**Subject: Charging Infrastructure for Electric Vehicles (EV) — the revised consolidated Guidelines & Standards-reg.**

Sir/Madam,

The “Charging Infrastructure for Electric Vehicles – Guidelines and Standards” were issued by the Ministry of Power on 14.01.2018 which were subsequently revised on 01.10.2019, 08.06.2020, 14.01.2022, 07.11.22 and 27.04.2023. After careful consideration of progress made and suggestion received from various stakeholders, it has been decided to amend the guidelines to accelerate the E-Mobility transition in the country. In supersession of all previous guidelines in this regard, the revised consolidated guidelines are as follows:

***Objectives***

1. To enable faster adoption of electric vehicles in India by ensuring safe, reliable, accessible and affordable Charging Infrastructure and eco-system.
2. To provide for affordable tariff chargeable from Charging Station Operators/Owners and Electric Vehicle (EV) owners.
3. To generate employment/income opportunities for small entrepreneurs.
4. To proactively support creation of EV Charging Infrastructure.
5. To encourage preparedness of Electrical Distribution System to adopt EV Charging Infrastructure.
6. To promote energy security and reduction of emission intensity of the country by promotion of entire EV ecosystem.

***Definitions:***

**i. Electric Vehicle Charging Infrastructure (EVCI)** comprises of charging stations catering to diverse charging requirement and includes components such as EVSE, Grid connection, Power Management System for energy optimization, energy distribution, grid stability and renewables integration, Communication network to assist data exchange in real time and remotely manage EV charging stations, cables, connectors, RFID tags, software and applications, circuit breakers, solar panels (if connected), civil work, smart meter, transformer.

**ii. Electric Vehicle Supply Equipment (EVSE)** shall mean an element in Electric Vehicle Charging Infrastructure (EVCI) that supplies electrical energy for recharging the battery of electric vehicles.

**iii. Public Charging Station (PCS)** shall mean EV charging station where any electric vehicle can get its battery recharged.

**iv. Battery Charging Station (BCS)** shall mean a station where the discharged or partially discharged electric batteries for electric vehicles are electrically recharged.

**v. Captive Charging Station (CCS)** shall mean an electric vehicle charging station exclusively for the electric vehicles owned or under the control of the owner of charging station e.g., Government Departments, Corporate houses, Bus Depots, charging stations owned by the fleet owners etc. and shall not be used for commercial purpose of charging other vehicles on paid for basis.

**vi. Battery Swapping Station (BSS)** shall mean a station where any electric vehicle can get its discharged battery or partially charged battery replaced by a charged battery.

**vii. Resident Welfare Association** **(RWA)** means an association comprising all the property owners within a Co-operative Group Housing Society, Multi storied Building, Residential Colony, or a similar body registered with the State Government.

**viii. Community Charging Stations** means public charging station installed by RWAs or other residential accommodations with a provision to allow authorised visitor, an owner of flat or a house therein owner to allow charging of electric vehicles.

***Guidelines:***

**1.** Owners may charge their Electric Vehicles at residences / offices using existing connections. Distribution licensee shall provide a separate connection for supply of electricity to Electric Vehicle charging stations in a Resident Welfare Association (RWA), an owner of flat or a house therein or any other consumer as per section 3(i) of the Electricity (Rights of Consumers) Amendment Rules 2024.

**2.** Any individual / entity, willing to set up public EV charging stations shall be free to do so provided, EVCI compliant with technical, safety norms, performance standards and protocols stipulated by the Ministry of Power, Bureau of Energy Efficiency (BEE), Bureau of Indian Standards (BIS) and Central Electricity Authority (CEA), are deployed for charging.

