



भारत सरकार

GOVERNMENT OF INDIA

भारी उद्योग एवं लोक उद्यम मंत्रालय

MINISTRY OF HEAVY INDUSTRIES & PUBLIC
ENTERPRISES

भारी उद्योग विभाग

DEPARTMENT OF HEAVY INDUSTRY

उद्योग

भवन

Udyog Bhawan

नई दिल्ली -110011

New Delhi-110011

No. 1(06)/2017-NAB-II(Auto)

Dated the 7th June, 2017

Subject: Minutes of 5th Meeting of the National Board on Electric Mobility (NBEM) held on **25.05.2017** at 12.00 Noon in Udyog Bhavan, New Delhi under the Chairmanship of Secretary, Department of Heavy Industry

Sir/Madam,

I am directed to forward herewith a copy of the Minutes of the 5th Meeting of the National Board on Electric Mobility (NBEM) held on **25.05.2017** at 12.00 Noon in Udyog Bhavan, New Delhi, under the Chairmanship of Secretary, Department of Heavy Industry, for information and necessary action.

(Ajay Kumar Gaur)

Under Secretary to the Government of India

Email ID: ak.gaur@nic.in

Tel: 011-23061340

To,

All Members as per list (enclosed).

Copy forwarded to:

1. PSO to SHI.
2. PPS to AS & FA(DHI)
3. PPS to JS(VS)
4. PPS to JS(MoRTH), Transport Bhavan, New Delhi
5. DG, SIAM
6. Director, SMEV
7. Electric Mobility Alliance
8. Director(Auto), DHI

अजय कुमार गौर/AJAY KUMAR GAUR

उप सचिव/Under Secretary

भारी उद्योग एवं लोक उद्यम मंत्रालय

Ministry of Heavy Industries & Public Enterprises

भारी उद्योग विभाग/Deptt. of Heavy Industry

उद्योग भवन, नई दिल्ली-110011

Udyog Bhawan, New Delhi-110011

LIST OF MEMBERS/INVITEES:

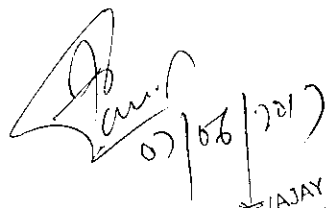
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|--|---|------------------|
| (1) Secretary (Department of Heavy Industry) | - | Chairman |
| (2) Secretary (Department of Economic Affairs) | - | Member |
| (3) Secretary (Department of Revenue) | - | Member |
| (4) Secretary (Ministry of Power) | - | Member |
| (5) Secretary (Ministry of Road Transport and Highways) | - | Member |
| (6) Secretary (Ministry of Urban Development) | - | Member |
| (7) Secretary (Ministry of New & Renewable Energy) | - | Member |
| (8) Secretary (Ministry of Environment, Forests & Climate Change)- | - | Member |
| (9) Secretary (Department of Industrial Policy & Promotion) | - | Member |
| (10) Secretary (Ministry of Petroleum and Natural Gas) | - | Member |
| (11) Secretary (Department of Science & Technology) | - | Member |
| (12) Adviser [Transport], NITI Aayog | - | Member |
| (13) Chairman, Technical Advisory Group | - | Member |
| (14) CEO, NATRIP/Chairman, NAB (Proposed) | - | Member |
| (15) President, Society of Indian Automobile Manufacturers (SIAM) - | - | Member |
| (16) President, Automobile Component Manufacturers Association of India [ACMA] - | - | Member |
| (17) President, Society of Manufacturers of Electric Vehicles [SMEV] - | - | Member |
| (18) President, Battery Manufactures Association | - | Member |
| (19) Joint Secretary [In-charge of Automobile Division] | - | Member Secretary |

Nominated Members:

- (20) Shri Vikram Shreekant Kirloskar, CMD, Kirloskar Systems Ltd.
- (21) Shri Vinod Dashari, MD, Ashok Leyland
- (22) Shri Pawan Goenka, Mahindra & Mahindra
- (23) Shri S Vijay Ananad, CEO, Amara Raja Batteries
- (24) Ms Annamalai Hemalatha, MD, Ampere Vehicles Ltd.
- (25) Shri Sudarshan Venu, Joint MD, TVS Motors

Special Invitees:

