

**16**

**STANDING COMMITTEE ON HOUSING AND URBAN AFFAIRS  
(2022- 2023)**

**SEVENTEENTH LOK SABHA**

**MINISTRY OF HOUSING AND URBAN AFFAIRS**

**[Action Taken by the Government on the recommendations contained in the Thirteenth Report (Seventeenth Lok Sabha) of the Standing Committee on Housing and Urban Affairs (2021-2022) on the subject, 'Implementation of Metro Rail Projects – An Appraisal']**

**SIXTEENTH REPORT**



**LOK SABHA SECRETARIAT  
NEW DELHI**

**December, 2022/ Agrahayana 1944 (Saka)**

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**Presented to Lok Sabha on 20.12.2022**

**Laid in Rajya Sabha on 20.12.2022**



**LOK SABHA SECRETARIAT**

**NEW DELHI**

December, 2022/ Agrahayana 1944 (Saka)

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**COMPOSITION OF THE STANDING COMMITTEE  
ON HOUSING AND URBAN AFFAIRS (2022-23)**

Shri Rajiv Ranjan Singh *alias* Lalan Singh - Chairperson

**MEMBERS**

**LOK SABHA**

2. Adv. A. M. Ariff
3. Shri Sanjay Kumar Bandi
4. Shri Shrirang Appa Barne
5. Shri Benny Behanan
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31. Shri Sanjay Singh

**SECRETARIAT**

1. Shri V.K. Tripathi - Joint Secretary
2. Ms Archana Pathania - Director
3. Ms Swati Parwal - Deputy Secretary
4. Shri Mukesh Kumar - Asst. Comm. Officer

## INTRODUCTION

I, the Chairperson of the Standing Committee on Housing and Urban Affairs (2022-2023) having been authorized by the Committee, present this Sixteenth Report (17<sup>th</sup> Lok Sabha) on action taken by the Government on the Observations/Recommendations contained in the Thirteenth Report (17<sup>th</sup> Lok Sabha) of the Committee on the subject, 'Implementation of Metro Rail Projects – An Appraisal' of the Ministry of Housing and Urban Affairs.

2. The Thirteenth Report was presented to Lok Sabha on 19 July, 2022 but had been laid on the table of Rajya Sabha on 07.04.2022. The Action Taken Replies of the Government to all the recommendations contained in the Report were received on 03 August, 2022.

3. The Committee considered and adopted this Report at their sitting held on 16 December, 2022.

4. An analysis of the action taken by the Government on the recommendations contained in the Thirteenth Report (Seventeenth Lok Sabha) of the Committee is given at Annexure-II.

5. For the facility of reference and convenience, the Observations/Recommendations of the Committee have been printed in bold letters in the body of the Report.

**NEW DELHI;**

**16 December, 2022**  
**25 Agrahayana, 1944 (Saka)**

**Shri Rajiv Ranjan Singh**  
***alias* Lalan Singh**  
**Chairperson,**  
**Standing Committee on Housing and Urban Affairs**

## CHAPTER I

### REPORT

This Report of the Standing Committee on Housing and Urban Affairs (2022-23) deals with the action taken by the Government on the recommendations contained in their Thirteenth Report (Seventeenth Lok Sabha) on the subject, 'Implementation of Metro Rail Projects – An Appraisal' of the Ministry of Housing and Urban Affairs which was presented to Lok Sabha on 9<sup>th</sup> May, 2022.

1.2 Action Taken Replies have been received from the Government in respect of all the 21 Recommendations contained in the Report. These have been categorized as follows:

- (i) Recommendations/Observations, which have been accepted by the Government:  
Recommendation Serial Nos. 1, 3, 4, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21  

(Total - 16)  
(Chapter-II)
- (ii) Recommendations/Observations, which the Committee do not desire to pursue in view of Government's replies:  
Recommendation Serial No. 2, 7, 8  

(Total - 03)  
(Chapter-III)
- (iii) Recommendations/Observations, in respect of which replies of Government have not been accepted by the Committee:  
Recommendation Serial Nos. 5, 18  

(Total - 02)  
(Chapter-IV)
- (iv) Recommendations / Observations, in respect of which final replies of the Government are still awaited:  
Recommendation Serial No. Nil  

(Total - 0)  
(Chapter-V)

1.3 The Committee desire that specific replies to the Comments of the Committee as contained in Chapter-I of this Report may be furnished to them at the earliest and in any case, not later than three months from the presentation of this Report.

1.4 The Committee will now deal with the action taken by the Government on some of their recommendations in the succeeding paragraphs.

### **Recommendation (Serial No. 5)**

#### **Adoption of Less Capital intensive MetroLite and MetroNeo networks**

1.5 The Committee had recommended in their original Report as under:

“The Committee note that metro projects are capital intensive in nature involving huge investment on the part of Ministry accounting for about 43 percent of total BE in 2021-22 of Ministry of Housing and Urban Affairs. The Committee have been further apprised that per kilometre cost of construction of metro projects range from Rs. 37 cr to Rs. 220 crores for elevated metro, Rs. 100 crores to Rs.1126 crores for underground metro and Rs. 84 to Rs. 122 crores for At Grade metros. On the other hand, MetroLite can be constructed at 40% cost of Metro train while MetroNeo (tyred metro) can be constructed at 25% of the cost of metro. The standards for MetroLite and MetroNeo have also been issued by the Ministry in July 2019 and November, 2020, respectively. They will provide a similar experience and ease of travel in terms of comfort, convenience, safety, punctuality, reliability, & environment-friendliness as that of a conventional metro system. Both are suitable for smaller cities with lower ridership that are aspiring for rail-based mass transit system and can also be used as feeder to high capacity metro rail systems. They are more viable and sustainable due to their very less capital, operation and maintenance costs. Apart from decongesting smaller cities, they will also reduce pollution.

The Committee, therefore, recommend the Ministry to promote and incentivize MetroLite and MetroNeo in smaller cities aspiring for rail-based mass transit system and also as feeder to high capacity metro systems, wherever possible. The Committee also desire to be informed of the specific measures taken to persuade/ incentivize adoption of MetroLite and MetroNeo systems.”

1.6 In their written reply, the Ministry have stated as follows:

"Urban transport, which is an integral part of urban development, is a state subject. Hence, respective State Government/Union Territory (UT) is responsible for initiating and developing urban transport infrastructure including Mass Rapid Transit System. The Central Government considers financial assistance for such projects in cities or urban agglomerates, based on feasibility of the proposal and availability of resources, as and when posed by the concerned State Government/Union Territory (UT). MoHUA has already issued standards for MetroLite and MetroNeo system. Selection of Metro Rail/MetroLite/MetroNeo is done as per traffic studies conducted



during DPR stage. Govt. of Uttar Pradesh and Union Territory of Jammu & Kashmir have already proposed MetroLite system for Gorakhpur and Srinagar/Jammu respectively. Similarly, Govt. of Maharashtra and Govt. of Uttarakhand have already proposed MetroNeo system in Nashik and Dehradun respectively."

**1.7 The Committee had recommended the Ministry to promote and incentivize MetroLite and MetroNeo systems in smaller cities aspiring for rail-based mass transit systems and also as feeder to high capacity metro systems, wherever possible. The Committee also desired to be informed of the specific measures taken to persuade/incentivize adoption of MetroLite and MetroNeo systems.**

**In its reply, *inter alia*, the Ministry have stated that Urban Transport being a State Subject most of the urban transport infrastructure projects including Mass Rapid Transit Systems (MRTS) are initiated and developed by the respective States and Ministry only funds those projects looking to its feasibility.**

**The Committee appreciate that the Ministry have issued standards for MetroLite and MetroNeo and some cities viz. Gorakhpur, Srinagar/Jammu, Nashik and Dehradun have also proposed these systems. However, the Committee are concerned that about 40-45 percent of the total budget of the Ministry is earmarked for metro projects alone leaving little for other urban infrastructure projects. The Committee are also aware that several metro projects are attracting less than expected average daily ridership and also operating on losses. Since, the Ministry is responsible for approving and funding metro projects in various States, the onus obviously lies on the Ministry to approve and fund feasible MRTS technology only (Metro/MetroLite/MetroNeo). The Committee, therefore, desire the Ministry to exercise greater caution and discretion at DPR approval**

**stage and fund only those projects which are adopting most feasible MRTS technology for a given city looking to its total population and traffic needs.**

### **Recommendation (Serial No. 18)**

#### **Registering for Carbon Credits**

1.8 The Committee had recommended in their original Report as under:

“The Committee are aware that a carbon credit is a tradable permit or certificate that provides the holder of the credit the right to emit one tonne of carbon dioxide or an equivalent of another greenhouse gas – it’s essentially an offset for producers of such gases. Several metro projects have registered/applied for Green House Gas (GHG) emission under two platforms viz. Clean Development Mechanism (CDM) under UNFCCC and the Gold Standard Registry (GS) to demonstrate emission reduction. The Committee have been apprised that Delhi metro has earned 4.4 million carbon credits from CDM and GS projects, Kochi & Lucknow metros have stated that their registration for Carbon Credits is under process while Nagpur metro will apply for it after commissioning of the project, Bhopal and Indore metros on the other hand have informed that their stations and depot are being planned/designed for India Green Building council (IGBC) Platinum Rating leading to Carbon Credits in due course. Hyderabad, Kanpur and Agra metros have not registered for Carbon Credits. Ahmedabad, Surat, Patna, Bengaluru, Jaipur and Kolkata metros have not provided any information regarding carbon credits. On the other hand Pune and Mumbai metros have merely informed that their projects are under implementation remaining silent on the issue of meeting power requirements from renewables. Since several metros are either using or planning to use renewable energy to a considerable extent to meet their requirements, the Committee feel that it is important to ensure that all these metro rail networks are registered for carbon credits so that they earn benefits for being environment friendly. However, the Ministry have informed that it is merely desirable for metro networks to register for carbon credits and not a mandate. That is perhaps the reason why several metro networks have not yet registered for it. Therefore, the Committee recommend the Ministry to impress upon all the metro rail projects and ensure that they register for carbon credits. The Committee are of the view that it may be made mandatory to make metro rail networks to register for carbon credits.”

