



PUNJAB NEW ENERGY VEHICLE (NEV) POLICY 2026



Transport & Masstransit Department
Government of the Punjab



Preface

The Government of Punjab is committed to advancing sustainable development, improving air quality, and reducing dependence on fossil fuels through the promotion of electric mobility. The Punjab New Energy Vehicle (NEV) Policy represents a significant step toward transforming the transport sector by encouraging the adoption of environmentally friendly and energy-efficient technologies.

This policy framework has been developed to create an enabling environment for electric vehicles by fostering investment, strengthening infrastructure, and supporting innovation across the EV ecosystem. It outlines strategic interventions aimed at accelerating the transition to electric mobility while ensuring economic growth, energy security, and environmental protection.

The formulation of this policy has been made possible through extensive consultations with key stakeholders, including government departments, industry representatives, academia, and civil society. The Government acknowledges the valuable technical assistance and professional expertise provided by the Lahore University of Management Sciences (LUMS), whose insights and analytical contributions in the role of the Consultant have been instrumental in shaping this comprehensive policy framework.

The Government of Punjab remains committed to effective implementation, continuous improvement, and collaboration with all stakeholders to achieve the shared vision of a cleaner, greener, and more sustainable future.

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List of Acronyms

NEV	New Energy Vehicle
CTF	Climate Transformation Fund
DISCOs	Distribution Companies
EDB	Engineering Development Board
EVs	Electric Vehicles
e-Waste	Electronic Waste
FED	Federal Excise and Taxation Duty
GCF	Green Climate Fund
GEF	Global Environment Facility
GST	General Sales Tax
GVG	Green Vehicles Guide
HEC	Higher Education Commission
HED	Higher Education Department
ICE	Internal Combustion Engine
IKI	International Climate Initiative
IMF	International Monetary Fund
IoT	Internet of Things
IT	Information Technology
KPIs	Key Performance Indicators
kW	Kilo Watt
LCEVs	Light Commercial Electric Vehicles
MAF	Mitigation Action Facility
MoIB	Ministry of Information and Broadcasting
NAP	National Action Plan
NDCs	National Determined Contributions
NEAP	New Energy Apprenticeship Programme
NEECA	National Energy Efficiency and Conversion Authority
NEV	New Energy Vehicle
NEVF	New Energy Vehicles Fund
NHA	National Highway Authority
NTP	National Tariff Policy
NVEES	National Vehicle Emission Efficiency Standard
NVTTC	National Vocational and Technical Training Commission
NEAP	New Energy Apprenticeships Program
OEMs	Original Equipment Manufacturers
PG	Provincial Government
PHEVs	Plug-in Hybrid Electric Vehicles
PM	Particulate Matter
PPP	Public Private Partnership
PSQCA	Pakistan Standards and Quality Control Authority
PTA	Punjab Transport Authority

PSW	Pakistan Single Window
REEVs	Range Extended Electric Vehicles
ROI	Return on Investment
SBP	State Bank of Pakistan
SC	Steering Committee
tCO ₂	Tons of Carbon Dioxide
TEVTA	Technical Education and Vocational Training Authority
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
VGf	Viability Gap Financing
WHT	Withholding Tax
ZEVs	Zero-Emission Vehicle

1. Introduction

The global shift towards sustainable and clean mobility is being driven by declining battery costs, rapid technological advancements, and growing consumer demand for sustainable transportation. Across the world, governments and private investors are working together to make new energy vehicles (NEVs) mainstream in multiple sectors, including passenger cars, public transport, and commercial fleets. Leading economies have set ambitious targets for phasing out internal combustion engines (ICE) vehicles, prioritizing the expansion of charging infrastructure, battery production, and green financing mechanisms to accelerate NEV adoption. Pakistan, as an emerging economy, must adopt the transition of global transportation electrification. With its increasing issues of energy security, rising fuel imports, and worsening environmental conditions, transitioning to electric mobility is not just an option but a necessity. Recognizing this, the Government of Pakistan has introduced policies to encourage NEV adoption, offer financial incentives, and build infrastructure to support electric transport solutions. However, implementation at the provincial level is key to ensuring the success of these national policies.

As Pakistan's largest and most industrialized province, Punjab plays a pivotal role in shaping the country's NEV transition. The province has the highest population density, largest vehicle fleet, the most severe air pollution levels, and the greatest demand for public and commercial transportation. Cities such as Lahore, Faisalabad, Gujranwala, Multan, and other major cities frequently experience dangerous smog levels, causing health crises, school closures, and economic disruptions. According to the Air Pollution Emission Inventory Report of Punjab, Pakistan (1990 – 2020), the transport sector alone accounts for 39% of Punjab's total emissions¹, with diesel-powered buses, trucks, and motorcycles being the primary culprits. Given the province's critical role in Pakistan's economy, it is imperative that Punjab takes the lead in NEV adoption, and sustainable urban mobility solutions. Punjab must align its policies with global NEV trends, ensuring energy security, industrial growth, and sustainable urban mobility to remain economically and environmentally competitive. Punjab can lead Pakistan's transition to electric mobility, fostering economic resilience, technological innovation, and environmental sustainability in the evolving global landscape by developing a strong provincial NEV policy.

1.1. Global Trends in Electric Mobility

The transportation sector worldwide is experiencing a transformative shift towards electric mobility, driven by advancements in battery technology, supportive government policies, and the need to reduce greenhouse gas emissions. Leading economies such as China, the United States, and the European Union have implemented aggressive policies to phase out internal combustion engine (ICE) vehicles and promote the adoption of NEVs. These policies include financial subsidies, tax incentives, charging infrastructure expansion, and research and development investments. China remains the global leader in NEV production and adoption, with over 60% of global NEV sales in 2023 and a well-developed battery supply chain. European nations are enforcing strict CO₂ emission limits, pushing automakers to transition

¹Air Pollution Emission Inventory Report of Punjab, Pakistan (1990 – 2020)

rapidly toward zero-emission vehicles. Meanwhile, the United States is implementing tax credits, funding for charging infrastructure, and research grants to accelerate NEV adoption. Countries like Norway, the Netherlands, and the UK have set ambitious 2030 to 2035 deadlines to phase out fossil fuel-based vehicle sales. The global transition is being fueled by falling battery costs, technological innovations, and increased consumer demand for sustainable transportation. Governments and private investors are collaborating to make electric vehicles (EVs) mainstream across various segments, including passenger cars, public transport, and commercial fleets. Recognizing these trends, Punjab must align its policies to ensure competitiveness, energy security, and environmental sustainability in the evolving mobility landscape.

1.2. Importance of NEV Adoption

The adoption of NEV in Pakistan, specifically in Punjab is critical for addressing climate change, reducing air pollution, and improving energy security. The country is facing rapid urbanization, increasing vehicular emissions, and heavy reliance on fossil fuel imports, which collectively pose significant economic and environmental risks.

1.3. Climate Change Mitigation

Pakistan ranks among the top 10 most vulnerable countries to climate change, with rising temperatures, erratic rainfall, and extreme weather events affecting livelihoods, agriculture, and overall economic stability. Shifting towards zero-emission vehicles can play a crucial role in reducing the carbon footprint and meeting Pakistan's commitments under the Paris Agreement and United Nations Sustainable Development Goals (SDGs). Punjab, being the most industrialized and urbanized province, bears a major responsibility in achieving national decarbonization targets. Electrification of public and private transport will directly contribute to lowering CO₂ emissions while promoting cleaner and more energy-efficient mobility solutions.

1.3.1. Air Pollution Reduction

Punjab faces severe air pollution challenges, driven by rapid urbanization, vehicular congestion, industrial emissions, and seasonal crop burning. Smog has become an annual crisis, with major cities such as Lahore, Faisalabad, and Gujranwala experiencing prolonged periods of hazardous air quality, leading to school closures, health emergencies, and economic losses. Air pollution is now a critical public health concern, with Punjab's Air Quality Index (AQI) frequently exceeding hazardous levels. The concentration of PM_{2.5} and PM₁₀ pollutants is several times higher than the World Health Organization (WHO)-recommended limits, posing severe health risks². One of the primary contributors to this pollution is the high concentration of fossil fuel-powered vehicles, particularly aging diesel and petrol-based public transport. Prolonged exposure to vehicular emissions is linked to respiratory diseases, cardiovascular illnesses, and reduced life expectancy among Punjab's urban population.

² Concentration of Particulate Matter and Its Impact on Public Health in Different Cities in Pakistan-A Review. Environmental Forensics, 1-17

This alarming situation underscores the urgent need for a transition to sustainable and emission-free transportation solutions. The electrification of public transport, ride-hailing fleets, and government vehicles presents a viable strategy to combat air pollution in Punjab. Vehicular emission data compiled by Environment Protection Agency (EPA) Punjab provides a robust evidence base for the phasing-out of high-polluting vehicles and to monitor the transition toward NEVs. Shifting electric buses, light commercial NEVs, and battery-swappable two- and three-wheelers will play a crucial role in reducing emissions, improving air quality, and fostering a healthier urban environment. The province can take a significant step toward environmental sustainability and public health improvement by integrating electric mobility into Punjab's transport network.

1.3.2. Energy Security and Economic Benefits

Pakistan's transport sector is heavily dependent on imported fossil fuels, with oil imports accounting for a significant portion of the trade deficit. The volatility in global oil prices and the weakening of the Pakistani rupee have put economic pressure on consumers and businesses alike. Shifting to locally powered EVs, especially those utilizing renewable energy sources such as solar and wind power, will reduce dependence on oil imports, stabilize energy costs, and improve the country's trade balance. Additionally, the promotion of local NEV manufacturing and battery production can create new job opportunities, boost industrial growth, and stimulate investment in research and development. Encouraging the local assembly of NEVs, battery recycling facilities, and the development of charging infrastructure will strengthen Punjab's position as a hub for sustainable mobility solutions.

1.4. Rationale for Punjab's New Energy Vehicle (NEV) Policy

The Government of Pakistan introduced the National Electric Vehicle Policy (NEVP) in 2019 to accelerate NEV adoption through targeted incentives, regulatory frameworks, and infrastructure development. This policy set ambitious NEV penetration goals, envisioning 30% of total new vehicle sales to be electric by 2030, and 90% by 2040, focusing specifically on two- and three-wheelers, buses, and trucks. Key incentives under the NEVP include duty-free imports on NEV components, tax exemptions for locally assembled EVs, and reduced registration fees for two- and three-wheelers; measures aimed at encouraging local manufacturing, reducing import dependency, and supporting cost-effective NEV deployment. Additionally, the policy provides guidelines to establish a nationwide NEV charging network, promote battery-swapping solutions, and integrate renewable energy sources into charging infrastructure. Despite these initiatives, nationwide progress has faced obstacles due to regulatory delays, implementation challenges, and limited development of charging infrastructure. Consequently, the government is revising the national policy for 2025 with renewed focus on localized battery manufacturing, enhanced financial mechanisms, and region-specific incentives to strengthen Pakistan's overall NEV ecosystem.

NEV market in Pakistan is gradually gaining momentum, supported by proactive government policies, increased private sector investment, and rising consumer awareness. Although still in its infancy, the NEV industry is seeing notable growth across segments, including two- and three-wheelers, electric buses, and passenger cars. Increasing interest from global automakers,

local manufacturers, and ride-hailing services has driven efforts toward fleet electrification and sustainable urban mobility solutions. For Punjab, transitioning to electric mobility is no longer optional but imperative, driven by the province’s severe air pollution challenges, escalating energy costs, growing transportation demand, and strong industrial potential. While the NEVP 2025 provides a broad national framework, effective implementation at the provincial level demands a tailored approach aligned closely with Punjab’s unique urban, economic, and environmental context. A dedicated Punjab NEV Policy will serve as a strategic roadmap to accelerate NEV adoption, boost local manufacturing, expand charging infrastructure, and streamline regulatory alignment within the province. Implementation of this policy will follow a phased and fiscally responsible approach, aligned with Punjab’s institutional capacity, fiscal space, and climate-finance opportunities. Such an approach is crucial to addressing Punjab’s specific opportunities and overcoming region-specific challenges, ensuring a robust and sustainable shift toward electric mobility.

2. Situational Analysis

2.1. Analysis of Existing Vehicular Fleet in Punjab

Punjab, being the most populous province of Pakistan, experiences significant transportation pressures stemming from rapid urbanization and population growth. Over the past decade, the vehicular fleet has grown exponentially, characterized predominantly by ICE vehicles. Table 1 lists the fleet composition in Punjab. The analysis shows that EV registrations have started to increase but still represent a marginal share of new sales. As of Sept 2024, Punjab has over 24.5 million on-road vehicles, including motorcycles, cars, commercial fleets, rickshaws, and heavy-duty vehicles, as shown in the table below (aggregated from district-wise records)³:

Table 1: Vehicle Registrations in Punjab (2020 – 2024)

Registered Motorcycles					
Category	2020	2021	2022	2023	2024
Electric	57	237	1,177	1,480	5,906
Non-Electric	879,484	1,306,248	1,087,122	841,378	910,681
Total	879,541	1,306,485	1,088,299	842,858	916,587
Registered Other Than Motorcycles					
Category	2020	2021	2022	2023	2024
Electric	29	39	192	122	513
Non-Electric	97,216	165,790	143,070	97,555	122,688
Total	97,245	165,829	143,262	97,677	123,201

Table 2: Estimated On-Road Vehicle Population in Punjab (2024)

Vehicle Category	Estimated Numbers
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³ <https://excise.punjab.gov.pk/pro-active-disclosure> (District wise , Body type wise total vehicles registered in Punjab as of 30 SEP 2024)

Motorcycles	20,507,258
Motor Cars	2,255,186
Delivery Vans / Pickups	615,270
Taxis / Cabs	578,682
Buses	97,765
Trucks	83,739
Tractors	304,776
Rickshaws	70,002
Ambulances	4,766
Double Cabins	11,956
Earth-Moving Machinery	4,594
Total Vehicles (All Types)	24,533,994

The above estimates include all active, registered vehicles across Punjab’s districts as of 2024 and reflect the actual load on the transport network and infrastructure. Two-wheelers (motorcycles) constitute the largest vehicle segment, followed by passenger cars, three-wheelers, and buses, with heavy dependence on fossil fuels. In urban centers such as Lahore, Faisalabad, and Multan, the prevalence of ICE vehicles has directly contributed to severe environmental and traffic congestion issues. Furthermore, an absence of regulatory incentives for cleaner alternatives has continued to sustain the growth trajectory of ICE vehicles, aggravating the environmental and public health challenges faced by the province.

2.2. Current Status of Vehicular Emissions and Air Quality

Punjab is currently facing a severe air quality crisis, with several of its major urban centers consistently ranking among the most polluted cities globally. Vehicular emissions are a dominant contributor, accounting for approximately 39% of the province’s urban air pollution⁴. Key pollutants such as particulate matter (PM2.5 and PM10), nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOCs) have regularly exceeded internationally accepted safe levels, directly impacting public health, urban livability, and economic productivity. The onset of smog, particularly during the winter months, severely exacerbates air quality degradation, leading to repeated school closures, healthcare emergencies, traffic disruptions, and significant economic losses. Studies link prolonged exposure to these vehicular pollutants to an alarming rise in respiratory illnesses, cardiovascular diseases, and premature deaths among Punjab’s urban populations.

