

Impact Assessment and Scale-Up Framework for the Electric Micromobility Program in India





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1. Introduction and Strategic Context

1.1. India's Last-Mile Mobility and Livelihood Challenge

Rural and small-town India continue to face persistent barriers to affordable, reliable, and gender-inclusive last-mile mobility. Limited public transport coverage, high costs of private vehicle ownership, and the absence of suitable mobility options restrict access to markets, healthcare, education, and income-generating opportunities—especially for women, self-employed workers, micro-entrepreneurs, and informal sector workers.

A significant share of India's workforce undertakes short, frequent trips for livelihood activities. However, the lack of low-cost, fit-for-purpose mobility solutions (such as electric micromobility) reduces productivity, increases drudgery, and limits service coverage. For women and Self-Help Group (SHG) members, the gap is further intensified by safety concerns, affordability barriers, and credit constraints, which collectively restrict economic participation and the ability to scale micro-enterprises.

Evidence from national mobility research reinforces the depth of this challenge.

According to the study “Travel to Work in India: Current Patterns and Future Concerns” by the Transportation Research and Injury Prevention Programme (TRIPP), IIT Delhi, nearly 70% of both rural and urban workers travel less than 5 km for work on a typical day, and only slightly above 10% travel more than 10 km.

These short-distance travel patterns highlight a critical gap: despite large numbers of workers requiring frequent mobility for livelihoods, the available mobility ecosystem does not adequately serve distances in the 2–10 km range, where electric bicycles and cargo e-cycles are most effective.

Improving last-mile mobility, therefore, is not merely a transport intervention—it is a key enabler of inclusive livelihoods, particularly for women, youth, gig-workers, and rural micro-enterprises. Affordable electric micromobility solutions have the potential to expand economic access, reduce daily travel effort, and enhance participation across income-generating sectors such as agriculture, fisheries, retail, health services, and urban delivery logistics.

1.2. Role of Electric Micromobility in National Priorities

Electric micromobility, particularly electric cargo bicycles, offers a scalable solution to bridge mobility gaps between non-motorized and conventional motorized transport.

- **Rural Livelihoods and Self-Help Groups (SHGs):** E-cargo bicycles support micro-entrepreneurs and SHG members by reducing travel time and effort, enabling doorstep services, and lowering operating costs. Their simplicity and suitability for decentralized livelihood models make them ideal for rural development initiatives.
- **Urban Last-Mile Connectivity:** In dense urban and peri-urban settings, e-cargo bicycles provide cost-effective alternatives for delivery services, vending, waste

collection, and other informal sector occupations. They offer lower total cost of ownership and reduce exposure to fuel price volatility.

- ◆ **Low-Carbon and Inclusive Transport:** E-micromobility is one of the most energy-efficient transport modes, cutting fuel consumption, emissions, and pollution from short trips. When combined with renewable energy charging, it strengthens India's clean and decentralized transport transition while improving accessibility for low-income users.

1.3. Need for scaling up

India's evolving policy landscape—across electric mobility, domestic manufacturing, renewable energy, and rural livelihoods—creates an enabling environment to scale electric micromobility. The STREE pilot by EESL/CESL and the Ministry of Rural Development has demonstrated operational feasibility across diverse geographies, showcasing successful integration with SHG-based livelihood models. Lessons from procurement, deployment, user acceptance, and institutional coordination provide a strong foundation for expanding micromobility interventions to a programmatic scale.

1.4. Purpose and Scope of This Report

This report begins by presenting the Impact Assessment (IA) of the STREE pilot, which provides evidence on operational performance, economic and social benefits, user experience, and environmental outcomes. These insights help identify the key factors that enable or constrain the success of electric micromobility interventions and inform the overall program design, policy alignment, and financing decisions.

Building on the IA findings, the report also develops a **scalable business plan** outlining how electric micromobility—particularly electric cargo bicycles—can be expanded sustainably across rural, peri-urban, and urban contexts. The business plan defines the cost structure, revenue models, financing needs, delivery mechanisms, partnership roles, and long-term sustainability pathways required to operationalize large-scale deployment. It also identifies opportunities to leverage SHG networks, government programs, private-sector logistics demand, and renewable-energy integration to strengthen commercial viability.

Together, the impact assessment and business plan form the evidence base for a broader **strategic framework for scaling up electric micromobility in India**, including deployment models, enabling policy and regulatory conditions, financing mechanisms, and institutional coordination frameworks. The report further explores how micromobility solutions can be integrated into national and state programs to advance mobility, livelihood, and climate objectives.

The report is intended to guide central and state governments, multilateral agencies, financial institutions, and implementing partners in positioning electric micromobility as a scalable, commercially viable, and inclusive solution for sustainable development.

2. Overview of the STREE Program and Pilot Experience

2.1. Program Overview

The STREE Program (Sustainable Transport for Rural Entrepreneurs through Electric Bicycles) is a flagship micromobility initiative conceptualized by Energy Efficiency Services Limited (EESL) and its wholly owned subsidiary Convergence Energy Services Limited (CESL), under the aegis of the Ministry of Power, Government of India and implemented in collaboration with the Ministry of Rural Development (MoRD). The program was designed to address a critical gap at the intersection of last-mile mobility, livelihood generation, and low-carbon transport, particularly in rural areas and tier II/III cities.



STREE seeks to demonstrate how electric cargo bicycles, when combined with appropriate institutional partnerships and financing support, can enable income-generating activities for micro-entrepreneurs, especially women associated with Self-Help Groups (SHGs). The program aligns with national priorities on energy efficiency, electric mobility, women's economic empowerment, and climate action, while deliberately targeting segments that remain underserved by conventional EV policies.

2.2. Pilot Phase Design and Institutional Partnerships

The STREE pilot was jointly implemented by EESL and CESL in partnership with the Ministry of Rural Development (MoRD), supported by GEF grants administered through ADB. This collaboration combined EESL/CESL's strengths in technology procurement and program management with MoRD's extensive grassroots network under NRLM, enabling effective deployment across diverse rural and peri-urban locations.

The pilot aimed to test four core elements essential for future scale-up:

- **Technical feasibility:** Assessing e-cargo bicycle performance across different terrains, weather conditions, and load profiles.
- **User acceptance:** Understanding adoption among SHG women and their willingness to shift from manual or fossil-fuel based mobility.
- **Livelihood relevance:** Evaluating improvements in productivity, reduced operating costs, and enhanced income attributable to e-mobility.
- **Institutional scalability:** Examining integration within the NRLM SHG ecosystem and potential for multi-state replication.

These insights collectively informed the program's suitability and readiness for large-scale expansion.

Alignment with Sustainable Development Goals (SDGs)

The STREE pilot advances multiple SDGs by promoting clean mobility, women-centric livelihood enhancement, and climate-resilient development. Key contributions include:



SDG	Contribution of the STREE Pilot
SDG 1: No Poverty	Expands income opportunities for SHG women and reduces daily mobility costs.
SDG 3: Good Health and Well-Being	Cuts exposure to pollution and reduces physical effort in load transport.
SDG 5: Gender Equality	Improves women's mobility, economic participation, and decision-making power.
SDG 7: Affordable and Clean Energy	Promotes low-cost electric mobility and reduces reliance on fossil fuels.
SDG 8: Decent Work and Economic Growth	Supports new livelihoods in delivery, agri-transport, and local logistics.
SDG 9: Industry, Innovation and Infrastructure	Builds the ecosystem for electric micromobility through supply chains and service networks.
SDG 11: Sustainable Cities and Communities	Enables low-emission, accessible last-mile mobility in rural and peri-urban areas.
SDG 12: Responsible Consumption and Production	Encourages repair, maintenance, and responsible end-of-life battery and component handling.
SDG 13: Climate Action	Reduces GHG emissions by substituting fossil-fuel two-wheelers for short-distance freight.

2.3. Pilot Deployment Overview

Under the pilot phase, 1,800 electric cargo bicycles were deployed across four states:

- Kerala – 600 units (Palakkad and Kannur)
- Bihar – 500 units (Patna Sadar, Muzaffarpur, Vaishali)
- Andhra Pradesh – 400 units (Kuppam constituency)
- Madhya Pradesh – 300 units (Sehore district)



Beneficiaries were SHG women under 40, actively engaged in livelihoods, capable of cycling, and possessing valid ID and a bank account. Identification of energy champions, hands-on training, and operational support facilitated smooth adoption into daily livelihoods.

2.4. Operational Learnings Relevant for Scale-Up

The pilot generated several insights critical for national expansion:

- **Technology suitability:** Electric cargo bicycles were found to be well-suited for short-distance, high-frequency trips common to livelihood activities.
- **User acceptance:** Adoption was strongest where vehicles directly replaced time-consuming or physically demanding mobility modes.
- **Institutional anchoring:** SHG-based identification and onboarding of beneficiaries proved effective for outreach, trust-building, and repayment linkage.
- **Cost sensitivity:** Upfront affordability remains a key constraint, reinforcing the need for structured financing and subsidy convergence at scale.
- **After-sales support:** Local maintenance and servicing ecosystems are essential for sustained usage and confidence among users.

These insights guide the development of scalable and financially viable deployment models.

2.5. Relevance of the Pilot for National Scale-Up

The STREE pilot acts as a **proof of concept** for mainstreaming electric micromobility across India. Its national relevance stems from:

- Demonstrating a livelihood-focused, non-conventional EV segment
- Establishing convergence across ministries related to mobility, energy, and rural livelihoods
- Highlighting the value of gender-responsive mobility solutions
- Providing practical insights for policy formulation, financing, and institutional coordination

The pilot offers a strong platform for designing and implementing large-scale, inclusive, and climate-aligned electric micromobility programs.

3. Impact Assessment of the STREE Pilot and key findings

The impact assessment for the STREE pilot was conducted across all four participating states to evaluate the social, economic, and environmental outcomes of sustained e-cargo bicycle use among SHG women. A **three-phase assessment design** was used to measure the pre-intervention baseline, early adoption trends, and longer-term impacts.

Assessment Phases and Coverage

1. **Baseline Survey** – conducted prior to distribution of e-bicycles

Coverage: 2,222 beneficiaries

The baseline captured the pre-intervention scenario, including mobility patterns, income and occupation, travel cost and time, physical strain, and safety perceptions.