1.9 In their written reply, the Ministry have stated as follows:

“M/o Housing and Urban Affairs has requested Metro Rail Corporations, who have not yet registered for Carbon Credits, to explore economic benefits of registration.”

**1.10 Observing the benefits of registration for Green House Gas (GHG) emission that accrued to Delhi Metro, the Committee had recommended the Ministry to**

**impress upon all the metro rail projects and ensure that they register for carbon credits mandatorily. In Reply, the Ministry have stated that they had requested Metro Rail Corporations who have not yet registered for Carbon Credits, to explore economic benefits of registration. The Committee are of the opinion that being the nodal Ministry for metro operations, the Ministry can do much more in this regard. The Committee feel that atleast the upcoming metros can be persuaded to register for GHG emissions. The Committee, therefore, recommend the Ministry to make GHG emission mandatory for all upcoming metros, apart from persuading metros in operation.**

#### **Recommendation (Serial No. 20)**

##### **Need for a platform for sharing ideas and experience**

1.11 The Committee had recommended in their original Report as under:

“The Committee have been apprised that there is a centralized institutional mechanism / system named ‘Indian Metro Rail Organizations Society’ (I Metro), headquartered at New Delhi in place to provide a common platform for all Metro Rail Companies, Regional Rapid Transit System (RRTS) /Mono Rail Organization, etc. in India in terms of sharing knowledge, experience, information, best practices, innovations in all aspects of urban rail transport and learn from one another in order to improve performance of members. The Committee were further informed that at present I Metro governing body consists of 15 members of various Metro Rail Organizations and under the Presidentship of Secretary (MoHUA). The forum also helps in coordination of the members with Government and other stake holders. However, the Committee note that Kolkata, the oldest metro and Patna metro are not the members of I metro so far.

The Committee are of the opinion that such robust centralized institutional mechanism/ system to share the experiences and to exchange ideas in implementation and operations of the Metro rail projects in India can help metros learn from experiences of each other, discuss the problems and arrive at solutions. The Committee appreciate Ministry for launching the initiative of I – Metro. However, it feels that I – Metros can be made more robust and an effective platform. The Committee desire that I – Metros is revitalized and metros are encouraged to share ideas and experiences on this platform and all the metro networks are brought under its fold.”

1.12 In their written reply, the Ministry have stated as follows:

“Metro Rail Corporations are already utilizing I-Metro platform for exchange the ideas and knowledge. M/o Housing and Urban Affairs has further requested Metro Rail Corporations to make optimum utilization of I-metro platform for sharing knowledge, experiences, information, exchange ideas, best practices and innovation amongst each other in all aspects of urban rail transport and learn from one-another in order to improve implementation and operation of Metro Rail Projects.”

**1.13 Appreciating the Ministry for launching the initiative of I-Metro platform for sharing experiences and exchanging ideas between different metro networks, the Committee felt that it could be made more robust and an effective platform. The Committee further desired that I-Metros was revitalized and metros are encouraged to share ideas and experiences on this platform and all the metro networks are brought under its fold. The Committee also observed that a few metros viz. Kolkata and Patna were not on this platform and desired the Ministry to bring all metro corporations on I-metros platform.**

**In its reply, the Ministry have not stated whether Kolkata and Patna metros have joined this platform. The Committee would, therefore, liked to be apprised about current status in this regard and steps taken to make this platform more robust.**

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## CHAPTER II

### RECOMMENDATIONS THAT HAVE BEEN ACCEPTED BY THE GOVERNMENT

#### Recommendation (Serial No. 1)

#### **NEED TO HAVE A SINGLE AND COMPREHENSIVE METRO ACT**

2.1 The Committee had recommended in their original Report as under:

“The Committee observe that presently Metro Rail Projects are governed by three Central Acts viz. (i) Metro Railways (Construction of Works) Act, 1978;(ii) the Calcutta Metro Railways (Operation and Maintenance) Temporary Provisions Act, 1985; and, (iii) Metro Railways (Operation and Maintenance) Act, 2002 whose objective is to (i) provide for the construction of works relating to metro railways in the metropolitan cities and for matters connected therewith (ii) make temporary provisions for the operation and maintenance of Calcutta metro railway and for matters connected there with pending the making of regular arrangements for such operations and maintenance and (iii) operation and maintenance and to regulate the working of the metro railway in the national capital region, metropolitan city and Metropolitan area, respectively.

The Metro Railways (Operation and Maintenance) Act, 2002 (the Metro Act) states that it extends in the first instance to the National Capital Region and the Central Government may, by notification, after consultation with the State Government, extend this Act to such other metropolitan area and metropolitan city, except the metropolitan city of Kolkata.

MoHUA have apprised the Committee that each state has separate Tramway Act and some of them actually started metro works under those Acts. For instance, Hyderabad metro was originally started under AP Tramways Act. Later, to get uniformity for all the Metros, Hyderabad Metro was also brought under the Central Metro Act, i.e., the Metro Railways (Operation and Maintenance) Act, 2002.

The Committee have further been informed that the Ministry of Housing and Urban Affairs (MoHUA) are in the process of drafting the Metro Rail (Construction, Operation, Maintenance and Administration) Bill, 2021 which upon enactment, will replace the three existing Metro Acts namely, the Metro Railways (Construction of Works) Act, 1978, the Metro Railways (Operation and Maintenance) Act, 2002 and the Calcutta Metro Railways (Operation and Maintenance) Temporary Provisions Act, 1985. Further, the Metro Act does not support PPP projects.

As many metro projects are under planning, development and operating phases in different cities under different models – exclusive ownership of State Govts, JV with Central Govt, PPP basis, private ownership, etc. and many more cities are expected to take up the different kinds of metro projects- MRTS, LRTS MetroLite, MetroNeo, etc, as part of addressing urban transport issues, the Committee feel that there is a requirement of a comprehensive legislation. The Committee while welcoming the

MoHUA's initiative to enact a single legislation in place of existing three Metro Acts, hope that such comprehensive legislation aid and enable the smooth setting up and functioning of metro rail networks at the earliest."

2.2 In their written reply, the Ministry have stated as follows:

"The relevant provisions of draft Metro Rail (Construction, Operation, Maintenance and Administration) Bill has been finalized and circulated to State Government/UTs for comments."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

### **Recommendation (Serial No. 3)**

#### **Setting of Unified Metropolitan Transport Authority (UMTA)**

2.3 The Committee had recommended in their original Report as under:

"The Committee note that the Metro Rail Policy, 2017 provide for an integrated approach in planning and management of urban transport wherein the State Governments are required to constitute Unified Metropolitan Transport Authority (UMTA) as a statutory body which would be responsible for preparation of Comprehensive Mobility Plan for the city, organize investments in urban transport infrastructure, establish effective coordination among various urban transport agencies, manage the Urban Transport Fund (UTF), etc. The Committee further note that for all metro rail projects taken up with central assistance it will be mandatory for the State Governments to give commitment to set up and operationalise UMTA in the city within a year and the cities where metro projects are already under implementation, UMTA should be constituted within a year.

The Committee have been apprised that UMTA has been constituted in Bengaluru, Kochi, Pune, Chennai, Hyderabad, Lucknow, Kanpur and Agra cities. On the other hand, UMTA for Patna, Bhopal, Indore and Nagpur metros are under process. However, it is disheartening to note that Delhi metro, which began its operations in 2002 has not yet constituted UMTA. Gujarat (Surat, Indore metros), Mumbai, Jaipur and Gurugram (Rapid metro) have also not constituted UMTA so far. The Committee are dismayed to note that despite a lapse of more than 4 years, out of 12 states where Metro rail net work has either commenced or is under construction, six states are yet to constitute UMTA, viz., NCT of Delhi, Karnataka, Gujarat, Madhya Pradesh, Maharashtra (in r/o Mumbai only) and Rajasthan.

The Committee, therefore, recommend the Ministry to take up and encourage setting up of UMTA in the states where its supported metro networks are, either operational or under construction, without any further delay."

2.4 In their written reply, the Ministry have stated as follows:

"M/o Housing and Urban Affairs has requested respective State Governments to take necessary action for setting up of UMTA, as envisaged in the Metro Rail Policy, 2017 at the earliest."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

### **Recommendation (Serial No. 4)**

#### **Need for implementation of National Policy on Transit Oriented Development**

2.5 The Committee had recommended in their original Report as under:

"The Committee are glad to note that Ministry of Housing and Urban Affairs, GoI has issued National TOD policy on 01.05.2017, which aims to promote planned and sustainable urban centres with high density, mixed land-use development within an influence zone of 500-800 meters of mass transit stations. This policy aims to enable transformation of cities from private vehicle dependent development to public transport-oriented development. The Committee note that Transit Oriented Development increases the accessibility of the transit stations by creating pedestrian and Non-Motorised Transport (NMT) friendly infrastructure like footpaths and cycle tracks that benefit large number of people, thereby increasing the ridership of the transit facility and improving the economic and financial viability of the system. Many cities have strengthened their public transport by developing MRTS such as metro rails and BRTS. The Committee feel that National TOD policy will help these cities to formulate city specific policies to efficiently use these systems. Transit Oriented Development will not only increase ridership of metro projects, it will also reduce traffic congestion, pollution, travelling time of commuters and overall health benefits to city dwellers.

The Committee, however are disappointed to note that (i) states/ cities namely Karnataka, Tamil Nadu, Bihar, Gujarat and Mumbai are yet to formulate TOD policy; (ii) Delhi, Uttar Pradesh, Telangana, West Bengal, Rajasthan, Kerala, Maharashtra, Nagpur and Pune have only notified TOD and none has developed TOD so far; and, (iii) Actual Transit Oriented Development has not happened along any metro until now. The Committee, therefore, recommend the Ministry to exhort, persuade and prod the state governments to implement Transit Oriented Development along metro stations in respective states. The Committee further recommend the Ministry to persuade every metro project to implement TOD along atleast one metro station on pilot basis and thereafter build upon the gains."

2.6 In their written reply, the Ministry have stated as follows:

"M/o Housing and Urban Affairs has requested respective State Governments for taking necessary action for implementation of Transit Orient Development (TOD), as envisaged in the Metro Rail Policy, 2017 at the earliest."