Punjab’s major cities such as Lahore, Faisalabad, Gujranwala, and Multan experience Air Quality Index (AQI) levels that frequently fall within the “hazardous” category, sometimes exceeding 1000 AQI during peak smog seasons which is several times higher than the WHO recommended limits. A major factor contributing to this environmental crisis is the province’s growing fleet of fossil fuel-powered vehicles, particularly aging diesel trucks, buses, two-stroke motorcycles, and conventional ICE passenger vehicles. Inadequate vehicle inspection and maintenance systems, reliance on low-quality fuels, and limited public transport

⁴ Air Pollution Emission Inventory Report of Punjab, Pakistan (1990 – 2020)

electrification have worsened the pollution burden. Without decisive interventions, the transport sector's emissions are expected to continue rising, further undermining Punjab's climate commitments and posing an existential threat to public health and economic resilience. The electrification of public transport, ride-hailing fleets, and private vehicles, combined with enhanced emission standards and strengthened regulatory frameworks, is crucial for reversing current air quality trends and fostering a healthier, more sustainable urban future for Punjab. Vehicular emission data compiled by Environment Protection Authority (EPA) of Punjab will be incorporated into the baseline inventory which shall be updated to provide a robust evidence base for the phasing-out of high-polluting vehicles and to monitor the transition toward NEVs. Addressing vehicular emissions through transition to NEVs offers Punjab a critical opportunity to:

- Reduce its transport-sector carbon footprint
- Improve urban air quality
- Achieving tangible public health benefits
- Strengthen its compliance with national and international environmental obligations, including Pakistan's commitments under the Paris Agreement and the United Nations Sustainable Development Goals (SDGs)

2.3. NEV Infrastructure Status and Gaps

The existing infrastructure supporting EVs in Punjab remains limited and fragmented, presenting substantial barriers to widespread NEV adoption. Despite initial government initiatives and pilot projects, the province's NEV infrastructure does not yet adequately address the demands of potential NEV users, investors, and manufacturers. Based on publicly available reports, industry assessments, and stakeholder consultations, Pakistan hosts approximately 30 public EV charging points as of early 2026. Major urban centers such as Karachi, Lahore, and Islamabad account for a significant share of the installed capacity, although national infrastructure remains far below the required scale to support mass EV adoption. Battery-swapping infrastructure remains nascent, with only a few pilot projects initiated, notably in Lahore, Multan and Karachi, representing fewer than ten operational battery-swapping stations nationwide.

The existing infrastructure supporting NEVs in Punjab remains limited and fragmented, creating substantial barriers to its widespread adoption. Despite initial governmental initiatives and isolated pilot projects aimed at introducing electric mobility, the province's NEV infrastructure has not developed at a pace or scale adequate to meet the growing transportation needs. Currently, public EV charging facilities are extremely limited and concentrated predominantly in Lahore, with only isolated installations present in other major urban areas. This uneven geographic distribution has resulted in substantial range anxiety among potential users, negatively impacting consumer confidence and significantly slowing the pace of NEV adoption. The provincial power distribution network currently faces challenges regarding its readiness for increased electricity demand due to EV adoption. There has been limited evaluation of grid capacity to support charging infrastructure expansion. Potential grid

instability is a real concern if NEV adoption occurs rapidly without parallel development in grid infrastructure and capacity planning. There remains an absence of a structured approach to harness renewable sources for NEV charging, resulting in missed opportunities for cleaner energy integration.

There is an urgent need for updating regulatory frameworks based on NEECA's charging station standards, ensuring building code compliance for EV infrastructure integration within residential and commercial buildings. Incorporating solar provisioning for charging stations was emphasized to improve sustainability and reduce grid dependency. Furthermore, there is currently no mechanism to classify different types of charging stations (Level 1, Level 2, Fast Charging, Battery Swapping) based on city size and density. It is critical to define minimum infrastructure standards for both small towns and major urban centers, ensuring equitable access across Punjab.

Another barrier to infrastructure development is the absence of standardized technical protocols for EV charging equipment and battery-swapping stations. Without clear technical standards and guidelines, there is low consumer and investor confidence, reducing private-sector willingness to invest. The regulatory environment is further complicated by unclear administrative procedures. The absence of a streamlined, and single-window approval process causes delays in infrastructure deployment, adding uncertainty for potential investors. Moreover, the limited private-sector investment is a constraint to scaling up the NEV infrastructure. Punjab currently lacks targeted financial regulatory frameworks to attract investments from private enterprises. Financial constraints, coupled with the high initial costs for setting up charging infrastructure and manufacturing facilities, make investors reluctant to commit capital in the absence of predictable incentive structures and regulatory clarity. In addition, establishing performance-linked subsidy frameworks, regulatory compliance mechanisms, and standard operating procedures (SOPs) for battery waste management and battery fire safety practices were identified as key gaps needing immediate attention.

Addressing these infrastructure gaps and regulatory bottlenecks requires a systematic approach. Strategic mapping and assessment of ideal locations for public charging stations and battery-swapping infrastructure must be prioritized, considering existing power infrastructure, vehicle density, and urban planning. Concurrently, comprehensive evaluations and proactive reinforcements of grid infrastructure should be undertaken, emphasizing renewable energy integration to sustainably meet increased NEV-related electricity demand. Regulatory frameworks must be standardized and streamlined to encourage investment, foster private-sector confidence, and ensure rapid infrastructure deployment.

3. Policy Objectives and Vision

3.1. Vision

Punjab envisions becoming a regional leader in sustainable electric mobility by 2035. Through this policy, the province aims to accelerate the transition toward a clean, inclusive, and innovation-driven transportation system that improves air quality, enhances energy security, mitigates climate change, and drives socioeconomic development. Through leveraging its industrial base, demographic strength, and technological potential, Punjab will foster local NEV manufacturing, scale clean infrastructure, and create green jobs to position itself at the forefront of electric mobility in Pakistan and South Asia.

3.2. Policy Objectives

3.2.1. Reducing Greenhouse Gas Emissions and Improving Air Quality

The primary objective of this policy is to significantly reduce vehicular emissions. Transitioning from fossil fuel-based vehicles to EVs will directly address Punjab's air quality crisis, particularly the smog issue prevalent in major cities. By setting achievable EV adoption targets, the policy seeks to reduce emissions and enhance air quality, thus safeguarding public health and environmental sustainability.

3.2.2. Enhancing Energy Security and Promoting Renewable Energy

The Punjab NEV Policy aims to enhance energy security by reducing reliance on imported fossil fuels, particularly petroleum products. Transitioning to electric mobility allows the province to not only reduce fuel import bills but also reshape its energy usage toward cleaner and sustainable sources. EVs provides a strategic opportunity to integrate renewable energy into the transport sector by powering EV charging and battery-swapping infrastructure through distributed generation. At the same time, the adoption of NEVs will support better utilization of Pakistan's existing power generation capacity, especially during off-peak periods when surplus electricity is available. EVs can reduce curtailment of power plants, improve DISCO revenue streams, and contribute to grid balancing by absorbing excess grid supply through managed charging programs. The policy will therefore promote a hybrid approach to EV charging by leveraging existing generation surplus and using renewable energy systems to reduce emissions and enable clean, decentralized charging in areas with limited grid reliability. This dual strategy aligns with both national energy security objectives and Punjab's long-term decarbonization goals.

3.2.3. Stimulating Economic Growth through Green Jobs and EV Manufacturing

The EV transition represents an economic opportunity for Punjab. The provincial government aims to capitalize on this opportunity by encouraging investments in local NEV and component manufacturing sectors. Punjab's existing industrial base provides a solid foundation to establish robust manufacturing clusters specializing in NEVs, battery packs, and charging infrastructure. The policy intends to facilitate an enabling environment through targeted financial and

regulatory incentives to attract both local and foreign investment. Such strategic initiatives will drive employment creation across the NEV value chain, fostering a skilled workforce and sustainable industrial growth.

3.2.4. Enhancing Public Awareness and Consumer Protection

The successful transition toward electric mobility heavily depends upon consumer acceptance and trust. The policy prioritizes building public awareness through targeted educational campaigns and outreach programs designed to inform citizens about the environmental, health, and economic benefits of adopting NEVs. These campaigns will address misconceptions regarding vehicle reliability, range anxiety, and total cost of ownership. Furthermore, robust consumer protection measures, including clear warranty guidelines, transparent battery-performance standards, safety certifications, and comprehensive after-sales service regulations, will be established to build consumer confidence in NEVs.

3.2.5. Promoting a New, Sustainable “Green Industry”

The EV sector represents a transformative opportunity for Punjab to cultivate an entirely new green industry, strategically diversifying the province’s industrial portfolio. By supporting local manufacturing capabilities for NEVs, battery packs, battery cells, motors, and NEV components, Punjab aims to foster a thriving green industrial sector. This will include the development of EV-specific manufacturing clusters, promotion of battery production facilities, and advancement of recycling and disposal infrastructure to support a circular economy. Punjab aims to position itself as a regional leader in NEV and clean technology manufacturing, thereby aligning environmental sustainability objectives with long-term economic resilience.

The overall goal of Punjab’s NEV Policy is to establish a sustainable and clean mobility landscape. Punjab will transform its transportation sector by accelerating NEV adoption, stimulating local manufacturing capabilities, fostering innovative technological advancement, and creating enabling infrastructure. This shift will position Punjab as a frontrunner in sustainable transportation in Pakistan and South Asia, effectively addressing environmental degradation, energy security challenges, economic growth objectives, and public health improvements. Through this policy, Punjab aims to not only mitigate its existing environmental challenges but to leverage its industrial capacity, technological innovation potential, and demographic advantage to achieve lasting and inclusive growth.

3.3. Policy Measures and Key Interventions

The successful realization of this policy relies on strategic interventions across the following domains:

- Increasing the availability of high-quality yet affordable NEVs.
- Establishing charging infrastructure networks to support widespread EV utilization.
- Creating targeted incentives to enhance consumer demand for NEVs.
- Building the necessary institutional frameworks to facilitate NEV adoption.

This policy directly supports the Climate Resilient Punjab Vision and Action Plan (CRPVAP 2024), particularly Mitigative Measure MM.4, which mandates the development of a provincial-level New Energy Vehicle Policy. The policy also contributes to multiple cross-cutting mitigation objectives in CRPVAP by promoting clean transport, reducing transport emissions, and enhancing climate-resilient urban mobility solutions. The Government of Punjab shall pursue the following policy measures and key interventions to achieve the objectives of sustainable transportation, air quality improvement, energy security, and industrial growth through clean mobility:

1) Accelerating NEV Adoption

- Promote the widespread adoption of NEVs across two-wheelers, three-wheelers, passenger cars, commercial vans, and buses through time-bound electrification targets.
- Prioritize early adoption in public and commercial fleets, municipal services, ride-hailing platforms, and last-mile delivery operators.
- Phase out ICE vehicles exceeding prescribed age limits
- Phase out ICE vehicles particularly targeting unapproved Qingqi-shaped, unregulated LPG three-wheelers, two-stroke motorcycles and diesel-based public and commercial transport.

2) Developing EV Charging and Battery Swapping Network

- Establish a network of public charging stations, battery swapping stations, and fast-charging corridors along major urban centers and highways.
- Incentivize private sector to install charging and swapping infrastructure
- Develop EV charging hubs in coordination with the Land Revenue Department.
- Mandate the integration of EV charging points in new commercial and residential developments under revised building codes such as ECBC 2023.
- Promote solar-powered EV charging installations in partnership with DISCOs to enhance renewable energy integration and grid stability.

3) Strengthening Financial Incentives for Consumers and Industry

- Provide targeted subsidies and rebates on NEV purchases, registration fees, and charging infrastructure installation.
- Offer tax exemptions and fee reductions for NEV manufacturers, component suppliers, and battery recycling facilities.
- Facilitate access to concessional green finance and credit schemes for NEV manufacturers, assemblers, and fleet operators through partnerships with financial institutions.

4) Promoting Local Manufacturing and Industrialization

- Incentivize the development of local EV assembly plants, battery manufacturing units, and component industries within and outside designated Special Economic Zones (SEZs).

- Streamline approval processes and facilitate infrastructure provisioning for investors establishing NEV manufacturing facilities.
- Support research, development, and localization of advanced battery technologies, smart mobility solutions, and EV charging systems.

5) Establishing Institutional and Regulatory Mechanisms

- Establish the NEV regulatory entity to oversee policy implementation, safety standardization, compliance monitoring, and industry facilitation.
- Enact the Punjab EV Act to provide a legal framework covering vehicle standards, charging infrastructure, safety requirements, investment promotion, and environmental safeguards.
- Set up dedicated NEV Facilitation Cells within the Transport Department, Energy Department, Industries Department, and relevant regulatory agencies.
- NEV regulatory entity shall operate in coordination with NEECA to ensure compliance with the *Pakistan Electric Vehicles Charging Infrastructure and Battery Swapping Regulations 2024*. Federal entities shall define standards, while NEV regulatory entity shall focus on provincial enforcement, facilitation, and investor support.

6) Ensuring Grid Readiness and Renewable Energy Integration

- Coordinate with distribution companies (DISCOs) and the Energy Department to assess grid capacity, upgrade distribution networks, and enable renewable-powered EV charging stations.

7) Implementing Battery Recycling and E-Waste Management Frameworks

- Develop and enforce guidelines for the collection, transportation, recycling, and disposal of EV batteries in collaboration with the Environment Protection Department (EPA).
- Incentivize the establishment of battery second life repurpose facilities and recycling plants through fiscal benefits.

8) Enhancing Public Awareness and Workforce Development

- Launch province-wide public education campaigns to promote the environmental, economic, and health benefits of NEV adoption.
- Establish vocational training programs and certifications for EV technicians, battery specialists, and charging station operators through partnerships with TEVTA and universities.
- Link Green job creation targets NEV adoption milestones and manufacturing sector expansion.

9) Facilitating Public-Private Partnerships (PPP) for Infrastructure and Manufacturing

- Enable private sector participation in the development of charging stations, battery swapping facilities, and EV manufacturing units through public-private partnerships.

- Provide viability gap funding where necessary to catalyze private investment in strategically important but commercially challenging locations.

10) Monitoring, Evaluation, and Adaptive Management

- Implement a robust Monitoring and Evaluation (M&E) framework with clear performance indicators for NEV adoption rates, infrastructure rollout, emission reductions, and industry development.
- Conduct quarterly reviews and biennial policy evaluations to update targets, refine incentive mechanisms, and address emerging technological and market trends.

The policy implementation period extends until 2030 which will set a foundational framework for progress beyond this timeline. It is a provincial-level policy designed for implementation through collaboration between regional governments, industry stakeholders, businesses, and the wider community. The policy mandates structured quarterly progress evaluations and annual reviews. These assessments aim to address coordination gaps and facilitate timely adjustments in the implementation strategy to meet growing needs and challenges.

4. Phased Roadmap for NEV Transition

The policy establishes a progressive roadmap designed to facilitate a transition towards electric mobility in the province. Policy targets are consistent with Pakistan’s NDC commitments and Punjab Climate-Resilient Vision 2024. The policy details specific milestones at three stages: short-term (2025), medium-term (2030), and long-term (2035), to ensure methodical implementation, tracking, and continuous refinement of strategies.

4.1. Phased EV Adoption Roadmap

The policy outlines clear electrification targets for different vehicle segments to accelerate Punjab’s transition toward sustainable transportation (Table 3). To align with global EV adoption trends⁵, this policy adopts a realistic and progressive target framework. International experience shows that NEV adoption tends to accelerate sharply after reaching the 1% threshold, with many countries reaching 10% in six years and up to 40 to 50% over a decade⁶. Punjab’s current NEV market share is below 1%. Accordingly, the policy proposes the segment-wise targets for new vehicle sales, which are designed according to the global trajectories. These targets will be reviewed periodically and adjusted based on market trends, and infrastructure deployment. These specific and incremental targets are strategically designed for phase wise adoption and to enhance environmental sustainability province-wide.