2. **Midline Survey** – undertaken three months after distribution

Coverage: 1,467 beneficiaries

The midline assessment was conducted in two sub-phases:

- **Midline Phase I:** conducted 2–2.5 months after receiving e-bicycles
- **Midline Phase II:** conducted to provide handholding support.

3. **Endline Survey** – completed six months after distribution

Coverage: 1,539 beneficiaries

The endline was conducted approximately 2.5–3 months after the midline and focused on usage continuity, income growth, empowerment indicators, and estimates of carbon emission reduction.

Initial findings from ongoing impact surveys and focus group discussions (FGDs) across the four project states indicate strong, multi-dimensional benefits for women beneficiaries and their households.



3.1. Socio-Demographic Characteristics of Beneficiaries

The STREE pilot primarily reached **working-age SHG women**, with nearly **75% aged 26–40**. Most beneficiaries had **completed secondary education**, while Kerala and Madhya Pradesh had higher shares of graduates. The program effectively engaged women balancing livelihood and family responsibilities, enabling mobility improvements with direct household-level benefits.

3.2. Adoption of e-bicycles

Adoption of e-bicycles was high at 78%, though usage varied by state:

- **MP: 98%, Kerala: 87%, Bihar: 75%, AP: 55%**

Women were the **primary users** in most states (up to 79% in MP; 69% in Kerala and 38% in AP). In AP and Bihar, bicycles were shared across family members.

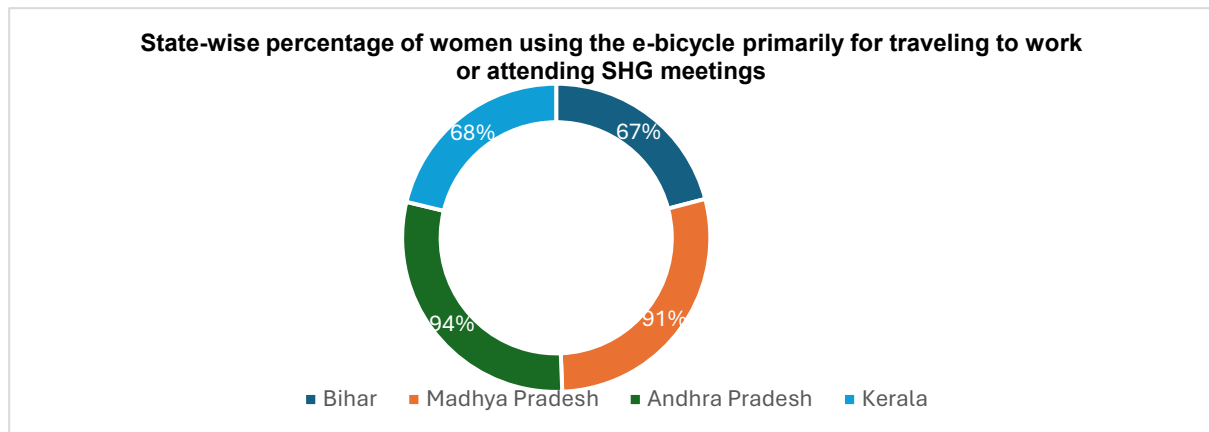


These findings suggest that while the e-bicycle is intended for women's mobility, it often functions as a **shared household asset**, benefiting entire families across states.

Usage frequency was strong, with most beneficiaries riding the bicycle **more than 3 days/week**, especially in **AP (89%)** and **MP (85%)**.

The e-bicycle became a **multifunctional asset**, used for work, SHG meetings, errands, market visits, school trips, health visits, and social activities.

Across the four states, 80% of beneficiaries reported using the e-bicycle primarily for travelling to work or attending SHG meetings. The state-wise distribution is presented in the below graph:



In addition, women frequently use the e-bicycle for household errands; Market visits; Children's school trips; Visits to health facilities; Community and religious activities

These patterns confirm that the e-bicycle is not only enabling livelihood mobility but has also become a **multifunctional mobility asset** integrated into daily life.

Enhanced Mobility and Improved Access

Across 1,392 users, e-bicycles recorded ~13 lakh km of travel in six months, indicating deep integration into daily routines.

- Bihar showed the highest long-distance use, with many travelling 6,000+ km.
- MP and AP recorded 4,000+ km for several users; Kerala saw moderate use, influenced by terrain and monsoon.

3.3. Shift in Primary Mode of Travel for Work

The introduction of e-bicycles has resulted in a clear and significant shift in beneficiaries' primary modes of travel for work across all four states.

- **Bihar:** Dependence on auto-rickshaws fell sharply from **71% to 21%**, with **74%** of beneficiaries using e-bicycles for work travel by endline.
- **Madhya Pradesh:** Walking as the main mode declined from **43% to 12%**, while **87%** adopted e-bicycles for work.
- **Andhra Pradesh:** Walking reduced dramatically from **59% to 7%**, with **90%** shifting to e-bicycles.
- **Kerala:** A moderate shift was observed, walking reduced from **21% to 13%**, and auto-rickshaw use from **26% to 5%**, with **48%** beneficiaries using e-bicycles for work related travel at endline.



The pilot led to a major shift from walking and auto-rickshaws to e-bicycles. Walking reduced by ~72% and auto-rickshaw use fell by 64%

Women also use the e-bicycle to visit banks, post offices, and government offices; take children to school; travel to religious or cultural places; and undertake occasional health-related trips.

3.4. Time Savings and Use of Saved Time

E-bicycles enabled meaningful time savings:

- **65% saved up to 30 minutes/day**
- **35% saved more than 30 minutes/day**

Time was reinvested in work, SHG activities, family care, household chores, rest and recovery. These savings enhanced women's productivity and well-being.



3.5. Impact on Livelihoods

The e-bicycle strengthened existing livelihoods and expanded access to income opportunities across retail, services, agriculture, delivery, and SHG-linked enterprises.



Occupational Profile

State-specific patterns emerged:

- **Bihar:** Strong growth in small businesses and market access
- **MP:** Increase in SHG-related and service-sector activities
- **AP:** High engagement in agriculture and new micro-enterprises
- **Kerala:** Strong growth in services and delivery-based work

Cargo loads were mainly up to 10 kg, with heavier loads common in agriculture-based states, confirming suitability for micro-enterprise tasks.

Overall, the e-bicycle primarily **reinforced and expanded ongoing livelihood activities**, helping women work more frequently, access markets easily, and operate more efficiently. Over time, its role may evolve into a catalyst for broader occupational shifts.

3.6. Economic Outcomes

Income Gains

Across states:

- **50% of women increased their monthly income**
- Among these, **70% gained ~₹3,564/month** and **30% gained ~₹8,367/month**

Women moved from lower to higher income brackets in all states, especially Kerala, AP, and Bihar.

Reduced Travel Costs

Monthly travel expenditure dropped significantly:

- Bihar: **35% reported zero travel costs**
- MP: low-expenditure group (Rs.1- Rs.1000), rose from **43% to 66%**
- AP and Kerala: sharp drop in high-expenditure categories. In AP, spending in ₹1,000–₹2,000 group dropped from 28% to 13% and in Kerala expenditure in **₹3,000+ group** reduced from 23% at baseline to none at endline, indicating a clear decline in high travel cost.

On average, 58% saved ₹1,351/month.

Savings were used for household needs, children’s education, health expenses, and in some cases, business reinvestment or savings.

3.7. Impact on Well-Being

The e-bicycle intervention led to substantial improvements in women’s physical comfort, emotional well-being, confidence, and social acceptance across all four states.

Improved Travel Comfort

Beneficiaries reported a major rise in comfort levels after receiving the e-bicycle. The increase in the share of beneficiaries reporting ‘comfortable’ travel at baseline to endline survey is mentioned below:

- **Bihar:** 18% to 75%
- **Madhya Pradesh:** 30% to 82%
- **Andhra Pradesh:** 28% to 86%
- **Kerala:** 3% to 67%

These consistent gains show that the e-bicycle significantly improved the quality of daily travel.

Reduction in Physical Stress

Physical strain associated with daily travel reduced sharply across all states. The proportion of beneficiaries reporting lower physical stress increased substantially from baseline to endline:

- **Bihar:** from 1% to 60%
- **Madhya Pradesh:** from 7% to 86%
- **Andhra Pradesh:** from 19% to 97%
- **Kerala:** from 13% to 62%



Women linked this relief to reduced walking, avoiding crowded shared transport, and having a reliable means of mobility.

Lower Emotional Stress

Improved mobility through the e-bicycle has significantly reduced travel-related emotional stress among beneficiaries. The proportion of beneficiaries reporting lower emotional stress related to travel increased substantially from baseline to endline survey as mentioned below:

- **Bihar:** from 4% to 37%
- **Madhya Pradesh:** from 24% to 86%
- **Andhra Pradesh:** from 53% to 93%
- **Kerala:** from 59% to 83%

Women reported feeling safer, more at ease, and less anxious during daily travel.

Confidence in riding the e-bicycle rose sharply, with strong family and community acceptance, and greater visibility of women in public spaces.

3.8. Environmental Impact

The shift from conventional fuel-based transport to e-bicycles generated significant environmental benefits across the four states. Using standard emission factors, kilometres travelled on e-bicycles were compared with emissions that would have occurred if the same distances were covered using petrol scooters.

Across 1,392 beneficiaries, a total of 13,05,121 km was travelled on e-bicycles during the study period. This resulted in an estimated 20 tonnes of CO₂ emissions, compared with 89 tonnes that petrol scooters would have produced for the same distance.

Total Emissions Avoided: ~68 tonnes of CO₂

This reduction is equivalent to the annual carbon sequestration capacity of approximately 3,275 mature trees, demonstrating the clear climate advantage of replacing fossil-fuel mobility with electric micromobility.

Overall Key Outcomes of the Intervention

*The STREE pilot significantly enhanced women's **mobility, livelihoods, independence, and well-being**, while delivering meaningful **economic and environmental benefits across the pilot states**. Access to an e-bicycle:*

- *Improved income opportunities*
- *Reduced travel time and cost*
- *Strengthened confidence and social acceptance*
- *Expanded access to markets, services, and community spaces*
- *Enabled climate-friendly mobility at scale*

However, the pilot phase has also helped to identify key challenges that must be addressed to enable nationwide scale-up. The core challenges include affordability, awareness, and the need for effective inter-ministerial convergence.

4. Business Plan

The outcomes of the STREE pilot have placed significant emphasis on addressing three core aspects: **identifying scale-up options, improving affordability, and enhancing awareness**. In response to these priorities, the following business plans have been developed to address the overall ecosystem and support sustainable expansion.

