No. 12/2/2020-EV-Part(5)-Part(1) (Comp No. 267590)
Government of India
Ministry of Power

Shram Shakti Bhawan, Rafi Marg,
New Delhi, the 27th April, 2023.

To,

1. The Secretaries of all the Ministries/Departments of Government of India
2. The Chief Secretaries of all the State/UTs

Subject: Amendment in the revised consolidated Guidelines & Standards regarding Charging Infrastructure for Electric Vehicles (EV) issued by the Ministry of Power on 14.01.2022 (amended on 07.11.2022) -reg

Sir/Madam,

I am directed to refer to Charging Infrastructure for Electric Vehicles- the revised consolidated Guidelines & Standards dated 14.01.2022 (copy enclosed) and to say that after deliberation, it has been decided to make the following additions in these guidelines:

(a) Under the heading" 7. Tariff for supply of electricity to EV Public Charging Stations", para 7.1A has been added as under:-

7.1.A. The cost of supply by DISCOM 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.

(b) Under the heading "8. Service charges at PCS", para 8.4 has been added as under:-

8.4. The ceiling limit for the service charges for serving the capital expenditure as recommended by the Committee formed in CEA shall be 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).

2. This issues with the approval of Hon'ble Minister of Power and NRE.

Yours sincerely,

27/04/23

(Govind Kumar)
Under Secretary to the Govt. of India

Copy to:
1. Prime Minister's Office/Cabinet Secretariat.
2. CEO, NITI Aayog
3. Pr Secretary (Energy) of all States and UTs/The Secretaries of the CERC/State Commissions/JERCs.
4. Chairperson. CEA
5. DG. BEE
6. CE(R&R), Ministry of Power

27/04/23

(Govind Kumar)
Under Secretary to the Govt. of India

No. 12/2/2020-EV-Part(5) (Comp No. 259314)
Government of India
Ministry of Power
Shram Shakti Bhawan, Rafi Marg,

New Delhi, the 07th November, 2022

To,
1. The Secretaries of all the Ministries/Departments of Government of India
2. The Chief Secretaries of all the State/UTs

Subject: Amendment in Charging Infrastructure for Electric Vehicles (EV)- the revised consolidated Guidelines & Standards issued by Ministry of Power on 14.01.2022-reg

Sir/Madam,

The undersigned is directed to refer to Charging Infrastructure for Electric Vehicles- the revised consolidated Guidelines & Standards dated 14.01.2022 (copy enclosed) and to say that after careful consideration, it has been decided to make the following additions in these guidelines:

(a) Under the heading **" 3. Public Charging Infrastructure (PCI) Requirements"**, para 3.1 (xi) has been added as under:

xi. *The public charging stations shall have the feature of prepaid collection of service charges with the time of the day rates and discount for solar hours.*

(b) Under the heading **"8. Service charges at PCS"**, para 8.3 has been added as under:

8.3 *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 8.2 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.*

This issues with the approval of Hon'ble Minister of Power and NRE.

(Anoop Singh Bisht)
Deputy Secretary to the Govt. of India

Copy to,
1. Prime Minister's Office/cabinet Secretariat.
2. CEO, NITI Aayog
3. The Secretaries of the CERC/State Commissions/JERCs.
4. Chairperson, CEA
5. DG, BEE
6. CE (R&R), Ministry of Power

(Anoop Singh Bisht)
Deputy Secretary to the Govt. of India

सत्यमेव जयते

No.12/2/2018-EV (Comp No. 244347)
Government of India
Ministry of Power

Shram Shakti Bhawan, Rafi Marg,
New Delhi, the 14th January, 2022

To,

1. The Secretaries of all the Ministries/ Departments of Government of India
2. The Chief Secretaries of the States/UTs

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 14.12.2018 which were subsequently revised on 01.10.2019 and an Amendment thereof was issued on 08.06.2020. After careful consideration of progress made and suggestions 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

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

Definitions:

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

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

iv. **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 the 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.

v. **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.

Guidelines:

1. Owners may charge their Electric Vehicles at their residence/offices using their existing electricity connections.

2. Any individual/entity is free to set up public charging stations provided that, such stations meet the technical, safety as well as performance standards and protocols laid down below as well as norms/ standards/ specifications laid down by Ministry of Power, Bureau of Energy Efficiency (BEE) and Central Electricity Authority (CEA) from time to time.

2.1 Public Charging Station (PCS), may apply for electricity connection and the Distribution Company licensee shall release connection for EV Public charging station (PCS) in accordance with the timelines stated in section 4 sub. (11) of the Electricity (Rights of Consumers) Rules 2020. Accordingly, timelines for providing the connectivity for the PCS are as under:

i. Post submission of application complete in all respect, the connection for a Public Charging Station shall be provided within time period not exceeding seven days in metro cities, fifteen days in other municipal areas and thirty days in rural areas, within which the distribution licensees shall provide new connection or modify an existing connection. Appropriate Commission may specify a time limit for providing such connection to a Public Charging Station which may be less than the aforementioned specified time limit.

ii. Provided 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 or within such period as may be specified by the Appropriate Commission.

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
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 from the table given in ANNEXURE II & ANNEXURE III in one or more electric kiosk/boards.
vii. Charging Station for(two/three wheelers) e- vehicles shall be free to install any charger other than those specified above subject to compliance of technical & safety standards as laid down by CEA.
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 should also include information regarding location, types and numbers of chargers installed/available, service charges for EV charging, etc.
ix. Share charging station data 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, 2019.

3.2 Electric Vehicle Supply Equipment (EVSE) should have been type tested 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).

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.

3.5 Public Charging Station may also be installed by Housing societies, 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. Public Charging Infrastructure (PCI) for long rangeEVs and/or heavy duty EVs:

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

i. At least two chargers of minimum 100 kW (200- 750 V or higher) each of different specification (CCS /CHAdeMO Chargers for above capacity or BIS

Standards for eBus Charging Station (Level-4: 250 to 500 kW) as provided under ANNEXURE III (6)) with single connector gun each.

ii. Appropriate Liquid Cooled Cables for high speed charging facility as above [4.1(i)], for onboard charging of Fluid Cooled Batteries (currently available in some long range EVs), if required.

4.2 Such Fast Charging Stations (FCS) which are meant for 100% in house/captive utilisation, for example buses of a company, would be free to decide the charging specifications as per requirement for its in- house company EVs.

5. Location of Public Charging Stations:

5.1 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 shallbe available in a grid of 3 Km X 3 Km. 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 4.1 above at every 100 Kms, one on each side of the highways/road located preferably within/alongside the Public Charging Stations as per ANNEXURE II or BIS Standards for Power Level 1 to 5 as per ANNEXURE III. Within cities, such charging facilities for heavy duty EVs may be located within Transport Nagars, bus depots.

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

5.3 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.

5.4 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.

6. Database of Public EV Charging Stations:

6.1. 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/Mobile Application developed by BEE on weekly basis.

7. Tariff for supply of electricity to EV Public Charging Stations:

7.1 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 31st March, 2025. The same tariff shall be applicable for Battery Charging Station (BCS).

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

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

7.4 DISCOMs may leverage on funding from the Revamped Distribution Sector Scheme (RDSS) under 'Part A – Distribution Infrastructure' for the general upstream network augmentation necessitated due to the upcoming charging infrastructure in various areas. The cost of such works carried out by the DISCOMs with the financial assistance from Government of India under the Revamped Scheme shall not be charged from the consumers for Public Charging Stations for EVs.

8. Service charges at PCS:

8.1 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.

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

9.1 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 ofrent 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.

9.2 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 –IV**.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.

9.3 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 V**. These may be implemented fully to provide adequate space for setting up charging stations.

10. 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:

10.1 **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**.

10.2 **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.

10.3 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.

11. Implementation Mechanism for Rollout:

11.1 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.

11.2 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.

12. Selection of Implementation Agency for Rollout:

12.1 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.

12.2 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.

13. These Guidelines and Standards shall supersede the Revised "Charging Infrastructure for Electric Vehicles – Guidelines and Standards" issued by Ministry of Power on 1st October, 2019 and subsequent amendments dated 08.06.2020.

This issues with the approval of Hon'ble Minister of Power, New & Renewable Energy.

(S. Majumdar)
Under Secretary to the Govt. of India
Tel: 23356938
Email:suman.m@nic.in

Copy to:

1. **Prime Minister's Office/Cabinet Secretariat**
2. **CEO, NITI Aayog**
3. **The Secretaries of the CERC/State Commissions/JERCs**
4. **Chairperson, CEA**
5. **DG, BEE**

(S. Majumdar)
Under Secretary to the Govt. of India
Tel: 23356938
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Annexure I

I. List of 4 million plus cities (as per census 2011)

1	Mumbai
2	Delhi
3	Bangalore
4	Hyderabad
5	Ahmedabad
6	Chennai
7	Kolkata
8	Surat
9	Pune

II. List of corridors

1	Mumbai-Pune Expressway
2	Ahmedabad-Vadodara Expressway
3	Delhi-Agra Yamuna Expressway
4	Delhi-Jaipur
5	Bengaluru-Mysore
6	Bengaluru-Chennai
7	Surat-Mumbai Expressway
8	Agra - Lucknow Expressway
9	Eastern Peripheral Expressway
10	Delhi-Agra NH2 Expressway
11	Hyderabad ORR expressway
12	5 connected highways to each megacity

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ANNEXURE II

Electric Vehicle Chargers as provided under Para 3.1 (vi) of the Guidelines

Charger Type	S. No.	Charger Connectors*	Rated OutputVoltage(V)	No. of No. of Connector guns (CG)	Charging vehicle type(W=wheeler)
Fast	1	Combined Charging System(CCS) (min 50 kW)	200-750or higher	1 CG	4W
	2	CHArgedeMOve (CHAdeMO) (min 50 kW)	200-500or higher	1 CG	4W
	3	Type-2 AC (min 22 kW)	380- 415	1 CG	4W, 3W, 2W
Slow/ Moderate	4	Bharat DC-001 (15 kW)	48	1 CG	4W, 3W, 2W
	5.	Bharat DC-001 (15 kW)	72 or higher	1 CG	4W
	6.	Bharat AC-001 (10 kW)	230	3 CG of 3.3 kW each	4W, 3W, 2W

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ANNEXURE III

Indian Standards EV Charging notified by BIS of 01.11.2021

1. *Light EV AC Charge Point*

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

2. *Light EV DC Charge Point*

Power Level 1	Charging Device	EV-EVSE Communication	Charge Point Plug/ Socket	Vehicle Inlet/ Connector
Up to 7 kW	IS-17017-25 [CAN]		Combined Socket under development	IS-17017-2-6

3. *Parkbay AC Charge Point*

Power Level-2	Device/ Protocol	EV-EVSE Communications	Infrastructure Socket	Vehicle Connector
Normal Power ~11kW/ 22 kW	IS-17017-1	IS-15118 [PLC] for Smart Charging	IS-17017-2-2	IS-17017-2-2

4. *Parkbay DC Charge Point*

Power Level-2	Device/ Protocol	EV-EVSE Communications	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

5. *DC Charging Protocol*

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

6. *eBus Charging Station (Level-4: 250 to 500 kW)*

Power Level 4 DC High Power (250 kW --> 500 kW)	Charging Device	EV-EVSE Communication	Connector
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

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Annexure IV

Model Revenue Sharing Agreement between Land-Owning Agency (LOA) and Charge Point Operator (CPO) for deployment of Public EV Charging Stations

This agreement is entered into this ….. day of …… <YYYY> at ……., India.