⁵ IEA (2024), *Global EV Outlook 2024*, IEA, Paris

⁶ <https://rmi.org/the-ev-revolution-in-five-charts-and-not-too-many-numbers/>

Table 3: Expected NEV Adoption in Punjab

Vehicle Category	Phase I (2026–2029)	Phase II (2030–2032)	Phase III (2033–2035)
Two-Wheelers	Early adoption focus through incentives, pilot deployments, and support for urban and peri-urban mobility use cases	Expanded market uptake through wider consumer access, charging and swapping availability, and private-sector participation	Large-scale mainstreaming across urban and rural markets as part of province-wide NEV transition
Three-Wheelers	Early adoption focus, particularly for commercial use, last-mile mobility, and battery-swapping-based operations	Expanded deployment across passenger and goods mobility segments with stronger financing and infrastructure support	Broad commercial uptake and integration into the wider provincial clean mobility ecosystem
Buses and Vans	Initial pilots and targeted introduction in public fleets, feeder services, and municipal operations	Scaled deployment across public transport, institutional fleets, and light commercial applications	Wider integration into intercity, urban, and commercial transport systems
Four-Wheelers	Limited early uptake supported through enabling measures, awareness, and initial charging network development	Market expansion through improved affordability, wider model availability, and stronger charging coverage	Broad-based adoption across private, institutional, and commercial users
Trucks	Early-stage demonstration and pilot deployment in selected commercial and logistics applications	Gradual expansion in freight and logistics use cases supported by corridor infrastructure and market readiness	Wider commercial uptake as the ecosystem matures and supporting infrastructure expands

4.2. Phasing Out Older ICE Vehicles

The Punjab EV Policy targets a phased transition to a cleaner fleet by systematically removing high-emission, aging ICE vehicles from the province’s roads. Vehicles older than 20 years (from registration date) will be subject to progressive restrictions and incentives for replacement with NEVs. To ensure equitable and enforceable implementation, the phase-out of older ICE vehicles will be supported by a digital vehicle age-verification system to be developed by PITB in coordination with the Excise and Taxation Department. This system will track vehicle registration year and enable regulatory enforcement across LEZs and province-wide bans. The phase-out will also be supported by scrappage incentive schemes (detailed in Section 5.2) to avoid burdening low-income households dependent on older vehicles. Table 4 lists the timeline, actions and vehicle categories for phase-out strategy:

Table 4: Table Phasing Out Old ICE Vehicles Timeline

Year	Action	Details / Notes	Lead Institutions
2026 (Q1 to Q2)	Launch digital vehicle age-verification system (pilot in Lahore & Faisalabad)	Developed by PITB & Excise; integrated with traffic enforcement and NEV regulatory entity dashboard	PITB, Excise & Taxation, Transport Dept.
2026 (Q3)	Draft amendments to Punjab Motor Vehicles Ordinance	Legal basis for LEZ enforcement, age-based bans, and compliance penalties	Law Dept., Transport Dept., NEV regulatory entity
2026 (Q4)	Launch voluntary scrappage incentive pilot (2W & 3W)	Scrappage rebate	Transport Dept., Finance Dept., PSIC
2027 (Full year)	Scale up digital verification system across all districts	Include all vehicle classes; used for subsidy targeting and LEZ access control	PITB, Excise, Municipal Bodies
2027 (Q3–Q4)	Evaluate pilot scrappage program & expand to buses and vans	May include conditional NEV replacement rebate or lease-to-own model	NEV regulatory entity, BoP, Urban Unit
2028–2030	Begin phased bans of >20-year-old ICE vehicles in LEZs	Based on vehicle type and zone; enabled via digital verification, cameras, and smart plates	NEV regulatory entity, Traffic Police, EPA
2028–2030	Integrate scrappage-linked NEV rebates with NEV purchase subsidy system	Automatic rebate deduction at purchase or registration	Transport Dept., Finance, Dealerships
2031–2035	Enforce province-wide phase-out of >20-year-old commercial vehicles	Expanded to private cars as well by 2033; enabled via integrated registration system	Transport Dept., NEV regulatory entity, Excise Dept.

4.3. Charging and Battery Swapping Infrastructure Roadmap

Punjab’s NEV transition requires a reliable, accessible, and well-distributed charging and battery swapping network. Instead of fixed numerical targets, the Policy adopts a phased infrastructure roadmap aligned with market readiness, vehicle uptake, grid preparedness, and private-sector participation.

In Phase I, deployment will focus on major urban centers, pilot intercity and highway nodes, and early battery swapping for two- and three-wheelers. In Phase II, the network will expand to intercity routes, district headquarters, secondary cities, and commercial fleet corridors, with wider support for four-wheelers, vans, buses, and light commercial vehicles. In Phase III, the focus will shift to province-wide coverage, improved reliability, interoperability, commercial viability, and stronger private-sector-led expansion.

Where needed, the Government of Punjab may also support phased development of public fast-charging facilities at key motorway and national highway locations through appropriate public-private arrangements.

Table 5: Charging and Battery Swapping Infrastructure Roadmap (2025-2035)

Infrastructure Area	Phase I (2026–2029)	Phase II (2030–2032)	Phase III (2033–2035)
Public Charging Infrastructure	Initial deployment in major urban centers, public facilities, commercial hubs, and priority pilot zones	Expansion across secondary cities, district headquarters, and intercity corridors	Province-wide coverage with stronger public and private network integration
Battery Swapping Infrastructure	Early rollout focused on two- and three-wheelers, especially for commercial, shared, and last-mile mobility	Expansion into wider urban and semi-urban markets with stronger operator participation	Mature and commercially integrated swapping ecosystem across priority transport segments
Fast-Charging Network	Deployment at strategic urban nodes and selected highway and motorway locations	Expansion along intercity routes, commercial fleet corridors, and high-demand travel corridors	Broad integration into provincial mobility corridors with improved accessibility and reliability
Highway and Corridor Infrastructure	Pilot corridor development at strategic entry, exit, and transit points	Expanded intercity connectivity across major routes and economic corridors	Comprehensive integration into the wider provincial highway and logistics network
Vehicle Segment Coverage	Focus on 2W, 3W, early public fleets, and pilot applications	Wider support for 4W, vans, buses, and commercial fleet operations	Full ecosystem support across major private, public, and commercial vehicle categories
Deployment Model	Public facilitation, pilot investments, and early PPP structures	Greater private-sector participation with blended financing and concession models	Mature market-led deployment supported by regulatory stability and commercial viability

4.4. Rural NEV Adoption Plan

Punjab will promote the adoption of affordable electric two- and three-wheelers for agricultural logistics, local commuting, and small-scale transport to recognize the unique transport needs of rural communities,

- Concessional financing schemes and subsidies shall be introduced to make rural NEVs affordable for low-income households and small farmers.
- Dedicated solar charging stations, equipped with net-metering where feasible, will be deployed in off-grid and weak-grid areas to ensure reliable and sustainable charging.
- Rural NEV pilot projects will be launched in at least two districts by 2026, with lessons integrated into province-wide roll-out.

- Partnerships with farmer cooperatives and rural transport unions will be developed to ensure NEVs contribute to efficient agricultural logistics.

4.5. Land Use and Location Strategy for NEV Infrastructure

NEV infrastructure deployment in Punjab requires strategic land use planning and site allocation. Land for charging stations will be identified through the Revenue Department and linked to urban planning frameworks. Suitable locations include:

- Conversion of abandoned CNG stations into EV charging hubs.
- Integration of charging facilities into existing fuel stations.
- Deployment of charging infrastructure within residential and commercial developments, ensuring compliance with updated building codes.
- Prioritization of government-owned land near public transport hubs, parking areas, and commercial centers.

All allocation or utilization of state land for NEV-related infrastructure shall be undertaken in accordance with the Board of Revenue Notification No. 2102-2019/749-CL(II) dated 13 September 2019, which governs the allocation of state land to provincial departments and public-sector entities. The NEV Policy does not establish any new land-lease mechanism; all proposals for use of state land will follow the existing BOR policy and, where private investment is involved, the applicable provisions of the Punjab PPP Act 2025 and Rules 2025. Punjab government will coordinate with municipal bodies, Revenue Department, and private sector stakeholders to allocate sites efficiently. To streamline this process, a “Single Window Facility” will be created to facilitate site selection, land leasing, and regulatory approvals.

4.6. Industrial and Economic Development Roadmap

Punjab’s NEV Policy aims to position the province as a hub for NEV manufacturing, battery recycling, innovation, and green industrial development. It seeks to promote investment, technology transfer, localization, and SME participation to build a competitive NEV ecosystem.

The Policy adopts a phased industrial development approach instead of fixed numerical outputs. In Phase I, the focus will be on industrial planning, investor engagement, and enabling infrastructure. In Phase II, emphasis will shift to assembly, supplier development, clustering, and early recycling activities. In Phase III, the focus will be on ecosystem strengthening, advanced recycling, higher-value manufacturing, and export readiness.

Table 6: Industrial and Economic Development Roadmap (2025–2035)

Milestone Area	Phase I (2026–2029)	Phase II (2030–2032)	Phase III (2033–2035)
Industrial Planning and Investor Facilitation	Engagement with SEZs and relevant industrial authorities for NEV-focused planning, land facilitation, utility	Expansion of investor facilitation mechanisms and strengthening of industrial support	Consolidation of Punjab’s position as a preferred destination for NEV-related

	readiness, and investor outreach	systems for scaling manufacturing activity	industrial investment
Testing and Certification Ecosystem	Establishment and operationalization of testing, validation, and certification support for NEVs and their components	Strengthening of technical standards, certification processes, and compliance support for manufacturers and suppliers	Mature testing and certification ecosystem aligned with national and international market requirements
Manufacturing and Assembly Development	Preparatory support for NEV assembly, battery systems, and component manufacturing through policy facilitation and industrial coordination	Operational expansion of assembly, component manufacturing, and related industrial activity across priority segments	Advanced industrial scale-up with stronger technological capabilities and value-added production
Vendor and Supply Chain Development	Initial engagement and onboarding of local suppliers and SMEs into the emerging NEV ecosystem	Expansion and strengthening of local vendor networks, supplier capabilities, and component localization	Mature and competitive domestic supply chains integrated with broader industrial and export ecosystems
Industrial Cluster Formation	Early planning and identification of locations for NEV-oriented industrial clustering within existing industrial and SEZ frameworks	Development and operational strengthening of industrial clusters supporting co-location, shared services, and ecosystem efficiencies	Integrated NEV industrial clusters with stronger market linkages, innovation support, and long-term commercial viability
Battery Recycling and Second-Life Development	Early preparation for battery recycling, collection systems, repurposing pathways, and enabling policy support	Expansion of pilot recycling and second-life initiatives linked to industrial and circular economy development	Advanced recycling, repurposing, and circular battery value chains integrated into the provincial NEV ecosystem
Employment and Green Industrial Growth	Early workforce mobilization and industrial skill development linked to emerging NEV sectors	Broader employment generation across manufacturing, services, recycling, and supporting industries	Sustained green industrial growth supported by ecosystem maturity, innovation, and long-term market expansion
Technology Transfer and Partnerships	Initial engagement with domestic and international industry	Deeper collaboration for joint ventures, supplier upgrading,	Stronger long-term partnerships supporting

	partners, research institutions, and technology providers	industrial innovation, and technical capability development	advanced manufacturing, innovation, and export competitiveness
Export Orientation and Market Expansion	Foundation-building for quality assurance, supplier capability, and industrial readiness	Strengthening of competitiveness and market positioning for regional and national value chains	Export-ready NEV manufacturing and component ecosystem with stronger participation in external markets

4.7. Environmental and Emission Reduction Goals

Environmental improvement is a core objective of Punjab’s NEV Policy. The transport sector is a major contributor to fossil fuel use, urban air pollution, and greenhouse gas emissions in the province. In cities such as Lahore, Faisalabad, Multan, and other major urban centers, transport emissions significantly contribute to smog, poor air quality, public health risks, and economic losses. The transition to NEVs is therefore intended to support cleaner mobility, reduced emissions, and improved urban livability.

Punjab’s NEV Policy aligns with Pakistan’s Nationally Determined Contributions (NDCs) and the Climate Resilient Punjab Vision and Action Plan (CRPVAP 2024). Rather than adopting fixed numerical targets, the Policy follows a phased environmental improvement approach linked to the gradual expansion of NEVs, cleaner public and commercial fleets, and better integration of charging infrastructure and clean energy systems.

Table 7: Phase-wise transport emission reduction and urban AQI improvement targets

Environmental Area	Phase I (2026–2029)	Phase II (2030–2032)	Phase III (2033–2035)
Transport Emissions	Initial reduction through early NEV deployment in priority segments	Broader reduction through expansion across more vehicle categories and corridors	Sustained province-wide reduction through ecosystem maturity
Urban Air Quality	Early improvement in major cities through targeted clean mobility measures	Wider improvement across urban centers and transport corridors	Long-term improvement through broader clean transport transition
Public Health Benefits	Early reduction in localized vehicular pollution	Expanded health benefits as adoption increases	Stronger long-term public health and livability gains
Climate Alignment	Alignment with provincial and national climate frameworks	Deeper integration with climate and clean air actions	Long-term contribution to decarbonization objectives

Monitoring and Evidence	Establish baseline monitoring and data integration	Strengthen assessment of environmental outcomes	Institutionalize long-term monitoring and policy refinement
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4.8. Institutional and Regulatory Milestones

Effective governance and regulatory clarity are crucial for the policy’s successful implementation. The Punjab NEV Policy envisions transforming the province into a regional hub for EV manufacturing, innovation, and green industrial development, thereby fostering economic growth, job creation, and technology transfer. This policy aligns with Punjab’s broader industrial strategy and climate commitments.

- Punjab shall promote a robust NEV manufacturing ecosystem through component localization, vendor development, and technology transfer, positioning the province as a competitive and export-oriented industrial base.
- A detailed EV industrialization roadmap, including supplier development, localization milestones, and mineral coordination shall be formulated under the forthcoming Implementation Framework in collaboration with the Industries, Commerce & Investment Department.
- Key industrial milestones include the establishment of EV manufacturing and assembly facilities, the operationalization of a dedicated NEV testing and certification laboratory, and the commissioning of pilot battery recycling and repurposing facilities. To further support this ecosystem, the province aims to integrate local vendors into the NEV supply chain and attract at least three global NEV brands through joint ventures.
- Key institutional milestones will guide and reinforce this transformation. By 2025, the NEV regulatory entity will be established to oversee policy implementation, ensure regulatory compliance, and coordinate stakeholder engagement. The policy also mandates a comprehensive revision of provincial motor vehicle regulations to enable and incentivize NEV adoption by the same year.
- In 2026, Punjab will introduce financial innovation frameworks such as green bonds and NEV credit schemes to mobilize sustained investment in the sector. Higher education institutions will launch specialized NEV curricula to prepare a skilled workforce, while specialized safety and emergency response units for NEV incidents will be operational by to ensure safety standards and build public trust. Table 7 lists down the institutional and regulatory targets and milestones for Punjab with a clear vision and practical framework for sustainable mobility and economic growth.

