



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
नवीकरणीय ऊर्जा परियोजना प्रबोधन प्रभाग
Renewable Energy Project Monitoring Division

No.CEA/PLG/RTD/15/14/2019/

Date:07.06.2019

To

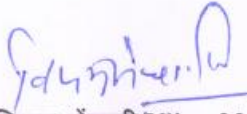
(As per attached list)

विषय: Minutes of the Meeting to review progress of the installation of public charging infrastructure (PCI) for Electric Vehicles in Delhi/NCR held on 10.05.2019 at CEA, Sewa Bhawan, New Delhi.

A meeting was held on 10.05.2019 to Review the progress of action taken on setting up of Public Charging Infrastructure for Electric Vehicle by various agencies in Delhi/NCR on at CEA Sewa Bhawan, New Delhi.

Minutes of the Meeting are enclosed for further necessary action and information please.

Encl: As above.


(विजय मेंघानी/Vijay Menghani)
मुख्य अभियंता/Chief Engineer

Minutes of the Meeting to review progress of the installation of Public Charging infrastructure (PCI) for electric vehicles in Delhi/NCR held on 10.05.2019 at CEA, Sewa Bhawan, New Delhi

The list of the participants is annexed at **Annexure-I**.

At the outset, Chief Engineer (RPM&RGI), CEA, welcomed all the participants to the "meeting to review progress of the installation of Public Charging Infrastructure (PCI) for electric vehicles in Delhi/NCR". The meeting was scheduled to be chaired by Member (Planning), but due to unavoidable circumstances he could not attend this meeting. He conveyed his regret and wished best for the meeting. In his opening remarks, Chief Engineer (RPM&RGI) stated that since our EV targets are quite ambitious, this meeting has been convened to take stock of promotion of the electric vehicle charging infrastructure subsequent to the policies/guidelines for Public Charging Infrastructure for EVs announced by the Government of India in December, 2018.

He further said that with the participants from all major stakeholders including oil & gas companies and Delhi DISCOMs at the meeting, objective would be to figure out problems being confronted in setting up of the PCI. He further added that as the availability of EV charging infrastructure is fundamental for allaying the range anxiety playing in the minds of the prospective EV buyers and for achieving the EV targets, unfolding of the PCI network is essential.

Now with the enabling framework in the form of Technical Standards and Policies/guidelines related to setting up of PCI are in place, he wished to know the challenges, if any, encountered in the implementation and the support various stakeholders expect from CEA.

He added that EV target implementation should be quite smooth unlike CNG experience in 2002. He cautioned against repeating the experience of long queues of vehicles observed at CNG filling stations during CNG transition phase in 2002.

He further informed that the CEA has the mandate through Guidelines issued by Ministry of Power on 14th December, 2018 to collect data and maintain PCI database and the same would be posted on the CEA website for the use of all EV owners. The information has to come through DISCOMs. The online portal will be created wherein information could be updated and a mobile app would be developed.

Some of the participants were not aware about the guidelines issued by MOP vide No. 12/2/2018-EV dated 14th December, 2018. As a first step toward sharing of all relevant information related to EVs, CEA will publish on its website the guidelines, technical standards and location of EV Charging stations.

During brief introduction of the participants, it was noted that representative of Central Nodal Agency, BEE is not present. CE(RPM) asked Director (RTD) to give a brief presentation covering the National Electric Mobility Mission Plan 2020, implementation mechanism thereunder, the enabling frameworks like Technical Standards and Policies/guidelines formulated, promotion schemes initiated by the Govt. for implementation of the PCI and

requested the participants to deliberate freely experiences and issues related to the implementation of the PCI so as to find solution to them.

Director (RTD) made a presentation to the participants (copy of the presentation is enclosed as **Annexure-2**) and the following issues were deliberated upon:

