



CLIMATE CHANGE TECHNOLOGY BRIEF

ELECTRIC MOBILITY

TECHNICAL DESCRIPTION

A battery electric vehicle (BEV) is a type of electric vehicle (EV) that exclusively uses chemical energy stored in rechargeable battery packs, with no secondary source of propulsion (e.g. hydrogen fuel cell, internal combustion engine, etc.). BEVs use electric motors and motor controllers instead of internal combustion engines (ICEs) for propulsion, as is the case for fossil-fuel powered vehicles. They derive all power from battery packs and thus have no internal combustion engine, fuel cell, or fuel tank. BEVs can include motorcycles, bicycles, scooters, skateboards, railcars, watercraft, forklifts, buses, trucks, and cars. These are currently applicable to Trinidad and Tobago with the exception of railcars.

CLIMATE RATIONALE OF THE TECHNOLOGY

Emissions from the transport sector has increased by orders of magnitude over the past two decades and has been targeted for action in Trinidad and Tobago's Carbon Reduction Strategy (CRS) and Nationally Determined Contribution (NDC) under the Paris Agreement. It is estimated for an optimistic economic growth scenario under a business-as-usual (BAU) trajectory that GHG emissions for transport could grow to as much as 144% from 2018 figures up to 2050. Deploying electric mobility charged with renewable energy would achieve the policy objectives outlined in the National Climate Change Policy (NCCP), the achievement of the country's NDC as well as contributing to the policy objective of absolute zero emissions in the transportation sector. Additionally, it would facilitate the phase out of internal combustion engine vehicles powered by fossil fuels in keeping with global trends and would avoid Trinidad and Tobago being locked-in to old technology.

AMBITION OF THE TECHNOLOGY

SCALE FOR IMPLEMENTATION AND TIME-LINE

It is intended that the transfer and diffusion of the technology will be done over a phased period in tandem with consumer uptake, estimated at 5 years. This will depend on various issues related to consumer confidence such as technical backstopping and maintenance, as well as public awareness and education. The target populations are the commuting public, whether those that are private vehicle owners or users of public transportation. The following actions have been identified to this end:

1. Adopt an e-mobility policy to establish the policy and legal framework and enabling environment;
2. Identify suitable sites for the establishment of charging stations, including those charged with renewable energy, particularly those in rural areas;
3. Develop a training programme in collaboration with the technical universities for EV maintenance in order to inspire consumer confidence and create green jobs;
4. Identify funding sources and opportunities for financing charging stations with renewable energy;
5. Develop a comprehensive public awareness and education programme.



EXPECTED IMPACTS OF THE TECHNOLOGY

Mitigation Potential	Accumulated Average of 1,745,407 tCO ₂ e per annum
Barriers	<ul style="list-style-type: none"> - Capital Cost - Lack of financial incentives or policy regulatory requirements - Low cost of gasoline limiting uptake of technologies
Advantages/opportunities/Co-benefits	<ul style="list-style-type: none"> - Air quality improvement that implies health benefits and less public health costs. - More reliable public transport system - Job Creation - Capacity building

POLICY ACTIONS FOR TECHNOLOGY IMPLEMENTATION

EXISTING POLICIES IN RELATION TO THE TECHNOLOGY

The National Climate Change Policy (NCCP), the Carbon Reduction Strategy (CRS), and the Nationally Determined Contribution (NDC) and its Implementation Plan form the existing policy framework that facilitates electric mobility. The NCCP's policy objectives include, inter alia, low carbon development that includes all sectors such as transportation. The CRS identifies mitigation actions in the transportation sector including electric vehicles, and the NDC and its Implementation Plan details specific actions, costs and greenhouse gas mitigation estimates.

PROPOSED POLICIES TO ENHANCE TECHNOLOGY IMPLEMENTATION

As Trinidad and Tobago continues to institute appropriate measures to catalase the deployment of EVs, an overarching policy framework is required to cover all aspects. Accordingly, the development of a comprehensive policy framework to inform any necessary legislative changes that will facilitate EV deployment is a necessary first step, given that legislative amendments and developments follow the process of establishing a policy basis first. The first step is to develop an e-mobility policy in consultation with stakeholders that would set the policy framework in order to facilitate the necessary actions, including legislative changes that may be required.

COSTS RELATED TO THE IMPLEMENTATION OF POLICIES

Costs will be estimated at various stages of implementation such as for solar charging stations.



USEFUL INFORMATION



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LINKS TO TNA REPORTS

National Climate Change Policy:

https://www.preventionweb.net/files/60670_trinidadandtobagoclimatechangeepolic.pdf

Carbon Reduction Strategy:

https://www.planning.gov.tt/sites/default/files/CRS%20_Strategy_Final.pdf

Nationally Determined Contribution:

<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Trinidad%20and%20Tobago%20First/Trinidad%20and%20Tobago%20Final%20INDC.pdf>

Nationally Determined Contribution Implementation Plan:

https://transparency-partnership.net/system/files/document/200114_GPD_Trinidad_and_Tobago_RZ.pdf

Technology Needs Assessment: https://tech-action.unepdtu.org/tna-database/?fwp_tna_database_type=tna_report&fwp_tna_reports_region=trinidadandtobago