Table 8: Punjab EV Policy – Industrial, Economic & Institutional Milestones (2025–2035)

Year	Milestone Category	Milestone Description	Target/Output	Responsible Institution
2025	Institutional	Establishment of NEV regulatory entity	Functional authority to guide implementation and regulatory compliance	Transport Department, P&D Board

Year	Milestone Category	Milestone Description	Target/Output	Responsible Institution
2025	Regulatory	Revision of provincial motor vehicle regulations	Updated laws to incorporate and incentivize NEV adoption	Transport Department, Law Department
2025	Industrial Planning	Initial engagement of SEZs under FIEDMC	Industrial promotion for EV manufacturing and component supply	FIEDMC, Industries Department
2026	Institutional	Launch of EV testing and certification laboratory	One national-standard lab operational	PITB, PSQCA, Private Labs
2026	Financial Innovation	Green bonds and NEV credit schemes	Financial tools launched to attract investment	Finance Department, SBP, SECP
2026	Skills Development	Integration of specialized NEV curricula in higher education institutions, and establishment of provincial EV Skills Observatory	Academic programs aligned with EV industry and labour market needs	HEC, NAVTTC, TEVTA, Universities, HED
2027	Industrial Execution	Commissioning of NEV assembly and manufacturing units	At least 3 facilities operational for 2W, 3W, cars, or buses	PSIC, BOI, Private Sector, Industries Department
2027	Public Safety	Deployment of NEV-specific emergency response units	Safety and response teams operational in major cities	Rescue 1122, Civil Defense
2028	Circular Economy	Establishment of pilot battery recycling/repurposing facilities	2 pilot plants operational	EPA Punjab, Private Sector
2028	Industrial Expansion	Growth of NEV component supplier network	10+ local vendors integrated	Industries Department, PSIC, Private Sector
2029	Economic Clustering	NEV-focused industrial zones operational within FIEDMC SEZs	Functional clustering and co-location of NEV firms	FIEDMC, PBIT
2030	Economic Impact	Green jobs and supply chain maturity	10,000+ direct and 25,000+ indirect jobs; 15–20 local suppliers	Industries Department, Labor Department
2031	Global Partnerships	International NEV brands enter Punjab through joint ventures	JVs or technology transfer agreements signed	
2033	Circular Economy	Scale-up of battery second-life applications	Integration into stationary storage and micro-mobility	

Year	Milestone Category	Milestone Description	Target/Output	Responsible Institution
2035	Industrial Leadership	Establishment of industrial-scale battery recycling plants	At least 2 large-scale facilities operational	
2035	Export Capability	Punjab as a key exporter of NEV components and systems	Proven export-oriented production and supply capability	

4.9. Opportunity for Development of New Industry and Green Jobs

The transition to electric mobility represents a transformative opportunity for Punjab to foster the development of innovation-driven green industrial ecosystem. By supporting EV manufacturing, battery recycling, component production, charging infrastructure, software development for smart mobility solutions, and clean energy integration, Punjab can not only advance its environmental objectives but also unlock economic and employment benefits. The NEV transition is expected to catalyze the emergence of high-value industries, attract domestic and foreign investment, stimulate SME participation, and create sustainable employment opportunities across diverse sectors. Special attention will be given to workforce development through vocational training programs, upskilling initiatives, and partnerships with higher education and research institutions. Punjab’s NEV policy envisions the creation of over 50,000 to 60,000 direct and indirect green jobs by 2035 through the establishment of new industries and associated value chains.

Vocational training institutions, universities, and private sector partnerships will play a central role in preparing the workforce to meet evolving industry demands. Specific focus will be placed on:

- Capacity building for technicians, engineers, and researchers.
- Promoting entrepreneurship among SMEs for component manufacturing, charging station operations, and recycling services.
- Gender inclusion initiatives to enable women's participation in green industry jobs.
- Incentivizing innovation hubs and research centers for continuous technological advancement.

Table 8 outlines the estimated new industry sectors and corresponding green job creation potential that the Punjab NEV Policy aims to facilitate by 2035:

Table 9: New Industry Sectors and Green Job Creation Potential by 2035

Industry Sector	Description	Estimated Jobs Created
NEV Manufacturing and Assembly	Vehicle production lines, assembly plants for two-, three-, four-wheelers, buses, trucks	8,000 to 10,000 direct jobs

Battery Manufacturing and Recycling	Battery pack assembly, cell manufacturing, second-life applications, recycling facilities	5,000 to 6,000 direct jobs
Charging and Battery Swapping Infrastructure	Installation, operation, and maintenance of charging stations and swapping networks	4,000 to 5,000 direct jobs
NEV Component Supply Chain	Production of motors, controllers, inverters, battery management systems (BMS), and software	6,000 to 7,000 direct and indirect jobs
Smart Mobility and IT Services	Development of software solutions for fleet management, NEV telematics, vehicle-to-grid (V2G) integration	2,000 to 3,000 jobs
Renewable Energy Integration for NEV Charging	Solar panel installation, hybrid energy solutions, micro-grid operations	1,000 to 1,500 jobs
Maintenance, Repair, and Vocational Services	Skilled technicians for NEV maintenance, battery diagnostics, repair services	5,000+ trained personnel
Research, Development, and Innovation Centers	Advanced battery research, NEV design, energy storage optimization	1,000 researchers and support staff
Public Sector and Regulatory Roles	Staffing for regulatory authorities (NEV regulatory entity), inspection units, training centers	150 professional roles

5. Incentives and Support Mechanisms

The Punjab NEV Policy outlines a set of incentives and support frameworks which aim to stimulate market development, promote private sector participation, enhance industrial competitiveness, and ensure the creation of a sustainable NEV ecosystem in the province. The incentives outlined in this policy are designed to complement, rather than duplicate the support mechanisms provided under the Federal NEV Policy 2025–2030, where relevant, capital subsidies for EV charging infrastructure in Punjab will be offered on top of federal level support, including but not limited to customs duty exemptions, tax reductions, and viability gap funding (VGF). Investors and developers are encouraged to avail both federal and provincial incentives, subject to eligibility and compliance with respective program requirements. A coordination mechanism between PEVRA and EDB will be established to ensure transparency, avoid overlaps, and streamline subsidy disbursements. The incentives are structured across two primary dimensions:

- Supply-side incentives which facilitating NEV manufacturers, battery recycling, component suppliers, and associated industries.
- Demand-side incentives which supporting NEV consumers, infrastructure developers, and service providers.

5.1. Supply-Side Incentives

5.1.1. Incentives for NEV manufacturers and associated industry

The Government of Punjab will facilitate and promote NEV manufacturing along with its associated industries through incentives as listed in Table 10. The NEV related industries

include manufacturers of EVs, batteries, components, charging equipment, and associated industries such as electronics, IT, testing facilities for NEVs and their components, and the recycling of batteries and e-waste. The list of eligible NEV manufacturing industry and its associated industry is given in Annexure-1. To promote an end-to-end battery industry ecosystem, the Government of Punjab will support the development of a complete battery value chain encompassing:

- Battery module and cell assembly,
- Material recovery and copper processing for battery components,
- Establishment of certified battery testing laboratories compliant with international standards (e.g., UN 38.3, IEC 62133)
- Punjab shall adopt UNECE and ISO standards for NEV safety and interoperability while ensuring full compatibility with IEC and GB standards recognized under NEECA’s regulations.
- Export facilitation support, including testing and certification for foreign markets.

These facilities will receive priority access to capital subsidies, land incentives, and inclusion in NEV clusters within SEZs.

Table 10: Incentive details for NEV Industries

Incentive Type	Details
Capital Investment Subsidy	capital subsidy on land cost as decided by the government policy
Exemption of Stamp Duty	Full exemption for financing agreements related to NEV manufacturing
Incentive on Land Transfer Fee	Waiver on land transfer fees to reduce acquisition costs
Streamlined Licensing and Approvals	Access to single-window clearance portal for permits, licenses, NOCs through existing e-Biz portal and Business Facilitation Center (BFC),
Research and Development Support	Capital grants for approved NEV-focused R&D facilities. Matching grants for collaborative R&D between industry and academia, covering some share of total project costs for eligible proposals.

5.1.2. Special Economic Zone (SEZ) Incentives for NEV Industry

The Government of Punjab encourages NEV-related industries to establish facilities within Special Economic Zones (SEZs). Table 11 lists incentives offered in SEZs shall be applicable to all NEV manufacturers, battery producers, charging equipment companies, and allied industries:

Table 11: SEZ Incentives for Industries

Incentive Type	Details
Land Ownership on Easy Terms	Initial down payment with remaining payable in easy installments
Zero Percent Custom Duty on Machinery	Full customs exemption on imported equipment for plant setup

Ten-Year Income Tax Exemption	From year of commercial operations commencement
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i. Streamlined Approvals and Business Facilitation

All NEV-related proposals submitted to SEZs will receive priority status for land allocation, approvals, and utility provisioning.

- Single-window clearance system for NEV projects covering land approvals, environmental clearances, and utility connections.
- Priority processing of NEV-related proposals through PBIT and SEZ Authorities.
- NEV regulatory entity will work with PBIT to coordinate across departments and resolve investor issues in real time.

ii. Access to Green Financing

Facilitation to access concessional green loans, bonds, and grants through partnerships with:

- Bank of Punjab (BoP)
- State Bank of Pakistan (SBP) Green Banking Guidelines
- Other banks

iii. Integrated Support Mechanism

A cross-agency task force comprising representatives from PBIT, Industries Department, Transport Department, and SEZ will be constituted to review project applications, ensure compliance, and streamline investor onboarding into SEZs.

iv. Dedicated NEV Clusters

The Government will work with SEZ authorities to earmark NEV Clusters within existing and upcoming SEZs. These clusters can be equipped with common testing, warehousing, and logistics support infrastructure.

v. Investor Outreach and Promotion

Targeted outreach will be carried out in partnership with international trade missions and chambers of commerce to attract investment in NEV manufacturing from both domestic and foreign players.

5.1.3. Framework for NEV Industry Establishment

The Government of Punjab has developed streamlined procedural roadmap (Figure 1) for investors aiming to establish NEV manufacturing and assembly units within the province. The process flow outlines the key steps including project conceptualization, land acquisition, regulatory approvals, infrastructure setup, and production commencement to ensure transparency, coordination, and ease of doing business for all NEV industry stakeholders. The process is designed to minimize administrative bottlenecks through a single-window clearance

system and close inter-agency coordination between SEZ authorities, PBIT, and NEV regulatory entity.

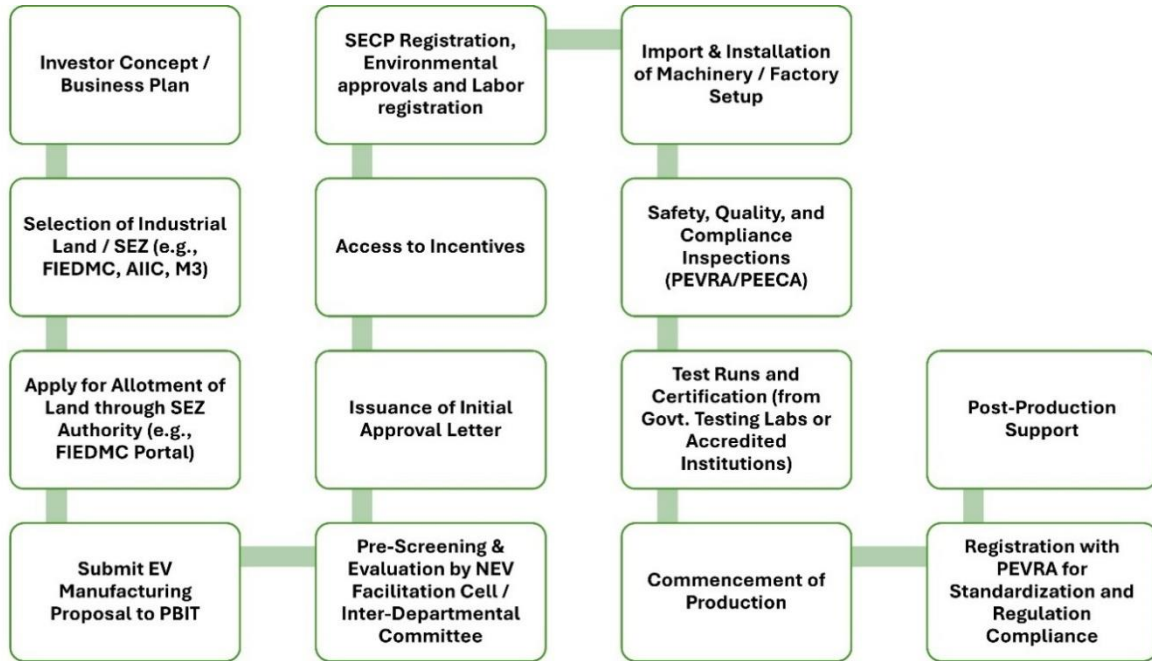


Figure 1: Framework for NEV Industry Establishment

5.1.4. Funding Support for Research and Development of Testing Labs for NEVs and its Parts

The Government of Punjab will promote both the establishment of dedicated research and development (R&D) facilities and localized testing laboratories to support the growth of the New Energy Vehicle (NEV) sector. In partnership with universities, research institutions, and private sector actors, the province will develop advanced testing infrastructure capable of evaluating NEVs, batteries, motors, electronic components, and charging systems. These facilities will adhere to national and international safety and performance standards and will support local manufacturers in validating product quality, ensuring compliance, and enabling certification of components for interoperability. The Government of Punjab will also support R&D in NEV technologies, including battery chemistry, electric drivetrains, charging solutions, software systems, and energy efficiency. The following financial and institutional incentives will be provided to promote this ecosystem:

- Capital grants for approved NEV-focused R&D facilities established in Punjab’s universities, SEZs, or through public-private partnerships.
- Matching grants for collaborative R&D between industry and academia, for eligible proposals.
- Exemption from provincial R&D levies and fast-track IP registration support for NEV-related innovations.
- Inclusion of NEV R&D firms in the Punjab Green Innovation Fund and access to concessional finance under the Green Loan Framework outlined in Section 10.3.

Priority will be given to projects involving:

- Battery chemistry and second-life reuse,
- Power electronics and drivetrain optimization,
- Smart mobility software and charging network analytics,
- Localized testing of NEVs under high-temperature, dust, and grid-variable conditions.

These R&D efforts will also explore advanced lightweight materials, energy optimization strategies, and integrated smart mobility systems. In the long term, researchers will provide recommendations to the government for planning future sustainable mobility options, ensuring long-term growth and innovation in the sector.

5.1.5. Incubation Facilities for NEV Innovation

The Government of Punjab will establish or expand existing incubation centers to serve as hubs for innovation, providing a supportive environment for startups and emerging businesses working on clean and green vehicle technologies. These facilities will be equipped with the necessary infrastructure and resources, allowing innovators to develop, test, and refine their projects without operational challenges.

5.2. Demand-Side Incentives

The demand-side incentive framework outlined in Table 11 provides financial and non-financial measures to make electric mobility more affordable, accessible, and attractive for individuals, businesses, and institutional users across Punjab.

5.2.1. Tiered Subsidies

Government of Punjab will adopt a tiered subsidy mechanism for NEV adoption to ensure equitable access:

- Low- and middle-income consumers purchasing electric two- and three-wheelers shall receive enhanced subsidies and concessional financing compared to higher-income buyers.
- Manufacturers producing affordable NEV models (particularly 2W/3W priced below a benchmark threshold notified by NEV regulatory entity) will be eligible for additional fiscal incentives, including reduced sales tax, production-linked subsidies, and priority access to SEZ facilities.
- Income-based eligibility will be verified using existing government social protection databases (e.g., BISP, Punjab Social Protection Authority) to prevent misuse. This framework ensures that the NEV transition benefits low- and middle-income households, who are most vulnerable to rising fuel costs and urban air pollution.

5.2.2. Tax Exemptions and Reductions

The government of Punjab will introduce a set of tax exemptions and reductions to incentivize the early development of NEVs and support the rollout of charging infrastructure across Punjab (Table 11). These incentives are designed to lower the capital burden on businesses, accelerate private-sector investment, and foster the creation of an enabling environment for NEV adoption.

1) Vehicle Registration and Token Tax Exemptions

A 95% exemption on registration fees, token taxes, and route permit fees will be offered for NEVs registered during the first three years of the policy’s implementation. From the fourth year onward, a 50% exemption will continue to be applicable until the end of the policy period (2035). This maintains the nominal 5% already notified by Excise, Taxation and Narcotics Control Dept. (ET&NCD) since 2021 to ensure vehicles are registered and remain within the tax net.

