Terms of Reference
For the hiring of Consultants to develop
"Electric Vehicle Strategy for Bhutan"

1. Background/rationale

The transport sector is one of the largest contributors to greenhouse gas emissions, air pollution, and fossil fuel consumption. As Bhutan strives to uphold its commitments to environmental conservation and carbon neutrality, transitioning to sustainable mobility is critical. With abundant clean hydropower, electric vehicles (EVs) present a strategic opportunity to reduce fossil fuel dependence, curb emissions, and enhance energy security. To accelerate this shift, a well-structured Electric Vehicle strategy is essential to guide policy frameworks, infrastructure development, and investment strategies, ensuring a systematic and sustainable transition to electric mobility.

The purpose of this Terms of Reference (ToR) is to engage a qualified consultant to develop a comprehensive EV strategy for Bhutan, outlining key strategies, policy frameworks, infrastructure needs, and implementation pathways. The strategy will support the government's vision for sustainable mobility while addressing challenges such as charging infrastructure, consumer adoption, and financing mechanisms.

2. Objective

The main objective of this EV strategy is to develop a comprehensive and strategic Electric Vehicle (EV) strategy that provides a clear, phased pathway for the adoption and promotion of electric mobility in Bhutan, aligned with national development goals, carbon neutrality commitments, and sustainable transport objectives, while ensuring economic viability and social inclusiveness.

The strategy will serve as a guiding framework for policy making, infrastructure development, investment planning, stakeholder coordination, and public awareness to support a smooth and inclusive transition toward low-emission transport systems.

This objective will be achieved by:

- 2.1. Assess the current status of EV adoption, infrastructure, and policy landscape.
- 2.2. Identify barriers and opportunities in the EV ecosystem.
- 2.3. Develop projections and scenarios for EV adoption and electricity demand.
- 2.4. Recommend policy, regulatory, and fiscal measures to accelerate EV uptake.
- 2.5. Propose an actionable implementation plan with targets, timelines, and responsibilities.

2.6. Ensure alignment with national priorities such as the Low Emission Development Strategy, NDCs, and economic development goals.

3. Scope of Work

The consultant is expected to undertake, but not be limited to, the following activities:

3.1. Baseline Assessment and Situational Analysis

- 3.1.1. Assess the current status of the EV ecosystem in Bhutan (EV penetration, charging infrastructure, policies, incentives, etc.).
- 3.1.2. Analyze vehicle registration trends, fuel consumption patterns, and transport emissions.
- 3.1.3. Review relevant policies, strategies, and plans (e.g., LEDS, NDCs, national transport policy).
- 3.1.4. Study vehicle fleet composition (breakdown by vehicle type, age, fuel type, ownership - private/commercial/government)
- 3.1.5. Conduct origin-destination surveys for key routes to understand actual travel patterns
- 3.1.6. Conduct energy consumption analysis per vehicle category (kWh/km for different EV types)

3.2. EV Adoption Strategy

- 3.2.1. Provide specific targets with justification for each vehicle category (2W, 4W passenger, commercial vehicles, buses, trucks)
- 3.2.2. Conduct TCO (Total Cost of Ownership) analysis comparing EVs vs ICE vehicles across all categories over 5, 10, and 15-year periods
- 3.2.3. Prioritize high-impact sectors (public transport, govt fleets, taxis, tourism)
- 3.2.4. Provide demand-specific policy instruments with fiscal impact analysis

3.3. Demand Forecasting and Scenario Planning

- 3.3.1. Develop scenarios for EV adoption (short-, medium-, and long-term)
- 3.3.2. Estimate future electricity demand, charging infrastructure needs, and grid impact under each scenario.
- 3.3.3. Consider socio-economic impacts, such as job creation, fuel import reduction, and emission savings.