4.1. Scaling up the Pilot to Nationwide Rollout

4.1.1. Scale-up through National Rural Livelihood Mission

The STREE initiative has successfully completed its pilot phase in **Kerala, Bihar, Madhya Pradesh, and Andhra Pradesh**. Following this, a National Workshop was organized with key stakeholders to discuss the feasibility and approach for expanding the program nationwide.

The next phase of the initiative shall focus on **scaling up implementation within the pilot states** to strengthen impact and support larger-scale deployment.

In parallel, the discussion with the National Rural Livelihood Mission (NRLM) shall be initiated who has already invited Expressions of Interest (EOIs) from State Rural Livelihood Missions (SRLMs) to enable **demand aggregation across states**. This process aims to pool requirements at scale, allowing for better planning, improved affordability, and smoother implementation. The EOI mechanism will help enable a coordinated rollout and lay the groundwork for **nationwide expansion**.

Additionally, the rollout shall give **priority to the additional states that participated in the National Workshop**, building on their early engagement to support quicker adoption and scaling. **Some of the target states include Telangana, Rajasthan, Maharashtra and Jharkhand**.

4.1.2. Scale-up through Department of Post

India's postal and allied field delivery systems represent one of the most execution-ready institutional channels for the rapid deployment of electric cargo bicycles. India Post is among the largest and most geographically distributed field organizations globally, employing approximately **4.74 lakh staff**—including postmen, Gramin Dak Sevaks (GDS), and delivery personnel—operating through a network of nearly **1.65 lakh post offices**, around 90% of which are in rural areas. This extensive and permanently deployed workforce offers a unique opportunity for standardized adoption of electric micromobility at scale.

Postal workers operate on fixed, pre-defined delivery beats, covering predictable **daily distances of approximately 15–25 km** through high-frequency, last-mile trips¹. These routes typically involve repeated stops, short travel segments, and time-bound delivery obligations, making them technically and operationally well-suited for electric cargo bicycles. The predictable nature of postal routes significantly reduces range uncertainty and enables efficient daily charging and utilization patterns.

Postal delivery personnel regularly carry mail and parcel loads ranging from **10–30 kg per day² during daily operations**. At parcel hubs and nodal delivery centers, existing operational

¹ AR 2025-26 English Final_03.02.2026 curve without cutmark.cdr

² <https://www.postalstudy.in/2022/01/pnop-specifications-of-delivery-bag-to.html#gsc.tab=0>

norms already allow for load capacities of 30 kg or more, reflecting the steady increase in parcel volumes driven by e-commerce, doorstep banking, and government service delivery.

As postal services continue to evolve from being primarily letter-based to handling a mix of mail and parcels, there is a growing need for efficient, flexible delivery solutions. Electric cargo bicycles address this requirement well by **offering adequate load-carrying capacity**, ease of movement in dense and narrow areas, and low operating costs, making them a suitable option for modern postal logistics.

Postal delivery networks already manage:

- Daily last-mile delivery of mail, parcels, and financial services
- Doorstep banking, DBT-linked services, and e-commerce logistics
- Large, distributed field staff with clearly defined operational needs

Electrification of these delivery functions offers immediate operational savings, improved productivity, and alignment with government sustainability goals—without requiring creation of new schemes.

4.1.3. Scale-up through Fishery Sector

India's fisheries sector represents a large, livelihood-critical, and mobility-intensive ecosystem, making it a strong institutional channel for scaling up electric cargo bicycles. The sector supports the livelihoods of **~28 million people**³, including fishers, fish farmers, vendors, and post-harvest⁴ workers, many of whom rely on daily short-distance transport for harvesting, aggregation, and market access. Inland fisheries and fresh fish vending—where women's participation is particularly high—are especially dependent on affordable, reliable last-mile mobility.

Fish vendors and small-scale fishers typically operate on **predictable daily routes**⁵ of **5–20 km**, often making multiple trips per day between landing sites, ponds, collection points, and local markets. Average payloads range from **25–60 kg per trip**, carried in insulated boxes or baskets along with ice, placing significant physical strain on workers and limiting market reach when relying on manual transport or conventional bicycles. Electric cargo bicycles are well-suited to these operating conditions, enabling safe and efficient transport of moderate payloads over short distances without fuel dependence or complex licensing.

The fisheries delivery and marketing ecosystem already manages:

- Daily movement of fresh fish from ponds, landing centers, and aggregation points to local and peri-urban markets.
- Door-to-door vending, roadside retailing, and small-market distribution—often time-sensitive due to perishability.

³ India: Ministry of Fisheries, Animal Husbandry & Dairying, Government of India published, *The Handbook on Fisheries Statistics 2023* - ICSF

⁴ Post-harvest refers to all activities that take place after a fish has been harvested or caught, and before it reaches the final consumer. The objective of post-harvest activities is to preserve quality, reduce losses, add value, and improve market access.

⁵ Annual Report 2025 (English) New.cdr

- A large, decentralized workforce with clearly defined mobility needs under programs such as Pradhan Mantri Matsya Sampada Yojana⁶ (PMMSY).

Electrifying these fisheries-related mobility functions can **deliver immediate gains** in productivity, reduced drudgery, and **lower operating costs**, particularly for women fish vendors. Improved transport efficiency also supports reduced post-harvest losses and better price realization, aligning directly with national priorities under the **PMMSY**⁷ to enhance incomes, market access, and sustainability in the fisheries sector.

4.1.4. Scale-up through Department of Education

India's education sector, particularly at the higher-secondary level represents a large, socially critical, and mobility-intensive ecosystem, making it a strong institutional pathway for scaling up electric bicycles. India is home to over **6 crore secondary and higher-secondary students**⁸, many of whom commute daily to schools located beyond walking distance due to consolidation of higher-secondary institutions, especially in rural and peri-urban areas. Reliable, affordable mobility is a key determinant of attendance, retention, and academic participation at this stage, with mobility constraints disproportionately affecting **girls and economically weaker households**.

Higher-secondary students typically operate on **predictable daily travel routes**⁹ of **3–10 km**. These daily commutes are recurrent and time-bound, frequently undertaken without access to dependable public transport. Students also carry **moderate but non-trivial payloads**, including textbooks, notebooks, and study materials, with school bag weights commonly in the range of **5–10 kg**, often exceeding recommended health limits. Over longer distances, this results in fatigue, physical strain, and reduced punctuality when students rely on walking or conventional bicycles.

Sensitizing Youth toward Sustainable Mobility

Beyond mobility access, the adoption of e-bicycles within the education system presents a strategic opportunity to **sensitize young citizens toward sustainable and clean mobility solutions at an early age**. Early exposure to electric mobility can help shape long-term behavioural preferences, fostering awareness of climate change, air quality, and energy efficiency, while positioning clean transportation as a practical and aspirational choice rather than a constraint-driven alternative.

Historically, several states have distributed **bicycles to school students**, primarily with the objective of improving **enrolment, attendance, and retention**, especially among girls^{10,11}. While these programs have delivered strong social outcomes, the availability of **advanced electric mobility technologies** offers an opportunity to **build upon these successes** by integrating environmental consciousness and aspirational mobility into student life.

⁶ Pradhan Mantri Matsya Sampada Yojana (PMMSY) is a centrally sponsored scheme aimed at sustainable development of India's fisheries sector by strengthening production, post-harvest infrastructure, livelihoods, and market access. [Pradhan Mantri Matsya Sampada Yojana](#)

⁷ Press Release: Press Information Bureau

⁸ PIB-Press-Release-26-08-2025-NSSO-Comprehensive-Modular-Survey-on-Education.pdf

⁹ How do children travel to school in urban India? A cross-sectional study of 5,842 children in Hyderabad - PMC

¹⁰ Bicycles distributed by government help improve attendance at schools | [Hubballi News - Times of India](#)

¹¹ Distribution of Ladies Bicycle | Secondary Education | Government Of Assam, India

With early adoption of e-bicycles, students can experience the benefits of powered, dignified mobility at a formative stage—potentially shaping future preferences away from conventional petrol scooters and towards **clean, electric transportation options**. This not only aligns with national objectives on emission reduction and sustainable urbanization but also helps position electric mobility as the **default future mode of transport**, rather than a later-life transition.

The education ecosystem already manages:

- Daily home-to-school and school-to-home travel for millions of secondary and higher-secondary students.
- Independent student commuting, especially in rural and semi-urban areas where escorted transport is limited.
- Large, distributed student populations with clearly defined and recurring mobility needs, supported through state education departments and school networks.
- Existing bicycle-linked interventions, particularly for secondary students, that demonstrate the strong linkage between mobility access, attendance, and retention.

Electrifying student mobility at the higher-secondary level can deliver immediate educational, social and environmental benefits, including:

- Reduced commute fatigue and improved student well-being
- Higher attendance, punctuality, and retention
- Increased study time and improved learning outcomes
- Early-stage sensitization of youth toward **clean, sustainable mobility**, contributing to long-term behaviour change and environmental stewardship

4.1.5. Scale-up through Health department

India's public health system represents a large, service-critical, and mobility-intensive ecosystem, making it a strong institutional channel for scaling up electric bicycles. The sector relies on a vast frontline **workforce of over 13–15 lakh workers**, including Accredited Social Health Activists¹² (ASHAs), Auxiliary Nurse Midwives¹³ (ANMs), and other field-level health staff, who form the backbone of last-mile healthcare delivery under the National Health Mission¹⁴ (NHM). These workers are responsible for routine outreach, preventive care, immunization, maternal and child health services, and referral support—functions that depend heavily on daily short-distance travel within defined service areas.

At present, most frontline health workers rely on **walking as their primary mode of transport**, especially in rural and semi-rural areas where settlements are scattered and motorable roads are poor or incomplete. In many districts, particularly in states such as Bihar, Jharkhand, and parts of Uttar Pradesh, ASHA workers walk **10–15 km daily**, often making multiple trips between households, anganwadi centres, and health facilities. Some workers use **conventional bicycles**, but these are physically demanding when roads are uneven or when the worker must carry medical supplies. Where walking or cycling is insufficient, workers depend on **shared autos, infrequent buses, or lifts from male family members**, resulting

¹² ASHA Support Mechanism: National Health Mission

¹³ ANMs (Auxiliary Nurse Midwives) are trained frontline health workers responsible for delivering essential maternal, child, and preventive healthcare services at the community and sub-health center level.