BETWEEN

M/s. <Insert Name of Land Owning Agency>which expression shall unless repugnant to the context or meaning thereof, include successors and assigns of the **FIRST PART**.

AND

M/s. <Name of CPO>a Company registered under the 1956 Act, having its registered Office at <CPO registered address> (hereinafter referred to as "<CPO>" which expression shall mean and include its successor(s), administrator(s) and assigns) of the **SECOND PART.**

<LAND OWNING AGENCY> and <CPO> are hereinafter individually referred to as the "**Party**"and collectively as the "**Parties**".

WHEREAS:

A. <Details of <LAND OWNING AGENCY> (Name & Address)>.

B. <Details of CPO (Name & Address)>,

C. <**CPO**> intends to establish, setup and operate Charging Point(s) (*defined herein below*) for charging of electric vehicles at identified sites operated by <<LAND OWNING AGENCY> Name> and <LAND OWNING AGENCY> intends to grant permission to <**CPO NAME**> to set up Public EV Charging Stations at selected sites in …… (hereinafter referred as "**Public Charging Station Locations/ SOL**") and manage the same at <LAND OWNING AGENCY> sites on mutually agreed terms and conditions outlined in this Agreement.

D. In consideration of the above, this Agreement sets out the intent of the Parties in relation to the said proposal.

NOW THEREFORE, in consideration of the mutual covenants, terms, conditions and understandings set forth in this Agreement, the Parties hereby agree as follows:

1. Definitions

The following capitalized terms wherever used in this AGREEMENT shall have the meanings given hereunder:

"**Public EV Charging Stations(s)**" means a device or station that supplies power to charge the batteries of an electric vehicle;

"**CPO**" mean Charger Point Operator.

"**AC**" shall mean Alternating Current Charging;

"**DC**" shall mean Direct Current Charging;

"**GST**" shall mean Goods and Services Tax;

"**Installation Work**" means the construction and installation of the Public Charging stations and upstream supply, (if required) System and the operation and maintenance thereof, all performed by or for <**CPO NAME**> at the identified site.

"**KW**" shall mean rating of public EV Charger;

"**Operating Cost**" shall include direct electricity energy charge payment through payment gateway service provider appointed by <**CPO NAME**>, salary of supervisor or equivalent level person designated for managing the backend system, salary for semi-skilled/ skilled workers appointed by <CPO NAME> for maintenance of chargers, annual maintenance cost of chargers, telecommunication cost, IT System cost and customer support;

"**Projects/ Charging Locations** shall have a meaning ascribed in above Recital C hereof;

"**SOL**" means sites owned and/or operated by <LAND OWNING AGENCY>.

"**Term**" shall mean 10 years with Annual Maintenance Cost (AMC) starting from the earlier of: (a) six months from the Effective Date, or (b) the date of installation of the last Charging Point at the identified SOL in terms of this Agreement.

Effective Date: DD/MM/YYYY

"**System**" includes the Charging Points, assemblies, converters, switches, wiring devices and wiring, and all other material/civil works comprising the Installation Work.

2. Proposal

a. M/s CPO Name has proposed to establish and operate up to ..... no. of Public Electric vehicle Charging Point(s) at SOL owned and/or operated by Land owning agency. For Setting up of such Public EV charging stations by M/s CPO, Land owning agency would provide the required space of about ..... Sq. Ft within the premises of the identified locations subject to feasibility in order to develop the required infrastructure for charging of electric vehicles.

b. The Parties are keen to develop partnership for the Projects/ Public EV Charging Locations at <Location Address> and may discuss further expansion at other locations, at the sole discretion of M/s <CPO Name>.
c. The Parties shall jointly select the identified locations based on availability of space and feasibility of operation of the Public Charging Stations without affecting regular operation of the identified locations.
d. M/s <CPO NAME> agrees to establish, setup and operate ..... nos. of charging points at each public charging station. The Charging Station shall have chargers in accordance with Guidelines notified by the Ministry of Power. The charging infrastructure so installed shall comply with the government/ministry of power guidelines and regulations for performance, safety & quality from time to time.
e. M/s <CPO NAME> agrees to invest in setting up and operating the public charging stations including separate power connection, transformer and meter, if required, at its own cost, and shall upgrade and refurbish the Public Charging Stations, in line with the technology advancements and business needs, from time to time. The cost of electricity including surcharge, duty, contingency for power purchase adjustment charges, etc. and all operating and maintenance expenses related to Charging Points shall be borne by M/s <CPO NAME>.
f. The Parties agree that the Public Charging Stations may be operated through a cloud-based solution technology developed and owned by M/s <CPO NAME> and manpower deployed at the identified locations by M/s <CPO name>
g. The Parties agree that all applicable statutory approvals/ permissions from the respective authorities for the Public Charging Stations shall be procured and obtained by M/s <CPO NAME>. <LAND OWNING AGENCY> shall provide all assistance to M/s <CPO NAME> to enable M/s <CPO NAME> to obtain the consents, clearances and permits, and the governmental approvals in a timely manner in connection with the Project. Further, <Land owning agency> agrees to assist in obtaining separate power connection or enhancing the power supply at each location, if required by M/s <CPO NAME> in connection with the Project.
h. M/s <CPO NAME> shall arrange deployment of qualified and suitable manpower and required necessary tools, logistics, spares & consumables during installation, commissioning and O&M of Public EV charging stations at SOL. <LAND OWNING AGENCY> hereby grants to M/s <CPO NAME> a right, co-terminus with the term to ingress and egress the location and access to electrical panels and conduits to interconnect or disconnect the System with the SOL electrical wiring.
i. Safety is of paramount importance and M/s <CPO NAME> shall take all safety precautions in connection with the setting up and operation of the Public Charging Stations to ensure safety to the user. <LAND OWNING AGENCY> agrees to ensure to provide safe and secure environment to install and operate the System. In the event of any damage to the land-owning agency facilities, property due to any fault in the M/s <CPO NAME>'s equipment, M/s <CPO NAME> will be liable to make good the losses to SOL for the same. <LAND OWNING AGENCY> shall be responsible for the loss incurred by M/s <CPO NAME> limited to Public Charging Stations and established infrastructure due to gross negligence or willful default on the part of <LAND OWNING AGENCY> or their agents/ employees.

j. <LAND OWNING AGENCY> agrees and confirms that the Public Charging Locations (including the unfettered access to the identified space for the respective <LAND OWNING AGENCY>) shall be free from encumbrances or hindrances, and if during the installation and operation period, the same is identified by M/s <CPO NAME>, then <LAND OWNING AGENCY> shall remove the encumbrance or hindrance or provide suitable space for the System within the same location at the cost and expense of <LAND OWNING AGENCY> with immediate effect.

k. The Parties agree to jointly undertake the planning, design, setting-up and implementing the Projects/ Public Charging Stations at the respective <LAND OWNING AGENCY>. The Parties, *inter-alia*, agree to ensure; (a) Planning and designing the charging infrastructure in relation to the Projects; (b) Investment in the Projects by M/s <CPO NAME>; (c) Operating and maintaining the Projects by <CPO Name>; and (d) Managing the Projects using cloud-based solution system software.

l. <LAND OWNING AGENCY> shall not directly or indirectly cause, create, incur, assume, or suffer to exist any lien on or with respect to the System or any interest therein. The Project and the System shall remain the property of M/s <CPO NAME> and shall not attach to or be deemed a part of, or fixture to the <LAND OWNING AGENCY>. Neither <LAND OWNING AGENCY> nor its lessees or tenants or any other Person shall have any right, benefit, or interest in the Project.

m. <LAND OWNING AGENCY> shall provide sufficient space at the provided location for the temporary storage and staging of tools, materials, equipment and facilities reasonably necessary during the Installation Work, or Project removal, and access for rigging and material handling.

n. Wherever separate power connection to Public EV Charging Stations is not mandated/ not provided, <LAND OWNING AGENCY> shall provide required power to M/s <CPO NAME> for the maintenance and operation of its System at the rate <LAND OWNING AGENCY> is paying to the distribution utility at the relevant SOL and M/s <CPO NAME> shall reimburse the same to <LAND OWNING AGENCY> on actuals. In case, requires additional transformer or any expenses for providing the power, the same shall be incurred by M/s <CPO NAME>. In the event of the Govt. announcing a policy for subsidized power charges for EV charging stations, then M/s <CPO NAME> shall make necessary arrangements including separate meter and approvals as required at their own cost to avail the lower tariff.

o. Any other activities considered necessary for setting up Public Charging Stations for electric vehicles at provided locations or other suitable locations on mutually agreed covenants/commercials arrangements, which are not specifically set out herein, but which may be identified at a later date, shall be included by mutual discussion and consent of Parties.

p. The number of identified locations considered for Public EV Charging Stations would not be a binding number and could be amended seeing the potential, increase in business volume, less vehicle turnaround etc., if any.

q. The number of Public EV Charging Stations in a cluster would be tentative and could increase / decrease subject to joint agreement between <LAND OWNING AGENCY> and M/s. <CPO NAME>. The addition or deletion of EV Charging Stations could be subsequently conveyed to each other in writing.

r. Branding: <LAND OWNING AGENCY> and M/s. <CPO NAME> shall do joint branding of the venture so as to create positive long-term association, market penetration, to create synergies based on unique strengths of each parties/brand, gain market share and increase revenue and also to boost the reputation of the parties in this project.

3. Payment of License Fee, Revenue Share and Billing Cycle raising of invoices, release of payments, security deposit etc.

(a) M/s. <**CPO NAME**> to pay <LAND OWNING AGENCY> Rs. xxx/kWh which shall be ₹ 1.0 / kWh in case of such CPO being a Government/Public Entity or at discovered price through bidding with floor price of ₹ 1 / kWh in case CPO being a private entity of billed units(kWh) from charging business starting from 1st year, of billed units from charging business to <LAND OWNING AGENCY> within .... days after end of Quarter.

(b) For the purpose of revenue sharing, M/s <**CPO NAME**> shall furnish the complete details of accounting of the billed units to <LAND OWNING AGENCY> for transparency and shall be governed by confidentiality under this Agreement.

M/s <CPO NAME> shall promptly pay the bill on monthly basis within 10 days of demand for electrical energy consumed for charging electric vehicles at the said locations as per actual minimum charges /as per actual. The charges should be paid to the <LAND OWNING AGENCY> till such time a separate meter is obtained in the name of <CPO NAME>. After obtaining a separate meter in the name of <CPO NAME>, the electricity charges shall be directly paid by <CPO NAME> based on the electrical energy consumed for charging EVs at each SOL. Dispute resolution mechanism of electricity bills, if any, to be taken up with relevant Discom with support from land owning agency.

4. Payment of Taxes

M/s <**CPO NAME**> shall pay all the statutory levies and taxes imposed by the Government or any other authorities present or future on the operation of EV charging stations. Further, M/s <**CPO NAME**> shall also pay to <LAND OWNING AGENCY> increase in the taxes and/or any levies on the land area used specifically for Public EV charging station, by any local authority including Municipal corporation/municipality/gram panchayat or any other statutory authority or by the government except property tax. <LAND OWNING AGENCY> shall pay property tax.

5. Insurance

M/s <**CPO NAME**> shall at all times and from time to time at its own cost and expense take out adequate and proper insurance during the continuance of this agreement from a well reputed insurance company against all risks including third party risk to persons and properties, fire and explosion risk and riot risks etc. covering operation of the Public Charging stations installed at SOL.