**Recommendation (Serial No. 6)**

**Need for coverage of Kochi water metro under FAME II**

2.7 The Committee had recommended as under:

“The Committee are aware that Kochi metro is constructing Kochi water metro to connect islands around Kochi and increase ridership of Kochi metro, for which it is purchasing battery operated boats. Kochi Water Metro being an urban electric transport system, which perfectly align with the objectives of FAME scheme being operated by Ministry of Heavy Industries, and inland watercrafts are classified under vehicles for various requirements such as insurance, inclusion in FAME scheme which will expedite the adoption of electric mobility in the sector.

The Committee feel that benefits of FAME II scheme subsidy can be extended to battery operated boats and charging infrastructure of Kochi Water Metro as it is an urban electric transport system, which perfectly align with the objectives of FAME scheme. The Committee are of the opinion that Extension of benefits of FAME II scheme to electric vehicles operating in water can act as a catalyst for adoption of e-boats and thereby reduce dependence on polluting diesel vessels. The Committee have also been apprised that Kochi Metro Rail Ltd. had submitted the application for inclusion of Kochi Water Metro Transport in FAME-II Scheme to Department of Heavy Industries and Ministry of Heavy Industries & Public Enterprises and the same is not yet approved.

The Committee, in view of the advantages of water metro in enlarging the catchment area for Kochi metro and also a pollution free mode of transport, strongly recommend the Ministry to take up inclusion of batteryoperated boats and charging infrastructure of Kochi Water Metro under FAME II scheme with Ministry of Heavy Industries immediately.”

2.8 In their written reply, the Ministry have stated as follows:

"Kochi Metro has informed that as per the recommendation, reminder letter has been sent to Ministry of Heavy Industries for including Kochi Metro under Fame II."



## **Recommendation (Serial No. 9)**

### **Robust First and Last Mile Connectivity will increase Ridership of Metros**

2.9 The Committee had recommended as under:

"The Committee note that Metro Rail Policy, 2017 stipulates that every proposal for Metro Rail should necessarily include proposals for feeder systems that help to enlarge the catchment area of each metro station at least to 5 kms. The Committee has been apprised that Last mile connectivity through pedestrian pathways, Non-Motorized Transport (NMT) infrastructure, and induction of facilities for para transit modes will be essential requirements for availing any central assistance for the proposed metro rail projects. State governments are required to commit provisioning of feeder systems for the metro rail proposed for availing central financing assistance.

The Committee, however, express concern that all metro networks do not have all these First and Last Mile Connectivity facilities. The Committee are disappointed to note that (i) Lucknow metro does not have infrastructure for Feeder Bus System; (ii) Patna and Ahmedabad Metro do not have facility of Non-motorised transport infrastructure while Surat metro have not provided information about it; (iii) Patna and Ahmedabad metros do not have facility for para transit modes; (iv) Kochi, Patna, Ahmedabad and Kolkata metros do not have or planned public bike sharing stations while Pune and Surat metros have not provided a clear reply; and, (v) Lucknow, Ahmedabad and Kolkata metros do not have infrastructure for Feeder Buses while Pune metro has not provided specific reply on this aspect.

It is heartening to note that Nagpur and Jaipur phase 1A metros have parking space at all stations but the Committee is also disappointed to note that Patna metro has not made provision for parking space at any station (barring one station in corridor II). No specific reasons are provided for not providing this basic provision at metro stations in corridor I and II (except in one station) which may lead to many commuters not opting metro.

The Committee are of the opinion that presence of First and Last Mile Connectivity is something that makes metro networks 'Mass Transportation Systems' in true sense and it should be made mandatory for all the metro stations. Further, the ridership is directly proportional to presence of First and Last Mile connectivity. In the absence of First and Last Mile Connectivity, the projected ridership cannot be achieved. It is, therefore, recommended that the Ministry may make it mandatory for all the metro stations to make provision for First and Last Mile Connectivity – wherever possible for operational metros and necessary for upcoming ones. The Committee further recommend that for upcoming metro stations no approval should be given until the DPR has a provision for First and Last Mile Connectivity."

2.10 In their written reply, the Ministry have stated as follows:

"M/o Housing and Urban Affairs has requested Metro Rail Corporations to take all necessary steps for implementation of First and Last Mile connectivity at Metro Stations as envisaged in Metro Rail Policy, 2017 and the provisions laid down in Sanction Orders issued by the Ministry, at the earliest."

## **Recommendation (Serial No. 10)**

### **Formation of Fare Fixation Committee**

2.11 The Committee had recommended in their original Report as under:

“The Committee note that Fare of Metro Rail Corporations is fixed as per Sections 33 to 37 of Metro Railways (Operation & Maintenance) Act, 2002. The initial fare is fixed by metro project itself, thereafter, the fares are fixed by a Fare Fixation Committee (FFC) comprising of a Chairperson who is has been a judge of a High Court and two other Members who are nominees of Central govt. & State govt. The recommendations of FFC are binding on metro railway administration. The Committee have been apprised that the Central Government takes necessary action for constitution of Fare Fixation Committee (FFC) after receipt of request from concerned State Govt/Metro Rail Companies. So far four FFCs have been constituted for Delhi metro (the last being in 2016) and two for Mumbai metro line 1 (last in 2018) while FFC for Bangalore metro is under process. For all other metros, initial fare is applicable. In view of the foregoing, the Committee suggest/ recommend that:

- (i) FFCs should be constituted at intervals as specified in the act or the regulations made thereunder; and,
- (ii) all the relevant factors that goes into the cost of running metro may be taken into consideration in fixing fares while keeping in view the affordability factor also. Otherwise, the Committee believe that many commuters may opt for other modes of transport defeating the very purpose of setting up of metro rail networks.”

2.12 In their written reply, the Ministry have stated as follows:

“Section 33 of the Metro Railway (Operations and Maintenance) Act, 2002 states that “the Metro Railway Administration may fix the fare under this section without recommendations of the Fare Fixation Committee on the initial opening of the metro railway.” The Central Government takes necessary action for constitution of Fare Fixation Committee (FFC) on receipt of request from concerned State Govt/Metro Rail Companies.”

## **Recommendation (Serial No. 11)**

### **Payment of Fares through Single Card across Metro networks and other Mass Rapid Transit Systems throughout country**

2.13 The Committee had recommended in their original Report as under:

“The Committee appreciate that on 4 March 2019, Hon’ble Prime Minister, launched the indigenously developed and internationally accredited ‘One Nation One Card’ National Common Mobility Card (NCMC) and Automatic Fare Collection (AFC) Gate- SWAGAT. The Committee are aware that NCMC has been developed to enable seamless travel by metro rail and other transport systems across the country. The Committee has been apprised that it is an Open Loop Card, which means a customer may use the same card for travel across the country through different modes and also use it for retail purchases. The Committee have also been informed that Department of Financial Services (DFS) have directed banks to issue all new Debit Cards compliant to NCMC standards which is expected to allow fast deployment of digital payments due to standardized implementation process and enable rapid digital penetration.

The Committee are glad to note that the complete NCMC eco-system consisting of Automatic Fare Collection (AFC) system software, Validation Terminal, Metro Gate, Common Mobility Card and interfacing with banking system was developed indigenously under the aegis of MoHUA by C-DAC in collaboration with Bharat Electronics Ltd (BEL) and NPCI and tested for international standards by EMVco accreditation agency in France and that it can be used for transit throughout the country if transit operators have NCMC compliant system. The Committee have further been apprised that these NCMC cards can be accepted in all operational metros by providing NCMC compliant hardware and instructions have been issued to Metro Corporations to take steps for transition to full interoperability on existing metro lines and to ensure full interoperability of NCMC in metro lines that are yet to be made operational from the day of commencement of operations itself.

The Committee are of the opinion that payment through single card will enable hassle free and seamless movement of people across different modes of public transportation in various cities and it can do wonders in attracting people towards mass transportation systems. Besides increasing ridership of metro networks, it will also reduce traffic congestion and air pollution.

The Committee, however, are disappointed to note that despite its launch about two years ago, the NCMC compliant systems have not been installed by Kolkata, Jaipur, Lucknow, Kanpur, Chennai and Gujarat metros so far. Moving at this pace, operationalising NCMC fully across entire country’s metro and other mass transit networks seems a far-fetched dream. The Committee also apprehend that without involving Ministry of Roads, Transport and Highways and State Governments, the operationalisation of NCMC across all transit networks throughout country may not be possible. The Committee, therefore, recommend that the Ministry of Housing and Urban Affairs may take up suitable steps in coordination with other stake holders for operationalisation of National Common Mobility Card across all transit networks throughout the country at the earliest and across all metro networks immediately.”

2.14 In their written reply, the Ministry have stated as follows:

"It is submitted that M/oHousing and Urban Affairs has already issued instructions to end exclusive arrangements and implement full interoperability in metro corporations. For upcoming metros, instructions have been issued to ensure implementation of NCMC from commencement of operation itself.

Further, M/oHousing and Urban Affairs has taken up the matter with M/oRoad Transport &Highway and M/o Railways to implement NCMC in SRTUs and Sub-Urban Railways respectively in phased and time bound manner."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

**Recommendation (Serial No. 12)**  
**Delhi Metro: Need to augur non-fare-box revenue**

2.15 The Committee had recommended in their original Report as under:

"The Committee note that Delhi Metro Rail Project is presently operating around 390 kms of metro network having 285 stations with Actual Average Daily Ridership (AADR) of 26.14, 28.00, 25.86, 25.93 and 50.65 lakhs in 2015-16, 2016-17, 2017-18, 2018-19 and 2019-20, respectively, against Average Daily Ridership required for Breakeven of 16.07, 18.59, 16.26, 17.03 and 38.24 lakhs, respectively, in the same years. Thus, Delhi metro have been getting more no. of Actual Average Daily Passengers than is required for achieving Breakeven. The Committee further note that Actual Average Daily earnings of Delhi Metro for the years 2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19 and 2019-20 have been Rs. 2.57, 3.50, 4.17, 4.51, 4.99, 5.57, 5.97, 8.29, 9.82 and 10.95 crore against Average daily earnings Required for Breakeven of Rs. 1.39, 1.71, 2.35, 2.71, 3.35, 3.86, 4.39, 5.72, 7.00 and 8.58 Crores for the same years respectively. The Committee also note that Delhi metro has been repaying its loans taken from JICA, timely from its operational revenues. The Committee note that though, DMRC is making profits at operating level, It is yet to make net profits. The Committee while appreciating the operational performance of DMRC which has improved considerably, they are concerned to note that DMRC is continuously incurring net losses despite (i) average daily earnings being higher than the average daily earnings required for breakeven, (ii) increase in average daily ridership in all the phases operational since 2011-12 to 2019-20, (iii) continuous increase in Fare Box collections since 2002-03 (iv) timely repayment of loans to JICA. The Company claimed that it has been making losses because of high Depreciation & Amortisation expenses which consumes major chunk of income, interest and principal repayments on loans.

