# PUBLIC NOTICE

## *(In compliance with the directions of the Hon'ble Bihar Electricity Regulatory Commission)*

## Case No. 07/2025

***Subject: Petition filed by General Manager (RS-O&M), M/s Patna Metro Rail Corporation Limited (PMRCL) for introduction of new tariff for operation of Metro Rail Services in Patna City.***

M/s Patna Metro Rail Corporation Ltd. (PMRCL) has submitted a petition before the Hon'ble Bihar Electricity Regulatory Commission (BERC) seeking the determination of a dedicated electricity tariff structure for the operation of Metro Rail services in Patna. The petition Filed by the PMRCL on the following key issues: -

a. **Introduction of special electricity tariff: -** PMRCL requested the Hon'ble Commission to establish a special electricity tariff for Metro train operations in Patna.
b. **Time of day tariff: -** PRMCL requested that time of day tariff should not be applicable for Metro Train operation.
c. **Re-generative energy: -** PMRCL requested that compensation for regenerative energy fed back into the grid be incorporated in the tariff structure under the Net Metering framework.
d. **Compensation on account of Solar energy: -** PMRCL requested that compensation for solar energy generated and fed into the grid be incorporated in the tariff, as per Net Metering regulations.
e. **Energy meter with lag only configuration: -** PMRCL requested that approval for the usage of energy meters with a lag-only configuration for metro rail services in Patna, similar to provisions in Uttar Pradesh (UP) and Delhi.
f. **Summation of Contract Demand: -** PMRCL requested- to ensure accurate measurement of maximum demand, the provision of summation Current Transformers (CTs) at each feeder of the Receiving Sub-Station (RSS), feeding into the main billing energy meter or a summation meter, may be allowed.
g. **Gradual increase in Contract Demand: -** PMRCL requested the approval of an initial contract demand of 2 MVA at the 132 kV voltage level, with provisions for gradual increase as operational requirements grow.
h. **Power Supply to Commercial Establishment in PMRCL Premises: -** PMRCL requested that it may be allowed to extend electricity to commercial concessionaires within its premises and collect electricity charges as per the prevailing commercial tariff. The differential amount (Between commercial tariff and the tariff applicable for PMRCL) shall be paid by PMRCL to DISCOM after retaining the amount towards cost of transformation, wheeling, T&D losses, billing system expenditure etc, will be decided by the commission.
i. **Simultaneous Contract Demand for Multiple Receiving Sub Stations: -**PMRCL requested to allow simultaneous contract demand for the power supply taken through different Receiving Sub-Station of PMRCL.

2. The petition has been taken on record by the Hon'ble Commission as Case No. 07 of 2025.
3. Copy of the aforesaid Petition is available in the office of the General Manager (RS/O&M), Patna Metro Rail Corporation Limited (PMRCL), 7th Floor, Indira Bhawan, West Boring Canal Road, Patna- 800001, Bihar. Copy of the complete Petition is available at official website of the petitioner, i.e., https://state.bihar.gov.in/urban and at Commission's website www.berc.co.in.
4. Objections / Suggestions, if any, on the said Petition with supporting Documents may be filed separately with the **Secretary, Bihar Electricity Regulatory Commission, Ground Floor, Vidyut Bhawan — II, Jawahar Lal Nehru Marg, Patna- 800021** in person or through registered post as so to reach him on or before **27.06.2025** and a copy of the same shall be served on to the General Manager (RS/O&M), Patna Metro Rail Corporation Limited (PMRCL), 7th Floor, Indira Bhawan, West Boring Canal Road, Patna- 800001, Bihar and proof of serving the same must be enclosed with the filing made to the **Secretary, Bihar Electricity Regulatory Commission.**
5. Last date for submission of objections/suggestions: Till the date of 27.06.2025.

Copy of the aforesaid Petition is available in the office of the General Manager (RS-O&M), Patna Metro Rail Corporation Limited (PMRCL), 7th Floor, Indira Bhawan, West Boring Canal Road, Patna- 800001, Bihar.

The matter was heard by the Commission on 20 February 2025. The case was presented by the legal counsel team of M/s Komandoor & Co LLP, comprising CA Mangal Singh (Partner) and Rahul Kumar Jha, who elaborated on the proposed concessional tariff structure.

After careful consideration, the Commission has decided to admit the petition. In compliance with the Commission's directive, the petitioner is publishing this abridged notice to invite objections/suggestions from consumers, stakeholders, and the general public.