- (26) Prof. Ashok Jhunjunwala, Adviser (MNRE)
- (27) Shri Rahul Bharti, Vice President, Maruti Suzuki India Ltd.
- (28) Shri Sohinder S. Gill, Representative, Hero Electric
- (29) Shri Ankit Singhvi, President, Electric Mobility Alliance
- (30) Shri Chetan Maini, Vice Chairman, Sun Mobility
- (31) Dr. Rashmi Urdhawaresh, Director, ARAI


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Ministry of Public Enterprises & Public Enterprises
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Minutes of the 5th Meeting of National Board for Electric Mobility (NBEM) held on 25.05.2017 at 12.00 Noon at Udyog Bhavan, New Delhi under the Chairmanship of Secretary (Heavy Industry)

5th Meeting of National Board for Electric Mobility (NBEM) was held on 25th May, 2017 at 12.00 Noon at Udyog Bhavan, New Delhi under the Chairmanship of Shri Girish Shankar, Secretary (HI). The list of the participants is annexed.

After a brief round of introduction, with the permission of chair Shri Vishvajit Sahay, Joint Secretary (Auto) initiated the discussion agenda wise and requested Shri Pravin Agrawal, Director (Auto) to present the current status and way forward about the activities of National Mission for Electric Mobility (NMEM).

1. Presentation by DHI:


Director (Auto) gave a brief presentation about current status of the FAME India scheme, key findings of independent review of FAME India Scheme and the proposed way forward and approach for transformational change in the field of electric mobility. He informed the members that from the beginning of the FAME India Scheme i.e. 1st April 2015 till date about 1.44 Lakhs vehicles have benefited from the scheme and total amount spent on the scheme till 31st March 2017 was 219 Cr. It was further informed that although performance of the scheme in terms of numbers is significantly below the numbers envisaged under National Electric Mobility Mission Plan (NEMMP) 2020, however the FAME India Scheme has played a very important role in presenting the agenda of clean mobility, front and center in the public discourse. A brief way forward for the second phase of scheme by way of promoting public and commercial transport through electric mobility and supporting the network of charging infrastructure and battery swapping centers in prospective areas was presented.

2. Presentation by NITI Aayog:

2.1 Shri Manoj Singh, Advisor, NITI Aayog informed the members that NITI Aayog has recently launched the outcome report of workshop on 'Transformative Mobility Solutions for All' held on 27 and 28 February, 2017. He informed that one of the important outcomes of the workshop is to adopt different strategies based on the possible outcomes for each category of vehicles.

2.2 Accordingly, the following three different strategies for early introduction of electric vehicles in the country were presented:

1


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2.2.1 **Service strategy;** where high mileage electric service vehicles with lower cost can offset higher capital cost. He suggested 2 wheeler fleet and 4 Wheeler fleet to be promoted for electrification using services strategy.

2.2.2 **Technology strategy;** wherein he suggested for smart, standardized and swappable batteries to reduce capital cost of electric vehicles especially of two wheelers and three wheelers vehicles.

2.2.3 **Manufacturing strategy;** wherein private 4 wheelers and commercial buses can be directed by way of reducing the cost of components like batteries which is expected to be reduces further.

He further stated that NITI Aayog is committed for transformative changes through electric mobility and also assured all support to electric mobility in future as and when required.

3. Presentation by SIAM:

Subsequently, Shri Vishnu Mathur, DG, SIAM made a presentation on SIAMs submission on FAME India scheme. He informed that SIAM supports technology agnostic, market driven and performance based incentives. He informed that SIAM supports development of manufacturing ecosystem through market creation and economies of scale to make the product available to the masses. He also requested DHI to invest in charging infrastructure and to work on solution based approach to deploy xEVs in Public Transport.

3.1 He informed that in order to instill confidence of industry for future investments, government may like to consider a long and clear roadmap and policy stability. He suggested to have parallel scheme for electrification of public transportation and suggested for creation of scale by way of promoting all xEVs to enable local manufacturing.

3.2 In response, Mr. Pawan Goenka, CMD, Mahindra & Mahindra raised various issues for the consideration of National Board of Electric Mobility as listed below:

3.2.1 Charging Infrastructure: Mr Goenka requested the NBEM to go aggressively for installation of charging infrastructure.

3.2.2. Registration of Vehicles: Mr Goenka informed that even after 2 years of the scheme there are issues related to registration of Electric Vehicles and requested NBEM to take up the matter with respective authorities.

