achieved.

#### **4.3 Interim Speed Certificate for operation of rolling stock not renewed**

As per point no. 8.6 of the Interim Speed Certificate (ISC) for operation of rolling stock over N-S Corridor, the certificate shall be valid for a maximum period of five years from the date of issue. In case Final Speed Certificate is not issued during this period, the Company shall approach Research Designs & Standards Organisation (RDSO) sufficiently in advance for extension of validity of this Interim Speed Certificate.

Audit noticed that the ISC was not renewed despite expiry of five years from the date of issue of the ISC (March 2017). In absence of non-renewal of ISC, wear and tear in wheel of rolling stock and adjustment needed thereof could not be ascertained. Thus, by not renewing the Speed Certificate after expiry of five years, the Company has taken unnecessary risk with the safety of passengers.

In reply, the State Government stated (September 2024) that as per Procedure for Safety Certification and Technical Clearance of Metro System (PSTM)-2015, Interim Speed Certificate (ISC) shall remain valid till the issuance of the final speed certificate (to assess the riding quality & stability with worn-out wheels and rails) as no extension provision of ISC (such as 5 years) is defined.

The reply was not factual because the PSTM-2015 does not state that ISC shall remain valid till the issuance of the Final Speed Certificate. Therefore, ISC issued to Lucknow metro was valid only for five years as specifically mentioned in ISC. This implies that the Company was supposed to reach out to the RDSO for the renewal of the certificate.

#### **4.4 Office building not insured**

A tenancy lease deed was executed (October 2015) between *the Smarakon, Sangrahalayon, Sansthao, Paarkon Va Upvano Aadi Ki Prabandhan Suraksha Evam Anurakshan Samiti* (Society) and the Company for taking at lease the Administrative Building of *Dr. BR Ambedkar Samajik Parivartan Sthal* to establish corporate office of the Company.

Clause 2(k) of the deed provided that the Company would keep the building insured in the joint names of the Society and the Company against loss or damage by fire on a sum equivalent to the cost of building with leading National Insurance Company. Whenever during the said term, the said building or any part thereof respectively is destroyed or damaged whether by fire or hurricane or earthquake or riots or otherwise, the Company would reinstate and rebuild the same to the satisfaction of the Society /GoUP.

However, the Company did not carry out insurance of the building, thus, resulting in violation of terms of the deed which was open to risk and liability in case of damages to the building.

In reply, the State Government accepted (September 2024) the facts and stated that the management of the Company has decided to get the building insured from leading National Insurance Company in the joint names of the Society and the Company.

#### **4.5 Conclusion**

There were deficiencies in operation and maintenance. Private security firm was appointed on nomination basis in violation of the provisions of the CVC Guidelines and GFR. Security of CBTC system was not examined from a certified cyber security agency for routine Vulnerability Assessment and Penetration Testing. Company used rails of less hardness. Interim speed certificate was not renewed after expiry. The Company did not get rented office building insured making it open to risk and liability in case of damages to the building.

#### **4.6 Recommendations**

6. *The Company should ensure full compliance with the statutory provisions, rules, Central Vigilance Commission guidelines, Indian Railway Standards/specifications, agreements, etc.*
7. *The Company should empanel a certified cyber security agency for routine vulnerability assessment and penetration testing to avoid susceptible threat and malfunctioning of the communication based train control system.*



## Chapter V

# Revenue Management



## Chapter V

### Revenue Management

#### Brief snapshot of the chapter:

- The Company collected electricity duty amounting to ₹ 17.42 lakh during the period July 2019 to August 2022 due to collection of energy charges at higher rate and the same was retained by the Company unauthorisedly and not remitted to the Government or the DISCOM.
- The company did not ensure payment of service tax/GST on rent paid by it for the office building.
- The Company could not generate revenue from operations as per the projections made in the DPR during March 2019 (commissioning of the project) to 2023-24 due to low ridership.
- The Company could not achieve the revenue targets from commercial and parking spaces as it could not lease out the entire space available for commercial use.
- The GoUP identified (October 2013) land to be provided to the Company for property development but the same was handed over to the Company in April 2022 after lapse of more than eight years. Moreover, the Company did not utilise 86.10 acres of land for property development after lapse of almost three years since receipt of the same.

Revenue generation through Property Development by metro projects is a global practice as the metro projects are highly capital intensive and the only way to become financially sustainable without government subsidies, is by generating Non-Fare Box Revenue from property development activities viz. advertisements, retailing, real estate at metro stations, etc.

The Company has a Property Development Cell for looking after generation of revenue from property development and advertisement businesses related to Non-Fare Box Revenue. It conducts studies for estimation of reserve prices or action plan for generating revenue to meet the targets set by the Company. Audit reviewed the financial management of the Company and findings thereof have been brought out in the succeeding paragraphs.

#### 5.1 Financial performance not achieved by the Company as envisaged in DPR

The DPR of the project is a guiding document which ensures the viability of the project. As per the DPR for N-S corridor, the ridership was estimated as 4.29 lakh in 2019-20<sup>43</sup>. As against this, the actual ridership was 0.54 lakh in 2019-20 which was 87.41 *per cent* short of the original projection. The year-wise projected ridership and actual ridership has been detailed in **Table 5.1** below:

<sup>43</sup> Entire section of the N-S Corridor became operational from March 2019.

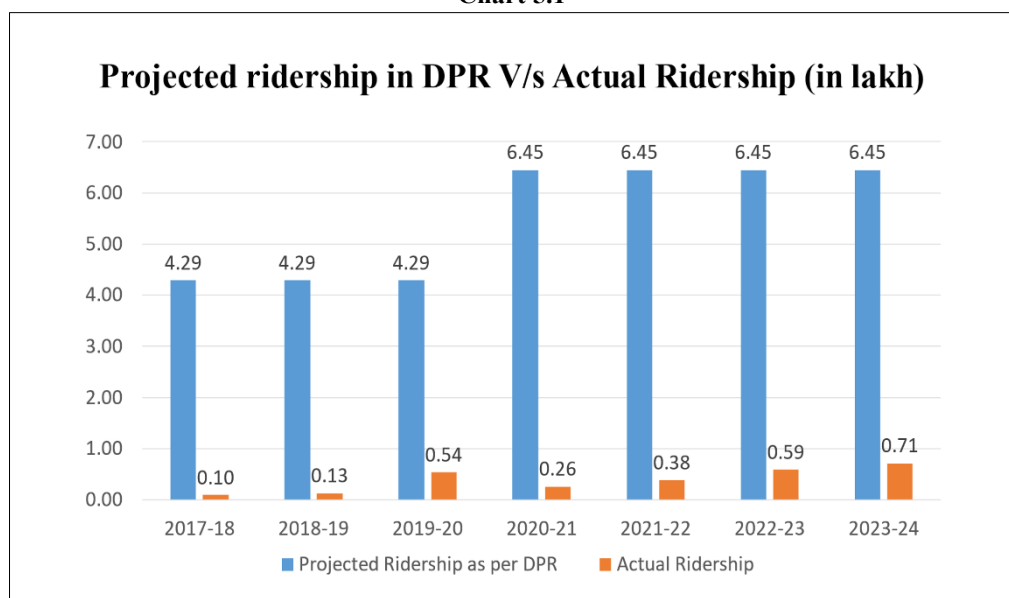
Table 5.1

Year-wise details showing projected, actual ridership and shortfall

Year	Projected daily ridership as per DPR	Actual daily ridership	Percentage shortfall
2017-18	4,29,250	10,054	NA <sup>44</sup>
2018-19	4,29,250	12,787	NA
2019-20	4,29,250	53,782	87.47
2020-21	6,44,659	25,888	95.98
2021-22	6,44,659	37,885	94.12
2022-23	6,44,659	59,154	90.82
2023-24	6,44,659	71,016	88.98
<b>Total</b>	<b>38,66,386</b>	<b>2,70,566</b>	

(Source: DPR of the project and data provided by UPMRCL)

Chart 5.1



It could be seen from above that in none of the year during 2019-24, the actual ridership was anywhere near to the ridership as projected in the DPR, adversely affecting the revenue generation from the operation of the metro as detailed in table-5.2 and 5.3.

