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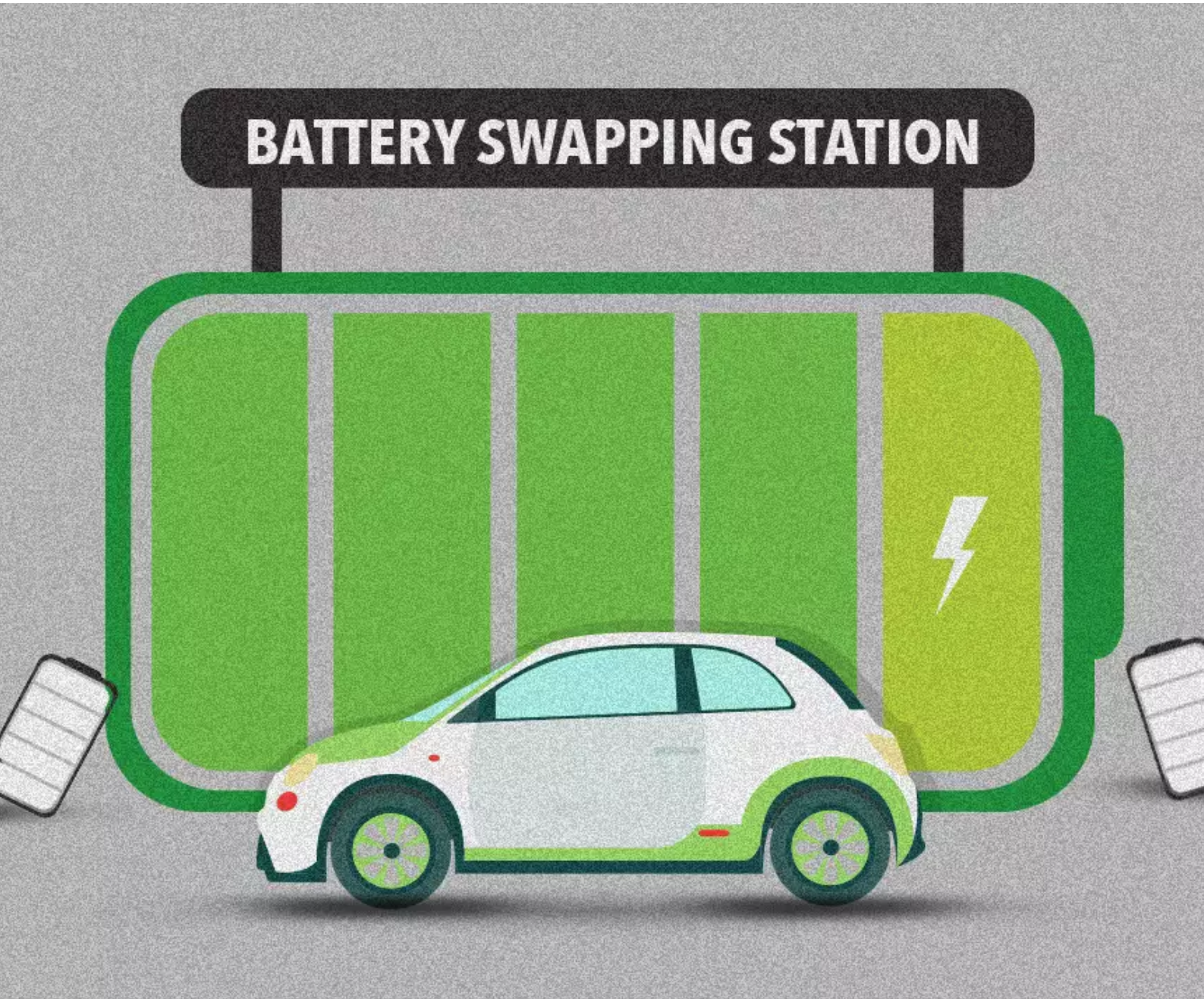


Recommendations on the

Draft Battery Swapping Policy

APRIL 2022

ABOUT VASUDHA FOUNDATION

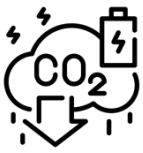
Vasudha Foundation is one of India's foremost environment advocacy organisations promoting green, socially just, and sustainable models of energy by focusing on renewable energy and energy-efficient technologies and lifestyle solutions. We are a cohort of energy and environment professionals committed to India's clean energy transition through thought leadership and conscientious research. Our approach is a combination of creating cross-sectoral data repositories and carrying out data analytics, coupled with strategic outreach to ensure resource conservation with the ultimate objective of conserving Mother Earth.