3.2.3. Post GST Impact: Mr Goenka requested the NBEM to take necessary action so that vehicles should not be expensive in any state because of GST.

3.2.4 Continuation of Private Vehicles: Mr Goenka suggested that private vehicles should continue to be supported under FAME India Scheme.

3.2.5. Separating Battery from Vehicle: Mr Goenka informed that cost of lithium batteries is higher and by separating batteries from vehicles, cost of the vehicles will be reduced. He also suggested for promotion of swappable battery centers especially for 3 wheelers.

4. Presentation by SMEV:

4.1 Mr. Sohinder Gill and Mr. Pawan Sachdeva made a presentation on behalf of SMEV. Mr Pawan Sachdeva reiterated the issues raised by Mr Goenka and in addition, requested the NBEM to consider waiving of road tax on electric vehicles across the country, standardization of charging protocols and increase in incentive for commercial electric vehicles.


4.2 Mr. Sohinder Gill further informed that in order to popularize electric vehicles Government should look for penetration of one million two wheelers in 10 cities within next two years. He further informed that Government should consider incentivizing e-cycles, promote two wheelers, base public transport and disincentivize fuel Guzzlers.

5. Presentation by DST:

Mr Sajid Mubashir, Scientist 'G' from department of Science and Technology gave a presentation on Technology Readiness Levels (TRL) and different types of electric vehicles. He informed that under the scheme, DHI-DST have formed a technology Platform for Electric Mobility (TPEM). TPEM is looking for projects, which comes under TRL-3 to TRL-6. He also informed that presently entire EVs technologies that exist in India are lower end and we need to think as how we can move toward high-end technologies. He suggested that around 20% of the allocation under the FAME scheme should be for R&D leading to indigenous capacity building.

6. Presentation by Electric Mobility Alliance

6.1 Mr. Ankit Singhvi from Electric Mobility Alliances informed that their alliance is an association of all stakeholders who are working in the field of electric mobility. Its members are EV manufactures, State Transport corporations, taxi aggregators etc.


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6.2 He informed that although cost of electric vehicle is higher, their operating cost is lower and hence, one should look at what is the cost per kilometre of running of electric vehicle. He further stated that hiring model which is also called as gross cost model would be the best strategy for deployment of EVs. It was informed that for hiring model, operator would be interested in knowing two parameters. First is an economy of scale; larger the number of buses in a fleet, lower will be the cost of acquisition resulting in less cost per kilometre. Second, total daily run of vehicle- more the daily run, lower will be the cost per kilometer.

6.3 He further emphasised that Government should look into three aspects for deployment of buses. First it should be Technology agnostic, second, there should be scale and third, performance based viable gap funding.


7. Presentation by ARAI:

7.1 Director ARAI informed the members about the protocol for charging infrastructure. She stated that the committee constituted for this purpose has already finalized the protocol for AC chargers and DC Charger for less than 100 Voltage. She informed that the CMVR TSC under MORTH has already approved the specifications. However, since DHI had subsequently placed these specifications on DHI website for inviting the comments from stakeholders, comments received were analysed by ARAI. She informed that most of the comments have already been taken care of while finalizing the specifications. Scientist G, DST intervened to suggest that specifications have eventually been finalised and it is essential that these are notified at once.

7.2 Chairman, suggested that the Committee which had given its recommendations on the charging protocol must look into all the comments received with open mind and sit once again and take note of all comments received and finalize the specification immediately.

7.3 After the presentations, with permission of Chair, Joint Secretary threw open the house for discussions.

8. **Shri Aniruddha Kumar, Joint Secretary**, Ministry of Power informed the house that he especially wants to know from NBEM as how much will be the power requirements for full electrification of transport sector and what policy changes are expected in the power sector for smooth rollout of electric mobility and charging infrastructure. He further informed that there are 20 cities which are generally called as Light House Cities where power is surplus and out of that, 12 cities have already expressed their willingness to go for electric mobility. He informed that he will share the list of these cities with DHI and suggested that DHI consider these 12 cities for electrification of transport sector on priority. Chairman informed JS, Power that DHI


07/07/2017
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has already written a letter to Secretary Power for allowing sale of electricity at charging stations and requested M/o Power to act upon the request as early as possible.