Table-5.2

Projected revenue from operations as per DPR

Particulars	(₹ in crore)						
	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Fare Box Revenue (a)	-	333.00	350.00	480.00	503.00	586.00	615.00
Non fare Box Revenue (b)	-	33.00	35.00	48.00	50.00	59.00	62.00
Revenue from Operations (c)=(a)+(b)	-	<b>366.00</b>	<b>385.00</b>	<b>528.00</b>	<b>553.00</b>	<b>645.00</b>	<b>677.00</b>

(Source: table 14.9.1 of DPR)

<sup>44</sup> During 2017-18 and 2018-19 only priority section from Chaudhary Charan Singh (CCS) Airport to Charbagh was commissioned and hence shortfall has not been calculated.

Table-5.3

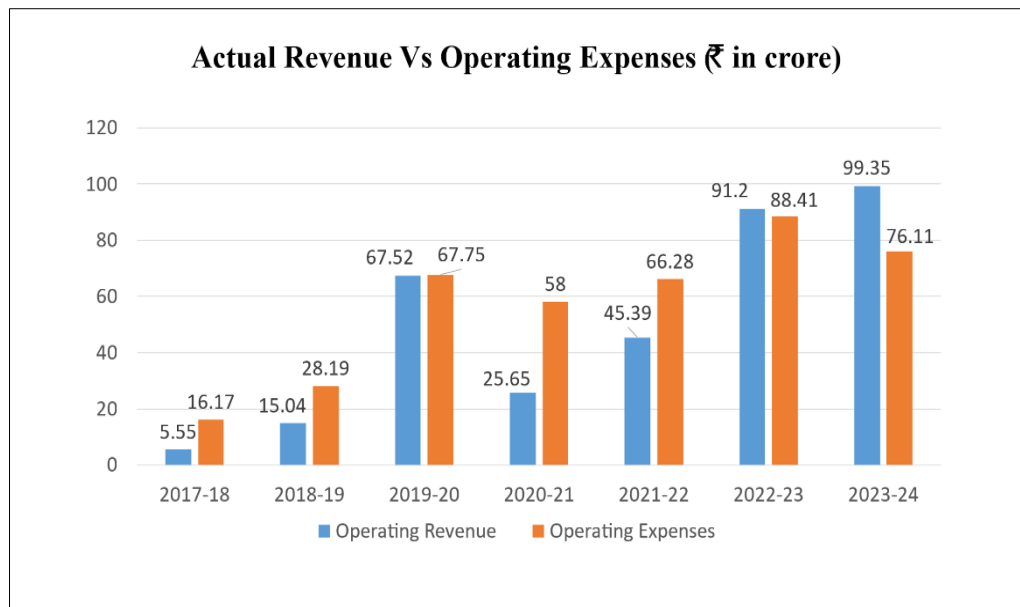
## Financial performance of the Company

(₹ in crore)

Particulars	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Fare Box Revenue (a)	4.35	10.80	54.73	15.94	35.60	66.44	77.02
Non-fare Box Revenue (b)	1.20	4.24	12.79	9.71	9.79	24.76	22.33
Revenue from Operations (c)=(a+b)	5.55	15.04	67.52	25.65	45.39	91.20	99.35
Operating Expenses (d)	16.17	28.19	67.75	58.00	66.28	88.41	76.11
Percentage of revenue generation against the projection in the DPR	-	4.11	17.54	4.86	8.21	14.14	14.67
Operating Ratio = (d)x100/(c) (in per cent)	291.09	187.40	100.34	226.17	146.02	96.94	76.61

(Source: Financial statements of the Company)

Chart-5.2



It is evident from above that operating revenue of the Company increased from ₹ 5.55 crore to ₹ 99.35 crore (1690.10 per cent) in the last seven years with average growth of 281.62 per cent. There was consistent growth in the operating revenue of the Company except 2020-21 and 2021-22 due to covid pandemic. During this period, operating expenses also increased from ₹ 16.17 crore to ₹ 76.11 crore. The Company was unable to meet operating expenses (except 2022-23 and 2023-24) from revenue from operations. Nevertheless, it was encouraging for the Company that it earned operating revenue more than the operating expenses after five years of operations of Lucknow Metro Rail Project.

Further, the Company in none of the years (2018-19 to 2023-24) could generate revenue from operations anywhere near to the projections made in the DPR in

respect of N-S corridor. The Company could not achieve the target of revenue from operation during 2018-19 to 2023-24, and could achieve revenue in the range of 4.11 *per cent* (2018-19) and 17.54 *per cent* (2019-20) only of the target set under DPR.

In reply, the State Government stated (September 2024) that comparison of actual revenue from N-S corridor with projected revenue in DPR for N-S corridor is not rationale because projected revenue in DPR for N-S corridor was calculated considering additional traffic coming from E-W corridor also, but in current scenario E-W corridor is not in existence. As per Government order, the interest earned on short term investment of funds received by Metros towards equities and interest free subordinate debt shall be recognized in the statement of Profit and Loss. It may be noted that only part section of 8 Km was opened till 2019 and subsequently after opening of full section, ridership pattern was totally disturbed due to Covid-19 as metro operation was closed two times. In 2022-23, Company has earned ₹ 167.59 crore while operating Lucknow & Kanpur metro. The total expenditure to ensure smooth operation in these cities was ₹ 157.71 crore. These metros were able to meet their expenditure on cash-in cash-out basis. However, these metros will be considered in loss if loan repayment was also included as about ₹ 300 crore are to be repaid.

The reply was not acceptable because audit has compared the low revenue generation with respect to projection made in the DPR in respect of N-S corridor. Further, interest earning on the short-term investment is not a regular business of the Company and such interest income will cease to incur as the capital work finishes.

The Lucknow and Kanpur metro may be operating smoothly on cash-in cash-out basis, but the project feasibility was not made on cash-in cash-out basis. Actual performance of a Company is decided only after it repays/provision for all its liabilities. Thereafter, the final profit and loss account depicts the true status of the Company.

## **5.2 Financial irregularities**

The exchequer had to suffer a loss of Service tax due to inaction on the part of the Company. The company wrongfully collected electricity duty and retained the same with it. Thus, the Company lacked a system to correctly interpret various laws and rules due to which various financial irregularities were noticed as stated in following paragraphs:

### **5.2.1 Rent payment without obtaining tax invoices resulted in loss to exchequer**

As per Section 65(105) (zzzz) of the Finance Act 1994, the term taxable service for renting of immovable property meant any service provided or to be provided to any person, by any other person in relation to renting of immovable property

for use in the course of furtherance of business or commerce. Further, Para 5 of the Schedule II of the CGST Act, 2017 also provided that renting of immovable property was supply of service. Further, section 73 (10) of the CGST Act, 2017 specifies time limit<sup>45</sup> for demand and recovery of the tax not paid.

The Company took (February 2015) on rent a building from the Society<sup>46</sup> for its corporate office on a monthly lease rent of ₹ 3.05 lakh with escalation of 15 *per cent* after every three years. The Company paid ₹ 94.86 lakh rent to the Society for the period February 2015 to September 2017. The Society was unregistered with Service Tax/GST authorities till December 2017. Therefore, it neither demanded nor the Company had paid Service Tax/GST on the renting service and the rent was paid by the Company without receipt of tax invoice. The Company did not insist for tax invoices. There was loss of Service Tax/GST revenue amounting to ₹ 14.19 lakh to the Government (*Appendix-VIII*) since the time limit specified in the CGST Act, 2017 for demand and recovery of tax not paid had already lapsed in December 2020.