2.1. Public Charging Station (PCS), RWA, an owner of flat or a house therein or any other consumer, may apply for electricity connection and the Distribution Company licensee shall release connection for EV charging station in accordance with the timelines stated in section 3 (i) of the Electricity (Rights of Consumers) Rules 2024. Accordingly, timelines for providing the connectivity for EV charging stations are as under:

i. The Commission shall specify the maximum time period, after submission of application complete in all respects, not exceeding three days in metropolitan areas, seven days in other municipal areas and fifteen days in rural areas, within which the distribution licensees shall provide new connection or modify an existing connection. Provided that for rural areas of States and Union Territories having hilly terrain, the maximum time period for new connection or modification of an existing connection, after submission of application, complete in all respects, shall not exceed thirty days.

ii. Provided further that where such supply requires extension of distribution mains, or commissioning of new sub-stations, the distribution licensee shall supply the electricity to such premises immediately after such extension or commissioning within a period not exceeding ninety days.

iii. State Nodal Agency (SNA) shall create online single window provision to expedite grant of electrical connectivity to EV chargers installed in PCS.

2.2. Any Public Charging Station/ Chain of Charging Stations may obtain electricity from any generation company through open access. Open Access shall be provided for this purpose within 15 days of receipt of the application complete in all respect. They will be required to pay the applicable surcharge — equal to the current level of cross subsidy (not more than 20 percent, as per the Tariff Policy Guidelines), transmission charges and wheeling charges. No other surcharge or charges shall be levied except mentioned in this provision.

**3. Public Charging Infrastructure (PCI) – Requirements:**

3.1. Every Public Charging Station (PCS) will comply with the following:

i. An exclusive transformer with all related substation equipment including safety appliance, if required by Supply Code as approved by Appropriate Electricity Regulatory Commission.

ii. Appropriate civil works.

iii. Appropriate cabling & electrical works ensuring safety including Type-1 & Type-2 protection as per Indian Standard Code IS / IEC 62305-4/IEC 61643-12 © IEC: 2008 (Edition 2.0 2008-11).

iv. Adequate space for Charging and entry/exit of vehicles.

v. Appropriate Fire protection equipment and facilities

vi. Public Charging Station shall have, any one or more chargers or any combination of chargers as given in ANNEXURE Il, in one or more electric kiosk/boards.

vii. Public Charging Station for electric two/three wheelers shall comply with technical & safety standards as laid down by CEA and Indian Standards (IS) specified in ANNEXURE II, with minimum capacity of 3.3 kW (AC/DC).

viii. Tie up with at least one online Network Service Providers (NSPs) to enable advance remote/online booking of charging slots by EV owners. Such online information to EV owners shall also include information regarding location, types and numbers of chargers installed/available, service charges for EV charging and any other information specified by Central Nodal Agency (CNA) from time to time.

ix. Share charging station data via “EV Yatra” Portal, with the appropriate State Nodal Agency (SNA) and adhere to protocols as prescribed by Central Nodal Agency (CNA) i.e., Bureau of Energy Efficiency (BEE) for this purpose. The CNA and SNA shall have access to this database.

x. Public Charging Stations for EVs shall comply with the provisions of Central Electricity Authority (Technical Standards for Connectivity of the Distributed Generation Resources) Amendment Regulations, 2019 and Central Electricity Authority (Measures relating to Safety and Electric Supply) (Amendment) Regulations, 2023, as amended from time to time.

xi. Public Charging Stations shall have the feature of prepaid collection of service charges with the time of the day rates and discount for solar hour.

3.2. Electric Vehicle Supply Equipment (EVSE) shall be type tested in accordance with BIS standards specified in ANNEXURE II, by an agency/lab accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL) from time to time.

3.3. The above minimum infrastructure requirements do not apply to Private Charging Points meant for self-use of individual EV owners (non-commercial basis). However, compliance with safety & connectivity requirements specified in Clause 3.1 (x) and Clause 3.2 of this guidelines, shall be ensured.

3.4 Captive charging infrastructure for 100% internal use for a company's own/leased fleet for its own use will not be required to install chargers as per para 3.1 and to have Network Service Provider (NSP) tie ups. However, compliance with safety & connectivity requirements specified in Clause 3.1 (x) and Clause 3.2 of this guidelines, shall be ensured.

