

Initiative for Climate Action Transparency

Development and Institutionalization of a Framework to Track NDC Action and Build Capacity in Relevant Areas

Measurement, Reporting and Verification Framework for the Electricity Generation and Transport Sectors

St. Kitts & Nevis

21st January 2025

Submitted to:

**The Government of St. Kitts and Nevis' Ministry of Sustainable Development,
Environment, Climate Action, and Constituency Empowerment**

Prepared by:

Caribbean Cooperative Measurement, Reporting & Verification Hub

DISCLAIMER

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, photocopying, recording or otherwise, for commercial purposes without prior permission of St. Kitts and Nevis. Otherwise, material in this publication may be used, shared, copied, reproduced, printed and/or stored, provided that appropriate acknowledgement is given of St. Kitts and Nevis and ICAT as the source. In all cases, the material may not be altered or otherwise modified without the express permission of St. Kitts and Nevis.

PREPARED UNDER

The Initiative for Climate Action Transparency (ICAT), supported by Austria, Canada, Germany, Italy, the Children's Investment Fund Foundation, and the ClimateWorks Foundation.



Supported by:



on the basis of a decision
by the German Bundestag

 **Federal Ministry
Republic of Austria**
Climate Action, Environment,
Energy, Mobility,
Innovation and Technology



**Environment and
Climate Change Canada**

**Environnement et
Changement climatique Canada**

The ICAT Secretariat is managed and supported by the United Nations Office for Project Services (UNOPS)



Measurement, Reporting and Verification Framework for the Electricity Generation and Transport Sectors Initiative for Climate Action Transparency – ICAT

Deliverable M – Output 3.1.1

AUTHORS

Benise Joseph, CCRMVH

Ahyana Bowen, CCMRVH

Kalifa Phillip, CCMRVH

21st January 2025

Table of Contents

ACRONYMS	5
1. Introduction	6
2. Overview and Objectives	8
3. Institutional Arrangements Overview	9
4. MRV Framework Components	15
4.1. Measurement/ Monitoring	15
4.2. Reporting Requirements	21
4.1. Verification	22
5. Data Management Systems	23
6. Capacity Building	24
7. Challenges	26
8. Conclusions	28
References.....	29
ANNEX 1	30
ANNEX 2	30
ANNEX 3	30
ANNEX 4	30
ANNEX 5	31

List of Tables

Table 1: Management and Coordination - current roles and positions.....	11
Table 2: Data Collectors and Compilers - Current Roles and Responsibilities.....	11
Table 3: Data Providers - Current Roles and Responsibilities.....	12
Table 4: Data Flows for MRV System.....	16
Table 5: Example of Data Collection Template for Electricity Generation.....	18
Table 6: Examples of Data Collection Table for Transport.....	19

List of Figures

Figure 1: Institutional Arrangements for MRV Process in St. Kitts and Nevis.....	11
--	----

ACRONYMS

BUR	Biennial Update Report
BTR	Biennial Transparency Report
CCMRVH	Caribbean Cooperative Measurement, Reporting and Verification Hub
CO ₂	Carbon Dioxide
CSI	Climate Smart Initiative
EV	Electric Vehicle
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse gas
GWh	Gigawatt Hour
GWP	Global Warming Potential
ICAT	Initiative for Climate Action Transparency
ktCO ₂ eq	Kilotonnes carbon dioxide equivalent (Unit)
kW	Kilowatts (Unit of Energy)
kWh	Kilowatt Hour
LEAP	The Low Emissions Analysis Platform
MRV	Measurement, Reporting and Verification
MW	Megawatts (Unit of Energy)
NDC	Nationally Determined Contribution
NEVLEC	Nevis Electricity Company
OLADE	The Latin American Energy Organization
QA	Quality Assurance
QC	Quality Control
RE	Renewable Energy
SIDS	Small Island Developing State
SKELEC	St. Kitts Electricity Company
SKN	St. Kitts and Nevis
SNC	Second National Communication
SUV	Sports Utility Vehicles
TraCAD	The Transport Climate Action Data Tool
USD	United States Dollars

1. Introduction

The Twin Island Federation of St. Kitts and Nevis (SKN) is a sovereign Small Island Developing State (SIDS) in the Eastern Caribbean. The island is committed to implementing measures to combat the negative impacts of climate change through the implementation of its Nationally Determined Contributions (NDCs). SKN has identified the following key areas as major interventions which contribute to their overall economy-wide emissions reduction strategies in their updated 2021 NDCs:

- Transition to 100% renewable energy in power generation
- Improve efficiency in the transmission and distribution of electricity
- Electrification of 2% of the total vehicle fleet
- Development of EV infrastructure

To support the implementation of their NDCs, the country is participating in the Initiative for Climate Action Transparency (ICAT) project. The Initiative for Climate Action Transparency (ICAT) aims to help countries better assess the impacts of their climate policies and actions and fulfil their transparency commitments. This is executed by increasing the overall transparency capacities of countries, including the capacity to assess the contribution of climate policies and actions on countries' development objectives and providing appropriate methodological information and tools to support evidence-based policymaking. ICAT capacity development efforts are established to reinforce existing climate measurement, reporting and verification (MRV) systems and knowledge within countries and complement previous or ongoing activities by other initiatives.

