The Low Emissions Development Strategies Global Partnership (LEDS GP) promotes low emission development and assists in moving towards low carbon economy. Asia LEDS Partnership (ALP), lying under the ambit of LEDS GP with the same objective, supports several developing countries towards clean transport policies and projects.

This case study discusses the framework recommended for developing an electric mobility policy in Sri Lanka by Asia LEDS Partnerships and supported by Swiss Agency for Development and Cooperation. The case study highlights the existing scenario of mobility sector including electric mobility in Sri Lanka, initiatives taken by the government pertaining to electric mobility, challenges and activities undertaken to develop the framework for Sri Lanka. This framework is expected to help Government of Sri Lanka to position itself towards clean mobility in its future programs.

Key Messages

- Sri Lanka is highly dependent on road transport which caters to 93% to 97% of passenger and goods movement in the country.
- Transport sector consumes 69% of the oil and petroleum products and contributes to 16% of total emissions with almost 43% rise in GHG emissions from 1990 to 2011.
- The Government of Sri Lanka has identified transport as a priority sector in its Nationally Determined Contributions (NDCs) and Nationally Appropriate Mitigation Actions (NAMAs), and plans to strengthen its standalone initiatives to control emissions.
- A Framework for Electric mobility policy was prepared and recommended by ALP to guide the Government of Sri Lanka towards a comprehensive long-term holistic vision for an EV policy through set of processes.

Ministry of Transport & Civil Aviations is taking initiatives to address transport issues and developing the framework for electric mobility policy is one step towards controlling emissions from transport sector.

Mr. Thilakratne Banda, Additional Secretary, Ministry of Transport & Civil Aviations, Sri Lanka
The recommended framework focused on awareness and capacity building through stakeholder consultation, meetings and workshops. Feedbacks were also incorporated in the document.

The main considerations in the framework include promoting public and private EVs, encouraging renewable energy, EV deployment on geographical basis, encouraging EV manufacturing units, creating supporting infrastructure, generating jobs and funding options.

The Government of Sri Lanka should create general awareness, build capacity, develop a long term action plan for EVs, initiate pilot projects, document and analyse the results and further scale them up.

Context

Dependence on Road Transport: The people of Sri Lanka largely rely on road transport, both private and public. The country has the highest road density in South Asia. The roads cater to 93% and 97% of the passenger and goods movement, respectively. The modal split is 52% motorcycles, 21% intermediate public transport like Auto-rickshaws, cycle rickshaws etc, 12 private cars and only 1% public buses.

Rising Emissions: As a result of the high dependence on road transport, and the growing population - estimated to be 21.2 million at present, and growing at 0.96% - the country’s carbon footprint is also rising; its GHG emissions jumped 43% from 1990 to 2011. The transport sector contributes just 16% of these emissions, but is responsible for 40% of the total energy-related emissions in Sri Lanka, because of the high volume of traffic in its major cities. The sector also consumes 69% of the oil and petroleum products in the country.

Mitigating Measures: In recognition of these issues, the Government of Sri Lanka, in its Nationally Determined Contributions (NDCs)¹ and Nationally Appropriate Mitigation Actions (NAMAs), has identified transport as a priority sector and plans to develop and strengthen its standalone initiatives to control emissions. It has taken a few measures to promote electric mobility in the country, such as offering tax rebates for the purchase of electric vehicles (EVs), making plans to buy electric buses, setting

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up a few charging stations, and developing policies to support a transition to clean fuels.

**Need for Framework:** However, a comprehensive long-term holistic vision for an EV policy is still absent. Therefore, a document with legal backing will help to bring together all aspects related to electric mobility and show the way forward. The framework, prepared by the ALP, aims to guide the Government of Sri Lanka by suggesting a set of processes towards and to help organize all standalone efforts under one common agenda.

**Framework Preparation**

**The Stakeholders:** As a first step, a set of stakeholders representing the government, the private sector, academia and the NGO sector were identified in consultation with the Ministry of Transport and Civil Aviation (MTCA). The Government of Sri Lanka, in the past has been exploring opportunities for shifting from fossil fuel based transport towards energy based transport system. Various initiatives such as policies and strategies have been formulated along with studies/researches to determine the feasibility to initiate electric mobility in Sri Lanka. The Ministry of Transport & Civil Aviation, Government of Sri Lanka in line with these developments sought assistance from Asia LEDS partnership in developing the framework for Electric Mobility Policy.

The government representatives included senior officials and project directors from government ministries and departments such as the MTCA; Sri Lanka Sustainable Energy Authority; the Ministries of Megapolis and Western Development (MMWD) and Mahaweli Development and Environment (MMDE); the National Transport Commission (NTC); Department of National Planning; Sri Lanka Transport Board; Railway Board; Sri Lanka Police; Department of Motor Traffic; Colombo Municipal Corporation (CMC); and Ceylon Electricity Board. There were representatives from the city corporations of Colombo and Kurunegala. Among others were representatives from the Electric Vehicle Club, an NGO called Janathakshan, a private consultancy called Climate SI, and the University of Moratuwa.