In reply, the State Government stated (September 2024) that the Company was liable to pay the rent along with all taxes and other charges to the service provider. As per clause 2 (c) of the agreement, Company had to pay the rent on monthly basis to the Society, in advance for each month. Further, service provider falls under forward charge mechanism and the liability to issue tax invoices timely and to pay GST is of service provider. However, Company was not at default as it paid rent along with the taxes and other charges as per agreement and tax invoices.

The reply was not acceptable because the Company did not pay any taxes to the Society. The Company should have insisted/put a condition upon the Society to get itself registered so that the Society was made liable to pay the service tax. The Company did not insist on the service provider to get itself registered in Central Excise & Service Tax Department resulting into loss to the exchequer.

### 5.2.2 Electricity duty collected from commercial establishments not remitted to the State Government

Section 4 (1) of the UP Electricity Duty Act, 1952 provided for payment of the electricity duty to the State Government. The Company falling under the category of non-government rail was provided electricity connection under HV-3B category and it was issued electricity energy bill by the DISCOM at the rate of ₹ 7.30 KVAh among other charges as per the tariff decided by the UP Electricity Regulatory Commission. This also included electricity duty at the rate of 7.5 *per cent* of total energy bill and accordingly, the Company paid energy charges along with electricity duty to the DISCOM.

<sup>45</sup> Within three years from the due date for furnishing of annual return for the financial year for which tax is not/short paid.

<sup>46</sup> “Smarakon, Sangrahalayon, Sansthao, Paarkon Va Upvano Aadi Ki Prabandhan Suraksha Evam Anurakshan Samiti”

However, while issuing electricity bill to its commercial tenants, the company demanded energy charges at the rate of ₹ 8.75 per unit. This also led to enhanced collection of electricity duty on the total energy bills.

Thus, due to collection of energy charges at higher rate, electricity duty amounting to ₹ 17.42 lakh on test checked sample bills was collected during the period July 2019 to August 2022, as detailed in *Appendix-IX*. This amount was retained by the Company unauthorisedly and not remitted to the Government or the DISCOM.

In reply, the Company stated (April 2025) that it was not utilizing transmission and distribution systems of the DISCOM, but it utilized the infrastructure built by it and the same was also being maintained by the Company. In order to recover the cost of maintenance, it was charging higher tariff on its commercial tenants.

The reply of the Company was not acceptable because the Company may collect higher tariffs to recover the cost incurred by it for construction and maintenance of transmission and distribution networks, however, any electricity duty collected by it should have been remitted directly to the Government or through DISCOM.

### **5.3 Property Development**

#### **5.3.1 Optimal revenue not realised from commercial and parking spaces**

Chapter 14 of DPR of Lucknow Metro Rail Project estimated that other revenues from Property Development at ten *per cent* of the fare box revenue<sup>47</sup> during operations. Apart from property development on metro stations it would be possible to raise resources through leasing of parking rights at stations, advertisement on trains and tickets, advertisements within stations and parking lots, advertisement on viaducts, columns, and other metro structures, co-branding rights to corporate, film shootings and special events on metro premises.

Scrutiny of records revealed that the Company identified 53,174.16 sq. ft. bare commercial space and 15,984.54 sq. ft. parking space of eight priority stations and invited bids in December 2016. The revenue from these spaces was estimated to ₹ 42.28 lakh<sup>48</sup> per month. Subsequent bids were invited in December and January 2019. However, only 6,768 sq. ft.<sup>49</sup> area of bare commercial spaces was leased out till January 2019 and monthly revenue of ₹ 12.00 lakh was received. No bids were received for the parking spaces included in tender of December 2016 and the Company did not include parking spaces in the subsequent tenders. The Company, further, invited bids for

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<sup>47</sup> The fare box collection is the revenue from ridership.

<sup>48</sup> ₹ 39.88 lakh from bare commercial space and ₹ 2.40 lakh from parking space.

<sup>49</sup> Commercial space 1285 in January 2018 and 5483 sq.ft. in January 2019.

1,08,684 sq. ft. bare commercial spaces between April 2019 and June 2021 for the entire stretch of N-S corridor. However, only 45,197 sq. ft. (42 per cent) bare commercial space with monthly revenue of ₹ 55.38 lakh was leased out by the Company.

Audit further asked (March 2025) for action taken by the Company for bidding of the remaining 62,948 sq. ft. bare commercial space and 15,984.54 sq. ft. available parking space. In response, the Company intimated (April 2025) that 8,751 sq. ft. bare commercial space with monthly earning of ₹ 12.59 lakh has also been leased out till February 2025. Thus, 54,196 sq. ft. bare commercial space involving reserve price of ₹ 33.01 lakh per month was still not auctioned as of March 2025 (details given in *Appendix-X*). No records/information in respect of subsequent bidding, if any, of the available 15,984.54 sq. ft. parking space was provided to Audit.

In reply, the State Government stated (September 2024) that regular tendering was being done for monetisation of commercial spaces. Due to such strenuous efforts, Company has succeeded to earn more than 10 per cent of fare-box revenue from property development. Only eight km section was opened till 2019 and property development earnings increased after opening of full section.

The reply was not acceptable because the Company has intimated about the achievement of fare box revenue, whereas the audit comment was on not generating revenues from bare commercial and parking spaces already available with the Company which were not leased out as of March 2025. Resultantly, the Company could not earn the estimated revenue amounting to ₹ 43.05 crore (January 2016 to February 2025) from property development (as detailed in *Appendix-X*).

### 5.3.2 Delayed acquisition and development of land

Chapter 14 of DPR prescribes that the revenue of Lucknow Metro Rail Project mainly consists of fare box collection and other incomes from property development, advertisement, parking etc. 30 per cent of total available land would be meant for property development which shall be used for commercial activity and remaining 70 per cent shall be used for residential activity development. The estimated income from rental revenue would accrue from 2018-19. Out of the estimated rental income, the Company would be able to repay loan and interest after meeting the maintenance expenditure. For this purpose, the estimation of 60 hectares of land were made in the DPR for calculation of FIRR<sup>50</sup> from property development.

Scrutiny of records revealed that primarily prepared DPR by DMRCL proposed to maintain minimum 4.55 per cent FIRR for Lucknow Metro Rail Project. However, GoUP directed DMRCL (August 2013) to maintain FIRR more than

<sup>50</sup> Financial Internal Rate of Return: is an indicator to measure the financial return on investment of an income generation project and is used to make the investment decision.

eight *per cent*.<sup>51</sup>. To achieve FIRR more than eight *per cent*, 150 acre land was to be made available by the GoUP free of cost as committed liability. GoUP identified (October 2013) 150 acres of land in *Chak Ganjaria City Project* at Lucknow for the Company and decided to levy development charges on the Company for payment to Lucknow Development Authority. Scrutiny further revealed that GoUP changed (February 2020) its own decision of providing 150 acre land and agreed upon for only 86.83 acres land after making adjustment of internal/external development charges of approximately ₹ 328 crore. The Company reiterated numerous<sup>52</sup> to GoUP for providing 150 acre land. However, only 86.10 acres of land was made available to the Company in April 2022. Thus, the Company got the land after lapse of more than eight years after identification of land by the GoUP. Audit further noticed that the Company had not utilised 86.10 acres of land for property development after lapse of three years from receipt of the land.

In reply, the State Government stated (September 2024) that it was decided at Government level to give 150 acre land to the Company in place of fund and expenses on internal and external development of the land was to be borne by the Company. Later, land equivalent to the expenses to be borne by the Company was adjusted and it was decided to give 86.10 acre land in place of 150 acres. Otherwise, the Company would have to pay ₹ 328 crore as development fee which would have been huge financial burden on the Company.

The reply was silent regarding delay in providing land to the Company. Moreover, the Company did not utilise 86.10 acres land for property development after the lapse of three years from receipt of the land.