3.4. Charging Infrastructure Plan

- 3.4.1. Conduct actual load curve analysis showing hourly/daily charging patterns

3.4.2. Specific site assessments for at least 50 priority charging locations (with GPS coordinates, grid connection capacity, land ownership status)
3.4.3. Power requirement calculations per location (kW capacity needed)
3.4.4. Grid impact studies for each district, identifying transformer upgrades needed
3.4.5. Cost estimates per charging point, including civil works, equipment, and grid connection
3.4.6. Specify charger-to-vehicle ratios for different scenarios (urban vs rural vs highway)
3.4.7. Recommend a phased plan for EV charging network expansion (including fast/slow chargers and geographic coverage).
3.4.8. Define technical standards for charger types (AC/DC), grid integration, and renewable energy coupling.
3.4.9. PPP frameworks, tax and tariff structures, and operator incentives.

3.5. Energy & Grid Integration
3.5.1. Assess hydropower capacity to support EV charging demand.
3.5.2. Propose smart charging solutions (off-peak incentives, V2G potential)

3.6. Battery Management & Circular Economy
3.6.1. End-of-life battery management strategy
3.6.2. Battery recycling/repurposing framework
3.6.3. Second-life battery applications (grid storage)
3.6.4. Extended producer responsibility mechanisms

3.7. Import & Standards Framework
3.7.1. Recommended vehicle standards (safety, battery specifications etc.)
3.7.2. Import regulations and certification requirements
3.7.3. Quality control mechanisms
3.7.4. Ban/phase-out timeline for ICE vehicles

3.8. Behavioural & Market Analysis
3.8.1. Consumer perception study (willingness to pay, range anxiety, charging concerns)
3.8.2. Market readiness assessment by vehicle segment
3.8.3. Financing barriers and banking sector readiness
3.8.4. Insurance framework for EVs

3.9. Financial & Economic Analysis
- 3.9.1. Government revenue impact analysis (loss of fuel taxes, customs duties)
- 3.9.2. Macroeconomic impact on foreign exchange savings, import bill reduction
- 3.9.3. Investment requirement breakdown by year and source (government, private, development partners)
- 3.9.4. Cost-benefit assessment of EV transition (savings on fuel imports, health benefits).
- 3.9.5. Taxation on vehicle import, etc.
- 3.9.6. tax revenue impact to govt.
- 3.9.7. Financing mechanism designs with implementation details on the subsidy administration system, Green loan schemes with banking partners, PPP models, and carbon finance opportunities
- 3.9.8. Recommend revisions to vehicle import taxes and propose incentive measures to promote EV adoption

3.10. Implementation strategy
- 3.10.1. Prepare a comprehensive, phased EV strategy (e.g., 2025–2050), outlining:
- 3.10.2. Vision and guiding principles
- 3.10.3. Strategic Goals & Targets
- 3.10.4. Action plan with timelines, milestones, and KPIs
- 3.10.5. Investment needs and funding mechanisms./Investment & Funding Strategies
- 3.10.6. Risk Mitigation *(Barriers: High upfront costs, grid capacity, public resistance, & Solution: Subsidies, phased grid upgrades, awareness campaigns)*

3.11. Stakeholder Mapping and Consultation
- 3.11.1. Identify key stakeholders (government, utility providers, transport operators, private sector, financial institutions, civil society).
- 3.11.2. Conduct consultations to understand needs, barriers, and opportunities related to EV adoptions

3.12. Monitoring & Evaluation Framework
- 3.12.1. Define KPIs (EV sales, emission reductions, charging stations deployed, etc.).
- 3.12.2. Recommend a governance structure for strategy execution.
- 3.12.3. (M&E template)

3.13. Post-sale service

3.13.1. The consultant shall design or recommend a comprehensive post-sale service framework to ensure that EV users in Bhutan are not left with vehicles that cannot maintain or repair a common barrier in emerging EV markets. The framework should clearly outline the roles and responsibilities of dealers, importers, and EV sellers in providing reliable after-sales services, including:

3.13.1.1. Maintenance and repairs
3.13.1.2. Warranty enforcement
3.13.1.3. Availability of spare parts
3.13.1.4. Customer support or helpdesks
3.13.1.5. Training of local technicians
3.13.1.6. Minimum service standards and response

4. **Deliverables**

4.1. Inception Report

4.1.1. Detailed work plan, methodology, timelines, and stakeholder engagement strategy.

4.2. Baseline Assessment Report

4.2.1. Situational analysis of Bhutan's current EV ecosystem (policy, market, infrastructure, emissions, etc.) and identification of key data gaps and challenges
4.2.2. GIS maps of transport corridors and demand hotspots
4.2.3. Emission inventory with methodology documentation
4.2.4. Gap analysis matrix (current vs required infrastructure)

4.3. Stakeholder Consultation Report

4.3.1. Summary of consultations conducted with relevant stakeholders across government, private sector, and civil society.