6. Standard Indemnification

Each party (indemnifying party) agrees to indemnify, defend and hold the other party (indemnified party) harmless from and against:

a. Any third party claim (including intellectual property infringement claim), liability, obligation, loss, damage, deficiency, assessment, judgement, cost or expense (including, without limitation to costs and expenses incurred in preparing and defending against or prosecuting any third party litigation, claim, action, suit proceeding or demand) of any kind or character, arising out of or in any manner solely attributable to any failure of the indemnifying Party to perform its obligations described hereunder, gross negligence or wilful misconduct in the fulfilment of its obligations hereunder or for infringing the intellectual property rights of any third party.

b. Any claim, liability, obligation, loss, damage, deficiency, assessment, judgement, cost or expense (including, without limitation to costs and expenses incurred in preparing and defending against or prosecuting any third party litigation, claim, action, suit proceeding or demand) of any kind or character arising from claims or sanctions or penalties imposed by any regulatory authority for failure by a Party or any of its respective officers, directors, employees, servants, sub-contractors or agents to comply with any applicable laws, rules and regulations.

c. Any claim, liability, obligation, loss, damage, deficiency, assessment, judgement, cost or expense (including, without limitation to costs and expenses incurred in preparing and defending against or prosecuting any third party litigation, claim, action, suit proceeding or demand) of any kind or character with respect to any damage to or loss of property of a third party arising out of acts or omissions by a Party or any of its respective officers, directors, employees, servants, sub-contractors, or agents in the performance of its obligations under this agreement.

7. Term & Termination

7.1 This Agreement shall come into force from the Effective Date of this agreement and remain in force during the 'Term' as defined under Definitions above. The agreement shall be further extended for a period as decided and agreed mutually in writing by the Parties. The Agreement may be terminated / exited by the Parties prior to the scheduled validity period due to any one of the following reasons:

a. Any misrepresentation, breach or violation of the terms of this Agreement by either of the Parties;
b. If <LAND OWNING AGENCY> fails to provide the Charging Locations for locating the Charging Points at the identified SOL or M/s <**CPO NAME**> failing to install the charging Points at the identified SOL within a reasonable time as agreed mutually; and
c. With mutual consent of both the parties without assigning any reason.

7.2 Upon such early termination, M/s <CPO NAME> shall have the right to dismantle all the System, equipment and Charging Points and take control in its custody, the Charging Points, System and equipment. <LAND OWNING AGENCY> shall have no right to claim and recover any of the Charging Points and the System from any

Charging Locations at the identified locations and the equipment/ infrastructure establishment by M/s <CPO NAME>.

8. Representations and Warranties

Each Party represents and warrants to the other Parties that:

(a) it has power to execute, deliver and perform its obligations under the Agreement and all necessary corporate and other actions have been taken to authorise such execution, delivery and performance;

(b) it has all requisite power and authority, and does not require the consent of any third party to enter into this AGREEMENT and grant the rights provided herein;

(c) it is in compliance with all applicable laws and regulations, as may be applicable to it.

(d) the execution, delivery and performance of its obligations under the Agreement does not and will not: (i) contravene any applicable law, or any judgment or decree of any court having jurisdiction over it; or (ii) conflict with or result in any breach or default under any agreement, instrument, regulation, license or authorisation binding upon it or any of its assets.

(e) violate the memorandum and articles of association, by-laws or other applicable organisational documents thereof; and

(f) there is no litigation pending or, to the best of such Party's knowledge, threatened to which it is a party that presently affects or which would have a material adverse effect on the financial condition or prospects or business of such Party in the fulfilment of its obligations under this AGREEMENT.

9. Confidentiality

9.1. During the subsistence of this Agreement and after termination or expiration of this Agreement for any reason whatsoever, the Party receiving any information and/or document which are marked as Confidential (hereinafter referred to as the "Confidential Information") shall:

a. Keep the confidential Information confidential;

b. Do not disclose the Confidential Information to any other person without the prior written consent of the Party disclosing such information (hereinafter referred to as the "**Disclosing Party**") except to its employees, agents, shareholders, investors, partners and advisors on a strictly need-to-know basis, and upon such person executing a non-disclosure undertaking in respect of the Confidential Information in a format reasonably satisfactory to the Disclosing Party;

c. Do not use the Confidential Information for any purpose other than the performance of its obligations under this Agreement; Without the prior written consent of the Disclosing Party, not to make a public announcement or any other disclosure of the Confidential Information except as required by any legal stipulation applicable to it. In case of such disclosure required by legal stipulation, a Party which is required to make such disclosure shall, as soon as practicable after it is made aware of the requirement to make such disclosure, inform the Disclosing Party of the need to disclose such Confidential Information, the content thereof and the legal stipulation which requires disclosure of such Confidential Information.

9.2. The obligations contained in the relevant clauses above shall not apply to any Confidential Information which:

a. is at the date of this Agreement or at any time after the date of this Agreement comes into the public domain other than through breach of this Agreement by such Party; can be shown by the Party receiving the information to the reasonable satisfaction of the Disclosing Party that the same was known to such Party prior to the disclosure;

b. subsequently comes lawfully into the possession of the Party receiving such information from a person other than the Disclosing Party; or

c. such information which any Party is required to disclose by law, by a court of competent jurisdiction or by another appropriate regulatory body, provided that the Party required to disclose shall use reasonable endeavors to consult with the Disclosing Party and take into consideration is reasonable requests in relation to such disclosure.

10. Notice

All communication, demand and notices required to be sent under this Agreement shall be sent or delivered to the receiving Party at the address set forth herein, or at such other address as the Parties may from time to time designate in writing:

M/s <CPO NAME>:
Address : -
…….
…….
……..
……..

Fax No.:
Email id :-

LOA:
Address:
Email id:-

Any Notice, demand or other communication shall be sent by registered post / hand delivery.

11. Intellectual Property Rights

Intellectual Property Rights owned by each respective Party shall remain the property of such Party and nothing in this AGREEMENT shall be taken to represent an assignment, license or grant of other rights in or under such Intellectual Property Rights to the other Party. All right, title and interest to all Intellectual Property of each Party as of the Effective Date of this AGREEMENT, including that which is or may become protectable by patent, copyright, trademark, trade secret or similar law, shall remain exclusively with that Party.

12. Governing Law and Jurisdiction

This AGREEMENT shall be governed by and construed in accordance with the laws of India. Courts at <City, State>, India shall have exclusive jurisdiction in respect of matters arising out of or in relation to this AGREEMENT.

13. Dispute Settlement

The Parties hereby agree that they shall work together to resolve any disputes that may arise under, in relation to or in connection with this Agreement (referred to in this clause as a "**Dispute**"). In the event such Dispute is not resolved amicably within 60 (sixty) days of the date of receipt of notice issued by disputing party with respect to same by the non- disputing party then in such case all Dispute shall be settled by binding arbitration pursuant to the Arbitration and Conciliation Act, 1996, as amended ("**Arbitration Act**"), in following manner:

If any dispute or difference of any kind whatsoever shall arise between the Parties in connection with or arising out of this agreement, such dispute or difference shall be resolved through arbitration as per the procedure mentioned herein below:

a. The dispute or difference shall be referred to a sole arbitrator.
b. The arbitration shall be through High Court Mediation and Arbitration Centre at High Court of Judicature at <city name> for the state of <state name>.
c. The rules of the above mentioned Institutional Arbitration Forum shall be applicable to the arbitral proceedings.
d. The Indian Arbitration & Conciliation Act 1996 and Arbitration and Conciliation (amendment) Act 2015 or any statutory modification or re-enactment thereof and the rules made there under for the time being in force shall apply to the arbitration proceedings under the clause.
e. The seat of arbitration shall be at <city name>, <state name>, India.
f. The proceedings shall be conducted in English language.
g. The cost of the proceedings shall be equally borne by the parties, unless otherwise directed by the sole arbitrator.
h. The following shall not be referred to arbitration:

   Disputes having financial claims less than Rs. 5 Lakhs.

Notwithstanding anything contained herein above (except 'h') upon arising of dispute the parties may agree to refer the same to arbitration of mutually acceptable sole arbitrator.

14. Limitation of Liability

Notwithstanding anything in this AGREEMENT to the contrary and to the extent permitted by applicable law, in no event shall either Party, its officers, directors, or employees be liable for any form of incidental, consequential, indirect, special or punitive damages of any kind, or for loss of revenue or profits, loss of business, loss of information or data, or other financial loss, whether such damages arise in contract, tort or otherwise, irrespective of fault, negligence or strict liability or whether such Party has been advised in advance of the possibility of such damages. A Party will not be in breach of the AGREEMENT or be liable to the other Parties if it fails to perform or delays the performance of an obligation as a result of an event beyond its reasonable control, including, legislation, regulation, order or other act of any Government or Governmental agency.

15. Waiver

Failure of a Party to require performance of any provision of this Agreement shall not affect such Party's right to full performance thereof at any time thereafter, and any waiver by a Party of a breach of any provision hereof shall not constitute a waiver of a similar breach in the future or of any other breach. No waiver shall be effective unless in writing and duly executed by the concerned Party.

16. Assignment

Except as provided in this Agreement, none of the Parties shall be entitled to assign their rights and obligations under the Agreement to a third party without the prior written consent of the other Party, except to its affiliate companies

17. Amendment

No modification or amendment to this Agreement and no waiver of any of the terms or conditions hereof shall be valid or binding unless made in writing and duly executed by the Parties.

18. Severability

If any provision of this Agreement is held to be invalid, illegal or unenforceable, such provision will be struck from the Agreement and the remaining provisions of this Agreement shall remain in full force and effect. Further, the Parties shall endeavour to replace such provision with a valid, legally enforceable provision that reflects the original intent of the Parties.

19. Entire Agreement

This Agreement supersedes all prior discussions and agreements (whether oral or written, including all correspondence) if any, between the Parties with respect to the

subject matter of this Agreement, and this Agreement contains the sole and entire understanding and agreement between the Parties hereto with respect to the subject matter contained herein.

20. Force Majeure

Neither Party shall be held responsible for non-fulfillment of their respective obligations under this AGREEMENT due to the exigency of one or more of the force majeure events which are beyond the reasonable control of the Party concerned such as but not limited to acts of God, wars, floods, earthquakes, lawful strikes not confined to the premises of the Party, lockouts beyond the control of the Party claiming force majeure, epidemics, riots, civil commotions etc. provided on the occurrence and cessation of any such event , the Party affected thereby shall give a notice in writing to the other Party within one (1) month of such occurrence or cessation. If the force majeure conditions continue beyond six (6) months, the Parties shall jointly decide about the future course of action.

21. Survival

Those Clauses that by its nature should survive expiration or termination of this Agreement shall remain in effect after the expiration or termination of this Agreement. It specifically clarified that the provisions of Clauses 9 (*Representations and Warranties*), Clause 10 (*Confidentiality*), Clause 12 (*Intellectual Property Rights*), Clause 13 (*Governing Law and Jurisdiction*) and Clause 14 (*Dispute Settlement*) shall survive expiration or termination of this Agreement.

22. Counterparts

This Agreement may be signed in counterparts, each of which shall be deemed to be an original, and all of which together shall constitute the same instrument.

