

Submission of Comments to the NITI Aayog On Consultation Paper - Public Consultation on the Future of Mobility

CUTS Institute for Regulation & Competition (CIRC) is an independent not-for-profit think tank with a mandate to undertake policy research and advocacy in the field of regulation and competition. The Institute's activities are divided into three broad programme areas: Economic Regulation, Infrastructure Development & PPPs, and Competition Policy & Law.

BACKGROUND:

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. On this perspective, NITI Aayog's Public consultation on ZEV (Zero Emission Vehicle) policy is a welcome step forward. As part of the public consultation, comments and suggestions from CIRC are provided 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)

Suggestion from CIRC:

- I. The term Zero Emission is misleading. It may so happen that the emission may not be from the tailpipe of the vehicle but at the point of energy generation, if it is from a polluting fuel source such as coal. So, a non-polluting source should be specifically targeted to source the energy required for EV charging. It should be sourced through non-polluting renewable sources such as water, wind, solar only.

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.)

Suggestion from CIRC:

- I. 2 wheelers are the segment which could be targeted first for rapid adoption of ZEV mobility. This segment is a huge market with an

¹ <http://www.circ.in/>

average 10 million units sold per year. The consumers are versatile in nature and the utility of such vehicle are multi- tasked.

- II. From a mobility perspective, 2 wheelers accounts for around 75% of vehicle ownership for most cities. It has also the advantage of “visibility”. These are the most used private vehicles in the city. Mostly, 2 wheelers are used for local mobility inside city premises and least preferred for venturing outside (except for some adventure bikers’ community). They are also most quickly to seize the price advantage per km. Adoption in this segment can therefore; become much quicker. For example, Bangalore has about 4.5 million two wheelers
- III. While other segments like car vehicle owners will want their usual range of luxury sedans, SUVs and would be reluctant to switch to smaller EVs in a hurry. It cannot be the first adopter for mass adoption, switching may be gradual in such cases. The proliferation of charging stations at 30A will act as an enabler for car adoption and will certainly take some time. Government can simultaneously plan to introduce public transport systems for mass transit through its own fleet of owned and operated city transport systems.

3. CHARGING INFRASTRUCTURE

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?

Suggestion from CIRC:

- I. The EV adoption would revive the electricity demand in the country and there may be peak demand spikes in the country as most of the movement happens in the peak timing, usually morning official timing (8 AM to 11 AM) and evening peak (5PM to 8PM).
- II. An EV (car) will run about 5.33 km on one unit of electricity. A typical city vehicle will run about 20-30 km on an average per day. A city like Bengaluru has over 6 million vehicles. At 30 km a day, this will entail additional power demand of about 11.25 million units per day. Most of this demand would accrue during morning and evening office hours adding to peak loads. Bengaluru’s entire daily consumption at peak load is about 6,000 MW. From power demand perspective, this demand addition from EV is a huge spike and cannot be ignored. While supply side may be under huge stress to cater to this demand, people may not be willing to switch unless ease of recharging stations options at convenient locations and speed charger are installed.

- III. Charging stations need to be fast charging and standardised. It should be of high amperage too. This will entail a network of ²30A plugs either through:
 - a. Home stations – typically costing around ³USD 1000 or
 - b. Public /commercial stations
- IV. The home station charging infrastructure would require government support in terms of direct subsidy or deferred payments of some kind. For example, the Power company/reseller can price the units charged at a higher rate and cover the cost of installation, which would be free for the homeowner (some kind of inter-operability mechanism with attached commercial with distribution companies like net metering for solar rooftop). For implementation of such models, regulatory interventions are required from state electricity regulators with a buy in from all stakeholders.
- V. The central regulator should come up with relevant guidelines for adoption of such interventions and higher tariff should be a pass through cost for the distribution companies. At 5km range per unit of EV, even a unit cost of around INR 10 per unit compares ⁴favourably with normal fuel. For two wheelers this will be even better.
- VI. Major cities have their own public transport fleets and have dedicated depots for parking. The depots can be transformed into charging stations with a bit of redesign and redevelopment. While charging can be done at night, buses can ply throughout the day. For an efficient use of infrastructure, these charging stations can be open to private vehicles, which would double up as a commercial revenue stream for the public transport departments. Further, these stations can be developed on a public-private partnership (PPP) model, attracting competition and private investment into the system without burdening the public exchequer.
- VII. Also, charging infrastructure can be created using PPP model for the city or identified clusters in and around the city vicinity (like a dedicated corridor set up for EV charging infrastructure by identifying various densely routes through various technology). The number of charging poles can be scaled up through clustering approach which would also give visibility and would be financially sustainable for private developers.
- VIII. Alternately, the scale can be achieved through clubbing the number of charging stations to be developed along with development of parking space. This would also help in establishing alternative source of revenue for private developers. The land allotted for creating parking spaces can be leased out for a long-term period and handed over to the private party for

