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Pakistan



Centre for Peace and
Development Initiatives

ELECTRIC VEHICLES IN PAKISTAN

Policy Brief

<https://www.cpdi-pakistan.org/> 

info@cpdi-pakistan.org 

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Research and Author/s: Dr. Naveed Arshad

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Pakistan's journey towards electric vehicle (EV) policy began in 2016-2017. A major milestone was achieved in 2019 with the draft of the National Electric Vehicle Policy, officially launched in 2020. This policy set ambitious targets for **EV adoption** and included various incentives for manufacturers, like one percent custom duty and sales tax for locally assembled EVs. NEVP became part of the Auto Industry Development and Export Plan (AIDEP 2021-26).

However, despite various incentives, the transition to electric vehicles (EVs) in Pakistan presents **a complex array of challenges**. While the shift towards EVs is crucial for environmental sustainability and economic progression, several policy and practical obstacles need to be addressed. Following are some of the policy obstacles that are hampering the growth of EVs in Pakistan.



1. High Upfront Costs

A significant barrier to EV adoption in Pakistan is the high initial purchase cost of these vehicles compared to traditional counterparts. This cost discrepancy places EVs out of reach for a substantial portion of the population, hindering widespread adoption and limiting market penetration to a wealthier demographic.

2. Range Anxiety and Charging Infrastructure

'Range anxiety', or the fear that an EV will run out of power before reaching a charging station, is a notable concern. This issue is exacerbated in Pakistan due to the insufficient charging infrastructure, deterring many potential customers from considering EVs as a viable alternative to fuel-based vehicles.

3. Electricity Shortfall and Battery Charging

The existing electricity shortfall in Pakistan directly impacts the feasibility of EVs. While the grid has enough capacity, revenue-based load management in many localities makes it difficult to operate charging stations. The long charging times and limited driving range per charge add to the perception of EVs as less convenient, contributing to hesitancy in their adoption.

4. Limited Model Variety and Availability

The limited availability of EV models in Pakistan restricts consumer choice. The lack of diverse options to suit specific needs, preferences, or budgets compared to traditional vehicles could hinder consumer adoption due to a lack of appealing choices. While the Engineering Development Board (EDB) has granted more than 22 EV manufacturing licenses, the manufacturers are slow to bring new models into the market.

5. Skilled Workforce for EV Maintenance

The shift to EVs requires specialized maintenance and repair skills. Pakistan currently faces a shortage of trained professionals in this field, potentially leading to higher maintenance costs and discouraging

EV buyers. Manufacturers also face challenges in finding skilled workforce in batteries, high-efficiency motors, and power electronics.

6. Policy Inconsistency and Regulatory Challenges

Inconsistent government policies and a lack of clear regulations create a climate of uncertainty for consumers and manufacturers alike. This uncertainty can slow down investments in EV infrastructure and technology, hampering the growth of the EV market. For example, it is still unclear which entity is responsible for battery safety, or to roll out charging standards, and so on. More importantly, the federal government and provincial governments have conflicting regulations with regard to electric vehicles, creating confusion for manufacturers.

7. Financing and Loan Accessibility

Access to financing for purchasing EVs is limited in comparison to traditional vehicles. This financial barrier can restrict the ability of a significant portion of the population, including consumers and small businesses, to transition to EVs. Moreover, a high-interest rate and cost of capital make EVs an unattractive option for prospective buyers.

8. Supply Chain and Manufacturing Constraints

Pakistan faces challenges in establishing a robust supply chain for EV components and in setting up local manufacturing facilities. These challenges can lead to higher costs and dependencies on imports, making EVs less competitive. To make EVs successful local manufacturing of battery packs and motors is critical. To manufacture any of these, the import duties on the components need to come down. At present, EV completely knocked down (CKD) kits can be brought in at 1 % custom duty and sales tax, while components to manufacture any of the parts in the CKD is at a duty of up to 25%. With low initial volumes of EVs, no parts manufacturer has the financial incentive to explore EV parts manufacturing.

9. Disposal and Recycling of Batteries

The disposal and recycling of used EV batteries present environmental and logistical challenges. Without proper facilities and regulations, there could be negative environmental impacts associated with battery disposal. Presently, there is no policy or regulation on the proper disposal of EV batteries.

10. Public Mindset and Awareness

There is a need to shift the public mindset towards EVs and raise awareness about their economic and environmental benefits. Emphasizing high speed, enhanced range, acceleration, and comfort can make EVs more appealing to the public.

