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MINISTRY OF HEAVY INDUSTRIES

EVALUATION OF ELECTRIC VEHICLE (EV) POLICY

COMMITTEE ON ESTIMATES
(2022-23)

TWENTY SIXTH REPORT

(SEVENTEENTH LOK SABHA)

LOK SABHA SECRETARIAT
NEW DELHI

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(Presented to Lok Sabha on 24 March, 2023)

LOK SABHA SECRETARIAT

NEW DELHI

March, 2023 / Chaitra, 1945 (Saka)

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INTRODUCTION

I, the Chairperson of the Committee on Estimates, having been authorized by the Committee to submit the Report on their behalf, do present this 26th Report on the subject 'Evaluation of Electric Vehicle (EV) Policy' pertaining to the Ministry of Heavy Industries.

2. India is massively dependent on oil imports. Internal Combustion Engine (ICE) vehicles produce air pollution and greenhouse gases. Promoting the use of EVs can have numerous benefits for the environment, public health, economy and technological innovation. India has been working to promote the use of electric vehicles (EVs) through various schemes and incentives.

3. In this backdrop, with a view to examine various aspects of Electric Vehicle Policy in the country, the Committee on Estimates (2022-23) selected this subject for in-depth examination and report to the House.

4. In this Report, the Committee have dealt with various schemes and initiatives for promotion of electric vehicles such as Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME) scheme, PLI scheme for Advanced Chemistry Cell, PLI Scheme for Automobile and Auto Component, other supportive policies, and Charging infrastructure development, battery waste management, skilled manpower for maintenance, repair and scrapping of EVs etc. The Committee have analysed these issues in detail and made observations/recommendations in the report.

5. The Committee on Estimates took oral evidence of the representatives of Ministry of Heavy Industries on the subject on 7th June, 2022 and 2nd August, 2022. The Committee also held informal discussion on the subject during its study visit on 4 November, 2022 at Hyderabad. The draft Report was considered and adopted by the Committee on Estimates (2022-23) at their sitting held on 23 March, 2023.

6. The Committee wish to express their thanks to the representatives of the Ministry of Heavy Industries for furnishing material, written replies to list of points and tendering evidence before them.

7. For facility of reference and convenience, the observations/recommendations of the Committee have been printed in bold in Part-II of the Report.

NEW DELHI
23 March, 2023
02 Chaitra, 1945 (Saka)

GIRISH BHALCHANDRA BAPAT
CHAIRPERSON
COMMITTEE ON ESTIMATES

PART I
CHAPTER I
INTRODUCTORY

An electric vehicle (EV) is a type of vehicle that uses one or more electric motors for propulsion instead of an Internal Combustion Engine (ICE). EVs can be powered by batteries that are recharged by plugging the vehicle into an electric power source, or they can be powered by a hydrogen fuel cell that converts hydrogen gas into electricity. Compared to traditional gasoline-powered vehicles, EVs produce fewer emissions and are more energy-efficient that can potentially save money on fuel and maintenance costs. While EVs were once seen as a niche market, they are becoming increasingly popular as battery technology improves and charging infrastructure becomes more widely available. The rise of EVs is part of a broader trend towards more sustainable transportation and reducing carbon emissions from the transportation sector.

1.2 There are four types of electric vehicles available:

1. **Battery Electric Vehicles (BEVs):** BEVs are also known as All-Electric Vehicles (AEV). Electric Vehicles using BEV technology run entirely on a battery-powered electric drive train. The electricity used to drive the vehicle is stored in a large battery pack which can be charged by plugging into the electricity grid. The charged battery pack then provides power to one or more electric motors to run the electric car.
2. **Hybrid Electric Vehicle (HEV):** HEVs are also known as series hybrid or parallel hybrid. HEVs have both engine and electric motor. The engine gets energy from fuel, and the motor gets electricity from batteries. The transmission is rotated simultaneously by both engine and electric motor.
3. **Plug-in Hybrid Electric Vehicle (PHEV):** The PHEVs are also known as series hybrids. They have both engine and a motor. One can choose among the fuels, conventional fuel (such as petrol) or alternative fuel (such as bio-diesel). It can also be powered by a rechargeable battery pack. The battery can be charged externally.
4. **Fuel Cell Electric Vehicle (FCEV):** FCEVs are also known as Zero-Emission Vehicles. They employ ‘fuel cell technology’ to generate the electricity

required to run the vehicle. The chemical energy of the fuel is converted directly into electric energy.

Need for Electric vehicles

1.3 India is massively dependent on oil imports. According to data of Petroleum Planning & Analysis Cell (PPAC), India has spent USD 119.2 billion in FY 2021–22, which is up from USD 62.2 billion spent in the previous fiscal year. High crude oil prices in the international market have adverse impact on country's economy.

Besides, the vehicular pollution arising from the increasing stock of private vehicles, especially internal combustion engines (ICE) has contributed significantly in deteriorating the air quality in Indian cities.

India has committed to Net-Zero carbon emissions by 2070 and to reduce the total projected carbon emissions by one billion tones by 2030. It is believed that faster adoption and promotion of Electric vehicles will not only bring down the import bill but also the pollution arising from the use of ICE vehicles. India has the potential to become a leading hub for manufacturing EVs and EV components with a robust Electric Vehicle (EV) Policy. In view of the above, the Committee selected the subject 'Evaluation of Electric Vehicle (EV) policy' for in-depth examination and report. Two sittings were held for the examination of the subject on 7 June, 2022 and 2 August, 2022 with the representatives of the Ministry of Heavy Industries (MHI), NITI Aayog and Convergence Energy Services Limited (CESL).

1.4 Ministry of Heavy Industries in their Background note has submitted as follows:

> India represents the fifth largest automobile market in the world. We are world's largest 3 Wheeler, 2nd largest 2 Wheeler and 3rd largest passenger vehicle manufacturer. We are also massively dependent on oil imports, with a USD 112 billion oil import bill in FY19 (equivalent to 4% of the country's GDP). Pollution in many Indian cities has reached alarming levels. All these factors combined, make a strong case for the Government of India for moving towards green mobility to control pollution and save the environment. The initiative has prompted

introduction of policy and incentive schemes by MHI for fast adoption of Electric Vehicles (EV) in India. As per Vahan portal, EV sales in FY21-22 were 4.3 lakh units, which are 3.3 times of EV sold during FY 2020-21. In FY21-22 ~2.3 lakh registered electric two-wheelers, ~1.7 lakh e-3W , ~19000 e-4W and ~0.01 lakh buses were sold, which is about 2.7 % of FY21-22 total Internal Combustion Engine vehicle sales.

1.5 One of the reasons for low popularity of EVs is a high upfront cost as compared to Internal combustion Engines (ICE) vehicles. When enquired about the reason for EVs being costlier than ICE vehicles, MHI has submitted as below:

"Based on the ARAI inputs, it is stated that

In electric vehicles, major expensive component is Lithium-Ion battery (approx. 30% to 40% cost of electric vehicle). Currently Lithium-Ion cells are imported and further manufacturing / assembly of battery pack is done domestically. Globally, prices of Lithium-Ion cells and battery pack are higher, although it is expected that there will be a downward trend in future.

Government of India's Production Linked Incentive (PLI) Scheme for Advance Chemistry Cells (ACC) will help in local manufacturing of Lithium-Ion cells and reduce dependency on import which may bring down the cost of the batteries.

Although penetration of electric vehicles is increasing, the percentage of EV sales as compared to total Auto vehicle sales is still minuscule (2 to 3%). Thus the volume of electric vehicles and their components manufacturing and sales is still quite low. Typically, in the Auto sector, volume sales drive down the cost and hence present volume of electric vehicles being still low, economics of scale is not achieved yet, thus resulting in higher cost of electric vehicles as compared to Internal Combustion Engines (ICE) vehicles."

1.6 In a written reply to a query, MHI has also stated as below:

Upfront cost of battery-operated vehicles is higher than the conventional vehicles. However, the operational cost of battery-operated vehicles is lower than the conventional vehicles. Therefore, the overall life time cost of the battery-operated vehicles is lower than the conventional vehicles. Battery-operated vehicles are being supported by the way of demand incentives under FAME India Phase II, MHI to reduce the cost difference between the battery-operated vehicles and the conventional vehicles.

Measures for promotion of EVs

1.7 When asked about the steps taken to promote Electric Vehicles (EVs) in the country Ministry of Heavy Industries in their written reply has submitted as below:

Following steps have been taken by the Government for adoption of electric vehicles in the country:

i. The Ministry of Heavy Industries formulated a Scheme Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) Scheme in 2015 to promote adoption of electric/ hybrid vehicles (xEVs) in the country. At present, Phase-II of FAME India Scheme is being implemented for a period of 5 years w.e.f. 01st April, 2019 with a total budgetary support of ₹10,000 crore.

ii. The Government on 12th May, 2021 approved a Production Linked Incentive (PLI) scheme for manufacturing of Advanced Chemistry Cell (ACC) in the country in order to bring down prices of battery in the country. Drop in battery price will result in cost reduction of electric vehicles.

iii. Electric Vehicles are covered under Production Linked Incentive (PLI) scheme for Automobile and Auto Components, which was approved on 15th September 2021 with a budgetary outlay of ₹ 25,938 crore for a period of five years.

iv. GST on electric vehicles has been reduced from 12% to 5%; GST on chargers/ charging stations for electric vehicles has been reduced from 18% to 5%.

v. Ministry of Road Transport & Highways (MoRTH) announced that battery-operated vehicles will be given green license plates and be exempted from permit requirements.

vi. MoRTH issued a notification advising states to waive road tax on EVs, which in turn will help reduce the initial cost of EVs.

vii. Model Building Bylaws 2016 amended to establish charging stations and infrastructure in private and commercial buildings.

1.8 MHI, in their written reply, to a query about the supported EVs, has stated that Battery Electric Vehicle and Strong Hybrid vehicles are supported under the FAME-II Scheme whereas hydrogen fuel cell based vehicles which are Zero Emission Vehicles (ZEVs) are covered under Auto and Auto component PLI Scheme.

EVs on Indian roads

1.9 Electric vehicles (EVs) are slowly gaining popularity on Indian roads, although they are still relatively uncommon. One of the main barriers to the widespread adoption

of EVs in India is the lack of charging infrastructure. Despite various challenges, the market for EVs in India is slowly growing. In 2021, electric two-wheelers, particularly scooters, emerged as the most popular EV segment, accounting for over 96% of EV sales in the country. Electric cars and buses are also gradually gaining popularity, with several manufacturers launching EV models in the market. Overall, while the adoption of EVs in India is still in its early stages, the country has the potential to become a major market for EVs in the future, given the Government's commitment to promoting electric mobility and the increasing awareness among consumers about the benefits of EVs.

A total of 18,02,967 Electric Vehicles (EVs) are being used on the roads of India as on 30 November, 2022, as per the information received from Ministry of Road Transport and Highways. The details are as under:

Sl. No.	Vehicle Category	No. of electric vehicles
1	Two Wheeler	8,13,431
2	Three Wheeler	9,19,025
3	Four Wheeler and above	70,511
Grand Total		**18,02,967**

Safety Concerns

1.10 Expressing concern about reports of some electric two wheelers catching fire, the committee enquired about steps taken to check such incidents and ensure safer quality of EV in the country. MHI in their written reply informed the committee that Ministry of Road Transport and Highways (MoRTH) constituted a team of experts from DRDO, IISC, Bangalore and Naval Science and Technological Laboratory (NSTL), Visakhapatnam to find out the root cause of fires and recommend remedial measures.

1.11 When further enquired about the said team of experts and their report on the incidents of fire, MHI in their written reply has updated as below:

> As per the information received from Ministry of Road Transport and Highways.
>
> In the wake of incidents of fire in electric two wheelers, the Ministry of road Transport and Highways vide letter dated 5th May, 2022 had constituted a committee of experts to suggest safety standards for Battery, BMS, and related components in electric vehicles.

The committee submitted the report on Safety Standards and suggested some additional requirements to be incorporated in the existing testing standards for battery and related components of L, M, and N category vehicles.

Incorporating the suggestions of the committee and inputs from the stakeholder, Amendment to the Automotive Industry Standards (AIS) 156 [Specific requirements for L category electric power train vehicles] and AIS 038 (Rev 2) [Specific Requirements for M, N Category Electric Power Train Vehicles] was published. The said Amendments will be applicable from 1st December, 2022 and some clauses of these AIS standards will be effective from 31st March, 2023.

MoRTH has issued the draft notification, vide G.S.R 659(E) dated 25th August 2022, for the requirements of Conformity of Production (COP), in respect of all categories of Electric vehicles including Quadricycles, E- rickshaws, two wheelers, and four wheelers.

CHAPTER II

CHALLENGES OF EVs AND EV INDUSTRY

While it cannot be denied that EVs provide huge benefits over traditional vehicles that use fossil fuels, there are several challenges that have been identified by EV users, enthusiasts and the public as well as various stakeholders in vehicle manufacturing, which need to be addressed to realise the full potential of EVs in India. The major issues present in the EV space are summarised below:

1. **Charging Infrastructure:** One of the major hurdles in adoption of EVs in India is the unavailability and slow development of charging infrastructure. Charging infrastructure is the foundation on which the EV market is built and India has not achieved an expeditious pace of establishment and use of charging infrastructure which creates a barrier in both production and sale of EVs in India. Factors like unsurety in utilization rates of charging stations, huge operating costs, load on electricity DISCOMs, etc., create a negative environment for operators to establish charging stations and discourage investment when there are not sufficient numbers of EVs in Indian roads for operators to realise the returns on their investments. Limited charging infrastructure in India, especially in smaller towns and rural areas as well as on Highways and expressways which are more than 600 at present in the country, makes it difficult for EV owners to travel long distances and may discourage potential buyers from purchasing an EV.
2. **Range anxiety -** Range anxiety is one of the crucial challenges ahead of the growth path for electric vehicles in India. The EV customers are often worried about the vehicles capability to reach point B from point A before the battery runs out. This issue is closely connected to the scarce charging infrastructure in India. The EV charging infrastructure in India is too low compared to the petrol pumps. Also, the available EV charging stations are concentrated in urban areas only.
3. **High initial cost-** There is no price parity between electric vehicles and ICE vehicles in India. Electric vehicles are way more expensive than their conventional fuel-powered counterparts. This huge price difference discourages many interested EV buyers to shy away from making a decision to buy those.