The focus of the St. Kitts and Nevis ICAT project is to design an MRV and NDC Tracking Framework and the establishment of sustainable capacity to conduct projections and mitigation of GHG emissions and removals, assessments of the impact of key policies and measures for the energy sector. In addition, policymakers are equipped to identify co-benefits and synergies from climate action and policy transparency.

This report presents the MRV framework for the electricity generation and transport sectors of the St. Kitts and Nevis ICAT project. To undertake this phase, the project involved the following:

- The review of modelling tools available for the Energy Sector and the selection of appropriate modelling tools for the greenhouse gas (GHG) analysis of the Energy Sector. The process of this selection was highlighted in the [SKN Modelling Tool Workshop Report](#) and [SKN Modelling Tool Justification Report](#) also contained in **ANNEX 1** of this report.

- Training workshops virtual and in-person on the modelling tools selected for analysis: The Transport Climate Action Data Tool (TraCAD) developed by the Climate Smart Initiative (CSI) (virtual training) and the Low Emissions Analysis Platform (LEAP) developed by the Stockholm Environment Institute (SEI) (in-person training). This process is highlighted in the [TraCAD Training Report](#) and the [LEAP Training Report](#), also contained in **ANNEX 2** of this report.
- Data collection management and data gap assessment for the energy sector. This process is highlighted in the [Data collection and management and data gap assessment report](#), also contained in **ANNEX 3** of this report.
- The development of fully elaborated models for the electricity generation and transport sectors using the selected modelling tools TraCAD and LEAP with the datasets obtained and [methodology for projections report](#).
- Validation workshop for the methodology for the projections where the data used for the projections and the methods were presented to stakeholders for validation and verification.
- Development of NDC Tracking training, including a report on NDC tracking tool and development of NDC Indicators, including data gaps. These reports can be found in **ANNEX 4** of this report.

The MRV framework for the electricity generation and transport sector is presented in the following sections:

- Section 2 – Overview and Objectives
- Section 3 – Institutional Arrangements Overview
- Section 4 – MRV Framework Components
- Section 5 – Data Management Systems
- Section 6 – Capacity Building
- Section 7 – Challenges
- Section 8 – Conclusions.

2. Overview and Objectives

This MRV Framework presents a structured system for the measurement, reporting and verification of climate actions, impacts, and related data for the electricity generation and transport sector as it relates to climate change mitigation and NDC tracking. The MRV framework should encourage and promote transparency, accountability, and accuracy in the following:

- **Measurement** - data collection and measurement, the methodologies, standards and protocols used.
- **Reporting** - data compilation and communication, formats used, templates and tools used to analyse the data and communicate to stakeholders and others
- **Verification** – process for checking the accuracy and credibility of the reported data through third-party, peer reviews or independent evaluations, validation of results.

The sectors covered in this MRV framework are:

- **Electricity Generation:** Generation systems (fossil-fuel and renewables) and transmission and distribution system efficiency
- **Transport sector:** road and rail transport emissions and electric vehicles penetration.

The objectives of this MRV Framework for the electricity generation and transport sectors are as follows:

- **GHG inventory development:** To support the collection of data that would be important in the quantification of GHG emissions for the electricity and transport sector
- **NDC Tracking:** To support the monitoring of progress towards the achievement of the NDC targets through data collection for the identified indicators
- **GHG emissions projects for NDC Tracking and Mitigation Assessments:** To support the development of GHG emissions projections for NDC Tracking and Mitigation Assessments.
- **Compliance:** To support SKN in the alignment of their data collection and reporting with the ETF and the IPCC guidelines.
- **Policy Impact Assessment:** To support the evaluation of the effectiveness of mitigation policies and strategies related to electricity generation and the transport sector
- **Capacity Building:** To support the strengthening of institutional frameworks and technical expertise for sustainable MRV systems.