2) Tax Incentives for EV Charging Infrastructure

The following measures are specifically targeted at reducing the fixed operating costs for EV infrastructure developers, making early investments financially viable.

- Capital subsidies for installation of public fast chargers and battery swapping facilities.
- Exemption on property taxation for land parcels used for establishing EV charging stations and battery swapping facilities.
- Reduced taxation on installation costs, equipment procurement, and utility connections associated with setting up NEV infrastructure.

3) Support for Existing Fuel Stations Transitioning to EV Charging

The government of Punjab will encourage the conversion of conventional refueling infrastructure into hybrid NEV-ready hubs, promoting faster charging network expansion using already well-located facilities. Existing petrol stations and CNG stations that incorporate EV charging stations into their facilities will be eligible for the same tax incentives:

- Waiver on land/property taxation.
- Eligibility for reduced taxation on installation and operational upgrades related to EV charging services.

4) International Climate Finance Access Facilitation

The Government of Punjab, through designated agencies, will provide facilitation services to investors applying for such funds, offering technical support for proposal development and documentation. Businesses investing in EV charging and swapping infrastructure will be supported in accessing international climate finance opportunities, including co-financing from:

- Global Environmental Facility (GEF)
- Green Climate Fund (GCF)
- Asian Development Bank (ADB) Clean Energy Programs
- Other multilateral and bilateral climate funding sources

5.2.3. Non-Financial Incentives

NEV users will enjoy priority parking spaces and access to restricted zones (low emission zones), ensuring smoother mobility in urban areas. To further distinguish and promote NEVs, the government will introduce green or distinctive number plates, allowing easy identification of NEVs for access to exclusive NEV zones and incentives.

i. Preferential Parking and Access to Restricted Zones

- Reserved parking spaces for EVs in commercial centers, shopping malls, airports, railway stations, and municipal parking lots.
- Preferential access to Low Emission Zones (LEZs) and future Zero Emission Zones (ZEVs).
- Congestion charge exemptions for EVs in designated urban areas.

ii. Time-of-Use Electricity Tariffs

- Implementation of reduced time-of-use electricity tariffs for EV charging during off-peak hours.
- Special EV charging tariffs for commercial fleet operators and public transport entities.

iii. Public Awareness and Educational Programs

The policy will build informed consumer awareness and accelerate behavioral change. Province-wide public awareness campaigns highlighting:

- Environmental and health benefits of EVs.
- Total cost of ownership (TCO) advantages.
- Available government incentives and financing options.
- Integration of NEV-related modules in school and university curriculums.

5.2.4. Government Fleet Electrification and Public Transport Transition

The Government of Punjab will transition its official vehicle fleet to NEVs in a phased manner. All newly procured vehicles for government departments, agencies, and authorities will be mandated to be electric or other approved zero-emission technologies where operationally feasible. In future phases, the number of electric buses will be increased, including the introduction of additional NEV feeder buses to improve last-mile connectivity. Metro buses will also be gradually replaced with NEVs to create a fully electric public transit system. Government vehicle electrification shall be implemented through a phased and progressive transition. These targets apply exclusively to new procurement and replacement of end-of-life vehicles, covering battery EVs and plug-in hybrid electric vehicles (PHEVs), where operationally feasible. The policy **does not** mandate immediate conversion of the existing

government fleet. The minimum share of electric or plug-in hybrid vehicles in annual government vehicle procurement shall be as follows:

- 2026: at least 10%
- 2027: at least 25%
- 2028: at least 50%
- 2029: at least 75%
- 2030 onwards: 100% of all new government vehicle procurement

Priority shall be given to urban fleets, pooled government transport, inspection, and enforcement vehicles. These targets shall be reviewed periodically based on market readiness, charging availability, and fiscal considerations. The incentivization approach includes:

- Priority allocation of government budget toward NEV procurement.
- Dedicated NEV procurement guidelines and annual fleet electrification targets.
- Partnerships with leasing companies offering NEV-only packages.

i. Electrification of Municipal Vehicles

- Replace waste collection vehicles, including three-wheeler loaders operated by municipal agencies (e.g., WASA, TMA), with electric alternatives.
- Provide financial facilitation for municipalities to access green loans for fleet transition.

The incentivization approach includes:

- Green financing options for municipal authorities.
- Preferential funding under urban climate action programs.
- Technical assistance for tendering and NEV fleet management.

ii. Public Transport Transition

Public transportation systems will be gradually electrified to create low-emission, sustainable mobility corridors across Punjab's cities.

- Phase 1: Deployment of electric buses in Lahore, Rawalpindi, Faisalabad, Multan, and other major cities.
- Phase 2: Expansion of electric feeder bus networks to enhance last-mile connectivity.
- Phase 3: Gradual replacement of metro buses (currently diesel) with fully electric or hybrid NEV options.

The incentivization approach includes:

- Public procurement tenders favoring NEV-based transport solutions.
- Infrastructure support (charging depots, maintenance centers).
- Long-term concession models for private operators offering electric services.

5.2.5. NEV Zones

The Government of Punjab will designate certain high-density urban zones as NEV-Only Zones to promote the uptake of clean mobility.

- Pilot Cities are Lahore, Faisalabad, Rawalpindi, Multan.
- Priority Areas will be central business districts (CBDs), government complexes, historical precincts, healthcare and educational zones.
- Operational model will allow only NEVs to operate within these zones and access incentives will be provided such as free parking, no congestion charges, and priority lanes.

The incentivization approach includes:

- Regulatory designation under the Punjab Motor Vehicle Ordinance amendments.
- Public-private partnerships for setting up exclusive NEV parking and charging hubs.
- Awareness campaigns promoting NEV zone benefits for users and operators.

5.2.6. Electrification of Private Intercity Bus Operators and Commercial Fleets Operators

i. Private Intercity Bus Operators

Private bus operators will be incentivized to transition to NEV fleets operating on intercity and regional routes through the following support measures:

- Priority access to highway charging infrastructure developed under PPP models.
- Preferential permits for electric buses on high-demand corridors.
- Facilitation in securing concessional financing for fleet replacement.

The incentivization approach includes signing of Public-Private Agreements (PPAs) for early NEV adopters and tax rebates on fleet renewal to electric models.

ii. Commercial Fleet Operators

Fleet-based companies including delivery service providers, ride-sharing companies, school van operators will be encouraged to electrify their fleets through targeted incentives through following support measures:

- Access to concessional loans for two-wheelers and three-wheelers NEVs.
- Reserved priority access to NEV-only zones for electric fleets.
- Preferential treatment in municipal contracts (e.g., waste collection, postal services) for companies with NEV fleets.

6. EV Charging Infrastructure Network Development

A robust and accessible charging infrastructure network is critical for the widespread adoption of NEVs in Punjab. The Government of Punjab will facilitate the development of EV charging and battery-swapping stations by simplifying regulatory frameworks, offering financial incentives, supporting public-private partnerships, and ensuring proper grid integration and

standardization. Punjab aims to create an NEV-ready province through strategic interventions and by ensuring equitable access to reliable charging facilities across urban, peri-urban, and rural areas.

6.1. Government Support for Charging Infrastructure

The Government of Punjab and its relevant departments will take the following measures to support the development of charging infrastructure:

- Identification of suitable public land (owned by government agencies) for charging stations, battery swapping stations, and new energy stations for mobility. Land will be leased at subsidized rates where applicable.
- The Government of Punjab will waive the commercialization fee for installing dedicated charging infrastructure in residential areas.
- The government will also revise city planning regulations to simplify and expedite the establishment of charging stations, working in coordination with relevant departments, including land management and municipal authorities.
- The Energy Department and respective DISCOs will collaborate with NEV regulatory entity to integrate projected EV load growth into provincial demand forecasts and grid development plans.
- An IT-enabled system will be introduced to simplify the approval process and ensure quick permissions for setting up charging infrastructure.
- Small and medium enterprises and local entrepreneurs will be provided access to concessional loans through the Punjab Small Industries Corporation (PSIC) to invest in charging or swapping stations
- In coordination with the Energy Department and DISCOs, grid integration plans will be developed to ensure reliable power supply. Standardization of charging connectors and interoperability protocols will be enforced in compliance with NEECA guidelines.
- A one-window digital portal under NEV regulatory entity shall be established to facilitate registration and compliance of charging stations in coordination with NEECA and provincial power utilities.
- Fast-charging stations will be deployed every 80 km along highways and motorways.
- On immediate basis, the Government of Punjab shall establish forty (40) public fast-charging stations at strategic entry and exit points of motorways and national highways across the province. Site identification shall be carried out based on traffic intensity, vehicle flow, intercity connectivity, and distance between nodes, in coordination with the National Highway Authority and relevant agencies. The charging stations shall be government-owned, while operations and maintenance shall be outsourced to private operators through transparent concession or O&M contracts. Electricity tariffs and service charges shall be regulated in accordance with rates notified by NEECA.
- Urban initiatives will focus on converting existing parking lots, rickshaw stands, and bus depots into EV charging hubs.
- Solar-powered and net-metered rural charging stations will be developed under the Rural NEV Adoption Plan.
- In major metropolitan cities, many residents live in apartments without dedicated parking spaces for home charging. To address this, the government will work with apartment associations and property management companies to install shared charging

networks. As an incentive, the government will offer tax benefits to developers and management companies that set up charging facilities within housing complexes.

- Charging depots will be established in cities to support the electrification of feeder buses, metro buses, and municipal transport fleets.

6.2. Grid Integration and Renewable Energy-Powered Charging

The Government of Punjab recognizes the importance of integrating NEV infrastructure with renewable energy sources to ensure upstream emission reductions, maximize the environmental benefits of NEVs and ease pressure on the grid. Public and private charging stations shall be encouraged to utilize renewable energy sources, particularly solar PV. for which the following actions will be implemented:

- NEV regulatory entity, in coordination with Punjab Energy Department, will develop technical and fiscal incentive frameworks to promote renewable-powered charging stations
- A minimum of 30% of all new public and commercial EV charging stations installed by 2030 shall integrate and source their electricity from on-site solar PV systems or solar-compatible infrastructure. Securing funding for renewable energy projects through climate finance mechanisms will further support this initiative.
- Priority will be given to solar-powered installations in housing societies, shopping malls, government buildings, industrial zones, and SEZs, particularly in areas with daytime charging patterns.
- Grid readiness, scenario-based load forecasting, and integration with renewable energy supply shall be carried out by the Energy Department in collaboration with relevant DISCOs.
- PITB may support the use of AI, geospatial mapping, and real-time data integration for load modeling and system planning. Pilot forecasting zones such as the Lahore–Faisalabad–Multan highway corridor and major urban NEV hubs will be prioritized for model development.
- EV charging sites will be encouraged to comply with the Energy Conservation Building Code (ECBC) 2023, which mandates rooftop solar provisioning for commercial and public buildings.
- Standardization of charging connectors and interoperability protocols will be enforced in compliance with NEECA guidelines.
- In collaboration with DISCOs and the Energy Department, grid-readiness and EV charging infrastructure integration program will be launched.
- Installation of dedicated EV charging feeders in high-density commercial zones and fast-charging corridors.
- Load forecasting and transformer upgrades based on EV adoption trends and location-specific energy needs.
- Inclusion of charging sites in DISCO-level distribution planning and net-metering policies.
- Solar-powered charging stations will be eligible for net-metering schemes, allowing for energy export during low-demand periods.

- All EV chargers installed with renewable energy systems must be equipped with smart load management systems that can optimize energy flow based on solar generation, time-of-use tariffs, and grid stability needs.

6.3. Incentives for Charging Stations Deployment

6.3.1. Types of Charging Stations and Use-Cases

Type of Charging Station	Description and Use Cases
Level 1 (Slow Charging)	Home-based or basic parking-lot charging; mainly for two-, three-, four-wheelers private vehicles
Level 2 (Medium Charging)	Opportunistic charging at commercial centers (malls, offices); mainly for four-wheelers
Level 3 (Fast Charging)	High-capacity chargers along highways and in cities for four-wheelers, vans, buses, LCVs
Battery Swapping Stations	Quick turnaround charging for two- and three-wheelers commercial and fleet operators

6.3.2. Incentives for Level 1 charging for two- and three-wheelers at Parking lots and stands

The government will provide a capital subsidy of 25% of the total deployment cost, with a maximum limit of Rs. 300,000 for each Level 1 charging station for two-wheelers and three-wheelers at parking lots and stands. This incentive will be available to the first 200 parking lots and stands that convert to NEV charging facilities. To qualify for the subsidy, parking lots must install smart meters to track energy consumption specifically used for NEV charging. Moreover, compliance with regulatory standards set by NEECA is essential for deploying Level 1 charging for two- and three-wheelers at parking lots and stands.

6.3.3. Incentive for Battery Swapping Stations

All battery swapping stations will receive a capital subsidy covering 25% of the total deployment cost, with a maximum limit of Rs. 500,000 per station. This incentive will be available at the first 100 battery swapping stations. To qualify, battery swapping stations must comply with all regulatory protocols and standards established by federal and provincial authorities such as NEECA. Similarly, the installation of smart meters is mandatory for stations to monitor energy consumption specifically used for NEV charging.

6.3.4. Incentives for Fast Charging Stations

To support the development of fast charging infrastructure, a capital subsidy will be provided. All fast-charging stations must meet the regulatory requirements and standards set by federal and provincial authorities like NEECA and PEECA. Smart meter installation is also mandatory to accurately measure the energy consumption used exclusively for NEV charging. No incentives will be provided for home-based Level 1 charging or commercial Level 2 charging. For Level 2 charging, which primarily serves four-wheelers at locations such as restaurants, shopping malls, and other commercial centers, businesses are encouraged to install these stations as part of their corporate social responsibility.

6.3.5. Charging Station Distance Guidelines for Urban and Rural Areas

The following distance guidelines will be adopted for planning and deployment to ensure equitable and convenient access to EV charging infrastructure across Punjab:

i. Urban Areas

- Public EV charging stations will be deployed to ensure coverage of at least one station per 5 km² to 7 km² in high-density urban areas
- Fast chargers will be prioritized in high-traffic corridors, commercial zones, shopping malls, transport terminals, and residential clusters.
- Battery swapping stations for electric two- and three-wheelers will be targeted at a density of one station per 5 to 10 km², integrated into rickshaw stands, petrol stations, or last-mile hubs in urban cores.

ii. Rural and Semi-Urban Areas

- Public charging stations should be available at an average spacing of every 10 to 15 kilometers along key rural roads, towns, and district centers.
- Highway fast-charging corridors will be deployed with charging stations spaced at approximately 80 kilometers intervals, ensuring consistent intercity and rural coverage.

Table 12: Charging Infrastructure Distance Guidelines

Area Type	Average Spacing for Charging Stations	Fast Charging Corridors (Highways)
Urban Areas	5 to 7 km ²	Up to 80 km between fast chargers
Rural/Semi-Urban Areas	10 to 15 km ²	
Urban Battery Swapping (two- and three-wheelers)	5 to 10 km ²	N/A

6.4. Support for Pilot Projects and Demonstration Programs

The Government of Punjab will launch phased pilot projects, starting from cities, then towns, and in villages to test different charging and battery swapping station models, assessing their economic feasibility and business potential. These projects will help identify operational challenges, allowing the government to refine policies, streamline processes, and address technical issues. In collaboration with private partners, including research institutes and universities, the government will evaluate financial viability and practical implementation. Once challenges are addressed, successful models can be replicated across Punjab with minimal modifications, as most areas share similar infrastructure, demographics, and mobility patterns.

i. Pilot Implementation Stages

Pilot projects will be implemented in a three-stage rollout, reflecting Punjab’s settlement hierarchy and NEV readiness:

- **Stage 1: Major Metropolitan Cities**

Lahore, Faisalabad, Multan, Rawalpindi, and Gujranwala will serve as early implementation hubs due to high vehicle density, existing grid infrastructure, and urban demand for electric mobility.