The Committee while agreeing with the view that performance of the metro projects may not be assessed purely on economic considerations given the benefits that such infrastructure projects brings to the Society as a whole such as reducing traffic congestion, pollution, providing reliable, comfortable, convenient and affordable

transport solutions to the millions in cities. Therefore, the Committee are of the opinion that there is a need to enhance non fare box revenues viz. commercial development of land and advertising revenues, etc. in the long run to make itself sustaining and profitable and accordingly recommend that all possible avenues of Non-Fare-Box revenue generation should be explored to increase profitability of Delhi metro.”

2.16 In their written reply, the Ministry have stated as follows:

**“DMRC has informed following for Non Fare Box Revenue through Property Development/ Property Business:**

- Non-fare-box revenue has been included while carrying out the financial analysis of the projects as mandated by the Metro Rail Policy, 2017 issued by M/o Housing and Urban Affairs.
  - Efforts are continuously being made to augment the non-fare box revenue through Property Development. Higher non-fare box revenue generation during Phase-I was made, which can be attributed to long term (perpetual) leasing of land plots for residential and commercial development.
- a) DMRC is making all out efforts to increase its non-fare box revenues through advertising and leasing of bare spaces and built-up shops available at its stations. Following activities are being carried out/planned to increase the non-fare box revenue in coming years:-
- i. Licensing of advertisement rights inside stations and outside civil structures on entire DMRC network.
  - ii. Awarding co-branding/semi naming rights of metro stations.
  - iii. Licensing of advertisement rights inside and outside metro trains.
  - iv. Licensing of built-up/bare spaces available at metro stations for shops, offices, kiosks, ATMs etc.
  - v. Licensing of spaces for installation of telecom towers and In-Building Solutions at stations and tunnel area.
  - vi. Licensing of spaces for installation of Automatic Vending Machines (AVMs).
  - vii. Exploring possibility for installing Dual Display Information System (DDIS) and Digital Advertisement Panels inside tunnel sections.
- b) DMRC is approaching/encouraging various Govt. Organizations and PSUs to take up co-branding/semi-naming rights of stations through simplified formalities like single tender and negotiation basis. So far, six metro stations have been allotted for co-branding to various Govt. Organizations and PSUs. Few undertakings of State Govts. like M/s Madhya Pradesh Laghu Udyog Nigam Ltd, M/s Punjab Agro Juices Ltd, M/s Horticulture Produce Marketing & Processing Corporation Ltd and M/s Mother Dairy (a subsidiary of National Dairy Development Board) have already shown interest in taking up spaces at metro stations for installing their kiosks/retails shops and the allotment process are in final stages.

### Non-fare box revenue through feeder services

In this regard, DMRC is striving to enhance the presence of last mile connectivity services from as many Metro Stations as practically possible. By doing so, DMRC intends to enhance the metro ridership which directly increases the fare box revenues. In addition, other modes of revenue generations such as advertisements in buses, revenue sharing with LMC service providers are being explored to increase the non-fare box revenue."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

### **Recommendation (Serial No. 13)** **Lucknow Metro- Timely completion of project**

2.17 The Committee had recommended in their original Report as under:

"The Committee desire to bring on record their appreciation for the UPMRC for completion of Lucknow Metro Rail Project 36 days before the deadline, a rare feat in completion of the projects in urban transport infrastructure sector and thereby, avoiding any cost overrun. This is particularly praiseworthy when most of the metro projects are delayed and have extended deadlines. The Committee, thus, suggest that MoHUA should project Lucknow Project as a 'role model' for all under construction projects and the learnings from this project may be shared with other metro corporations which are executing the projects."

2.18 In their written reply, the Ministry have stated as follows:

"The suggestion of the Committee has been suitably communicated to all Metros."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

### **Recommendation (Serial No. 14)** **Viability Gap Funding issue in Hyderabad Metro**

2.19 The Committee had recommended in their original Report as under:

"The Committee have been apprised that Hyderabad Metro is the world's largest Metro Rail project in Public Private Partnership (PPP) mode and around 90% of the project cost has been financed by the private sector - first time for a Metro project of this magnitude in the world. This project was undertaken by the Government of Telangana under the Public Private Partnership (PPP) model of funding through Viability Gap

Funding (VGF) scheme of Government of India. The actual project cost was Rs.18,411 crore (Rs.1,204 crore VGF released by Gol and Rs. 17,207 crore by L&TMRHL). The Committee note that fare and non-fare box revenue collection of Hyderabad Metro Rail Corporation was rising since inception until FY 2020-21 when it plummeted due to Covid pandemic. The Committee further note that the actual average daily ridership has remained very low, for instance, Rs.2.76 lakhs in 2019-20 vis-à-vis 'average daily ridership required for breakeven' which stands at 19 lakhs.

The Committee also note that Hyderabad metro has suffered a loss of Rs. 1,767 crore in FY 2020-21 and a cumulative loss of Rs. 3,279 crore so far. Huge debt of Rs. 13,252 crore and a high interest burden of 9.1% (as against -2% for Government projects) are mainly contributing to the losses. The interest burden is coming to about Rs.1,200 crore per annum.

The Committee has also been apprised that out of the total VGF sanctioned grant of Rs.1,458 crore, only Rs.1204 crore has been released to Hyderabad metro and Rs 254 crore VGF has been withheld by Dept. of Economic Affairs, Ministry of Finance. In this context, the Committee has been apprised by DEA, MoF that balance amount has not been released owing to violation of the VGF Guidelines by Hyderabad metro, i.e., revision of fares. However, the Committee has been apprised that Hyderabad metro initially began under the AP Tramways Act and later on, it came under the Central Metro Act which permitted revision of fares. Accordingly, Hyderabad metro revised its fares. Hyderabad metro has submitted a request to DEA, MoF for release of balance Rs. 254 crore which is under consideration. Looking to the huge loss that Hyderabad metro is incurring, the Committee desire that VGF issue is resolved at the earliest by DEA, MoF."

2.20 In their written reply, the Ministry have stated as follows:

"Ministry of Finance, Department of Expenditure has informed that the matter is under consideration and will be disposed of expeditiously."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

## **Recommendation (Serial No. 15)**

### **Maximization of Non-Fare Box Revenues**

2.21 The Committee had recommended in their original Report as under:

"The Committee are aware that Non-Fare Box Revenues are generated from sources such as advertisements, property development, naming rights, co-naming rights, feeder buses, consultancy works, external projects, etc. The Committee have been apprised that the percentage of total revenues generated by Delhi Metro Phase I, II and III from Fare Box ranged from 24.16% in 2005-06 to 56.95% in 2019-20, Kochi metro generated 78.14% of its revenues from fares in 2017-18 which reduced to 60.38% in 2019-20, Gujarat metro generated 97 to 100 percent of its revenues from

Fare Box in last three years though only 6.5 km stretch is operational so far, Chennai metro raised 74.4 to 81.6% from fares, revenues from fares component for Hyderabad metro rose from 41% in 2017-18 to 62% in 2019-20 while Lucknow metro generated about 73% from fares barring the COVID year and Mumbai Metro Line 1 generated 86-89% of its revenues since 2014-15 (barring COVID year), which is quite high. The Committee have further been informed that under Non-Fare Box, Delhi metro generated revenues from property development, advertisements, naming rights, property business, feeder buses, consultancy works and external projects. The Committee note with dismay that percentage of revenues generated from fare collection is quite high for most of the metros and there is a need to increase revenues from Non-Fare Box.

The Committee are of the opinion that maximization of revenue from Fare Box collections may negatively impact ridership and it may prevent metro projects from becoming a true mass transportation system and thus defeat the entire objective of developing metro projects. Therefore, the Committee recommend the Ministry to persuade and impress upon metro projects to explore all possible avenues of maximization of revenues from Non-Fare Box. The Committee also desire that information about various sources Non-Fare Box revenue generation is also made available on I-metros platform of the Ministry so that there is cross board learning. They also would like to be apprised of the experience of raising Non Fare Box revenues by the major metros of the world including the share of such revenues in the total revenues of these metros."

2.22 In their written reply, the Ministry have stated as follows:

"M/o Housing and Urban Affairs has requested Metro Rail Corporations to take necessary action for all possible avenues of maximization of revenue from Non-Fare-Box alongwith sharing the information about various sources of Non-Fare Box revenue generation on I-Metros platform.

As regards raising of Non Fare Box revenue by the major metros of the world, no such data is available with the Ministry."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

### **Recommendation (Serial No. 16)**

#### **Green Energy initiatives by metro projects**

2.23 The Committee had recommended in their original Report as under:

"The Committee note that several Metro networks viz. Nagpur, Chennai, Hyderabad, Delhi, Lucknow, Ahmedabad, Surat, Kolkata, Pune, Bhopal and Indore are adopting energy conservation measures and development of green sources of power such as solar energy. It is heartening to note that Nagpur metro has planned to meet 65% of its total operational energy requirements through solar power, while Kochi and Pune metros have planned to meet 60% of their total operational energy requirements through solar power. The Committee are, disappointed to observe that Patna,



Bengaluru, Kanpur and Agra metros have not provided information about solar power generation in their networks. Similarly, Mumbai Metro has not provided specific reply w.r.t. Line 1 to 12. It has merely stated that approximately 2.3 MW of renewable power is installed or proposed to be installed in different office buildings/depots of Metro Line 3 which appears too less for size and magnitude of 12 lines of Mumbai metro.