JS, Power further informed that Energy Efficiency Services Limited, under Ministry of Power has developed the expertise in aggregating the demand as they have done it for LED Bulbs. If mission (NMEM) can offer them role, EESL can certainly play an important role in aggregation of demand, setting standards, doing tendering process and supplying electric vehicles. He also stated that to start with they could aggregate the demand of Government vehicles in Delhi itself, which will be in the range of few thousands vehicles. Similarly, if OEMs get together and aggregate the demand for battery cells, EESL will be happy to do similar activity for supplying cells to OEMs which may reduce the prices of vehicles further. All the members supported the proposal of JS Power regarding aggregation of demand especially for Government Vehicles. Members suggested that Government may initiate the proposal immediately for introduction of Electric Vehicles in the Government.

9. Mr Chetan Maini, Vice Chairman, Sun Mobility, stated that 'range anxiety' and 'charge (refuelling) time' are two main limitations of electric vehicles and this can be overcome by using battery swapping. He suggested that for charging of electric vehicles; concessional tariff of energy need to be announced else electric vehicles will not be economical. He informed that non-fiscal policy measures are the low hanging fruits, which needs to be plucked immediately. He also suggested that many companies are having CSR funds and government may allow them to use to use these funds for Electric Mobility or charging infrastructure,

9.1 Mr. Kartik from Ashok Leyland, informed that although aggregation of demand will certainly bring the prices of Electric Vehicles down, but in his opinion, still there will be some gap and Government need to provide incentives to fill this viability Gap for initial few years unless cost of Electric vehicles comes down to the level of IC vehicle.

9.2 Mr. Shekhar Vishwanathan, VP, Toyota Kirlosakar stated that it is very important to know the time line by which Charging Infrastructure can be built up without which, it will be difficult for OEMs to bring new models of Electric Vehicles. He further recommended the promotion of all types of technologies including Hybrid technology since both hybrid and Electric Vehicles required same ecosystem.

10. Representative from MNRE informed that Hydrogen based fuel and technology should also be included in electric vehicle scheme. He stressed that while deriving the policy for charging infrastructure, depending upon the timing of charge, there should be differential tariff for charging of vehicles.

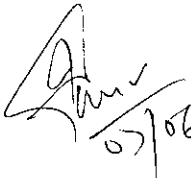

6/15/24
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11. **Ms Hemalatha Annamalai, from Ampere Vehicles,** suggested that depreciation benefit for purchase of electric vehicles be restored. Similarly, she suggested that vehicles being used for routine duty in governments like Postal Department vehicles, Night Patrolling vehicles and waste management vehicles should be made mandatorily electric vehicles. Similarly she suggested that banking authorities, including Mahila Bank to be directed to finance electric vehicles.

12. **Mr Rahul Bharti, from Maruti Suzuki India Ltd** informed that for development of local manufacturing eco system for Electric vehicles; Hybrid vehicles is the first stage. This is because hybrid vehicles as well as electric vehicles use same component for electric drives. Local manufacturing could not be developed unless there is investment commitment from OEMs and investment commitments can only come when there exists trust for the system and the Government and this trust can come only when there is policy stability. He suggested that in order to develop local manufacturing eco system Government should ensure policy stability. He informed that Maruti Suzuki India Ltd recently announced Rs. 1200 Crore Lithium Battery plant in India and due to their perception of instability in policy with regard to Hybrid Vehicles, they are reluctant to go ahead with this project. Chairman stated that there is no question of policy instability and mild hybrids have only been removed from receiving benefits under the FAME Scheme only at the end of the term for Phase I. Batteries for Hybrid PHEVs and BEV vehicles continue to be a requirement and no review of investment on this ground is warranted.

13. **Representative of Ministry of Environment Forest and climate change** suggested that DHI needs to address issues of end of life of vehicles, disposal of e-waste and batteries. She further sought to know whether there is any study about the energy requirement for making full electrification. To this, Shri Chetan Maini replied that there was a study, which stated that for electrification of 20 million vehicles, power requirement is to the tune of 25 GW, which is 25% of the total solar power expected to be installed in the country by 2022 would be needed. As far as battery is concerned, even after 5-6 years, lithium batteries still have 80% capacity and this may be useful for stationary applications. Information is available, but in pieces and there is a need to connect all these and have complete and cohesive policy.