23. Miscellaneous

a. It is agreed and understood by the Parties that this Agreement is a legally binding contract and under no circumstances shall stand terminated, except in terms of Clause 3 of this Agreement.

b. This Agreement is on a principal-to-principal basis between the Parties hereto. Nothing contained in this Agreement shall be construed or deemed to create any association, partnership or joint venture or employer-employee relationship or principal-agent relationship in any manner whatsoever between the Parties.

c. The Parties shall not use each other's name and/or trademark/logo or publicize or release any information about this Agreement or its contents or market, publish, advertise in any manner any information without prior written consent of the other Party.

24. Rules of Interpretation

a. Irrelevance of Gender and Plurality. The definitions in this Agreement shall apply equally to both the singular and plural forms of the terms defined. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms.

b. Internal References. All references herein to Clauses and Annexure shall be deemed to be references to Clauses of and Annexure to, this Agreement unless the context shall otherwise require. All Annexure attached hereto shall be deemed incorporated herein as if set forth in full herein. The terms "clause(s)" and "sub-clause(s)" shall be used herein interchangeably. The words "hereof," "herein" and "hereunder" and words of similar import when used in this Agreement shall refer to this Agreement as a whole and not to any particular provision of this Agreement. The words "include", "includes", and "including" shall be deemed to be followed by the words "without limitation".

c. Default Rules. Unless expressly contradicted or otherwise qualified, (i) all references to a Person also refer to that Person's successors and permitted assigns, including permitted transferees, and (ii) all references to and definitions of any agreement, instrument or statute herein or in any agreement or instrument referred to herein mean such agreement, instrument or statute, including the Articles, as from time to time may be amended, modified, supplemented or restated, including (in the case of agreements or instruments) by waiver or consent and (in the case of statutes) by succession of comparable successor statutes and references to all attachments thereto and instruments incorporated therein.

d. Drafting. The Parties have participated jointly in the negotiation and drafting of this Agreement; accordingly, in the event an ambiguity or a question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties, and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any provisions of this Agreement.

e. Clause Heading: The clause heading contained in this Agreement are for the convenience of the Parties and shall not affect the meaning or interpretation of this Agreement.

25. GENERAL PROVISIONS

a. If any provision of this AGREEMENT is held to be invalid or unenforceable to any extent, the remaining provisions of this AGREEMENT shall not be affected thereby and each remaining provision of this AGREEMENT shall be valid and enforceable to the fullest extent permitted by law. Any invalid or unenforceable provision of this AGREEMENT shall be replaced with a provision which is valid and enforceable and reflects, to the maximum extent possible, the original intent of the unenforceable provision.

b. Each Party will be solely responsible for its own acts and omissions (and the acts and omissions of its employees and other agents) and neither Party will have the authority nor will purport to act for, or legally binding, the other Party in any transactions with a third party except as agreed in writing by the Parties.

c. The release of any information and of all public announcements (other than when such disclosure is required under any applicable law) related to such projects by a Party shall be subject to the prior written approval of the other Party, unless required under stock exchange regulations/SEBI.

d. This Agreement shall not be amended, modified or supplemented without prior written consent of the other Party.

In Witness Whereof The Parties Hereto Have Signed This MoU In Duplicate On The _____Day, _____ Month and _____Year Herein Above Written In The Presence Of:

For <LAND OWNING AGENCY>

For M/S <CPO NAME>

Signed & Sealed	**Signed & Sealed**
WITNESS:	**WITNESS:**
1.	**1.**
2.	**2.**

ANNEXURE V

Amendments in Model Building Bye-Laws (MBBL - 2016) for Electric Vehicle Charging Infrastructure

Town and Country Planning Organization
Ministry of Housing and Urban Affairs
Government of India

February, 2019

Preamble

To address the quantum of emissions from the "Transport" sector powered by fossil fuels, "electric vehicle" is considered a viable option for short distance / inter-city trips with adequate "charging stations" available. It is necessary to make provisions for establishing Public Charging Stations (PCS) in the local areas including urban CBDs for vehicle re-fuelling / recharging.

Hence, amendments are required for addition of norms for charging Infrastructure provisions in Development Control Regulations and enabling provisions for installing "*Charging Infrastructure*" in the building premises and core urban areas of the cities.

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 are made in the relevant sections (Chapter 10) of the Model Building Bye-laws, 2016.

In Chapter 10: Sustainability and Green Provisions
After section 10.3 "Various Guidelines for Green Rating Systems".
Provision of "Electric Vehicle Charging Infrastructure" to be added at clause 10.4

10.4 Electric Vehicle Charging Infrastructure (EVCI):
Based on the occupancy pattern and the total parking provisions in the premises of the various building types, charging infrastructures shall be provided only for EVs, which is currently assumed to be 20% of all 'vehicle holding capacity'/'parking capacity' at the premise.

Additionally, the building premise will have to have an additional power load, equivalent to the power required for all charging points (in a PCS) to be operated simultaneously, with a safety factor of 1.25 (refer *Explanatory Note- Annexure III*).

10.4.1 Residential Buildings (plotted house)

Table 1: Charging Infrastructure requirements for individual house/ self-use

Building Type	Plotted House
Ownership of Station	Private (Owner)
Connection and Metering	Domestic meter
Type of Charger	Slow chargers as per owner's specific requirements
Modes of Charging	AC (Single charging gun)
Norms of Provisions	Min. 1 SC and additional provisions as per the owner individual.

Note:

- *The charging infrastructure installed by a home owner shall be construed as a Private CI meant for self-use (non-commercial basis) as per the note at clause no 4 of the explanatory note at Annexure III.*

10.4.2 All other buildings (including Group Housing)

Any PCS installed at Public/Private areas or building premises of any category that caters to commercial mode of charging of EVs shall be deemed as a Public Charging Station and shall have to install the minimum requirements of chargers as specified in the Guidelines dated 14.12.2018 of Ministry of Power (refer Annexure IV for MoP Guidelines. However, in order to provide sufficient charging points for the EV share in all vehicles (refer clause 3 of the *Explanatory Note- Annexure III*), ratio of types of chargers is recommended in the table below -

Table 2: Charging Infrastructure requirements for PCS (commercial use)

Building Type	Any building type			
Ownership of Station	Service provider			
Connection and Metering	Commercial Metering and Payment			
Types of Charger	as per min. requirements specified in MoP Guidelines (refer Annexure IV)			
Additional chargers	PCS service providers shall install additional number of kiosk/chargers beyond the minimum specified requirements to meet the ratio of charging points as prescribed below (by the type of vehicles).			
Norms of Provisions for charging points	**4Ws** 1 SC - each 3 EVs 1 FC - each 10EVs	**3Ws** 1 SC - each 2 EVs	**2Ws** 1 SC - each 2 EVs	**PV (Buses)** 1 FC - each 10 EVs

Note:

- *Charging bays shall be planned currently at 20% capacity of all vehicles including 2Ws and PVs(cars)*
- *Open metering and on-spot payment options to be available for all users.*
- *Provision of FCB CS and BS shall not be mandatory, and will be at the discretion of the service provider.*

---------- x x x ----------

Abbreviations used:

2Ws	-	Two wheelers
3Ws	-	Three wheelers
4Ws	-	Four wheelers / PV(cars)
PVs	-	Passenger Vehicles
EV	-	Electric Vehicle
SC	-	Slow Charger / Slow Charging (AC)
FC	-	Fast Charger / Fast Charging (DC and a few AC ones)
PCS	-	Public Charging Stations
MBBL	-	Model Building Bye-Laws, 2016
FCB CS	-	Fluid Cooled Battery Charging Station
BS	-	Battery Swap

Annexure III
(MBBL 2016)

Explanatory Note
on
Electric Vehicle Charging Infrastructure
(For MBBL, 2016)

Town and Country Planning Organization
Ministry of Housing and Urban Affairs
Government of India

February, 2019

Abbreviations:

UNFCC	-	United Nations Framework Convention on Climate Change
IPCC	-	Intergovernmental Panel on Climate Change
GHG	-	Green House Gases
2Ws	-	Two wheelers
3Ws	-	Three wheelers
4Ws	-	Four wheelers / PV(cars)
PVs	-	Passenger Vehicles
CVs	-	Commercial Vehicles
EV	-	Electric Vehicle
EVSE	-	Electric Vehicle Supply Equipment
SC	-	Slow Charger / Slow Charging (AC)
FC	-	Fast Charger / Fast Charging (DC and a few AC ones)
BS	-	Battery Swap
PCS	-	Public Charging Stations
PCI	-	Public Charging Infrastructure
Private CI	-	Private Charging Infrastructure
MBBL	-	Model Building Bye-Laws, 2016
URDPFI	-	Urban and Regional Development Plan Formulation and Implementation Guidelines, 2014
NSP	-	Network Service Provider (information network)
SP	-	Service Provider

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1. Rationale for EVCI establishment

Rapid urbanization coupled with adoption of mechanized transportation modes has resulted in high emissions of Green House Gases that goes on to impact Global warming. Unless, the global surface temperature rise is restricted to no more than 2°C compared with pre-industrial levels, the IPCC has warned that the world will see irreversible catastrophic climate change.

India being a signatory to the UNFCCC, has pledged for efforts to assess the Greenhouse Gas Emissions (GHG) of anthropogenic origin and removal by sinks. India's per capita emissions are still considered low at 1.9 tonnes (2013), but its total emissions are next only to China and the US and is likely to overtake those of the EU by 2019.

While comparing the Indian cities for their emission scores, Delhi is on top as the biggest emitter at over 38 38 million tonnes of carbon dioxide equivalent overall emissions, followed by Greater Mumbai at 22.7 million tonnes and Chennai at 22.1 million tonnes, Kolkata at 14.8million tonnes, Bangalore at 19.8million tonnes, Hyderabad at 13.7 million tonnes and Ahmedabad at 9million tonnes were the other cities whose emissions for the year were calculated sector wise.

As per the statistics of Transport Department (GNCTD), total number of vehicles in Delhi is more than the combined total vehicles in Mumbai, Chennai and Kolkata. Delhi has 85 private cars per 1000 population against the national average of 8 cars per 1000 population. In terms of CO2 emissions due to motor vehicles, Delhi emits about 12.4 million tonnes while the city of Bengaluru emits about 8.6 million tonnes.[1]

Therefore, addressing the quantum of emissions from the "Transport" and "Domestic" sector emerges to be the high priority subjects under the overarching umbrella of *"Climate change mitigation"* as committed to the UNFCC.

Encouraging "Electric Vehicles" as a viable option for phased transportation in terms of short and long distance trips with appropriate "Charging Infrastructure" is therefore, the pre-condition for this paradigm shift / phased migration to sustainable transportation.

For this changes are required in Infrastructure provisions (at Regional and City levels) and in Development Control Regulations (in terms of provisions therein) to include the formulations of norms and standards for "*Charging Infrastructure*" in the said Mater Plan Regulations and State Bye-Laws for adoption across the country suiting local conditions.

2. EV Charging Technology

2.1 Electric Vehicle Supply Equipment (EVSE):

An EVSE is a wall mounted box that supplies electric energy for recharging of electric vehicle batteries. Also EVSEs have a safety lock-out feature that does not allow current to flow from the device until the plug is physically inserted into the car.

EVSEs can be customized with added features like:

- Authentication
- Integrated payment gateways
- Software for remote monitoring.

As electric vehicle charging technology continues to advance, several standards and guidelines have become widely accepted across the industry. This section gives a brief overview of charging infrastructure technology, standards, and terminology.