Interested parties may submit their objections/suggestions along with supporting documents to the following:

**The Secretary**
**Bihar Electricity Regulatory Commission (BERC)**
3rd Floor, Vidyut Bhawan-II, J L Nehru Marg, Bailey Road,
Patna – 800021, Bihar
**Email: bercpat@bihar.gov.in**

A copy must also be sent to:
**General Manager (RS-O&M), Patna Metro Rail Corporation Ltd.**
Indira Bhawan, 7th Floor, Patna – 800001, Bihar
**Email:-mail.pmrcl@gmail.com**
*Last date for submission of objections/suggestions: Till the Date of 27th June 2025.*

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**BEFORE THE BIHAR ELECTRICITY REGULATORY COMMISSION, PATNA**

**IN THE MATTER OF:** Incorporation of New Tariff category for Metro Rail Services in Patna during Determination of Tariff for FY 2025-26 under Bihar Electricity Regulatory Commission (Multi Year Distribution Tariff) Regulations, 2021 and its amendments issued thereof along with the other guidelines and directives issued by the BERC from time to time and under Section 45, 46, 47, 61, 62, 64 and 86 of the Electricity Act 2003 read with the relevant guidelines.

**AND**

**IN THE MATTER OF:** Patna Metro Rail Corporation Limited (hereinafter referred to as "PMRCL" or "Petitioner" which shall mean for the purpose of this petition), having its registered office at Indira Bhawan, West Boring Canal Road, Patna.

**The Petitioner respectfully showeth:**

Patna Metro Rail Corporation Limited, (herein after referred to as "PMRCL" or "the Company") a Company incorporated under the Companies Act, 2013 (CIN:U93090BR2019SGC041042) on 18.02.2019 and presently a Company of GoB (within the meaning of the Companies Act, 2013), which is reconstituted as a joint venture Company of GoI and GoB within the meaning of Companies Act, 2013, (which expression unless repugnant to the context or meaning thereof includes its executors and official assignees) be represented by its Managing Director, having Registered Office at Urban Development and Housing Department, Vikas Bhawan, Patna-800 015, Bihar.

PMRCL is mandated to provide Patna with a fast reliable, convenient, efficient, modern and affordable mode of public transport, as a solution to the city's growing transport needs, the GoB felt the need for an efficient mass rapid transit system in Patna and decided to implement the Patna Metro Rail Project covering two corridors of a total length of 31.89 km, (i) Danapur to Mithapur (16.94 km) with 12 stations and (ii) Patna Railway Station to New ISBT (14.45 Km) with 12 stations and forwarded the proposal to GoI for sanction.

The Project is being implemented as a Central Sector Project through the Executing Agency, i.e. PMRCL as a Special Purpose Vehicle (SPV) for the implementation of the project with GoI and GoB being the joint promoters with equal equity holding.

Legal cover for the Patna Metro Rail Project shall be governed by the provisions of the Metro Railways (Construction of Works) Act, 1978; the Railways Act 1989 and the Metro Railways (Operation & Maintenance) Act, 2002; as amended through Metro Railways (Amendment) Act, 2009 or such other legislations made from time to time as may be decided by GoI.

**POWER SUPPLY AND TRACTION**

25 kV AC system is proposed to adopt for Patna Metro corridors. The power requirements of a metro system are determined by peak-hour power demand for traction and auxiliary applications. The ultimate (design) power requirement has been estimated considering following norms, directives/ guidelines:

- Train operation with combination of 3 & 6 car rakes for Danapur to Khemni Chak corridor.
- Train operation with 3 car rakes for Patna Station to New ISBT corridor.

- Peak period headway of 3.0 minutes for Danapur to Khemni Chak corridor and Patna Station to New ISBT corridor.
- Specific energy consumption of rolling stock – 75 KWh / 1000 GTKM
- Regeneration @ 30%
- At grade/ Elev. station load – initially 200 kW, ultimate design 300 kW
- Underground station load – initially 1500 kW, ultimate design 2000 kW
- Depot auxiliary load – initially 1500 kW, ultimate design 2000 KW
- Power factor of load – 0.9
- Transmission losses @ 5%

Keeping in view of the above norms, power demand estimation for the proposed corridors of Patna Metro was envisaged in DPR as per **Table1.**

**TABLE 1: POWER DEMAND ESTIMATION (MVA)**

| Corridor | Danapur - Mithapur Corridor | | | | Patna Station – New ISBT Corridor | | | |
|---|---|---|---|---|---|---|---|---|
| **Year** | **2024** | **2031** | **2041** | **2051** | **2024** | **2031** | **2041** | **2051** |
| **Traction** | 6.75 | 10.12 | 10.91 | 14.01 | 5.27 | 6.65 | 7.14 | 8.07 |
| **Auxiliary** | 12.37 | 13.30 | 14.58 | 16.80 | 15.17 | 16.25 | 17.79 | 20.42 |
| **Total** | **19.12** | **23.42** | **25.49** | **30.81** | **20.44** | **22.90** | **24.94** | **28.48** |

However, there is some delay in execution of project due to various reasons. The first section which is likely to be operational will be elevated section of one corridor between Malahi Pakri Station to ISBT Station from August 2025. Accordingly, electricity supply for train trials testing & commissioning shall be needed in 1st quarter of F.Y: 2025-26.