The Committee, therefore, recommend that the Ministry should encourage mandatory sourcing of power from renewables especially solar, by the metro rail networks to the maximum extent that the technology permits. The Committee also suggest that green energy measures viz. solar power be compulsorily be made part of DPR of metro projects and the Ministry before approving any metro may examine whether it has green energy provisions or not. The Committee also desire to be apprised of the steps taken in this regard.”

2.24 In their written reply, the Ministry have stated as follows:

"M/oHousing and Urban Affairs has requested Metros to take all possible steps formaximum utilization of renewable energy sources, as envisaged in National Urban Transport Policy, 2006. The replies received from metros in this regard are as under:-

<b>Sl. No.</b>	<b>Metro Company</b>	<b>Observation / reply</b>
1.	Bangalore Metro Rail Corporation Limited	Presently, the power requirements are met through the State Government owned Bangalore Electricity Supply Company. The distribution company is also purchasing power from non-conventional energy sources including solar. As part of green initiatives, Solar Roof Top Photo Voltaic System of 1.5 MWp have been installed at 5 Stations of newly commissioned Reach-4 extension section under CAPEX Model, a saving of Rs 1 Crore per annum approximately is expected with the current energy tariff.
2.	Chennai Metro Rail Corporation Limited	<p>1. Renewable Energy- Solar Power</p> <p>CMRL has so far commissioned 6.4 MWp Solar Power at its Koyambedu Depot roof top and Ground level, Elevated Metro Stations Roofs, Under Ground Metro Stations, Ancillary Buildings etc. with average per day generation of 23,000 KWH. So far 287 lakhs KWH have been generated and 24,421,830 Tonnes of CO2 emission avoided.</p> <p>2. Energy Conservation and Technology absorption</p> <p>a) Regenerative Braking in train</p> <p>b) Energy efficient equipment and methods</p> <p>c) Provision of PSD</p> <p>d) Buildings are designed for green buildings ratings.</p>

		<p>Proposed work for green energy initiatives in future It is proposed to install solar panels and roof top system in the upcoming Phase 2 project of CMRL like what has been done in Phase1 project. Energy efficient equipment specification are being incorporated in the tendering stage itself to achieve energy efficiency. CMRL Phase 2 Trains will be with regenerative braking and with the minimum bench mark energy efficiency of 48 kwh per 1000 GTKM.</p>
3.	Delhi Metro Rail Corporation	<p>It is mentioned that DMRC is meeting 65% of its day time energy requirements from renewable sources energy since Dec. 2019 and efforts to harness solar energy from roof-top solar plants were initiated in August 2014, itself. All future elevated stations and depots are planned with roof-top solar plants.</p> <p>Regarding the recommendation of the Committee to make sourcing of power from renewables, especially solar, mandatory may not be the right step, because electrical energy constitutes nearly 30% of the operating cost of a metro system and there are number of regulatory issues faced by the metro organization(s), while sourcing renewable power through Open Access, as Electricity is a concurrent list subject and each State Electricity Regulator issues guidelines / orders from time to time, which adversely affect the financial viability of such Power Purchase Agreements.</p>
4.	Kochi Metro Rail Corporation	<p>Green energy Initiatives taken by KMRL are as follows</p> <ol style="list-style-type: none"> <li>1. Solar Power generation (54% energy neutrality achieved)</li> <li>2. Rain Water Harvesting</li> <li>3. Biodegradable waste management</li> <li>4. Tree plantation &amp; auditing</li> <li>5. Vertical gardens &amp; Median Beautification</li> <li>6. Organic vegetable farming</li> </ol>
5.	Mumbai Metro Rail Corporation Limited	<p>Following initiatives are being planned/taken in MMRC towards Green Energy initiatives by metro projects i.e., Solar Energy:</p> <ol style="list-style-type: none"> <li>i) Planning to purchase 50 MVA solar power (Approx. 35% of total power requirement of MML-3) through open access.</li> <li>ii) Each RSS &amp; All Covered sheds/OCC shall have Roof Top Solar PV plant with Grid Interactive Net metering.</li> </ol> <p>Further, in pursuit of its green commitments, MMRC has installed Rooftop Mounted 17.6 kWp Solar PV plant at</p>

		MMRC Transit Office Building.
6.	Pune Metro Rail Corporation Limited	Pune Metro is implementing energy conservation measures and adopting the green sources like solar energy. All Pune Metro Stations and Depots, integration of Rooftop Solar Power installation work is under progress and Pune Metro is committed to install a total of 11 MWp solar plants.
7.	Jaipur Metro Rail Corporation	JMRC has installed 100 KW Power capacity Solar Panels on the roof top of JMRC Depot under JMRC Phase-1A Project.
8.	Hyderabad Metro Rail Corporation Limited	Hyderabad Metro has installed a captive solar capacity of 8.35 MWp at its depots and on station roof tops. This caters to about 15% of the energy requirements of Hyderabad Metro.
9.	UP Metro Rail Corporation	At Lucknow Metro a total of 1.032 MW power is being generated through Roof top solar power plants at present.
10.	Gujarat Metro Rail Corporation	<u>For Ahmedabad Metro Rail Project Phase-1</u> GMRC had appointed GERMI (Gujarat Energy Research and Management Institute) as third party engineering consultant, to study the solar energy harnessing capacity in both depot buildings, From the identified capacity 200 kW capacity of grid connected rooftop solar power plant installed at Apparel park depot (RCC buildings) on 23.02 2019 under CAPEX model (User owns the plant).  Moreover, 406 kW of identified solar power plant capacity (on RCC buildings) at both depots is planned for installation in this year. Also, GMRC has requested the Govt. of Gujarat to allot 100 acres of land to develop ground mounted solar PV plant of approx. 25 MW capacity at suitable location nearby Ahmedabad, the matter is being pursued with the State Government.
11.	Nagpur Metro Rail Corporation	Nagpur Metro has decided to install 10,000 kWp Solar PV systems at station rooftops, depot buildings, boundary walls, spare land etc.  4500 KWp Solar PV systems have already been installed and a tender for 6000 KWp is being floated.  Due to restrictions in Net-metering regulations of the state (max. 1 MW per consumer Number) Nagpur Metro has been constrained for installation of total exploitable potential of 14 MWp.  This integrated roof top, grid connected solar power system over the Metro stations of Nagpur Metro Rail

	Project will meet upto 50% of energy requirement including traction, Metro station facilities, property development and EV charging also.
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[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]

**Recommendation (Serial No. 17)**  
**Development of Solar Power on RESCO model by metro projects**

2.25 The Committee had recommended in their original Report as under:

*“The Committee note that RESCO model of Solar Power development is a zero-investment model in which the consumer pays only for the electricity generated, while the solar plant is owned by the RESCO developer. One can enjoy the electricity that is generated without worrying about any of the associated operations and maintenance issues. In return, all one need to do is pay a pre-decided monthly tariff which is lower than prevailing grid electricity tariff. The Committee have also been apprised about Nagpur metro being the Greenest Metro by integration of Rooftop Solar Energy right from inception stage to meet 65% of energy requirements under RESCO PPP Model. Kochi metro has also adopted this model.*

The Committee feel that adoption of this model will ensure generation of green energy by Metro networks without extra financial burden on metros for capacity creation. This can augment country’s efforts in meeting climate change targets. The Committee, therefore desire that MoHUA may consider encouraging states to adopt RESCO model for Solar Power generation on metro rooftops, depots and other possible areas.”

2.26 In their written reply, the Ministry have stated as follows:

It is mentioned that most of the Metros have either adopted RESCO model or taking necessary steps for adopting the same for Solar Power generation on metro rooftops, depots and other possible areas. The replies received from Metros in this regard are under:-

Sl. No.	Metro Company	Observation / reply
1.	Bangalore Metro Rail Corporation Limited	Further to the existing installed capacity of 1.5 MWp Roof Top Solar System, tenders have been invited under RESCO model for 40 stations of Phase-2 Project and 2 depots of Phase-1 Project which shall be operational in the next two years. Expected Solar power generation capacity shall be around 20MWp and saving of Rs.14.81 Crore per annum approximately is expected due to this initiative with respect to current energy tariff.

2.	Chennai Metro Rail Corporation Limited	CMRL has installed the solar power plant of 6.386 Mwp in various locations of Elevated, Underground stations and Depot of Phase 1 & Phase 1 Extension corridors from 2016 to 2022 under RESCO model. So far, solar generation is 287 lakh KWH (from April 2016 to June 2022) and the average generation of solar power is 23,000 KWH per day and the CO2 emission avoided of approx. 24,421 tons. Also, CMRL planned to install solar power plant in Phase 2 corridors.
3.	Delhi Metro Rail Corporation	DMRC has already adopted RESCO Model ( <i>No Capital cost and No investment on maintenance of plant</i> ) for its roof-top solar plant as well as for sourcing solar power from Rewa Ultra Mega Solar project, to meet 65% of its day time energy requirements from renewables, since December 2019. As on 30.06.2022, DMRC has commissioned 37 MWp of roof-top solar plants on its stations and depot, and plans to achieve 40 MWp by December 2022 on its own premises, and 50 MWp in totality by Dec. 2022 (after including 10 MWp installed on Noida-Greater Noida line constructed by DMRC for Noida Metro Rail Corpn.).
4.	Kochi Metro Rail Corporation	KMRL has installed and commissioned solar power project for an installed capacity of 9.9MWp on the roofs of Metro station buildings and Depot buildings & other areas through RESCO (Renewable Energy Service Company) model. Presently with the above capacity of the plant, KMRL is able to achieve 54% energy neutrality.  An additional solar power project with a capacity of 655KWp is under execution. Once the project is completed, KMRL is likely to enhance its energy neutrality to 58%.
5.	Jaipur Metro Rail Corporation	JMRC is planning to install Solar Plant at Rooftop at all the stations & Depot and similar locations to encouragement of solar energy.
6.	Pune Metro Rail Corporation Limited	Pune Metro has adopted RESCO PPP model for integration of Rooftop Solar power model. At present, Pune Metro has awarded 5.00 MWp Solar Plant Installation on Station roofs and Depots under RESCO Model out of which 0.5 MWp is commissioned and balance work is in progress. Further the process for selection of a developer for installation of 4 MWp will be initiated soon under RESCO Model. Moreover, PMRP targeted to complete 11 MWp solar plants on its premises by 2024-25.
7.	Hyderabad Metro	Hyderabad Metro has installed a captive solar capacity of