3. Institutional Arrangements Overview

In an MRV process, it is important to establish clear roles and responsibilities for all stakeholders involved. The overall coordinating body to oversee data integration and compliance with quality assurance and quality control (QA/QC) procedures is the Ministry with responsibility for the Environment. This ministry is the focal point of the UNFCCC and is responsible for submitting the NCs, BTRs and NDC reports. At present, this ministry is the Ministry of Climate Action, Environment and Constituency Empowerment. The Climate Action Unit within this ministry is responsible for coordinating climate change matters, including NDCs, BTRS, and NC reports. Therefore, the climate action unit should have the overall responsibility for overseeing data integration and compliance with QA/QC procedures within the ministry.

The Department of Statistics is within the Ministry of Sustainable Development, which currently shares the same minister with the Ministry of Climate Action, Environment and Constituency Empowerment, and has a key role in data collection, data compilation and verification. It is essential that the Department of Statistics has clear communication and established relationships with the Climate Action Unit to ensure that data collection and data verification for the sectors are completed in accordance with the ETF and IPCC guidelines.

The Department of Energy within the Ministry of Public Infrastructure, Energy and Utilities and the Department of Public Transport within the Ministry of Domestic Transport currently share the same Minister. These two Departments also play critical roles in the establishment of the MRV process. The energy unit and the domestic transport unit would be responsible for collecting all energy-related data and domestic transport data. This data would then be verified and submitted to the Department of Statistics and the Climate Action Unit.

The data providers comprise the various agencies and government departments that collect, store or process data related to electricity generation or the transport sector. **Figure 1** explains the recommended institutional arrangements and data flows. **Table 1** shows the current roles and responsibilities of the management and coordination section. Final QA/QC verification of data is completed in this section by sector experts and/or private consultants and independent reviewers. **Table 2** shows current roles and responsibilities of the data collectors and compilers as it relates to the electricity generation and transport sectors. The data compilers and collectors are the first point data validation, this means that QA/QC checks on the data should be performed at these points. The data providers are responsible for providing related to the data collected and compilers and their roles and responsibilities can be found in **Table 3**.