4.4. Demand Forecasting & Scenario Analysis Report

4.4.1. Projections for EV growth, electricity demand, charging infrastructure needs, and emissions impacts, multiple adoption scenarios (e.g., conservative, moderate, ambitious).

4.5. Draft EV Strategy

4.5.1. Clear vision, strategic goals, targets, and timelines for EV adoption in Bhutan
4.5.2. Policy recommendations, infrastructure strategy, institutional framework, and financing options
4.5.3. Phased implementation plan with key performance indicators (KPIs)

4.5.4. Implementation matrix with specific actions, responsible agencies, budget estimates, timelines, dependencies, risks
4.5.5. Financial, emission and other models (Excel or R or Python Script) showing year-by-year investment needs and funding sources
4.5.6. Site-specific infrastructure rollout plan

4.6. Validation Workshop Materials
4.6.1. Presentation slides and summary notes for stakeholder validation workshop(s)
4.6.2. Incorporation of feedback for strategy refinement.

4.7. Final EV Strategy Report
4.7.1. Incorporating feedback from stakeholders and the client
4.7.2. Ready for publication and dissemination

4.8. Policy Brief and Executive Summary
4.8.1. Concise summary of key findings, recommendations, and proposed actions for policy-makers and public dissemination

4.9. Post-Delivery Support
4.9.1. 2 workshops to present findings to stakeholders
4.9.2. Training session for project staff on using models/tools developed

All deliverables shall be submitted in both editable formats (Word, Excel, PowerPoint) and finalized PDF versions. In addition, the consultant shall submit working sheets for all the analysis carried out. The consultant shall work closely with the Project Management Unit (PMU) team throughout the assignment and present findings and recommendations to the client at agreed milestones. The final report shall document key findings and serve as a benchmark for measuring the outcomes of project interventions.

Further, the consultant shall;
a. Not submit generic international case studies without Bhutan-specific adaptation
b. Not use regional average data where Bhutan-specific data is available
c. Not provide recommendations without cost-benefit justification

5. **Methodology**

In addition to reviewing existing data and literature, the consultant is expected to identify data gaps and, where necessary, undertake primary data collection, including surveys, interviews, or field assessments. This will ensure a realistic and reliable EV Strategy grounded in local conditions and user behavior. The consultant shall take responsibility for designing appropriate data collection

tools and methodologies to fill critical information gaps related to EV usage patterns, charging needs, consumer preferences, and infrastructure readiness.

Primary data collection shall fulfil the following requirements;

i. Minimum 500 vehicle owners survey (stratified by vehicle type and region)
ii. Traffic counts on at least 20 major routes
iii. Electricity consumption patterns from BPC for transport planning
iv. Stakeholder interviews of minimum of 30 (government, dealers, fleet operators, financial institutions)
v. Provide validated sources of data, land, power grid etc., used for all recommendations on charging infrastructure locations.
vi. All data collection tools, raw data, and analysis files must be submitted

Site visits are recommended to gain an accurate understanding of ground realities and ensure the proposal addresses actual on-site needs.

All analysis in this assignment must be replicable (provide models, assumptions, data sources), and the client shall have the right to reject deliverables if quality standards are not met.

6. **Required Consultancy Team/Team Composition, Qualifications and Experience**

#	Role	Qualifications	Experience
1	Team Leader (EV Policy Expert)	Master's degree or higher in Public Policy, Transport Planning, Environmental Studies, or a related field	- Minimum 7 years of experience in policy development, preferably in sustainable transport or electric mobility. - Proven experience of at least 2 similar assignments completed - Strong stakeholder coordination and project management skills
2	Transport Planner / Mobility Expert	Degree in Transport Engineering, Urban Planning, or related field.	- At least 7 years of experience in transport system analysis, scenario development, and infrastructure planning. - Experience with sustainable mobility planning and modal shift strategies.