- **Stage 2: Secondary Cities and District Headquarters**

Medium-sized towns and district centers will be targeted to assess infrastructure needs and demand patterns in semi-urban and peri-urban zones.

- **Stage 3: Rural Areas and Highway Corridors**

Pilot programs will extend to rural settlements and along intercity highways to evaluate charging station viability in low-density areas and long-distance travel routes.

ii. Testing Parameters

- Assessment of capital and operational expenditure, cost recovery, and revenue potential.
- Monitoring of station uptime, charging speed, energy metering, and service continuity.
- Surveys and usage data analysis to understand user preferences, adoption challenges, and satisfaction levels across demographic segments.

iii. Strategic Partnerships

- Academic institutions and R&D centers for data collection, analysis, and innovation testing.
- Private sector developers and investors to fund pilot business models, assess viability, and develop investment-ready frameworks.
- Lead coordination will be overseen by the Transport Department and NEV regulatory entity in partnership with universities, SEZ authorities, and industry platforms.

iv. Replication and Scaling Strategy

Pilot project outcomes will guide the province-wide scaling of charging and battery-swapping infrastructure. Successful models will be:

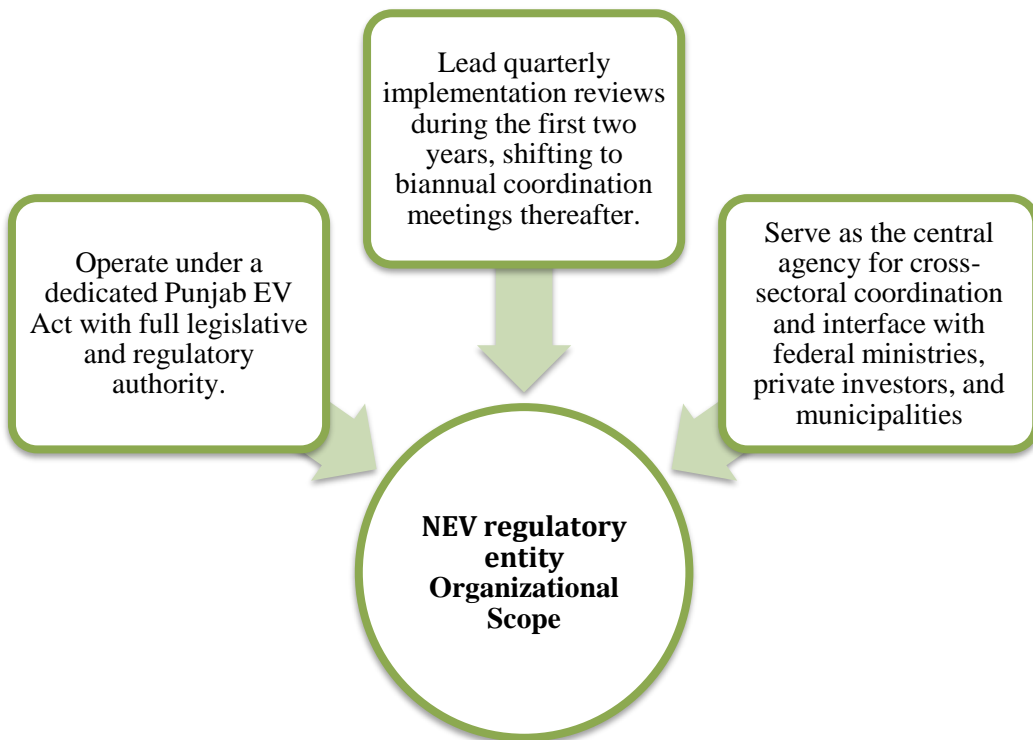
- Replicated with contextual modifications across cities, towns, and rural areas,
- Supported through technical standardization, operational templates, and digital tools,
- Linked to future incentive programs and infrastructure investment pipelines.

7. Institutional Framework and Governance

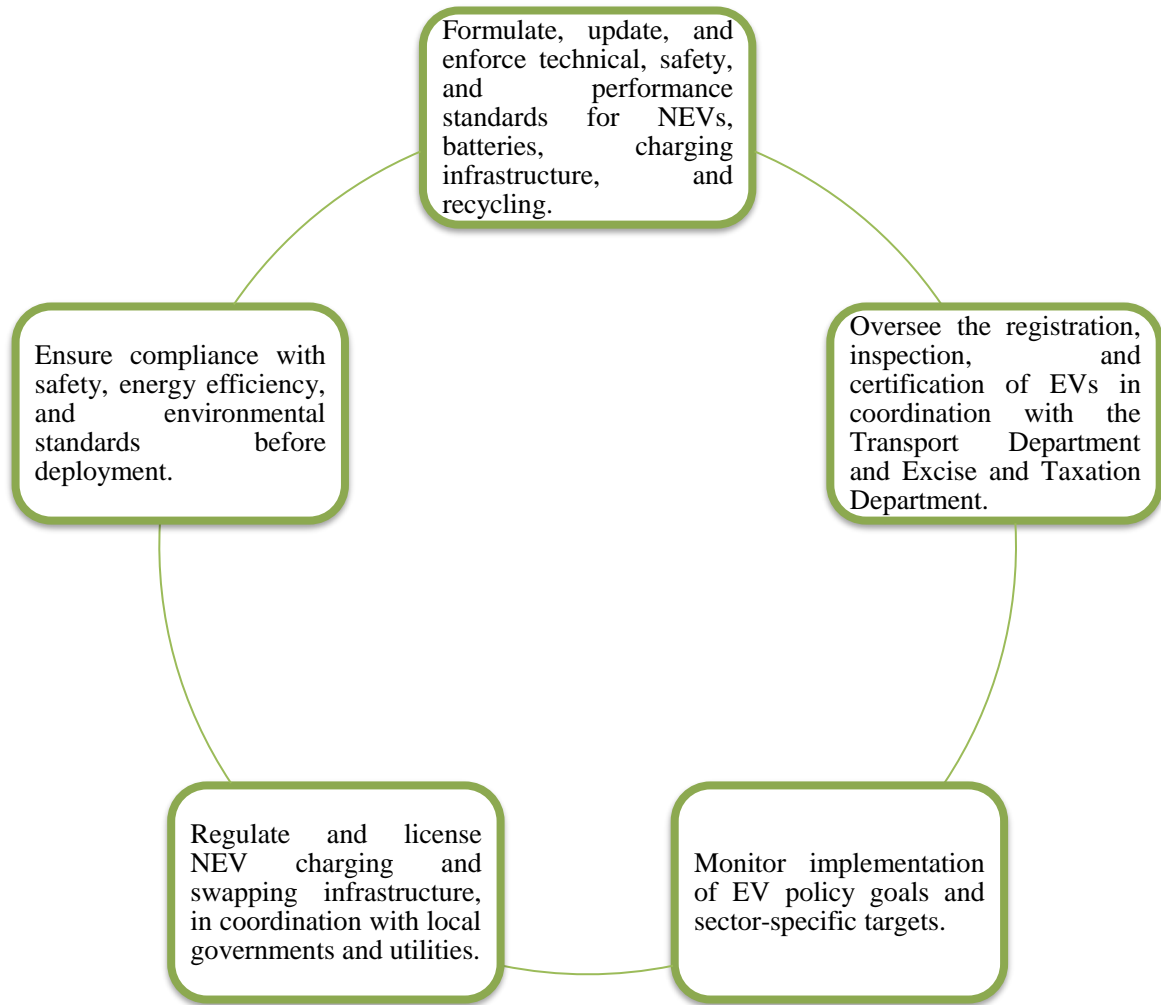
Effective governance and institutional alignment are fundamental to the successful implementation of the Punjab NEV Policy. The Government of Punjab will establish an institutional architecture that includes the formation of a dedicated regulatory authority, regulatory reforms, and structured coordination mechanisms to facilitate streamlined regulation, cross-departmental collaboration, and responsive oversight.

7.1. NEV regulatory entity

NEV regulatory entity will be established and shall function initially as a coordination and facilitation unit within the Transport and Mass Transit Department to ensure coherence and avoid duplication, with evolution into a statutory entity only if required under future administrative or legislative frameworks. The EV entity within Transport & Masstransit Department will be created through a notification. It will serve as the central coordinating, regulatory, and oversight institution for all NEV-related activities in the province. NEV regulatory entity’s organizational scope is as follows:



7.2. Core functions of NEV regulatory entity



7.3. Punjab NEV Act: Scope and Institutional Roles

The Government of Punjab will enact a Punjab NEV Act to provide a legislative framework for NEV deployment and oversight. The Act will align with existing provincial transport, municipal, and industrial development laws and supersede any overlapping regulatory clauses.

i. Scope of the Act

- Legalize and define NEV vehicle categories (2W, 3W, 4W, buses, LCVs, trucks) aligned with UNECE and national guidelines.
- Identify and establish the mandate and authority of NEV regulatory entity, including licensing, monitoring, and compliance.
- Define and enforce Low Emission Zones (LEZs) with penalties for violations.
- Enable digital vehicle age-verification and regulatory action for non-compliance.
- Empower traffic authorities and NEV regulatory entity to issue citations or restrict access for non-compliant vehicles.
- Provide guidelines for public and private use of NEVs, charging infrastructure development, grid integration, battery standards, and safety norms.

- Require data reporting from NEV operators, charging station owners, and battery suppliers.
- Empower departments to take enforcement actions against non-compliant entities.
- Coordinate to ensure alignment with national standards while focusing on provincial enforcement and facilitation.

ii. Key Regulatory Reforms under the Act

- Inclusion of electric three-wheelers into Punjab’s official vehicle classification system.
- Modernization of the NEV registration process: shifting from battery capacity/motor ratings to invoice-based registration for ease and transparency.
- Mandate for innovative vehicle design guidelines, allowing flexibility and evolution in NEV product development.

7.4. NEV Sections in Government Departments

Dedicated NEV cells or sections will be established within the following key departments to ensure effective implementation and inter-agency alignment:

Department	Function of NEV Section
Transport Department	Licensing, classification, policy enforcement, public transport transition
Energy Department	Grid readiness, renewable energy integration, tariff setting
Industries & Commerce Department	Manufacturing facilitation, investor onboarding, SEZ coordination
Urban Development and Housing	Urban planning integration, building code compliance
Local Government	Municipal vehicle electrification, land use for NEV infrastructure
Finance Department	Budget allocation, incentive disbursement, green bond framework
Information & Culture Department	Public awareness and outreach campaigns

Each NEV Section will be led by a designated focal person, who will represent the department in NEV regulatory entity coordination forums.

7.5. Inter-Agency Collaboration Mechanism

A structured inter-agency framework will be created to facilitate implementation across sectors as mentioned in Table 14. Coordination between provincial agencies, municipalities, private stakeholders, and regulatory authorities will be institutionalized through a recurring schedule of meetings and a joint monitoring dashboard maintained by NEV regulatory entity.

Table 13: Institutional Coordination Roles and Responsibilities

Activity	Facilitating Departments / Bodies	Key Responsibilities
Land Identification & Allocation	Land Revenue Department, Municipal Corporations	Site identification, leasing for charging stations
Building Code Updates	Urban Unit, Housing & Urban Development Department	Inclusion of NEV readiness in new building norms
Grid Readiness and Energy Supply	Energy Department, DISCOs	Load forecasting, infrastructure upgrades, renewable integration
Regulatory Oversight	NEV regulatory entity, Transport Department	Technical standards, licensing, compliance monitoring
Financial Mechanisms	Finance Department, Bank of Punjab, SBP	Design and rollout of subsidies, tax rebates, green finance
Investor Facilitation (PPP/SEZ)	PBIT, FIEDMC, PSIC	Business onboarding, land processing, approvals
Awareness Campaigns	Transport Department, Information and Culture Department	Promotion of NEV benefits, incentives, safety awareness

7.6. Coordination and Monitoring Schedule

- Quarterly meetings (2025 to 2027) will be led by NEV regulatory entity and hosted by the Transport Department. Focus on early-stage barrier resolution, pilot tracking, and investor onboarding.
- Biannual meetings (2028 and onwards) for the review of NEV adoption metrics, policy updates, incentive effectiveness, and emerging challenges.
- The annual Policy Review Reports will be prepared by NEV regulatory entity for the Chief Minister’s Office and shared with all participating departments.

A centralized NEV Dashboard will be developed by PITB and hosted by NEV regulatory entity to support real-time tracking of:

- NEV registrations, vehicle category-wise adoption
- Charger deployment (public, private, and swapping stations)
- Emissions reductions and air quality trends by city
- Scrappage and subsidy disbursals

This dashboard will be publicly accessible and updated quarterly. A backend NEV Data Portal will also support internal coordination, enforcement planning, and AI/ML-driven analytics for infrastructure deployment and policy updates.

8. Policy Implementation Plan

A comprehensive, phased, and structured implementation framework has been developed. This framework defines specific policy measures, corresponding actions, responsible institutions, and time-bound milestones extending until 2035. The Government of Punjab will implement the NEV Policy across three strategic phases:

8.1. Implementation Phases

8.1.1. Short-Term Phase (0–2 Years: 2025–2026)

The focus during the initial phase will be on laying the foundational groundwork necessary for scaling NEV adoption. Key actions will include:

- Establishment of a dedicated task force for NEV policy execution under NEV regulatory entity.
- Development and codification of regulatory frameworks, including the enactment of the Punjab NEV Act.
- Design and launch of incentive structures covering consumer adoption, charging infrastructure, and local manufacturing.
- Initiation of province-wide awareness campaigns to build public understanding of NEV benefits.
- Capacity-building programs for government agencies, regulatory authorities, and municipal bodies to ensure readiness for NEV operations.

8.1.2. Medium-Term Phase (2–5 Years: 2027–2030)

The second phase will emphasize scaling up deployment and strengthening institutional mechanisms to support growing NEV demand. Key initiatives will include:

- Expansion of NEV infrastructure networks, including public charging stations, battery swapping hubs, and green corridor developments.
- Support for domestic NEV manufacturing, component production, and R&D initiatives in collaboration with SEZs and academic institutions.
- Strengthening inter-agency collaboration through the deployment of a digital monitoring and reporting system managed by NEV regulatory entity.
- Implementation of comprehensive financial incentive programs, concessional green loans, and investment facilitation mechanisms.
- Integration of NEV adoption strategies into broader transportation, energy, climate, and urban planning frameworks.

8.1.3. Long-Term Phase (5+ Years: 2031–2035)

The final phase will aim to mature Punjab’s NEV ecosystem and establish the province as a national and regional leader in electric mobility. Long-term goals include:

- Full-scale deployment of NEV initiatives across all urban and rural regions.
- Continuous policy refinement and adaptation based on real-time operational data, emerging market trends, and stakeholder feedback.
- Positioning Punjab as a leading hub for NEV production, battery recycling, innovation, and green job creation.

8.1.4. Model City for NEV Deployment

As identified under CRPVAP’s priority actions, Lahore will serve as the model city for NEV implementation in Punjab. Pilot actions will include:

- Designation of NEV-only zones and enforcement of LEZs.
- Electrification of public transport corridors and government fleet.
- Early deployment of EV charging and battery swapping infrastructure.
- Use of Lahore’s urban data to develop a replicable NEV zoning and fleet transition framework for other cities in Punjab.

8.2. Implementation Framework

Each policy domain is mapped in Table 15 with actionable steps that will be periodically reviewed and updated based on emerging technologies, market feedback, and progress monitoring under the supervision of the NEV regulatory entity.

