



ZERO EMISSIONS, FULL CHARGE: PAVING THE WAY FOR ELECTRIC VEHICLES IN ST. KITTS AND NEVIS

TECHNOLOGY DESCRIPTION

TECHNICAL DESCRIPTION

Hybrids and electric vehicles (EVs) are essential components of a sustainable transport system that reduce dependence on fossil fuels and minimize greenhouse gas (GHG) emissions. Hybrid vehicles combine a conventional internal combustion engine (ICE) with an electric propulsion system, offering increased fuel efficiency and lower emissions. Battery electric vehicles (BEVs), on the other hand, operate solely on electricity and produce zero tailpipe emissions. The introduction of these vehicles requires the development of a supporting infrastructure, including charging stations, grid upgrades, and policies to incentivize the transition from conventional vehicles to hybrids and EVs.

CLIMATE RATIONALE OF THE TECHNOLOGY

The transport sector is one of the largest contributors to GHG emissions in St. Kitts and Nevis, largely due to the widespread use of fossil fuel-powered vehicles. The transition to hybrids and EVs is crucial for the country's climate mitigation strategy, as it will help reduce emissions, improve air quality, and reduce dependence on imported fuels. As the impacts of climate change intensify, particularly in small island developing states (SIDS), a cleaner and more efficient transport system is essential for reducing the country's overall carbon footprint and enhancing resilience to global energy price fluctuations.

AMBITION OF THE TECHNOLOGY

SCALE FOR IMPLEMENTATION AND TIMELINE

The ambition for **diffusion of six EV buses and 15 charging stations (conventional and solar) by 2030** at a cost of **USD 4.08 million**.

Actions	Target	Costs (USD)
<p>Action 1: Develop and implement a pilot project to electrify the fleet of government school buses.</p> <p>Action 2: Conduct detailed electricity grid analysis and install charging stations (both conventional and solar) at strategic locations to facilitate pilot school bus project.</p> <p>Action 3: Conduct comprehensive economic and financial feasibility study including design of incentive regime necessary for transition to EVs and policies for vehicle replacement and procurement of new vehicles for the government fleet.</p> <p>Action 4: Conduct waste management study and policy for ICE vehicles and EV batteries reuse, repurpose, recycling and disposal.</p> <p>Action 5: Develop and implement training programme for school bus drivers, mechanics and first responders.</p> <p>Action 6: Develop and implement public awareness campaign related to long-term benefits of hybrids and EVs.</p>	The TAP target is for diffusion 6 EV buses and 15 charging stations (conventional and solar) by 2030.	4,080,000



EXPECTED IMPACTS OF THE TECHNOLOGY

- **Reduction in GHG emissions:** The introduction of hybrids and EVs will lead to significant reductions in carbon emissions from the transport sector, contributing to the national climate change mitigation goals.
- **Improved air quality:** EVs produce zero tailpipe emissions, improving air quality in urban areas and contributing to better public health outcomes.
- **Energy security:** By reducing dependence on imported fossil fuels, hybrids and EVs contribute to energy security and reduce exposure to volatile global oil prices.
- **Economic savings:** EVs offer lower operational and maintenance costs compared to conventional vehicles, providing long-term economic benefits for consumers and fleet operators.
- **Increased climate resilience:** Transitioning to electric transport powered by renewable energy sources helps build resilience against energy supply disruptions and contributes to the country's overall climate adaptation efforts.

POLICY ACTIONS FOR TECHNOLOGY IMPLEMENTATION

EXISTING POLICIES IN RELATION TO THE TECHNOLOGY

Recently, the NDC and mitigation analysis chapters in the third National Communication to the UNFCCC assess progress towards mitigation actions identified in the **National Climate Change Policy (2017)**, **National Energy Policy and Action Plan (2014)** and more recently in the Draft St. Kitts and Nevis Electric Vehicle Transition Policy and Action Plan (2024). These important policy tools and action plans provide the roadmap for climate change mitigation in the Federation. The Draft EV policy and action plan needs to be actualized as soon as possible to trigger implementation and action on EVs in the Federation.

PROPOSED POLICIES TO ENHANCE TECHNOLOGY IMPLEMENTATION

To enable diffusion of EVs as targeted in the draft EV policy, comprehensive feasibility studies are required to ensure full and effective diffusion of the technology as outlined in Actions 2 to 4 of the TAP.

- **Action 2.1:** Collaborate with utility companies to conduct a detailed analysis of the electricity grid, to ensure the availability of grid connections and the integration of renewable energy sources for the charging stations.
- **Action 3:** Conduct comprehensive economic and financial feasibility study including design of incentive regime necessary for transition to EVs and policies for vehicle replacement and procurement of new vehicles for the government fleet.
- **Action 4:** Conduct waste management study and policy for ICE vehicles and EV batteries reuse, repurpose, recycling and disposal.

COSTS RELATED TO THE IMPLEMENTATION OF POLICIES

The estimated cost for comprehensive feasibility studies for diffusion of EVs was estimated at **USD 700,000** over 2 years.



THE UNIVERSITY OF THE WEST INDIES
MONA CAMPUS, JAMAICA, WEST INDIES

USEFUL INFORMATION

CONTACT DETAILS

TNA Coordinator: Cheryl Jeffers, Chief Technical Officer, Climate Action Unit
Transport Sector Lead: Ministry of Public Infrastructure, GOSKN.

LINKS TO TNA REPORTS

More information on the Technology Needs Assessment for St. Kitts and Nevis can be found at <https://tech-action.unepccc.org/country/st-kitts-and-nevis/>.