14. **Mr. Vinnie Mehta, DG ACMA,** stated that ACMA members have huge exposure for components of IC engine vehicles and any policy on electric vehicles will affect its members to great extent, which need to be accounted for. He also stated that GST on the components are higher than full electric vehicles and this may lead to inverted duty structure for electric vehicles.


05/06/2017
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15. **Mr. Sohinder Gill** also raised the issue of import duty on stand alone battery which is 28% while battery for manufacturing of EVs attract concessional duty. Because of this, replacement of battery becomes too costly and proves to be deterrent to purchaser of vehicles. This will also affect the proposal of separation of battery from vehicle negatively.

16. **Mr. Raman from Maruti Suzuki India Limited** stated DHI has formulated NEMMP and FAME India scheme based on certain assumptions and incentives were calculated based on Total cost of ownership. He requested that as stated because of any reason if there is any change in assumptions based on which some technologies are being excluded based on sustainability point of view, the changes may be shared with everyone. To this Chairman replied that in the beginning of the meeting, findings of independent review were presented and all changes are based on that review.

17. **Representative of Ministry of Road Transport and Highways** informed that he will take up the issue of registration of vehicles with concerned authority in his Ministry. Chairman also reiterated that registration is a big issue and he himself has taken the issue with Chief Secretary, Delhi Government.

With these comments, Chairman thanked all the members for participation and offering various suggestions for inclusion in Phase II.

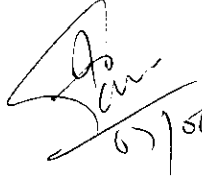
Meeting ended with vote of thanks to the chair.


67/06/217
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Annexure

LIST OF PARTICIPANTS:

1. Shri Girish Shankar, Secretary(HI) - Chairman
2. Dr. S.C. Pandey, AS&FA(DHI)
3. Shri Vishvajit Sahay, JS(Auto)
4. Dr. Vandana Kumar, JS(DIPP)
5. Shri Anil Srivastava, Advisor(NITI)
6. Shri Aniruddha Kumar, Jt.Secy (M/o Power)
7. Dr. Sanjay Bandopadhyaya, CEO(NATRIp)
8. Shri Pravin Agrawal, Director(Auto) DHI
9. Shri Manoj Singh, Advisor, NITI Aayog
10. Dr. Shruti Rai Bhardwaj, MoEF&CC
11. Shri P.C. Maithani, Adviser(MNRE)
12. Shri K.C. Sharma SE(MoRTH)
13. Dr. Sajid Mubashir, Scientist'G' DST
14. Shri Zakaria Khan, Sr.D.O(DIPP)
15. Shri Vijay Sharma, Director (M/o Petroleum)
16. Shri Abhishek Mukherjee, EO(Industry) NITI
17. Shri Dipesh Pherwani, Scientist 'B' (MNRE)
18. Shri Harpreet Singh, Director (M/o Power)
19. Shri Reyaz Ahmed, Director(TRU) CBEC(DoR)
20. Dr. Rashmi Urdhwareshe, Director(ARAI)
21. Shri Chetan Maini, Vice Chairman, Sun Mobility
22. Shri Sudarshan Venu, TVS Motor Co
23. Shri Ankit Singhvi, Electric Mobility Alliance
24. Ms. Annamalai Hemalatha, Ampere Vehicles
25. Shri Sohinder Gill, Hero Electric (SMEV)
26. Shri Pawan Goenka, CMD(M&M Ltd.)
27. Shri C.V. Raman Exec. Director, Maruti Suzuki
28. Shri Shekar Vishwanathan, Vice-Chairman, Toyota Kirloskar
29. Shri Vishnu Mathur, DG, SIAM
30. Shri Saurabh Rohilla, SIAM
31. Shri Rahul Bharti, Maruti Suzuki India Ltd.
32. Shri Karthick A, VP(Ashok Leyland Ltd)
33. Shri Vinnie Mehta, DG, ACMA
34. Shri Narender Kukreti, Totota Kirloskar
35. Ms. Subhag Naqvi, ACMA
36. Shri Pawan Sachdeva, SMEV/SIAM/M&M
37. Shri Ujjwal Kumar, Under Secretary (Deptt. of Economic Affairs)
38. Shri Ajay Kumar Gaur, Under Secretary(DHI)
39. Ms. Simi Narnaulia, Under Secretary(DHI)
40. Shri R.P. Sharma, Consultant(NAB)


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