Required Policy Interventions

To effectively expand the adoption of electric vehicles in Pakistan, a range of policy interventions is necessary. While some of these initiatives necessitate **financial investment**, the majority can be achieved through enhanced **government support** or by empowering **the private sector**. This approach underscores the need for a collaborative effort between public authorities and private entities to drive the successful proliferation of electric vehicles in the country.



1. Manufacturing and Supply Chain Development

To stimulate the domestic manufacturing sector for electric vehicles (EVs), policies like Staggered Localization of EV Parts, Import Policy for EV Spare Parts, and Localization Targets and Roll-Out Strategy focus on developing a local EV parts manufacturing industry. These policies aim to set phased targets for localization, revise import duties to encourage local production, and provide incentives for achieving early localization milestones. The overarching goal is to reduce import dependence and foster a competitive and sustainable domestic EV manufacturing landscape.

2. Infrastructure and Charging Network

The Establishment of EV Charging Infrastructure, Renewable Energy Integration for EV Charging, Electrical Infrastructure for EV Loads, and Public-Private Partnerships for EV Infrastructure aim to create a comprehensive and sustainable EV charging infrastructure. This includes the formation of a dedicated body to manage infrastructure development, integration of renewable energy sources in EV charging, adapting electrical grids to support EV loads, and collaboration between government and private sectors to expand the charging network.

3. Public Awareness and Education

Public Awareness and Education Campaigns must be designed to enhance public understanding and acceptance of EVs. This involves launching nationwide educational campaigns, partnering with educational institutions to include EV technology in curricula, and organizing events to showcase the latest EV technologies. The objective is to foster a positive perception of EVs and increase consumer awareness about their benefits.

4. Technology Standardization and Safety

Standardization of EVs and charging technologies, battery standardization and first responder training, and battery technology and charging standards must be focused on ensuring safety, compatibility, and efficiency in EV technologies. These interventions involve developing and enforcing technology standards, providing specialized training for emergency responders on EV-related incidents, and promoting research in advanced battery technologies.

5. Financial and Tax Incentives

The Custom Duties and Taxation for EV Batteries, EV Registration and Taxation Framework, Incentives for Supply and Demand Sides, Incentives for EV Industry Establishment, and Land Acquisition and Industry Setup Support mechanisms must aim to make EVs more affordable through financial measures. These include adjusting custom duties, simplifying registration processes, offering subsidies and tax breaks, and providing support for new industry setups through rent-free land leases, thereby reducing financial barriers and encouraging EV adoption and production.

6. Regulatory and Administrative Framework

Development of an Electric Vehicle Board, Training for Customs Authorities on EVs, and Organizational Structure and capacity-building policies focus on establishing robust administrative and regulatory frameworks for effective EV policy implementation. This encompasses setting up a dedicated EV board, training customs officials in EV technologies, and creating specialized groups within government ministries for coordinated EV policy oversight and implementation.

7. Environmental and Recycling Measures

The Disposal and Recycling of EV Batteries, Supply Chain and Recycling of EV Batteries, and Lifecycle Management of EV Batteries policies are needed to address environmental concerns related to EVs. These policy interventions aim to develop a regulatory framework for recycling EV batteries, encourage businesses focused on battery second life, and create guidelines for safe disposal or secondary use, ensuring responsible management of EV batteries throughout their lifecycle.

8. Policy Expansion and Inclusivity

Expansion of EV Types in Policy and Diverse Vehicle Type Inclusion policies seek to broaden the scope of EV policies to encompass a range of vehicle types. The objective is to ensure that policies cater to diverse market needs, including electric tractors, commercial vehicles, and specialized vehicles, thereby promoting a more inclusive and comprehensive approach to EV policy development.

9. Green Initiatives and Emission Reduction

Zero-Emission Vehicle (ZEV) Mandate, Green Public Transport Initiatives, Residential, and Workplace Charging Incentives, and Low Emission Zones and Congestion Charges may be designed to promote environmentally friendly transportation. These include mandating a certain percentage of vehicle sales to be zero-emission, electrifying public transport, incentivizing the installation of charging stations in homes and workplaces, and implementing low-emission zones in urban areas.

10. Government Leadership and Innovation Support

Government Fleet Electrification and Research and Development (R&D) Support demonstrates government leadership and commitment to EV adoption. These steps focus on setting targets for government fleet electrification and allocating funds for R&D in EV technology, thereby driving innovation and signaling the government's dedication to advancing the EV sector. While the EV policy was approved in 2020, the government has not allocated any budget for EV R&D and has not put up an EV procurement plan for government fleets.

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+92 51 237 51 58-59, 431 94 30

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