4. **Scarce battery technology -** The battery technology used in EVs is still evolving, and the cost of the battery is a significant factor in the overall cost of an EV. Moreover, the availability of rare earth metals and other raw materials required for the production of batteries is limited. The lithium-ion battery is the most popular and widely used energy source for EVs. India doesn't produce lithium. The country doesn't produce li-ion batteries either. India relies on import for EV batteries resulting in the sky-high price for these important components and eventually the EVs as well. Cost for repetitive battery replacement, etc., do not make EVs a popular option for the Indian consumers.
5. Power Supply: India faces challenges in ensuring reliable and stable electricity supply, especially in rural areas. As the EV adoption increases, the demand for electricity will also increase. To meet the increasing requirement of electricity, huge invest in infrastructure is required for producing more electricity from renewable energy sources.

6. Manufacturing Capabilities: India is heavily dependent on import in EV sector. India's domestic manufacturing capabilities for EVs and its components are limited. Therefore, a boost in the domestic manufacturing industry will be needed to provide affordable EVs and components.

7. **Consumer perception -** The consumer perception about electric vehicles in India is still weak compared to ICE vehicles. The range anxiety, lack of charging infrastructure, a wide gap between EV and ICE vehicle prices, lack of assurance about satisfactory resale value play key roles in that. Despite the Indian consumers are becoming more open about adopting e-mobility than before, the negative perception about EVs is still there.
8. **Consumer protection:** While the technology is still relatively new and is being accepted more day by day, The repair and maintenance network is still very minuscule compared to ICE vehicles. The lack of people skilled in EV maintenance is one of the major causes of this challenge.
9. **Limited Awareness:** In the absence of widespread marketing strategies concerning the impact and importance of EVs, Indian consumers have limited awareness of EVs as alternative to traditional fossil fuel engine-based vehicles.

10. **Policy Support:** While various steps have been taken by the Government to promote the use of EVs, more policy support for longer period is required to encourage the EV penetration at par with ICE vehicles. This includes providing incentives for EV manufacturers, creating a supportive regulatory environment, and investing in charging infrastructure promoting EV awareness etc.
11. **Scrapping Policy**: Electric vehicles contain high-voltage components that are harmful to the environment, if not handled properly. This includes batteries, which can contain toxic chemicals, and electronic components, which can release harmful substances when broken down. Many of the materials used in EVs, such as lithium and cobalt, are valuable and can be recycled. Electric vehicles can also contain sensitive data that should be protected during scrapping. This includes personal information stored in infotainment systems and telemetry data collected by the vehicle's sensors.
12. **Shortage of skilled manpower for servicing and repair of EVs**.

Availability of skilled labor for servicing and repairing EVs is a concern. Unlike traditional gasoline-powered vehicles, EVs have unique components and systems, such as batteries, electric motors, and regenerative braking systems, that require specialized training and expertise to repair and service. As EVs become more popular and their numbers on the road increase, shortage of trained technicians and mechanics who are qualified to work on these vehicles could result in longer waiting time for repairs, higher costs for maintenance and repairs, and potentially lower customer satisfaction.

CHAPTER III

GOVERNMENT MEASURES TO PROMOTE ADOPTION OF EVS

National Electric Mobility Mission Plan (NEMMP) 2020

Government of India launched the National Electric Mobility Mission Plan (NEMMP) 2020 in 2013.

The National Electric Mobility Mission Plan 2020 was one of the most important and ambitious initiatives undertaken by the Government of India to bring about a transformational paradigm shift in the automotive and transportation industry in the country. This was a culmination of a comprehensive collaborative planning for promotion of hybrid and electric mobility in India through a combination of policies aimed at gradually ensuring a vehicle population of about 6-7 million electric/hybrid vehicles in India by the year 2020 along with a certain level of indigenisation of technology ensuring India's global leadership in some vehicle segments. It was a composite scheme using different policy-levers such as:

1. Demand side incentives to facilitate acquisition of hybrid/electric vehicles
2. Promoting R&D in technology including battery technology, power electronics, motors, systems integration, battery management system, testing infrastructure, and ensuring industry participation in the same
3. Promoting charging infrastructure
4. Supply side incentives
5. Encouraging retro-fitment of on-road vehicles with hybrid kit

3.2 In the Background note submitted to the committee, MHI has stated as below:

> India embarked on its Electric mobility journey in 2015, with the launch of flagship Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles (FAME India) scheme. Its approach to electric mobility evolved towards developing a shared & connected mobility paradigm and to reduce the fossil fuel imports.
>
> The Government's approach for India's EV transition also encompasses:

1) Promotion of localization 'Make in India' or Aatmanirbhar Bharat and position India as an export hub for EVs and

2) Promotion and establishing a comprehensive policy framework that shall support a fair and a smooth transition to e-mobility.

India's EV policy emphasises on moving people rather than vehicles, targeting incentives towards shared and public transport, which have greater potential to reduce congestion, improve urban air quality, and reduce carbon emissions. The incentives are linked to battery capacity, providing motivation to customers and manufacturers to shift towards longer-range vehicles.

3.3 The policy measures taken by MHI to become a leader in sustainable mobility are as below:

(i) **Faster Adoption & Manufacturing of (Hybrid &) Electric Vehicles (FAME) Phase-I:** The Scheme was launched in April, 2015 with a budget allocation of ₹ 895 Crore over 4 years (till 2019). It supported about 2.8 lakh hybrid and electric vehicles and deployed 425 e-buses across 10 cities.

(ii) **FAME Phase-II:** Following the success of Phase-I of FAME India Scheme and the leanings from it, the FAME Scheme was extended to Phase II initially for a period of three years commencing from 1st April, 2019 with a total budgetary support of ₹10,000 crore to support all ZEVs (Zero Emission Vehicles) fitted with Advanced Chemistry Batteries. This Scheme envisaged supporting 1 million 2W, 0.5 million 3W, 55,000 cars and 7090 e-buses. Incentives under this Scheme are linked to power of the battery @ ₹10,000/kWh for all vehicles except buses (@₹ 20,000/kWh). This scheme provides for ₹1000 Crores for installation of Charging Infrastructure for Electric Vehicles.

The Scheme was remodelled in June 2021 based on experience particularly during Covid-19 Pandemic and feedback from industry and users.

Under remodeled FAME-II, following are the amendments:

a. Aggregation will be the key method for bringing the upfront cost of 3W EV at an affordable level and at par with ICE 3-Wheelers. Energy Efficiency

Services Limited (EESL) will aggregate demand for 3 lakh Electric three Wheelers for multiple user segments.

b. For Electric Buses, 4 million plus cities (Mumbai, Delhi, Bangalore, Hyderabad, Ahmedabad, Chennai, Kolkata, Surat, and Pune) will be targeted. EESL will go for aggregation of demand in these 9 cities for remaining E-buses under the Scheme on OPEX basis.

c. For Electric 2 Wheelers, demand Incentive is increased to @ ₹15000/- per KWh from @ ₹ 10000/- per KWh.

d. The cap on incentives for Electric 2 Wheelers is increased to 40% of the cost of vehicles from 20% cost of vehicles.

e. The scheme has been extended for a further period of 2 years i.e. upto FY 2023- 2024.

Under the aegis of MHI, the largest ever aggregation of demand for electric buses – 5450 buses across five major cities namely Kolkata, Delhi, Bangalore, Hyderabad and Surat is under process. The aggregation model establishes a benchmark for public transit going forward in terms of a business model. It allows state agencies to purchase mobility as a transit service – where operators are paid a fixed price denominated as rupees per kilometre over a period of time. This public-private model has emerged as a way for cities to introduce or scale electric bus services. With a burgeoning demand for mobility, this model holds the potential to serve as a solution to cover the investment needs of the bus sector and ramp up bus services.

The total number of EVs envisaged under FAME II can cumulatively save about 12 billion liters of fuel over their lifetime, which translates into monetary savings worth Rs. 72000 crores. It would lead to avoidance of about 27 million tonnes of CO2. Hence, there are enormous economic and environmental benefits for citizens of the country.

3.4 When enquired about the details as worked out by EESL for implementation of aggregation of demand of electric 3 wheelers and for electric buses, MHI in their written reply have submitted the following:

As per the information received from EESL:

a). For E-3Ws:

i. In fulfillment of the mandate given, Convergence Energy Services Limited (CESL) aggregated demand for electric 3Ws, about 82,000 electric 3-wheelers for different uses cases like garbage tipper for municipal corporation, cargo vehicles for e-commerce and 3rd part logistic companies' passenger e-autos and refrigerated vehicles for dairy vaccine & product. Further, CESL has also received demand for garbage tippers from various state municipal corporations through expression of Interest.
ii. Subsequently CESL floated tender on 6th August 2021 for 1,00,000 E3Ws for price discovery under 8 use cases, the bidding process concluded in October 2021.
iii. 21 Bidders participated in the tender, 12 bidders qualified, after due evaluation L1 price was discovered for each lot. 6 bidders agreed to match the L1 price.
iv. Price reduction achieved for e-3Ws through this aggregated tendering were 18%-26% lower than the prevailing market prices and are inclusive of GST, 3-year AMC, 1-year comprehensive insurance. CESL is offering the E3Ws through its MyEV portal for retail (B2C) and bulk (B2B) procurement.
v. Final deployment of these electric 3Ws under FAME-II was not executed as per the timelines due the following reasons:

   a. Issue in financing
   b. Final purchase order was not placed by potential clients within the bid validity.

vi. Currently, CESL is in process of reviving the aggregation model for electric 3Ws through robust consultation with various stakeholders for successful implementation for this program.

b). For e-buses:

i. Ministry of Heavy Industries vide Gazette notification dated 11th June 2021, nominated EESL to aggregate demand for e-Buses under FAME -II, in 9 major cities having population of over 4 million (Mumbai, Delhi, Bangalore, Hyderabad, Ahmadabad, Chennai, Kolkata, Surat, and Pune).
ii. EESL through its wholly owned subsidiary CESL had intense consultations with STUs, State Governments, OEMs, NITI Aayog, Ministry of Heavy Industries (MHI), financiers and several sector experts/institutions, CESL managed to standardize e-bus specifications, terms and conditions of public transport across cities. CESL issued Grand Challenge document on 30th September, 2021, soliciting demand for e-buses from STUs. This stayed publicly floated and open until 31st Dec 2021, and upon closing, a demand for 5,450 buses was received from 5 of the 9 nominated cities.
iii. CESL floated a centralised tender on 20th January 2022 to enable deployment of e-buses against the aggregated demand. This tender contained homogenized terms and conditions of public transit across the 5 cities –an unprecedented exercise thus far, given the peculiarities and uniqueness of cities across India and their local needs for buses and bus transport. The last date of submission of bids was 15th March 2022. Financials bids were opened on 26th April 2022.
iv. The prices discovered are lowest ever and further, they include electricity charges. The rates discovered are 27% less than diesel and 31% less than CNG

without subsidy. This was achieved by aggregating the demand and floating a unified tender with standardized parameters and contract terms.

v. The aggregation model of e-buses has resulted in monetary saving of around Rs. 471 crores of subsidy under FAME-II Scheme.

vi. Two cities namely Delhi & Bengaluru has signed the concession agreement with the operator for deployment of 921 buses each in each city, these buses are envisaged to be deployed within a years' time.

3.5 To a query about the level at which incentives/subsidies under FAME-II are provided, MHI in their written reply has informed the Committee as below:

> In FAME-II Scheme, the demand incentive is available for consumers (buyer/end users) in the form of an upfront reduced purchase price of hybrid and electric vehicles (e-2W, e-3W and e-4W) to enable wider adoption, which is being reimbursed to the OEM by Government of India.

3.6 When further enquired whether FAME-II support is provided to imported EVs, MHI replied in negative and stated that, FAME-II supports EVs manufactured in the country.

3.7 During the examination of the subject, one of the representatives of NITI aayog explained the rationale behind the remodeling of FAME II scheme and its positive outcomes as below:

> "□□□ □□ □□ □□ □□□□□□ □□□□□□□ □□ □□□ □□ □□ □□□□□□□□ □□□□□ □□ □□ □□□□□□□ □□□□□ □□□□ □□□□ □□□□ □□□□, □□□□□ □□□ □□□□ □□□□ □□□ □□ □□ □□□ □□□-□□□ □□□□□□ □□ □□ □□□ □□□ □□ □□ □□ we are giving the same prescription to all the patients. For two wheelers, we realised that we must raise the incentives. We raised it and you can see the result, it is ten times. For three wheelers, we said "no, we should aggregate the demand". Let the manufacturer know that □□□□ □□□ □□□□□□ □□□□□ □□□□□ □□□ □□□ □□□□□□□ □□ □□□ □□ □□□ □□□ □□□□□□□ □□ □□□□□□ □□□□□□□□ □□□□□ □ □□□□□ □□ □□□□□, □□□□□□□ □□□□ □□□□ □□□□□ □□□ □□□□ 80,000 □□ 1 □□□ □□ □□ □□□ □□ □□□□ □□□□□□□□□ □□ □□□□ □□ and this has resulted into drop in prices by 20 per cent. □□□□ □□□□ □□□ □□□□□ □□□□ □□□□ □□□ That was altogether a different model. We said that we will not spend our resources all over India. □□□□ □□□□ □□□ □□□ □□□□ □□□□ □□□□□□□ We will just focus on nine cities, what we call light house cities, cities having population of four million plus. □□□□ □□□ □□ □□□ □□ □□ □□□□□ □□□ □□□□□□ □□□□□□□□□□□□□□ □□□ □□□□□□□□□□ □□□□□□□□ □□ □□□□□□, □□ □□□□ □□□□ □□□ □□□□ □□□ □□ will be inspired and they will be copying it. We took these nine cities and out of these nine, five cities took interest. So, the first principle was light house cities. Then, we said, no, the process should be that of grand challenge. By that we meant that we will ask you whether you are