¹⁴ Goal & Objectives - National Health Mission

in long waiting times, loss of productive work hours, reduced autonomy, and safety concerns—especially during early mornings, late evenings, or in poorly lit areas. For those who use private motorized vehicles, fuel and maintenance costs become an additional financial burden, often unaffordable given their modest honorariums¹⁵.

Frontline health workers typically operate on predictable **daily field routes of approximately 5–17 km**, often spread across multiple village habitations, urban slums, or peri-urban clusters. Their work involves repeated door-to-door visits, outreach sessions, and follow-ups rather than single long commutes. During routine service delivery, health workers carry moderate but essential payloads, including medicines, registers, tablets or smartphones, IEC material, and diagnostic tools. On immunization and outreach days, **payloads increase to 10–20 kg**, including vaccine carriers, cold boxes, ice packs, and medical supplies—loads that place significant physical strain on workers when moving on foot or using conventional bicycles.

Electric bicycles are well-suited to these operating conditions. They enable safe, low-effort transport of health supplies over short distances, reduce travel time and fatigue, and allow frontline workers—most of whom are women—to cover their assigned populations more efficiently. Crucially, e-bicycles do not require fuel, driving licenses, or complex maintenance, making them compatible with existing public health deployment models.

The health delivery ecosystem already manages:

- Daily doorstep delivery of health services, including maternal and child health visits, immunization follow-ups, and disease surveillance.
- Last-mile movement of essential health commodities, such as medicines and vaccines, from sub-centers and primary health facilities to community session sites.
- A large, decentralized frontline workforce with clearly defined catchment areas and mobility needs under the National Health Mission and related programs.

Electrifying frontline health mobility can deliver immediate improvements in productivity, coverage, and service quality, while significantly reducing physical drudgery for health workers. Improved field mobility supports timelier immunization, better follow-up of high-risk cases, and stronger community engagement. At a system level, adoption of electric bicycles aligns with national priorities on strengthening **last-mile healthcare delivery, improving women's working conditions**, and promoting low-carbon public service systems, without requiring the creation of new schemes or parallel delivery structures.

4.1.6. State-Level Model Replication Strategy

The replication of planned state models for e-bicycle adoption will follow a structured, phased approach that leverages learnings from early-adopter states and established institutional frameworks.

¹⁵ [*View of E-Cycles as pathway to Mobility Empowerment for ASHA Health Workers*](#)

Bihar

The proposed state-level business model for Bihar aims to promote women-led green mobility solutions through the SHG institutional architecture, while simultaneously reducing daily commuting costs, improving livelihood access, and building a financially sustainable community-based asset financing system.

Under the plan, Bihar aims to operationalize the model across six selected districts. Within each district, six blocks will be covered, and in each block, three Cluster Level Federations (CLFs) will be identified as the primary institutional units for implementation. This results in a total **outreach of 108 CLFs** during the initial phase. The selection of districts and CLFs will be based on existing institutional strength, SHG maturity, and demonstrated livelihood activity among women members.

To ensure effective oversight, accountability, and performance tracking, a **central Project Monitoring Unit (PMU)** will be established at the state level. The PMU will function as a **monitoring, coordination, and quality-assurance mechanism**. For on-ground execution, a **local NGO with proven experience in SHG-based livelihoods, community mobilization, and last-mile program delivery** will be engaged as the **implementation support agency**. The NGO will work closely with CLFs and block-level institutions to support beneficiary identification, community outreach, training delivery, deployment of Energy Champions, and day-to-day facilitation during the rollout phase. This structure allows implementation to remain locally responsive while the PMU ensures oversight and standardization at the state level.

To ensure effective program management and on-ground facilitation, a defined human resource structure is proposed. One state-level coordinator will oversee the program at the Bihar SRLM level, supported by three regional coordinators responsible for multi-district implementation and monitoring. At the grassroots level, each CLF will identify and nominate two “Energy Champions,” creating a **cadre of approximately 216 trained** community-level resource persons across the pilot area. These **Energy Champions will act as the backbone of the model**, supporting beneficiary onboarding, facilitating repayments, addressing technical or operational issues, and ensuring sustained community engagement.

The Energy Champions will undergo comprehensive training covering **business processes, e-bicycle technology and basic maintenance**, communication and community mobilization techniques, digital payment facilitation, and record-keeping. This decentralized capacity-building approach is intended to reduce dependency on external agencies, build local ownership, and ensure program sustainability over the long term.

From a financial perspective, the model assumes an indicative cost of ~ Rs.32,000 – Rs.35,000 per e-bicycle. Based on initial assessments and projected demand, **the program estimates a potential requirement of approximately 10,000 e-bicycles at scale.**

The upfront capital cost for procuring the e-bicycles will be borne by CLFs and SRLMs, utilizing existing grant funds, revolving funds, or livelihood promotion resources. This approach ensures that SHG women are not burdened with high upfront payments, while keeping asset ownership anchored within community institutions until repayment is completed.

Currently, three primary business and repayment models have been proposed for beneficiaries.

Model 1 (Daily savings-to-repayment)

The first model is a daily savings-to-repayment mechanism, designed specifically for women who currently spend significant amounts on daily commuting. In this model, SHG members contribute a **small upfront amount** of approximately **₹2,000–₹3,000**. Many women currently incur daily transport costs ranging from ₹150–₹200. By shifting to an e-bicycle, most of this expenditure is eliminated. A portion of the daily savings, typically **₹50–₹100 per day, is then digitally transferred** to the respective CLF or SRLM as repayment. Under this structure, the repayment period is expected to range between **18 and 20 months**. This model leverages actual cash savings rather than additional financial burden, making it both affordable and behaviorally viable.

Model 2 (Fixed monthly repayment)

The second model is a fixed monthly repayment structure, aimed at beneficiaries who prefer predictable and simplified payment schedules. Under this model, SHG members make a monthly payment of approximately **₹2,000–₹3,000 to the CLF or SRLM**. The repayment tenure under this approach is shorter, typically ranging from **12 to 15 months**. This model allows for faster ownership transfer and easier integration with existing SHG financial practices and monthly cash flows.

Model 3 (Low cost financing)

Beyond SHG members, the model envisions catering to individual buyers who may wish to purchase e-bicycles independently. For this segment, consultations with banking institutions are proposed to **design low-cost loan products** with affordable interest rates and simplified documentation. In such cases, CLFs and SRLMs would play a facilitative role by supporting beneficiary identification and financial literacy, rather than directly absorbing financial risk.

Kerala

The Kerala pilot confirms that inclusive mobility solutions can deliver both economic returns and social empowerment at the grassroots level.

The proposed business model anchored in multi-stakeholder convergence, with clearly defined institutional roles that can be replicated in other states:

- **State Livelihood Missions / Women SHG Federations** (e.g., Kudumbashree): Act as nodal implementing agencies, responsible for beneficiary identification, capacity building, monitoring, and aggregation of demand.
- **Ministry of Rural Development (MoRD)**: Provides policy backing and enables alignment with **national livelihood and mobility missions**.
- **Local Self-Government Institutions (LSGIs)**: Utilize decentralized planning provisions to extend subsidies up to 50% of project cost, subject to income eligibility and fund availability in annual plans.
- **Mobility Partners (EMC)**: Support state-level implementation, including proposal-based expansion models
- **Implementing Partner (EESL/CESL)**: Support procurement, aggregation, technical standards, and scale efficiencies,

A key success factor of the Kerala model is the blended finance approach, which significantly lowers the upfront burden on beneficiaries:

- **Capital Subsidy Support:** Subsidies from LSGIs and state renewable energy agencies help reduce acquisition costs.
- **Affordable Credit Access:** Low-interest loans (4%–7%) made available through women-focused financial institutions (such as State Women’s Development Corporations) enable staggered repayment.
- **State Funding:** Additional funding support from the Energy Management Centre has significantly reduced beneficiary contributions, as evidenced in Kerala where the contribution declined from ₹9,500 to ₹3,500.
- **CSR and Proposal-Based Funding:** CSR funds and targeted proposals can be leveraged to further bridge affordability gaps, especially for ultra-poor or priority beneficiaries.

This financing mix ensures financial sustainability without compromising inclusion, making replication feasible even in resource-constrained states.

4.2. Improving Affordability

4.2.1. Financing Alignment with Banks and Development Finance Institutions:

Electric micromobility—especially low-speed electric bicycles—can significantly improve incomes and reduce costs for SHG members, informal workers, and micro-entrepreneurs. Technology itself works well and is affordable to operate. However, the main challenge is access to finance, not the vehicle.

Most potential users need small loans, earn irregular or informal incomes, and the vehicles are often not formally registered. Because of this, traditional banks and lenders find it difficult to **offer loans at scale**, making financing the biggest barrier to wider adoption.

The proposed multi-institution **financing alignment** resolves this by embedding micromobility within existing livelihoods and development finance systems, converting e-bicycles from discretionary consumer goods into **productive, income linked assets**. Each financial institution category addresses a different failure point in the current market.

NABARD: Converting Micromobility into a Livelihood Asset

By recognizing **e-bicycles as livelihood-enhancing assets for non-farm and service-oriented activities**, NABARD can play a catalytic role in enabling affordable financing and mainstreaming micromobility within rural and semi-urban livelihoods.

- **Livelihood positioning and asset classification:** E-bicycles may be positioned within **off-farm, non-agricultural livelihood categories** such as last-mile service delivery, health outreach, retail vending, home-based enterprise logistics, delivery services, and access to nearby markets and workplaces. Treating e-bicycles as **income-enhancing mobility tools**, rather than consumer durables or farm equipment, would allow more appropriate loan terms with lower collateral and interest requirements.

- **Refinance support for non-farm livelihoods:** NABARD may extend refinance support to banks and other financial institutions under **off-farm sector financing, rural livelihoods, and NRLM-linked SHG lending windows**. This would lower balance-sheet risk for primary lenders and enable them to issue small-ticket loans for livelihood-linked mobility assets, which are otherwise seen as high-risk or low-return.
- **Integration with NRLM–SHG credit systems:** Linking e-bicycle financing with **NRLM-supported SHG credit architecture** leverages existing group mechanisms, repayment discipline, and peer monitoring. This is particularly relevant for women engaged in non-farm livelihoods that require daily local travel, where improved mobility directly translates into higher productivity, time savings, and income stability.
- **Product design and guidance:** NABARD can support the sector by issuing **guidance notes or pilot frameworks** for financing e-bicycles as non-farm livelihood assets. This would help lenders design standardized loan products aligned with typical use cases such as service delivery, outreach work, informal trade, and micro-enterprise support—without positioning e-bicycles as farm mechanization tools.