2.2 Different types of EVSE:

Charging speeds- Charging power, which determines the time required to charge a vehicle, can vary by orders of magnitude across charge points, as shown in Table 1. A small household outlet may charge as slowly as 1.2 kW, while the most advanced rapid charging stations can charge at up to 350 kW. Charging infrastructure is broadly broken into three categories based on speed: Level 1, Level 2, and direct current (DC) fast charging (sometimes referred to as Level 3).

(Source: "Emerging Best Practices for Electric Vehicle Charging Infrastructure", Oct' 2017)

Private Charging

Charging batteries of privately owned cars through domestic charging points. Billing is mostly part of home/domestic metering.

AC "Slow" Charging:

The home private chargers are generally used with 230V/15A single phase plug which can deliver a maximum of up to about 2.5KW of power. The EVSE supplies AC current to the vehicle's onboard charger which in turn converts the AC power to DC allowing the battery to be charged.

Public Charging

For charging outside the home premises, electric power needs to be billed and payment needs to be collected. The power drawn by these chargers may need to be managed from time to time.

DC "Fast" Charging:

DC current is sent to the electric car's battery directly via the charge port. FC chargers (usually 50 KW or more) can supply 100 or more kilometers of range per hour of charging. The fast chargers would generally be used as a top-up, rather than fully charging vehicles. These are important for cab companies and corporate users who have a fleet of electric cars.

3. Options for EV Charging

There is an urgent need to offer flexible charging infrastructure for different vehicle segments to drive adoption of EVs. Charging infrastructure is the most crucial enabler in the entire EV value chain. The exploration of different charging models according to the local conditions shall enable faster deployment of electric vehicles in the country.

EV share in all vehicles - It has been broadly projected that by the current rate of adoption of EVs, about 15% of all vehicles in the country would be EVs by the year 2020. Therefore, while assuming percentage composition of all proposed capacities in Public facilities of vehicle holding capacity, the Metropolitan and 'Tier I' cities will be assumed to have a higher percentage share of EVs, say ***20% for now***. The charging infrastructure prescriptions in all urban development guidelines shall, therefore, be in consonance with the said percentage.

Power Load sanction to premises – While adding these Charging Infrastructures to the proposed set of building types of the Indian cities, ***enhanced Power Load*** *shall have to be had for each such building type by the Power DISCOMs*, commensurate to the total additional power requirement of simultaneous operation of all the prescribed charging points in the premise. With further advancement of charging technologies and the enhanced capacity of chargers to draw more power, it is advised that the *load capacity assigned to each premise should be kept with a safety factor of 1.25* with a long-term vision of 30 years.

Table 1: EVs charging "modes" and 'availability'

Vehicle type	Slow Charging	Fast Charging	Public CI
2 Wheelers	Y	N	Yes/Limited
3 Wheelers	Y	N	Yes/Limited
PVs (Cars)	Y	Y	Yes
PVs (Buses)	N	Y	Yes

Table 2: Charging options for EV types (by ownership)

Vehicle type	Private CI	Public CS	Predominant place of charging
2 Wheelers	SC/BS	SC	Point of residence / Work
3 Wheelers	SC/BS	SC/BS	Residence / Parking stations
PVs (Cars)	SC/BS	FC	Residence / Point of work / other public places
PVs (Buses)	-	FC/BS	Bus Terminals/Depots

Note:

- *The option of Battery Swapping (BS) for privately owned 2Ws and PV(Cars) is limited to Private CI.*
- *For 3 Ws the BS is proposed to be made available in PCS, for faster recharge experience only*
- *For PV (Buses), Captive Fast charging infrastructure for 100% internal use for fleets may be adopted by privately owned Depots/Garages.*

Based on the above stated EV charging technologies available and the current trend of evolving technologies of faster charging experience, the Ministry of Power has issued ***Guidelines and Standards for setting up Charging Infrastructure for Electric Vehicles*** *[Ministry of Power (MoP) Guidelines dated 14.12.2018]* for charging infrastructure to be installed at every Public Charging Station (PCS).'Connectivity regulations and Safety norms' shall be defined by respective authorities such as Central Electric Authority/MoP for grid access to such PCS / any other charging station/infrastructure.

4. Charger Specifications and PCS Infrastructure

Any installed PCS shall have one or more electric kiosk/boards with installation of all charger models as prescribed in the ***Guidelines and Standards*** *notified by* ***Ministry of Power, dated 14 December 2018*** *for* ***"Charging Infrastructure for EVs"*** (at *Annexure II*), with other necessary arrangements as deemed necessary.

Public Charging Station service providers shall be free to create charging hubs and to install additional number of kiosk/chargers in addition to the minimum chargers prescribed vide the MoP Guidelines, including options for installation of additional chargers, if required.

Note:

1. *Minimum infrastructure requirements do not apply to Private Charging Points meant for self-use of individual EV owners (non-commercial basis).*
2. *Captive charging infrastructure for 100% internal use for a company's own fleet will not be required to install all type of chargers and to have NSP tie ups.*

5. Location of PCS / FCB CS in local area / building precincts

In accordance with the Guidelines issued by the *Ministry of Power (MoP)*, following minimum standards with regard to density of / distance between PCS in local level facilities in building premise / urban precincts shall be followed as per provisions in the Model BBL-2016

1. **At the Local levels (within the urban area):**

- At least 1Public Charging Station is to be available within a grid of 3Km x 3Km.

2. **At the Building premise levels (for various building types)**

- Private charging infrastructure (non-commercial use) for individuals.
- For all commercial modes of charging EVs, at least 1PCS, as per minimum specifications laid under MoP guidelines.
- Standalone Battery Swapping Stations may be added with the PCs.

Annexure IV
(MBBL 2016)

No.12/2/2018-EV
Government of India
Ministry of Power
Shram Shakti Bhawan, Rafi Marg.

New Delhi, the 14th December, 2018

To,

1. The Secretaries of all the Ministries/Departments of Government of India.
2. The Chief Secretaries of the States/UTs.

Sub: Charging Infrastructure for Electric Vehicles – Guidelines and Standards -reg.

Sir/Madam,

Government of India have undertaken multiple initiatives to promote manufacturing and adoption of electric vehicles in India. With support of the Government, electric vehicles have started penetrating in the Indian market. However, availability of adequate Charging Infrastructure is one of the key requirements for accelerated adoption of electric vehicles in India. It is proposed to encourage this by laying down an enabling framework.

Objectives

- To enable faster adoption of electric vehicles in India by ensuring safe, reliable, accessible and affordable Charging Infrastructure and eco-system
- To promote affordable tariff chargeable from EV owners and Charging Station Operators/Owners
- To generate employment/income opportunities for small entrepreneurs
- To proactively support creation of EV Charging Infrastructure in the initial phase and eventually create market for EV Charging business
- To encourage preparedness of Electrical Distribution System to adopt EV Charging Infrastructure.

In light of the above, it has been decided as follows:

1. Private charging at residences / offices shall be permitted. DISCOMs may facilitate the same.
2. Setting up of Public Charging Stations (PCS) shall be a de-licensed activity and any individual/entity is free to set up public charging stations, provided that, such stations meet the technical as well as performance standards and protocols laid down below as well as any further norms/standards/specifications laid down by Ministry of Power and Central Electricity Authority from time to time.

2.1 Any person seeking to set up a Public Charging Station may apply for connectivity and he shall be provided connectivity on priority by the Distribution Company licensee to supply power in the area.

2.2 Any Charging Station/ Chain of Charging Stations may also obtain electricity from any generation company through open access.

3. Public Charging Infrastructure (PCI)- Minimum Requirements:

3.1 Every Public Charging Station (PCS) shall have the following minimum infrastructure:

i. An exclusive transformer with all related substation equipment including safety appliance.

ii. 33/11 KV line/cables with associated equipment including as needed for line termination/metering etc.

iii. Appropriate civil works.

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

v. Current international standards that are prevalent and used by most vehicle manufacturers internationally are CCS and CHadeMO. Hence, Public Charging Stations shall have, one or more electric kiosk/boards with installation of all the charger models as follows:

Charger Type	Charger Connectors*	Rated Voltage (V)	No. of Charging Points/No. of Connector guns (CG)
Fast	CCS (min 50 kW)	200-1000	1/1 CG
	CHAdeMO (min 50 kW)	200-1000	1/1 CG
	Type-2 AC (min 22 kW)	380-480	1/1 CG
Slow/Moderate	Bharat DC-001 (15 kW)	72-200	1/1 CG
	Bharat AC-001 (10 kW)	230	3/3 CG of 3.3 kW each
*In addition, any other fast/slow/moderate charger as per approved BIS standards whenever notified.			

vi. The kiosk/board may have options for installation of additional chargers if required.

vii. The Public Charging Station Providers are free to create Charging Hubs and to install additional number of Kiosk/Chargers in addition to the minimum number of chargers prescribed above.

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 should also include information regarding location, types and numbers of chargers installed/availableetc.

ix. Share charging station data with appropriate DISCOM and to maintain appropriate protocols as prescribed by such DISCOM for this purpose. CEA shall have access to this database.

x. Appropriate public amenities.

xi. Where, in addition to the above, fast charging facility is also planned to be provided at the PCS by the PCI provider, the following additional infrastructure must be provided:
   a. Appropriate Liquid Cooled cables if High Speed Charging Facility for onboard charging of Fluid Cooled Batteries (FCBs) is also planned.
   b. Appropriate Climate Control Equipment for Fast Charging of Batteries to be used for swapping (i.e. not onboard)

3.2 Every Public Charging Station (PCS) shall be operational only after inspection and clearance as communicated by a suitable clearance certificate, by the concerned electrical inspectors/technical personnel designated specifically by the respective DISCOM for this purpose. DISCOMs may also empanel one or more third party authorized technical agencies for this purpose.

3.3 Electric Vehicle Service Equipment (EVSE) shall be type tested by an appropriate reputed authority.

3.4 The above minimum infrastructure requirements do not apply to Private Charging Points meant for self-use of individual EV owners (non-commercial basis).

3.5 Captive charging infrastructure for 100% internal use for a company's own/leased fleet for its own use will not be required to install all type of chargers and to have NSP tie ups.

3.6 Public Charging Station can also have the option to add Standalone battery swapping facilities in addition to the above mandatory facilities, provided space/other conditions permit.

4. Public charging Infrastructure (PCI) for long distance EVs and/or heavy duty EVs:

4.1 Public charging stations for long distance EVs and/or heavy duty EVs (like trucks, busses etc.) shall have the following minimum requirements:

i. At least two chargers of minimum 100 kW (with 200-1000 V) each of different specification (CCS & Chademo) and with single connector gun each in addition to the minimum charging infrastructure requirements as mandated for Public Charging Stations in para 3.

ii. Appropriate Liquid Cooled Cables for high speed charging facility for onboard charging of Fluid Cooled Batteries (currently available in some long range EVs).

iii. In addition to 4.1 (i) and (ii) above, the Fast Charging Stations (FCS) for Long Distance EVs and/or Heavy Duty EVs may also have the option of swapping facilities for batteries for meeting the charging requirements as per para 3 and para 4.1(i)&(ii) above. It is notable that Fluid Cooled Batteries (FCBs) are generally necessary for Fast Charging / Long Distance use of EVs and/or for Heavy Duty Vehicles like buses/trucks etc. FCBs will have higher charging rate and longer life.

4.2 Such Fast Charging Stations (FCS)which are meant only for 100% in house/captive utilisation, for example buses of a company, would be free to decide the charging specifications as per requirement for its in- house company EVs.