interested or not. We will not be wasting time with a particular city □□ □□ □□ □□□□□ □□ □□□□□□ □□□□ □□ □□□ □□ □□□□ □□□ □□□□□□□□□ □□□□ □□, □□ □□□□ □□□□□□ □□□□ □□□□□ □□□, □□□□□, □□ □□□□ □□□□□□ □□□□□ That is how we selected five cities. We harmonized the demands, the specifications.□□□□ □□□□□□, □□□□ □□□ □□ □□□□□ □□□□ □□ □□□□□ □□□□□, □□□□□□□□□ □□□□□ □□□□□, 12 □□□□ □□ □□ □□□□□, 9 □□□□ □□ □□ □□□□□, □□□ □□□□□, □□□ □□□ □□□□□, □□□□ □□□ □□□ □□ □□ □□□□□□ □□ □□□□ □□□ □□□□ □□□□□□□□□ □□□□□ □□ □□□□ □□ □□□ □□ □□□□ □□□□□□ □□ □□□□□□□□ □□□ □□□□□□□ □□, □□□□ □□□□□□ □□, □□□□□□ □□, □□□□ □□, □□□□ □□□□□ □□□□□ □□□ □□□□□ □□ □□□□□□□□ □□□ □□□ □□□ □□□ □□ □□□□ □□ □□□□ □□□□□ □□□□□□□□□ □□□□ □□, □□ □□ □□, □□□□ □□□ □□ □□ □□□□□□ □□□□ □□ □□□□ □□□□ □□□□ □□□□□ □□□□ □□□□ □□ □□□ □□□□□ □□□□ □□□ □□ □□□□ □□□ □□□ □□□ □□□□ □□□□ □□□□ □□ □□□□□ □□ □□□□□□□ □□□□ □□□□□ □□□□ □□, □□ □□ □□ □□□ 1 □□ □□□ □□□□ □□□□□ □□, □□□ □□ □□□□□□ □□□□□ □□ □□□ □□□□ □□□□ □□□□ □□□□□□ □□□, □□ □□□□ □□□□ □□□□ □□ □□□□□ □□□□ □□□ □□ □□□□ □□□ □□□□ □□□□ □□□□ □□□ □□ □□□□ □□ □□ □□□□, □□ □□□□, □□□□□ □□□□ □□ □□□□, □□ □□□□ □□□ □□ □□□□□□ □□□ □□□ □□ 12 □□□ □□ □□□□ □□ □□ □□□□ □□□□ □□ □□□ □□□ □□□□□□, □□□□□□□□ □□□□□□□□, □□□□□□□, □□□□□□□□, □□□□□ □□ □□□□ □□□□□□ □□□□, □□□□□ □□ □□□ □□□□□□ □□□□ □□□□, □□ □□□ □□□ □□□□□□ □□ □□□□ □□□ □□□□-□□□□ □□□□ □□ □□ □□ □□□□□ □□□□□□□□□□ □□□□ □□□□ □□ □□□□ □□□□ □□□ The only thing that I am concerned about is that per kilometer □□ □□□□□ □□□□□ □□□□□□ □□ □□□□ □□ □□□□□ □□□□, □□ □□□□ □□□□□□ You may see the result, Sir. The result that has come is, □□□□□□ □□ □□ □□□ □□□□□ □□□□ □□, □□ □□□ □□ □□□□□ □□□ □□ □□□□□□ □□ □□□□ □□ □□ □□ □□□ This has happened for the first time. □□□□□□□□□□ □□ □□ □□□□□□ □□□□ □□ price is less than that of CNG and diesel. So, this has inspired us. This is a big story that India has done.

With regard to charging, we said that buses cannot stay in the city and say that □□ 7 □□□□ □□ □□□□□ □□□□□□□ So, it was terminal charging. Every infrastructure is developed by the owner. We do not have to do anything. We have to simply run the bus. We have to identify □□ □□ □□□ □□ □□□ □□ □□□□□ □□ □□□□ □□□□ □□□□ □□, □□ □□ □□ □□□□□□□ I will be just administering it and will be ensuring □□ □□□□ □□□□□ □□□□□□□□□□ □□□ □□ □□ □□□□ □□ □□□□□□□□ □□□□□□ □□□ □□, that must be given to him. That is a fair deal for 12 years. The price that came is Rs. 47 per km. □□ 47 □□□□□ □□ □□□□□□□□ □□ □□□ □□, □□ 12 □□□ □□ □□□ 47 □□□□□ □□ □□□□ □□□□□□ □□□□? There is no increase. For 12 years, it is the same. They have calculated everything. Of course, now Tatas will be supporting it. All of them are pulling off the buses. We are in the process of issuing them letter of award finally."

(iii) Advance Cell Chemistry (ACC) PLI Scheme: ACCs are new generation advanced storage technologies that can store electric energy and convert it back to electric energy as and when required. The Government approved the Production Linked Incentive (PLI) Scheme for 'Advanced Chemistry Cell (ACC) Battery Storage' for achieving manufacturing capacity of 50 GWh for enhancing India's Manufacturing Capabilities with a budgetary outlay of ₹ 18,100 crore. The scheme was notified in June 2021.

Through PLI ACC Scheme, the Government of India intends to optimally incentivize potential investors, both domestic and overseas, to set- up Giga-scale ACC manufacturing facilities with emphasis on maximum value addition and quality output and achieving pre committed capacity level within a pre-defined time-period.

(iv) PLI for automobile and auto component Scheme: Electric Vehicles are covered under Production Linked Incentive (PLI) scheme for Automobile and Auto Components, which was approved on 15th September 2021 with a budgetary outlay of ₹25,938 crore for a period of five years. It envisages enhancing India's Manufacturing Capabilities for Advanced Automotive Products (AAT).

The PLI scheme for Automobile and Auto components proposes financial incentives to boost domestic manufacturing of Advanced Automotive Technology products and attract investments in the automotive manufacturing value chain. Its prime objectives include overcoming cost disabilities, creating economies of scale and building a robust supply chain in areas of Advanced Automotive Technology products. Under the Scheme total 86 applicants have been approved.

3.8 During the evidence when asked about the rationale of 5% GST on the EVs and whether MHI had recommended for zero percent GST on EVs, Secretary, MHI deposed as under before the Committee:

"the rates of GST are decided by the Ministry of Finance. They only take our inputs. So, they have to look at various rates that how they do. So, we are incapable of answering the rationale. The only thing what we said is this. The GST on electric vehicles is to be lower. As on today, the cost of battery is so high. If the GST is also at the normal rate, the initial upfront cost of buying an EV will be prohibitive for the consumer. So, we suggested reduction. It is the Ministry of Finance which has taken the call that at which level it should be."

3.9 When enquired about the States which have waived road tax on EVs so far, MHI submitted in their written reply as below:

> As per the information received from Ministry of Road Transport and Highways, it is stated that Uttar Pradesh, Punjab, Madhya Pradesh, Karnataka, Haryana, Gujarat, Jammu & Kashmir, Assam, Bihar, Telangana, Meghalaya, Rajasthan, West Bengal, Maharashtra, Chhattisgarh, Kerala, Chandigarh, Uttarakhand, Puducherry, Odisha and Delhi have provided concessions at various rates on Road Tax / Registration charges / Parking Charges to Electric Vehicles.

3.10 When further asked about compensation of revenue loss to the States on account of waiver of road tax on EVs, MHI has stated that as per the information received from Ministry of Road Transport and Highways, no such proposal is under consideration.

3.11 The Chief Secretary of Telangana informed the Committee during its study visit to Hyderabad that the incentives of EV two wheelers and three seater auto rickshaws comprise of 100% exemption from road tax and registration fee for the first 2,00,000 and 20,000 respectively for vehicles purchased and registered in the State of Telangana; retro-fitment incentive at 15% of retro-fitment cost capped at Rs.15000 per vehicle for the first 5000 retro-fit 3 seater auto rickshaws in Telengana; Financial Institutions are encouraged to provide a hire-purchase scheme at discounted interest rates and on similar lines incentives for electric 4 wheeler commercial passenger vehicles such as taxi, tourist cabs, private cars etc. have been announced.

3.12 States have a critical role in ensuring the success of the mobility transition. In this regard when asked about States/ UTs which have so far approved/notified dedicated EV Policies, MHI in their written response have submitted as below:

As per information received from MoRTH.

Himachal Pradesh, Uttarakhand, Maharashtra, Telangana, Gujarat, Assam, Meghalaya, Rajasthan, West Bengal, Tripura, Andhra Pradesh, Chhattisgarh, Chandigarh, Goa, Tamil Nadu, Madhya Pradesh, Odisha, Delhi, Karnataka, Kerala and Haryana have notified respective EV policies. The EV policies for Punjab, Uttar Pradesh, Jharkhand and Bihar are in draft stage.

3.12 The objectives of these State level EV policies vary by state but commonly include improved air quality, climate change mitigation, reduced dependence on oil imports, and the development of India's electric vehicle industry.

Demand-side policies: Capital subsidies are one of the most common demand-side tools in state-level policies, with some states like Gujarat and Assam providing flat subsidies for the purchase of all new electric 2W, 3W, and 4W vehicles, while others like Odisha and Kerala provide subsidies that are a percentage of the EV's purchase price. Some programs, such as Assam's incentive for early 2W and 3W, base the subsidy on the vehicle battery capacity. "Early-bird" subsidy programs like the one in place in Maharashtra only subsidize the first 100,000 EV purchases.

Other common incentives include exemptions from or reductions to vehicle registration fees, road taxes, parking charges, and occasionally, vehicle purchase taxes. To convert its large 3w vehicle fleet, Delhi has adopted a scrappage program that allows owners of internal combustion engine rickshaws to scrap their old vehicles for a credit towards purchasing an electric one.

Supply-side policies: A core component of many state-level EV policies is the provision of incentives and capital subsidies for EV manufacturing, research, and development. Some governments establish tax breaks for purchasing land used in the construction of EV manufacturing facilities, exempt EV manufacturers from stamp and electricity duties, and provide utilities at a reduced rate.

Charging infrastructure: Indian states provide a variety of incentives for private EV charger installations and establish targets for installing public chargers in densely populated areas and at regular intervals on high-traffic roads. Many policies change

their state's zoning laws, setting charging infrastructure requirements for constructing large-scale commercial complexes and residential buildings.

Several states have invested in battery-swapping kiosks to promote the transition to electric 2- and 3-wheeled vehicles in the ridesharing and delivery sectors.

3.13 When enquired about the position of India vis-a-vis other major countries especially China, in production and usage of Electrical Vehicles, MHI in their written reply has furnished the following information:

A look at key electric vehicle markets

China

Key Subsidies

China was aiming to phase out subsidies from 2020. However, the changed subsidy structure has affected the Chinese EV industry in 2019. The EV sales in 2019 have grown by a mere 4% y-o-y compared to 62% y-o-y growth in 2018. Sales in the months of Sep-Nov 2019 were down by more than 30% y-o-y. However, the scenario slightly improved in Dec 2019, in which the EV sales decline was 22% y-o-y. In order not to further hinder the car market in the depressed context of the pandemic, the planned end-2020 elimination of the New Electric Vehicle (NEV) subsidy program was postponed to 2022 albeit with gradual reductions in subsidies over that period.

United States

Key Subsidies

In 2020, a federal tax credit of up to $7,500 for the purchase of an electric car was still available, with the exception of General Motors and Tesla which had reached the 200 000 sales limit per automaker in 2018, but this credit was not renewed.

State-level Regulations

It was at the state level where policies pushed for stronger EV deployment. The number of states following the California Low Emissions Vehicles pollutant and greenhouse gas emissions regulations now represent about a third of US car sales. The Governor of California issued an Executive Order requiring that by 2035 all new car and passenger light truck sales be zero-emission vehicles. Major markets such as New York, New Jersey, and Massachusetts are considering similar bans on internal combustion engines.

European Union

Key Subsidies

Many countries in Europe are continuing EV subsidy and incentive measures launched as far back as 2015. In some, pandemic relief stimulus measures have favoured electric vehicles powertrains with additional purchase subsidies and cash-incentive schemes for scrapping petrol/diesel vehicles for electric vehicles.

Acceleration of electric mobility regulations during the pandemic

As part of its pandemic-related response, the European Union accelerated the roll-out of electric mobility through its commitment to decarbonization in the EU Green Deal and the subsequent Next Generation EU and Recovery Plan.

A number of EU directives and regulations are under review to adapt them to achieve stated ambitions. These include: CO2 emissions performance standards for cars and vans, Alternative Fuels Infrastructure Directive, European Energy Performance of Buildings Directive (which supports the deployment of charging infrastructure), and the EURO pollutants emissions standard.

India

In India key policy initiatives (remodeling of FAME II, PLI Auto and PLI ACC scheme) with respect to Electric Vehicles were taken in the calendar year 2021 during the pandemic.

Budgetary outlay of the Schemes

FAME-II scheme

3.14 In a written reply to the query as to how much funds were allocated vis-a-vis utilised during each of the years since the inception of the FAME-II Scheme, MHI has submitted as below:

The details of the Budget Estimate (BE), Revised Estimate (RE) and Actual Expenditure (AE) for Phase-II of FAME–India Scheme since FY 2019-20 are as under:

Sl. No.	Financial Year	Budget Expenditure (BE)	Revised Estimate (RE)	Actual Expenditure (AE)
1	2019-2020	Rs. 500.00 Crore	Rs. 500.00 Crore	Rs. 500.00 Crore
2	2020-2021	Rs. 692.94 Crore	Rs. 318.36 Crore	Rs. 318.36 Crore
3	2021-2022	Rs. 756.66 Crore	Rs. 800.00 Crore	Rs. 800.00 Crore
4.	2022-23	Rs. 2908.28 Crore	Rs. 2897.84 Crore	Rs. 1382.90 Crore as on 08.02.2023
5.	2023-24	Rs. 5171.97 Crore	NA	NiL

3.15 When further asked about the reasons for meager allocation of ₹1618.36 crore during first 3 years of FAME-II scheme and extra measures being taken/ proposed for speedy implementation of FAME-II so as to fully utilise the remaining ₹ 5,500 crore allocated for the scheme in its last year of completion i.e. 2023-24.

MHI in their written reply has submitted the following:

> The expenditure has been less as COVID affected off take of vehicles. The upfront cost of EVs is also more than the cost of ICE vehicles. In this regard, following actions have been taken by the Government:
>
> Consultations were held with various stakeholders.
>
> It was decided to extend FAME II within the overall allocation of ₹ 10,000 crore up to 31st March 2024.
>
> The subsidy for e-2W has been increased from ₹10,000 per Kilowatt hour to ₹ 15,000 per Kilowatt hour subject to a limit of 40% ex-showroom price. This was revised from the earlier 20%.
>
> For three wheeler EESL has been asked to aggregate demand. This will result in bringing upfront cost down by 20%.
>
> These steps will bring down cost of e-2w and e-3w. Upfront purchase cost is main concern. This will lead to a mass movement in e-2w and e-3w and bring cost at par with internal combustion vehicles.
>
> For buses it was decided that EESL will aggregate demand for the remaining buses for the nine, 40 lakh plus cities which will be targeted for deployment.

3.16 When enquired about proposal to optimally utilize ₹ 2908.28 crore allocated during FY 2022-23 under FAME-II which is on a much higher side as compared to the last three years, MHI in their written reply has stated the following:

"It is submitted that Rs. 1130.19 Cr has been spent towards subsidies/ incentive for sale of EVs (e-2w, e-3w and e-4w) being provided under the Scheme as on 21.02.2023. Further, after remodeling of the Scheme, the sale of electric vehicles has been increased.