Views and issues flagged by the petroleum sector PSUs

1. Setting up of PCI at Retail Outlets of the Oil Marketing Companies (OMCs):
CE(RPM & RTD) sought experiences of petroleum sector PSUs in this connection. The representatives from the OMCs stated that apart from the space constraint at the Retail Outlets(ROs), approval from Petroleum and Explosives Safety Organization (PESO) for change in layout plan is required for setting up PCI.
CE (RPM) said that in this regard , if they need any help , they can write to CEA. CEA will interact with PESO so as approval procedure may be made easier.
2. It was apprised that in the 1st phase to start with, only Bharat AC/DC charges are being installed. They felt that PCS definition includes CCS and CHAdeMO, therefore, only having Bharat AC/DC charger would not qualify for a PCS and so is for EV charging tariff as well. They added this would stall everything including inspection/approvals. Therefore, they wished for modification, at least for some time, in the December, 2018 Policies/Guidelines to include only Bharat AC/DC charger in the PCS definition..
3. They suggested that installation of charger models at PCI should be a business decision based on the location and density and all types of chargers should not be made compulsory at every PCI.
4. OMCs stated that many ROS are supplied through LT system and might not have exclusive transformer. Further, sufficient space for installation of exclusive transformer and related substation equipment may not be available.
5. Representative from TPDDL stated that 11 kV network is planned by them with N-1 contingency and each RO having more than 100 kW load has exclusive transformer and alternate source of supply. If one source goes out, the supply can be restored from the alternate source. He told that notwithstanding this, to maintain sustained and quality power supply to the charging station, back end infrastructure needs to be strengthened or dedicated infrastructure may be developed provided quantum of total load of PCIs is shared in advance. To this, the representative from IOCL responded that the provision of dedicated infrastructure could increase the CAPEX requirement of the organization.
6. **These two issues i.e necessity of all types of chargers and the need of exclusive transformers would be taken up by CEA with MOP. CE (RPM) stated that the views of stakeholders will be considered while amending guidelines and these two aspects would be reviewed.**
7. CE (RPM) stated that Discoms would take all necessary actions to provide reliable power supply and if they need any support from CEA, it will be given as target is to give priority connections to PCS as per the Guidelines of Ministry of Power.
8. HPCL representative shared their experience stating that they have 9 PCS in Delhi/NCR, however, they are unutilised so far. Further, he expressed a need for knowing the EV population on road to enable realistic planning of EVCI. He stated that though FAME site shows population of EV, but majority of them are hybrid.

9. CE (RPM) stated that an effective interface needs to be developed to bring the EVs and the EV Charging infrastructure (EVCI) on a common platform. It is understood that EESL has a list of owner of EVs it has sold to. **EESL was requested to provide the list.** Petroleum companies' representatives stated that a detail breakup of estimated cost of EV Charging stations may be shared. Also if EESL have some model agreement for installation of EVCI, the same can be shared. If EESL has a list of equipment suppliers of EVCI, this too can be shared. All this information would help in expediting the implementation of the Guidelines. CE (RPM) assured that all possible information would be shared but within three-month, visible progress in EVCI is required so that the users are assured of availability of EVCI. For this, all sorts of EVCI like Public, Limited access or captive can come up.
10. BSES representative apprised that supply connections being sought by EVCI are on 24x7 basis. In this regard, he informed that Distribution Transformers(DTs) are loaded to 70-80% of their capacity for 5% of the time and therefore, DISCOMs may be allowed to throttle the charges (disconnecting chargers from their end if feasible) whenever DTs are overloaded. CE (R&D), CEA stated that throttling is not the solution, however, time of use(ToU) tariff may be used to encourage the EV owners to charge their vehicles during off peak hours so that the distribution assets are optimally utilized and the EVs are charged economically. Battery swapping may also be a solution.

Views and issues flagged by the NTPC

11. NTPC representative suggested for development of standards and bringing compatibility in battery swapping facilities for the viability and sustainability in the business of battery swapping and economic charging cost for EVs.
12. He also suggested for setting up of battery swapping facilities at suitable locations across the city and informed that NTPC is working on such a model of installation of battery swapping station in the city and clear picture will emerge after the pilot project is operationalized. He was of the opinion that this would reduce the capital cost of e-rickshaws and will encourage the growth of e-rickshaws.
13. CE (R&D) CEA stated that at present battery standards are not there. CE (RPM) stated that action may be initiated on this and a meeting of EV manufacturers would be called so that size and specification of batteries can be standardized as it will enable EV users to consider option of swapping and will also reduce cost of batteries by reducing manufacturing cost.

Views and issues flagged by the DMRC

14. Representative from DMRC informed that they are open to providing EV Charging Infrastructure (EVCI) at their 39 no. parking spaces subject to the study of technical feasibility for entry and exit to the parking space.