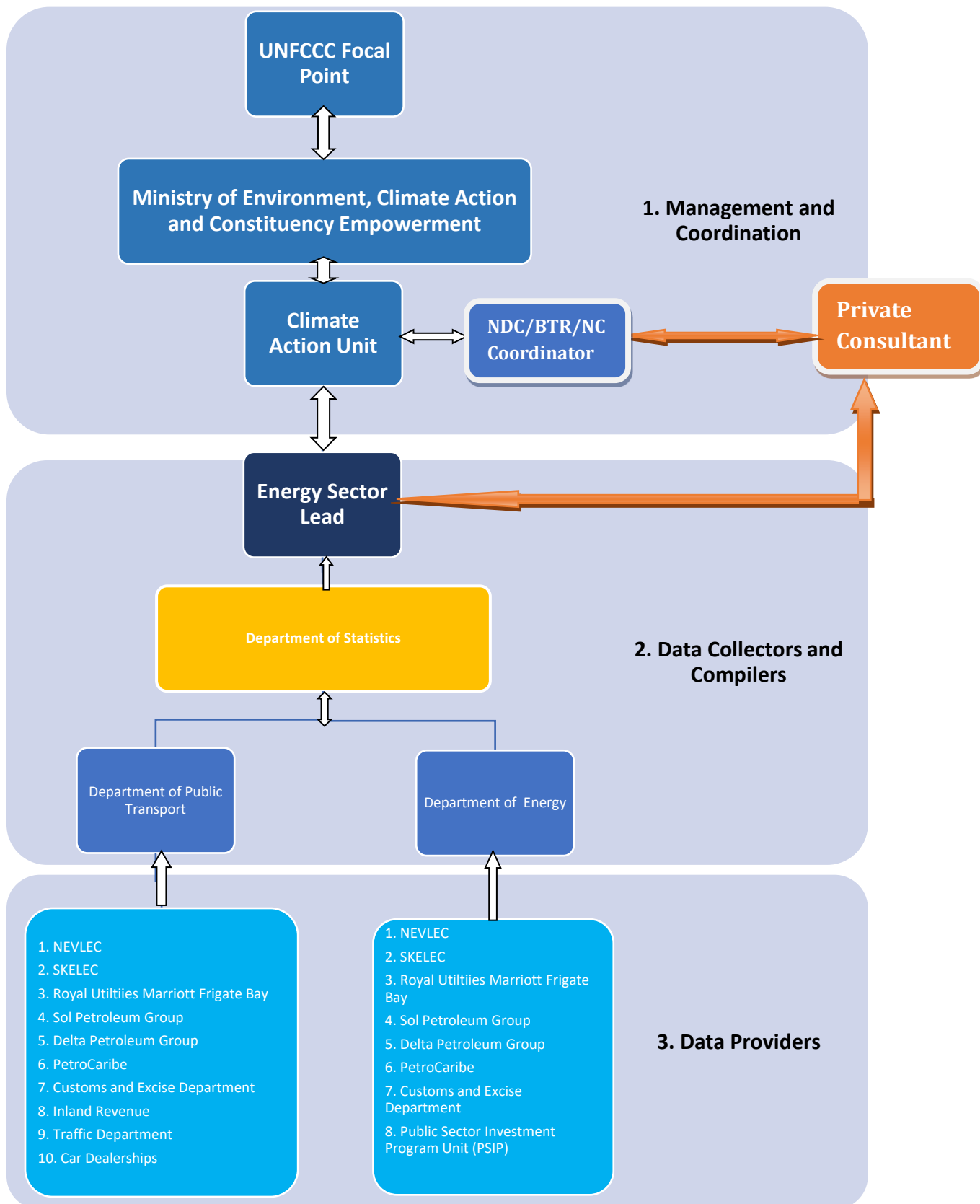


Figure 1: Institutional Arrangements for MRV Process in St. Kitts and Nevis

Table 1: Management and Coordination - current roles and positions

Management and Coordination	Ministry of Climate Action, Environment, and Constituency Empowerment		
	Minister: Honourable Senator Dr. Joyelle Clarke		
	Permanent Secretary		
	Colinicia Levine		
	Key Departments		
	Climate Action Unit		Department of Environment
	Responsibilities	Coordinating climate change matters, including NDC, BUR/BTR and NC reports.	Leads on preservation, conservation and protection of the natural ecosystems, which includes leading on biodiversity, forestry and land degradation matters
	Director	Ms. Cheryl Jeffers*	Mr. Derionne Edmeade
	Contact Person	Mrs. Ouerika Lennon-Petty - Programme Management Officer – Contact Person	Kashief Hynes – Conservation Officer
Private Consultants	To be determined on a case-by-case basis		

Table 2: Data Collectors and Compilers - Current Roles and Responsibilities

Data Collectors and Compilers	Ministry of Sustainable Development		Ministry of Public Infrastructure, Energy and Utilities; Domestic Transport
	Minister: Hon. Senator Dr. Joyelle Clarke		Minister: Hon. Konris Maynard
	Permanent Secretary		
	Sherilita Dore- Tyson		Daryll Lloyd
	Departments		

	Department of Statistics		Energy Unit	Department of Public Transport
	Responsibilities	Develop and manage an integrated, harmonised and coordinated National Statistical System which generates adequate, relevant, coherent, timely and quality statistics to meet national, regional and international data needs [1].	Collect and Compile data relevant to the energy sector, including the preparation of energy balances	Collect and compile data relevant to the transport sector.
	Director	Carlton Phipps	Bertille Brown	Not Assigned
	Contact person	Sherise McKoy-Wilkin - Statistician	Denasio Frank – Energy officer	Michelle Buncome – Transport Officer

Table 3: Data Providers - Current Roles and Responsibilities

	St. Kitts Administration		Nevis Island Administration
Data Providers	Ministry of Public Infrastructure, Energy and Utilities; Domestic Transport		Office of the Premier; Ministry of Public Utilities and Energy
	Minister: Hon. Konris Maynard		Minister: Hon Mark Graham Brantley
	Permanent Secretary		Permanent Secretary
	Daryll Lloyd		Wakely Daniel
	Departments		
		St. Kitts Electricity Company (SKELEC)	Nevis Electricity Company (NEVLEC)
	Responsibilities	Collect data related to electricity generation (renewables and fossil fuel); data related to consumption by different sectors (residential, commercial, and industrial) disaggregated by fuel type; data related to consumption of electricity by the transport sector; data related to system losses disaggregated by technical and non-technical losses	

	Director	Clement Williams	Albert Gordon
	Contact persons	Jonathon Kelly – Projects and Renewable Energy Manager in the Energy Transition Unit Haniff Woods – Operations Engineer	Nelson Stapleton – Transmission and Distribution Manager
Data Providers	Ministry of Finance		Ministry of Finance
	Minister: Dr. Terrance Drew		Minister: Hon Mark Graham Brantley
	Financial Secretary Hilary Hazel		Permanent Secretary Colin Dore
	Departments		
	Inland Revenue Department		Nevis Inland Revenue
	Responsibilities	Collect data related to the registration of vehicles, vehicle type, type of fuel use and age of vehicles.	
	Comptroller	Edward Gift	Deputy Comptroller – Eric Haynes
	Contact person	Not assigned	Keeshan Biscette – Senior Valuation Officer
	Departments		
	Customs and Excise Department		
	Responsibilities	Collect data related to imports of vehicles	
	Comptroller	Kennedy De Silva	Cynric Carey – Deputy Comptroller
	Contact person	Cephus Whittaker – Senior Customs Officer	Roger Fyfield- Assistant Comptroller Hurisa Martin – Customs Officer
	Data Providers	Prime Minister Ministry	
Minister: Dr. Terrance Drew			
Permanent Secretary			
Glenroy Blanchette			
Department: National Security			
Royal St. Christopher and Nevis Police Force – Traffic Department			