Further, an amount of Rs. 252.71 Cr. (approx.) has been used under the Grant for Capital Creation Head for e-buses and charging infrastructure as on 21.02.2023.

Therefore, the proposed amount would be required for this purpose."

3.17 When asked about the various reasons for slow progress of the Scheme, MHI in their written reply has given the following reasons:

The reasons for slow pace in implementation of Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme have mainly been:

(i) High upfront cost of electric vehicle as compared to corresponding IC Engine vehicle.

(ii) Customer anxiety about range of electric vehicle.

(iii) Limited models available in India compared to Internal Combustion Engine (ICE) vehicles especially in Electric car segment.

3.18 Pointing out that not all manufactures of EVs are eligible for subsidy under FAME phase II scheme, when enquired about the details of criteria for eligibility of subsidy to EVs under FAME II, MHI in their written reply has submitted as below:

Under FAME-II Electric Vehicles complying the performance and efficiently criteria as laid down in Gazette notification dated 8th March 2019 and 28th March 2019 are eligible for incentive. In this regard, copy of gazette notifications and guidelines are uploaded on www.fame2.heavyindustries.gov.in web portal. The manufactures of EVs which are registered under FAME India Scheme Phase II for availing demand incentive is attached as **Annexure B.**

3.19 Ministry of Heavy Industries in their written submission has also clarified that there is no proposal under consideration to further extend the FAME-II scheme beyond FY 2023-24.

Advance Cell Chemistry (ACC) PLI Scheme

3.20 When asked about the timeline for achieving the target of Production Linked Incentive (PLI) Scheme for advanced Chemistry Cell (ACC) Battery storage and year wise target set for expenditure under this PLI scheme, MHI in their written reply has stated as below:

As per the Notification No. S.O. 2208(E) dated 09th June, 2021, the breakup of fund allocation year wise, for the scheme's duration is tabulated below –

(All amounts are in ₹ Crore)

FY	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	Total
Subsidy Amount	Setting Up of Manufacturing Facilities	Setting Up of Manufacturing Facilities	2700	3800	4500	4300	2800	18100

PLI for automobile and auto component Scheme

3.21 When asked about the timeline for the PLI Scheme for Automobile and Auto components and year-wise target set for expenditure under this PLI scheme, MHI has submitted the following information:

> "Incentive under the PLI Automobile and Auto Components Scheme will be applicable, starting from the Financial Year 2022-23 which will be disbursed in the following Financial Year i.e. 2023-24 and so on for a total of five (05) consecutive Financial Years."
>
> The expected annual incentive outlay and total incentive outlay under the Scheme is as given below:
>
> Incentive outlay

Applicable Incentive (F.Y.)	Disbursement of Incentive (Financial Year)	Total Incentive (₹ Crore)
2022-23	2023-24	604
2023-24	2024-25	3,150
2024-25	2025-26	5,925
2025-26	2026-27	7,199
2026-27	2027-28	9,060
Total		25,938

Progress of Schemes of Ministry of Heavy Industries to promote EVs

3.22 In a note submitted to the Committee, MHI has furnished the following information about the progress of the schemes.

FAME-II Scheme

MHI has sanctioned 6315 electric buses to 65 cities/STUs/State Govt. entities for intra-city operations. Which includes, 700 e-buses approved for intercity operation and 100 e-buses to Delhi Metro Rail Corporation (DMRC) for last mile connectivity. Out of these 6315 electric

buses, Supply Order for 3538 electric buses for intra-city, inter-city operation and last mile connectivity have been issued as on 30th May, 2022. Out of these 3738 buses, 1397 electric buses have been deployed (340 e-buses are deployed in the city of Mumbai, 150 e-buses in Navi Mumbai, 350 e-buses in UP, 50 e-buses in Goa, 10 e-buses in Dehradun, 10 e-buses in Silvassa, 25 e-buses in Patna, 49 e-buses in Surat, 150 e-buses in Ahmadabad, 49 e-buses in Delhi (DMRC), 150 e-buses by DTC, 40 e-buses in Chandigarh and 24 e-buses in Rajkot as on 30st May, 2022. After this initiative, total 1,822 electric buses have become operational under FAME (Faster Adoption and Manufacturing of Hybrid & Electric Vehicles in India) scheme including 425 electric buses as deployed in the cities of Srinagar, Jammu, Lucknow, Indore, Kolkata, Guwahati and Hyderabad, Mumbai under Phase-I of the Scheme.

Ministry has also sanctioned 2877 EV charging stations in 68 cities across 25 States/UTs. Letters of Award are being issued to the selected entities after ensuring the availability of land for EV Charging Stations, signing of necessary agreements/MoU with concerned partner organizations like city municipal corporation/Discom/Oil companies etc. Letters of award for 1822 EV Charging Stations have been issued as on 30th May, 2022.Out of these 1822 EV Charging Stations 41 EV Charging Stations (8 each in the city of Chennai, Delhi and Thrissur; 6 in Ernakulum; 4 in Nagpur; 2 each in Ahmedabad, Kannur and Indore and 1 in Jaipur) installed and commissioned as on 30th May 2022.

MHI has sanctioned 1576 EV Charging Stations across 16 Highways & 9 Expressways.

PLI Scheme for ACC Batteries

Ministry of Heavy Industries under PLI ACC scheme has allocated 50 GWh of battery capacity to 4 successful bidders. The details are as under:

i. Rajesh Export Ltd. - 5GWh
ii. Ola Electric Mobility - 20 GWh
iii. Hyundai Global Motoras Co Ltd. – 20 GWh

iv. Reliance New Energy Ltd.- 5 GWh

Hyundai Global Motors did not sign Programme Agreement. Subsequently, they have been disqualified from the scheme due to misrepresentation of facts in their bid application.

In the Empowered Group of Secretaries (EGoS) meeting recently held on 06.02.2023, EGoS recommended re-tendering for the unallocated 20 GWh capacity under the scheme. MHI has taken up necessary activities for re-tendering of unallocated capacity in consultation with NITI Aayog.

3.23 On being enquired about the Companies/ firms who had participated in the bid for the Scheme and the number of bids which were rejected and the reasons thereof, MHI in their written reply has furnished following information:

> "Ministry of Heavy Industries, on 22nd Oct, 2021 has released Request for Proposal (RFP) inviting bids from domestic and international players for setting up manufacturing facilities for Advance Chemistry Cell (ACC) Battery Storage in India under the ACC Production Linked Incentive (PLI) Scheme.
>
> In response to the EoI, total 10 domestic/ intentional manufacturers submitted their proposal for ~130 GWh as per technical bids opened on 15.01.2022.
>
> After evaluation of the Selected Bidders based on the Quality & Cost Based Selection (QCBS) mechanism and the bidders were ranked on the basis of their combined technical and financial score. The ACC capacities have been awarded to the selected 3 entities i.e, (Rajesh Exports Limited - 5 GWh, Ola Electric Mobility Private Limited - 20 GWh& Reliance New Energy Solar Limited - 5 GWh)."

3.24 When asked whether the companies which are getting incentives under the Scheme free to export the incentivized batteries, MHI in their written reply has stated as below:

> The Production Linked Incentive Scheme for Advanced Chemistry Cell (ACC) envisages to enhance India's Manufacturing Capabilities and Enhancing Exports – for manufacture of ACC in India.

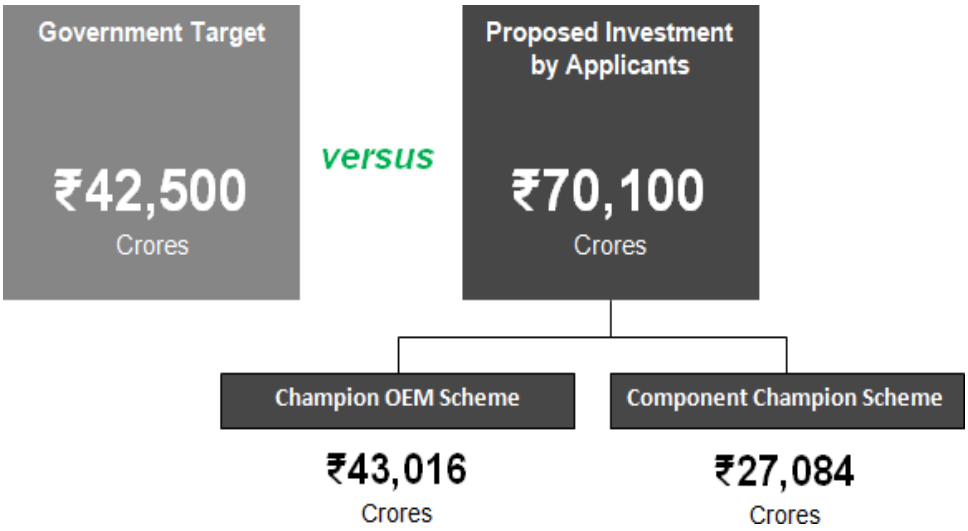
PLI scheme for auto mobile and auto component

> The scheme for automobile and auto component was introduced in September 2021. The Scheme was opened to both existing

automotive companies as well as new non-automotive investor companies (not in automobile or auto component manufacturing business) and applications were invited by the government till January 2022.

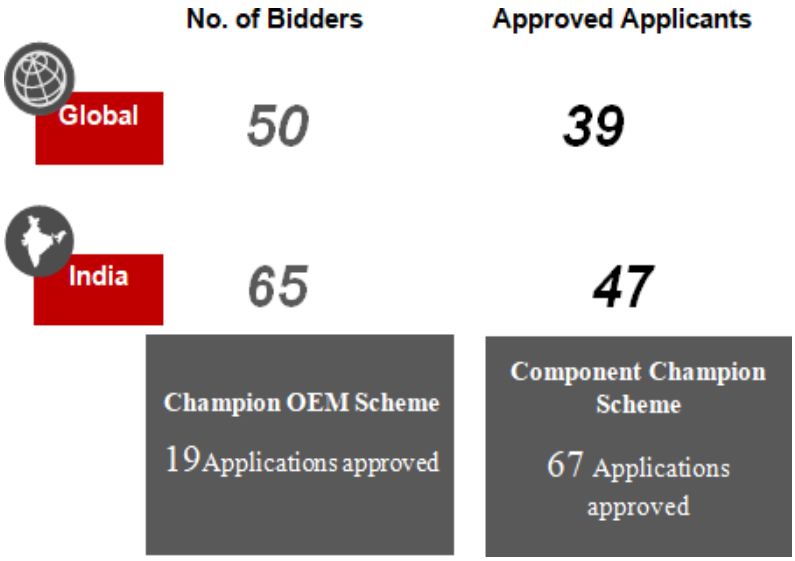
In this short duration, this scheme has received a lot of support from the automobile and auto-component industry, as below:

- Government exceeded investment target by ₹ 27,600 crores (as per bid guarantees received from applicants)



The Scheme has been successful in attracting proposed investment of ₹ 70,100 crore against the target estimate of investment ₹ 42,500 crore over a period of five years. The proposed investment of ₹ 43,016 crore is from approved applicants under Champion OEM Incentive Scheme and ₹ 27,084 crore from approved applicants under Component Champion Incentive Scheme.

- High number of applications for the program, indicating favourable scheme structure for manufacturers



The PLI scheme for Automobile and Auto Component Industry has been a huge success in terms of the applications received from local as well as globally headquartered groups engaged in/ proposing to manufacture Advanced Automotive Technology vehicles/ products. Apart from Indian business groups, approved applicants include groups from countries such as Japan, Germany, USA, UK, Republic of Korea, Ireland, France, Belgium, Netherlands and Italy.

3.25 During the examination of the subject one of the representatives while explaining the importance of the scheme had deposed as under before the Committee:

> "The importance of PLI Auto can be seen by the very fact that today, in the world, around 18 per cent of the vehicles constitute electronics. In India it is just three per cent and it is expected to go up to 30 per cent by 2030. This schemes actually overcomes the disabilities in respect of manufacturing of Advanced Automotive Technology. We do not have a supply chain; we do not have the required skilled manpower. This scheme provides incentive up to 18 per cent to overcome these disabilities so that we can catch up with the world. It has a budgetary outlay of ₹ 25,938 crore which will be given for a period of five years. The incentives will become applicable from the year 2023 to 2026-27. They are in two parts. The first part is Champion OEM Incentive Scheme and the second part is Component Champion Incentive Scheme. It incentivises various advanced technology products like dealing with emission, electronics, safety, CNG, LNG, flex fuel technology and clean fuels also."