	Rail Corporation Limited	8.35 MWp, which is on RESCO model at a tariff equivalent to the grid tariff. Since Hyderabad Metro is operated by a private party, i.e. the Concessionaire L&TMRHL, it is not extended the subsidy being provided by the Solar Energy Corporation of India (SECI) under prevailing rules.
8.	UP Metro Rail Corporation Limited	At Lucknow Metro a total of 1.032 MW power is being generated through Roof top solar power plants at present in RESCO model.
9.	Gujarat Metro Rail Corporation	<ul style="list-style-type: none"> <li>• RESCO model is not allowed in Gujarat State.</li> <li>• GMRC has installed 200 KW Grid connected Rooftop solar power plant at Apparel park depot in CAPEX model.</li> <li>• Further, 406 kW capacity of Grid connected solar power plant is identified and planned for installation.</li> </ul>
10.	Nagpur Metro Rail Corporation	All, the Solar PV plants at Nagpur Metro Rail Project are being installed in RESCO (PPP) mode, wherein a Power Purchase Agreement (PPA) is signed with a solar PV developer for 25 years and MahaMetro can procure the energy, thus generated, at a predetermined tariff, which is much cheaper than the tariff offered by the local Discom.

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

### **Recommendation (Serial No. 19)** **Regenerative Braking System**

2.27 The Committee had recommended in their original Report as under:

“The Committee are aware that Regenerative Braking System (RBS) is an energy recovery mechanism that slows down a moving vehicle or object by converting its kinetic energy into a form that can be either used immediately or stored until needed. In this mechanism, the electric traction motor uses the vehicle's momentum to recover energy that would otherwise be lost to the brake discs as heat. The Committee have been informed that adoption of Regenerative braking systems by metro projects are resulting in power saving and reutilization. For instance, Regenerative Braking system adopted by L&T Metro Hyderabad is stated to be resulting in 35% power regeneration and reutilization. The Committee have also been apprised that all the metro rail projects are following the regenerative braking and setting up solar panels which are leading to considerable reduction in power consumption and savings in expenditure on power. The Committee are happy to note that various operational and under construction metro rail projects have adopted the regenerative braking system in rolling stocks viz. Delhi Metro, Nagpur Metro, Pune Metro, Metro Railway Kolkata, Jaipur Metro, Patna Metro, Lucknow Metro, Kanpur Metro, Chennai Metro, Ahmedabad

Metro, Surat Metro, Kochi Metro, Mumbai Metro Line-1, Mumbai Metro Line-3, Bhopal Metro, Indore Metro, NCRTC, etc.

The Committee appreciate the Ministry for promoting Regenerative Braking System which ensures energy saving thereby making the metro projects more energy efficient. The Committee also desire the Ministry to ensure that Regenerative Braking Systems are adopted in all upcoming metro projects including MetroLite projects.”

2.28 In their written reply, the Ministry have stated as follows:

“Various operational and under construction metro rail projects have adopted the regenerative braking system in rolling stocks. The recommendation of the Committee is noted.”

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

**Recommendation (Serial No. 20)**  
**Need for a platform for sharing ideas and experience**

2.29 The Committee had recommended in their original Report as under:

“The Committee have been apprised that there is a centralized institutional mechanism / system named ‘Indian Metro Rail Organizations Society’ (I Metro), headquartered at New Delhi in place to provide a common platform for all Metro Rail Companies, Regional Rapid Transit System (RRTS) /Mono Rail Organization, etc. in India in terms of sharing knowledge, experience, information, best practices, innovations in all aspects of urban rail transport and learn from one another in order to improve performance of members. The Committee were further informed that at present I Metro governing body consists of 15 members of various Metro Rail Organizations and under the Presidentship of Secretary (MoHUA). The forum also helps in coordination of the members with Government and other stake holders. However, the Committee note that Kolkata, the oldest metro and Patna metro are not the members of I metro so far.

The Committee are of the opinion that such robust centralized institutional mechanism/ system to share the experiences and to exchange ideas in implementation and operations of the Metro rail projects in India can help metros learn from experiences of each other, discuss the problems and arrive at solutions. The Committee appreciate Ministry for launching the initiative of I – Metro. However, it feels that I – Metros can be made more robust and an effective platform. The Committee desire that I – Metros is revitalized and metros are encouraged to share ideas and experiences on this platform and all the metro networks are brought under its fold.”

2.30 In their written reply, the Ministry have stated as follows:

“Metro Rail Corporations are already utilizing I-Metro platform for exchange the ideas and knowledge. M/o Housing and Urban Affairs has further requested Metro Rail Corporations to make optimum utilization of I-metro platform for sharing knowledge, experiences, information, exchange ideas, best practices and innovation amongst each

other in all aspects of urban rail transport and learn from one-another in order to improve implementation and operation of Metro Rail Projects.”

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

**Comments of the Committee**  
(Please see Para 1.13 of the Report)

**Recommendation (Serial No. 21)**  
**Requirement of a Central Database for Metro Projects**

2.31 The Committee had recommended in their original Report as under:

“The Committee note that the Ministry of Housing and Urban Affairs provide substantial funds for funding Metro projects every year which accounted for about 43.1 per cent of the Budget Estimates in 2021-22 and 31.2 per cent for 2022-23. However, the Committee are dismayed to note that the Ministry does not have a Central database of various metro projects funded by it. The Committee feel that a Centralized database containing data on various facets of functioning of the Metrorail networks is imperative from the policy making perspective viz. data about funds released *vis-a-vis* utilized, physical progress, ridership, First and Last Mile Connectivity, Fare and Non-Fare Box revenue, Green Energy initiatives, etc. The Committee are glad that the Ministry have also agreed to the need of maintaining a centralized database for various metro projects. The Committee, therefore, desire that a robust central database on various facets of metro projects must be created and maintained at the earliest. The database may be made in such a way that as and when any updates in the metro rail networks take place, the same should get reflected in the central base.”

2.32 In their written reply, the Ministry have stated as follows:

“A centralized database IT platform is under development for various Urban Transport projects including metro projects funded by Government of India.”

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

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## CHAPTER III

### RECOMMENDATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE REPLIES OF THE GOVERNMENT

#### Recommendation (Serial No. 2)

#### LAYING OF ANNUAL REPORTS BEFORE THE PARLIAMENT

3.1 The Committee had recommended as under:

"The Committee note that Section 13 of the Metro Railways (Operation and Maintenance) Act, 2002 stipulates that the Central Government shall cause the annual report of the Chief Commissioner of Railway Safety to be laid after its receipt before each House of the Parliament. The Committee note that barring Kolkata metro, Hyderabad metro and Jaipur metro, the annual reports of various operational and under construction metro projects are being laid before each house of the Parliament or are under preparation for laying. The Committee desire that as per present practice the annual report of all the operational and under construction metros, funded by the central government, must be laid in both the Houses of Parliament in a timely manner without fail."

3.2 In their written reply, the Ministry have stated as follows:

" The replies received from Hyderabad Metro, Jaipur Metro and Ministry of Railways (for Kolkata Metro) for laying of Annual Reports in both the Houses of Parliament are as under:-

Sl. No.	Metro Company	Reply
1	Hyderabad Metro Rail Corporation	Since Hyderabad Metro Rail Project is a State Government Project, its annual reports are being placed in both the Houses of State Legislature
2.	Jaipur Metro Rail Corporation	Jaipur Metro Rail Corporation is funded by State Government.
3	Ministry of Railway (Kolkata Metro)	Kolkata Metro is not a company but a Government Railway hence laying of annual report which is requirement of The Company Act 2013 is not applicable.

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

## **Recommendation (Serial No. 7)**

### **Need for setting up of Water Metro Networks in Cities with Waterways**

#### **Connectivity**

3.3 The Committee had recommended as under:

"The Committee note that Kochi Water Metro is a unique project envisaged for developing modern water transport infrastructure, connecting 10 island villages by constructing 38 Jetties, in the Greater Kochi region. The water metro network covering a route length of 76 km having 38 terminals with 78 Nos. of battery-operated boats provide inter-modal connectivity between Jetties, Bus terminals and Metro networks. The Committee observe that apart from connecting island villages around Kochi, it is also expected to increase ridership of metro and have environmental benefits. The Committee are of the view that such water metro like that of Kochi has potential to connect coastal zones and areas having inland water bodies with mass transportation systems, thereby boosting economic activity as well ensuring social welfare. The Committee, therefore, suggest MoHUA to explore possibility and encourage building such water metros in areas having water networks viz. Rivers, Canals, etc. and impress upon states which have such water bodies to build them."