**SOURCES OF POWER SUPPLY**

Patna City has 220kV, 132kV, 33kV power transmission and distribution network to cater to various types of demand in the vicinity of the proposed corridor. Keeping in view of the reliability requirements and considering the complete length of corridors, two Receiving Sub-Stations (RSS) are being constructed to avail power supply for traction as well as auxiliary services from the Bihar State Power Transmission Company Limited (BSPTCL) grid sub-stations at 132 kV voltage through transmission lines or cable feeders for the proposed Patna Metro corridors.

M/s BSPTCL has confirmed the availability of power supply at Mithapur new Grid Sub-Station (GSS) for Mithapur RSS and upcoming 132kV Switching Station adjacent to New ISBT RSS after its connectivity with LILO arrangement of 132kV Gaurichak-Fatuha transmission line. The receiving substation (132/33/25KV) planned for the power requirements of the corridors of Patna Metro with the respective feeding zones and the length of cables from the grid substation is shown in **Table 2.**

**TABLE 2: SOURCES OF POWER SUPPLY**

| Grid Sub-Station | RSS of Metro Authority | Feeding Zone | Distance from GSS to RSS |
|---|---|---|---|
| Mithapur New GSS (132/33kV) | Mithapur RSS (132/33/25kV) | Corridor 1 | 0.150 km |
| New ISBT GSS (132kV) | New ISBT RSS (132/33/25kV) | Corridor 2 | 0.150 km |

The equipment rating of the RSS cum TSS has been determined considering the normal as well as emergency situation. When one RSS fails, the traction supply will be maintained by extending feed from adjoining RSS. However, in case of total grid failure, all trains may come to a halt but emergency lighting, fire and other essential services can be catered to stand-by UPS/ DG sets.

**AUXILIARY SUPPLY ARRANGEMENTS AND STANDBY POWER SUPPLY**

Auxiliary Sub-Stations (ASS) are envisaged to be provided at each station for stepping down 33kV supply to 415V for auxiliary applications. The ASS will be located at mezzanine or platform level inside a room. The demand of power at each elevated station is expected to be about 200 kW in the initial years and is likely to reach 300 kW in the horizon year. Similarly, for the underground stations, the auxiliary load requirements have been assessed at 1500 kW which is likely to increase to 2000 kW in the horizon year. The average load considered for elevated station and underground station are being fine tuned to suit station requirement.

**SOLAR ENERGY HARNESSING SYSTEM**

Provision of a grid connected solar photovoltaic power plant utilizing all possible areas viz. roof top of stations/sheds and buildings is considered. Based on the solar radiation intensity in the city of Patna, the peak solar power generation of Patna Metro corridor is expected to be about 50 kWp for the elevated stations and about 2000 kWp for maintenance depot.

**VENTILATION AND AIR-CONDITIONING SYSTEM**

The large quantity of heat generated in underground stations cannot be extracted by simple ventilation, especially when the outdoor air temperature and humidity is high. It is, therefore, essential to provide mechanical cooling in order to remove the heat to the maximum possible extent. Ancillary spaces such as staff room, equipment plant room, will be mechanically ventilated or air conditioned in accordance with the desired air change rates and temperatures/humidity.

The Ventilation and Air-conditioning (VAC) system requirements for the underground sections include Station Air-conditioning System, Ventilation System for station plant rooms (ancillary spaces), Station Smoke Management System, Tunnel Ventilation System etc.

Opening of the sections will come in phases. The initial electricity connection which will be taken at ISBT RSS shall be in order of 2MVA. It will be increased subsequently with commissioning of new sections and increase in rolling stock to meet the traffic requirements.

As per tariff for 132kV category minimum contract demand which is to be taken is 7.5 MVA. However, in the initial stage specially during testing and commissioning the power requirement shall not be more than 2MVA. Therefore, PMRCL may be allowed to take contract demand of 2MVA initially which will be increased through formal request to South Bihar Power Distribution Company Limited (SBPDCL).