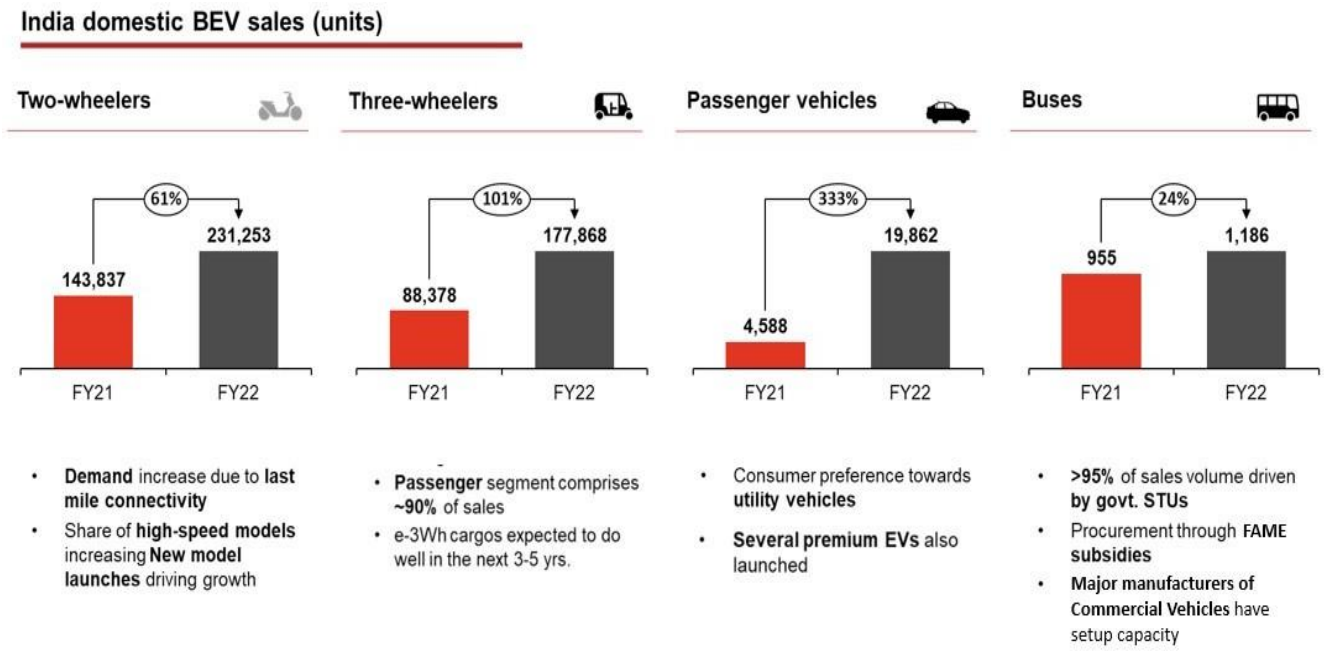
CHAPTER IV

GROWTH OF ELECTRIC VEHICLES IN INDIA

In a note submitted to the Committee, MHI has furnished the following information:

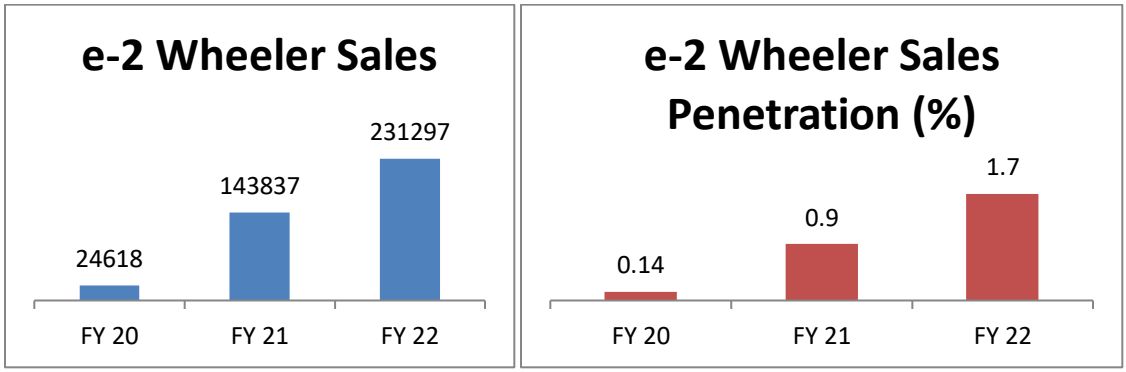
The outcomes from the efforts on the Policy Front are seen as under:

Electric Vehicle Sales



Electric passenger vehicles displayed the largest growth; The sales volume continues to be contributed by the electric 2-wheeler segment. Segment wise insights on electric vehicle sales performance follows:

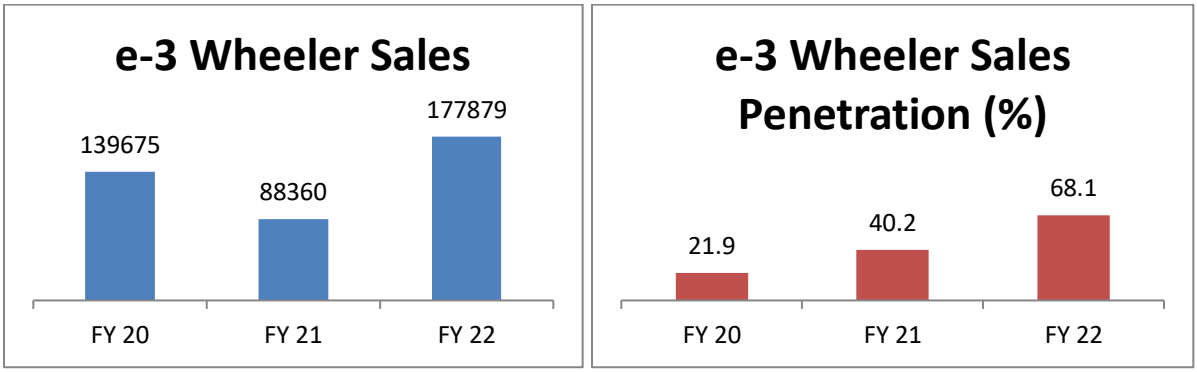
Electric 2-wheeler sales



The e-2Wh segment has grown at a Cumulative Annual Growth Rate

(CAGR) of 111% over the last 3 years (FY20-22), thus signifying a rapid pace of growth for this segment; e-2Whs accounted for less than 15% of the EV market in FY20, whereas they account for 54% of the market in FY22.

Electric 3-Wheeler sales



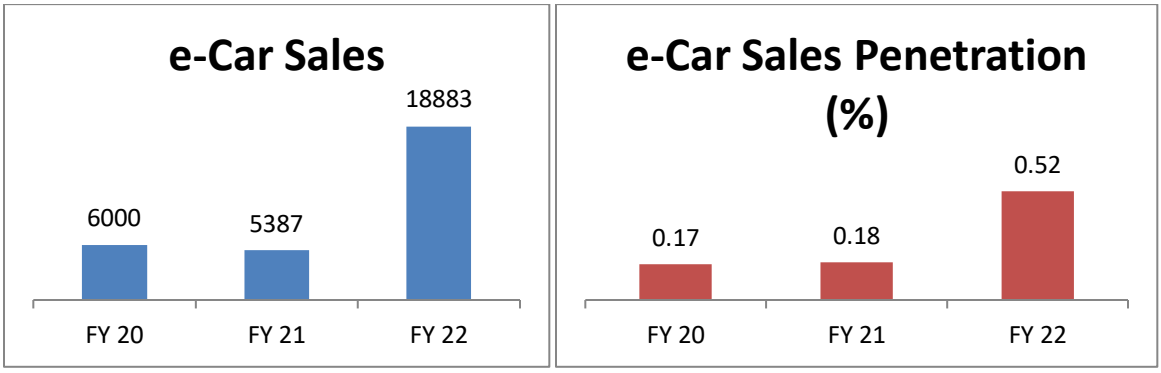
*Includes both passenger and cargo 3wheelers

Despite the e-2Wh market taking over in FY22, electric 3-wheelers have been dominating the EV market consistently all throughout and have been driving the electrification of the Indian Automobile Industry thus far.

The growth of the electric 3-wheeler market can be attributed to the following reasons:

a. Three-wheelers are not only a mode of transportation but also serve as the lifeline for several people formally/informally employed by their use
b. They offer better value proposition in the shared mobility space
c. There's a growing need for last-mile connectivity through Rail-Metro, buses, etc.
d. Range anxiety issues are mitigated due to e-3Wh being usually deployed on shorter routes
e. They're quieter, cleaner and cheaper to maintain than a traditional auto-rickshaw; cost of maintenance for an e-3Wh is 80% as compared to that of an ICE vehicle.

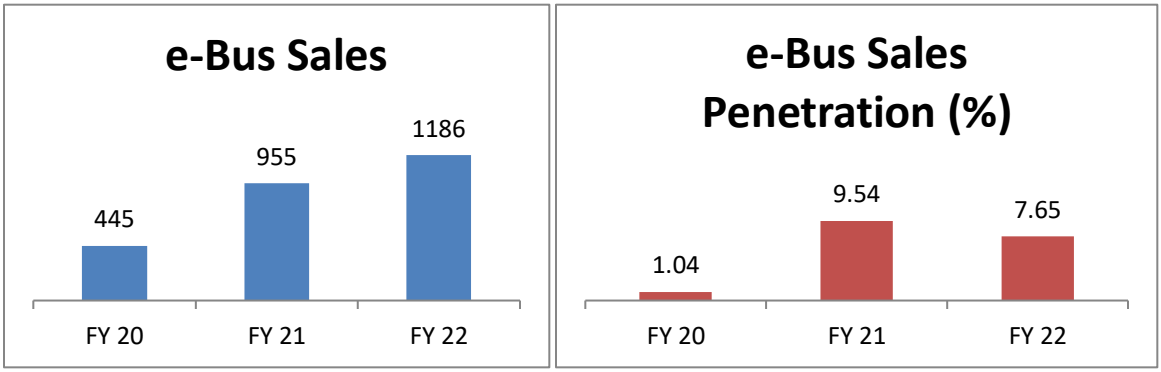
Electric Cars (passenger vehicles):



Currently, the e-4Wh market contributes to a mere 3% of the total EV ecosystem.

In the past couple of years, OEMs have been rapidly ramping up their e-4Wh production and have been pushing out new models in EV space. To add to this, issues related to range anxiety and cost of ownership – caused primarily due to a lack of ancillary manufacturers – have been steadily getting mitigated through cost parity and development of EV technologies. This has led to an increase of over 300% in sales from FY20 to FY22.

Electric Buses



The growing focus of the government has led the transformation of public transportation landscape in the country; several players have ventured into this arena and have started launching their electric bus models.

4.2 When asked to elaborate on Sales penetration of EVs, MHI in their written reply has stated as below:

Sales penetration refers to the successful selling of a good or service in a specific market. As per vahan portal sale penetration of e-2w, e-3w and e-4W is as per below:

FY(2022-2023) till 22-02-2023			
	Registration of battery Electric Vehicles	Registration of Total Vehicles	Sale penetration(%)
	A	B	(A/B)
2W	6,22,562	142,28,292	4.4
3W including e-rickshaw	3,35,551	6,33,612	53.0
4W	37,539	44,89,055	0.8

4.3 When inquired whether the Government is satisfied with the number of production of EVs during FY 2022, MHI in their written submission has stated as below:

"EV sector witnessed significant growth during FY 2022. As per the VAHAN portal a total of 4.29 lakh EVs (E-2W:2.31 lakh, E-3W:1.8 lakh and E-4W:0.18 lakh) were sold in FY 2022 as compared to 1.34 lakh EVs (E-2W:0.41 lakh, E-3W:0.88 lakh and E-4W:0.05 lakh) in the year FY 2021, an increase of about 220%. The penetration of EVs across all segments of vehicles increased from 0.9% to 2.6% in the same period. The sale of E-2W has seen a substantial traction in the year FY 2022 as compared to FY 2021.

Presently penetration of EVs across all segments continues to remain upward as in first quarter of FY 2022-23 as per vahan portal a total of 2.1 lakh EVs (E-2W:1.31 lakh, E-3W:0.71 lakh and E-4W:0.08 lakh) were sold which is 4.34 % of sale of total Vehicles in the same period."

4.4 When asked to about the projected number of electric vehicles to be used in India by the year 2025, MHI in their written reply has stated as below:

It is expected that the share of sale of EVs across all segment may grow to more than 5% in a few years.

CHAPTER V

CHARGING INFRASTRUCTURE

In a note submitted to the Committee, MHI has submitted the following Information:

Abundant availability of EV charging infrastructure is one of the major drivers for enabling higher adoption of electric mobility. A robust and well developed EV charging infrastructure alleviates the charge anxiety of users and increases off-take.

Ministry of Power (MoP) on 13.04.2018 has issued a clarification stating that charging EVs is considered a service, not a sale of electricity, meaning that no license is required to operate EV charging stations and any individual/entity is free to set up public charging stations as per extant guidelines.

Guidelines and Standards for Charging Infrastructure for Electric Vehicles were issued by Ministry of Power on 01.10.2019, which was further amended on 08.06.2020 and 14.01.2022 to cap Tariff for Supply of Electricity to Public Charging Stations (PCS) and Definitions of Public Charging Station, Battery Swapping Stations, Battery Charging Stations and Electric Vehicle Charging Equipment. Further, the guidelines specifies the type of chargers of different standards (viz. CCS, CHAdeMO, Type-2 AC, Bharat AC 001) thus ensuring that the PCS owners have the freedom to install the chargers as per the market requirement. To keep the PCS technology agnostic, it has been provided that any other fast/slow/ moderate charger as per approved DST/BIS standards whenever notified can also be installed at the PCS. Thus, the Guidelines provide an extensive flexibility while ensuring a democratic choice to both EV owners and PCS providers to install the type and number of chargers. The Guidelines as issued by MoP mentions that “Charging Station may also be installed by Housing Societies, Malls, Office Complexes, Restaurants, and Hotels etc. with provision to allow charging of visitor’s vehicles which are permitted to come in its premises.

The tariff to be charged, from Public Charging Stations as well as from domestic consumers for domestic charging, by the DISCOMs and the Service Charges to be charged by these PCS from EV users have also been covered in the guidelines. It has been provided that the domestic charging shall be akin to domestic consumption of electricity and shall be charged as such. However, in case of PCS, it has been provided that tariff for the supply of electricity to PCS shall be a single part tariff and shall not exceed the 'Average Cost of Supply' till 31st March, 2025. In such cases where the Public Charging Station/Fast Charging Station has been installed with Government Incentives (financial or otherwise), State Nodal Agency/State Government/Appropriate Commission shall fix the ceiling of Service Charges to be charged by such Public Charging Station/Fast Charging Station.

Ministry of Housing and Urban Affairs has issued amendment to the guidelines to allow establishing charging stations and infrastructure in private and commercial buildings.

5.2 In view of the expected growth of EVs, it was enquired about the quantum of charging stations which will be required on Expressways, NHs and SHs by the year 2025. Responding to it, MHI in their written reply has stated as below:

"as per the guidelines of Ministry of Power, there shall be at least one charging station at every 25 kms on both sides of the Highway and also atleast one Charging Station for long Range/Heavy Duty EVs at every 100 kms on both sides of the Highway. For the city at least one charging station will be set up in a grid of 3km x 3km. MHI has sanctioned 1576 EV Charging Stations across 16 Highways & 9 Expressways."

5.3 When asked about the present status of charging infrastructure available in the country, MHI in their written reply has stated as below:

The Ministry of Heavy Industries had sanctioned 520 Charging Stations/ Infrastructure under the Phase-I of FAME India Scheme. Further, this Ministry has also sanctioned 2,877 Electric Vehicle Charging Stations in 68 cities across 25 States/UTs and 1576 charging stations across 9 Expressways and 16 Highways under Phase II of FAME India Scheme. Under FAME India Scheme I & II, a total of 529 charging stations have been installed as on 1st July, 2022 as per

ANNEXURE A. Further, as per information received from the Ministry of Petroleum and Natural Gas,total 1536 charging stations have been installed at Oil Marketing Companies (OMCs) retail outlets in the country as on 01.01.2022.

5.4 During the briefing on the subject a representative of MHI had inter-alia informed the Committee as below:

"I would also like to bring to your knowledge that various OMCs are also planning to set up 22,000 charging stations by 2024 and NHAI is also setting up charging stations."