Building on the leads obtained from the banking conference/seminar held in Hyderabad, follow-up discussions shall be initiated to assess the feasibility of establishing a Partial Risk Guarantee Fund through NABARD.

Public Sector Banks (PSB): Scaling Micromobility Beyond Pilots

- Offering priority sector or livelihood-oriented loan products, PSBs **reduce interest rates** and broaden eligibility.
- Their extensive branch networks would enable **uniform roll out** across districts and states, reducing regional disparities in access.
- Participation by PSBs will signal that micromobility is a mainstream financial asset class, not an experimental niche.

PSBs will **provide the institutional momentum** required to move micromobility from proof of concept to population scale adoption.

SIDBI: Enabling Innovation and Ecosystem Depth

SIDBI can play a pivotal role in deepening the micromobility finance ecosystem by crowding in private capital, enabling risk-sharing, and supporting innovation in lending models suited to informal workers.

- **Catalytic financial support to lenders:** By providing **credit lines, partial guarantees, or first-loss risk support**, SIDBI can enable NBFCs and fintech lenders to extend credit to informal workers and first-time borrowers without charging prohibitive interest rates. This de-risking role improves lender confidence and accelerates market participation.
- **Promotion of asset-light, cash-flow-linked lending models:** SIDBI can encourage lending structures where repayments are **aligned with daily or weekly earnings** generated from micromobility-enabled work, ensuring affordability and reducing borrower stress while improving portfolio performance.

- **Blended finance and direct funding participation:** In addition to catalytic support via lenders, **wealth funds, climate finance institutions, and Government of India funding windows** may directly co-invest alongside SIDBI through **blended-finance structures, dedicated green or mobility funds, or programmatic credit lines**. Such funding can lower overall cost of capital, extend loan tenures, and position micromobility as a climate-aligned livelihood intervention.
- **Alignment with climate and inclusion priorities:** By anchoring micromobility finance within **green finance, MSME support, and financial inclusion mandates**, SIDBI can help channel domestic and international climate capital toward scalable, employment-generating mobility solutions.

Through these interventions, SIDBI helps ensure that micromobility finance **keeps pace with the informal, high-frequency, and cash-flow-driven nature of user incomes**, while also attracting long-term institutional and climate-focused capital into the ecosystem.

4.2.2. Ministerial Convergence for De Risking, Scale & Standardization:

The integrated approach relies on coordinated alignment across ministries, ensuring electric bicycles are treated not as isolated transport products but as cross sector infrastructure assets.

1. Ministry of Rural Development (MoRD)

- **Anchors alignment with NRLM and SHG livelihoods:** MoRD provides the institutional backbone through **DAY-NRLM**, anchoring e-bicycle deployment within existing SHG-based livelihood planning, credit linkage, and enterprise promotion frameworks.
- **Supports the national Lakhpati Didi mission:** The Ministry is implementing the Government of India’s flagship objective of creating **six crore “Lakhpati Didis” by 2029–30**, defined as SHG women earning **₹1 lakh or more annually** through sustainable livelihoods. This target was announced by the Union Rural Development Minister and builds on the early achievement of the earlier three-crore target under NRLM. Improving women’s access to productivity-enhancing inputs and mobility is central to sustaining and scaling these income gains¹⁶.
- **Facilitates beneficiary identification and aggregation:** Through its extensive SHG network, covering nearly 10 crore women nationwide, MoRD enables beneficiary identification, social validation, peer support, and aggregation, ensuring that livelihood assets are deployed among women with demonstrated repayment capacity and economic activity.
- **Positions e-bicycles as productivity-enhancing tools:** e-bicycles can be positioned as **livelihood enabler** that reduce travel time, expand market access, and enhance daily earnings in rural and peri-urban economies, directly contributing to the Lakhpati Didi outcome of sustained income augmentation rather than one-time asset ownership.

¹⁶ [Centre aims for 6 crore 'Lakhpati Didis' by 2029-30: Shivraj Chouhan | India News - Business Standard](#)

Manufacturers' Viewpoint:

- Provides minimum demand assurance of e-bicycles per annum in discussion with SRLMs, aggregated through central and state-led programs.

Through MoRD, micromobility can be embedded in livelihood planning frameworks, enabling **smoother credit linkage and higher repayment confidence**.

2. Department for Promotion of Industry and Internal Trade (DPIIT):

- Anchors domestic manufacturing through a **dedicated PLI framework** for e-bicycles and critical components, enabling participation of OEMs and MSMEs.
- Strengthens market development by **promoting domestic value-chain integration** for motors, controllers, lightweight frames, and battery systems.
- Builds a robust and quality-assured ecosystem through the **upgradation** of the existing **Bicycle R&D and Testing Centre** at Ludhiana, as a national hub for testing, quality assurance, and innovation.
- Facilitates inter-ministerial convergence to design a suitable **demand-side incentive scheme** for e-bicycles, recognizing their role in livelihoods and last-mile mobility.
- Leads discussions on issuing a **central advisory/notification encouraging all states to explicitly include non-motorised transport (NMT), including e-bicycles, within their respective EV policies**, enabling consistent policy recognition, incentives, and adoption across states.

Manufacturers' Viewpoint:

- Mandates Minimum required certification such as **I-CAR, battery & other component certification** to ensure compliance with prescribed performance, safety, and quality standards for e-bicycles and pass on the benefits of the PLI scheme to the e-bicycle OEMs.

3. Ministry of Road Transport and Highways (MoRTH):

- Facilitates an enabling regulatory and institutional framework to support the scale-up of electric bicycling as a viable mobility option, particularly in rural and peri-urban areas.
- Supports regulatory modernization and safety enhancement through proposed amendments providing for **enhancement of permissible power limits** with appropriate speed capping, along with the **introduction of gradeability requirements**.

4. Ministry of New & Renewable Energy (MNRE):

- Strengthens convergence with renewable energy schemes to scale-up the STREE initiative, particularly through **decentralized, solar-based charging solutions** for rural households and enterprises.
- Promotes women-led workforce participation by adopting Solar Sakhi-type models for **training and skill development** in assembly, installation, servicing, and maintenance of e-bicycles and solar charging systems.

- Enables **structured collaboration** to seamlessly integrate renewable energy solutions with rural mobility and livelihood programs at scale.

5. Rural Technology Action Group (RuTAG):

- Anchors convergence between **RuTAG Smart Village Centers**¹⁷ (RSVCs) and the STREE program to enable scalable deployment of e-bicycles in rural areas.
- Positions RSVCs as local support hubs for STREE by providing repair and maintenance services, training infrastructure, and **market linkages** for women SHG beneficiaries.
- Integrates STREE Energy Champions into **RuTAG's Techpreneurs program**¹⁸ to build village-level technology ambassadors and strengthen grassroots capacities.
- Creates a self-sustaining ecosystem that accelerates e-bicycle adoption while reinforcing RuTAG's mandate of **demand-driven rural technology** dissemination.

6. Ministry of Fisheries, Animal Husbandry & Dairying:

The Department of Fisheries enables targeted **micromobility deployment** within fisheries and aquaculture value chains, particularly in coastal and inland regions.

- Supports short-distance transport of fish catch, ice, feed, and equipment
- Enhances access to nearby landing centers, markets, and aggregation points
- Improves time efficiency and quality preservation for small scale fishers

Through this convergence, electric bicycles are positioned as livelihood infrastructure for fisheries, not merely personal transport, enhancing adoption among fishing communities and cooperatives.

Thus, the ministry can:

- Facilitate an enabling institutional, and programmatic framework to support the adoption and scale-up of micromobility using electric bicycles as a **productive asset across fisheries**, animal husbandry, and dairy value chains, particularly for **last-mile service delivery**, input distribution, and **market linkages in rural** and peri-urban areas.

4.2.3. Role of Foundations and Philanthropic Capital

Foundations and philanthropic institutions support the program primarily through **technical assistance and institutional strengthening**. Their role is most relevant during pilot and early-scale phases, where robust evidence, well-designed systems, and implementation capacity are still being built.

Philanthropic support can finance **feasibility studies, diagnostics, market assessments, and analytical reports** that inform program design and strengthen the case for public and private financing for scale up activities. In addition, foundations can support the establishment

¹⁷ Innovative initiatives aimed at bridging the gap between rural needs and technological advancements. Launched in collaboration with the Government of India, these centers focus on improving access to technology, supporting local manufacturing, and boosting entrepreneurship development.

¹⁸ Part of the RuTAG initiative, which aims to enhance rural technology and entrepreneurship. The program focuses on empowering rural communities by providing them with the necessary tools and technologies to thrive, addressing specific technological challenges, and bridging the gap between existing technologies and rural needs.

and functioning of a **Project Monitoring Unit (PMU)**, including expert staffing, monitoring frameworks, standard operating procedures, and reporting systems. Philanthropic resources are also well suited for **capacity building and awareness initiatives** for CLFs, community cadres, and implementing partners, as well as for **IT and digital enablement**, such as development of program dashboards, **MIS platforms, and monitoring tools (subject to availability of GPS and digitally monitored wallet-based payment systems)**. These systems can be shared with CLFs to enhance transparency, accountability, and decision-making, while enabling a smooth transition toward commercially sustainable and publicly financed models over time.

