



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,

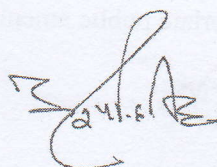
Government of India have undertaken multiple initiatives to promote manufacturing and adoption of electric vehicles in India. With support of the Government, electric vehicles have started penetrating in the Indian market. However, availability of adequate Charging Infrastructure is one of the key requirements 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.


24.12.18

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:

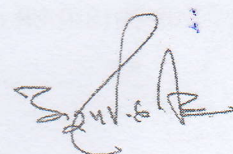
- An exclusive transformer with all related substation equipment including safety appliance.
- 33/11 KV line/cables with associated equipment including as needed for line termination/metering etc.
- Appropriate civil works.
- Adequate space for Charging and entry/exit of vehicles.
- Current international standards that are prevalent and used by most vehicle manufacturers internationally are CCS and CHAdMO. 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
	CHAdMO (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.

- The kiosk/board may have options for installation of additional chargers if required.
- 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.
- 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 etc.
- 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.
- 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 para 4.1 at every 100 Kms, one on each side of the highways/road located preferably within/alongside the stations laid in para 3 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.

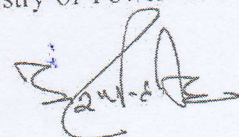
7. **Tariff for supply of electricity to EV Public Charging Stations:**

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:**

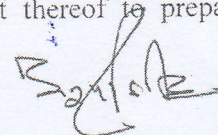
- 10.1 Ministry of Power shall designate a Central Nodal Agency for the rollout. All relevant agencies including Central electricity Authority (CEA) shall provide necessary support to this nodal agency.

- 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.

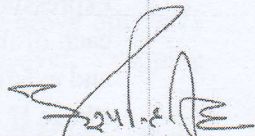
- 11.2 An Implementation Agency shall be selected by the respective State Nodal Agency and shall be entrusted with responsibility of installation, operation and maintenance of PCS/FCS/BCS/BSF for designated period as per parameters laid down in this document and as entrusted by the concerned Nodal Agency. 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)

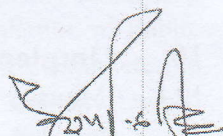
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Copy to:

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



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2. PPS to Secretary (Power)
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4. PPS to Joint Secretary (Thermal), MoP
5. PPS to Director (UMPP), MoP



(Anoop Singh Bisht)

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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

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