5.5 When enquired about steps taken/ proposed to be taken by the Government to meet the targets for installation of the charging stations, MHI in written reply has stated as below:

To facilitate the establishment of Charging Infrastructure for Electric Vehicles, following actions have been taken by the Government of India:

i. FAME-India Scheme: Ministry of Heavy Industries (MHI) has launched Phase-II of FAME India Scheme which provides for INR 1000 Crores for installation of Charging Infrastructure for Electric Vehicles.

ii. Grid Connectivity and Safety regulations: Central Electricity Authority (CEA) has issued amendments in the regulations regarding Technical Standards pertaining to Grid Connectivity and Safety of supply for Charging Stations.

iii. Guidelines and Standards: Revised consolidated Guidelines and Standards for Charging Infrastructure for Electric Vehicles were issued by Ministry of Power vide MoP Communication No.12/2/2018-EV (Comp No. 244347) on 14.01.2022.

iv. Central Nodal Agency: Bureau of Energy Efficiency (BEE) has been selected as the Central Nodal Agency (CNA) under the provisions of Guidelines issued on 01.10.2019.

v. Go Electric Campaign: Ministry of Power along with Ministry of Road Transport and Highways, Ministry of Heavy Industries and NITI Aayog has launched a nationwide "Go Electric" Campaign on 19.02.2021 to educate the general public on the benefits of e-mobility, inform the potential EV owners about the Government incentives for EV adoption, generate curiosity and transform the same into demand, discredit misinformation

against Electric Vehicles and bring together multiple stakeholders under single platform.

vi. Amendments issued by Ministry of Housing and Urban Affairs: Ministry of Housing and Urban Affairs has issued amendments in Model Building By-Laws and Urban and Regional Development Plans Formulation and Implementation Guidelines regarding Charging Infrastructure for Electric Vehicles.

5.6 When asked to furnish details of cost of EV charging station sanctioned by MHI under FAME-I & FAME-II schemes, MHI in their written reply has stated as below:

"the Ministry of Heavy Industries had sanctioned 520 Charging Stations/ Infrastructure for ₹ 43 Crore (approx.) under Phase-I of FAME-India Scheme.

Under phase-II of FAME-India Scheme, ₹1000 Cr. has been allocated for supporting charging infrastructure for electric vehicles in the country through active participation and involvement of various stakeholders including Government agencies, industries, and Public Sector Enterprises (PSEs).

The Ministry of Heavy Industries has sanctioned 2,877 electric vehicle charging stations in 68 cities across 25 states/UTs including the State of Tamil Nadu. Further, 1576 charging stations across 9 Expressways and 16 Highways under phase-II of FAME India Scheme has also been sanctioned."

5.7 When asked whether the Government has prepared any roadmap for creation of solar charging stations in the country, MHI in their written reply have stated as below:

There is no roadmap prepared as of now by Ministry of Power for creation of solar charging stations in the country. However, it may be noted that Charging Stations take connection from DISCOMs which in turn take the supply of electricity from the Grid and the power is supplied to grid from both Non-Renewable and Renewable Sources.

PART II

OBSERVATIONS / RECOMMENDATIONS

1. An overview

India is currently the world's fifth largest automobile market, and the largest manufacturer of tractors, 2-wheelers, and 3-wheelers. However, the country's heavy reliance on imported oil, with a staggering USD 119.2 billion spent on crude oil imports in FY 2021-22, coupled with the alarming pollution levels in many Indian cities, calls for urgent action towards green mobility. The shift of Internal Combustion Engine (ICE) vehicles, being the significant contributor to the pollution levels, towards electric vehicles (EVs) to curb the pollution and to reduce oil imports is a need of the hour. The trend has stared since at present 1.4 million EVs ply on the roads, majority of which are 2 wheelers and 3 wheelers. The Committee note with satisfaction that since 2013 the Government has taken several steps to promote the adoption of EVs through various schemes such as FAME I&II, ACC PLI, AAT PLI, and incentives such as lower GST etc. However, the higher upfront cost of EVs compared to ICE vehicles, inadequate charging infrastructure, range anxiety, dependence on imported e-vehicle components, lack of domestic lithium, need for a scraping policy for EVs, skilling of labour for servicing and repair of EVs, and fast-changing EV technology are some of the impediments hindering the faster adoption of EVs. Hence efforts are required at all levels to increase public confidence on EVs. As regards prices, the Committee acknowledge that once the volume of sales of EVs increases, the cost of EVs and their components will come down due to the economics of scale. Therefore, the Committee urge the Government to bring more vigour into their efforts, increase incentives on EVs further and address the challenges faced by EV industry with a view to bring down upfront cost of EVs and accelerate the transition towards green mobility so that India could become a leader in the global EV market.

2. Need for National Policy on EVs

Government of India launched the National Electric Mobility Mission Plan (NEMMP) 2020 in 2013. The NEMMP 2020 is a National Mission document

providing the vision and roadmap for the faster adoption of EVs (full range of hybrid and electric vehicles) and their manufacturing in the country. It was believed that with the commitment and support of all stakeholders, 6-7 million units of new vehicle sales of EVs, could be achieved by 2020. The Committee note with regret that the target 6-7 million units of EVs was not achieved as only around 1.4 million Electric Vehicles were being used on the roads of India as on 3rd August, 2022. It has been a decade since MHI had launched the NEMMP 2020. The Committee are of the view that since transport, being State subject, some States have formulated an EV policy for themselves, still a strong National Policy framework on EVs is required which should incorporate the experience and feedback of NEMMP 2020, which can serve as a guiding policy to all States/UTs and ensure a comprehensive and uniform growth of the EV Sector. A National Policy on EVs should have realistic goals and strategies and it should be commensurate with India's commitment to the Paris Agreement on climate change to reduce greenhouse gas emissions. The Committee, therefore, urge the Government to frame a comprehensive National Policy on EV by incorporating the elements of successful State models and international best practices on charging infrastructure, battery swapping, battery waste management/ recycling, public awareness in addition to the demand and supply side incentives such as lower GST, waiving road tax, registration fee, hire-purchase scheme at discounted interest rates by Financial Institutions for buying EVs etc.

3. <u>Upfront cost of EV Four Wheelers</u>

The Committee note that there were total 18,02,967 Electric Vehicles (EVs) being used on the roads of India as on 30 November, 2022. Out of which maximum number of vehicles (9,19,025) are under three wheeler category and 8,13,431 are under two wheeler category. The Committee are somewhat perturbed to note that under four wheeler category, there were only 70,511 vehicles on the road in November, 2022. They are of the view that lower number of EVs under four wheeler category is due to huge gap between the upfront cost of EV four wheelers and ICE four wheelers of similar specifications as well as driving range anxiety among the vehicle users. The Committee strongly hold that sale of EV

four wheelers would pick up if the upfront cost could be further brought down by offering incentives such as tax breaks, waiving registration fee etc. as well as if other major concerns of range anxiety, lack of network of EV charging facility, longer time for charging etc. are addressed urgently. Therefore, the Committee recommend that the Government should consider remodeling the subsidy on electric four wheelers similar to that of electric two wheelers i.e. demand incentive may be increased to @ ₹15000/- per KWh from @ ₹ 10000/- per KWh and the cap on incentives for Electric 4 Wheelers may be increased to 40% of the cost of vehicles from 20% cost of vehicles. The Government may also consider incentivizing the range of the vehicle in addition to the subsidy being given on per unit power of the battery. This would push the OEMs to produce more efficient EVs which would provide greater range per unit power of the battery. The Committee desire to be apprised of the view of the Ministry on these measures.

4. <u>Remodelled Scheme for Electric Buses</u>

The Committee observe that nine 4 million plus cities (Mumbai, Delhi, Bengaluru, Hyderabad, Ahmedabad, Chennai, Kolkata, Surat, and Pune) were targeted under remodelled FAME II scheme for electric buses. EESL has undertaken aggregation of demand in these cities for remaining e-buses under the Scheme on OPEX basis. It was aimed to bring electric mobility in public transportation in these cities which would inspire other cities too. However, the Committee are concerned to note that only five of the nine targeted cities namely Kolkata, Delhi, Bengaluru, Hyderabad and Surat have opted for it. They would like to be apprised of the reasons for other four cities declining this scheme, and alternate schemes, if any, opted by those cities. The Committee are further of the view that cities which have less than 4 million population also use considerable number of buses for inter-city and intra-city transport hence those should also be considered under the remodelled FAME II scheme for electric buses so that e-mobility could pick up its momentum on Pan India basis. The Committee would like to be apprised of the action taken in this regard.

5. Extension of FAME-II Scheme

As per the Ministry, the FAME II scheme will be phased out on March 31, 2024 under which a significant subsidy amount is provided on EVs. Incentives under this Scheme are linked to power of the battery of all EVs @ ₹10,000/kWh except for 2 wheelers @ ₹15,000/kWh and buses @ ₹ 20,000/kWh. The Committee are concerned that removal of Government support would result in price escalation of EVs significantly. The Committee find that a large number of Start-Ups are also involved in this field, which may have to shut down once the scheme is closed. It will, therefore, be detrimental for long-term growth that EVs can achieve in the Indian market. The Committee, therefore, recommend that the Government should extend the FAME-II scheme beyond its current March 31, 2024 timeline by an additional two years to allow more time to evaluate the effectiveness of the scheme and to make necessary adjustments/modifications to promote the electric vehicles (EVs). Further, a comprehensive FAME-III scheme should be introduced once the extended period of FAME-II is over, based on the experience gained from FAME I and FAME II to continue the momentum till the desired level is achieved. This will help increase the penetration of EVs in the market and allow them to compete with Internal Combustion Engine (ICE) vehicles, especially in terms of upfront costs, without requiring high incentives.

6. Need for robust mechanism for bidding process

The Committee were informed that bidding process for award of the Government approved the Production Linked Incentive (PLI) Scheme for 'Advanced Chemistry Cell (ACC) Battery Storage' for achieving manufacturing capacity of 50 GWh for enhancing India's Manufacturing Capabilities with a budgetary outlay of ₹ 18,100 crore has been undertaken and MHI has issued Letters of Award for 50 GWh of battery capacity to 4 successful bidders namely:-

i. **Rajesh Export Ltd. - 5GWh**
ii. **Ola Electric Mobility - 20 GWh**
iii. **Hyundai Global Motoras Co Ltd. – 20 GWh**
iv. **Reliance New Energy Ltd.- 5 GWh.**

However, it is distressing to note that Hyundai Global Motors did not sign Programme Agreement. Consequently, they had to be disqualified from the scheme due to misrepresentation of facts in their bid documents and MHI reportedly initiated necessary action for re-tendering of the unallocated 20 GWh capacity in consultation with NITI Aayog. The Committee note with concern that proper scrutiny of bid documents was not done before the bidding process reached the stage of Letters of Award and signing of Programme Agreement, which has resulted in wastage of precious time and resources. Hence, the Committee are of the view that appropriate action should be taken against those who are found accountable for the lapse. The Committee strongly hold that a robust mechanism should be developed for all such bidding processes so that incomplete/frivolous applications can be rejected summarily at pre-bid/technical bid stage in future.

7. Promotion of other technologies along with EVs

EVs are charged at Charging Stations by using supply of electricity from the Grid and the power is supplied to grid from both Non-Renewable and Renewable Sources. In the foreseeable future, coal is projected to remain an important source of electricity generation. This means that vehicles are being switched from petrol and diesel to coal, which may not assist in meeting the aggregate pollution targets. Also, in electric vehicles, major expensive component is Lithium-Ion battery (approx. 30% to 40% cost of electric vehicle is battery). Currently Lithium-Ion cells are imported and further manufacturing / assembly of battery pack is done domestically. Globally, prices of Lithium-Ion cells and battery pack are higher and the rising global demand for certain minerals would make coasting and importing them difficult. The Committee observe that Battery Electric Vehicle and Strong Hybrid vehicles are supported under the FAME-II Scheme, whereas hydrogen fuel cell based vehicles, which are Zero Emission Vehicles (ZEVs), are covered under Auto and Auto component PLI Scheme. It is possible that EVs will continue to dominate the mobility transition because other alternatives require more research and development, but it is prudent to keep options open and the Government should also promote other technology such as

flex fuel vehicles, Hydrogen ICE , Hydrogen fuel cell vehicles etc. with greater emphasis. The Committee also recommend that a roadmap for setting up of Solar charging stations should be prepared in a time bound manner to reduce the dependence on electricity generated by using coal, to remain true to the green mobility objective of the Government.

8. Waiving of Road Tax on EVs

The Committee note that Ministry of Road transport and Highways (MoRTH) had issued a notification, advising States to waive road tax on EVs, which, in turn, will help reduce the initial cost of EVs. The Committee also note that Uttar Pradesh, Punjab, Madhya Pradesh, Karnataka, Haryana, Gujarat, Jammu & Kashmir, Assam, Bihar, Telangana, Meghalaya, Rajasthan, West Bengal, Maharashtra, Chhattisgarh, Kerala, Chandigarh, Uttarakhand, Puducherry, Odisha and Delhi have waived off or reduced the road tax on EVs and these States are not getting any compensation for the loss of revenue arising on account of waiver/reduction of road tax on EVs from the Union Government. The Committee are of the view that some compensation to the States, which have waived off or reduced the road tax on EVs, may be provided so that these States do not find it financially burdensome to continue such waiver or reduction on road tax to promote and poplularise EVs. The Committee believe that this will encourage all the States to provide such waiver on road tax on EVs, which will result in faster adoption of EVs all over the Country.

9. Need for Review of GST on EVs

The Committee are glad to note that GST on electric vehicles has been reduced from 12% to 5%; and GST on chargers/ charging stations for electric vehicles has been reduced from 18% to 5% to promote the electric mobility in the country. The Committee are of the view that the Government should make a comparative study on GST rate on EV vis-à-vis ICE vehicles and their components/ spare parts for rationalizing GST on EVs and their components. The Committee strongly hold that for e-two wheelers, being, the common man's vehicle, the MHI should take up the matter with Ministry of Finance at the appropriate level to further reduce or

waive off GST, so that their upfront cost may be reduced further to make it more affordable to the common man.