Table 14: Implementation Framework

Policy Measure	Action	Short-Term (2025–26)	Medium-Term (2027–30)	Long-Term (2031–35)	Lead Responsibility	Supporting Departments
Accelerating NEV Adoption	Launch NEV purchase subsidy, update registration process	Launch subsidies, reform registration system	Expand fleet conversions (public, ride-hailing, commercial)	75% of new vehicle sales are NEVs	Transport Department	Excise and Taxation Department, Law Department, EPA
	Phase-out high-emission ICE vehicles	Define age limits, initiate pilot bans in cities	Expand phase-out zones, full ban on unapproved 2-stroke and LPG Qingqi vehicles	Province-wide ICE vehicle enforcement	Transport Department	EPA
Legal Foundation & Oversight	Draft and enact Punjab NEV Act	NEV Bill drafted, reviewed, and passed	Annual legal reviews and updates	Institutionalize into transport laws	Transport Dept., Law Dept.	P&D, NEV regulatory entity
Charging and Swapping Network	EVSE deployment including public, fleet, and private charging points	Install 500 chargers & 100 swapping stations	Expand to 2000 chargers; full highway coverage	3000+ chargers, integrated solar hubs	Transport Department, NEV regulatory entity	Energy Department, Urban Unit, LRMIS
	Land allocation and solar integration	Identify public land, incentives for solar charging	Integrate solar in 50% new chargers	Fully solar-integrated charging hubs	Land Revenue Department	Energy Department, Housing Department
ICE Phase-Out Enablement	Scrappage scheme + LEZ notification	Pilot scrappage in Lahore/Faisalabad; LEZ defined in regulations	Expanded to 5 cities with enforcement + tracking	Province-wide LEZ compliance	Transport, Excise, EPA	PITB, Urban Unit
	Consumer and business incentives	Launch purchase rebates, land	Expand green finance, low-	Institutionalize performance-	Finance Department	Transport, PSIC, BoP

Policy Measure	Action	Short-Term (2025–26)	Medium-Term (2027–30)	Long-Term (2031–35)	Lead Responsibility	Supporting Departments
Financial Incentives		tax exemptions, infra CAPEX subsidies	interest NEV loans	linked incentives		
Financial Activation	Launch EV Transition Fund & disbursement protocols	Fund seeded and operationalized; first subsidies disbursed	Scale-up of funding pipeline and consumer financing programs	Performance-linked rebates and reviews	Finance Dept., Transport Dept.	SBP, Bank of Punjab, PBIT
Local Manufacturing Promotion	Attract investment in SEZs	Launch NEV investor facilitation cell	Establish NEV assembly, battery production facilities	Export NEV parts and battery systems	Industries Department	PBIT, FIEDMC, PITB
	Localization and R&D	Start research programs with universities	Develop battery innovation centers, NEV software labs	Patents for local battery chemistries and NEV platforms	PITB, HED	Industries Department
Institutional and Regulatory Framework	Punjab NEV Act and NEV regulatory entity setup	Enact NEV Act, launch NEV regulatory entity operations	Strengthen licensing, compliance, data reporting	Institutionalize policy updates, legislative reviews	Law Department, Transport Department	P&D Board
	Departmental NEV Cells	Notify NEV focal points	Full inter-departmental coordination via NEV regulatory entity	Establish provincial NEV Steering Committee	NEV regulatory entity	All Line Departments
Grid Readiness and Renewable Integration	NEV grid readiness and solar net metering	DISCOs grid upgrade plans for NEV load	Solar-NEV integration in urban centers	V2G pilot projects for fleets	Energy Department	DISCOs, Transport Department
Grid Readiness & Load Forecasting	Launch grid readiness audits and pilot forecasting models	Identify pilot zones (Lahore, Faisalabad), initiate DISCO-level data sharing	Develop full-scale forecasting tools, align with NEV deployment zones	Expand to rural corridors and integrate V2G pilots	Energy Department	DISCOs, PITB, NEV regulatory entity
Battery Recycling and E-Waste Management (Circular Economy)	Battery collection and recycling framework, circular-economy activities with carbon-credit and climate-finance mechanisms	Draft battery recycling rules; pilot collections	Set up two pilot battery second-life and recycling plants, carbon-credit and climate-finance mechanisms	Mandatory producer responsibility framework,	EPA Punjab	PSIC, Finance department, Industries Department

Policy Measure	Action	Short-Term (2025–26)	Medium-Term (2027–30)	Long-Term (2031–35)	Lead Responsibility	Supporting Departments
Public Awareness and Workforce Development	NEV education campaigns and technical skills	Launch province-wide campaigns, TEVTA short courses	Train at least 5000 certified NEV technicians	Link green job targets to NEV KPIs	TEVTA, Information Department	Transport Department, HED
Public-Private Partnerships (PPPs)	Enable PPP investment in infra and fleets	Launch VGF scheme for rural chargers	Expand PPP metro electrification, rural highway coverage	Fully mainstream PPP-led NEV projects	PBIT, Finance Department	Transport, PPP Cell
Monitoring, Evaluation, Adaptive Management	Real-time policy monitoring and adjustments	Develop KPIs, NEV adoption dashboards	Publish biannual NEV progress reports	Institutionalize dynamic adaptive policy frameworks	NEV regulatory entity	Transport, PITB, P&D Board
Monitoring, Evaluation & Data Systems	Launch NEV dashboard + publish review reports	Public dashboard (NEV regulatory entity); 1st biannual review published	Dynamic dashboard updates and linked KPIs	Integrated digital M&E system	NEV regulatory entity, PITB	All departments

9. Monitoring and Evaluation (M&E) Framework

Effective implementation of the Punjab NEV Policy requires a Monitoring and Evaluation (M&E) system to track progress, measure outcomes, and ensure adaptive management. This framework outlines the approach, indicators, milestones, and performance metrics that will guide ongoing assessment of policy execution through 2035. The M&E Framework will be coordinated centrally by the NEV regulatory entity, in collaboration with all relevant provincial departments and agencies.

9.1. M&E Approach and Methodology

A centralized NEV Data Platform will be established and managed by NEV regulatory entity to facilitate real-time monitoring. This platform will collect, verify, and analyze data on NEV adoption, infrastructure utilization, and emissions performance, in coordination with EPA Punjab and the Punjab Energy Department. The platform shall also serve as a public transparency tool, with periodic publication of progress reports. The M&E process will be based on the following principles:

- Timebound monitoring will be done for short-, medium-, and long-term targets.
- Measurable indicators will assess both outputs (actions completed) and outcomes (impact achieved).

- Policy interventions will be adjusted based on real-world data, stakeholder feedback, and periodic evaluations.
- Results will be published through annual progress reports and biannual review workshops.

The M&E Framework can also incorporate AI-based decision support tools, including:

- GIS heatmaps for charger sites based on population density, traffic flows, and power availability.
- Predictive demand analytics for forecasting NEV growth and energy needs.
- GPS-linked data to assess NEV usage patterns and link performance-based incentives to actual emissions reductions.
- EPA Punjab’s vehicular emission data will be integrated into the M&E framework to track reductions in transport sector emissions and to evaluate the policy’s effectiveness over time.

These tools will support evidence-based revisions to policy instruments and infrastructure planning, and enable adaptive management aligned with real-world outcomes.

9.2. Timelines and Measurable Indicators

The following key measurable indicators will be monitored annually and evaluated at major milestones:

Indicator	Measurement
Number of NEVs registered and operational	Annual registration data by Excise and Taxation Department
Growth in charging and swapping infrastructure	Number of operational public chargers and battery-swapping stations
Volume of private sector investment	Investment inflows reported by PBIT and SEZ authorities
Reduction in vehicular emissions	EPA Punjab’s vehicular emission data will be integrated into the Monitoring, Reporting, and Verification (MRV) framework to track reductions in transport sector emissions and to evaluate the policy’s effectiveness over time.
Number of NEV technicians trained	Workforce development data from TEVTA and Higher Education Department
Grid readiness for EV integration	Infrastructure upgrades reported by DISCOs and Energy Department

9.3. Milestones and Checkpoints for Monitoring Progress

Regular progress evaluations will be conducted at the following key milestones to ensure timely course corrections and achievement of targets:

Year	Milestone Description
2026	Formation of NEV regulatory framework (NEV regulatory entity operational), pilot project launch, and incentive scheme rollout.

2027	Operational expansion of infrastructure (500+ chargers), financial incentives implemented, full integration of NEV elements into sectoral policies.
2030	Mid-term policy review assessing NEV penetration, incentive impact, regulatory enforcement, and infrastructure gaps. Adjustments made as needed.
2035	Full policy review, assessment of Punjab’s leadership in NEV production, clean mobility impact, and development of next-phase targets.

9.4. Key Performance Indicators (KPIs)

The implementation of the Punjab NEV Policy shall be monitored against clearly defined Key Performance Indicators (KPIs) to assess the overall success and impact using the following KPIs:

KPI Category	Indicator
NEV Adoption and market share	Percentage increase in NEV sales and registrations annually, disaggregated by category
Emission Reductions	Annual reduction in CO ₂ and PM _{2.5} emissions from transport sector compared to 2025 baseline.
Infrastructure Roll-Out	Number of operational public charging and battery-swapping stations, including share powered by renewable energy.
Manufacturing and Industrial Growth	Number of NEV manufacturers, battery plants, and local component suppliers established
Workforce Development	Number of certified NEV technicians, R&D projects initiated
Policy and Institutional Coordination	Frequency and effectiveness of inter-agency meetings, progress reports
Public-Private Partnership Success	Number of PPP-based projects executed in NEV charging and manufacturing
Infrastructure Readiness	EVSE coverage per city and highway corridor; number of solar-powered NEV hubs
Battery Recycling Capacity and Initiatives	Installed and operational capacity for battery recycling and repurposing in Punjab; Battery waste diverted from landfill.
Job Creation	Number of green jobs created in NEV manufacturing, infrastructure deployment, and recycling sectors.

10. Financial Mechanisms and Investment Promotion

10.1. Financial Frameworks and Incentives for Public–Private Partnerships (PPP) and Private Investment Facilitation

- The government will develop financial frameworks and offer incentives to encourage private sector investment in the NEV industry. These may include tax benefits, subsidies, low-interest loans, and investment-friendly policies to support manufacturers, suppliers, and service providers. Additionally, support will be provided to NEV manufacturing plants and associated industries through targeted assistance programs.
- A dedicated portal will be established to showcase investment opportunities, making it easier for investors to connect with NEV-related projects. Furthermore, a

manufacturing support system will be introduced to streamline production processes, enhance supply chains, and facilitate access to advanced technologies.

- Appropriate PPP models such as DBFOM, BOT/BOOT, or O&M concessions, may be adopted according to project feasibility.
- Highway and motorway fast-charging infrastructure developed under Section 4.3, including the forty (40) government-established fast-charging stations at motorway and national highway entry and exit points, shall be implemented through appropriate Public–Private Partnership models, primarily under O&M or concession arrangements. While capital establishment shall remain with the Government of Punjab, operations and maintenance shall be outsourced to private operators through transparent bidding processes. Electricity tariffs and service charges for such facilities shall be regulated in accordance with rates notified by NEECA.
- A PPP and Investment Facilitation Node will be established within the NEV regulatory entity to coordinate with P4A for project origination, investor liaison, and transaction support.
- Targeted, transparent, and time-bound viability-support mechanisms may be considered in line with Finance Department guidelines and PPP Rules 2025.
- Risk allocation shall follow principles defined under the PPP Act 2025 to ensure bankable yet fiscally responsible contracts.
- Both public and private land may be utilized for charging and swapping infrastructure through transparent lease or concession agreements as per BOR Notification No. 2102-2019/749-CL(II) and the PPP Act 2025.
- The Policy will further link NEV PPPs with Punjab’s Green Financing Strategy by mobilizing green bonds, climate-finance facilities, and carbon-credit revenues through PECCEF and CFU.

10.2. Strategies for Attracting International and Local Investment in NEV Infrastructure and Manufacturing

The Government of Punjab will explore the following innovative financing mechanisms in coordination with the Finance Department to encourage the banks in developing green financing solutions for the NEV sector:

- Fee-bate models
- Green bonds
- Blended climate finance,
- Potential Punjab EV Transition Fund

Efforts will be made to introduce trade finance schemes, working capital support, and long-term financing options to help businesses establish or upgrade NEV manufacturing facilities. Financing schemes will be tailored to different NEV categories outlined in the policy. Small and medium enterprises (SMEs), which play a key role in the NEV supply chain, will receive support through supplier financing programs. Banks will be encouraged to design financial products that directly assist these businesses in manufacturing NEV components.

Beyond local banking support, the government of Punjab will explore green financing options to secure necessary funds for NEV development. It will work with relevant stakeholders to seek funding from international climate finance programs, multilateral development partners, and donor agencies. Special emphasis will be placed on co-financing opportunities where public and private sector partnerships can drive investment in NEV infrastructure and manufacturing.

10.3. Green Finance and Investment Framework for Punjab’s NEV Ecosystem

The Policy will align with the Punjab Green Financing Strategy and utilize existing instruments such as the Climate Finance Unit (CFU) and the Punjab Environmental Conservation and Clean Energy Fund (PECCEF) to leverage green bonds, blended finance, and carbon-credit monetization. Direct capital subsidies are not envisaged; fiscal measures will be targeted, capped, and time bound. Achieving the adoption targets set forth in the Punjab NEV Policy will depend on the availability of financing and investment mechanisms that can support the expansion of NEV manufacturing, assembly, and the supply chain. This includes Original Equipment Manufacturers (OEMs), battery and component manufacturers, infrastructure providers, and allied vendors, particularly SMEs that form a critical part of the NEV ecosystem.

10.3.1. Carbon Markets Development

The Government of Punjab will establish a structured carbon market to support the transition towards a cleaner and more sustainable economy. GoPb will develop a regulatory framework for carbon trading, enabling industries, businesses, and the transport sector to generate, verify, and trade carbon credits in line with international best practices. Through this, the GoPb aims to leverage carbon credit mechanisms and access global climate funds.

10.3.2. Structured Green Financing Solutions

The Government of Punjab, in collaboration with PBIT will work with the Ministry of Finance (MoF), SBP, and local financial institutions to promote the development of dedicated green financing instruments for NEV sector needs. These will include:

- Trade finance and working capital solutions for OEMs and component suppliers to scale up production.
- Concessional green loans at interest rates between 5% to 7%, supported by government-backed guarantees or risk-sharing mechanisms.
- Long-term infrastructure financing for the establishment of NEV manufacturing plants, battery assembly units, and testing labs.
- Leasing models and credit lines specifically for local vendors and fleet operators transitioning to NEVs.

Special emphasis will be placed on enabling access to affordable finance for SMEs manufacturing batteries, motors, electronics, and charging equipment. Banks and microfinance

institutions will be encouraged to develop supplier financing programs to anchor OEMs and public procurement programs for NEVs. In addition, solar-based EV charging will be incentivized through concessional loan products. Projects meeting solar PV thresholds (minimum 3 kW per charger for Level 2 and above) will receive preferential interest rates, capital subsidies, and fast-track loan approval through EV investor desk in PBIT or NEV facilitation cell.

10.3.3. Mobilizing International Climate and Green Funds

The Government of Punjab will actively engage with multilateral and bilateral climate financing institutions to channel green investments into Punjab’s NEV sector. Punjab Green Finance Coordination Unit will be established under PBIT, tasked with:

- Developing a centralized database of active green and climate finance funds.
- Curating investment-ready NEV projects for donor engagement and co-financing.
- Coordinating with global climate funds for on-ground deployment of capital into manufacturing clusters, charging infrastructure, and battery recycling projects.