#### **5.4 Conclusion**

The Company did not achieve projected revenue as envisaged in the DPR till March 2024. The Company was unable to meet even operating expenses from revenue from operations during 2017-18 to 2021-22. Rent for the office building was paid without payment of service tax/GST resulting into loss to the exchequer. Electricity duty collected by the Company was not remitted to the Government. The Company could not lease out 54,196 sq. ft. bare commercial spaces involving reserve price of ₹ 33.01 lakh per month. Besides, no bids were received for 15,984.54 sq. ft. parking spaces available with the Company which were included in the tender of December 2016 and the Company did not include the available parking spaces in subsequent tenders during 2017-24. The Company did not utilise 86.10 acres of land for property development even after lapse of almost three years since receipt of the same.

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<sup>51</sup> On suggestions of Ministry of Housing & Urban Affairs, New Delhi (MoHUA), GoI.

<sup>52</sup> August 2017, March 2018 and January 2020.

## 5.5 Recommendations

8. *The Company should devise ways to attract commuters into the metro by providing end to end connectivity to increase the ridership and revenue.*
9. *The Company should ensure timely development of land available for property development and realisation of optimal revenue from developed properties through timely leasing out of available commercial and parking spaces.*

PRAYAGRAJ  
THE

**(RAJ KUMAR)**  
Principal Accountant General (Audit-I)  
Uttar Pradesh

**COUNTERSIGNED**

NEW DELHI  
THE

**(K. SANJAY MURTHY)**  
Comptroller and Auditor General of India



## Appendix



**Appendix-I (a)**

*(Reference: Paragraph no.1.6)*

**List of selected major category contract agreements of Lucknow Metro Rail Project**

Sl. No.	Name of Contractor	Description	Contract No.	Contract Value (₹ in crore)
1	M/s Gulermak-TPL Joint Venture	Underground Twin Tunnelling including 3 underground stations including Ramp, architectural & E&M Works	LKCC-06	1,190.52
2	M/s Larsen & Toubro Limited	Elevated Packages for K.D. Singh babu to Munshi Pulia	LKCC-07	675.33
3	Larsen & Toubro Limited	Construction of elevated viaduct, eight elevated stations from Transport Nagar to Charbagh/c ramp to depot (LKCC-01) including extra items, negative Escalation and variation for elevated viaduct and Amausi Extension towards CCS Airport - Contractor Larson & Toubro Limited	LKCC-01	630.68
4	SAM (India) Built Well Pvt. Ltd.	Civil and E&M works for Depot including variations + Misc. Contracts for depot items + Evergreen Landscape & Horticulture + Kitchen Planning + Furniture of DCC building + Auditorium & Class setup of Training Centre	LKCC-03	130.51
5	Canon Fastners, Delhi	Architect and E&M works for 8 Nos stations of priority corridor + Signage LKSG-01	LKCC-04	85.55
6	M/s K.S.M Bashir Mohmmad & Sons	Staff Quarters and officer's colony	LKCC-09	80.93
7	Systra MVA Consulting India Pvt. Ltd.	Detailed designed contract	LKDD-01	14.41
8				5.75
9	Larsen & Toubro Limited	25kv Flexible/Rigid OHE (LKE01 &2) & Receiving & Auxiliary Main/ Traction sub stations	LKE-1&2	363.33
10	BLT-Stone India Consortium	Escalators	LKE 04	53.09
11	M/s Kalindee Rail Nirman (Engineers) Limited	Track Laying	LKT-5	109.47
12	Vossloh Fastening Systems GmbH	Fastenings systems	LKT-3	51.02
13	Mitsui & Co. Pvt. Ltd.	Track work in Viaduct, Station and Depot: Tender for supply of Head Hardened Rail	LKT-01	39.88
14	Consortium of AYESA-KARNA-AARVEE-GEODATA	General Consultancy work	LKGC-01	234.57
15				14.38
16	Delhi Metro Rail Corporation Ltd.	Interim Consultancy	-	13.00
17	CBM Industries Ltd.	Signage work	LKSG-02	14.40

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<b>Sl. No.</b>	<b>Name of Contractor</b>	<b>Description</b>	<b>Contract No.</b>	<b>Contract Value (₹ in crore)</b>
18	M/S Larsen & Turbo Limited	Telecom. System	LKS 02	112.30
19	M/S Datamatics Global Services Ltd.	Automated Fare collection system	LKS-01	63.92
20	Consortium of ALSTOM Transport India Ltd., Bangalore & ALSTOM Transport SA France	Rolling Stock (cars) & Signalling	LKRS-01	1069.81
21	M/s KPIT Technologies Ltd.	ERP	LKERP-01	9.24
<b>Total</b>				<b>₹ 4,962.09</b>

## Appendix-I(b)

(Reference: Paragraph no.-1.6)

## List of selected contracts for miscellaneous works of Lucknow Metro Rail Project

Sl. No.	Name of Contractor	Description	Contract no.	Contract Value (₹ in crore)
1	BVG India Ltd.	Mechanized Cleaning and Housekeeping Works of Rolling Stock (Metro Trains), Transport Nagar Depot and 21 Nos. Metro Stations from CCS Airport to Munshipulia, of Lucknow Metro at Lucknow.	LKHK-02	15.21
2	Indradev Associates	Maintenance contract for civil works from CCS Airport to Munshipulia Metro Station and Transport Nagar Depot”.	LKCM-01	3.11
3	Abhi Advertising	Advertisement Rights of Lucknow Metro Trains in Priority Section of LMRCL Network of Phase-I. (For 13 sets)	LKAR-02	1.96
4	Saumya Traders	Maintenance cum Rate contract for E&M works at Transport Nagar Depot and 8 Stations of Priority section (TPNR-CHBG) of Lucknow Metro Rail Co. Ltd.	LKE-MCRC-1	1.63
5	Shri Ramswaroop Digital Technologies Pvt. Ltd.	Custom HRMS Module Development and AMC	LKERP-02	0.74
6	FEAG Engineers & Construction Pvt. Ltd.	Maintenance cum Rate contract for E&M works at Transport Nagar Depot and 8 Stations of Priority section (TPNR-CHBG) of Lucknow Metro Rail Co. Ltd.	LMRC/O&M/E&M/25/Rate Contract -3/2019 dated 10.06.2019	0.54
7	Oasis	Comprehensive Annual maintenance Contract of 29 no. Escalator of Priority	UPMRCL/ Escalators/AMC-2/01	0.51
8	Nugen Innova	Proposal for computerised maintenance management system (CMMS)	LKE-CMMS	0.50
9	Saransh	Maintenance cum Rate Contract of Maintenance at Depot & stations of Priority section (TPNR-CHBC) of UPMRC	LMRC/O&M/ E&M/25/Rate contract dated 20.03.2018	0.19
10	D.K. Enterprises	Refilling Cartridge	UPMRC/Stores/2020/017/1	0.10
11	Coffee Day Global Limited	Tea Coffee vending	LMRC/Stores/17/001/2020	0.08