10. PLI Scheme for automobile and auto components

The Committee note that PLI for automobile and auto component Scheme provides incentive up to 18 per cent to overcome disabilities in respect of manufacturing of Advanced Automotive Technology so that it can catch up with the world. It has a budgetary outlay of ₹ 25,938 crore, spread over a period of five years from 2022-2023 to 2026-27. The scheme consists of two parts. The first part is Champion OEM Incentive Scheme and the second part is Component Champion Incentive Scheme. It incentivises various advanced technology products, dealing with emission, electronics, safety, CNG, LNG, flex fuel and clean fuels. The Committee take note of the fact that 19 applications under Champion OEM scheme and 67 applications under Component Champion Scheme have been approved. Apart from Indian business groups, approved applicants include groups from countries such as Japan, Germany, USA, UK, Republic of Korea, Ireland, France, Belgium, Netherlands and Italy. The Committee are of the view that for the benefit of domestic economy, the beneficiaries of the scheme need to continue their production, even after the conclusion of the scheme. The Committee, therefore, recommend that the Government should make such a provision applicable to the beneficiaries of the scheme to make it mandatory for them to continue their production till 2030 at least.

11. Export of ACC Batteries

Production Linked Incentive Scheme for Advanced Chemistry Cell (ACC) envisages to enhance India's Manufacturing Capabilities and Exports of ACC in India with a budgetary outlay of ₹ 18,100 crore. The Committee are aware that the Government of India intends to optimally incentivize potential investors, both domestic and overseas, to set- up Giga-scale ACC manufacturing facilities with emphasis on maximum value addition and quality output. The Committee are perturbed to note that the ACC battery produced with the incentive under the PLI

scheme would be exported apart from domestic consumption. The Committee are of the view that while export of ACC batteries produced with the incentive under PLI scheme will boost the 'Make in India' initiative, it is equally important to ensure enough production of ACC for domestic EV Sector too. The steps taken in this regard may be furnished to the Committee.

12. Guarantee for EV Batteries's life

In the wake of certain incidents of fire in electric two wheelers in the past, the Committee note that the Ministry of Road Transport and Highways had constituted a Committee of Experts to suggest safety standards for Battery, BMS, and related components in electric vehicles. The Expert Committee, in its report, suggested some additional requirements to be incorporated in the existing testing standards for battery and related components of L, M, and N category vehicles. Incorporating the suggestions of the Expert Committee and inputs from the stakeholders, amendment to the Automotive Industry Standards (AIS) 156 [Specific requirements for L category electric power train vehicles] and AIS 038 (Rev 2) [Specific Requirements for M, N Category Electric Power Train Vehicles] were notified. The said Amendments have reportedly been made applicable from 1st December, 2022 and some clauses of these AIS standards would be effective from 31st March, 2023. The Committee expect that these specific requirements would help in improving the safety standards of the battery. The Committee further hold that in addition to the safety standards, there should be a minimum guarantee for batteries' life. Longer battery life of EVs would instill confidence among potential EV buyers as the price of the battery in the EVs constitutes major part of the cost of the vehicle. The Committee also recommend that the Government should work closely with Bureau of Indian Standards (BIS) to establish a series of national standards in relation to EVs and its various components.

13. Strategy for reuse or disposal of EV Batteries

The Committee find that presently penetration of EVs across all segments continues to remain upward. As per VAHAN portal, a total of 4.29 lakh EVs were

sold in FY 2022 as compared to 1.34 lakh EVs in FY 2021, an increase of about 220%. The same is expected to rise further as the adoption of EVs pick up. As the number of EVs being used in the country will be continuously rising, safe disposal and /or reuse of batteries and requirement for skilled manpower for undertaking this job needs to be addressed. A proper disposal plan and dedicated recycling units would ensure a truly sustainable ecosystem of EVs. E-waste (management) rules may suitably be modified and elaborated further to facilitate processes for disposal and/or re-use of EV batteries. The Committee, therefore, recommend that the Government should develop a national strategy to facilitate processes for disposal and/or re-use of such batteries and to ensure trained manpower for the same to reduce the environmental impact of EV production/ manufacturing.

14. <u>Need for apprenticeships and traineeships</u>

The Committee are of the view that scheme such as FAME India, Advance Cell Chemistry (ACC) PLI Scheme and PLI for automobile and auto component Scheme would not only promote adoption of EVs but would also give a major boost to the manufacturing of EVs, batteries and automobiles sector. As the manufacturing in these areas grow further, it would lead to creation of a large number of employment. Though repair and maintenance in EVs is statedly minimum compared to ICE vehicles, yet lack of skilled manpower in EV repair, maintenance and scrapping is one of the major concerns as well as challenges for universal adoption of EVs. Keeping this in view, the Committee recommend that the Government, in conjunction with industry stakeholders, should frame new courses for specialization in EVs in ITIs, other Industrial Training Centres and Skill Development Centres, as well as fund apprenticeships and traineeships in the local EV and associated manufacturing sector so that a pool of trained and skilled workforce can be created.

15. <u>Expediting extraction of Lithium</u>

The Committee note that in electric vehicles, major expensive component is the Lithium-Ion battery (approx. 30% to 40% cost of electric vehicle). Currently

Lithium-Ion cells are imported and further manufacturing / assembly of battery pack is done domestically. Globally, prices of Lithium-Ion cells and battery pack are higher. As per a think tank, EV manufacturing in India will raise reliance on China since China processes more than 60% of Lithium globally. In this regard, the Committee are glad to learn that Geological Survey of India (GSI) has, for the first time, established Lithium inferred resources (G3) of 5.9 million tonnes in Salal-Haimana area of Reasi District of Jammu & Kashmir (UT). In view of the recent discovery of Lithium reserves the Government should expedite the process for its extraction and further processing/refining so that import of Lithium can be cut down. Reducing the import dependency of Lithium would help produce cheaper Lithium-ion batteries to bring down the upfront cost of EVs. Hence the Ministry should follow the developments closely in coordination with the Ministry of Mines and other agencies to make full use of the opportunity and strive to get domestically manufactured Lithium-ion batteries for EVs in the times to come. The Committee are also of the view that Government should accelerate further exploration of Lithium reserves in other parts of the country.

16. <u>Need for increase in Public Charging Network</u>

The Committee note that as per the Ministry of Power guidelines, there shall be at least one charging station at every 25 kms on both sides of the Highway and also at least one Charging Station for long Range/Heavy Duty EVs at every 100 kms on both sides of the Highway. For the city at least one charging station will be set up in a grid of 3km x 3km. The Committee also find that MHI had sanctioned 520 Charging Stations/ Infrastructure under the Phase-I of FAME India Scheme. It has also sanctioned 2,877 Electric Vehicle Charging Stations in 68 cities across 25 States/UTs and 1576 charging stations across 9 Expressways and 16 Highways under Phase II of FAME India Scheme. The Committee regret to note that only 479 charging station out of 520 charging station sanctioned under FAME phase I and merely 50 out of 2877 charging station sanctioned under FAME phase II could be installed till December 2022. Various Oil Marketing Companies (OMCs) have also planned to set up 22,000 charging stations by 2024 and NHAI is also setting up charging stations. At present, the number of EV charging stations sanctioned

under FAME is very meager as India has about 63.73 lakh km of road network, which is the second largest in the world. The Committee are of the view that reason for slow pace of installation of the sanctioned charging station under FAME should be examined. Further it is learnt that a pilot programme namely 'National Highways for EVs' has been framed lately by the Government of India under which a new model for upgrading some existing highways into 'electric' highways with adequate charging infrastructure at regular intervals, has been created, and trial report on the same is awaited. As more and more EVs show up on the road, frequently placed smart charging stations would make movement for long distance smoother and faster. Hence existing highways or expressways would be ultimately required to become e-highways. The Committee recommend that MHI should coordinate with other Ministries and charging infrastructure operators to frame a comprehensive plan for rollout of a nationwide public charging network.

17. <u>Charging Infrastructure</u>

The Committee note that Ministry of Power (MoP) issued a clarification on 13.04.2018 to the effect that charging EVs is considered a service, not a sale of electricity and dispensed with the license required to operate EV charging stations. Accordingly, any individual/entity is free to set up public charging stations as per extant guidelines. Model Building Bylaws 2016 was amended to establish charging stations and infrastructure in private and commercial buildings. However, people living in tall apartments who do not have designated parking spots would find it difficult to install their own charging points. To solve such difficulties, the Government need to modify the Building Bylaws suitably to make provision for personal charging points at the designated parking spots or at a designated location for the benefit of EV users residing in apartments. The Committee are of the view that If some form of incentives/subsidy can be provided to private persons/builders to set up charging stations, it would boost the network of charging infrastructure. This would help solve the problem of range anxiety of EVs and would further boost faster adoption of EVs. The Committee desire to be apprised of the action taken on the matter.

18. Cost escalation of Charging Stations

The Committee note that the MHI had sanctioned 520 Charging Stations/ Infrastructure for ₹ 43 Crore (approx.) under Phase-I of FAME-India Scheme launched in year 2015 and under phase-II of FAME-India Scheme launched in year 2019, ₹1000 Cr. has been allocated for supporting charging infrastructure for electric vehicles in the country. MHI sanctioned 2,877 electric vehicle charging stations in 68 cities and 1576 charging stations across 9 Expressways and 16 Highways under phase-II of FAME India Scheme. The Committee are concerned to note that charging stations sanctioned under phase I of FAME India Scheme were much cheaper with an average cost of ₹8.27 lakh per station than the charging stations sanctioned under phase II of FAME India scheme, which has an average cost of ₹22.45 lakh per station. The Committee would like to know the reasons for such cost escalation of charging stations under Phase-II of FAME of India Scheme and also recommend that Government should conduct an audit to avoid any inefficient use of funds. The Committee would like to be apprised of the action taken in this regard.

19. Cash Incentive Scheme on Exchange/Scraping of ICE Vehicles for EVs.

India's Vehicle Scrappage Policy took effect in April 2022. The objective of this Government-funded programme is to phase out old passenger and commercial vehicles and thereby reduce urban air pollution, increase passenger and road safety, and stimulate vehicle sales. The policy requires passenger vehicles older than 20 years and commercial vehicles older than 15 years to pass a "fitness and emissions test" to keep their registration. The Committee notice that some countries are providing additional purchase subsidies and cash-incentive schemes for scrapping petrol/diesel vehicles for electric vehicles. They, therefore, are of the view that similar purchase subsidies and cash-incentive schemes for scrapping/exchanging petrol/diesel vehicles for electric vehicles can be considered here too as it would lead not only to faster adoption of EVs but also have a major impact on controlling CO_2 emissions. The Committee believe that many ICE vehicle owners, who may be willing to change their vehicle to EV,

would feel encouraged if such incentives are provided. They recommend an early consideration of the matter.

20.Awareness for promotion of EVs

The Ministry of Power along with Ministry of Road Transport and Highways, MHI and NITI Aayog had launched a nationwide "Go Electric" Campaign on 19.02.2021 to educate the general public on the benefits of e-mobility, inform the potential EV owners about the Government incentives for EV adoption, generate curiosity and transform the same into demand, discredit misinformation against Electric Vehicles and bring together multiple stakeholders on single platform. The Committee are of the view that the said campaign could not fulfill its objective to the required extent. In spite of various concessions and benefits, EV sales' penetration is very low. In the absence of widespread marketing strategies concerning the impact and importance of EVs, Indian consumers have limited awareness of EVs as alternative to traditional fossil fuel engine-based vehicles. The Committee are of the view that to further promote EVs, Government in collaboration with EV manufacturers should organize exhibitions/consumer education campaign, especially in colleges, corporate offices, institutions, motor race events like formula race in various parts of the country to make people aware of the capabilities and benefits of EVs such as low operating cost, low maintenance, benefit in income tax on interest on loans for EVs, low GST, road tax, registration fee, lesser pollution etc and various concessions being given on EVs to promote adoption of EVs as well as to clear doubts to dispel any inhibition in the minds of potential buyers.

NEW DELHI
23 March, 2023
02 Chaitra, 1945 (Saka)

GIRISH BHALCHANDRA BAPAT
CHAIRPERSON
COMMITTEE ON ESTIMATES

Annexure A

1. Under Phase-I of FAME India Scheme – Ministry of Heavy Industries has sanctioned520 EV Charging Stations out of which 479 charging stations have been installed as on 07th December, 2022 as follows:

State/ UT	Charging Stations	Highway	Charging Stations
Chandigarh	48	Delhi -Chandigarh	24
Delhi	94	Mum-Pune	17
Rajasthan	49	Delhi- Jaipur- Agra	31
Karnataka	65	Jaipur-Delhi Highway	9
Jharkhand	30		
Uttar Pradesh	16		
Goa	30		
Hyderabad (Telangana)	57		
Himachal Pradesh	9		
Total	**398**		**81**

2. Under Phase-II of FAME India Scheme:

- Ministry of Heavy Industries has sanctioned 2877 EV Charging Stations in 68 cities across 25 states/UTs out of which 50 Charging stations have been installed as on 15th July, 2022.