3	Electrical / Energy Systems Engineer	Degree in Electrical Engineering, Energy Systems, or a related discipline	- At least 5 years of experience in grid analysis, charging infrastructure planning, and renewable energy integration. - Knowledge of power demand modelling and grid-readiness for EVs. - Has experience in designing charging infrastructure
4	Financial / Investment Analyst	Degree in Finance, Economics, Business Administration, or a related field.	- At least 5 years of experience in cost-benefit analysis, investment planning, or financing models for infrastructure. - Experience working with PPPs, donor-funded projects, or government incentive schemes is preferred.
5	Environmental / Climate Specialist	Degree in Environmental Science, Climate Policy, or related area.	- Experience in emissions modeling, environmental impact assessments, and alignment with NDCs and national climate goals.
6	Social/Communications/Public Engagement Specialist	Degree in related areas.	- Experience in awareness campaigns, stakeholder engagement, and knowledge dissemination. - Ability to design strategies for public outreach and acceptance of EV adoption.

7. **Duration/timeline and Milestones**

The consultancy will be for a maximum of 9 months.

8. **Payment Schedule**

#	**Deliverables**	**Description**	**Deadline**	**% of payment**
1	Inception Report	Finalized work plan, methodology, timeline, and stakeholder engagement	Within 1 month after acceptance of the report.	10%

		strategy.		
2	Baseline Assessment & Stakeholder Consultation Report	Situational analysis of Bhutan's current EV ecosystem (policy, market, infrastructure, emissions, etc.) and identification of key data gaps and challenges. Includes a summary of stakeholder consultations from government, private sector, and civil society	Within 2 months after acceptance of Inception Report	20%
3	Demand Forecasting & Scenario Analysis Report	Projections for EV growth, electricity demand, charging infrastructure needs, and emissions impacts. Includes multiple adoption scenarios (e.g., conservative, moderate, ambitious).	Within 1 month after the acceptance of Baseline Assessment Report	20%
4	Draft EV Strategy Report	Presentation of a comprehensive strategy including policy recommendations, infrastructure development plan, and phased implementation strategy.	Within 1 month after acceptance of Scenario Analysis Report (i.e., within 4 months from commencement)	20%
5	Final EV Strategy Report, Executive Summary & Policy Brief	Presentation of the Final report incorporating stakeholder and client feedback. Includes visual summaries, infographics, timelines, and a concise policy brief with key findings and recommendations for public dissemination.	Within 1 month after acceptance of the Draft Strategy.	25%
6	Post-deliverables	Complete the two workshops to present findings to stakeholders, and train project staff on using the models/tools developed	Within 1 month of completion of workshops and training	5%

9. **Reporting**

The consultant shall report to the Transport Planning and Development Division under the Department of Surface Transport, Ministry of Infrastructure and Transport and shall maintain regular communication with the Division. The division will serve as the primary point of contact for all coordination, review, and approvals related to the assignment.

10. **Evaluation Criteria**

The EoI will be shortlisted based on the following criteria:

Sl. no.	**Criteria**	**Descriptipns**	**Weightage**
1	The firm's experience in similar work	Relevant experience in EV strategy or similar projects.	35%
2	Team Qualifications	Qualifications and experience of key experts relevant to the assignment.	35%
3	Methodology & Approach	Clarity, feasibility, and relevance of the proposed approach and work plan.	30%

11. **Shortlisting**

Based on the proposals received from firms, only the top 5 applicants will be shortlisted. The shortlisted candidates will then be invited to submit a detailed request for proposal (RFP). Following evaluation of the RFPs, a contract will be awarded to the selected firm.

12. **Contact point:** For any clarifications, contact at unorbu@moit.gov.bt or tsheringdendup@moit.gov.bt and phone:+97577364637/+97517941716 during office hours.