Key Contributions:

- First loss guarantees or partial risk covers during early phases to crowd in bank lending
- Technical support for development of Project Management Unit at the central level to plan, implement and monitor scale up activities.
- Support for **beneficiary training, awareness, and behavioral adoption**, particularly for women SHG members and informal workers
- Funding monitoring, evaluation, and **repayment performance** studies to generate evidence for scale-up
- Support to ecosystem intermediaries such as CBOs, NGOs, SHG federations, and implementation partners

Illustrative Foundations and Philanthropic Institutions

The following domestic and international foundations are well positioned to support such catalytic roles, based on their existing focus on livelihoods, climate, mobility, financial inclusion, or systems level market building:

Indian Foundations

- **Tata Trusts** – livelihoods, financial inclusion, and sustainability transitions
- **Azim Premji Foundation** – institutional strengthening, rural livelihoods, and systems reform
- **Infosys Foundation** – women empowerment, skilling, and inclusive infrastructure
- **Wipro Foundation** – healthcare, urban sustainability, and community development
- **Mahindra Foundation** – livelihoods, skilling, and last-mile mobility linkages
- **Aga Khan Rural Support Programme (India)** – SHG based livelihoods and rural enterprise support
- **Shakti Foundation** - Clean mobility, climate policy, and market transformation

International Foundations

- **Bill & Melinda Gates Foundation** – livelihood productivity, financial inclusion, and gender outcomes
- **Rockefeller Foundation** – climate resilient livelihoods and systems transformation
- **Ford Foundation** – informal economy workers, urban livelihoods, and inclusion
- **Children’s Investment Fund Foundation (CIFF)** – climate and equity linked interventions
- **William and Flora Hewlett Foundation** – clean energy and market building initiatives
- **Clinton foundation** - Climate action, and public-private partnership models

- **Shell foundation** - Clean energy access, sustainable mobility, and enterprise-led market solutions

These foundations can operate individually or collaboratively, depending on geography, beneficiary profile, and stage of program maturity.

“Philanthropic capital is deployed as catalytic risk mitigation and ecosystem building support, enabling early adoption and evidence generation while preserving a clear pathway toward commercial and institutional sustainability.”

4.2.4. State EV Policy

State EV policies can significantly enhance the affordability and adoption of e-bicycles by providing an enabling fiscal and regulatory framework. Implementing agencies may proactively engage with the respective State EV Nodal Agency to advocate for the **inclusion of e-bicycles** as a distinct category within the State EV Policy.

Such engagement can help ensure that e-bicycles are reflected in **incentive structures, capital subsidy provisions**, and demand-side support mechanisms.

State EV policies can extend targeted purchase incentives and tax & fee exemptions. Collectively, the approach will help reduce the upfront costs for the end-users.

Integration with state-supported financing and charging infrastructure initiatives can further **lower lifecycle costs**. By formally recognizing the livelihood and last-mile mobility role of e-bicycles during policy renewals, states can institutionalize support measures and enable sustainable scale-up of inclusive e-mobility solutions. *A detailed list of states with existing EV policies & support provided for e-bicycles is provided in Annexure.*

4.3. Increasing Awareness

The pilot study identified limited awareness as a critical barrier to the adoption and scale-up of e-bicycles, particularly in rural and peri-urban contexts. While beneficiaries who participated in the pilot demonstrated high acceptance and usage, broader awareness about the productivity, livelihood, and **cost-efficiency benefits** of e-bicycles **remained low** among potential users, community institutions, and local stakeholders. Addressing this gap is essential to generate demand, build confidence, and support sustained adoption at scale.

To mitigate this challenge, the strategy emphasizes structured and targeted awareness campaigns, drawing on the successful outreach models implemented during the pilot phase.

4.3.1. BEE Awareness Campaigns:

The efforts may be aligned with the Bureau of Energy Efficiency’s (BEE) ongoing awareness and outreach initiatives through SDA’s on energy-efficient and clean mobility solutions like “Go-electric Campaigns”.

- **Integrating e-bicycle messaging** within BEE-led campaigns will help position e-bicycles as an energy-efficient, low-carbon mobility solution while reinforcing their role in enhancing livelihoods and last-mile connectivity.

- Such convergence will **ensure consistency** in messaging and maximize outreach through existing national and state-level communication platforms.

4.3.2. Leveraging Pilot Awareness Campaign to Other States:

As part of the expansion plan, new states will be targeted by replicating and adapting awareness campaigns successfully executed in the pilot states. This will include:

- **Community-level demonstrations:** Community-level demonstrations will be used to showcase the practical utility, performance, and economic benefits of e-bicycles in real-life rural and peri-urban settings. Live demonstrations and pilot rides will help address misperceptions around cost, durability, and usability while building trust among potential users. Such demonstrations also create visibility and social acceptance, encouraging peer-to-peer influence and adoption.
- **Engagement with SHGs and Livelihood Institutions:** Structured engagement with Self-Help Groups (SHGs), Village Organizations, and livelihood institutions under NRLM will be central to awareness creation. These platforms will be used to disseminate information on the livelihood enhancement potential of e-bicycles, financing options, and operational models. Leveraging existing institutional networks will ensure deeper outreach, social validation, and faster diffusion of information at the grassroots level.
- **Exposure visits & Peer Learnings:** Exposure visits to pilot states and interaction with early adopters can be organized for SHG members, community leaders, and implementing agencies from new states. First-hand experience of successful use cases will help build confidence, demonstrate income-enhancement outcomes, and reduce resistance to adoption. Peer learning from women e-bicycle users will play a critical role in accelerating behavioral change.
- **Digital and on-Ground Communication Tools:** A mix of digital tools and on-ground communication materials shall be deployed to reinforce awareness messages at scale. This will include short videos, testimonials, IEC (Information, Education, and Communication) material, and local language content disseminated through BEE-aligned awareness platforms, State EV policy, community meetings, and SHG forums. Integrating energy-efficiency and clean mobility messaging will help position e-bicycles as both livelihood-enabling and climate-friendly solutions.

Leveraging learnings from the pilot, these campaigns will focus not only on awareness creation but also on addressing behavioral and informational barriers, thereby enabling a smoother and faster transition during the nationwide scale-up of e-bicycles.

Business Model

Scaling electric micromobility in India requires business models that balance affordability for end users, asset productivity, operational reliability, and institutional risk management. Drawing on learnings from the STREE pilot, national electric mobility programs, and comparable deployment models, this section outlines key business models suitable for phased scale-up across livelihood and service delivery use cases.

4.4. Catalytic support through Viability Gap Funding

Viability Gap Funding (VGF) based support is most effective in livelihood models where **upfront affordability is the primary barrier**, but there is a clear pathway to **income generation and repayment over time**. While women SHGs represent the core and lowest-risk beneficiary segment for such interventions, the same approach can be **systematically extended to other vulnerable groups and first-time users** by appropriately adapting the institutional anchor and risk-management mechanisms.

These models deliver the strongest outcomes when combined with **training, enterprise development inputs, and post-deployment handholding**, ensuring that beneficiaries are able to translate improved mobility into sustainable income gains. Grant support under VGF should therefore be designed to **catalyze initial adoption and market entry**, rather than create long-term dependence, with a clearly articulated transition toward **financial sustainability as livelihoods stabilize and incomes rise**.

In this context, **CSR funding¹⁹ can play a strategic catalytic role** by supporting limited, non-recurring cost elements that lower adoption barriers, such as:

- Partial support toward the **capital cost** for low-income households
- Provision of **safety kits and accessories**, including helmets, lights, and locks
- Establishment of **community-level charging infrastructure**
- Support for **basic maintenance toolkits, periodic service camps, and onboarding support**

Such targeted VGF-type interventions help accelerate uptake, improve safety and reliability, and strengthen early user confidence, while allowing credit-linked and market-based financing mechanisms to take over as the primary mode of asset financing over time.

Types of Companies likely to fund this:

- **Large Indian Corporations** with CSR Programs (Eg: Oil & Gas, Power Sector, Banks, IT and Tech, Manufacturing and automotive)
- **Multinational Companies** operating in India (Eg: Amazon India, Google, Microsoft, Flipkart, Unilever, FedEx)
- **PSUs** (Public Sector Undertakings)²⁰
- **Corporate Foundations** (Eg: Tata Trusts²², Reliance Foundation²³, HCL foundation, Aditya Birla Foundation, Shell foundation, Mahindra Foundation²⁴)

CSR contributions can be routed through state rural livelihood missions (SRLMs) or district-level federations to ensure transparent deployment.

¹⁹ CSR funds can be availed from companies covered under Section 135 of the Companies Act, 2013, particularly corporates with ongoing commitments in livelihood enhancement, women's empowerment, rural development, and environmental sustainability. Funding may be routed through SRLMs, district-level SHG federations, or accredited implementation partners.

²⁰ [NTPC Ltd CSR Activities: Building a Sustainable and Inclusive India - NGO Funding](#)

²¹ [CSR Initiatives in India | ONGC Major CSR projects by Oil & Gas Companies - en - ongcindia.com](#)

²² [Nandini+Sahay.pdf](#)

²³ [Corporate Social Responsibility - Reliance Industries](#)

²⁴ [Nation Builders 2024 - Mahindra: Forging a Resilient Future, Anchoring National Development - The Logical Indian](#)

4.4.1. How to Approach CSR Funding

The PSE CSR Committee may be requested to formally include electric micromobility as a CSR priority area under Schedule VII themes such as environmental sustainability, livelihood enhancement, women empowerment, and climate action. This would enable PSUs to channel a portion of their mandated CSR spend toward deployment of electric bicycles for SHGs, frontline workers, and micro-entrepreneurs.

Ownership Model

- Individual ownership with institutional service agreement: Ownership rests with the user, while **work opportunities and income flows** are anchored by the institution.
or
- Institutional ownership with user assignment: the **institution owns the asset** and **assigns it to a user** for livelihood use. The user does **not own the bicycle initially** but earns through its use.

Unified Grant Structure

Component	Typical Range	Funding Source
Capital grant	~25%	CSR / climate finance / govt schemes
Beneficiary contribution	~15%	Cash / EMI
Debt/Loan	~60%	MFI / bank / cooperative loan

Example: Updated Financial Calculations (Revised Grant and Loan Structure)

Assumptions

- **Electric Bicycle Cost:** ₹35,000
- **Capital Grant (25%):** ₹8,750
- **Beneficiary Upfront Contribution:** ₹5000
- **Loan Amount (P):** ₹21,250²⁵
- **Annual Interest Rate (r):** 11.5%
- **Monthly Interest Rate:** $r = 11.5\% / 12 = 0.96\%$

$$EMI = \frac{P \times r \times (1 + r)^n}{(1 + r)^n - 1}$$

EMI Scenarios Under Revised Loan Structure

Scenario	A	B	C
Loan Tenure (n)	12 Months	15 Months	18 Months
Monthly EMI (₹)	1,883	1,528	1,291
Total EMI Paid (₹)	22,597	22,915	23,237
Total Interest Paid (₹)	1,347	1,665	1,987
Total Beneficiary Contribution (₹) (Upfront + EMI)	27,597	27,915	28,237

²⁵ *Top Indian Companies Leading CSR Practices: Case Studies • CSR Education*

Additionally, a PMC of ~14% would be charged to support program operations such as beneficiary onboarding, monitoring, servicing coordination, IT systems, e-bicycle procurement & deployment and institutional handholding,

Minimum Demand Guarantee for Subsidy Implementation

To ensure effective utilization of subsidy funds and enable efficient program execution, the subsidy support under the e-bicycle initiative is proposed with a minimum demand guarantee. **Under this framework, the subsidy shall be extended subject to a confirmed demand of at least 2,000 demand numbers of from participating states, corresponding to 1,000 electric bicycles. The subsidy of 25% per e-bicycle would be extended for 1000 numbers.**

This minimum demand threshold provides certainty of scale, allowing for streamlined procurement, optimized manufacturing, and efficient logistics planning. It also reduces financial and operational risks for CESL and OEMs by ensuring adequate aggregation of demand before subsidy deployment. From a governance perspective, the approach encourages stronger commitment and preparedness from states, leading to more coordinated implementation and timely rollout.