Views and issues flagged by the Delhi DISCOMs

15. Delhi DISCOMs' representative stated that all Delhi DISCOMs are willing to set up PCI in their substation premises, however they may face the issues of local land use laws and utilization of PWD land abutting the premises for the entry and exit of the EVs. They wanted that an advisory may be issued to Delhi Govt./PWD by CEA/MoP to promote and facilitate Delhi DISCOMs for setting up PCI. CE(GM) was not agreeable to this citing that

the extant policy/guidelines of the MoP don't debar anybody from setting up the PCI and the land-owning/ land-use subject is not in the purview of the Central Government. CE(RPM), CEA agreed that Urban development Ministry would be approached and recommendation would be sent that space outside the Discom premises can be utilized for EV charging infrastructure. Discoms are requested to send a letter to Member (Planning), CEA stating how much space would be required and an assurance that normal traffic flow would not be disrupted.

16. The DISCOMs suggested that the regulators should include the capital investment in setting up electrical infrastructure for PCS into the non-tariff CAPEX investment. Director (GM), CEA stated that this additional income can be treated similar to Power Grid Communication business. It was decided that DISCOMs can write to CEA in this regard and send their proposal of treatment of this investment. CEA would take up this issue with the Forum of Regulators.
17. BSES representative sought clarification on para 3.2 of Guidelines issued by MOP with regard to inspection. It was clarified by Director (RTD), CEA Sh Upendra Kumar that as most of the states have allowed self-certification upto 11 kV, an inspection of PCI may not be required. DISCOM representatives suggested that a format for self-certification of EVCI may be devised or existing formats may be modified by CEA for the use of DISCOMs as per the provisions of CEA's safety Regulations as, they added that, the existing formats do not have anything specific to the EVCI. They stressed that charges may be operationalized only after safety clearance by the DISCOMs. To this effect, CE(CEI) informed that relevant provisions of the safety regulations need to be complied with for installing each apparatus of EVCI and needful will be done with regard to the formats, if required. CEA will suggest required modification in MOP guidelines.
18. Representative of Fortum informed that in Telangana they are facing a specific problem that a separate meter is not being allowed to Mall owner for EV Charging stations so they have to bear commercial charges in place of EV Charging tariff. This issue would be examined and necessary provision can be made in the Guidelines for benefit of all.
19. With regard to EVCI database, CE (RPM) CEA told the DISCOMs that the formats in which DISCOMs are supposed to collect data from the EVCI operators are under preparation and draft would be circulated to the DISCOMs along with the Minutes of the Meeting.

Copies of proposed **Format -A and Format -B** are enclosed. Comments on these may be sent and in case of any difficulty in collecting data, the same may be mentioned.

Views and issues flagged by the EESL

20. CE(RPM) queried about the cost of setting up a PCS. To this, EESL representative informed that PCI with all charger variants i.e. CCS, CHAdEMO, Bharat would cost @ Rs 50 lakh. He further said that there is no market for CCS & CHAdEMO at present. On the query for extent of subsidy for the PCS, he informed that it is not known. EESL was requested to share the breakup of the cost of setting up of a PCS, to which they assured to furnish it soon.

CE(RPM), CEA informed that a provision of 1000 Crs has been made under FAME-II for EV Infrastructure support and details of subsidy will be finalized soon.

EESL apprised that they have already set up PCS at some locations in parking lots of NDMC areas in Delhi based on a small study for setting up PCI. He informed that any user can login

through mobile app to know which chargers are available, can book slot, get the vehicle charged and make payment.

He also informed that EESL not charging any GST on Electricity supply cost but charging only on service part of EV Charging, which is very small. He suggested for review of various components of supply charges such as duty charge, surcharge and sanctioned load charges so as to make PCI investment cost slightly less. To this, REMC Delhi representative commented that these charges can not be wished away as there are multiple agencies involved in these charges and these rates are finalized by the DERC for EV Charging and are very rational.

21. Director (DP&R), CEA Mrs. Rishika Sharan informed that the cost for getting new connections for Ease of doing Business (EoDB) applicants is Rs. 13,009/-(Rs thirteen thousand and nine only) in Mumbai whereas the same in Delhi is Rs 58,256/-(Rs fifty thousand, two hundred and fifty six only) which is nearly 4 times as compared to that in Mumbai. She apprised that the matter has already been taken up with DERC by Chairperson, CEA to review the connection charges in Delhi to facilitate India's ranking in EoDB.
22. Representative from EESL suggested that battery storage facility could be created at charging stations to cater to the unforeseen situations due to the failure of grid electric supply. However, the participants felt it to be prohibitory due to high cost and lack of enough space at the charging stations, therefore, should not be a mandatory requirement.