5. Location of Public Charging Stations:

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

i. At least one Charging Station should be available in a grid of 3 Km X 3 Km. Further, one Charging Station be set up at every 25 Km on both sides of highways/roads.

ii. For long range EVs (like long range SUVs) and heavy duty EVs like buses/trucks etc., there should be at least one Fast Charging Station with Charging Infrastructure Specifications as per para4.1 at every 100 Kms, one on each side of the highways/road located preferably within/alongside the stations laid in para3 above. Within cities, such charging facilities for heavy duty EVs shall be located within Transport Nagars, bus depots. Moreover, swapping facilities are also not mandatory within cities for Buses/trucks.

5.2 Additional public charging stations shall be set up in any area only after meeting the above requirements.

5.3 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.

5.4 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 including 'firewalls' etc.) to meet the requirements as laid above. Further, within such ROs, Company Owned and Company Operated (COCO) ROs may be given higher preference.

5.5 Any deviation from above norms shall be admissible only after specific approval of State Nodal Agency in consultation with the Central Nodal Agency.

6. Database of Public EV Charging Stations:

Central Electricity Authority (CEA) shall create and maintain a national online database of all the Public Charging Stations through DISCOMs. Appropriate protocols shall be notified by DISCOMs for this purpose which shall be mandatorily complied by the PCS/BCS. This database shall have restricted access as finalised between CEA and Ministry of Power.

7. Tariff for supply of electricity to EV Public Charging Stations:

7.1 The tariff for supply of electricity to EV Public Charging Station shall be determined by the appropriate commission, provided however that the tariff shall not be more than the average cost of supply plus 15 (fifteen) percent.

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

8. Service charges at PCS/BCS:

8.1 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.

8.2 The State Nodal Agency shall fix the ceiling of the Service Charges to be charged by the Public Charging Stations.

9. 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:

9.1 **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 shall be taken up for coverage. A list of these Mega Cities and existing connected expressways is attached at Annexure 1.

9.2 **Phase II (3-5 Years):**
Big cities like State Capitals, UT headquarters shall be covered for distributed and demonstrative effect. Further, important Highways connected with each of these Mega Cities shall be taken up for coverage.

9.3 The above priorities for phasing of rollout shall 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.

10. Implementation Mechanism for Rollout:

10.1 Ministry of Power shall designate a Central Nodal Agency for the rollout. All relevant agencies including Central electricity Authority (CEA) shall provide necessary support to this nodal agency.

10.2 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.

11. Selection of Implementation Agency for Rollout:

11.1 The Central Nodal Agency shall finalize the cities and expressways/highways to be finally taken up from the above phasing, in consultation with the respective State Governments.

11.2 An Implementation Agency shall be selected by the respective State Nodal Agency and shall be entrusted with responsibility of installation, operation and maintenance of PCS/FCS/BCS/BSF for designated period as per parameters laid down in this document and as entrusted by the concerned Nodal Agency. The Implementation Agency can be an Aggregator as mutually decided between Central and State Nodal Agencies. However, they can also decide to choose different PCS/FCS providers for bundled packages or for individual locations as mutually decided. Further, whenever bundled packages are carved for bidding, such packages shall necessarily include atleast 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.

11.3 Where Implementing Agency is selected by bidding, all bidding shall be conducted by the State Nodal Agency.

11.4 There shall be an upper cap on the Service Charges declared by the State Nodal Agency as per para 8.2 above. Subsidy, if admissible from Central/State governments, shall be suitably factored in such calculations of Upper Cap/Bid Variable.

This issues with the approval of Hon'ble Minister of State (IC) for Power and New & Renewable Energy.

(Anoop Singh Bisht)
Under Secretary to the Govt. of India
Tel:23766236
Email:anoopsingh.bisht@nic.in

Copy to:

1. Prime Ministers Office/Cabinet Secretariat.
2. CEO, NITI Aayog
3. The Secretaries of the CERC/State Commissions/JERCs.

(Anoop Singh Bisht)
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Copy for information to:

1. PS to MoS (IC) for Power and NRE
2. PPS to Secretary (Power)
3. PPS to Addl Secretary (SNS)
4. PPS to Joint Secretary (Thermal), MoP
5. PPS to Director (UMPP), MoP

(Anoop Singh Bisht)
Under Secretary to the Govt. of India
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Annexure 1

I. List of 4 million plus cities (as per census 2011)

1	Mumbai
2	Delhi
3	Bangalore
4	Hyderabad
5	Ahmedabad
6	Chennai
7	Kolkata
8	Surat
9	Pune

II. List of corridors

1	Mumbai-Pune Expressway
2	Ahmedabad-Vadodara Expressway
3	Delhi-Agra Yamuna Expressway
4	Delhi-Jaipur
5	Bengaluru-Mysore
6	Bengaluru-Chennai
7	Surat-Mumbai Expressway
8	Agra - Lucknow Expressway
9	Eastern Peripheral Expressway
10	Delhi-Agra NH2 Expressway
11	Hyderabad ORR expressway
12	5 connected highways to each megacity

Amendments in

Urban and Regional Development Plans Formulation and Implementation Guidelines

(URDPFI - 2014)

for

Electric Vehicle Charging Infrastructure

Town and Country Planning Organisation
Ministry of Housing and Urban Affairs
Government of India

February, 2019

Preamble

To encourage "Electric Vehicles" as a viable option for long distance trips / inter regional trips with adequate "charging stations", it is necessary to make provisions for establishing Public Charging Stations (PCS) in the regional facilities for re-fuelling/recharging of vehicles.

Hence, amendments are required for addition of norms for charging Infrastructure provisions in Development Control Regulations and provide "*Charging Infrastructure*" in the City Mater Plans / Regional Plans.

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 as regional facilities and with the long term vision of implementing 'electric mobility' during the next 30 years, amendments are made **Under Chapter 8: Infrastructure Planning, at section 8.4.7 "Distribution Services",** Table 8.57 – "Norms for Distribution Services" of URDPFI Guidelines, 2014 (Volume I) as detailed in clause 3 of this document.

2. Existing provision in Urban and Regional Development Plans Formulation and Implementation Guidelines (URDPFI, 2014)

Chapter 8: Infrastructure Planning (Volume I of URDPFI Guidelines 2014)
At section 8.4.7 "Distribution Services",
Table 8.57 – "Norms for Distribution Services"

Sr. No.	Category	Population served per unit	Land Area Requirement		Other Control
			Type of facility	Area requirement	
1.	**Petrol/Diesel filling and Service Centre**				
	Permitted in: Central District Sub central district District centres Community Centres (Only Filling Station) Residential & industrial Use Zone in Urban Areas Along National and State Highways Villages identified as growth centres Freight Complex Proposed major roads Police/security forces services (for captive use only) (MPD, pg 125)		i. Only filling station ii. Filling cum service station iii. Filling cum service station cum workshop iv. Filling station only for two and three wheelers	30m x 17m 36m x 30m 45 x 36m 18m x 15m	• Shall not be located on road having Right of Way less than 30m. • Special cases in old city areas may be considered based on the approval by statutory authorities. • Shall be approved by the explosive/ fire department.
2.	**Compressed Natural Gas (CNG)/filling centre**				
	Permitted in: All use zones (except in Regional Parks and Developed District Parks) Along National and State Highways Villages identified as growth centres Freight Complex Proposed major roads		CNG mother station (Including building component - control room/office/dispensing room/store, pantry and W.C.)	1080 sqm (36m x 30m)	• Shall not be located on road having Right of Way less than 30m. • Shall be approved by the explosive/fire department.
3.	**LPG Godown/GasGodown**	40,000 to 50,000	Capacity = 500 cylinders or 8000 kg of LPG Area (inclusive of guard room)	520 sqm (26m x 20m)	• The major concern for its storage and distribution is the location, which shall be away from the residential areas and shall have open spaces all around as per the Explosive Rules.
4.	**Milk Distribution**	5000	Areas inclusive of service area	150sqm	---

3. **Amendments to URDPFI Guidelines 2014:- Necessary provisions for EV Charging have been incorporated at Sr. No. 1 and Sr. No. 3 of table 8.57. The revised table will be as under:**

Table 8.57 – "Norms for Distribution Services":

Sr. No.	Category	Population served per unit	Land Area requirement		Other controls
			Type of Facility	Area required	
1.	Petrol/Diesel filling/**EV charging*** and service centre				
	Permitted in: Central District Sub central district District centres Community Centres (Only Filling Station) Residential & industrial Use Zone in Urban Areas Along National and State Highways Villages identified as growth centres Freight Complex Proposed major roads Police/security forces services (for captive use only) (MPD, pg 125)		i. Only filling station ii. Filling cum service station iii. Filling cum service station cum workshop iv. Filling station only for two and three wheelers **v. Public Charging Station (PCS) (minimum requirement as per MoP guidelines)** **vi. FCB CS** **1 CCS** **1 CHAdeMO** **vii. Battery Swapping Station (optional)**	30m x 17m 36m x 30m 45 x 36m 18m x 15m **Min. 13.5m x 5.5m** **Min. 15m x 7m** **Earmarking area for "battery fitting"**	Shall not be located on road having Right of Way less than 30m. Special cases in old city areas may be considered based on the approval by statutory authorities. Shall be approved by the explosive/ fire department. **Charging station and all equipment layout with respect to nearest dispensing unit (DU)/fuel tank to be as per PESO rules.** **Equipped with CCE and LCC, as required in addition to requirements of PCS.** **Optional addition to PCS by the SP**
2	Compressed Natural Gas (CNG)/filling centre				
	Permitted in: All use zones (except in Regional Parks and Developed District Parks) Along National and State Highways Villages identified as growth centres Freight Complex Proposed major roads		CNG mother station (Including building component - control room/office/dispensing room/store, pantry and W.C.)	1080 sqm (36m x 30m)	Shall not be located on road having Right of Way less than 30m. Shall be approved by the explosive/ fire department

Sr. No.	Category	Population served per unit	Land Area requirement		Other controls
			Type of Facility	Area required	
3.	Standalone Public Charging Stations (PCS)				
A	Public Charging Stations	Every 25 Kms, both sides along the highways/roads	PCS with charger ratio (minimum requirements of PCS, as per MoP) - 1 FC for every 10 EVs 1 SC for every 3 EVs	Additional area as per total parking capacity at the Restaurants /Eateries.	Equipped with CCE and LCC, as may be required for fast charging.
B	Fast Charging facility / FCB CS (*for Long Distance & Heavy Duty EVs*)	Every 100 Kms, both sides along the highways/roads	At least 2 chargers 1 CCC type 1 CHAdeMO type (min 100KW each)	Min. 15m x 7m	May be coupled with the PCS at item A above, with CCE and LCC.
C	Battery Swapping Station	Optional provisions as per MoP Guidelines.	Standalone	Min 5.5m x 2.75m	May be coupled with PCS at item A or FCB CS at item B above.
			Provided along with FBC charging Stations		
4	LPG Go down/ Gas Go down	40,000 to 50,000	Capacity = 500 cylinders or 8000 kg of LPG Area (inclusive of guard room)	520 sqm (26m x 20m)	The major concern for its storage and distribution is the location, which shall be away from the residential areas and shall have open spaces all around as per the Explosive Rules
5	Milk Distribution	5000	Areas inclusive of service area	150 sqm	---