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Sl. No.	Name of Contractor	Description	Contract no.	Contract Value (₹ in crore)
12	Balaji Enterprises	Rectification of faulty lights of workshop & IBL at Depot and Station	LMRC/E&M/24/Quotation/2019/ Workshop dated 26.07.2019	0.08
13	Oasis	Annual maintenance of drinking water fountain of all 21 metro stations (CCAP-MSPA) LMRC	UPMRC/O&M/E&M/WF/AMC-2	0.07
14	Amazon Internet Services Pvt Ltd.	Amazon Web Services	LMRC/ IT/Cloud/2021	0.07
15	Oasis	Annual maintenance of drinking water fountain of all 21 metro stations (CCAP-MSPA) LMRC	UPMRC/O&M/ E&M/WF/AMC-1	0.05
16	Cummins India Ltd.	D1 check/repair of 01 no. Cummins engine of CMV (Tower wagon) with spare and consumable by original equipment manufacturer (M/s Cummins India Ltd.) for traction wing of UPMRC (including GST)	D1 check 01 no of Cummins Engine of CMV	0.04
17	Maharaja Baba Enterprises	SITC of streetlights at TPNR depot and artwork lights at various stations of Lucknow metro	LKE-ENM-02/LOA	0.04
18	Aparna Baranwal	Annual Recharge & AMC of DTH connections for UPMRC officers	LKDTH-01	0.04
19	J C Engineering and commercial construction	Supply Installation of various LED lights on occasion of Republic Day 2020 at TPN Depot and three nos. of UG stations	UPMRC/O&M/E&M/24/ Republic Day /2020/LOA dated 21.01.2020	0.04
20	Hitachi	Comprehensive annual maintenance for H1 Rel. make UPS System (2*5 KVA installed TPNR RSS and MSPA RSS for 2 years	CAMC of UPS System	0.03
21	Saumya traders	Providing of Decorative lightings at different locations on various occasion	LMRC/O&M/E&M/24/ quotation/2018 dated 14-8-2018	0.03
22	Noida Testing laboratories	Proposal for rate contract of oil testing auxiliary and booster transformer installed at MSPA RSS & TPNR RSS & main line balance section (CCAP-MSPA)	Proposal for rate contract of oil testing	0.02
23	BSNL	Broad Band Connectivity at UPMRC colony	UPMRC/IT/ Internet/Colony	0.01
24	Saumya traders	Providing of Decorative lightings at different locations on occasion of visit of PM	LMRC/O&M/ E&M/24/quotation/PM visit /2018 dated 26-7-2018	0.01

Sl. No.	Name of Contractor	Description	Contract no.	Contract Value (₹ in crore)
25	National insurance company limited	Renewal of insurance policy and payment of road tax for rail cum road vehicle	UPMRC/RS/19-20/RRV/ Certification/05	0.006
26	J K Enterprises	Comprehensive Annual Maintenance contract of 3 nos. Kent Perk RO water purifier/cooler in workshop area TPNRD Depot.	UPMRC/RS/20-21/RO/CAMC	0.006
27	J K Enterprises	Comprehensive Annual Maintenance contract of Kent Perk RO at DCC.	LMRC/O&M/ E&M/25/AMC-1/2019	0.005
28	Noida Testing laboratories	Proposal for oil testing auxiliary and booster transformer installed at MSPA RSS & main line balance section (KDSS-MSPA)	Transformer oil testing	0.005
29	Godrej and Boycee Mfg. Ltd	Furniture	LMRC/store/rate contract/furniture/1	0
30	ITI ltd.	e-tendering	UPMRC/stores/e-tendering/2019	0
		<b>Total</b>		<b>25.122</b>

**Appendix-II**

*(Reference: Paragraph no.-1.8)*

**Records not furnished**

<b>Sl. No.</b>	<b>Details</b>
1.	With reference to the contract package LKCC-01, the file related to the correspondences between UPMRCL, interim consultant (DMRC) and M/s Gammon India Ltd.
2.	Contract records of General Consultancy (LKGC-01) related to contract package for Administrative Building, or its construction.
3.	Copy of written structure/set of rules, regulation, instructions for Contract Management cell approved by the competent authority.
4.	Copy of challans for deposit of service tax from February 2015 to September 2017
5	Contract records of contract package LKCC-03
6	Permission for earth excavation from Geology and Mining Department.

Appendix-III

(Reference: Paragraph no. -3.3)

Calculation of interest as per Clause 11.2.6 of GCC on Plant & Machinery Advance (LKCC-07)

Vr. No./ Date of disbursement	Amount disbursed (in ₹)	Vr. No./Date of recovery	Amount recovered (in ₹)	Unrecovered Amount (in ₹)	Period for which the amount was with contractor	Days	Amount of interest to be recovered (@ 15% p.a.) (in ₹)
2879/03.04.17	317414842	-	0	317414842	03.04.2017 to 15.10.2017	195	25436668.85
		1609/16.10.2017	22593832	294821010	16.10.2017 to 15.11.2017	31	3755938.89
		1823/16.11.2017	27166329	267654681	16.11.2017 to 19.12.2017	34	3739832.53
		2071/20.12.2017	32902100	234752581	20.12.2017 to 28.01.2018	40	3858946.54
		2400/29.01.2018	47878192	186874389	29.01.2018 to 18.02.2018	21	1612751.58
		2555/19.02.2018	42464035	144410354	19.02.2018 to 15.03.2018	25	1483668.02
		2836/16.03.2018	36815722	107594632	16.03.2018 to 27.03.2018	12	530603.66
		3020/28.03.2018	22537994	85056638	28.03.2018 to 25.04.2018	29	1013688.70
		3317/26.04.2018	4640024	80416614	26.04.2018 to 23.05.2018	28	925341.86
		267/24.05.2018	34670348	45746266	24.05.2018 to 03.07.2018	41	770793.25
		674/04.07.2018	30726033	15020233	04.07.2018 to 19.07.2018	16	98763.18
		838/20.07.2018	15020233	0			0.00
	317414842		317414842				43226997.06

**Appendix-IV**

(Reference: Paragraph no.-3.4)

**Irregular payment for material at site paid to contractor**

(Amount in ₹)

Material Advance/ RA Bill	Material Advance paid	Material Advance recovered	Balance Material Advance	Voucher Number	Date
Ist material Advance	2,49,90,763	0	2,49,90,763	276	19.05.2016
IInd RA/bill	0	83,30,254	1,66,60,509	419	06.07.2016
IIIRD RA/Bill	0	83,30,254	83,30,255	698	12.08.2016
IInd material Advance	2,56,63,648	0	3,39,93,903	858	31.08.2016
<b>Total</b>	<b>5,06,54,411</b>	<b>1,66,60,508</b>	<b>3,39,93,903</b>		
Contract value			85,54,54,948		
Maximum 4% Material Advance admissible to contractor			3,42,18,198		
Balance Material Advance recoverable from contractor			3,39,93,903		
Material Advance due to contractor			2,24,294.92 Say ₹ 0.02 crore		
Provisional payment to contractor for material at site in 4th RA/bill			14,02,98,364 Say ₹ 14.03 crore		
<b>Excess payment to contractor for material at site</b>			<b>14,00,74,069</b> <b>Say ₹ 14.01 crore</b>		

**Appendix-V (a)**  
(Reference: Paragraph no.-3.6.1)  
**Details of approval of variations (LKCC-04)**

Sl. No.	DSR Code No.	Particular	Unit	As per BOQ	BOQ Rate	Amount	Executed quantity	Executed Amount	Variation in quantities	Per cent Variation	Excess Amount
1.	5.9.3	Centering and Shuttering:-suspended floor, roof, landings, balconies and access platform	Sqm	160	401.65	64264	3939.73	1582392.555	3779.73	2362.33	1518128.6
2.	5.3	RCC work in beams, suspended floors roof etc.	Cum	45.84	6778.2	310712.688	716.92	4859427.144	671.08	1463.96	4548714.5
3.	18.8.4	Water Supply- concealed work including cutting chases and making good the wall etc. 32mm nominal outer dia pipes	Mtr	80	422.4	33792	1158.28	489257.472	1078.28	1347.85	455465.47
4.	22.5	Providing and laying water proofing treatment in sunken portion of WCs, bathrooms etc.	Sqm	349.04	283.1	98813.224	4944.96	1399918.176	4595.92	1316.73	1301105
5.	12.41.2	providing and fixing on wall face unplasticized rigid PVC 110 metre diameter	Mtr	160	231.65	37064	1990.2	461134.0725	1830.65	1144.16	424070.07
6.	5.22A.6	Steel reinforcement- thermo-mechanically	Kg	7900.8	68.1	538044.48	96892.57	6598384.017	88991.77	1126.36	6060339.5
7.	13.45.1	Finishing Wall - priming coat of exterior primer applied @ 2.20kg/10Sqm	Sqm	800	146.45	117160	7227.19	1058420.511	6427.18	803.4	941260.51
8.	5.9.5	Centering and Shuttering:-Lintels, beams, girders, bressumers, and cantilevers.	Sqm	598.96	332.15	198944.564	5287.52	1756249.768	4688.56	782.78	1557305.2
9.	8.7.2	Providing and fixing cramps-Stainless steel cramps	Kg	500	574.65	287325	2097.41	1205276.657	1597.41	319.48	917951.66
10.	6.1.1	Brick work- cement mortar 1:4	Cum	44.88	4918.65	220749.012	184.38	906654.7545	139.45	310.72	685905.74
11.	4.20.2.1	M-15 grade plain cement concrete work	Cum	826.16	6540.9	5403829.944	3071.3	20089066.17	2245.14	271.76	14685236
12.	8.5	Extra for Providing opening or required size & shape for wash basins/kitchen sink in kitchen platform, vanity counters and stone work	Rmt	32	386.6	12371.2	110	42526	78	243.75	30154.8