Chief Engineer (RPM), CEA thanked all the participants for fruitful discussions. He also thanked representative of petroleum companies and distribution companies for their assurance of participating in development of EV infrastructure and requested that within three-month, progress should be visible on ground. CEA would facilitate all necessary cooperation to all stakeholders.

Action points:

1. Petroleum companies would seek approval of layout plan for EV charging stations at the retail outlets from PESO and inform CEA.
2. CEA will publish all relevant information related to the EV charging infrastructure like guidelines, technical standards and location of EV Charging stations on its website.

(Action: Oil marketing Companies)

(Action: RPM Division, CEA)

A link- http://cea.nic.in/ev_charging.html has been created on CEA website and the information relevant to EV charging infrastructure has been uploaded.

3. In the guideline issued by MOP on 14.12.2018, following issues need to be reviewed:
 - i. Not all the chargers should be made mandatory at a single location as it will needlessly increase the cost of installation of Public Charging system. The type of charging station may be decided as per market conditions and roll out plan of EVs.

- ii. The requirement of exclusive transformer may be reviewed as Discoms are giving 140 kW on single connection. So based on existing load on the transformer, this can be decided.
- iii. Requirement of inspection by electrical inspector before energization of the charging station may be reviewed as per the norms of self-certification adopted by respective distribution company under CEA(measures for electric supply and safety) regulations 2010. If required, format for self-certification of EV Charging Stations will be finalized by CEA.

(Action: RPM Division, and EI Division CEA)

Proposal for modification in Guidelines dated 14.12.2018 on the above lines has been initiated.

- 4. A comprehensive list of EV owners need to be prepared so as to effectively utilize the charging infrastructure. EESL may share with CEA the data related to the vehicles purchased by it and given to the States. Similarly, EESL will share list of EV charging station equipment manufactures too. Detailed breakup of estimated cost of an EV charging station including Capex cost and Opex cost will also be shared by EESL so that the OMCs can take quick decision about the setting up charging stations. A copy of a model draft agreement will also be shared by EESL.

(Action; EESL)

- 5. There is a need for formulating battery standards and CEA will call a meeting of EV manufacturers to discuss issue of standardization in size and other specification of batteries for EVs. Also, the roll out plans of EV manufacturers will be discussed.

(Action: R&D / RPM Division, CEA)

- 6. The proposal of DISCOMs to utilize the area around their boundary wall for the installation of EV charging stations was agreed to and for this, Distribution companies will send their proposal to CEA so that the issue can be taken up with the Urban Development Ministry.

(Action: Distribution Companies & CEA)

- 7. Initial investment of Distributing companies in setting up EV Charging stations may be considered as non-tariff capex and income through EV Charging stations may be treated as per Regulatory provisions. Distribution companies will send their proposal about regulatory treatment of cost and income, and that will be taken up with the Forum of Regulators/State Regulatory Commission.

(Action; Distribution Companies of Delhi &CEA)

- 8. The metering for EV charging stations should be separate so that energy is properly accounted for and billed as per EV charging tariff. This issue will be considered while reviewing MOP Guidelines.

(Action: Distribution companies & CEA)

- 9. The number and locational details of existing charging stations will be shared with CEA by Petroleum companies, Distribution companies, EESL and private companies like Fortum, EV Motors and EVI Technologies.

(Action: Charging station owners/Distribution Companies)

Annexure-1**List of participants**

Sl. No.	Name & Designation (Shri/Smt)	Organization/Company	Mobile No./Email
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EV Charging Infrastructure

Journey So Far...



& Way Forward.....

Journey So Far...

- 2011: National Mission on E-mobility (NMEM) was approved.
- 2013: National Electric Mobility Mission Plan (NEMMP) 2020 was launched.
 - to provide the future roadmap, and
 - to establish common set of priorities, broad principles and framework for promoting the adoption of the full range of e-mobility solutions for the country which can enhance:
 - ✓ national fuel security,
 - ✓ provide affordable and environment friendly transportation, and
 - ✓ enable Indian automotive industry to achieve global manufacturing leadership.