**APPROACH TO SBPDCL/ BSPTCL/ BSPHCL FOR TARIFF DETERMINATION**

PMRCL vide different letters (1342 dt. 07.06.2022, 1746 dt. 19.10.2022, 1972 dt. 13.01.2023, 2075 dt. 20.02.2023, 2376 dt. 28.06.2023, 2527 dt. 25.08.2023, 2612 dt. 29.09.2023, 2745 dt. 22.11.2023, 2823 dt. 16.12.2023 & 3347 dt. 07.06.2024) requested SBPDCL/ BSPTCL/ BSPHCL for determination and filing of Tariff Petition to BERC on concessional and subsidized basis in a separate category.

**(A) Discussions on Tariff:**

PMRCL submits that the tariff for Metro Rail network should be special tariff considering the following:

(1) The tariff should be less than the tariff of Railways, as Metro Rail Corporations fully depend on passenger traffic for their revenue requirements and they have no scope to compensate the fare by running Goods Train.

(2) Further, Metro services cannot be run during night time because of maintenance issue and zero passenger load.

(3) Considering the above facts, in most of the cities where metro trains are operational, special tariff is assigned in the tariff orders by State Electricity Regulatory Commissions to make the Mass Rapid Transit System (MRTS) sustainable & viable. A comparative statement is placed below for ready reference. These tariffs are extracted from most recent tariff orders available on web sites of the Electricity Regulatory Commissions.

| Category | UPERC | | DERC | | BERC | |
|---|---|---|---|---|---|---|
| | F.Y. 2024-25 | | F.Y. 2021-22 Onwards | | F.Y. 2024-25 | |
| | Demand Charges | Energy Charges | Demand Charges | Energy Charges | Demand Charges | Energy Charges |
| Railway Traction | Rs. 400 (HV-3A) | Rs. 8.50 | - | - | Rs. 540 | Rs. 8.16 |
| Metro Services | Rs. 300 (HV-3B) | Rs. 7.30 | - | - | To be decided | To be decided |
| Public Utilities (**Metro**, Hospitals, Jal Board etc.) | - | - | Rs. 250 | Rs.6.25 | - | - |

Copy of relevant pages of respective Tariff orders are placed at **Annexure-'A'** (UPERC), **Annexure-'B'** (DERC), **Annexure-'C'** (BERC).

(4) As per para 12.9 of MoU between GoI, GoB and PMRCL dated 06-Nov-2019, on behalf of Govt. of Bihar it is mentioned that ***"To endeavour to make available electric Power to the project on a no-profit-no-loss basis, subject to the applicable laws and orders of the State Electricity Regulatory Commission."*** *(enclosed as* ***Annexure-'D'****)*

(5) Mass rapid transport system will relieve Patna city from pollution, traffic congestion, and will improve environment condition and air quality of the city.

(6) Metro Rail Corporation has to pay huge electricity cost around 34% in the initial stage which is a major requirement for Metro train operation. If electricity cost is heavy, the Metro fare will be eventually high and due to this passengers will not prefer to travel by metro. Metro train services are run mainly for the passenger convenience and smooth traffic flow. As such, he whole purpose of MRTS will be defeated.

**Therefore, special lower tariff per unit of electricity and lower Contract Demand charges is requested.**

**(B) Time of day tariff:**

The metro authorities have to run the trains as per city traffic requirements. They have no choice to shift the timing of Metro Trains. Hence, time of day tariff should not be applicable for Metro Train operation.

**(C) Re-generative energy:**

Modern Metro train systems are state of the art and re-generate energy during braking. Most of the re-generated energy quantity is consumed by the system itself, while 2-5 % energy is fed back to the grid. Compensation for this needs to be incorporated in the tariff through Net-metering.

**(D) Compensation on account of Solar energy:**

There is plan to install solar panels on the roof top of stations and depot area. Excess energy shall be fed back to the grid. Compensation on this account is requested in the tariff through net metering scheme.

**(E) Energy meter with lag only configuration:**

The metro system normally operates at high power factor. Considering this fact, in different states the Electricity Regulatory Commissions have allowed that billing should be maintained on lag only principle. This provision is also made by UPERC and DERC for Railway and Metro Rail services. Reference of UPERC tariff order is given in **Annexure-'A'** and reference of DERC letter is given at **Annexure-'E'**.

**(F) Summation of Contract Demand**

For reliability of public transport system, two different feeders are being taken for each Receiving Substation having individual consumer ID. One feeder shall be on load while the other will be on standby. Similar provision is made in both the Receiving substation i.e ISBT RSS and at Mithapur RSS. Power shall be drawn from one circuit of the substation at a time, but may be changed over to other as per requirement. For measurement of correct Maximum demand, the CTs provided with each feeder should be connected with summation CT which will feed to main energy meter or through summation meter. This provision may please be allowed.

