

Public Consultation on the Future of Mobility – Inviting comments from all stakeholders on Zero Emission Mobility

The Government of India is working on a draft policy to encourage Zero Emissions Mobility in India in line with the objective to have all new vehicle sales by 2030 as Zero Emission Vehicles. The government is inviting comments, suggestions, possible solutions to the challenges in implementing and sustaining Zero emission-mobility solutions. Comments/Suggestions are invited (in pdf, .doc, .xls, .ppt) on the following key aspects as well as on any other considerations in this regard. Respondents may choose to respond on all the queries or a particular set of query/queries or also on aspects which are not explicitly captured by the topics mentioned below.

1. SCOPE - EXPLORING THE POTENTIAL OF ZERO EMISSION FOR ALL CLASSES OF VEHICLES INCLUDING CARS, BUSES, 3- WHEELERS, 2- WHEELERS, AUTOS, SCOOTERS, TRUCKS ETC)

1.1. Comments on the potential of transformative mobility technologies such as Electric Vehicles, Fuel Cell Technology, and Strong Hybrids etc for India's domestic needs as well as for India to become a hub of export of ZEVs.

1.2. What are the existing and predicted performance capabilities for Zero Emission/ Electric mobility in all classes of vehicles both in India and globally?

1.3. Suggestions on the feasibility and the roadmap to migrate to Zero emission vehicles in all classes of vehicles - cars, buses, 3-wheelers, 2-wheelers, commercial fleets, trucks etc? What are the potential challenges and possible solutions to realize the above mentioned objective?

2. PROMOTING E-MOBILITY - FIRST ADOPTERS

2.1. Which vehicle segment should be targeted first for rapid adoption of ZEV mobility? (2-wheeler, 3-wheeler, or public transportation buses, cab aggregators etc)

2.2. How can we encourage adoption and procurement of ZEV/Electric buses in public transport?

2.3. How can Governments (Centre/States/Local) act as demand aggregators through both short term and long term incentives?

2.4. Comments/Suggestions on appropriate models/mechanisms/roadmaps to provide an ecosystem approach to early adoption and manufacturing of ZEVs.

3. CHARGING INFRASTRUCTURE

3.1. What are the appropriate models of charging infrastructure that should be pursued for early and sustained adoption?

3.2. Comments on the advantages and disadvantages of varied charging infrastructure models.

3.3. Comments on the advantages and disadvantages of battery swapping models.

3.4. Which locations could be the most appropriate ones to set up DC fast chargers and AC slow chargers factoring land availability, charging times, congestion and other relevant constraints?

3.5. What could be the possible appropriate business models for players such as Urban Local Bodies (ULBs), Distribution Companies (DISCOMS), and other private players to come forward and provide charging stations?

3.6. Comments on the following options pertaining to setting up of charging infrastructure

- DISCOMS setting up and operating Charging Stations
- PPP Franchisee Model with companies partnering with DISCOMS
- Battery Swapping Model where firms aggregate batteries, charge and swap them

3.7. What is the approach with respect to charging protocols that India should adopt to ensure interoperability at charging stations? Is it possible for India to develop charging technologies and softwares that can ensure universal interoperability?

3.8. Comments from standards regulating agencies with on various aspects of the ZEV mobility ecosystem.

4. MANUFACTURING

4.1. Battery/Cell

What are the type of short term and long term incentives for boosting domestic cell manufacturing?

4.2. Auto Components

What are the type of short term and long term incentives for boosting domestic manufacture of auto components for ZEVs?

4.3. EV Chargers

What are the type of short term and long term incentives for boosting domestic manufacturing of EV Chargers and allied components?

4.4. Software for chargers and charging stations

How best to utilize the existing pool of talent in the domestic software industry to develop solutions that will promote interoperability in the charging ecosystem?

4.5. Raw Material and Market Access

4.5.1. Comments on the suggestion of setting up and Indian mining PSU or Joint venture that shall mine rare earths overseas as well as from marine based polymetallic nodules from the Indian Ocean and other known deposits?

4.5.2. Comments on strategic partnership agreements and trade agreements with foreign partners (governments, private players, etc.) for supplying raw materials for cell manufacture and other components etc.