Overall, the minimum demand guarantee strengthens the viability, cost-effectiveness, and impact of the subsidy program, while laying a robust foundation for scalable and replicable adoption across regions.

4.5. Institutional Fleet Leasing Model (Service-Based Deployment)

In addition to ownership-oriented financing models, a **CLF-anchored institutional fleet leasing model** is proposed for pilots and specific use cases where **individual ownership by SHG members is neither necessary nor optimal**. This model is particularly suited for early pilots, shared-use scenarios, and livelihood activities with predictable and recurring mobility requirements.

Under this approach, **e-bicycles are procured, owned, and managed at the Cluster Level Federation (CLF)**, and deployed to SHG members **as a service rather than as a personal asset**. SHG members access e-bicycles through a **longer-duration rental or assignment model** (weekly, monthly, or activity-linked), enabling usage flexibility while keeping asset management centralized.

Key Characteristics:

- **Asset ownership retained at the CLF level**, with fleets registered and managed as community livelihood infrastructure
- **SHG members access e-bicycles through structured rental or allocation arrangements**, rather than ownership
- **Longer-duration rentals** (e.g., monthly or mission-based assignments) aligned with livelihood activities, outreach responsibilities, or service routes

- **Centralized maintenance, insurance, servicing, and asset replacement** managed by the CLF or designated service partners
- **GPS-enabled tracking** to monitor asset utilization, movement, downtime, and maintenance needs, supporting transparent reporting and operational discipline
- **High utilization across multiple users and shifts**, improving unit economics and reducing per-user cost compared to individual ownership

*This model allows CLFs to function as **community-level fleet operators**, while SHG members benefit from reliable access to mobility without the burden of upfront investment or long-term debt.*

Typical Use Cases:

- **SHG-led service delivery** (health outreach support, nutrition supply chains, community mobilization, local facilitation roles)
- **Zone-based or cluster-based deployments**, where e-bicycles circulate within a defined geography under CLF supervision

Payment Structure:

- Monthly Rental / Subscription Model
- Weekly Pay-As-You-Use Model
- Task- or Activity-Linked Payment Model

5. Implementation Roadmap

The implementation roadmap is designed to enable **rapid but institutionally sound scale-up** of electric micromobility as a livelihood and service-delivery asset within a one-year period. The approach follows a **phased, quarter-wise sequence**, beginning with policy enablement and demand aggregation, followed by procurement and deployment, and culminating in consolidation and transition to regular programmatic scale.

All activities proposed in this roadmap are designed to be executed through **existing government missions, procurement norms, financing channels, and budget heads**, without requiring the creation of new schemes or recurring subsidy commitments.

Implementation Roadmap (2025-26)

#	Activities	Quarter 1			Quarter 2			Quarter 3			Quarter 4		
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	Initiate stakeholder consultations and demand validation												
1.1	Meeting with AICMA for discussion on technical aspects of e-bicycles												
1.2	Meeting with DPIIT for chairing the discussion with OEMs												
1.3	Meeting with MoRD for connecting with SRLMs for demand aggregation												
1.4	Meeting with Department of Post for demand aggregation												
1.5	Follow up from Bihar SRLM for demand confirmation												
1.6	Meeting with CEO, Telangana SERP for ebicycle program in the state												
1.7	Meeting with RuTAG under chairmanship of MoRD												
1.8	Meeting with MoEFCC/CZA												
1.9	Discussion with MoRTH on enhancing motor capacity												
1.10	Meeting with NABARD for developing a rural risk guarantee mechanism												
1.11	Meeting with BEE for awareness campaign												
1.12	Meeting with respective nodal departments of State EV policies												
1.13	Meeting with GATES foundation												
1.14	Meeting with SHAKTI Foundation												

#	Activities	Quarter 1			Quarter 2			Quarter 3			Quarter 4		
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1.15	Meeting with Clinton foundation												
1.16	Meeting with TERI												
1.17	Meeting with the IIT Bombay for report finalization												
1.18	Completion of Jingles												
1.19	Discussion with MoRD on state level workshop for dissemination of pilot outcomes (Bihar, AP and MP)												
1.20	Demand Validation												
2	Vendor onboarding and Procurement												
2.1	RFP publication												
2.2	Bid Process Management												
2.3	Vendor onboarding												
3	Phase I Initial Deployment												
3.1	Deployment of e-bicycles												
4	Measurement, Reporting and Verification (MRV)												
4.1	Performance Monitoring for Phase I deployment												
4.1	Impact Assessment and Documentation for phase I												
4.3	Initiate discussions with the additional states through relevant stakeholders (NRLM, postal, health, education and fishery)												

Quarter 1 (Apr-Jun): Stakeholder consultation and Demand Aggregation

Objective: To lay the foundation for large-scale deployment of e-bicycles by building multi-stakeholder alignment, validating institutional demand, and finalising the technical and policy contours of the intervention.

Key Focus Areas: During the first quarter, the program concentrates on **ecosystem building rather than execution**. Engagements span central ministries, state livelihood missions, technical institutions, financiers, OEM bodies, and philanthropic organisations to ensure that the intervention is technically viable, institutionally anchored, and demand-driven.

Efforts in this phase focus on:

- Validating aggregated demand from SHGs, state missions, and large institutional users
- Aligning technical specifications and performance standards with OEMs and expert bodies
- Exploring financing and risk-mitigation mechanisms with development finance institutions
- Positioning the intervention within national and state policy frameworks (NRLM, EV policies, climate and energy programs)
- Developing communication, knowledge, and dissemination assets to support uptake

Key Outputs

- Consolidated and validated demand pipeline across multiple states and institutional users
- Agreed technical benchmarks for e-bicycles and deployment models
- Policy and financing pathways identified for pilot and scale-up
- Completed analytical and technical documentation to guide implementation
- Stakeholder consensus and readiness to move into procurement

Quarter 2 (Jul-Sep): Market Preparation and Procurement Readiness

Objective: To convert validated demand into an implementable pipeline by completing procurement processes and onboarding qualified vendors.

Key Focus Areas: This quarter shifts from consultation to market engagement and operational preparation. Activities are centred on ensuring that procurement is transparent, competitive, and aligned with program requirements, while also preparing vendors for deployment at scale.

The focus includes:

- Finalising delivery, servicing, and warranty frameworks
- Finalizing and publishing RfP document for procurement of ebicycles
- Bid process management for onboarding vendors

Key Outputs

- Empanelled OEMs meeting program standards
- Clear commercial, delivery, and service arrangements in place
- Procurement and supply chain readiness for deployment

Quarter 3 (Oct-Dec): Deployment and Operational Learning

Objective: The third quarter marks the transition to **on-ground implementation**. Deployment is undertaken in a controlled manner to test operating assumptions, usage patterns, and service models while generating real-world evidence.

Key emphasis is placed on:

- Rolling out e-bicycles across selected geographies and institutions
- Establishing performance monitoring systems (usage, uptime, maintenance, user feedback)
- Capturing early lessons on adoption, affordability, and operational bottlenecks

Key Outputs

- Successful deployment across identified locations
- Initial operational and usage data to inform program refinement
- Identification of implementation enablers and constraints

Quarter 4 (Jan-Mar): Impact Assessment and Scale-Up Preparation

Objective: To assess the outcomes of Phase I, document learnings, and prepare a roadmap for expansion across additional states and sectors.

Key Focus Areas: The final quarter focuses on evaluation, learning, and future readiness. Monitoring data is consolidated into structured assessments to understand impact on livelihoods, service delivery efficiency, and institutional performance.

Key activities include:

- Comprehensive impact assessment and documentation
- Synthesis of operational and policy learnings from pilots
- Engagement with additional states and sectors to build the next deployment pipeline

Key Outputs

- MRV and impact assessment reports for deployment of ebicycles
- Refined deployment and models based on evidence
- Strong justification and roadmap for scale-up
- Expanded interest from new states and institutional partners

This phased implementation roadmap would enable electric micromobility to transition from pilot-based interventions to a nationally scalable livelihood and service-delivery infrastructure within one year, using existing public systems and financial mechanism

6. Resource Planning

The proposed initiative is designed to be implemented through a **lean core team model**, supported by a **time-bound Project Monitoring Unit (PMU)** and strategically engaged consultants and institutional partners, rather than a large permanent staffing structure. This approach ensures agility, cost-effectiveness, and scalability, while leveraging specialized expertise only where required.

The resource plan deliberately mirrors **government program implementation best practices**, where policy ownership, strategic decision-making, and institutional coordination are retained within a compact core team, while **execution monitoring, technical backstopping, and field-level coordination are supported through a PMU and external experts**, without duplicating roles performed by existing public systems.

6.1. Core Team

Overall implementation responsibility will rest with a **central core team of four professionals**, responsible for strategic direction, institutional coordination, and program governance. The core team will provide leadership and oversight, while delegating day-to-day tracking and technical functions to the PMU.