3.5 Public Charging Station may also be installed at RWAs, residential accommodation, Malls, Office Complexes, Restaurants, Hotels, etc. with a provision to allow charging of visitor's vehicles which are permitted to come in its premises.

**4. Residential Welfare Association (RWA) Community Charging requirements:**

Resident Welfare Associations in consultation with the Distribution licensee shall ensure the following:

i. Installation of appropriate mix of community EV chargers, if required.

ii. Display of boards/notices at each community EV charger mentioning the specifications of chargers along with charging etiquette, if required.

iii. Presence of trained personnel to safely operate the EV chargers, if required.

iv. Clear demarcation of EV charging /parking space ensuring easy access to residents and visitors.

v. Installation of suitable safety devices as specified by Distribution licensee and safety and connectivity regulations of CEA.

vi. Tracking the charger usage per user, automatic billing, and bill generation, if required.

**5. Public Charging Infrastructure (PCI) for long range EVs and/or heavy duty EVs:**

5.1 Fast Charging Stations (FCS) i.e. Public charging stations for long range E Vs and/ or heavy duty EVs (like trucks, buses etc.) will have the following:

i. At least two chargers of minimum 100 kW, compliant with Power Level 3 or Level 4 as provided under ANNEXURE Il, with single connector gun each.

ii. Appropriate Liquid Cooled Cables for high-speed charging facility as above [5.1 (i)], for onboard charging of Fluid Cooled Batteries (currently available in some long range EVs), if required.

5.2 Such Fast-Charging Stations (FCS) which are meant for 100% in house/captive utilization, for example buses of a company, would be free to decide the charging specifications as per requirement for its in- house company EVs, subject to compliance with safety & connectivity requirements specified in Clause 3.1 (x) and 3.2 of this guidelines.

**6. Location of Public Charging Stations:**

6.1 In case of Public Charging Stations, the following requirements are laid down with regard to density/distance between two charging points:

i. At least one Charging Station shall be available in a grid of 3 km x 3 km in the urban limits. Further, one Charging Station shall be set up at every 25 km on both sides of highways/roads.

ii. For long range EVs and/or heavy duty EVs like buses/trucks etc., there shall be at least one Fast Charging Station with Charging Infrastructure Specifications as per para 5.1 above at every 100 kms, one on each side of the highways/road located preferably within/alongside the Public Charging Stations as per BIS Standards for Power Level 3 and 4 as per ANNEXURE Il. Within cities, such charging facilities for heavy duty EVs may be located within Transport Nagars, bus depots.

6.2 Additional PCS/FCS can be installed even if there exists a PCS/FCS in the required grid or distance.

6.3 The above density/distance requirements shall be used by the concerned state/UT Governments/their Agencies for the twin purposes of arrangement of land in any manner for public charging stations as well as for priority in installation of distribution network including transformers/feeders etc. This shall be done in all cases including where no central/state subsidy is provided.

6.4 The appropriate Governments (Central/State/UTs) may also give priority to existing retail outlets (ROS) of Oil Marketing Companies (OMCs) for installation of Public EV Charging Stations (in compliance with safety norms) to meet the requirements as laid above. Further, within such ROs, Company Owned and Company Operated (COCO) ROs may be given higher preference.

**7. Database of Public EV Charging Stations:**

7.1. Bureau of Energy Efficiency (BEE) shall create and maintain a National online database of all the Public Charging Stations in consultation with State Nodal Agencies (SNAs). Bureau of Energy Efficiency shall create a Web- Portal/Software/Mobile Application for the database of Public Charging Stations throughout the country. A common format for information in this regard shall be prepared by Bureau of Energy Efficiency (BEE) and State Nodal Agencies (SNAs) shall be directed to keep the details as per such format and update the same on the Web-Portal/Software/MobiIe Application developed by BEE on weekly basis.