Journey So Far...

- As a part of the Mission, [FAME](#)-India (**F**aster **A**doption and **M**anufacturing of (Hybrid &) **E**lectric Vehicles in India) was formulated by DHI.
- The Scheme was envisaged for implementation in two phases over a period of 6 years with Phase-I commencing from 1st April 2015 for 2 FY with Rs [795 Cr](#) outlay for 4 focus areas.
- The scheme was extended from time to time upto 31st March 2019 with revised outlay of Rs 895 crores.

Journey So Far...

- After review of the Scheme, [FAME-India Phase-II](#) was formulated by the DHI to be implemented over a period of 3 years w.e.f. 1st April 2019 with Rs 10,000/- Cr outlay including committed expenditure of [Rs. 366 Cr](#) from Phase-I.
- The Phase-II has 3 verticals:
 - (1) Demand Incentives
 - (2) Establishment of Network of Charging Stations
 - (3) Administration of Scheme including publicity, IEC activities.

Journey So Far...

- Since setting up of charging infrastructure is one of the key concern areas, therefore to draw a roadmap, MoP constituted two Committees
 - (1) Committee on Technical Aspects of charging station, and
 - (2) Committee on Policy, Planning & Regulatory/Tariff Aspects as per the decision taken in the MoP meeting held on 02.01.2018.
- Both the Committees have submitted their recommendations as per their ToR vide report dated 28th Mar, 2018 & Guidelines and Standards dated 14th Dec, 2018, respectively.

Journey So Far...



Recommendations of the Committee on Technical Aspects

ToR	Recommendations	Responsibility	Status
A. Technical issues			
1. Regulations regarding connectivity with grid such as power factor, load factor, harmonics, voltage deviations etc.	CEA (Technical Standards for connectivity below 33 kV) Regulations, 2013 to be amended to incorporate charging station.	CEA	Published in Gazette on 8 th February, 2019
2. Safety standards required for grid	CEA (Measures relating to safety and electric supply) Regulations, 2010, to be amended to incorporate charging station.	CEA	<ul style="list-style-type: none">• With CEA• To be send to the press for notification• Expected in 5/19

Journey So Far...



Recommendations of the Committee on Technical Aspects

ToR	Recommendations	Responsibility	Status
3. Standards/specification of equipment/ products to be used in charging infrastructure considering the interoperability of the device and the agency responsible for it	Technical Standards for: (i) Charging Station: IEC: 61851-1, 61851-21, 61851-22, 61851-23 and 61851-24 (ii) Connectors: IEC 62196-1, 62196-2 & 61196-3 shall be adopted except ambient temperature conditions which should be 0 to +55 ⁰ C instead of -25 ⁰ C to +40 ⁰ C	BIS ETD 51 Committee- CHN Sh.Sajid Mubashir, Scientist 'G', DST 03 WG formed on 20.06.2018	WG1-Charging Stations: IS corresponding to IEC 61851-1 published WG2-Connectors: In process

Journey So Far...

Recommendations of the Committee on Technical Aspects

ToR	Recommendations	Responsibility	Status
	<p>(iii) Communication between Electrical Vehicle Supply Equipment (EVSE) & Central Monitoring System (CMS): Open Charge Point Protocol (OCPP)</p> <p>(iv) Communication between EV & EVSE: As per DHI notification:</p> <ul style="list-style-type: none"> • For lower voltage (<120 V)- Already exist • For medium (<500 V) & high voltage (500 V and above)- CCS mandatory at PCI 		<p>WG3-Network Interface (Headed by CE (DP&R), CEA):</p> <ul style="list-style-type: none"> • WG has approved ISO 15118 (Part 1-5 & 8) standard of communication b/n EV & EVSE in 08/18 for Combined Charging System (CCS)

Journey So Far...



Recommendations of the Committee on Technical Aspects

ToR	Recommendations	Responsibility	Status
4. Testing and verifications of equipment wrt standards	Testing and verification of equipment wrt standards shall be done by ARAI and other accredited laboratories, e.g. ICAT Manesar, CPRI, GARC Chennai, VRDE Ahmednagar etc	ARAI, ICAT	<ul style="list-style-type: none">• Some of the facilities have been setup by ARAI, ICAT.• However, full testing facilities will be available after all standards are notified
5. Assessment and strengthening of capacity of sub transmission/ distribution network to supply the load of EVs	Proposed to be carried out by state DISCOMs.	DISCOMs	Included in the CEA (Technical Standards for connectivity below 33 kV) Regulations, 2013

Journey So Far...