4.5.3. Comments/Suggestions on possible global markets that ZEV automakers in India should target to boost exports.

4.6. Institutional Mechanisms for setting up the right ecosystem

Comments/Suggestions on appropriate institutional mechanism to ensure convergence of efforts in the entire manufacturing value chain

5. INTEGRATION OF RENEWABLE ENERGY AND ENERGY DEMAND FOR E-MOBILITY

5.1. How can the electricity demand for ZEVs be balanced with supply for renewable energy sources in a way to reduce dependency on fossil fuels like coal etc?

6. REGULATORY REFORMS/AMENDMENTS

6.1. What are the possible amendments to the Electricity Act 2003 to facilitate the Electric Vehicle ecosystem?

6.2. Suggestions/Comments on Time of Day tariff (peak, off-peak charges), grid stabilization mechanisms, smart metering to deal with a progressive all-electric fleet etc.

6.3. What are the perceived existing regulatory hassles with respect to Electric Vehicles specifically in the Motor Vehicle Registration Act, 1988?

6.4. What are the potential implications (if any) on the Vehicle Insurance industry?

6.5. Comments on any other possible complementary policy changes/ initiatives/Legislative reforms required in other sectors to boost electric mobility

7. FISCAL/NON FISCAL INCENTIVES

7.1. What are the possible revenue-neutral fiscal incentives/policies to promote EV adoption?

7.2. What are the possible non-fiscal incentives/policies to promote EV adoption? (Examples- Free parking, registration fee waivers, dedicated lanes, etc.)

8. RESEARCH & DEVELOPMENT IN ELECTRIC VEHICLES, BATTERIES, BATTERY MANAGEMENT SYSTEMS, ALTERNATE TECHNOLOGIES

8.1. What are the upcoming areas of R&D? How can they be incentivised so that they become a priority area?

8.2. Comments on the model that is required for promoting R&D in this area with multi-stakeholder involvement?

8.3. Comments and suggestions on standards that need to be adopted for making ZEVs manufactured in India globally competitive and compliant with global norms.

9. SKILL DEVELOPMENT CONSIDERATIONS

9.1. Comments on Re-skilling of existing workforce trained in ICE technology both from a manufacturing and after sales service perspective.

9.2. What are the new skills that will be required?

9.3. What are the existing skills that would continue to remain relevant in the ZEV paradigm?

9.4. What are the skills that may become obsolete as a result of the transition?

9.5. Comments/Suggestions on Certification of new skills.

10. RECYCLING AND SCRAPPING OF END-OF-LIFE VEHICLES

- 10.1.** What are the existing capabilities present in India for recycling batteries?
- 10.2.** What are the possible/appropriate methods to process end-of-life vehicles?
- 10.3.** What are the kind of incentives that are required to facilitate recycling and scrapping of EOL vehicles?

11. USER PERSPECTIVE ON ZERO EMISSION VEHICLES

- 11.1.** What is a user's (existing/potential) perception about range and performance?
- 11.2.** What is a user's (existing/potential) perception about the total cost of ownership?
- 11.3.** What is a user's (existing/potential) perception about resale value?
- 11.4.** What are the possible "tipping points" for accelerating zero-emission mobility, after which it would be able to move ahead on its own? How can public actions help take it to such a tipping point?
- 11.5.** Comments and concerns on potential safety concerns with regards to Zero emission vehicles.

12. POTENTIAL INDUSTRIAL IMPACTS:

- 12.1.** Comments/Analysis of the impacts on the current automobile manufacturing sector, and its associated component manufacturing and repairs & maintenance sectors?
- 12.2.** Comments/Analysis of the impacts on the oil and gas sector and especially the jobs provided by this sector?

12.3. Comments/Analysis of the impacts on any other relevant sector.

13. MISCELLANEOUS CONSIDERATIONS:

13.1. Any other relevant information, reports, academic papers, presentations etc are also welcome in this regard.

*Responses may be emailed to **transport-niti@gov.in** or sent to the Office of Shri Anil Srivastava (DG, DMEO & Adviser-Electric Mobility), Room 268, NITI AAYOG, Sansad Marg, New Delhi – 110001 latest by **31st January 2018.***