**Performance Audit on Construction and Operation of Lucknow Metro Rail Project**

Sl. No.	DSR Code No.	Particular	Unit	As per BOQ	BOQ Rate	Amount	Executed quantity	Executed Amount	Variation in quantities	Per cent Variation	Excess Amount
13.	13.41.1	New work (two or more coats) over and including water thinnable priming coat with cement primer	Sqm	21000	89.7	1883700	71698.07	6431316.879	50698.07	241.42	4547616.9
14.	8.8.1.2	Fastener with threaded dia 10mm	Each	2000	28.35	56700	5715	162020.25	3715	185.75	105320.25
15.	13.6.1	12 mm cement plaster 1:4	Sqm	4350	242.05	1052917.5	11326.6	2741603.53	6976.6	160.38	1688686
16.	19.19.2.2	RCC main hole cover: MD-10 circular shape 500 mm internal dia -meter	Each	24	909.25	21822	55	50008.75	31	129.17	28186.75
17.	21.8.1	Filling the gap in between aluminum frame and adjacent RCC/Brick stone work: up to 5mm width	Mtr	1100.8	88.75	97696	2474.51	219612.7625	1373.71	124.79	121916.76
18.	18.8.3	Canceled work: 25mm nominal outer dia	Mtr	200	351.3	70260	448.7	157628.31	248.7	124.35	87368.31
19.	19.21.1	Makin connection of drain or sewer line: for pipes 100 to 250 mm diameter	Each	8	364.6	2916.8	17	6198.2	9	112.5	3281.4
20.	18.17.4	Providing and fixing gun metal gate valve: 50 mm nominal bore.	Each	32	750.75	24024	67	50300.25	35	109.38	26276.25
21.	10.25.2	In gratings, frames guard bar ladder, railings brackets etc.	Kg	53493.68	90.10	4819780.57	101538.74	9148640.47	48045.06	89.81	4328860
22.	24.3.3	Supply and assembling lower in and fixing in vertical position in bourwel unplasticized PVC 200 mm dia	Mtr	160.00	878.60	140576.00	292.95	257385.87	132.95	83.09	116809.9
23.	17.28.1.2	Providing and fixing PVC 40mm dia	Each	32.00	82.60	2643.20	57.00	4708.20	25.00	78.13	2065
24.	8.3.2	Granite work.	Rmt	3162.40	230.55	729091.32	5389.45	1242537.70	2227.05	70.42	513446.4
25.	8.2.2.2	Granite of any colour and shade /area of slab over 0.50 sqm.	Sqm	136.48	3907.40	533281.95	201.45	787145.73	64.97	47.60	253863.8
26.	21.1.1.3	Polyster powder coated aluminium	Kg	7155.20	385.10	2755467.52	10048.04	3869500.20	2892.84	40.43	1114033
27.	8.4	extra for fixing marble/ granite stone over and above corresponding basic items	Rmt	170.40	247.40	42156.96	222.75	55108.35	52.35	30.72	12951.39
28.	19.26.2	Rectangular manhole 120X90cm with circular cover of 500mm of grade mnd -10	Each	24.00	2503.55	60085.20	31.00	77610.05	7.00	29.17	17524.85
		<b>Total</b>				<b>19616189.13</b>		<b>65710032.80</b>			<b>46093844</b>

**Appendix-V (b)**

(Reference: Paragraph no.-3.6.1)

**Details of Approval of Variations (LKCC-07)**

Sl. No.	Schedule	Item No.	As per BoQ	Rate	Unit	Bonded cost (in ₹)	Executed quantities	Variation in quantities	Variation (in per cent)	Excess amount (in ₹)
1	A	G01/2	125.00	2601.73	RM	325216.25	280.00	155.00	124.00	403268.15
2		8.1	10.00	18279.70	Nos.	182797.00	59.00	49.00	490.00	895705.30
3		8.2	10.00	28348.83	Nos.	283488.30	40.00	30.00	300.00	850464.90
4		8.3	5.00	45759.16	Nos.	228795.80	98.00	93.00	1860.00	4255601.88
5	B	V01/2	31	100509.53	MT	3115795.43	312.147	281.147	906.93	28257952.83
6		12	1510.78	5800.35	Cum	8763052.77	2332.036	821.256	54.36	4763572.24
7		V02/1	2578.3	12448.78	Cum	32096689.47	5826.786	3271.7	126.89	40728673.53
8		2	868.38	9277.37	Cum	8056282.56	1233.275	364.9	42.02	3385312.31
9		V03/2	360	1555.02	Cum	559807.20	1010	665.4	184.83	1034710.31
10		3	1450	10893.76	Cum	15795952.00	2743.58	1293.58	89.21	14091950.06
11		5	1387.3	10893.76	Cum	15112913.25	3796.65	2420.58	174.48	26369217.58
12		7	112.49	10893.76	Cum	1225439.06	361.29	287.51	255.59	3132064.94
13		V04/2	17640.85	1955.13	MT	34490155.06	22473.6	4871.35	27.61	9524122.53
14		3	288	12213.14	Cum	3517384.32	590.7	302.7	105.1	3696917.48
15		4	72	1555.02	Cum	111961.44	590.7	518.7	720.42	806588.87
16		5	918	2178.51	MT	1999872.18	1476.69	1341.98	146.19	2923516.85
17		8	1008.32	12213.14	Cum	12314753.32	2436.78	1561.68	154.88	19073016.48
18		9	2570	1955.13	MT	5024684.10	20224.14	17816.72	693.26	34834003.77
19		10	1	167352.24	Nos.	167352.24	8	7	700.00	1171465.68
20	11	1	446625.7	Nos.	446625.70	2	2	200.00	893251.40	
21	12	1	423956.97	Nos.	423956.97	2	1	100.00	423956.97	
22	V05/2(ii)	124424.2	158.33	RM	19700083.59	157046.3	32752.84	26.32	5185757.16	
23	3 (i)	176.65	158424.66	MT	27985716.19	264.07	87.42	49.49	13849483.78	

Sl. No.	Schedule	Item No.	As per BoQ	Rate	Unit	Bonded cost (in ₹)	Executed quantities	Variation in quantities	Variation (in per cent)	Excess amount (in ₹)
24		(ii)	7070.08	270.01	RM	1908992.30	9671.36	2601.22	36.79	702355.41
25		(iv)	1536	11435.01	Nos.	17564175.36	3366	964	62.76	11023349.64
26		4 (i)	242.87	158424.66	MT	38476597.17	308.589	97.13	39.99	15387787.23
27		(iv)	784	11435.01	Nos.	8965047.84	664	218	27.81	2492832.18
28		V06/2 (i)	80.37	110660.76	MT	8893805.28	546.11	459.63	571.89	50863005.12
29		V07/1	17438400	1.64	Cum	28598976.00	23145184	5994323.2	34.37	9830690.05
30	C	S02/4	1633.84	11646.11	Cum	19027880.36	2494.15	866.95	53.06	10096595.06
<b>Total</b>						<b>315364248.51</b>			<b>Total</b>	<b>320947819.69</b>
Say (₹ in crore)						<b>31.54</b>			<b>Say (₹ in crore)</b>	<b>32.09</b>