Recommendations of the Committee on Technical Aspects

ToR	Recommendations	Responsibility	Status
6. Energy performance standards for chargers	Energy performance standards for chargers Shall be assessed by BEE	BEE	<ul style="list-style-type: none"> • However, at present there are no IEC standard for reference
7. Identification of suitable location and density/ penetration of charging infrastructure	Proposed to be carried out by state DISCOMs.	DISCOMs	Included in the CEA (Technical Standards for connectivity below 33 kV) Regulations, 2013

Journey So Far...



Recommendations of the Committee on Technical Aspects

ToR	Recommendations	Responsibility	Status
B. Infrastructure related issues			
1. Identification of suitable location and density/ penetration of charging infrastructure	<ul style="list-style-type: none">• Classification of charging points could be done between public charging (PC), restricted public charging and in-house/captive charging stations. Permission from DISCOMS would be required for all.• For PC points, these would be identified by the DISCOMs, SRTC and Ministry of Urban Development of the State.• Initially be set up through Govt. support & when enough EVs are on the road, then through bidding	DISCOMs SRTC Ministry of Urban Development of the States	MoP vide its policy dated 14.12.2018 have notified rules for the same

Journey So Far...



Recommendations of the Committee on Technical Aspects

ToR	Recommendations	Responsibility	Status
B. Infrastructure related issues			
2. Concentration of slow chargers and fast chargers based on suitability of location and utility	Slow Chargers- <ul style="list-style-type: none">• In residential areas mostly.• Municipal and/or community parking as well.• Ground floor of every upcoming multi-storey building should provide for charging points Fast Chargers- <p>These could be provided on highways, malls parking spots, petrol pumps, parking areas associated with open markets, etc.</p> Combined- <p>Office spaces</p>		MoP vide its policy dated 14.12.2018 have notified rules for the same

Journey So Far...

Recommendations of the Committee on Technical Aspects

ToR	Recommendations	Responsibility	Status
B. Infrastructure related issues			
3. Land requirement: (a) Capacity/number of charging stations being set up. (b) Availability of suitable land/location	May be decided as per the population density of the city/area		MoP vide its policy dated 14.12.2018 have notified rules for the same

Journey So Far...



Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

MINISTRY OF POWER POLICY DATED 14.12.2018

1. Objectives

- To enable faster adoption of EVs in India by ensuring safe, reliable, accessible and affordable CI and eco-system.
- To promote affordable tariff chargeable from EV owners and CS operators/owners.
- To generate employment/income opportunities for small entrepreneurs.
- To support creation of EVCI in initial phase and eventually create market for EV Charging Business.
- Encourage preparedness of electrical distribution system to adopt EVCI.

Journey So Far...



Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

MINISTRY OF POWER POLICY DATED 14.12.2018			
Guidelines/Standards	Recommendations	Responsibility	Status
2. Policy Decisions	<ul style="list-style-type: none">• Private charging at residences / offices shall be permitted• Setting up of Public Charging Stations (PCS) shall be a de-licensed activity• Connectivity on priority by the Distribution Company licensee• May also obtain electricity from any generation company through open access.	DISCOMs Individual/Entity GENCOs	
3. Public Charging Infrastructure (PCI)- Minimum Requirements	<ul style="list-style-type: none">• Exclusive Transformer, 33/11 KV line/cables, civil works, space for charging and entry of vehicles.		

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
	<ul style="list-style-type: none"> • Tie up with at least one online Network Service Providers (NSPs) • Share charging station data with appropriate DISCOM • Fast charging facility is also planned • Liquid Cooled cables • Climate Control Equipment • Operational only after inspection and clearance • Requirements do not apply to Private Charging Points. • Captive charging infrastructure will not be required to install all type of chargers 		

Journey So Far...



Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Charger Models to be Installed at every charging station

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

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
<p>4. Public charging Infrastructure (PCI) for long distance EVs and/or heavy duty EVs</p>	<p><u>PCS:</u></p> <ul style="list-style-type: none"> • At least two chargers of min. 100 kW (with 200-1000 V) each of different specification (CCS & Chademo). • Liquid Cooled Cables for high speed charging facility for onboard charging of fluid cooled batteries. <p><u>FCS:</u> in addition should-</p> <ul style="list-style-type: none"> • have option of battery swapping facilities, be free to decide the charging specs as per the requirement of its in-house company EVs 		

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
5. Location of Public Charging Stations – with regard to density/distance b/n two charging points	<ul style="list-style-type: none"> • At least one Charging Station should be available in a grid of 3 Km X 3 Km • One Charging Station be set up at every 25 km on both sides of highways/roads • For long range EVs: <u>on highways/ road</u>-at least one FCS at every 100 Kms on each side, <u>With in cities</u>- transport Nagar, bus depot 		

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
	<ul style="list-style-type: none"> • Governments may also give priority to existing retail outlets (ROs) of Oil Marketing Companies for installing PCI • COCO ROs may be given higher preference within such ROs. 		

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
6. Database of Public EV Charging Stations	<ul style="list-style-type: none"> • CEA shall create and maintain a national online dB of all PCI through DISCOMs • Appropriate protocols shall be notified by DISCOMs for this purpose • This database shall have restricted access as finalized between CEA and MoP 	<p>CEA</p> <p>DISCOMs</p>	

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
7. Tariff for supply of electricity to EV Public Charging Stations	<ul style="list-style-type: none"> To be determined by the appropriate commission, provided however that the tariff shall not be more than the average cost of supply plus 15%. The tariff applicable for domestic consumption shall be applicable for domestic charging 	Appropriate commission	
8. Service charges at PCS/BCS	<ul style="list-style-type: none"> Charging of EVs is a service State Nodal Agency shall fix the ceiling of the Service Charges 		Clarified by Ministry of Power vide letter No. 23/08/2018-R&R dated 13.04.2018

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
10. Implementation mechanism for rollout	<ul style="list-style-type: none"> • MoP shall designate a Central Nodal Agency for the rollout • Every State Government shall nominate a Nodal Agency for that State • State DISCOM shall generally be the nodal agency, however, State Government shall be free to select PSUs, ULBs as Nodal Agency 	MoP & State Govts.	<ul style="list-style-type: none"> • CAN: BEE • SNA: BESCO-Karnataka

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
11. Selection of Implementation Agency (IA) for Rollout	<ul style="list-style-type: none"> • CNA shall finalize the cities, expressways/highways to be finally taken up from the above in consultation with respective State Govts. • IA shall be selected by the respective SNA • IA 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 policy and as entrusted by the concerned Nodal Agency 		