All public EV Charging Station Operators shall comply with the following:

i. Register public charging station data with Central Nodal Agency (CNA) through the State Nodal Agency (SNA) using Nationalized web portal, “EV Yatra”, as per the protocol specified by the CNA.

ii. Register on “EV Yatra” portal and regularly update the public charging station data, share the API/OCPI to enable availability of the real time status of chargers, session-wise daily energy sale data of each EV charger, month-wise metered energy data, Service charges (excluding GST), status of usage of renewable energy, etc.

**8. Tariff for supply of electricity to Public EV charging stations including community charging stations in RWAs, other residential accommodations:**

8.1 The tariff for supply of electricity to Public EV Charging Stations shall be a single part tariff and shall not exceed the "Average Cost of Supply" till 31 March 2025. The same tariff shall be applicable for Battery Charging Station (BCS) and Battery Swapping Stations (BSS).

i. The cost of supply by Distribution Licensee to a Public Charging Station will be 0.8 times of Average Cost of Supply (ACoS) during solar hours and 1.2 times ACoS during non-solar hours. Solar hours mean 9 AM to 4 PM time and non-solar hours mean the remaining period of the day.

8.2. The tariff applicable for domestic consumption shall be applicable for domestic charging.

8.3 Separate metering arrangement shall be made for PCS so that consumption may be recorded and billed as per applicable tariff for EV charging stations.

**9. Service charges at PCS:**

9.1 Charging of EVs is a service as already clarified by Ministry of Power vide letter No. 23/08/2018-R&R dated 13.04.2018.

9.2 As electricity is being provided at concessional rates and also considering the fact that subsidy is being provided by the Central/State Governments in many cases for setting up Public Charging Stations, the State Government shall fix the ceiling of Service Charges to be charged by such PCS/FCS.

9.3 A Committee under Central Electricity Authority (CEA) will periodically recommend to the State Government the ceiling limit of service charges to be levied under para 9.2 above. This Committee shall also recommend “time of the day rate” for service charges as well as the discount to be given for charging during solar hours.

9.4 The ceiling limit for the service charges for serving the capital expenditure recommended by the Committee formed under clause 9.3 are as under:

|  |  |
| --- | --- |
|  | **Cost for serving of capital investment excluding GST (Rs. / unit)** |
| **AC (Slow) Charging** |  |
| During Solar hours  (9.00 AM to 4.00 PM) | 2.5 |
| During non-solar hours  (For remaining part of the day) | 3.5 |
| **DC (Fast) Charging** |  |
| During Solar hours  (9.00 AM to 4.00 PM) | 10 |
| During non-solar hours  (For remaining part of the day) | 12 |

**\*The above ceiling limit shall be applicable up to 31.03.2026 (subject to annual review, if required)**

**10. Provision of land at promotional rates for Public Charging Stations (PCS):**

10.1 In initial years the penetration of Electric Vehicles on road is increasing gradually. Consequently, the utilization rate for the Public Charging Stations is very low. High cost of rent for land and chargers coupled with no definite visibility of revenues makes the overall investment proposition for setting up a public Charging Station challenging in present scenario.

10.2 Accordingly, it is provided that the land available with the Government/Public entities shall be provided for installation of Public Charging Stations to a Government/Public entity on a revenue sharing basis for installation of Public Charging Station at a fixed rate of ₹1/kWh (used for charging) to be paid to the Land-Owning Agency from such PCS business payable on quarterly basis. A model revenue sharing agreement is placed at **Annexure III**. Such revenue sharing agreement may be initially entered by parties for a period of 10 years. The Revenue Sharing Model may also be adopted by the public Land-owning agency for providing the land to a private entity for installation of Public Charging Stations on bidding basis with floor price of ₹(1/kWh).