ACCESS TO CLEAN ENERGY AND CREATION OF LIVELIHOODS THROUGH CLEAN ENERGY APPLICATIONS

SUSTAINABLE TRANSPORT SOLUTIONS

CLEAN ENERGY TRANSITION

CLIMATE FINANCE



LOW CARBON PATHWAYS AND CLIMATE POLICY

CLIMATE RESILIENCE

GLOBAL PARTNERSHPS (CROSS-CUTTING)

NEED FOR THE POLICY

The announcement of the Net-Zero emissions target by 2070 requires India to take bold steps to de-carbonise emission-intensive sectors like power, transport, etc. The electrification of the transport sector presents a key opportunity for de-carbonisation. However, the uptake is slower than expected because of the lack of charging stations for Electric Vehicles (EVs). Moreover, even with a large number of charging stations, EVs take considerably more time to charge compared to the refuelling of the Internal Combustion Engine (ICE) Vehicles and thus presents a key challenge to EV uptake on large scale.

In this context, battery swapping posits itself as a rewarding option, especially in 2/3-wheelers segment where the upfront investment in setting up the Battery Swapping Station is less due to the possibility of manual intervention.

POLICY SUMMARY

Keeping the EVs sector's fast charging needs in mind, the Government of India (GOI) expressed interest in battery swapping technology in the FY 2022-23 budget session . Following this, a draft battery swapping policy was released on April 20, 2022.

This is a holistic policy that aims to catalyse the large-scale adoption of EVs by ensuring efficient and effective use of scarce resources like public funds, land, and raw materials for advanced cell batteries for delivery of customer-centric services. The policy is battery technology- and business model-agnostic and is applicable for all Advanced Chemistry Cells (ACCs).

The draft policy also aims to streamline technical and operational requirements to provide impetus to the battery swapping ecosystem. It also talks about the provision of direct and indirect financial incentives to various stakeholders to promote battery swapping. Re-use and recycling of batteries after first life and end-of-life have also been considered in the policy.

Finally, there is an institutional framework put in place to ensure smooth implementation of the policy.

RECOMMENDATIONS

As the famous scientist Stephen Hawking said, "One of the basic rules of the universe is that nothing is perfect. Perfection simply doesn't exist."

In this context, with the aim of further improving the draft policy, Vasudha Foundation recommends the incorporation of the following key suggestions:

1. In the testing and certification of battery swapping components section (Section 5.3), the policy promotes rigorous testing of batteries. For the same, **we suggest including testing of batteries for numerous partial charge and discharge cycles on EVs**. This will help in making evidence-based decision on whether to allow the removal and usage of partially charged batteries by EV users.

2. Since the health and capacity of a battery is dependent on the EV owner's driving patterns, **there may be a need to come up with provisions that caps or tweaks certain features of the EV running under the Battery as a Service (BaaS) model.**

3. Regarding grievance redressal and compensation mechanism, **we suggest making both the battery provider and EV manufacturer equally responsible for monetary compensation to the EV owner, in case of malfunctioning**. This is because both battery and EV must be designed optimally to ensure the smooth operation. However, at the time malfunctioning, it will be unfair to put the onus solely on the battery provider for the EV's malfunctioning, unless proven so.

4. The draft policy promotes usage of a battery bank for RE storage and other applications after first life. However, there is a strong case for the usage of battery banks during their first life for providing ancillary services. Thus, a proposal for inclusion of this in CERC's (Ancillary Services) Regulations, 2021 will be a welcome step.

5. Owing to the increasing incidents of EV battery fires in the country, **we recommend including the development of detailed Health and Environment Safety Guidelines in place along with the requisite training of individuals to work at EV workshops/charging stations**. Moreover, ascertaining the obligation and legal and compensatory guidelines in case of an accident must also be included in the draft policy.

6. **We are of the opinion that it can be explicitly mentioned that Electric 2/3 wheelers even without batteries should continue to be a part of the FAME Scheme**. However, a detailed release of the extant of support should follow. This will extend the coverage of the FAME Scheme from the existing 10 lacs and 5 lacs, respectively. Moreover, this will also lead to market adoption at a faster pace.

7. **The government policy may also include a framework to promote consumer awareness around battery swapping.** The need for awareness of consumers as a class cannot be over-emphasised and is already well recognised all over the world. The advancement of technology and advent of sophisticated vehicles in the market and aggressive marketing strategies in the era of globalisation have not only thrown open a wide array of choices for the consumer but at the same time also rendered the consumer vulnerable to a plethora of problems concomitant to such rapid changes. And as the success of the EV transition is directly proportional to the increase in demand, there is an urgent need to educate the consumers to help them to make prudent decisions.

Vasudha Foundation

CISRS House, 14 Jangpura B, Mathura Road,
New Delhi - 110014, India
Tel/fax: + 91-11-2437-3680

Visit us at www.vasudha-foundation.org

For more information about Vasudha Foundation, email us at
info@vasudhaindia.org