CLIMATE CHANGE TECHNOLOGY BRIEF

INFORMATION COMMUNICATION TECHNOLOGY (ICT) FOR TRAFFIC MANAGEMENT

TECHNICAL DESCRIPTION

The term "Information and Communication Technologies (ICT)" is used to delineate the various telecommunications and information technologies used within the transportation sector. These can include a number of technologies and systems in various stages of development from research prototypes to commercially viable products and applications. These include devices, networking components, applications and systems that when combined allow people and organisations to interact in the digital world to facilitate sustainable transportation. Information Communication Technology is therefore a suite of digital technologies that can be deployed to achieve various objectives such as avoiding the need to travel, red light coordination and traffic management systems to reduce traffic and increase traffic coordination. It can also include electric transponders or license plate system or similar technology.

CLIMATE RATIONALE OF THE TECHNOLOGY

The transport sector is the main consumer of the 20% of local consumption of the daily oil production and the sector contributed 5.6% of total GHG emissions in 2018. Emissions from the transport sector have increased by orders of magnitude over the past two decades and it is estimated that, for an optimistic economic growth scenario under a business-as-usual (BAU) trajectory, GHG emissions for transport could grow to as much as 144% from 2018 figures up to 2050. Transport has therefore been targeted for action in Trinidad and Tobago's Carbon Reduction Strategy (CRS) and Nationally Determined Contribution (NDC) under the Paris Agreement. Given that the main form of transportation is through private car ownership, the vehicle population in Trinidad and Tobago has seen significant increases in the past two decades resulting in horrendous traffic jams at peak hours. This has resulted in significant loss of manhours with consequences for stress and lifestyle impacts. Additionally, heavy traffic jams result in increased emissions of greenhouse gases. More efficient traffic management can reduce traffic intensity and the time spent in traffic with concomitant reductions in greenhouse gas emissions.

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, and will depend on various issues such as digital readiness in vehicle registration and licensing The following actions have been identified to this end:

1. Create the enabling environment to equip ministries and relevant agencies with capacity to digitally monitor issues related to traffic management, including in real time;
2. Digitize relevant government institutions;
3. Update transportation policies to incorporate digital and ICT approaches to traffic management;

4. Installation of relevant hardware at street lights and stop signals for the monitoring and coordination of traffic;
5. Develop relevant policies and legislation;
6. Setting up traffic management branch software and capacity building.

EXPECTED IMPACTS OF THE TECHNOLOGY	
Information Communication Technology (ICT) for integration and networking of land transport system for intelligent traffic management systems	
Mitigation Potential	- Reduction in carbon emissions associated with high traffic routes, in Trinidad and Tobago, such as the capital city centre, which is the no. 1 transport location due to the high concentration of businesses and offices
Barriers	- Lack of legislative and policy framework - High cost of infrastructure and training
Advantages/opportunities/Co-benefits	- Opportunities for decentralisation of government agencies from the capital city and innovative work arrangements to reduce traffic/emissions - Correspondingly reducing the need/pressure for increased road capacity and reducing emission levels, energy use and other environmental impacts - More reliable public transport system - Job Creation

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 emissions reductions in the transport sector. 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 traffic management, and the NDC and its Implementation Plan details specific actions, costs and greenhouse gas mitigation estimates.

PROPOSED POLICIES TO ENHANCE TECHNOLOGY IMPLEMENTATION

Trinidad and Tobago has embarked on a digitalization drive across ministries and agencies through its Ministry of Digitalization. It is expected that as this progresses, digital capacity will be improved to facilitate the implementation of actions. Nonetheless, there is inadequate overall policy framework governing national transportation to guide the implementation of actions.

COSTS RELATED TO THE IMPLEMENTATION OF POLICIES

Costs will be estimated at various stages of implementation.

USEFUL INFORMATION

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LINKS TO TNA REPORTS

National Climate Change Policy:

https://www.preventionweb.net/files/60670_trinidadandtobagoclimatechangepolic.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