10.3 Furthermore, based on available charging technologies and their evolution, type of vehicles, the types of chargers, indicating number Of charging points required for setting up adequate PCS within the local urban areas including the building premises of all building types and with the long term vision of implementing 'electric mobility' during the next 30 years, amendments have been made in the relevant sections (Chapter 10) of the Model Building Bye-laws, 2016 and the Urban and Regional Development Plans Formulation and Implementation Guidelines (URDPFI — 2014) by the Ministry of Housing and Urban Affairs (MoHUA). A copy of these amendments is enclosed at ANNEXURE IV. These may be implemented fully to provide adequate space for setting up charging stations.

10.4 RWAs, other residential accommodation or any other entity having common parking space for at least 20 vehicles, shall set aside minimum 10% of its total common parking capacity, if feasible, for setting up community EV Chargers in consultation with the Distribution licensee and install chargers in accordance with ANNEXURE II of these guidelines and in compliance with safety & connectivity requirements specified in Clause 3.1 (x) and Clause 3.2 of this guidelines, shall be ensured.

**11 Priority for Rollout of EV Public Charging Infrastructure:**

After extensive consultations with State Governments and different Department/Agencies of Central Government, phasing as follows are laid down as national priority for rollout of EV Public Charging Infrastructure:

11.1 **Phase I (1-3 Years):**

All Mega Cities with population of 4 million plus as per census 2011, all existing expressways connected to these Mega Cities & important Highways connected with each of these Mega Cities may be taken up for coverage. A list of these Mega Cities and existing connected expressways is attached at ANNEXURE I.

11.2 **Phase II (3-5 Years):**

Big cities like State Capitals, UT headquarters may also be covered for distributed and demonstrative effect. Further, important Highways connected with each of these Mega Cities may be taken up for coverage.

11.3 The above priorities for phasing of rollout may be kept in mind by all concerned, including, different agencies of Central/State Governments while framing of further policies/guidelines for Public Charging Infrastructure of EVs, including for declaring further incentives/subsidies for such infrastructure and for such other purposes.

**12. Implementation Mechanism for Rollout:**

12.1 Bureau of Energy Efficiency (BEE) shall be the Central Nodal Agency for rollout of EV Public Charging Infrastructure All relevant agencies including Central Electricity Authority (CEA) shall provide necessary support to Central Nodal Agency.

12.2 Every State Government shall nominate a Nodal Agency for that State for setting up charging infrastructure. The State DISCOM shall generally be the Nodal Agency for such purposes. However, State Government shall be free to select a Central/State Public Sector Undertaking (PSU) including Urban Local Bodies (ULBs), Urban/Area Development Authorities etc. as its Nodal Agency.

**13. Selection of Implementation Agency for Rollout:**

13.1 The Central Nodal Agency shall finalize the cities and expressways/highways to be finally taken up from the priority as given at para 10 above, in consultation with the respective State Governments.

13.2 An Implementation Agency may be selected by the respective State Nodal Agency and shall be entrusted with responsibility of installation, operation and maintenance of PCS/FCS for designated period as per parameters laid down in this policy and as entrusted by the concerned Nodal Agency. The Implementation Agency maybe an Aggregator as mutually decided between Central and State Nodal Agencies. However, they may also decide to choose different PCS providers for bundled packages or for individual locations as mutually decided. Further, whenever bundled packages are carved for bidding, such packages may include at least one identified expressway/highway or part thereof to prepare a cohesive regional package; the selected identified cities may be divided into one or more parts as necessary for such purposes.

**14**. These Guidelines and Standards shall supersede the Revised "Charging Infrastructure for Electric Vehicles — Guidelines and Standards" issued by Ministry of Power on 14th January 2022 and subsequent amendments dated 07.11.2022 & 27.04.2023.