Schedule-E Misc. Works Under DSR 2014							
Item	Description	Unit	Quantities	Rate	Amount (₹ in crore)	Final Revised (₹ in crore)	Final Execution (₹ in crore)
1	Items covered in DSR 2014 but not mentioned in Schedule A, B, C & D	Lump Sum	Not available		15.00	47.00	48.95
			Total of Schedule E		15.00	47.00	48.95
			Above 5%		15.75	49.35	51.40
<b>Variation (per cent)</b>							<b>226%</b>

## Appendix-VI

(Reference: Paragraph no.-3.6.2 (ii))

## Abstract of contract agreement (LKCC-04)

(₹ in crore)

Sl. No.	Description of Sub Heads	BOQ Amount	Quoted rate in per cent below/ above	Quoted Amount	Up-to-date work done	Extra Item	Total Executed cost
1	Schedule A (DSR 2014 items)	22.12	-0.111	19.66	12.82	32.45	45.27
2	Schedule B (NDSR items)	44.93	-0.13	39.10	40.53	1.77	42.30
3	Schedule C -E&M Works	29.80	-0.10	26.79	22.65	1.14	23.79
	<b>Total</b>	<b>96.85</b>		<b>85.55</b>	<b>76.00</b>	<b>35.35</b>	<b>111.36</b>

**Appendix-VII**

(Reference: Paragraph no.-3.7)

**Procurement through obtaining quotations**

Contract no.	Particular	New item	Value of work (in ₹)
LKCC-06	Extra Item 3(2)	Acoustic Insulation of ceiling using Mineral Rockwool	4374579.00
	Extra item 3(6)	Providing and fixing of 6 mm thick Lacquered glass on toilet wall	2814722.00
	Extra Item variation EI 1(2)	Providing 13.52 mm thick laminated toughened glass lift canopy	1463616.00
	Extra Item 5(5)	For providing 12 mm thick toughened curved glass railing at Hazratganj station	475238.00
	Extra Item 6(1)	Retro Reflective boards inside tunnel for cross passage marking	145286.00
	Extra Item 6(2)	Providing Radiant Glow Fluorescent paint on tunnel eye and cross passage location inside tunnel	578168.00
	Extra Item 6(5)	Providing and Laying S&S non pressure NP4 RCC pipes 1600 mm diameter	390236.00
	Extra Item 6(8)	Providing and painting Deco PU paint over concrete surface and providing & laying yellow visibility vitrified tile (1200 mm X 100 mm X 12 mm) at Platform level.	1188002.00
	Extra Item 6(9)	Providing and Installation of 12 mm thick toughened glass for AFC barrier and 12 mm thick toughened glass for urinal partition	1030932.00
	Extra Item 6(11)	Providing and Fixing of Dholpur/Agra stone slab flooring in place of original restoration works	6206325.00
	Extra Item 6(4)	Providing and fixing of frosted film on clear glass	107063.00
	Extra Item (I)	Display rack with storage souvenir shelf (as per drawing no UPMRC/SM/INT/D/002/R2) and UPMRC/SM/INT/D/003/R2 dated 03.11.2020	567250.66
	Extra Item (III)	Trophy shelf (as per drawing no. UPMRC/SM/INT/D/004/R1 dated 03.11.2020	687446.82
	Extra Item (IV)	Providing and fixing of glass film 3m as per approved design	175014.00
<b>Total</b>			<b>20203878.48</b>

Contract no.	Particular	New item	Value of work (in ₹)
LKCC-09	Extra Item -2	Providing and fixing tabletop wash basin	219602.00
	Extra Item -3	Providing and fixing Wall hang WC	244470.00
	Extra Item -4	Providing and fixing Canceled Cisten	168390.00
	Extra Item -5	Providing and fixing SS Kitchen Chimney of Kaff make	141518.00
	Extra Item -6	Providing and fixing Stenless steel kithen sink with drain board	64438.00
	Extra Item -8	Boring and instalation of 300mmx150mm dia and 425mtr depth tube well	6540561.00
	Extra Item -9	Painting of external wall with textured paint	12269600.00
	Extra Item -10	Providing and laying in position cement concret 1:4:8	8565128.00
	Extra Item -15	Providing and making of Bed with two bed side table	510000.00

<b>Contract no.</b>	<b>Particular</b>	<b>New item</b>	<b>Value of work (in ₹)</b>
	Extra Item -18	Providing and fixing Toilet Vanity of size 750mm x 550mm	736680.00
	Extra Item -20	Providing and fixing 450mm long SS Tower Bolt	888030.00
	Extra Item -21	Providing and fixing 110x110mmx110mm unplasticised PVC Tee	30588.00
	Extra Item -22	Providing and fixing uPVC Tap 110mm	1496.00
	Extra Item -26	Providing and fixing Armstrong make 10.5 mm thick wooden flooring	924912.00
	Extra Item -27	Extra payment for additional quantity of admixture used in RCC as per design mix	1876800.00
		<b>Total</b>	<b>33182213.00</b>

**Appendix-VIII**

*(Reference: Paragraph no. 5.2.1)*

**Calculation of Service Tax/GST against rent paid**

<b>Date of payment of rent</b>	<b>Rent Amount (in ₹)</b>	<b>Rent period</b>	<b>Service Tax<sup>53</sup>/GST<sup>54</sup> (in ₹)</b>
02.11.2015	2175761	February2015 -September 2015	304606.54
29.06.2016	3046065	October 2015-July 2016	456909.75
10.08.2016	304606	August 2016	45690.90
09.09.2016	304606	September 2016	45690.90
28.09.2016	304606	October 2016	45690.90
28.10.2016	304606	November 2016	45690.90
13.12.2016	304606	December 2016	45690.90
28.12.2016	304606	January 2017	45690.90
27.01.2017	304606	February 2017	45690.90
07.03.2017	304606	March-2017	45690.90
07.04.2017	304606	April 2017	45690.90
05.05.2017	304606	May 2017	45690.90
23.05.2017	304606	June 2017	45690.90
28.06.2017	304606	July 2017	45690.90
11.08.2017	304606	August 2017	54829.08
03.09.2017	304606	September 2017	54829.08
<b>Total</b>	<b>9486310</b>		<b>1419465.00</b>

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<sup>53</sup> Rate of service tax was 14 per cent vide Service Tax Notification 14/2015 thereafter it becomes 15 per cent according to section 161 of the Finance Act, 2016.

<sup>54</sup> Rate of GST was 18 per cent vide Notification No. 11/2017 Central Tax (Rate).

Appendix-IX

(Reference: Paragraph no. 5.2.2)

Calculation of electricity duty collected by the Company but not remitted to State Government