	Responsibilities	Responsible for vehicle licenses and collection of data related to annual licensed vehicles, fleet composition, fuel type, distance travelled per vehicle (annually)
	Commissioner of Police	James Sutton
	Contact persons	Ray Gordon - Sergeant
Data Providers	Ministry of Sustainable Development	
	Minister: Hon. Senator Dr. Joyelle Clarke	
	Permanent Secretary	
	Sherilita Dore- Tyson	
	Departments:	
	Economic Affairs and Public Sector Investment Planning Unit (PSIP)	
	Responsibilities	Maintenance and monitoring of the Public Sector Investment Programme
	Director	Manners Auren – Senior Project Analyst
Contact persons	Yazim Leader/ Myrtila Williams – Project Analyst	
Data Providers	Private Sector Companies	
	Fuel Providers	
	Companies	
	Sol Petroleum Group Delta Petroleum Group PetroCaribe	
	Responsibilities	Provide data related to import, export and distribution of fuel and fuel products
	Other Generators of Electricity	
	Companies	
	Royal Utilities Marriott Frigate Bay	
	Responsibilities	Provide data fuel use, electricity generation (renewables and fossil fuel) and distribution losses
	Car Dealerships	
Companies		
Car Dealership Companies		

Responsibilities	Provide data related to sales of vehicles by vehicle type
------------------	---

4. MRV Framework Components

The MRV Framework consists of measurement/monitoring components, reporting components, and verification components. Each component of the MRV Framework is explained below:

4.1. Measurement/ Monitoring

The measurement/ monitoring involves the collection of data as needed for the national GHG inventories, GHG emissions projections and NDC Tracking for the electricity and transport sectors. In many cases the data requires overlaps across sectors, detailed information on data required for electricity generation and transport sectors for GHG inventories, GHG emissions projections and NDC Tracking can be found in Data Gap Assessment found **ANNEX 2**, the methodology for projections of GHG emissions found in **ANNEX 3** and the NDC indicators and gap assessment report found in **ANNEX 4**. An overall view of some of the major indicators/ data requirements and data sources are provided in **Table 4** below. It is recommended that to ensure that data is provided consistently that annual data collection for each of the key indicators be collected and compiled by the relevant agencies. Data templates for each indicator is recommended to be developed specific for St. Kitts and Nevis. In some cases, data may need to be obtained for both St. Kitts and Nevis independently as have been highlighted in **Section 3** where separate departments exist across the Federation.

Several data gaps do exist in St. Kitts and Nevis and this has been highlighted in the Data Gap Assessment found **ANNEX 2**, and the NDC indicators and gap assessment report found in **ANNEX 4**. These reports also highlight methods to address the data gaps reported. The development of specific data templates and collection of data annually can also help in the following areas:

- Highlighting the data needs to the specific agencies
- Identifying possible collaborations or other sources of the specific data
- Providing a system where data is collected regularly, allowing for agencies to consistently improve data reporting and communication
- Improved identification of missing data, and target specific interventions to address the gaps

- Facilitate data aggregation through the compilation of data in a common format, allowing for a more comprehensive analysis
- Improved QA/QC procedures, by identification of expected ranges, provisions of drop-down list and mandatory fields
- Improved data collection efficiency by reduction in time spent in identifying data requirements
- Identification of capacity building needs across agencies

There are some practical steps for using data templates to address data gaps

1. Design comprehensive templates – this should be done in consultation with the data providers and the data compilers. Recommend that this be done by the Climate Action Unit to ensure that data requirements are captured. It is good practice to include essential information as well as optional information that can be used for the enhanced development of projections.
2. Capacity Building- continuous training on these templates and the data required, including methods to address data gaps. Important to include examples of completed templates and guidelines to improve data entry accuracy.
3. Use of Digital Tools – collecting information through digital platforms can ease the burden for compilers and it also can incorporate interactive features, validation features and suggestions.
4. Monitor and review – templates should not be fixed and should have to flexibility to be adjusted to the St. Kitts and Nevis circumstances. This will help refining templates for updated NDCs and help address the missing data trends. Important that data providers are been given opportunities to review the templates and provide suggestions for improvements.