10.3.4. Blended Finance and Public-Private Partnerships

To scale NEV infrastructure deployment (especially in charging and battery swapping), the Government of Punjab will promote the use of blended finance instruments, combining concessional public capital with private investment. Charging infrastructure projects that are financially less attractive but strategically important (e.g. in rural or low-density areas) will be made bankable through:

- Viability Gap Funding support from the provincial government.
- Public-Private Partnership frameworks to share investment risk.
- Project-based green bonds (subject to future green bond framework finalization).

Relevant departments including the Energy Department, Industries Department, and Finance Department will collaborate to develop risk-sharing instruments and investment guarantees to incentivize private sector involvement.

10.3.5. Facilitating Trade and Investment

To enhance investor confidence and attract foreign direct investment (FDI), the Government of Punjab will provide:

- Business facilitation services through PBIT and the NEV Facilitation Cell.
- Dedicated NEV investor desks at PBIT and SEZ authorities such as FIEDMC.
- A centralized investment portal highlighting opportunities in NEV manufacturing, parts localization, and charging solutions.

Special emphasis will be placed on maintaining regulatory alignment with SECP, SBP, and BOI to ensure ease of doing business and investor protection. In collaboration with national

stakeholders, Punjab will also participate in international investment forums and climate finance summits to showcase opportunities emerging from the Punjab NEV Policy.

10.3.6. Monitoring and Coordination

NEV regulatory entity, in coordination with PBIT, will oversee the implementation of this framework, review financing gaps, and update the list of eligible projects on a bi-annual basis. All financial facilitation efforts will be monitored through periodic reporting to ensure transparency, impact assessment, and course correction where needed.

11. Capacity Building and Awareness

11.1. NEV Curriculum Integration

The Punjab Government, in collaboration with the Higher Education Department (HED), will integrate NEV-related courses into existing university programs. This will ensure that students in engineering, technology, and business fields gain essential knowledge about NEV technologies, battery systems, charging infrastructure, and sustainable mobility solutions. Universities will be encouraged to develop specialized degree programs and certifications focused on NEVs to create a skilled workforce for the growing NEV industry.

11.2. Advanced Training Programs

Ongoing initiatives by the Skills Development & Entrepreneurship Department, including the modernization of technical training labs and collaboration with international EV manufacturers, demonstrate Punjab's readiness to cultivate a skilled and future-ready workforce. The government will establish advanced training programs in partnership with universities and research institutions. These programs will cover critical areas such as battery management systems, battery chemistry, electric motor design, power electronics, and charger.

11.3. Workforce Development

- Specialized vocational training programs will be introduced for technicians and mechanics through Technical Education and Vocational Training Authority (TEVTA) which will focus on the establishment of specialized curricula for EV mechanics, battery handling, charging infrastructure maintenance, and safe disposal practices, aligned with national and industry standards.
- Training centers across Punjab will be equipped with modern facilities to provide hands-on learning experiences.
- The Government of Punjab shall align NEV-related skill-development programs with national certification frameworks (e.g., TEVTA, NAVTTC) and may establish a Provincial EV Skills Observatory to anticipate future labor-market needs.
- Punjab will develop a province-wide EV repair and maintenance training ecosystem in collaboration with the Skills Development & Entrepreneurship Department and its line agencies (NAVTTC, TEVTA, PVTC, and PSDF).

- The Government will further encourage curriculum modernization, industry partnerships, and resource mobilization skill developments programs to ensure that EV skill development evolves with technological needs.

11.4. Safety Training and Readiness for NEV-Related Incidents

The Government of Punjab will implement specialized safety training programs to address the unique challenges of handling NEV-related accidents, particularly those involving lithium-ion batteries, which require different protocols than conventional fire hazards. These programs will provide targeted training for both individuals and first responders, including Rescue 1122, focusing on battery fire management, safe handling of damaged EVs, and emergency response procedures to mitigate risks such as thermal runaway and electrical hazards. Punjab Emergency Services (Rescue 1122) will be equipped with the necessary knowledge, tools, and protocols to effectively respond to NEV-related incidents. Additionally, the Government of Punjab will support institutions like the Emergency Services Academy, Punjab, which already provides disaster response training, to expand their scope and incorporate NEV safety and emergency response modules. This initiative aims to enhance overall safety standards and ensure a well-prepared response system for NEV-related emergencies in the province.

11.5. Public Awareness and Communication

- The Government of Punjab will allocate funds to launch public awareness campaigns on NEVs at various government levels.
- Higher education institutions and universities will be required to introduce courses and training programs focused on NEV-related technologies.

12. Environmental Sustainability

The Punjab should adopt a formal Extended Producer Responsibility (EPR) framework to promote sustainability and a circular economy. All NEV manufacturers, assemblers, and importers will be legally obliged to ensure the environmentally sound management of end-of-life vehicles, batteries, and critical components. Producers shall establish take-back and recycling systems, and report lifecycle environmental performance data annually to NEV regulatory entity and EPA Punjab. Adherence to EPR obligations will be mandatory for obtaining registration, licensing, and fiscal incentives under this Policy. This initiative will encourage the reuse and repurpose of valuable materials, supporting the transition to a circular economy. An ‘EPR framework’ and a ‘Battery Policy’ is mandatory to be devised which will cover the following areas:

- Implement a clear, province-wide battery lifecycle management protocol which will cover the registration and tracking of batteries from manufacture/import to end-of-life, categorization of batteries eligible for reuse, second-life, or recycling and safe handling protocols during charging, storage, and transport.
- Collection framework of NEV batteries through certified vendors or designated drop-off points.

- Compliance with battery storage facilities for fire safety, ventilation, and leak-proof containment requirements.
- Registration of transporters of used batteries and training in hazardous material handling.
- Encompass various battery types, including lithium-ion batteries used in NEVs, and outline the entire recycling process, covering collection, transportation, assessment, disassembly, recycling, repurposing, and final disposal of both battery packs and individual cells.
- Collaboration with industry stakeholders, recyclers, environmental organizations, consumer groups, and OEMs, aligning recycling efforts with production and waste cycles. Additionally, domain experts will be involved in designing appropriate incentives and regulatory measures.
- Manufacturers, importers, and assemblers will be legally obligated to take back used batteries and ensure environmentally safe recycling or repurposing.
- An annual compliance report will be generated outlining battery take-back performance and recycling metrics.
- Battery recycling facilities will obtain licenses from the EPA and will be audited regularly to ensure compliance with environmental standards.
- NEV regulatory entity and EPA will jointly issue penalties for violations, including improper disposal, unauthorized handling, or leakage of toxic materials.
- Battery recycling businesses will be eligible for capital subsidies, land tax exemptions, and inclusion in SEZ incentives (refer to Section 5.1.1).
- Second-life battery facilities (for storage, microgrids, or solar integration) will be promoted through green finance access.
- Strict safety and environmental standards along with EPA, Punjab will be established for recycling processes, along with clear guidelines for battery disposal, refurbishment, and material extraction. A network of recycling and collection centers will be developed to ensure accessibility across both urban and rural areas.
- The government of Punjab will introduce financial incentives, tax breaks, and subsidies for companies setting up recycling facilities, strengthening the province's commitment to sustainable waste management and resource efficiency.

12.1. Battery Lifecycle Management (BLM)

The Government of Punjab shall adopt a Battery Lifecycle Management (BLM) framework through a 'Battery Policy' and 'EPR' framework to ensure the safe and sustainable handling of batteries across their full lifecycle. The framework will include:

- At least one licensed lithium-ion battery recycling center shall be operational in Punjab by 2028, with a province-wide network established by 2030.
- All collection, transport, storage, and recycling of batteries shall follow international best practices, with standards notified by NEV regulatory entity in coordination with EPA Punjab and the Punjab Energy Department.
- Dedicated safety guidelines for handling, storage, and transport of lithium-ion batteries will be mandated for manufacturers, fleet operators, and recyclers.
- NEV manufacturers, assemblers, importers, and recycling units shall be legally bound to comply with lifecycle management standards. Non-compliance will result in penalties, withdrawal of fiscal incentives, and suspension of licenses.

- Battery production, usage, repurposing, and recycling data will be reported annually to NEV regulatory entity and EPA Punjab as part of the M&E framework.
- NEV regulatory entity and the Finance Department will explore integration of recycling and circular-economy activities with carbon-credit and climate-finance mechanisms to attract private investment and enhance sustainability.

13. Provincial Action Plan, Review Mechanism, and Supplemental Initiatives

13.1. Continuous Review and Course Correction

NEV landscape is evolving rapidly, shaped by global technological advances, changing consumer behavior, and emerging policy innovations. To remain effective and responsive, the Punjab NEV Policy will be reviewed periodically to ensure alignment with technological progress, environmental objectives, and evolving market realities.

13.1.1. Need and Scope of Review

- Identify and address barriers in policy implementation,
- Update the regulatory, financial, and technical components of the policy,
- Ensure continued alignment with national climate commitments and Punjab’s economic and environmental vision.

13.1.2. Scope of Policy Review

- Evaluate the sustainability and efficiency of public-private cost-sharing models for NEV infrastructure and vehicle subsidies. This includes adjustments in funding structures, incentives, and the viability gap funding (VGF) framework.
- Monitor adoption rates, NEV technology innovations (e.g., battery advancements, bi-directional charging), and their integration with renewable energy such as solar PV and bioenergy.
- Assess emission reductions, improvements in urban air quality, and socio-economic outcomes such as job creation and improved mobility access for low-income communities.

13.1.3. Review Schedule and Governance

- First Review: Q1 2026
- Second Review: Q1 2028
- Third Review: Q1 2030

All reviews will be led by NEV regulatory entity, in consultation with provincial departments, private stakeholders, research partners, and civil society organizations. The outcomes will be shared with the Chief Minister’s Office and made publicly available.

13.2. Supplemental Documents and Supporting Initiatives

To operationalize the NEV policy effectively and comprehensively, the Government of Punjab will issue the following supplemental policies and frameworks:

13.2.1. Battery Disposal and Recycling Policy

The battery disposal and recycling policy document will outline technical and legal guidelines for the safe collection, transportation, repurposing, and disposal of NEV batteries. It will:

- Define roles of manufacturers, consumers, and recyclers,
- Ensure environmental safeguards for all types of battery waste,
- Enable performance-based subsidies for recycling centers.

To ensure product quality, traceability, and export readiness, the policy mandates the establishment of:

- Certified NEV battery testing and performance labs for safety, lifespan, and thermal stability testing.
- Copper and rare-metal recovery units are integrated into battery dismantling facilities.
- Partnerships with international certification agencies to enable battery and recycling facilities to meet export standards and compliance requirements.

13.2.2. Charging Infrastructure Roadmap

Charging Infrastructure Roadmap will serve as a detailed operational guide for infrastructure developers, municipal planners, and energy utilities, ensuring the EV ecosystem develops in a synchronized, equitable, and scalable manner. This technical document will:

- Define charging station typologies (Level 1, 2, fast chargers, swappable battery hubs) and priority use-cases (public transport, fleets, private EVs),
- Outline geographic deployment strategy using area-based (km²) planning for urban, semi-urban, and rural contexts,
- Identify load concentration zones for DISCO collaboration and grid readiness (transformer upgrades, EV feeders),
- Define land use models and site selection criteria, in partnership with the Urban Unit and municipal authorities,
- Establish phased deployment milestones aligned with EV adoption targets,
- Provide financial planning models (e.g., CAPEX estimates, VGF benchmarks, blended finance),
- Recommend PPP models for attracting private investment while ensuring public access and reliability.

13.2.3. E-Waste Management Policy

Aimed at addressing the broader stream of NEV-related e-waste (e.g., electronics, controllers, charging systems), this framework will:

- Establish safe handling and disposal protocols,
- Promote recycling valuable metals and electronics,
- Reduce landfill waste and contamination risks.

13.2.4. Vehicle Licensing and Inspection

NEV regulatory entity, in collaboration with the Excise, Taxation & Narcotics Control Department and EPA Punjab, shall develop a periodic fitness and safety inspection framework for all NEVs. In collaboration with the Engineering Development Board (EDB), a new licensing system will:

- Digitize the application and quota approval process for NEV manufacturers,
- Extending incentives to component vendors (batteries, motors, BMS, software),
- Ensure transparency and competition within the NEV value chain.

13.2.5. NEV Standards and Regulations Development

NEV regulatory entity, in collaboration with national and international agencies, will issue localized NEV standards that:

- Ensure compatibility and safety of charging, battery, and vehicle components,
- Align with UNECE and ISO standards,
- Enable certification of NEV infrastructure and components for public use.

13.2.6. Establishment of NEV Testing Centers and Certification Facilities

Punjab will develop certified testing labs to evaluate:

- Batteries, power electronics, motors, and full vehicles,
- Safety, performance, and environmental compliance,
- These centers will enable manufacturers to obtain NEV certifications and boost local credibility.

13.2.7. NEV Vehicle Registration Regime

The Excise and Taxation Department, in coordination with NEV regulatory entity, will establish a new NEV registration regime that:

- Moves away from Ah/kW-based taxation to invoice-based registration,
- Introduces green plates and color-coded stickers for NEVs,
- Standardizes registration criteria across cities and integrates with a provincial NEV database.

13.2.8. Zero-Emission Transport Roadmap

A separate roadmap will be developed to guide Punjab toward a fully zero-emission transport system by 2040. It will outline:

- Phased targets and technology pathways,
- Integration with mass transit electrification programs,
- Monitoring indicators for carbon neutrality in the transport sector.

13.3. Institutional Ownership and Legislative Endorsement

All supplemental frameworks will be endorsed via executive orders or integrated into the Punjab NEV Act, where applicable. These will be drafted by lead departments (e.g., Transport, Industries, EPA, Energy), with coordination by NEV regulatory entity so that it is aligned with the NEVP 2025, SDGs, and Pakistan's updated NDCs.

14. Conclusion

The Punjab NEV Policy marks a critical turning point in the province’s transition toward clean and sustainable transportation. Through phased implementation, inter-departmental coordination, and dynamic policy review, Punjab is positioned to become a national leader in sustainable mobility. The policy’s success will depend not only on incentives and infrastructure but also on proactive governance, investment facilitation, technological innovation, and strong institutional accountability. The Government of Punjab remains fully committed to realizing the vision of delivering cleaner air, a green economy, and a future-ready transport system for all.

Annexure

Annex-1: Eligible NEV manufacturing industry and its associated industry

- Manufacturing and assembly of NEVs, including PHEVs, REEVs/EREVs, EVs (both fixed and swappable battery configurations), as well as hydrogen-powered and fuel-cell vehicles.
- Production of storage solutions, including manufacturing and assembly of battery packs/modules (Li-ion cells, fuel cells, hydrogen cells, or other advanced chemistry battery cells).
- Manufacturing components for NEVs, including:
 - Electric propulsion systems: Electric motors, driveline systems, integrated power box units, electric axles/half shafts, and power transfer units.
 - Power electronics: Motor controllers, power control units, inverters/converters, battery pack controllers, and onboard chargers.
 - Charging infrastructure: AC and DC charging, its components, inlets.
 - Battery systems: Li-ion or advanced battery cells/packs, battery management systems, and thermal management systems, packaging foil & steel casing for battery
 - NEV-specific electrical infrastructure: High-voltage wiring and associated components.
 - IT and IoT industry for NEVs
- Manufacturing of NEV Charging/Swapping Infrastructure Equipment and Hydrogen Stations
- Reuse and Recycling of batteries through recycling centers set up by NEV and its parts/component manufacturers and other players
- Testing Facilities, including testing of NEVs, its components/parts like battery pack/cell, motors, electrical & electronics components, IT and IoT devices and NEVs chargers.