**(G) Gradual increase in Contract Demand:**

Initially the electricity connection will be needed for energization of substation only. Gradually illumination for safety requirements, pre-running tests and train running trial will be carried out where energy consumption will be very low, therefore PMRCL should be allowed to take low contract demand in the initial stage. It will be enhanced as metro train operation increases in the network.

It is requested to allow contract demand as low as 2MVA at 132kV voltage level which will be increased by PMRCL as per requirement.

**(H) Simultaneous Contract Demand for Multiple Receiving Sub Stations:**

When power supply from one Receiving Sub Station will fail, the trains with passengers will come to hard at mid sections. The trains will be rescued to the station by extending power supply from other Receiving Sub-Station of PMRCL. Simultaneous contract demand for all Receiving Sub-Stations of Patna Metro may please be allowed and penalty may be applicable only if cumulative maximum demand is breached.

Similar arrangement is made in Delhi for the DISCOMs who deliver power supply to different RSS through different Grid Sub Stations. Copy of one such agreement between DMRC and DISCOMs is enclosed as **Annexure- 'F'**.

**(I) Power Supply to Commercial Establishment in PMRCL Premises**

This is to bring to the kind notice of the Hon ble Commission that, in case of Delhi area, Delhi Electricity Regulatory Commission (DERC) has issued following guidelines which regulates the use of electricity in metro stations for commercial activities:

*"all commercial consumers of DMRC, drawing power at LT i.e. 400 V (since DMRC does not have any provision for supply of power at 11KV), DMRC may retain 5 % of tariff along with additional retention of either 2.5 % (for supply on 66KV) or 4 % (for supply on 220KV)".* ***(Annexure-'G')***

Accordingly, PMRCL may kindly be allowed to charge the electricity bill from its commercial customers at the prevailing commercial tariff issued by Hon'ble Commission in tariff order. The difference between this commercial tariff and tariff applicable on PMRC shall be calculated and differential amount shall be paid to DISCOMs along with applicable Electricity duty to commercial customers. To meet the expenses involved in stepping down and other losses, PMRCL may be allowed to retain 4% (for receiving supply an EHV i.e. 132 KV and distribution at Lower voltage).

**Prayers:** In view of facts brought out in para (A) to para (I) and its sub paras, PMRCL would once again request Hon'ble Commission for the following:

1. **Tariff:**

   Considering the facts elaborated in para (A), PMRCL requests the Hon'ble Commission to consider special Electricity tariff for Metro train services in Patna.

2. **Time of day tariff:**

   Hon'ble Commission is requested that time of day tariff should not be applicable for Metro Train operation.

3. **Re-generative energy:**

   Hon'ble Commission is requested that compensation on account of re-generative energy fed back to Grid, may kindly be incorporated in the tariff under Net metering.

4. **Compensation on account of Solar energy:**

   Hon'ble Commission is requested that compensation on account of solar energy may kindly incorporated in the tariff through Net metering.

5. **Energy meter with lag only configuration:**

   Hon'ble Commission is requested that similar to provision made in Tariff for Metro in U.P. and Delhi, for Metro Rail Services in Patna, energy meter with lag only configuration may kindly be allowed. This billing by DISCOM to be done for lagging power drawn only.

6. **Summation of Contract Demand:**

Hon'ble Commission is requested that for measurement of correct Maximum demand, the CTs provided with each feeder of the RSS should be connected with summation CT which will feed to main billing energy meter or through summation meter. This provision may please be allowed.

7. **Gradual increase in Contract Demand:**

Hon'ble Commission is requested to allow contract demand as low as 2MVA at 132kV voltage level which will be gradually increased by PMRCL as per requirement.

8. **Power Supply to Commercial Establishment in PMRCL Premises:**

Hon'ble Commission is requested that similar to provisions given in other states, PMRCL may kindly be allowed to charge the electricity bill from its commercial customers as per prevailing commercial tariff issued by Hon'ble Commission for that category.

The difference between this commercial tariff and tariff applicable on PMRCL shall be calculated and differential amount shall be paid to DISCOMs along with applicable Electricity duty to commercial customers. To meet the expenses involved in stepping down and other losses, PMRCL may be allowed to retain 4% (for receiving supply a EHV i.e. 132kV and distribution at Lower voltage).

9. **Simultaneous Contract Demand for Multiple Receiving Sub Stations:**

To allow simultaneous contract demand for the power supply taken through different Receiving Sub-Station of PMRCL. Simultaneous contract demand for all Receiving Sub-Stations of Patna Metro may please be allowed and penalty may be applicable only if cumulative maximum demand is breached.

(VIKASH RANJAN)
GM (RS-OPN)