Table 4: Data Flows for MRV System

Area	Sector	Key Indicators	Data Provider/ Data Sources	Data Compiler, Collector and Validator
Projection of GHG emissions NDC Tracking	General	Population Data	Department of Statistics through Census Data and surveys	Department of Statistics
		Economic Data	Department of Statistics	Department of Statistics

Area	Sector	Key Indicators	Data Provider/ Data Sources	Data Compiler, Collector and Validator
GHG Inventories Projection of GHG emissions NDC Tracking	Electricity Generation	Fuel imports for electricity generation (fossil fuel)	Fuel Companies Utility Companies	Department of Statistics Department of Energy
GHG Inventories Projection of GHG emissions NDC Tracking		Fuel Types and quantities consumed	Utility Companies Fuel Companies Energy balances	Department of Statistics Department of Energy
GHG Inventories Projection of GHG emissions NDC Tracking		Emission Factors for each Fuel	IPCC Guidelines or country specific emissions factor reports	Climate Action Unit Department of Statistics
GHG Inventories Projection of GHG emissions NDC Tracking		Transmission and Distribution Losses	Utility Companies	Department of Statistics Department of Energy
NDC tracking Projection of GHG emissions		Installed Renewable systems	Utility Companies Residential and commercial owners	Department of Statistics Department of Energy
Projection of GHG emissions		Renewable Energy Projects	Department of Energy Utility Companies PSIP	Department of Energy
GHG Inventories Projection of GHG emissions NDC Tracking		Transport	Number of vehicles (type)	Traffic Department Inland Revenue Department

Area	Sector	Key Indicators	Data Provider/ Data Sources	Data Compiler, Collector and Validator
GHG Inventories Projection of GHG emissions NDC Tracking			Customs Department	
		Total fuel consumption by type	Fuel providers Gas Stations	Department of Public Transport Department of Statistics
		Annual vehicle mileage and fuel economy	Traffic Department Inland Revenue Department	Department of Public Transport Department of Statistics
		Emission factors by vehicle category and fuel type	IPCC Guidelines and country Specific reports	Climate Action Unit Department of Statistics
Projection of GHG emissions NDC Tracking		Number of electric and hybrid vehicles	Traffic Department Inland Revenue Department Customs Department	Department of Public Transport Department of Statistics

Table 5: Example of Data Collection Template for Electricity Generation

Reporting Period Field	Description	Data Input	If unavailable state reason
Facility Name	Name of Powerplant or generation unit		

Reporting Period				
Field		Description	Data Input	If unavailable state reason
Installed Capacity (MW)		Maximum generation Capacity		
Energy Generated (MWh)		Actual Energy output		
Fuel Type		Types of fuel used		
Total Fuel used by Type		Fuel Used by Type		
Maintenance Schedule		Record of planned/unplanned maintenance		
Cost of Electricity (\$/kWh)		Costs of electricity to consumers		
Capacity Expansion Plans		Any plans to purchase or decommission generators (explain which generators and what year of decommission or purchase)		
Cost of Fuel (\$/Gj)		Cost of fuel		
Maintenance Costs (\$)		Costs associated with maintenance		
Costs of Generators (\$)		Capital costs of generators		
Transmission and Distribution Losses (%) - technical and non-technical losses if available		Transmission and Distribution losses, disaggregated by technical and non-technical losses		

Table 6: Examples of Data Collection Table for Transport

Reporting Field	Description	Data Input	Notes/Remarks
General Information			

Project name/ID	Unique identifier		
Reporting period	Timeframe of data		
Responsible entity	Organization collecting data		
Contact Information	Name, email, phone		
Number of road transport vehicles by type	Total number of road transport vehicles (cars, SUV, buses, etc)		
Number of domestic marine vehicles by type	Total number of domestic marine vehicles (ferries,		
Fuel type	Types of fuel used in transport		
Total fuel consumed	Fuel used by type (diesel, gasoline, etc) and category road, marine		

Vehicle Fleet Activity Data						
Vehicle ID	Vehicle Type	Fuel Type	Vehicle Age (Yrs)	Distance travelled (Km)	Fuel consumed (litres)	GHG Emissions (tCO2e)
	Car/Bus/Truck	Gasoline/Diesel				

Public Transport Infrastructure Data						
Facility Type	Location	Passenger volume	RE Integration	# of EV/Gas/Diesel Stations	GHG Savings (tCO2e)	Notes/Remarks

E.g. Bus/Ferry Terminal,		# of passengers	Solar-panel installations, LED streetlights	# of charging/refuelling stations available		

4.2. Reporting Requirements

All reporting for NDCs, BTR and NCs will be done through the Climate Action Unit of the Ministry of Environment, Climate Action and Constituency Empowerment. NDCs are required to be updated every 5 years, NC are required every 4 years and BTRs every 2 years. St. Kitts and Nevis is a SIDS and therefore there are flexibility provisions that are provided based on their national circumstances.