Core Team Roles (Indicative):

1. Program Lead / Director

- Overall program ownership, vision, and accountability
- High-level stakeholder engagement and representation
- Interface with central ministries, state missions, and senior government officials
- Oversight of scale targets, timelines, and outcome achievement

2. Institutional & Government Engagement Lead

- Coordination with NRLM, NHM, Department of Posts, Health department, Ministry of Education and Fisheries
- Follow-up on approvals, advisories, and convergence mechanisms

3. Finance & Partnerships Lead

- Engagement with banks, NABARD, SIDBI, CSR partners, and development finance institutions
- Oversight of financing structures, credit flows, and risk-mitigation arrangements
- Coordination with procurement and demand-aggregation entities

4. Program Operations & Monitoring Lead

- Overall supervision of rollout across sectors and states
- Review and consolidation of reporting, dashboards, and field inputs
- Coordination and performance management of the PMU, consultants, and implementation partners

6.2. Establishment and Scope of the Project Monitoring Unit (PMU)

To support effective execution at scale, a **Project Monitoring Unit (PMU)** will be established as a **dedicated implementation and monitoring support structure**, reporting to the Core Program Team. The PMU will not function as a parallel decision-making body, but as a **technical and operational backbone**, ensuring consistency, transparency, and real-time feedback across geographies.

Scope and Functions of the PMU

The PMU will support the initiative across the following areas:

1. Program Monitoring and Reporting

- Track day-to-day progress of deployments, milestones, and timelines across states and sectors
- Collect, validate, and consolidate MIS data from states, CLFs, and implementation partners
- Prepare regular progress reports and simple dashboards for internal review and stakeholder updates

2. Field-Level Coordination, Implementation and Stakeholder Support

- Support identification and onboarding of suitable NGOs or third-party agencies for state-level implementation
- Coordinate rollout logistics, training plans, and deployment readiness with states and partners
- Support planning and execution of stakeholder consultations, including meetings with ministries, state missions, CLFs, financiers, state EV nodal departments and ecosystem partners
- Facilitate structured feedback from stakeholders to inform program design, mid-course corrections, and scale-up decisions

3. Procurement and Demand Aggregation Support

- Support aggregated procurement processes in coordination with EESL/CESL

- Assist in finalising technical specifications, tender documents, and evaluation frameworks
- Track delivery schedules and coordination with vendors during deployment
- Ensure gender, safety, and inclusion considerations are built into implementation and monitoring

4. Financial Structuring

- Support design and refinement of blended-finance and viability-gap funding structures
- Provide documentation and coordination support for banks, DFIs, and financing partners

5. Data, MIS, and Performance Dashboards

- Set up and operationalise MIS frameworks for the program
- Manage GPS-enabled usage data, payment tracking, and asset performance indicators
- Ensure data quality, consistency, and comparability across states and use cases

6. Monitoring, Evaluation, and Learning (MEL)

- Design outcome indicators related to livelihood income, productivity, and service delivery
- Support independent assessments to evaluate program impact
- Document learnings, challenges, and best practices to inform scale-up and replication
- Prepare learning notes and evidence summaries for stakeholders

7. Knowledge Sharing and System Strengthening

- Develop notes, implementation toolkits, and operational guidelines based on initial deployment
- Support dissemination workshops with states, ministries, and sector partners
- Facilitate knowledge transfer to government and community institutions

8. Awareness and Capacity Building

- Conducting/Organizing Stakeholder Roundtables/Workshops
- Carrying out awareness campaigns
- Organizing training & capacity building camps for state institutions as well as beneficiaries

9. IT & Digital Enablement

- Development of program dashboards, MIS platforms, and monitoring tools (with GPS)
- Digitally monitored wallet-based payment systems

Annexure – Images of the Electric bicycle Distribution in the Pilot States

Electric bicycle Distribution in Kerala



Electric bicycle Distribution in Andhra Pradesh



Electric Bicycle Distribution in Madhya Pradesh - Launch by Hon'ble CM in Madhya Pradesh



Electric Bicycle Distribution in Bihar - Launch by Hon'ble CM in Bihar



Annexure – Testimonials of beneficiaries from STREE Program



Sunita Devi - Muzaffarpur, Bihar

“80% credit of my livelihood expansion goes to e-bicycle. With e-bicycle, I have a sense of ownership as this is the first asset in my name”

“My husband used to get things for me. And now I go there (to the market) myself. Earlier, he had to tell me to get things for the shop. If he didn't have time, then I had to wait for him. But now I get things myself”



Sarita – Seku Kheda, Sehore, Madhya Pradesh



Aishwarya – Palakkad, Kerala

“Earlier, we used to walk and carry goods in a bag to deliver them. But now, when I go to the Panchayat office on the cycle, I put the items in the basket, and when people see it, they ask me what the goods are, what the product is, and then they buy it from me. When we carry it, people on the way, including acquaintances, ask about it when they see it. So, they ask and buy it like that. So, there has been a change in the business.”

“Before I got the cycle, the hard part was going walking, and after that, doing household errands. I had to run faster to complete my works. After receiving the cycle, I feel free, now I can go faster to complete work and come back faster, I don’t feel any difficult, it feels easy and comfort. I deliver the (shop) items to houses when it’s an emergency using the e-bicycle.”



Neelamma – Chinnakurubulapalle, Andhra Pradesh

ANNEXURE – List of State EV Policy

Sr. No.	State	Nodal Agency	Notified	Duration	Incentive for e-bicycles	Link
1	Andhra Pradesh	Department of Industries & Commerce, Government of Andhra Pradesh	Dec-24	5 years	No Incentive	EV Policy 2024-29.pdf
2	Arunachal Pradesh	Department of Power, Govt. of Arunachal Pradesh	Apr-21	untill next update	No Incentive	PSSNAD000132.pdf
3	Assam	Assam State Designated Agency (ASDA)	Sep-21	5 years	No Incentive	electric_vehicle_policy_of_assam_2021.pdf
4	Bihar	Transport Department, Government of Bihar	Dec-23	5 years	No Incentive	Bihar State EV Policy 2022.pdf
5	Chhattisgarh	Transport Department (via State EV Development Corporation, an SPV)	Apr-22	5 years	No Incentive	ChhattisgarhStateEVPolicy2022English.pdf
6	Goa	Goa Energy Development Agency (GEDA)	Apr-21	untill next update	No Incentive	Goa Electric Mobility Promotion
7	Gujarat	Transport Department	Jul-21	4 years	No Incentive	Gj state ev policy_2021 Draft 2.0.4
8	Haryana	New & Renewable Energy Department, Haryana (HAREDA)	Jul-22	5 years	No Incentive	HREP
9	Himachal Pradesh	Himachal Pradesh State Electricity Board (SDMC)	Apr-22	5 years	No Incentive	Himachal Pradesh Electric Vehicle Policy, 2022 NFS
10	Jharkhand	Department of Industries, Jharkhand	Oct-22	5 years	No Incentive	Jharkhand Electric Vehicle Policy 2022.pdf
11	Karnataka	Commerce & Industries Department, Government of Karnataka	Feb-25	5 years	No Incentive	EOG.docx
12	Kerala	Transport Department, Government of Kerala	Mar-19	5 years	No Incentive	kerala-ev-policy.pdf
13	Madhya Pradesh	Urban Development & Housing Department (UDHD), Government of Madhya Pradesh	Apr-25	5 years	No Incentive	Final Draft MP EV policy 2025.pdf
14	Maharashtra	Environment & Climate Change Department, Government of Maharashtra	Jul-21	5 years	No Incentive	E-Vehicle-GR- Eng_22_July-updated.pdf
15	Manipur	Transport Department, Government of Manipur	Aug-22	5 years	No Incentive	Manipur-Electri-Mobility-policy
16	Meghalaya	Transport Department, Government of Meghalaya	Sep-21	5 years	No Incentive	Meghalaya_policy2021.pdf
17	Mizoram	Transport Department, Government of Mizoram	Sep-24	5 years	No Incentive	Electric Vehicle Policy of Mizoram

Sr. No.	State	Nodal Agency	Notified	Duration	Incentive for e-bicycles	Link
18	Nagaland	No Policy			No Incentive	
19	Odisha	Commerce & Transport Department, Government of Odisha	Sep-25	5 years	No Incentive	Draft-Odisha EV Policy,2025.pdf
20	Punjab	Department of Transport	Feb-23	3 years	Passenger: 25% of max sale or ₹4000 per cycle (whichever is lower) Cargo: 33% of max sale price or ₹ 10,000 per cycle (whichever is lower)	Punjab-Electric-Vehicle-Policy-2022.pdf
21	Rajasthan	Transport & Road Safety Department, Government of Rajasthan	Sep-22	5 years	No Incentive	Final REVP 2022.pdf
22	Sikkim	Transport Department, Government of Sikkim	Apr-23	5 years	No Incentive	Sikkim Draft Policy
23	Tamil Nadu	Industry, investment promotion and commerce department	Feb-23	5 years	20% of the cost upto ₹ 5000; Number of vehicle to be incentivized per year 6000	ind e 41 2023.pdf
24	Telangana	Electronics Wing, Information Technology, Electronics & Communications (ITE&C)	Aug-20	10 years	No Incentive	TELANGANA ELECTRIC VEHICLE AND ENERGY STORAGE POLICY 2020-2030
25	Tripura	Transport Department, Government of Tripura	May-22	5 years	No Incentive	
26	Uttar Pradesh	Infrastructure & Industrial Development Department (IIDD), Government of Uttar Pradesh	Oct-22	5 years	No Incentive	UP EV Policy
27	Uttarakhand	Transport Department, Government of Uttarakhand	Dec-19	5 years	No Incentive	Uttarakhand EV Policy
28	West Bengal	Transport Department, Government of West Bengal	Jun-21	5 years	No Incentive	WB EV Policy
1	Andaman and Nicobar Islands	Directorate of Transport, Andaman & Nicobar Administration	Dec-22	5 years	No Incentive	Andaman and Nicobar Islands Electric Vehicle Policy 2022 NFS

Sr. No.	State	Nodal Agency	Notified	Duration	Incentive for e-bicycles	Link
2	Chandigarh	CREST	Sep-22	5 years	Upfront: 25% of Cost of Bicycle; Maximum ₹3,000 for First 25,000 Bicycle purchased during the policy period	crest20-evpolicy22-2009.pdf
3	Dadra & Nagar Haveli and Daman & Diu (merged UT)	No Policy			No Incentive	
4	Delhi (NCT of Delhi)	Department of Transport, Government of NCT of Delhi (EV Cell)	Aug-20	6 years	25% purchase incentive upto ₹5,500 for first 10,000 buyers. Scrapping incentive for old vehicles.	Switch Delhi - The mission
5	Jammu & Kashmir	No Policy			No Incentive	
6	Ladakh	Transport Department, UT Administration of Ladakh	Aug-22	5 years	No Incentive	Ladakh EV
7	Lakshadweep	No Policy			No Incentive	
8	Puducherry	No Policy			No Incentive	