**Research, Workshops & Consultations:** Reports and studies - both country-specific and from across the globe - were studied to understand the status of electric mobility. In addition, one-to-one meetings were held with officials from the ministries of Transport and Environment, NTC and State Transport Boards, besides sector experts to get feedback and information.

The ALP provided subnational support to the MTCA by conducting two consultation workshops on electric mobility, where it presented its findings and approaches for developing the framework.

At the workshops, the team discussed the emissions scenario in the transport sector at the global, regional and country levels, the different commitments made at national levels to control emissions in various sectors, the current status of mobility and electric mobility in terms of modal split and travel pattern, along with the policies pertaining to/promoting electric mobility in Sri Lanka. The participants were asked for their feedback on Sri Lanka’s plans regarding preferred geographies for promoting electric mobility, shift towards indigenous energy

National Planning Department is also of the view that public transport in the country needs to be strengthened and for future they are focussing on the idea to improve first and last mile connectivity through electric vehicles. He said that LRT is a good option but people need some mode to reach to the LRT and probably that last mile connectivity through auto rickshaws/motorcycles leads to heavy emissions and hence such modes should be converted into electric.

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**Mr. Thennakoon T.M.D.P,** Assistant Director, National Planning Department, Sri Lanka
sources, provision of charging infrastructure and manufacture of vehicles, besides carrying out of research activities, provision of employment opportunities, institutional setups and funding sources, among others.

The Partnership on Sustainable, Low Carbon Transport (SLOCAT) and National Renewable Energy Laboratory, USA (NREL) provided technical inputs to the draft framework, in their role as members of the Transport Working Group of the LEDS Global Partnership.

**Stakeholder Feedback:** The stakeholders updated the ALP team about the studies undertaken in Sri Lanka on electric mobility, which suggested promotion of the use of electric vehicles to strengthen last-mile connectivity, and plans for phasing out conventional vehicles and for reusing batteries, among others. They also emphasised the need to create awareness about electric mobility and about strengthening public transport in Colombo and its surrounding areas.

**High-Impact Activities**

The ALP has proposed the following high-impact activities for the framework, following an analysis of various case studies and best practices from across the world, and after receiving feedback from the stakeholders. Secondary research was the main source of information specific to Sri Lanka, including studies and reports, besides one-to-one meetings and consultations with stakeholders.

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Ministry of Transport should initiate formation of presidential task force which will also be a source of funding and will help to bring in investors in Sri Lanka to manufacture and promote electric mobility.

**Mr. Bangsa Jayab,** Chairman,  
Sri Lanka Sustainable Energy Authority, Sri Lanka
The main considerations in the framework are:

**EV Deployment on the basis of Geographical Spread**
The framework suggests three approaches based on geographical spread for EV deployment: cluster-based, project-based and corridor-based deployment.

- **Cluster-based EV deployment** would cater to the demands of an urban area along with its urban agglomerations. This is considered to be a feasible option as the distances within urban areas are short, and the major urban areas in Sri Lanka are located in a cluster near Colombo.

- **Project-based deployment on a pilot basis** should be planned in different parts of the country, and might be best suited to cities with large populations such as Colombo, Kandy and Galle.

- **Corridor-based deployment** will strengthen intracity connectivity if EVs can cover larger distances. This requires efficient supporting infrastructure, such as trains with overhead wires, elevated electric Light Rail Transit (LRT) that connect suburbs, and trolley buses.

**Promote Private and Public EVs**
Motorcycles are the most preferred mode of transport in the country - 52% of the total modal split - followed by three-wheelers at 21%, private cars at 12% and buses at just 1%. The framework suggests separate approaches for different modes:

- **Private vehicles (two-wheelers and four-wheelers)** - Since two-wheelers dominate the roads, the government should promote electric two-wheelers by offering incentives for their purchase and use, and also allow hail-and-ride schemes for private EVs.

- **Intermediate public transport (IPT)** - IPT is a mode of transport which fills the gap between public
transport and provides last mile connectivity to users. These include auto rickshaws, autos, rickshaws, e-rickshaws, etc. The government should provide incentives to encourage the shift to EVs by offering rebates on road tax and registration fees and by increasing the tax on internal combustion engine (ICE) vehicles.

Public transport - The government wishes to strengthen public transport even though it is not a preferred option as of now. It should, therefore, plan to replace intra-city buses with electric buses, instead of intercity buses, due to the range limitation of electric buses. The target of establishing LRT operations by 2025 would also increase the demand for feeder buses. Urban local bodies should be encouraged to initiate integration of EVs as a modal option to help the people shift from private vehicles to public transport.

**Move towards Renewable Energy**
Sri Lanka depends greatly on imported fuel to meet its primary energy demand. The expenditure on fuel imports grew by 30% to touch USD 3.428 million in FY 2017, thus increasing the economic burden. In 2017, Sri Lanka imported 1.6 million tonnes of crude oil, with 70% of the demand coming from the transport sector.