The GHG Inventories need to ensure that the principles of transparency, accuracy, completeness, comparability and consistency (TACCC) are applied and application of the IPCC guidelines. Emissions inventories need to be completed using the common reporting tables (CRT), where all notation keys used are explained. The GHG Inventories are contained in the NCs and BTRs.

The projections of GHG emissions also need to follow the TACCC principles. These are used in BTRs and NCs. The projection of GHG emissions need to adhere to the common tabular formats (CTF) tables provided by the UNFCCC and the modalities, procedures and guidelines (MPGs) as provided by the ETF. Under the MPG developing countries are not mandated to provide projection of GHG emissions in their BTRs but are rather encouraged to undertake this assessment. The Projections shall begin from the most recent year in the national inventory report and extend at least 15 years beyond the next year ending in zero or five; those developing country they can extend their projections at least to the end point of their NDCs which in the case of SKN is 2030. The methodology for projections of GHG emissions found in **ANNEX 3** provides more information on the projections completed for SKN under this project.

Tracking of NDCs are reporting in the BTRs through the common tabular formats (CTF) tables. To track NDCs it is essential that indicators to track the progress have been selected. The NDC indicators and gap assessment report found in **ANNEX 4** provides in-depth

information on NDC indicators that can be used, its' limitations, data gaps and methods to address these gaps.

This ICAT project has provided substantial information to SKN to support their reporting requirements to the UNFCCC.

4.1. Verification

Verification of data and reports are usually done both internally and externally. Internal verifications are done by experts in the sector and following QA/QC procedures in accordance with the IPCC guidelines. In this MRV process outlined, data validation is completed at several stages of data collection, with the final checks occurring at the Climate Action Unit. It is also essential that internal consistencies are verified, such as cross-checking fuel consumption and activities with energy balances and national statistics data. Internal verification of the reports is done in the opposite direction of the data flow system, where the reports are prepared by the Climate Action Unit but are verified by the data compilers and data providers.

External verification is necessary to ensure the credibility, accuracy and transparency of data reported. It normally involves an independent verification entity or third-party auditors of the data and reports. Regional peer reviews can be done through partnerships with the Caribbean Cooperative MRV Hub and other regional entities. External verification lends to impartiality to the reported data, improving its trust worthiness to governments and international organisations. External verifiers are usually able to identify errors, inconsistencies and methodological flaws that can sometime before overlooked by internal teams when handling large pools of data. This type of verification ensures measurement, calculations and assumptions are in adherence to accepted standards such as the IPCC guidelines. This verification supports policy and decision-making by providing verified data that can increase the robustness of decision-making. In addition, it supports stakeholder confidence in the data and reports provide and fosters collaboration among agencies and entities.

Ensuring that data is credible, accurate and transparent can support the successful implementation of climate related projects and energy transitions.

5. Data Management Systems

Data Management Systems (DMS) usually involve a number of procedures to ensure that data is collected, stored, accessed, secured and processed and reported in an organised manner. Data management systems are very useful in electricity generation and transport sectors where large amounts of data are usually handled and processed. DMS needs to be carefully analysed and adjusted to the country's needs, in particular, SKN being a SIDS may not have the funding or the human resource to have a dedicated DMS for the electricity generation and transport and therefore it may be considered for the climate change data for the entire Federation.

Some key aspects when considering a DMS:

- Definition of scope, type of analytical skills required from system and data providers, data collectors and compilers need
- Scalability, adaptability to new requirements, compatible with country data and ease of use
- Ease of development of governance policies for data access, storage and security including legal and regulatory compliance
- Ability of continuous capacity building, maintenance and costs.

DMS offer several benefits that support the MRV process, these include:

- Reduction in time spent compiling, processing and analysing data
- Reduction in input errors, through automated validation tools
- Provides in some cases visualisation and reporting capabilities. Generation of dashboards and customised reports
- Provides improved data security and access permissions to protect sensitive information
- It can be flexible and scalable, handling increasing volumes of data.
- Can easily track progress against indicators
- Improved transparency, and access to varying data
- Provide access to data to multiple sources

DMS systems are usually centralised but can also be sector-specific and normally requires standardised templates, but they can prove essential to the increase reporting requirements that countries are now encountering.