3.4 In their written reply, the Ministry have stated as follows:

" Urban Transport, which is an integral part of urban development, is a State subject. Hence, respective State Governments are responsible for initiating, developing and funding urban transport infrastructure including Water Metro Projects."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

## **Recommendation (Serial No. 8)**

### **Low Actual Average Daily Ridership vis. a. vis. Actual Average Daily Ridership required for Breakeven: Need for increase of Ridership**

3.5 The Committee had recommended as under:

"It is disheartening for the Committee to observe that barring Delhi and Mumbai Line 1, most of the operational metros viz. Bengaluru metro, Hyderabad metro, Lucknow metro, Chennai metro, Kolkata metro and Kochi metro has low ridership. Bengaluru Metro had Actual Average Daily Ridership (AADR) of 1.48, 3.40, 4.52, 4.89 and 0.96 lakhs only in 2016-17, 2017-18, 2018-19, 2019-20 and 2020-21, respectively, against Average Daily Ridership required for Breakeven of 7.65, 10.09, 12.32, 13.19 and 18.54 lakhs, respectively, in the same years. Thus, Bengaluru metro has been

constantly witnessing low ridership than it is required for Breakeven. Similarly, Hyderabad Metro has very low Actual Average Daily Ridership (AADR) i.e. 0.67, 1.26, 2.76, and 0.65 lakhs only in 2017-18, 2018-19, 2019-20 and 2020-21, respectively, against Average Daily Ridership required for Breakeven of 19.00 lakhs for all these years. Lucknow Metro also had Actual Average Daily Ridership (AADR) of 0.537 and 0.258 lakhs only in 2019-20 and 2020-21, respectively, against Average Daily Ridership required for Breakeven of 0.943 lakhs for all these years. Thus, Lucknow metro also does not have sufficient ridership for breakeven. The Committee further note that Kolkata Metro had Actual Average Daily Ridership (AADR) of 5.40 to 5.84 lakhs only in Pre Covid times against 15 lakhs required for Breakeven. Thus, actual ridership is merely one-third (approx) of the ridership required for breakeven. Kochi Metro too had Actual Average Daily Ridership (AADR) of 0.35, 0.35, 0.51 and 0.19 lakhs only in 2017-18, 2018-19, 2019-20 and 2020-21, respectively, against Average Daily Ridership required for Breakeven of 0.59, 0.40, 0.64, and 1 lakh, respectively, in the same years. Jaipur metro also had dismally low Average Daily Ridership than it is required for breakeven. And Chennai Metro had Actual Average Daily Ridership (AADR) of 10,923, 23,301, 50,312, 92,000 and 45,393 only in 2017-18, 2018-19, 2019-20 and 2020-21, respectively against Average Daily Ridership required for Breakeven of 92209, 108694, 204903, 253989 and 433644 for all these years.

The dismal performance of the majority of the metro rail networks in terms of carrying passengers enough to breakeven even after six to seven years of continuous operations shows that (i) faulty DPRs, (ii) lack of proper planning to provide first and last mile connectivity, (iii) provision of parking at metro rail stations, (iv) need for increasing catchment area, etc. The Committee are of the view that if metro rail projects are to be made as mass transportation medium in true sense and operate them on sustainable basis the commuters are to be weaned away from using private vehicles, a compelling proposition should be made available to them in terms of comfort, convenience, quality, affordability and reliability, etc. The Committee, therefore, recommend the Ministry to:

- i. deliberate upon the reasons for low ridership vis-à-vis the projected ridership for all the above-mentioned metros;
- ii. take concrete steps to increase ridership of all metro projects and update the Committee of the steps taken in this regard to increase ridership; and
- iii. to ensure that ridership estimation which forms the basis for selection of type of metro (conventional or metrolite or metroneo) must be accurate and be realistic to the extent possible.”

3.6 In their written reply, the Ministry have stated as follows:

“Metro Rail Corporations are taking various measures to increase ridership as mentioned below in the replies furnished by them. COVID-19 has also badly affected the operations of Metro system in the past two years. However, Ministry has requested Metro Rail Corporations to make all possible efforts to increase ridership.

**REPLY OF METRO COMPANIES:**

Sl. No.	Metro Company	Observation / reply

1.	Bangalore Metro Rail Corporation Limited	<p>1) As per DPR, for Phase 1 projected ridership was 8.20 lakh passengers per day in 2007, 10.20 lakh passengers per day in 2011 and 16.10 lakh passengers per day in 2021. While Phase 1 of the project was supposed to commence fulltime operations in 2007, it started revenue services partially from 2011 with Reach-1 commencement and the project became fully operational by June-2017. The factors like land acquisition issues, traffic diversions, water table, public utility services, environmental clearances, tree clearances, technical problems, etc which are beyond the control of the company, caused delay in implementation of project. As a result, the projections in the DPR could not be achieved.</p> <p>After full implementation of the Phase 1 in 2017, the actual average ridership (boarding) per day has been increasing steadily, being 3.40 lakhs, 4.52 lakhs, and 4.89 lakhs for the FY 2017-18, 2018-19 and 2019-20 respectively.</p> <p>However, the Breakeven boardings per day to cover the operating expenditures for these years are 2.50 lakhs, 3.46 lakhs and 4.19 lakhs respectively, while the actual boardings per day are more as indicated above.</p> <p>The performance was severely affected by Covid 19 during FY 2020-21 and 2021-22. The results of the first quarter of FY 2022-23 have been encouraging, the first three months registering the average boardings of 3.65 lakhs, 4.07 lakhs and 4.61 lakhs per day respectively.</p> <p>2) The following measures have been taken to improve ridership, which will improve revenue.</p> <ul style="list-style-type: none"> <li>i) Last mile connectivity is improved in co-ordination with BMTCL, facilitating connectivity through Mopeds, Electric bikes and bicycles services.</li> <li>ii) Parking facilities are provided in most of the stations</li> <li>iii) To encourage connectivity bus bays are provided in some important stations.</li> <li>iv) Road Over Bridges are provided at metro stations which are in close proximity to Indian railway stations and state bus stations.</li> <li>v) Metro trains are run with punctuality of above 99.5% to attract to commuters</li> <li>vi) Digital mode introduced for commuter to top-up the smart cards. However, The Commuters can recharge the cards through Namma Metro Mobile App, PayTM, PhonePe, Amazon Pay and BMRCL website.</li> <li>vii) Travel Concessions are provided with discount of 5%</li> </ul>
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		<p>on smart cards and 10% on group tickets to attract commuters.</p> <p>viii) One day, three and five day passes are introduced to attract and facilitate tourists and short stay visitors of Bangalore.</p> <p>3) The recommendation of the Committee regarding reasonably accurate estimation of ridership will be kept in mind in future DPR preparation.</p>
2.	Chennai Metro Rail Corporation Limited	<p>Phase -1 Stations of CMRL have been commissioned in Stages from 2015 &amp; started with approx. 12,000 Passengers per day and completed its 45 kms by 2019 and reached approx. 1 lakhs passenger per day. Phase-1 to further 9Kms covering 9 metro Stations and currently reached ridership of approx. 1.8 Lakhs passengers per day.</p> <p>However, the same was less compared to the projected ridership considered in the DPR.</p> <p>Meanwhile due to COVID-19 Pandemic, lockdown, restrictions on travelling, social distancing norms etc, the ridership has been severely affected in FY 2020-21 and FY 2021-22. After relaxation in travelling norms/ covid protocol etc the ridership has started picking up and reached around 1.8 lakh average per day. Efforts are being taken for improving first and last mile connectivity for increase in ridership. Also various promotional events are being planned for increase in ridership.</p>
3.	Kochi Metro Rail Corporation	<p>Measures taken by KMRL to increase the ridership is as follows</p> <ul style="list-style-type: none"> <li>• Flexi fare Implementation for non peakhours(06:00 -08:00 hrs. &amp; 20:00 hrs. to 23:00 hrs.)</li> <li>• Discounted Passes Launched : Student Day Pass, Student Monthly Pass, Covid Warriors, Weekly Pass, Monthly Pass.</li> <li>• Discounted Ticket : 50 % discount for Scout, Guides, NSS, Zero Value Ticket to Mentally Challenged &amp; 50% discounted to one accompanying person, Zero Value Ticket to Old age person (70 Years &amp; more than 70 , 50% discounted to one accompanying person).</li> </ul>

		<ul style="list-style-type: none"> <li>• Kochi Metro Whats app Bot: Various Travel Offer Creative &amp; Video developed &amp; put inside Trains &amp; Station. Visit to School, Colleges, Institute, Corporates. Cycle Rally conducted. Brand Ambassador Concept implemented.</li> </ul>
4.	Jaipur Metro Rail Corporation	<p>(i) The basic reason for the low ridership as compared to projected is small operational section of 12 kms. As per DPR, expected Ridership of Jaipur Metro is based on operation of Phase-I &amp; Phase-2. Commercial operation of Phase-1A started on 03.06.2015 and Phase-1B started late on 23.09.2020. In present scenario, it is not possible to evaluate ridership as compared to projected ridership as Phase-2 is yet to be completed. Expansion in future will increase ridership.</p> <p>(ii) Jaipur Metro is providing facilities of Mass Rapid Transit System in the city of Jaipur with punctuality of 99.88%. All Jaipur metro stations are having parking facility. Jaipur Metro has started Feeder Service to its passengers for First / Last Mile connectivity wherever possible.</p> <p>(iii) Noted for future compliances.</p>
5.	UP Metro Rail Corporation	<p>i. Lucknow Metro was commissioned on 06.09.2017 in small priority section of 8.9 km. However complete corridor of 23km (North-South corridor) of Lucknow metro was operational on 09.03.2019.</p> <ul style="list-style-type: none"> <li>• An average of 54250 passengers travelled daily in Lucknow Metro before the COVID-19 pandemic since 09.03.2019. During this period, the maximum daily ridership was 71586.</li> <li>• During the first and second COVID waves, the operation of Lucknow Metro remained closed for about seven months.</li> <li>• After the first wave of COVID-19, an average of 22323 passengers travelled daily in Lucknow Metro.</li> <li>• In the month of December after the second wave of COVID-19, an average of 54192 passengers travelled daily in Lucknow Metro.</li> <li>• After COVID-19, the maximum daily ridership has been 69406.</li> <li>• Metro operations remained completely closed during the first and second waves of COVID-19 pandemic. Like other metros, there was a decrease in the number of passengers after the resumption of operations. However, in comparison to the other metros, Lucknow Metro had</li> </ul>