Month	Sanction Load(in KW)	Fixed Charges per Kw/Month	Fixed Charges (4)=(2)*(3)	Total KWH	Electricity Charge by the Company @ ₹ 7.30 per unit (6)=(5)*7.30	Electricity duty paid by the Company (7)={(4)+(6)}*7.5/100	Electricity duty collected by the Company from commercial tenants	Electricity Duty collected by the Company but not remitted (9)=(8)-(7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Jul-19	388.9	300.0	116670.0	47364.8	345763.0	34682.5	56247.3	21564.8
Aug-19	612.4	300.0	183720.0	63216.4	461479.7	48390.0	89064.4	40674.5
Sep-19	1260.8	300.0	378240.0	75340.9	549988.6	69617.1	127952.1	58335.0
Oct-19	786.4	300.0	235920.0	75974.2	554611.7	59289.9	100014.8	40724.9
Nov-19	852.9	300.0	255870.0	127358.0	929713.4	88918.8	137493.0	48574.3
Dec-19	857.4	300.0	257220.0	133305.0	973126.5	92276.0	141138.1	48862.1
Jan-20	947.4	300.0	284220.0	93722.2	684172.1	72629.4	120516.2	47886.8
Feb-20	972.4	300.0	291720.0	87762.2	640664.1	69928.8	116276.1	46347.2
Mar-20	1010.4	300.0	303120.0	114626.0	836769.8	85491.7	140713.0	55221.3
Apr-20	992.4	300.0	297720.0	17994.7	131361.3	32181.1	96730.4	64549.3
May-20	992.4	300.0	297720.0	28300.7	206595.1	37823.6	107187.0	69363.4
Jun-20	1188.4	300.0	356520.0	66741.5	487213.0	63280.0	129695.9	66416.0
Jul-20	871.0	300.0	261300.0	37835.7	276200.6	40312.5	102994.6	62682.0
Aug-20	834.0	300.0	250200.0	58643.6	428098.3	50872.4	93559.9	42687.6
Sep-20	834.0	300.0	250200.0	78874.3	575782.4	61948.7	104033.0	42084.3
Oct-20	834.0	300.0	250200.0	86843.9	633960.5	66312.0	106189.8	39877.7
Nov-20	834.0	300.0	250200.0	69058.0	504123.4	56574.3	94218.0	37643.7
Dec-20	874.0	300.0	262200.0	7375.0	53837.5	23702.8	98504.0	74801.2
Jan-21	934.0	300.0	280200.0	77013.0	562194.9	63179.6	103083.0	39903.4
Feb-21	944.7	300.0	283410.0	80906.0	590613.8	65551.8	106001.0	40449.2
Mar-21	964.7	300.0	289410.0	105187.0	767865.1	79295.6	122692.0	43396.4
Apr-21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
May-21	863.2	300.0	258960.0	64247.0	469003.1	54597.2	95917.0	41319.8
Jun-21	863.2	300.0	258960.0	68838.0	502517.4	57110.8	102060.0	44949.2
Jul-21	888.2	300.0	266460.0	926.3	6761.8	20491.6	113876.9	93385.3

*Performance Audit on Construction and Operation of Lucknow Metro Rail Project*

Month	Sanction Load(in KW)	Fixed Charges per Kw/Month	Fixed Charges (4)=(2)*(3)	Total KWH	Electricity Charge by the Company @ ₹ 7.30 per unit (6)=(5)*7.30	Electricity duty paid by the Company (7)={{(4)+(6)}*7.5/100	Electricity duty collected by the Company from commercial tenants	Electricity Duty collected by the Company but not remitted (9)=(8)-(7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Aug-21	931.0	300.0	279300.0	122835.0	896695.5	88199.7	134534.0	46334.3
Sep-21	927.3	300.0	278190.0	132326.0	965979.8	93312.7	140590.9	47278.2
Oct-21	1012.2	300.0	303660.0	132010.0	963673.0	95050.0	134891.8	39841.8
Nov-21	1008.0	300.0	302400.0	106814.0	779742.2	81160.7	126211.0	45050.3
Dec-21	994.0	300.0	298200.0	103449.0	755177.7	79003.3	123413.0	44409.7
Jan-22	1046.2	300.0	313860.0	95163.0	694689.9	75641.2	120557.5	44916.2
Feb-22	989.2	300.0	296760.0	96003.0	700821.9	74818.6	118149.5	43330.9
Mar-22	996.2	300.0	298860.0	143418.0	1046951.4	100935.9	148545.5	47609.7
Apr-22	1012.2	300.0	303660.0	175706.0	1282653.8	118973.5	170318.4	51344.9
May-22	1179.2	300.0	353760.0	235558.0	1719573.4	155500.0	215141.6	59641.6
Jun-22	1211.2	300.0	363360.0	242147.0	1767673.1	159827.5	220479.9	60652.4
Jul-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Aug-22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	<b>32707.90</b>			<b>3252883.40</b>	<b>23746048.60</b>		<b>4258990.50</b>	<b>1742109.10</b>

Appendix-X

(Reference: Paragraph no.-5.3.1)

Position of revenue realised from commercial and parking spaces

Name of Tender	Month of NIT	Area Available (in sq. ft.)	Area added/ removed in previous vacant area (in sq. ft.)	Total area available for new tender (in sq. ft.)	Minimum Reserve Price (₹ in lakh)	Area for which tender invited (in sq. ft.)	Agreement executed for the area (in sq. ft.)	Minimum reserve price of agreement area (₹ in lakh)	Agreement amount (H-1) (₹ in lakh)	Vacant area (in sq. ft.)	Minimum reserve price per month (₹ in lakh)	Total vacant months	Total revenue foregone (₹ in lakh)
	2	3	4	5	6	7	8	9	10	11	12	13	14
LKPD-01	Jan 2016	53174.16	0	53174.16	39.88	53174.16	0	0.00	0.00	53174.16	39.88	13	518.45
PD Area concourse	Jan 2018	53174.16	0	53174.16	39.88	2493.00	1285.00	2.65	4.35	51889.16	37.23	12	446.76
LKPD-02	Jan 2019	51889.16	0	51889.16	37.23	23539.00	5483.00	7.13	7.65	46406.16	30.10	3	90.30
LKPD 3 to 05	April 2019	46406.16	52453.84	98860.00	82.45	98860.00	12916.00	13.17	29.47	85944.00	69.28	10	692.80
LKPD-6	Feb 2020	85944.00	-539.00	85405.00	70.99	85405.00	18648.00	12.90	14.99	66756.00	58.08	15	871.20
LKPD-07	June 2021	66756.00	9824.00	76580.00	53.67	76580.00	13632.00	9.72	10.92	62948.00	43.95	21	922.95
LKPD-11	LAO Jan. 2024	62948.00	0.00	62948.00	43.95	Not given	6473.00	6.94	7.42	56475.00	37.01	9	333.09
LKPD-13	LAO Feb. 2025	56475.00	0	56475.00	37.01	Not given	2278.00	4.00	5.17	54197.00	33.01	13	429.16
<b>Total</b>												<b>4304.71</b>	



## Abbreviations



## List of Abbreviations

Abbreviation	Full Form
AAR	Alternative Analysis Report
BCC	Backup Control Centre
BoD	Board of Directors
BoQ	Bill of Quantity
CA	Chartered Accountant
CBTCS	Communication Based Train Control System
CE	Chief Engineer
CCS	Chaudhary Charan Singh
CISF	Central Industrial Security Force
CPWD	Central Public Works Department
CVC	Central Vigilance Commission
CGWA	Central Ground Water Authority
dB	Decibel
DMRCL	Delhi Metro Rail Corporation Ltd.
DPR	Detailed Project Report
DSR	Delhi Schedule of Rate
EC	Environment Clearance
EIB	European Investment Bank
EW	East West Corridor
FIRR	Financial Internal Rate of Return
GCC	General Conditions of Contracts
GeM	Government e Market
GO	Government Order
GoI	Government of India
GoUP	Government of Uttar Pradesh
GST	Goods & Services Tax
GWD	Ground Water Department
GFRs	General Financial Rules
HUPD	Housing and Urban Planning Department
IB	Intelligence Bureau
IDC	Interest During Construction
IIT Kanpur	Indian Institute of Technology, Kanpur
ISC	Interim Speed Certificate
LMRCL	Lucknow Metro Rail Corporation Limited
LD	Liquidated Damage
MD	Managing Director
MoHUA	Ministry of Housing and Urban Affairs
MoUD	Ministry of Urban Development
MoU	Memorandum of Understanding
MRTS	Mass Rapid Transit System
NIT	Notice Inviting Tender
NGT	National Green Tribunal
NS	North South Corridor
OCC	Operation and Control Centre
PD	Property Development
PSTM	Procedure for Safety Certification and Technical Clearance of Metro System

<b>Abbreviation</b>	<b>Full Form</b>
RDSO	Research and Design Standard Organisation
RFP	Request for Proposals
ROD	Revenue Operations Date
SCC	Special Conditions of Contracts
SoP	Schedule of Powers
SPV	Special Purpose Vehicle
TS	Technical Sanction
UPPCL	Uttar Pradesh Power Corporation Ltd.
UPRC	Uttar Pradesh Regulatory Commission
USD	United States Dollar
VAPT	Vulnerability Assessment and Penetration Testing



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