6. Capacity Building

An MRV process cannot thrive without consistent and strategic capacity building. Training programs are essential to enhance the skills and expertise of personnel involved in critical areas such as the GHG Inventory process, NDC tracking and GHG emissions projections. Under this ICAT project, several capacity building and training initiatives were implemented to strengthen these areas. Detailed information on these efforts can be found in **ANNEX 2** and **ANNEX 4**. Some areas for continued capacity building are highlighted below:

1. Training on Data Requirements:

- Providing data providers with comprehensive training on the types of data needed, the reason behind these requests and the use of data collection templates is crucial.
- This enhances data providers' understanding, encouraging greater buy-in and compliance, ultimately improving the quality and reliability of data inputs.

2. GHG Inventory and Projections:

- Specialized training on methodologies for GHG inventory development, including sector-specific emissions calculations.
- Skills development for projecting future emissions based on current trends and planned interventions.

3. NDC Tracking:

- Building expertise in monitoring progress against NDC targets using robust indicators and methodologies.
- Training on reporting requirements to align with international standards, such as the UNFCCC guidelines.

4. DMS

- Building expertise in using DMS, once identified
- Enhanced training in the use of standardised templates

In addition to training programs, sustained technical assistance from regional and international organisations is important. Under the ICAT project, partnerships were formed to provide technical guidance and expertise, significantly bolstering the capacity of St. Kitts and Nevis. Continuing these collaborations will improve access to the latest tools.

Methodologies and best practices in MRV process. It will enhance regional cooperation through sharing of best practices and resources.

Capacity building investments are foundational for long-term success of MRV processes. If maintained St. Kitts and Nevis can establish an MRV process that is robust and would ensure quality data collection and reporting to global commitments.

7. Challenges

There are several challenges that have been identified in the previous reports that can hinder the effective implementation of the MRV process. These challenges include technical, institutional and financial aspects and require strategic and phased solutions. Addressing these challenges will likely require a multi-cycle approach, as some issues are systematic and need sustained efforts to resolve. Key challenges include

➤ **Data Gaps**

Missing or incomplete datasets can hinder the accurate tracking of GHG emissions, tracking of NDCs and create unreliable GHG emissions projections. The use of standardised templates and use of regional data to fill gaps can mitigate some risks involved. It is essential to conduct periodic reviews of the data gaps and identify methods to address these gaps.

➤ **Inconsistent Data**

Inconsistencies are usually created through inconsistent reporting frequencies, lack of standardised format for receipt of data and acquisition of data from various sources. This creates difficulties in data integration and analysis. This can be mitigated through the use of standardised templates and digital tools. It is also essential that clear outlines for institutional arrangements and data sources are outlined.

➤ **No legal requirements for data**

Currently, there are no legal requirements for submitting data to the relevant ministries. Addressing this area can provide consistent data collections methods and also help to address the major data gaps.

➤ **Lack of stakeholder buy-in**

Low engagement from key data providers due to unclear process and perceived additional workloads are critical issues that need to be addressed early. This can limit access to critical data and undermines the effectiveness of the MRV process. Therefore, it is essential that key data providers are provided access to capacity building workshops and clear communication of benefits of the reports or data collection. In some cases, it may be necessary to provide incentives or recognition programs for data providers.

➤ **Limited Technical Expertise**

This can be due to insufficiently trained personnel handling complex methodologies of DMS and can lead to errors in calculations and inaccurate projections. Therefore, a

need to have continuous capacity building programs and in some cases collaboration with regional and international organisations to provide expert guidance and mentorship.

➤ **Human Resource Constraints**

In many Caribbean islands, human resource constraints are encountered. This leads to overburden of personnel and delays in fulfilling tasks and meeting deadlines. This can be mitigated through careful management of staff loads and use of private consultants and regional organisations to provide support.

➤ **Financial Constraints**

SKN is considered a high-income country and access to climate finance may be limited for MRV systems, training programs and access to tools. This can hinder capacity building and regular data audits and verification. Therefore, strategic planning is required to leverage finance from organisations such as the Global Environment Facility (GEF) and the Green Climate Fund (GCF)

By systematically addressing these challenges, the MRV process can be strengthened to deliver reliable, transparent and accurate data for reporting to UNFCCC.

8. Conclusions

Through the support of ICAT, St. Kitts and Nevis has documented the MRV Framework to streamline the processes of data collection, data compilation, data and reporting verification and reporting. This Framework serves to enhance robust and transparent climate action monitoring and reporting in SKN. The framework was specifically designed to track NDC implementation and report for the Biennial Transparency Reports (BTRs). It supports SKN in aligning with international climate commitments by ensuring data consistency, accuracy, and reliability throughout the MRV process.

References

- [1] Department of Statistics, Ministry of Sustainable Development., “Department of Statistics - St. Kitts and Nevis,” [Online]. Available: <https://www.stats.gov.kn/>. [Accessed 2024].