² 30A stands for 30 ampere standard charging stations

³ <https://www.greenbiz.com/blog/2014/05/07/rmi-whats-true-cost-ev-charging-stations>

⁴ <https://www.zigwheels.com/forum/posts/18831-is-an-electric-bike-really-cheaper-to-run-than-a-petrol-bike>

a longer duration, say 20 to 30 years for commercial exploitation as an add-on revenue stream.

- IX. Government should rope in public sector undertakings to set up some additional infrastructure in parallel using their resource/infrastructure and capabilities. In this scenario, players like NTPC, Power Grid and major oil companies' roles cannot be ruled out. The government may think of inviting the oil and gas companies to take a lead and build some of the assets and strategically shift their base from oil and gas to electric charging infrastructures. The existing oil and gas stations can be converted to charging infrastructure with less investment and tweaking of some rules and regulations.

4. MANUFACTURING

4.1. Battery/Cell

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

Suggestion from CIRC:

- I. There is no battery manufacturing base in India. If India has to import the battery for its charging requirements, the whole effort of adopting EVs would negate the very basic objective of switching over to a new technology. It will also not help in achieving the import reduction target of the government. So, for real gain in terms of saving foreign currencies, India should look for manufacturing batteries locally. This would not only help in reducing the overall cost but also help generate employment. Consequently, any step in this direction will help strengthen the government's "Make in India" initiative.
- II. Any government capital subsidy, Viability Gap Funding (VGF) and concessional financing should be linked to integrated development of EV vehicles with battery manufacturing to the EV fleet developer's/manufacturing companies.
- III. Government can also think of developing Special Manufacturing Zones (SMZ) for setting up this facility with PPP mode of development by providing all clearances and land at concessional rate to developers who would like to set up their business in that zone. Preference may be provided to domestic manufacturers of 2 wheelers, 3 wheelers, cars and buses.
- IV. The major outcome of these initiatives would be meeting the domestic demand first and export the surplus, if any. It will help in establishing world-class manufacturing hub for battery systems in the country and eventually lead to lower the battery cost and improve efficiency.
- V. The residual battery life after the useful life in EVs would help in development of an alternate market for storage requirements for low end systems like e-rickshaws, agriculture pump sets and the telecom sector.

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.

Suggestion from CIRC:

- I. The biggest glitch in the Indian context is the electrical circuit maintenance on vehicles. Normal “repair” services are terrible on electrical circuits in cars, including leakage. There needs to be trained and certified maintenance services staff as the EV engines work differently. Street auto part mechanics having basic knowledge can be provided with EV repair skill sets and some sort of certifications from Government of India.
- II. Government may tie up with EV manufacturers and ITI institutions to provide the skill sets and the scheme can be converged with Government of India’s “Skill India” initiative. This can be scaled up in no time with proper incentive mechanism and open up employment opportunities in the formal sector too.

Possible Government intervention at an early stage to promote this market is a pre requisite to develop this rising sector. The commercial aspect would be self-sustainable once the network is in place. Hence, it may start with some pilots without any delay.

Majorly, the prime areas, it need to target are:

- I. Subsidy on home-charging stations when buying a vehicle
- II. Authorising re-selling of power by EV charging stations enterprises. This can be mom and pop store operation which would be employment oriented.
- III. Assisting EV makers with geography based promotion by government with identification of city clusters and promoting pilot projects for an early adoption of EV systems in the country.

For further query; Contact Us:

Radha Krishna Tripathy
Sr. Fellow, CIRC
Email: rkt@circ.in
Contact: 9650997482