**ANNEXURE I**

**I: List of 4 million plus cities (as per Census 2011)**

|  |  |
| --- | --- |
| **S. No.** | **Cities** |
|  | Mumbai |
|  | Delhi |
|  | Bangalore |
|  | Hyderabad |
|  | Ahmedabad |
|  | Chennai |
|  | Kolkata |
|  | Surat |
|  | Pune |

**II: List of Corridors**

|  |  |
| --- | --- |
| **S. No.** | **Corridors** |
|  | Mumbai-Pune Expressway |
|  | Ahmedabad-Vadodara Expressway |
|  | Delhi-Agra Yamuna Expressway |
|  | Delhi-Jaipur |
|  | Bengaluru-Mysore |
|  | Bengaluru-Chennai |
|  | Surat-Mumbai Expressway |
|  | Agra - Lucknow Expressway |
|  | Eastern Peripheral Expressway |
|  | Delhi-Agra NH2 Expressway |
|  | Hyderabad ORR expressway |
|  | 5 connected highways to each megacity |



**ANNEXURE II:**

**Indian Standards EV Charging notified by BIS of 01.11.2021**

* + 1. **Light EV AC Charge Point (for 2W, 3W and 4W – M1 Category)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Power Level 1** | **Charging Device** | **EV – EVSE Communication** | **Charge Point Plug / Socket** | **Vehicle Inlet / Connector** |
| Up to 7 kW | IS-17017-22-1 | Bluetooth Low Energy | IS-60309 | As per EV manufacturer, IS-17017-2-7, IS-17017-2-3 |

* + 1. **Light EV DC Charge Point (for 2W, 3W and 4W – M1 Category)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Power Level 1** | **Charging Device / Protocol** | **EV – EVSE Communication** | **Charge Point Plug / Socket** | **Vehicle Inlet / Connector** |
| Up to 12 kW | IS-17017-25 [CAN] | | IS-17017-2-6 | IS-17017-2-6 |

* + 1. **Light EV AC/DC Combo (for 2W, 3W)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Power Level 1** | **Charging Device / Protocol** | **EV – EVSE Communication** | **Charge Point Plug / Socket** | **Vehicle Inlet / Connector** |
| Up to 7 kW (AC) or up to 12 kW (DC) | IS-17017-26 | | IS-17017-2-7 | IS-17017-2-7 |

* + 1. **Parkbay AC Charge Point (for 3W and 4W – M1 Category)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Power Level 2** | **Charging Device / Protocol** | **EV – EVSE Communication** | | **Charge Point Plug / Socket** | **Vehicle Inlet / Connector** |
| Normal Power ~11kW/ 22 kW | IS-17017-1 | | IS-15118 [PLC] for Smart Charging | IS-17017-2-2 | IS-17017-2-2 |

* + 1. **Parkbay DC Charge Point (for 3W and 4W)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Power Level 2** | **Charging Device / Protocol** | **EV – EVSE Communication** | | **Infrastructure Socket** | **Vehicle Connector** |
| Normal Power ~11kW/ 22 kW | IS-17017-23 | | IS-17017-24[CAN]  IS-15118 [PLC] | IS-17017-22-2 | IS-17017-2-3 |

* + 1. **DC Charging Protocol (for 4W (M1) Category, Buses and Trucks))**

|  |  |  |  |
| --- | --- | --- | --- |
| **Power Level 3** | **Charging Device** | **EV – EVSE Communication** | **Vehicle Inlet / Connector** |
| DC 50 kW to 250 kW | IS-17017-23 | IS-17017-24 [CAN]  IS-15118 [PLC] | IS-17017-2-3 |

* + 1. **e-Bus and Trucks Charging Station**

|  |  |  |  |
| --- | --- | --- | --- |
| **Power Level 4** | **Charging Device / Protocol** | **EV – EVSE Communication** | **Connector** |
| **DC High Power (250 kW --> 500 kW)** |
| Dual Gun Charging Station | IS-17017-23-2 | IS-15118 [PLC] | IS-17017-2-3 |
| Automated Pantograph Charging Station | IS-17017-3-1 | IS-17017-3-2 |