State	No. of EV chargers sanctioned
Maharashtra	317
Andhra Pradesh	266
Tamil Nadu	281
Gujarat	278

Uttar Pradesh	207
Rajasthan	205
Karnataka	172
Madhya Pradesh	235
West Bengal	141
Telangana (Hyderabad- 118, Warangal- 10, Karimnagar- 10)	138
Kerala	211
Delhi	72
Chandigarh	70
Haryana	50
Meghalaya	40
Bihar	37
Sikkim	29
Jammu & Kashmir	25
Chhattisgarh	25
Assam	20
Odisha	18
Uttarakhand	10
Puducherry	10
Andaman and Nicobar (Port Blair)	10
Himachal Pradesh	10
Total	2877

- MHI has sanctioned 1576 EV Charging Stations across **9 Expressways & 16 Highways. Details are as specified below:**

Sl. No	Expressways	EV Charging Stations Sanctioned
1	Mumbai - Pune	10
2	Ahmadabad - Vadodara	10
3	Delhi Agra Yamuna	20
4	Bengaluru Mysore	14
5	Bangaluru-Chennai	30
6	Surat-Mumbai	30
7	Agra-Lucknow	40
8	Eastern Peripheral (A)	14
9	Hyderabad ORR	16
Sl. No	**Highways**	**EV Charging Stations Sanctioned**
1	Delhi - Srinagar	80
2	Delhi – Kolkata	160
3	Agra - Nagpur	80
4	Meerut to GangotriDham	44
5	Mumbai - Delhi	124
6	Mumbai-Panaji	60
7	Mumbai - Nagpur	70
8	Mumbai - Bengaluru	100
9	Kolkata - Bhubaneswar	44
10	Kolkata - Nagpur	120
11	Kolkata - Gangtok	76

12	Chennai-Bhubaneswar	120
13	Chennai - Trivendram	74
14	Chennai-Ballary	62
15	Chennai - Nagpur	114
16	Mangaldai - Wakro	64
1576		

3.0 **State/UT No. of Petroleum Retail Outlets (Ros) where EV Charging facility is available as on 1.1.2022**

State/UT	No of RO's where EV Charging Facility available
Andhra Pradesh	65
Arunachal Pradesh	4
Assam	19
Bihar	26
Chandigarh	4
Chhattisgarh	51
Delhi	66
Goa	17
Gujarat	87
Haryana	114
Himachal Pradesh	13
Jharkhand	22
J&K	3
Karnataka	100
Kerala	39
Leh	2
Madhya Pradesh	167
Maharastra	88
Manipur	1
Meghalaya	3
Nagaland	2
Odisha	26
Pondicherry	2
Punjab	41

Rajasthan	174
Tamil Nadu	76
Telangana	112
Tripura	3
Uttar Pradesh	128
Uttarakhand	10
West Bengal	71
Grand Total	**1536**

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ANNEXURE-B

State-wise manufacturing units established registered as on 15.12.2022 under phase-II of FAME India Scheme

Category		Name of Manufacturers	Location of Manufacturing Plant
e-2W	1	Ampere Vehicle Pvt. Ltd.	Tamil Nadu
	2	Ather Energy Pvt. Ltd.	Karnataka
	3	Benling India Energy & Technology Pvt. Ltd.	Haryana
	4	Hero Electric Vehicles Pvt. Ltd.	Punjab
	5	Jitendra EV Tech Pvt. Ltd.	Maharashtra
	6	Li-ions Elecktrik Solutions Pvt. Ltd.	Haryana
	7	Okinawa Auto Tech Pvt. Ltd.	Rajasthan
	8	Revolt Intellicorp Pvt. Ltd.	Haryana
	9	TVS Motor Company Ltd.	Tamil Nadu
	10	Tunwal E-motors Pvt. Ltd	Rajasthan
	11	Bajaj Auto Ltd	Maharashtra
	12	Booma Innovative Transport Pvt. Ltd.	Tamil Nadu
	13	Kabira Mobility Llp	Goa
	14	Lectrix Ev Pvt.ltd.	Uttar Pradesh
	15	Microcon I2i Private Limited	Tamil Nadu
	16	Okaya Ev Pvt Ltd.	Himanchal Pradesh
	17	Ola Electric Technologies Private Limited	Tamil Nadu
	18	Twenty Two Motors Private Limited	Rajasthan
	19	Maruthisan Private Limited	Karnataka
	20	Bgauss Auto Pvt.Ltd	Maharashtra
	21	Kinetic Green Energy & Power Solutions Ltd.*	Maharashtra
	22	Hero Motocorp Limited	Andhra Pradesh
	23	Chetak Technology Limited	Maharashtra
	24	Tork Motors Pvt. Ltd.	Maharashtra
	25	Amo Mobility Solutions Pvt. Ltd.	Uttar Pradesh
e-3W	1	Champion Polyplast	New Delhi
	2	Kinetic Green Energy and Power Solution Ltd.	Maharashtra
	3	Mahindra Electric Mobility Ltd.	Karnataka
	4	Victory Electric Vehicles Intl. Pvt. Ltd.	Haryana
	5	YC Electric Vehicle Pvt. Ltd	New Delhi
	6	Best Way Agencies Pvt. Ltd.	Haryana
	7	Energy Electric Vehicles	New Delhi
	8	Thukral Electric Bikes Pvt Ltd	Haryana
	9	Saera Electric Auto Pvt Ltd	Rajasthan
	10	Khalsa Agency	Uttar Pradesh
	11	Goenka Electric Motor Vehicles Pvt. Ltd.	Haryana
	12	Atul Auto Ltd.	Gujarat
	13	Dilli Electric Auto Pvt Ltd	Haryana
	14	U P Telelinks Ltd	Uttarakhand
	15	Piaggio Vehicles Pvt. Ltd.	Maharashtra
	16	Lohia Auto Industries	Uttarakhand

	17	Avon Cycles Ltd.	Punjab
	18	Altigreen Propulsion Labs Pvt. Ltd.	Karnataka
	19	Keto Motors Pvt. Ltd.	Telangana
	20	Omega Seiki Pvt. Ltd.	New Delhi
	21	Speego Vehicles Co. Pvt. Ltd.	New Delhi
	22	Etrio Automobiles Private Ltd.	Telangana
	23	Grd Motors	Delhi
	24	Om Balajee Automobile India Pvt Ltd	Uttar Pradesh
	25	Mlr Auto Ltd	Telangana
	26	Balan Engineering Private Limited	Karnataka
	27	Continental Engines Private Limited	Uttarkhand
	28	Euler Motors Pvt Ltd	Delhi
	29	J.s. Auto Pvt Ltd.	Uttar Pradesh
	30	Shigan Evoltz Limited	Haryana
	31	Sks Trade India Pvt Ltd	Haryana
	32	Scooters India Limited	Uttar Pradesh
	33	Jitendra New Ev Tech Pvt. Ltd.*	Maharashtra
	34	Efev Charging Solutions Pvt Ltd	Haryana
	35	Green Evolve Private Limited	New Delhi
	36	Smartomatic Vehicles Private Limited	Bihar
	37	Mahindra & Mahindra	Maharashtra
	38	Ti Clean Mobility Private Limited	Tamil Nadu
	39	Fitwel Mobility Private Limited	Maharashtra
	1	Mahindra & Mahindra	Maharashtra
	2	Tata Motors	Gujarat
	1	PMI Electro Mobility Solutions Pvt. Ltd (PEMSPL)	Haryana
	2	Olectra	Telangana
	3	TATA Motors	Karnataka
	4	Eicher	Madhya Pradesh
	5	JBM Solaris Electric Vehicle (JBMSEV)	Uttar Pradesh
	6	Mytrah Mobility	Rajasthan
	7	Ashok Leyland	Tamil Nadu

MINUTES OF SECOND SITTING OF THE COMMITTEE ON ESTIMATES (2022-2023)

The Committee sat on Tuesday, the 7th June, 2022 from 1500 hrs. to 1640 hrs. in Committee Room 'D', Parliament House Annexe, New Delhi.

PRESENT

Shri Girish Bhalchandra Bapat – Chairperson

Members

2. Shri Kunwar Danish Ali
3. Shri Sudarshan Bhagat
4. Shri P.P. Chaudhary
5. Shri Parvatagouda Chandanagouda Gaddigoudar
6. Shri Dharmendra Kumar Kashyap
7. Shri Pinaki Misra
8. Shri K. Muraleedharan
9. Shri Ashok Kumar Rawat
10. Shri Magunta Srinivasulu Reddy
11. Shri Dilip Saikia
12. Shri Francisco Cosme Sardinha
13. Shri Sunil Dattatray Tatkare

SECRETARIAT

1.	Smt. Anita B. Panda	-	Additional Secretary
2.	Smt. Geeta Parmar	-	Additional Director

WITNESSES

1	Shri Arun Goel	-	Secretary
2	Shri Shashank Priya	-	SS&FA
3	Shri Vijay Mittal	-	Joint Secretary
4	Shri Amit Mehta	-	Joint Secretary
5	Shri Sudhendu J Sinha	-	Adviser, NITI Aayog
6	Ms. Mahua Acharya	-	MD, CESL

2. At the outset, the Chairperson welcomed the Secretary, Ministry of Heavy Industries and the officers accompanying him to the sitting of the Committee convened to have briefing on the subject 'Evaluation of Electric Vehicle (EV) Policy.'

3. Thereafter, a representative of the Ministry made a power point presentation highlighting key policy initiative for promotion of electric vehicles, like launch of Faster Adoption & Manufacturing of Electric Vehicles(FAME) Phase-I in 2015, FAME Phase-II in April, 2019, Advance Chemistry Cell (ACC) PLI Scheme, Auto & Auto Component PLI Scheme, etc. Other initiative taken were also apprised like identity of Electric Vehicles, Reduction in GST on EVs, framing of guidelines and standards for EV charging infrastructure and amendments in Model Building Bylaws 2016 to establish charging stations and infrastructure in private and commercial buildings, etc.

4. The Members, then, raised various queries on the subject related issues like lack of charging infrastructure for EVs, lack of Lithium in India which is used in the manufacturing of EV batteries, range anxiety of EVs, GST on EVs, EV policy of States/UTs and its impact on the investment in these States/UTs, issue of incentives going to few big private players of EVs, skilling of labour for servicing and repair of EVs, apprehension in the minds of the consumer about fast changing technology in EVs and chargers and other related matters.

5. The representatives of the Ministry responded to the queries raised by the Members. The Chairperson thanked the representatives of the Ministry and tendering their views. The Ministry was asked to furnish written replies, on the points, which remained unanswered, within two weeks.

6. A verbatim record of the proceedings has been kept

7. The witness, then, withdrew.

The Committee, then, adjourned.

MINUTES OF SIXTH SITTING OF THE COMMITTEE ON ESTIMATES (2022-2023)

The Committee sat on Tuesday, the 2nd August, 2022 from 1600 hrs. to 1720 hrs. in Committee Room 'D', Parliament House Annexe, New Delhi.

PRESENT

Shri Nihal Chand Chauhan – convenor

Members

2. Shri Kunwar Danish Ali
3. Shri Kalyan Banerjee
4. Shri Sudarshan Bhagat
5. Shri P.P. Chaudhary
6. Shri Harish Dwivedi
7. Shri Parvatagouda Chandanagouda Gaddigoudar
8. Dr. Sanjay Jaiswal
9. Shri K. Muraleedharan
10. Shri Magunta Srinivasulu Reddy
11. Shri Rajiv Pratap Rudy
12. Shri Francisco Cosme Sardinha
13. Shri Prathap Simha
14. Shri Shyam Singh Yadav

SECRETARIAT

1.	Smt. Anita B. Panda	-	Additional Secretary
2.	Shri Muraleedharan. P	-	Director
3.	Smt. Geeta Parmar	-	Additional Director

Representatives of the Ministry of Heavy Industries

1	Shri Arun Goel	-	Secretary
2	Shri Shashank Priya	-	SS&FA
3	Shri Amit Mehta		Joint Secretary
4	Ms. Mahua Acharya	-	MD, Convergence Energy Services Ltd.(CESL)
5	Shri Anand Kumar Singh		Director
6	Shri Rajnesh Singh	-	Director
7.	Ms. Pamela Tikku	-	Director, International Centre for Automotive Technology(ICAT)

2. At the outset, the Convener, Committee on Estimates welcomed the Members to the sitting of the Committee. The Committee, thereafter, took up for consideration the following draft Reports and adopted the same without any amendments/modifications :

(i) Draft Report on the subject 'Requirement of Human Capital & Physical Infrastructure to meet the growth of Civil Aviation Sector in India and Development of Airports in various parts of the Country' pertaining to the Ministry of Civil Aviation.

(ii) Draft Report on action taken by the Government on the Observations/ Recommendations contained in the Seventh Report of the Committee on Estimates (17th Lok Sabha) on "Estimates and Functioning of National Highways Projects including Bharatmala Projects" pertaining to the Ministry of Road Transport & Highways.

(iii) Draft Report on action taken by the Government on the Observations/ Recommendations contained in the Ninth Report of the Committee on Estimates (17th Lok Sabha) on "Recent Budgetary Reform for Better Management of Government Expenditure" pertaining to the Ministry of Finance(Department of Expenditure).

3. The Committee, then, authorized the Hon'ble Chairperson to finalise the draft report, mentioned at Para (i) above in light of the factual verification received from the Ministry of Civil Aviation before the same are presented in the House.

4. Thereafter, the Convener, Committee on Estimates welcomed the representatives of the Ministry of Heavy Industries to the sitting of the Committee convened to take oral evidence of the Ministry on the subject 'Evaluation of Electric Vehicle (EV) Policy' and drew their attention to the provisions contained in Direction 55(1) of the 'Directions by the Speaker' regarding confidentiality of the Committee's proceedings.

5. The Secretary then briefed the Committee on the progress made so far with regard to the tendering process of E-buses for 5 major cities, production of EVs in various segments like two-wheelers, three wheelers and four wheelers, constraints faced and initiatives being taken to enhance their productions. During deliberations on the subject, the Members raised various queries which inter-alia included the amount and purpose of subsidies to EVs, inadequate charging stations, time required for charging EVs, area required for setting up of charging stations, transformer to back-up charging stations, e-charging stations by oil

companies in petrol pumps, possibility of solar charging stations in towns & villages, hybrid e-vehicles, dependency on import of e-vehicle components, shortage of lithium in India for EV batteries, speed of EVs, range anxiety associated with EVs, steps for promotion of EVs in rural areas and scrapping policy for EVs, if any, coordination with Ministry of Mines for lithium exploration etc.

6. The representatives of the Ministry responded to the queries of the Members. The Convener then thanked the witnesses for appearing before the Committee and furnishing useful information to the Committee. The Secretary, MoHI was requested to furnish required information which remained unanswered, in writing, to the Secretariat within two weeks time.

7. A copy of the verbatim record of the proceedings of the sitting has been kept.

The witness, then, withdrew.

The Committee then adjourned.

MINUTES OF THE EIGHTEENTH SITTING OF THE COMMITTEE ON ESTIMATES (2022-2023)

The Committee sat on Thursday, the 23rd March, 2023 from 1545 hrs. to 1615 hrs. in Committee Room 'D', Parliament House Annexe, New Delhi.

PRESENT

Shri Nihal Chand Chauhan – **Convener**

Members

2. Kunwar Danish Ali
3. Shri Sudarshan Bhagat
4. Shri P.P. Chaudhary
5. Shri Harish Dwivedi
6. Shri Dharmendra Kumar Kashyap
7. Shri K. Muraleedharan
8. Shri Kamlesh Paswan
9. Shri Ashok Kumar Rawat
10. Shri Magunta Srinivasulu Reddy
11. Shri Dilip Saikia
12. Shri Francisco Cosme Sardinha
13. Smt. Sangeeta Kumari Singh Deo
14. Shri Kesineni Srinivas (Nani)
15. Shri Sunil Dattatray Tatkare

SECRETARIAT

1.	Smt. Anita Bhatt Panda	-	Additional Secretary
2.	Shri Muraleedharan. P	-	Director
3.	Shri R.C. Sharma	-	Additional Director

2. At the outset, the Convener welcomed the Members to the sitting of the Committee and briefed them about the agenda of the sitting viz. Consideration and adoption of draft Report.

3. The Committee then took up for consideration and adoption of the draft Report on the subject 'Evaluation of Electric Vehicle (EV) Policy' pertaining to the Ministry of Heavy Industries.

4. The Committee after due deliberations adopted the draft Report. The Committee, then, authorised the Chairperson / Convener (Shri Nihal Chand Chauhan, MP) to finalize the draft Report and present the same to Lok Sabha.

The Committee, then, adjourned.