*** A detailed explanation is given at *Appendix 'P' – "Explanatory Note on EVCI"* and *Appendix 'Q'* – "Guidelines issued by Ministry of Power on EVCI, dated 14.12.2018" (in Volume IIA & IIB).**

Notes:

- *Super Kerosene Oil/Light Diesel Oil storage for industrial uses shall be given separately.*
- *Large petrol/diesel storage centers to be located outside city limits.*
- *To be organized by a service provider for connection and metering, available 24x7for all users.*
- *Provision of FCB CS & BS shall not be mandatory, and will be at the discretion of the service provider.*
- *Size recommended for FCB CS is subject to variance as per technical specifications of the SP.*
- *Fuel filling stations (including COCO outlets) shall conform to specifications and safety norms as per the amendment in Petroleum Rules or, PESO Act and obtain clearances as maybe necessary from the 'Competent Authority ', for adding PCS to Retail outlets/ Fuel filling stations.*

For Standalone PCS:

- *The ratio of provision of charging points (FC/SC) with respect to total parking capacity will be considered for only 20% (i.e. 20% of total parking capacity will be considered EVs & ratio will be applied on them)*
- *Land allocation is preferably to be contiguous/in close proximity to commercial land of the Mid-way Restaurant.*
- *"General Conditions of Siting" of Standalone PCS shall follow clause 4.1-4.4 of IRC:12 (latest revision) except for the distance between stations which shall be as per the Guidelines issued by MoP, dated Dec, 2018.*

Abbreviations used:

2Ws	- Two wheelers
3Ws	- Three wheelers
4Ws	- Four wheelers / PV(cars)
PVs	- Passenger Vehicles
CVs	- Commercial Vehicles
EV	- Electric Vehicle
SC	- Slow Charger / Slow Charging (AC)
FC	- Fast Charger / Fast Charging (DC and a few AC ones)
BS	- Battery Swap
PCS	- Public Charging Stations
URDPFI	- Urban and Regional Development Plans Formulation and Implementation Guidelines, 2014
CCS	- Combined Charging System
CHAdeMO	- A DC Fast charging standard
FCB CS	- Fluid Cooled Battery Charging Station
CCE	- Climate Control Equipment
LCC	- Liquid Cooled Cables
NSP	- Network Service Provider (information network)
SP	- Service Provider

---------- x x x ----------

Appendix P
(URDPI Guidelines Vol IIA and II B)

Explanatory Note

on

Electric Vehicle Charging Infrastructure

(For URDPFI Guidelines 2014)

Town and Country Planning Organization
Ministry of Housing and Urban Affairs
Government of India

February, 2019

Abbreviations:

UNFCC	-	United Nations Framework Convention on Climate Change
IPCC	-	Intergovernmental Panel on Climate Change
GHG	-	Green House Gases
2Ws	-	Two wheelers
3Ws	-	Three wheelers
4Ws	-	Four wheelers / PV(cars)
PVs	-	Passenger Vehicles
CVs	-	Commercial Vehicles
EV	-	Electric Vehicle
EVSE	-	Electric Vehicle Supply Equipment
SC	-	Slow Charger / Slow Charging (AC)
FC	-	Fast Charger / Fast Charging (DC and a few AC ones)
BS	-	Battery Swap
PCS	-	Public Charging Stations
PCI	-	Public Charging Infrastructure
Private CI	-	Private Charging Infrastructure
MBBL	-	Model Building Bye-Laws, 2016
URDPFI	-	Urban and Regional Development Plans Formulation and Implementation Guidelines, 2014
NSP	-	Network Service Provider (information network)
SP	-	Service Provider

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4. Charging Specifications and PCS Infrastructure----------7

1. Rationale for EVCI establishment

Rapid urbanization coupled with adoption of mechanized transportation modes has resulted in high emissions of Green House Gases that goes on to impact Global warming. Unless, the global surface temperature rise is restricted to no more than 2°C compared with pre-industrial levels, the IPCC has warned that the world will see irreversible catastrophic climate change.

India being a signatory to the UNFCCC, has pledged for efforts to assess the Greenhouse Gas Emissions (GHG) of anthropogenic origin and removal by sinks. India's per capita emissions are still considered low at 1.9 tonnes (2013), but its total emissions are next only to China and the US and is likely to overtake those of the EU by 2019.

While comparing the Indian cities for their emission scores, Delhi is on top as the biggest emitter at over 38 38 million tonnes of carbon dioxide equivalent overall emissions, followed by Greater Mumbai at 22.7 million tonnes and Chennai at 22.1 million tonnes, Kolkata at 14.8million tonnes, Bangalore at 19.8million tonnes, Hyderabad at 13.7 million tonnes and Ahmedabad at 9million tonnes were the other cities whose emissions for the year were calculated sector wise.

As per the statistics of Transport Department (GNCTD), total number of vehicles in Delhi is more than the combined total vehicles in Mumbai, Chennai and Kolkata. Delhi has 85 private cars per 1000 population against the national average of 8 cars per 1000 population. In terms of CO2 emissions due to motor vehicles, Delhi emits about 12.4 million tonnes while the city of Bengaluru emits about 8.6 million tonnes.[1]

Therefore, addressing the quantum of emissions from the "Transport" and "Domestic" sector emerges to be the high priority subjects under the overarching umbrella of *"Climate change mitigation"* as committed to the UNFCC.

Encouraging "Electric Vehicles" as a viable option for phased transportation in terms of short and long distance trips with appropriate "Charging Infrastructure" is therefore, the pre-condition for this paradigm shift / phased migration to sustainable transportation.

For this changes are required in Infrastructure provisions (at Regional and City levels) and in Development Control Regulations (in terms of provisions therein) to include the formulations of norms and standards for "*Charging Infrastructure*" in the said Mater Plan Regulations and State Bye-Laws for adoption across the country suiting local conditions.

2.1 Electric Vehicle Supply Equipment (EVSE):

An EVSE is a wall mounted box that supplies electric energy for recharging of electric vehicle batteries. Also EVSEs have a safety lock-out feature that does not allow current to flow from the device until the plug is physically inserted into the car.

EVSEs can be customized with added features like:

- Authentication
- Integrated payment gateways
- Software for remote monitoring.

As electric vehicle charging technology continues to advance, several standards and guidelines have become widely accepted across the industry. This section gives a brief overview of charging infrastructure technology, standards, and terminology.

2.2 Different types of EVSE:

Charging speeds- Charging power, which determines the time required to charge a vehicle, can vary by orders of magnitude across charge points, as shown in Table 1. A small household outlet may charge as slowly as 1.2 kW, while the most advanced rapid charging stations can charge at up to 350 kW. Charging infrastructure is broadly broken into three categories based on speed: Level 1, Level 2, and direct current (DC) fast charging (sometimes referred to as Level 3).

(Source: "Emerging Best Practices for Electric Vehicle Charging Infrastructure", Oct' 2017)

Private Charging

Charging batteries of privately owned cars through domestic charging points. Billing is mostly part of home/domestic metering.

AC "Slow" Charging:

The home private chargers are generally used with 230V/15A single phase plug which can deliver a maximum of up to about 2.5KW of power. The EVSE supplies AC current to the vehicle's onboard charger which in turn converts the AC power to DC allowing the battery to be charged.

Public Charging

For charging outside the home premises, electric power needs to be billed and payment needs to be collected. The power drawn by these chargers may need to be managed from time to time.

DC "Fast" Charging:

DC current is sent to the electric car's battery directly via the charge port. FC chargers (usually 50 KW or more) can supply 100 or more kilometers of range per hour of charging. The fast chargers would generally be used as a top-up, rather than fully charging vehicles. These are important for cab companies and corporate users who have a fleet of electric cars.

3. Options for EV Charging

There is an urgent need to offer flexible charging infrastructure for different vehicle segments to drive adoption of EVs. Charging infrastructure is the most crucial enabler in the entire EV value chain. The exploration of different charging models according to the local conditions shall enable faster deployment of electric vehicles in the country.

EV share in all vehicles - It has been broadly projected that by the current rate of adoption of EVs, about 15% of all vehicles in the country would be EVs by the year 2020. Therefore, while assuming percentage composition of all proposed capacities in Public facilities of vehicle holding capacity, the Metropolitan and 'Tier I' cities will be assumed to have a higher percentage share of EVs, say ***20% for now***. The charging infrastructure prescriptions in all urban development guidelines shall, therefore, be in consonance with the said percentage.

Power Load sanction to premises – While adding these Charging Infrastructures to the proposed set of building types of the Indian cities, ***enhanced Power Load*** *shall have to be had for each such building type by the Power DISCOMs*, commensurate to the total additional power requirement of simultaneous operation of all the prescribed charging points in the premise. With further advancement of charging technologies and the enhanced capacity of chargers to draw more power, it is advised that the *load capacity assigned to each premise should be kept with a safety factor of 1.25* with a long-term vision of 30 years.

Table 1: EVs charging "modes" and 'availability'

Vehicle type	Slow Charging	Fast Charging	Public CI
2 Wheelers	Y	N	Yes/Limited
3 Wheelers	Y	N	Yes/Limited
PVs (Cars)	Y	Y	Yes
PVs (Buses)	N	Y	Yes

Table 2: Charging options for EV types (by ownership)

Vehicle type	Private CI	Public CS	Predominant place of charging
2 Wheelers	SC/BS	SC	Point of residence / Work
3 Wheelers	SC/BS	SC/BS	Residence / Parking stations
PVs (Cars)	SC/BS	FC	Residence / Point of work / other public places
PVs (Buses)	-	FC/BS	Bus Terminals/Depots

Note:

- *The option of Battery Swapping (BS) for privately owned 2Ws and PV(Cars) is limited to Private CI.*
- *For 3 Ws the BS is proposed to be made available in PCS, for faster recharge experience only*
- *For PV (Buses), Captive Fast charging infrastructure for 100% internal use for fleets may be adopted by privately owned Depots/Garages.*

Based on the above stated EV charging technologies available and the current trend of evolving technologies of faster charging experience, the Ministry of Power has issued ***Guidelines and Standards for setting up Charging Infrastructure for Electric Vehicles*** *[Ministry of Power (MoP) Guidelines dated 14.12.2018]* for charging infrastructure to be installed at every Public Charging Station (PCS). 'Connectivity regulations and Safety norms' shall be defined by respective authorities such as Central Electric Authority/MoP for grid access to such PCS / any other charging station/infrastructure.

4. Charger Specifications and PCS Infrastructure

Any installed PCS shall have one or more electric kiosk/boards with installation of all charger models as prescribed in the ***Guidelines and Standards*** *notified by* ***Ministry of Power (MoP), dated 14 December 2018*** *for* ***"Charging Infrastructure for EVs"*** (at *Annexure II*), with other necessary arrangements as deemed necessary.

Public Charging Station service providers shall be free to create charging hubs and to install additional number of kiosk/chargers in addition to the minimum chargers prescribed vide the MoP Guidelines, including options for installation of additional chargers, if required.

Note:

- *Minimum infrastructure requirements do not apply to Private Charging Points meant for self-use of individual EV owners (non-commercial basis).*
- *Captive charging infrastructure for 100% internal use for a company's own fleet will not be required to install all type of chargers and to have NSP tie ups.*

5. Regional location of PCS / FCB Charging Stations

In accordance with the Guidelines issued by the *Ministry of Power*, following minimum standards with regard to density of / distance between PCS in regional level facilities shall be followed as and regulated by the URDPFI Guidelines-

1. **Along Highways and inter-city corridors:**

- At every 25 Kms on both sides of highways/roads, at least 1PCS is to be set up.
- At every 100 Kms on both sides of highways/roads, at least 1 Fast Charging/FCB Charging Station as per specifications. (may be coupled with PCS)
- Standalone Battery Swapping Stations may be added with the PCS.