In consultation with the Ceylon Electricity Board and Sri Lanka Sustainable Energy Authority, the framework suggests setting up of renewable energy-based charging stations to promote the use of EVs, thus reducing the dependence on fossil fuels in the transport sector.

**Set Up EV Manufacturing Units**
The country does not have a vehicle manufacturing industry as of now. There are only units making spare parts, assembling vehicles and doing repair and maintenance of ICE vehicles. Therefore, it is high time the national government strategized their vision. Currently, all EVs are imported and a majority of them are used vehicles. The import duties on EVs are high, though far less than that imposed on petrol vehicles. Additionally, imported EVs need battery replacement, with new ones being expensive. In addition, there are no e-battery recycling facilities. A few private companies are planning to set up EV manufacturing units. The government should leverage such opportunities and finalize its future plans.

**Create Network of Charging Facilities**
Currently, there is minimal infrastructure for the charging of EVs in Sri Lanka. Therefore, the framework suggests the development of public and private charging facilities. The government should take steps such as updating of the building byelaws relating to intercity and intra-city charging needs, development of tariff plans and specifications of charging stations, locations and guidelines.

**Recycle & Switch to Lithium-Ion Batteries**
There are no EV vehicle battery recyclers in Sri Lanka, and their disposal is a major concern for the government. Sri Lanka is a signatory to the BASEL convention, and detailed regulations and policies are required for tracking the import, recycling and disposal of EV batteries. The framework suggests recycling of the existing stock of lead acid batteries, and the use of li-ion batteries for EVs in the future, as these would be more efficient, require less maintenance and would last longer on a single charge. Restrictions and heavy penalties on disposal of batteries on landfills/ disposal sites need to be enforced.

**More Jobs, Better Skills**
The framework suggests that the employment structure would not be adversely affected by the introduction of EVs. A direct and positive impact on the workforce participation is anticipated with increased employment opportunities in the sectors of electricity, manufacturing, transport, research and development. The framework also suggests capacity-building initiatives to improve the skills and knowledge of the people for better employment opportunities in the EV sector.

**Widen Funding Net**
The framework proposes project development, preferably through public-private partnerships, to reduce risks and improve overall returns. It also suggests exploring funding opportunities through grants, assistance from bilaterals/ multilaterals, foreign commercial borrowings and local commercial banks, among others.
**Key Benefits**

The framework provides guidance on reducing GHG emissions and energy consumption, creating liveable cities and promoting sustainable transport systems, in line with the commitments made by the national government under the UN Framework Convention on Climate Change, Paris Agreement, National Adaptation Plan, National Adaptation Programme of Action on Climate Change, Nationally Appropriate Mitigation Action and Nationally Determined Contributions.

The adoption of the framework’s proposals might lead to the following benefits:

- Development of public charging stations would encourage a shift to EVs.
- Prioritisation of electrification of public transport along with shared transport will help to shift the public preference from private transport to public transport.
- The manufacture of EVs in the country might become preferable because import duties and related costs would no longer apply, and it would also generate employment.
- New guidelines and regulations can help to implement a recycling plan for EV batteries.

**Next Steps for Government of Sri Lanka**

Choose the right technology: Electric mobility is at a very nascent stage in Sri Lanka and would involve a few risks such as technological risks, target-related risks and decision-related risks. The EV framework suggests that technology is changing at a fast pace, and the government should, therefore, be cautious and formulate a clear strategy on choosing the most appropriate technology.

**Prioritise Targets:** It is very critical to understand and prioritise global targets vs. national targets. The government should clearly underline national priorities that the country would be able to commit to and deliver.

**Generate Awareness:** While an efficient public transport system is a necessity, it is also important to improve the efficiency of all other transport vehicles, which would ultimately help to reduce emissions and improve air quality and health.

**Build Capacity:** hold consultations, meetings and workshops for stakeholders to build capacity and to get feedback on EVs; organize low-cost training programs on EV repairs to improve employment opportunities.

**Promote EVs:** Sri Lanka has taken initiatives including electric vehicle deployment, development of charging infrastructure, subsidy plan for EVs and plans/targets for procurement. However, more needs to be done. Tax incentives and other measures could be offered to promote EVs in the country to reduce dependence on fossil fuels. A 5-10 year action plan could be developed in this connection.

**Initiate Pilot Projects & Scale Up:** introduce pilot projects that would help the government to assess their acceptance by the people. Gradual scaling up of the project will help to gain the approval of stakeholders from other areas.

**Analyze & Document:** showcase the successes and failures of the pilot initiatives to scale up the process.

**Form Policy & Regulatory Framework:** A legal backing in terms of a detailed policy will help to promote electric mobility in Sri Lanka.

**Overcoming Challenges**

Since electric mobility is at a very nascent stage in Sri Lanka and would involve few risks such as technological risks, target related risks and decision related risks. The framework suggests that the change in technology is happening at a very fast pace therefore the government should be cautious while choosing the technology and formulate a clear strategy on which best technology should be adopted and promoted. Secondly, it is also very critical to understand and priorities global targets vs national targets. The government should draw a clear line on national priority which the country would be able to commit and deliver.
References


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