

New Energy Vehicles Workshop

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Electric Mobility in India

印度电动交通出行

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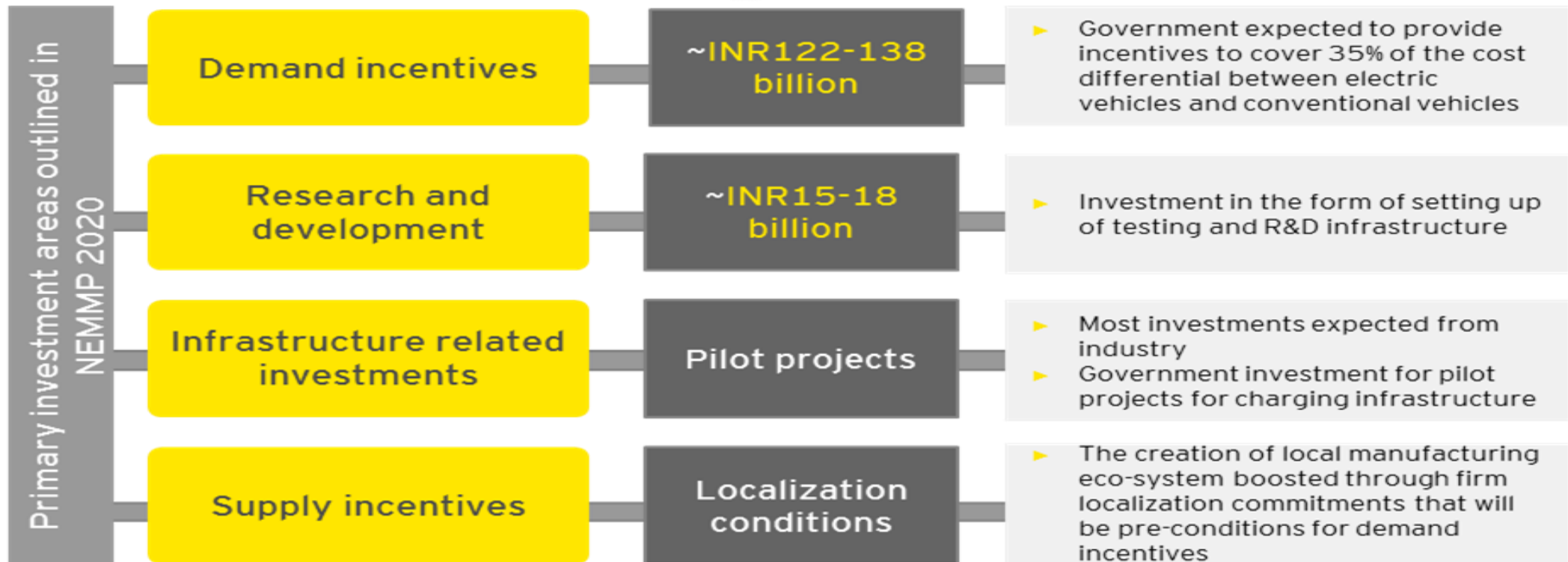
Genesis

电动汽车发展背景

- To transition to low carbon sustainable, cost-effective, efficient green mobility path, Electric Vehicles (EVs) is being increasingly considered as the key green low-carbon mobility solution
- Although EV technology and market penetration are developing rapidly, EVs are still in a nascent stage
- Several initiatives are being taken at the national and sub-national level by various Ministries/ Departments and state governments

National Electric Mobility Mission Plan (NEMMP) 2020

印度国家电动交通任务计划(NEMMP) 2020



Sources: National Electric Mobility Mission Plan (NEMMP) 2020 plan

Faster Adoption and Manufacturing of Electric Vehicle (FAME)

加速电动汽车采用及生产(FAME)

- To support the hybrid/ electric vehicles market development & related manufacturing ecosystem to achieve self-sustenance
- Implementation Period - 6 years; Ministry of Heavy Industries and Public Enterprises
- Focus Areas:
 - Demand creation,
 - Technology development,
 - Pilot projects and
 - Establishment of charging infrastructure
- Phase –I implemented over a 2 year period - FY 16 & FY17 @ US \$120 million
- Under this Scheme, 1,63,997 xEVs given direct support by way of demand incentives amounting to US \$ 28 mn till December, 2017 resulting in fuel savings and CO₂ reduction
- Various Indian and international Automobile Manufacturers registered with the Department of Heavy Industry as on date for availing benefit of demand incentives on sale of their electric/hybrid vehicles