		<p>the fastest recovery in the number of passengers.</p> <p>Steps taken to increase ridership include:</p> <ul style="list-style-type: none"> <li>• Some city bus routes parallel to the metro alignment have been rationalised by the district administration.</li> <li>• The ridership of metro will increase by rationalising and banning/controlling the routes of autos etc. by the district administration. Action is being taken in this regard in coordination with the State Government.</li> <li>• MoU with two wheeler and taxi service to provide last mile connectivity at metro stations has been done.</li> </ul>
6.	Gujarat Metro Rail Corporation	<p>Presently for Ahmedabad metro rail Phase-1, only 06 out of 32 stations are operational; the reach under operation is at one end of the city and not connected to the prominent place of the city. Ridership is less on account of this.</p> <p>Once the entire Phase-1 is commissioned, ridership is likely to increase. Efforts shall also be made to increase ridership once the entire phase is commissioned.</p>
7.	Pune Metro Rail Corporation	<p>12 Km. of Priority Sections which are part of Corridor-1(PCMC-Swargate) &amp; Corridor 2 (Vanaz-Ramwadi) are operational since 6<sup>th</sup> March, 2022 and rest of the corridor is under implementation and expected to be fully operational by March 2023. Pune Metro has taken various steps for enhancing ridership as under:</p> <ol style="list-style-type: none"> <li>1. More emphasis to be done on 'Downloading the Pune Metro mobile Apps' through effective PR. The very 'First Ride' should be given @50% off on downloading the Mobile App. The mobile app should be downloaded at the TOM to avail this offer.</li> <li>2. More publicity and awareness campaign should be done through PR-Social Media Handles, Print &amp; Radio (FM) to promote 'Celebration on Wheel' to induce citizens to come in large numbers to have the experiential celebrations on board the train.</li> <li>3. Enhancement of visibility at the stations on Feeder Services-Announcements on-board the stations and few Standees and Banners at the Platform Level too.</li> <li>4. More 'Metro Samvaad' &amp; 'Educational Tours' for the Educational Institutions.</li> <li>5. Allowing the use of Bicycles on-board the trains.</li> <li>6. Integrated Employee and School Mobility initiated for Corporates, Factories, Industrial Zones and Educational Institutions.</li> <li>7. Exploring Integrate Tourism with MTDC on Week-ends and public Holidays for conducted City Tour integrate with Metro Ride.</li> <li>8. Integrated Airport Shuttle Services.</li> </ol>

		9. Integrated Cab Services and Taxi Operators (Mumbai-Pune).
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*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

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## CHAPTER IV

### RECOMMENDATIONS IN RESPECT OF WHICH REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE

#### Recommendation (Serial No. 5)

##### Adoption of Less Capital intensive MetroLite and MetroNeo networks

4.1 The Committee had recommended in their original Report as under:

“The Committee note that metro projects are capital intensive in nature involving huge investment on the part of Ministry accounting for about 43 percent of total BE in 2021-22 of Ministry of Housing and Urban Affairs. The Committee have been further apprised that per kilometre cost of construction of metro projects range from Rs. 37 cr to Rs. 220 crores for elevated metro, Rs. 100 crores to Rs.1126 crores for underground metro and Rs. 84 to Rs. 122 crores for At Grade metros. On the other hand, MetroLite can be constructed at 40% cost of Metro train while MetroNeo (tyred metro) can be constructed at 25% of the cost of metro. The standards for MetroLite and MetroNeo have also been issued by the Ministry in July 2019 and November, 2020, respectively. They will provide a similar experience and ease of travel in terms of comfort, convenience, safety, punctuality, reliability, & environment-friendliness as that of a conventional metro system. Both are suitable for smaller cities with lower ridership that are aspiring for rail-based mass transit system and can also be used as feeder to high capacity metro rail systems. They are more viable and sustainable due to their very less capital, operation and maintenance costs. Apart from decongesting smaller cities, they will also reduce pollution.

The Committee, therefore, recommend the Ministry to promote and incentivize MetroLite and MetroNeo in smaller cities aspiring for rail-based mass transit system and also as feeder to high capacity metro systems, wherever possible. The Committee also desire to be informed of the specific measures taken to persuade/ incentivize adoption of MetroLite and MetroNeo systems.”

4.2 In their written reply, the Ministry have stated as follows:

"Urban transport, which is an integral part of urban development, is a state subject. Hence, respective State Government/Union Territory (UT) is responsible for initiating and developing urban transport infrastructure including Mass Rapid Transit System. The Central Government considers financial assistance for such projects in cities or urban agglomerates, based on feasibility of the proposal and availability of resources, as and when posed by the concerned State Government/Union Territory (UT). MoHUA has already issued standards for MetroLite and MetroNeo system. Selection of Metro Rail/MetroLite/MetroNeo is done as per traffic studies conducted

during DPR stage. Govt. of Uttar Pradesh and Union Territory of Jammu & Kashmir have already proposed MetroLite system for Gorakhpur and Srinagar/Jammu respectively. Similarly, Govt. of Maharashtra and Govt. of Uttarakhand have already proposed MetroNeo system in Nashik and Dehradun respectively."

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

**Comments of the Committee**  
(Please see Para 1.7 of the Report)

**Recommendation (Serial No. 18)**  
**Registering for Carbon Credits**

4.3 The Committee had recommended in their original Report as under:

"The Committee are aware that a carbon credit is a tradable permit or certificate that provides the holder of the credit the right to emit one tone of carbon dioxide or an equivalent of another greenhouse gas – it's essentially an offset for producers of such gases. Several metro projects have registered/applied for Green House Gas (GHG) emission under two platforms viz. Clean Development Mechanism (CDM) under UNFCCC and the Gold Standard Registry (GS) to demonstrate emission reduction. The Committee have been apprised that Delhi metro has earned 4.4 million carbon credits from CDM and GS projects, Kochi & Lucknow metros have stated that their registration for Carbon Credits is under process while Nagpur metro will apply for it after commissioning of the project, Bhopal and Indore metros on the other hand have informed that their stations and depot are being planned/designed for India Green Building council (IGBC) Platinum Rating leading to Carbon Credits in due course. Hyderabad, Kanpur and Agra metros have not registered for Carbon Credits. Ahmedabad, Surat, Patna, Bengaluru, Jaipur and Kolkata metros have not provided any information regarding carbon credits. On the other hand Pune and Mumbai metros have merely informed that their projects are under implementation remaining silent on the issue of meeting power requirements from renewables. Since several metros are either using or planning to use renewable energy to a considerable extent to meet their requirements, the Committee feel that it is important to ensure that all these metro rail networks are registered for carbon credits so that they earn benefits for being environment friendly. However, the Ministry have informed that it is merely desirable for metro networks to register for carbon credits and not a mandate. That is perhaps the reason why several metro networks have not yet registered for it. Therefore, the Committee recommend the Ministry to impress upon all the metro rail projects and ensure that they register for carbon credits. The Committee are of the view that it may be made mandatory to make metro rail networks to register for carbon credits."

4.4 In their written reply, the Ministry have stated as follows:

“M/o Housing and Urban Affairs has requested Metro Rail Corporations, who have not yet registered for Carbon Credits, to explore economic benefits of registration.”

*[Ministry of Housing and Urban Affairs, OM No. G-20011/2/2020-UT-II Dated the 3<sup>rd</sup> August, 2022]*

**Comments of the Committee**  
(Please see Para 1.10 of the Report)  
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**CHAPTER V**

**RECOMMENDATIONS IN RESPECT OF WHICH FINAL REPLIES OF THE  
GOVERNMENT ARE STILL AWAITED**

**-Nil-**

**NEW DELHI;  
16 December, 2022  
25 Agrahayana 29, 1944 (Saka)**

**SHRI RAJIV RANJAN SINGH  
*alias* LALAN SINGH  
Chairperson,  
Standing Committee on Housing  
and Urban Affairs**

**STANDING COMMITTEE ON HOUSING AND URBAN AFFAIRS**

**Minutes of the Fourth Sitting of the Standing Committee on Housing and Urban Affairs held on Friday, 16 December, 2022**

The Committee sat from 1530 hours to 1630 hours in Main Committee Room, Ground Floor, Parliament House Annexe, New Delhi.

**PRESENT**

Shri Rajiv Ranjan Singh alias Lalan Singh - Chairperson

**Members**

**Lok Sabha**

2. Shri Sunil Kumar Soni
3. Shri Benny Behanan
4. Shri Syed Imtiaz Jaleel
5. Shri Hasnain Masoodi

**Rajya Sabha**

6. Dr. Kalpana Saini
7. Shri Ram Chander Jangra
8. Shri Kumar Ketkar
9. Shri R. Girirajan
10. Smt Jebi Mather Hisham
11. Dr. K. Laxman
12. Shri S. Niranjana Reddy
13. Shri Sanjay Singh

**Secretariat**

1. Shri V.K. Tripathi Joint Secretary
2. Ms Archana Pathania Director
3. Ms Swati Parwal Deputy Secretary

2. At the outset, Hon'ble Chairperson welcomed Members of the Standing Committee on Housing and Urban Affairs to the Sitting of the Committee and thereafter,

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3. The Committee then took up for consideration the Draft Report on Action Taken by the Government on the Thirteenth Report (17th Lok Sabha) on the subject, Implementation of Metro Rail Projects – An Appraisal' relating to Ministry of Housing and Urban Affairs and adopted the Draft Report without any modifications.

***The Committee then adjourned.***

[Vide para 4 of the Introduction]

**ANALYSIS OF THE ACTION TAKEN BY THE GOVERNMENT ON THE RECOMMENDATIONS/OBSERVATIONS CONTAINED IN THE TWENTY FIFTH REPORT OF THE STANDING COMMITTEE ON URBAN DEVELOPLMENT (SIXTEENTH LOK SABHA)**

I.	<b>Total number of recommendations</b>	<b>21</b>
II.	<b>Recommendations/Observations which have been accepted by the Government:</b>	<b>16</b>
	<b>Recommendation Nos. 1, 3, 4, 6, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20 and 21</b>	
	<b>Percentage to total recommendations</b>	<b>(76.19 %)</b>
III.	<b>Recommendations/Observations which the Committee do not desire to pursue in view of Government's replies:</b>	<b>03</b>
	<b>Recommendation Nos. 2, 7, 8</b>	
	<b>Percentage to total recommendations</b>	<b>(14.28 %)</b>
IV.	<b>Recommendations/Observations in respect of which replies of the Government have not been accepted by the Committee:</b>	<b>02</b>
	<b>Recommendation Nos. 5, 18</b>	
	<b>Percentage to total recommendations</b>	<b>(09.52%)</b>
V.	<b>Recommendations/Observations in respect of which final replies of the Government are still awaited:</b>	<b>00</b>
	<b>Recommendation No. Nil</b>	
	<b>Percentage to total recommendations</b>	<b>(00.00%)</b>