2. **In Regional level Industrial SEZs / other Industrial Parks/Estates**

- Land for at least 1PCS is to be reserved within a grid of 10 Km x 10 Km of the designated industrial area/park/estates.

Appendix 9
(URDPFI Guidelines Vol. IIA & IIB)

No.12/2/2018-EV
Government of India
Ministry of Power
Shram Shakti Bhawan, Rafi Marg.

New Delhi, the 14th December, 2018

To,

1. The Secretaries of all the Ministries/Departments of Government of India.
2. The Chief Secretaries of the States/UTs.

Sub: Charging Infrastructure for Electric Vehicles – Guidelines and Standards -reg.

Sir/Madam,

Government of India have undertaken multiple initiatives to promote manufacturing and adoption of electric vehicles in India. With support of the Government, electric vehicles have started penetrating in the Indian market. However, availability of adequate Charging Infrastructure is one of the key requirements for accelerated adoption of electric vehicles in India. It is proposed to encourage this by laying down an enabling framework.

Objectives

- To enable faster adoption of electric vehicles in India by ensuring safe, reliable, accessible and affordable Charging Infrastructure and eco-system
- To promote affordable tariff chargeable from EV owners and Charging Station Operators/Owners
- To generate employment/income opportunities for small entrepreneurs
- To proactively support creation of EV Charging Infrastructure in the initial phase and eventually create market for EV Charging business
- To encourage preparedness of Electrical Distribution System to adopt EV Charging Infrastructure.

In light of the above, it has been decided as follows:

1. Private charging at residences / offices shall be permitted. DISCOMs may facilitate the same.
2. Setting up of Public Charging Stations (PCS) shall be a de-licensed activity and any individual/entity is free to set up public charging stations, provided that, such stations meet the technical as well as performance standards and protocols laid down below as well as any further norms/standards/specifications laid down by Ministry of Power and Central Electricity Authority from time to time.

2.1 Any person seeking to set up a Public Charging Station may apply for connectivity and he shall be provided connectivity on priority by the Distribution Company licensee to supply power in the area.

2.2 Any Charging Station/ Chain of Charging Stations may also obtain electricity from any generation company through open access.

3. Public Charging Infrastructure (PCI)- Minimum Requirements:

3.1 Every Public Charging Station (PCS) shall have the following minimum infrastructure:

i. An exclusive transformer with all related substation equipment including safety appliance.

ii. 33/11 KV line/cables with associated equipment including as needed for line termination/metering etc.

iii. Appropriate civil works.

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

v. Current international standards that are prevalent and used by most vehicle manufacturers internationally are CCS and CHadeMO. Hence, Public Charging Stations shall have, one or more electric kiosk/boards with installation of all the charger models as follows:

Charger Type	Charger Connectors*	Rated Voltage (V)	No. of Charging Points/No. of Connector guns (CG)
Fast	CCS (min 50 kW)	200-1000	1/1 CG
	CHAdeMO (min 50 kW)	200-1000	1/1 CG
	Type-2 AC (min 22 kW)	380-480	1/1 CG
Slow/Moderate	Bharat DC-001 (15 kW)	72-200	1/1 CG
	Bharat AC-001 (10 kW)	230	3/3 CG of 3.3 kW each
*In addition, any other fast/slow/moderate charger as per approved BIS standards whenever notified.			

vi. The kiosk/board may have options for installation of additional chargers if required.

vii. The Public Charging Station Providers are free to create Charging Hubs and to install additional number of Kiosk/Chargers in addition to the minimum number of chargers prescribed above.

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 should also include information regarding location, types and numbers of chargers installed/availableetc.

ix. Share charging station data with appropriate DISCOM and to maintain appropriate protocols as prescribed by such DISCOM for this purpose. CEA shall have access to this database.

x. Appropriate public amenities.

xi. Where, in addition to the above, fast charging facility is also planned to be provided at the PCS by the PCI provider, the following additional infrastructure must be provided:
   a. Appropriate Liquid Cooled cables if High Speed Charging Facility for onboard charging of Fluid Cooled Batteries (FCBs) is also planned.
   b. Appropriate Climate Control Equipment for Fast Charging of Batteries to be used for swapping (i.e. not onboard)

3.2 Every Public Charging Station (PCS) shall be operational only after inspection and clearance as communicated by a suitable clearance certificate, by the concerned electrical inspectors/technical personnel designated specifically by the respective DISCOM for this purpose. DISCOMs may also empanel one or more third party authorized technical agencies for this purpose.

3.3 Electric Vehicle Service Equipment (EVSE) shall be type tested by an appropriate reputed authority.

3.4 The above minimum infrastructure requirements do not apply to Private Charging Points meant for self-use of individual EV owners (non-commercial basis).

3.5 Captive charging infrastructure for 100% internal use for a company's own/leased fleet for its own use will not be required to install all type of chargers and to have NSP tie ups.

3.6 Public Charging Station can also have the option to add Standalone battery swapping facilities in addition to the above mandatory facilities, provided space/other conditions permit.

4. Public charging Infrastructure (PCI) for long distance EVs and/or heavy duty EVs:

4.1 Public charging stations for long distance EVs and/or heavy duty EVs (like trucks, busses etc.) shall have the following minimum requirements:

i. At least two chargers of minimum 100 kW (with 200-1000 V) each of different specification (CCS & Chademo) and with single connector gun each in addition to the minimum charging infrastructure requirements as mandated for Public Charging Stations in para 3.

ii. Appropriate Liquid Cooled Cables for high speed charging facility for onboard charging of Fluid Cooled Batteries (currently available in some long range EVs).

iii. In addition to 4.1 (i) and (ii) above, the Fast Charging Stations (FCS) for Long Distance EVs and/or Heavy Duty EVs may also have the option of swapping facilities for batteries for meeting the charging requirements as per para 3 and para 4.1(i)&(ii) above. It is notable that Fluid Cooled Batteries (FCBs) are generally necessary for Fast Charging / Long Distance use of EVs and/or for Heavy Duty Vehicles like buses/trucks etc. FCBs will have higher charging rate and longer life.

4.2 Such Fast Charging Stations (FCS)which are meant only for 100% in house/captive utilisation, for example buses of a company, would be free to decide the charging specifications as per requirement for its in- house company EVs.

5. Location of Public Charging Stations:

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

i. At least one Charging Station should be available in a grid of 3 Km X 3 Km. Further, one Charging Station be set up at every 25 Km on both sides of highways/roads.

ii. For long range EVs (like long range SUVs) and heavy duty EVs like buses/trucks etc., there should be at least one Fast Charging Station with Charging Infrastructure Specifications as per para4.1 at every 100 Kms, one on each side of the highways/road located preferably within/alongside the stations laid in para3 above. Within cities, such charging facilities for heavy duty EVs shall be located within Transport Nagars, bus depots. Moreover, swapping facilities are also not mandatory within cities for Buses/trucks.

5.2 Additional public charging stations shall be set up in any area only after meeting the above requirements.

5.3 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.

5.4 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 including 'firewalls' etc.) to meet the requirements as laid above. Further, within such ROs, Company Owned and Company Operated (COCO) ROs may be given higher preference.

5.5 Any deviation from above norms shall be admissible only after specific approval of State Nodal Agency in consultation with the Central Nodal Agency.

6. Database of Public EV Charging Stations:

Central Electricity Authority (CEA) shall create and maintain a national online database of all the Public Charging Stations through DISCOMs. Appropriate protocols shall be notified by DISCOMs for this purpose which shall be mandatorily complied by the PCS/BCS. This database shall have restricted access as finalised between CEA and Ministry of Power.

7. Tariff for supply of electricity to EV Public Charging Stations:

7.1 The tariff for supply of electricity to EV Public Charging Station shall be determined by the appropriate commission, provided however that the tariff shall not be more than the average cost of supply plus 15 (fifteen) percent.

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

8. Service charges at PCS/BCS:

8.1 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.

8.2 The State Nodal Agency shall fix the ceiling of the Service Charges to be charged by the Public Charging Stations.

9. 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:

9.1 **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 shall be taken up for coverage. A list of these Mega Cities and existing connected expressways is attached at Annexure 1.

9.2 **Phase II (3-5 Years):**
Big cities like State Capitals, UT headquarters shall be covered for distributed and demonstrative effect. Further, important Highways connected with each of these Mega Cities shall be taken up for coverage.

9.3 The above priorities for phasing of rollout shall 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.

10. Implementation Mechanism for Rollout:

10.1 Ministry of Power shall designate a Central Nodal Agency for the rollout. All relevant agencies including Central electricity Authority (CEA) shall provide necessary support to this nodal agency.

10.2 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.

11. Selection of Implementation Agency for Rollout:

11.1 The Central Nodal Agency shall finalize the cities and expressways/highways to be finally taken up from the above phasing, in consultation with the respective State Governments.

11.2 An Implementation Agency shall be selected by the respective State Nodal Agency and shall be entrusted with responsibility of installation, operation and maintenance of PCS/FCS/BCS/BSF for designated period as per parameters laid down in this document and as entrusted by the concerned Nodal Agency. The Implementation Agency can be an Aggregator as mutually decided between Central and State Nodal Agencies. However, they can also decide to choose different PCS/FCS providers for bundled packages or for individual locations as mutually decided. Further, whenever bundled packages are carved for bidding, such packages shall necessarily include atleast 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.

11.3 Where Implementing Agency is selected by bidding, all bidding shall be conducted by the State Nodal Agency.

11.4 There shall be an upper cap on the Service Charges declared by the State Nodal Agency as per para 8.2 above. Subsidy, if admissible from Central/State governments, shall be suitably factored in such calculations of Upper Cap/Bid Variable.

This issues with the approval of Hon'ble Minister of State (IC) for Power and New & Renewable Energy.

(Anoop Singh Bisht)
Under Secretary to the Govt. of India
Tel:23766236
Email:anoopsingh.bisht@nic.in

Copy to:

1. Prime Ministers Office/Cabinet Secretariat.
2. CEO, NITI Aayog
3. The Secretaries of the CERC/State Commissions/JERCs.

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Copy for information to:

1. PS to MoS (IC) for Power and NRE
2. PPS to Secretary (Power)
3. PPS to Addl Secretary (SNS)
4. PPS to Joint Secretary (Thermal), MoP
5. PPS to Director (UMPP), MoP

(Anoop Singh Bisht)
Under Secretary to the Govt. of India
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Annexure 1

I. List of 4 million plus cities (as per census 2011)

1	Mumbai
2	Delhi
3	Bangalore
4	Hyderabad
5	Ahmedabad
6	Chennai
7	Kolkata
8	Surat
9	Pune

II. List of corridors

1	Mumbai-Pune Expressway
2	Ahmedabad-Vadodara Expressway
3	Delhi-Agra Yamuna Expressway
4	Delhi-Jaipur
5	Bengaluru-Mysore
6	Bengaluru-Chennai
7	Surat-Mumbai Expressway
8	Agra - Lucknow Expressway
9	Eastern Peripheral Expressway
10	Delhi-Agra NH2 Expressway
11	Hyderabad ORR expressway
12	5 connected highways to each megacity