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

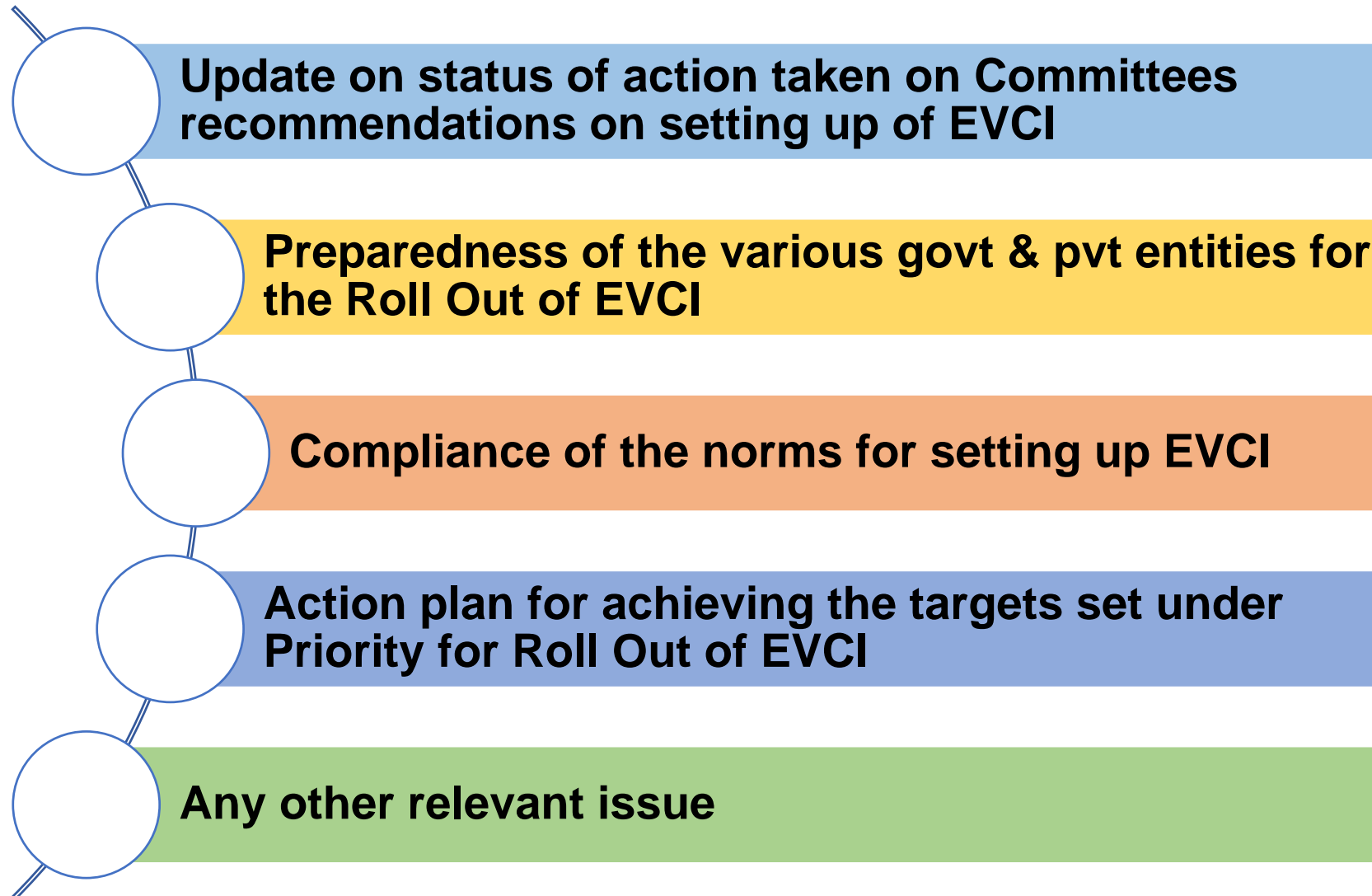
Guidelines/Standards	Recommendations	Responsibility	Status
	<ul style="list-style-type: none"> • IA to be mutually decided by CNA & SNA • IA can be an Aggregator as mutually decided between CNA & SNA • Different PCS/FCS providers bundled pkgs or for individual locations could also be chosen as mutually decided. • Whenever bundled packages are carved for bidding, such packages shall necessarily include at least one identified expressway/highway or part thereof 		

Journey So Far...

Recommendations of the Committee on Policy, Planning & Regulatory/ Tariff Aspects

Guidelines/Standards	Recommendations	Responsibility	Status
	<ul style="list-style-type: none"> • Where IA is selected by bidding, all bidding shall be conducted by SNA • There shall be an upper cap on the Service Charges declared by the SNA • Subsidy, if admissible by Central/State Govt, shall be suitably factored in such calculations of Upper Cap/Bid Variable 		

Way Forward.....



FORMAT-A**Location and Technical Detail Of EV Charging Stations*****DISCOM:**

Frequency of Updation: Monthly

(As on.....)

DISCOM	Circle or Zone	Station Name	Location						Station Type (Attendant /Self service)
			Address	Latitude	Longitude	City	State	PIN	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

Station Phone No.	Access (Public /Restricted /Captive)	Access Time (24 Hrs/ Limited 8 AM - 10 PM)	Payment Mode (Cash/Card / e-wallet)	Commi-ssioning Date	Owner	Connector type	Number of Level-1 EVSE
(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)

Number of Level-2 EVSE	Number of DC fast Charge	Connected at Voltage (AC Input Voltage)	DC Output
(19)	(20)	(21)	(22)

* Information in respect of All type of EV Charging stations is to be given (Public, Restricted entry and Captive)

FORMAT-B**Electricity Consumption Details of EV charging stations**

Discom	Month	No of Stations (*)	No. of vehicles Charged	Electricity Consumed during the month
(1)	(2)	(3)	(4)	(5)

* In no. of stations, all type of charging stations are to be included like Public charging, Limited Entry and Captive.