Pilot Project Of Multi-modal Electric Public Transport Under FAME

多模式电动公共交通示范项目

- Government giving **priority to public transport (buses, taxis, autos) in the second phase of incentive scheme**
- 11 cities selected for pilot project; US\$ 67 million to be allocated under this phase, including US\$ 6.1 million as incentives for installation of charging infrastructure
- Government to provide subsidy for a total of **390 buses, 370 taxis & 720 three-wheelers**
 - 9 major cities (Delhi, Ahmedabad, Bengaluru, Jaipur, Mumbai, Lucknow, Hyderabad, Indore and Kolkata) to be given subsidy for 40 buses each, while Jammu and Guwahati to get subsidy for 15 buses each;
 - Kolkata to get subsidy for 200 e-taxis, followed by Bangalore (100 taxis), Indore (50 taxis) and Ahmedabad (20 taxis)
 - Bangalore will get subsidy for 500 three-wheelers, followed by Indore for 200 three-wheelers and Ahmedabad for 20 three-wheelers
- **Bangalore, Ahmedabad and Indore are emerged as cities to implement multi-model electric vehicles network**

Initiative to boost demand & market confidence

通过倡议来激发市场需求和市场信心

- State-run Energy Efficiency Services Ltd. (EESL) mandated to procure and deploy electric vehicles in government offices across the country on lease basis
- Estimated that replacing these 500,000 government cars with EVs over the 3-4-year period will lead to fuel savings of about 8000 million liters, 10 million tons of CO2 reduction and 28,200 crore of annual fuel savings
- Intended to provide an impetus to the industry to gain efficiencies of scale, drive down costs, create local manufacturing facilities, grow technical competencies for the long-term growth
- Rolled out phase-1 procurement of 10,000 electric cars already, first delivery of 500 cars expected this month
- Planned to set up 4,000 charging stations in Delhi/NCR

Initiatives at National Think Tank- NITI Aayog

印度国家智库 NITI Aayog 的系列倡议

- Study undertaken on Transformative Mobility with Rocky Mountain Institute (RMI) estimated that adoption of Electric and shared vehicles would:
 - save \$60 billion in diesel and petrol i.e. reduction in energy demand by 64%
 - Reduction of as much as 1 gigatonne (GT) (37%) of carbon emissions by 2030
- Two technical policy briefs launched focusing on Electric Vehicles:
 - **India's Energy Storage Mission:** details a technology and policy roadmap that leverages Make in India to meet domestic EV demand while creating a globally competitive battery industry.
 - **An Evaluation of a Motor Vehicle Feebate Policy for India** - evaluates the potential for a revenue neutral feebate policy taking into account the social cost of emissions (polluter pay principal) and create incentives for consumers and manufacturers to adopt clean and efficient vehicle technologies.
- Launched the Lighthouse Challenge: to select a state to host **India's first mobility solutions Lighthouse city program;** to generate solutions to complex mobility problems and test their solutions as pilots in a Lighthouse City

Initiatives at National Think Tank- NITI Aayog

印度国家智库 NITI Aayog 的系列倡议

- Electric Mobility Mission to be constituted and housed at NITI Aayog
- NITI to act as a Coordinator among various stakeholder department / Ministries for the implementation
- NITI is in the process of drafting the National Policy on Electric Vehicles
- Undertaking Public consultation on future of mobility – have invited comments from all stakeholders on **Zero Emission Mobility**

Initiative to promote Electric Buses by States

印度各州推广电动公交的倡议

- Various Cities/ states are procuring / conducting trials of electric buses in India
- Mumbai, Thane (Maharashtra), Shimla (Himachal Pradesh) have already procured or placed orders for hybrid/ electric vehicles
- Other cities like Chandigarh, Hyderabad, Chennai, Bangalore and Ahmedabad are conducting trials of electric buses or in the process of finalizing orders
- Several state government are coming up with their state policies such as Karnataka, Telangana to move to electric vehicles

Industry Response

印度工业界的行动

- Several corporates have forayed into the electric vehicles space; responding to the government e-mobility vision
- All automobiles companies (national & international); aggregators, solar power developers, lithium ion battery makers, financial intermediaries are throwing their hats in the ring
- Bigger Public Sector Undertaking (Energy and Electronics) such as NTPC, BHEL, PowerGrid trying to enter this evolving energy landscape

Moving Forward ...

电动汽车未来发展

- To send strong signal to the market, Government reduced the GST rate of electric vehicles to 12%, compared with 28% plus cess for petrol and diesel cars and hybrid vehicles
- Formulated a Committee to work on Standards & Specifications for Vehicles; fuel efficiency standards for passenger cars providing super credits for electric vehicles
- Moving forward following areas need attention:
 - Policy and regulatory gaps to be addressed
 - Codes, Standards and specifications for batteries, vehicles manufacturing and charging infrastructure to be framed
 - Impact on electricity demand & supply side constraints
 - Expansion and scale up of charging infrastructure
 - Capacity building & skilling especially at the city level for public transport
 - Promoting R&D

Thank You