



## **Part I: Project Information**

### **GEF ID**

10856

### **Project Type**

FSP

### **Type of Trust Fund**

GET

### **CBIT/NGI**

CBIT **No**

NGI **No**

### **Project Title**

Achieving a rapid decarbonization of the energy sector in Saint Kitts and Nevis

### **Countries**

St. Kitts and Nevis

### **Agency(ies)**

UNEP

### **Other Executing Partner(s)**

Ministry of Environment, Climate Action and Constituency Empowerment

### **Executing Partner Type**

Government

### **GEF Focal Area**

Climate Change

### **Sector**

Energy Efficiency

### **Taxonomy**

Focal Areas, Climate Change, Climate Change Mitigation, Energy Efficiency, Influencing models, Strengthen institutional capacity and decision-making, Demonstrate innovative approaches, Transform policy and regulatory environments, Stakeholders, Communications, Education, Public Campaigns, Behavior change, Awareness Raising, Civil Society, Type of Engagement, Information Dissemination, Consultation, Private Sector, Capital providers, Financial intermediaries and market facilitators, Gender Equality, Gender Mainstreaming, Gender-sensitive indicators, Capacity, Knowledge and Research, Knowledge Generation, Learning, Knowledge Exchange, Capacity Development

**Rio Markers**

**Climate Change Mitigation**

Principal Objective 2

**Climate Change Adaptation**

Significant Objective 1

**Biodiversity**

**Land Degradation**

**Submission Date**

2/13/2023

**Expected Implementation Start**

6/15/2023

**Expected Completion Date**

6/14/2027

**Duration**

48In Months

**Agency Fee(\$)**

315,305.00

**A. FOCAL/NON-FOCAL AREA ELEMENTS**

<b>Objectives/Programs</b>	<b>Focal Area Outcomes</b>	<b>Trust Fund</b>	<b>GEF Amount(\$)</b>	<b>Co-Fin Amount(\$)</b>
CCM-1-1	Promote innovation and technology transfer for sustainable energy breakthroughs for decentralized power with energy usage	GET	1,500,995.00	9,000,000.00
CCM-1-3	Promote innovation and technology transfer for sustainable energy breakthroughs for accelerating energy efficiency adoption	GET	1,818,000.00	2,120,000.00
<b>Total Project Cost(\$)</b>			<b>3,318,995.00</b>	<b>11,120,000.00</b>

## **B. Project description summary**

### **Project Objective**

Accelerate the transition towards 100% renewable electricity generation and 100% high energy efficiency public buildings in Saint Kitts and Nevis.

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$ )	Confirmed Co- Financing(\$ )
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Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
1. Policy and institutional arrangements for decarbonizing the electricity sector and enhancing energy efficiency of public buildings	Technical Assistance	1. The Government of St. Kitts and Nevis implements a policy and regulatory framework for achieving its vision of 100% renewable electricity generation and 100% high energy efficiency public buildings	<p>1.1. The Government of St. Kitts and Nevis develops a revised National Energy Policy for achieving 100% renewable electricity generation and 100% high energy efficiency public buildings</p> <p>1.2. The Government of St. Kitts and Nevis develops a roadmap for implementing the National Energy Policy</p> <p>1.3. The Government of St. Kitts and Nevis have a Federal Energy Commission for coordinating the transition towards 100% renewable electricity generation</p> <p>1.4. The Government of St. Kitts and Nevis</p>	GET	668,250.00	1,500,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
			develops energy efficiency legislation to achieve the goals of the National Energy Policy			
			1.5. The Government of St. Kitts and Nevis develops knowledge management and monitoring systems for tracking the implementation of the National Energy Policy, roadmap and related investments			
			1.6. St. Kitts and Nevis government representatives and other key stakeholders demonstrate increased capacity (technical, planning, and regulatory) on a gender-sensitive implementation of the national energy policy, roadmap and			

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
			related investments			
2. Demonstration of energy efficient buildings, grid-integrated renewable electricity generation and innovative scale-up models	Investment	2. St. Kitts and Nevis generates an increasing share of electricity through renewable energy and has increased energy efficiency in public buildings	<p>2.1. Key stakeholders demonstrate increased awareness of the technical, economic, social and environmental feasibility of energy efficient buildings and grid-integrated renewable electricity generation</p> <p>2.2. The energy units and electric utilities of St. Kitts and Nevis demonstrate awareness of the viability of an innovative integrated utility services model</p>	GET	1,721,151.00	7,600,000.00



Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
3. Scaling up financing for 100% renewable energy and energy efficient measures	Technical Assistance	3. The Government of St. Kitts and Nevis is able to mobilize and channel increased investments aligned with the revised national energy policy	<p>3.1. Officials in governmental, technical, academic and private institutions demonstrate increased capacity in the development, assessment and appraisal of renewable energy and energy efficiency projects aligned with the National Energy Policy</p> <p>3.2. The electric utilities SKELEC and NEVLEC have access to tailored and innovative integrated utility service models for accelerating the scale-up of energy efficient and renewable energy generation measures</p> <p>3.3. The electric utilities SKELEC and NEVLEC have access to</p>	GET	701,547.00	1,400,000.00

Project Component	Financing Type	Expected Outcomes	Expected Outputs	Trust Fund	GEF Project Financing(\$)	Confirmed Co-Financing(\$)
			<p>a financing window for accelerating investment in renewable energy and energy efficiency through an integrated utility service model</p> <p>3.4. Regional and international investors demonstrate increased awareness of the business opportunities in the renewable and efficient energy sector in St. Kitts and Nevis</p>			
Monitoring and Evaluation	Technical Assistance	4. Project is effectively monitored and evaluated	4.1. Monitoring and evaluation products are delivered (see section 9 of UNEP project document)	GET	70,000.00	
Sub Total (\$)					3,160,948.00	10,500,000.00

**Project Management Cost (PMC)**

GET	158,047.00	620,000.00
<b>Sub Total(\$)</b>	<b>158,047.00</b>	<b>620,000.00</b>
<b>Total Project Cost(\$)</b>	<b>3,318,995.00</b>	<b>11,120,000.00</b>

**Please provide justification**

**C. Sources of Co-financing for the Project by name and by type**

<b>Sources of Co-financing</b>	<b>Name of Co-financier</b>	<b>Type of Co-financing</b>	<b>Investment Mobilized</b>	<b>Amount(\$)</b>
Recipient Country Government	Ministry of Environment, Climate Action and Constituency Empowerment	In-kind	Recurrent expenditures	595,000.00
Recipient Country Government	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport	Public Investment	Investment mobilized	10,500,000.00
Recipient Country Government	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport	In-kind	Recurrent expenditures	25,000.00
<b>Total Co-Financing(\$)</b>				<b>11,120,000.00</b>

**Describe how any "Investment Mobilized" was identified**

Investment mobilized was identified through a detailed baseline analysis (see section 1b.ii) ? baseline scenario and any associated baseline projects), including a mapping of potential investments aligned with the project proposed alternative scenario. Following this analysis and mapping, investment mobilized was determined through presential and virtual meetings with representatives of the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport and the Ministry of Environment, Climate Action and Constituency Empowerment. Descriptions of the investment mobilized co-financing may be found in annex I-2 of the UNEP project document. The co-financing letters are in annex N of the UNEP project document.

**D. Trust Fund Resources Requested by Agency(ies), Country(ies), Focal Area and the Programming of Funds**

<b>Agency</b>	<b>Trust Fund</b>	<b>Country</b>	<b>Focal Area</b>	<b>Programming of Funds</b>	<b>Amount(\$)</b>	<b>Fee(\$)</b>	<b>Total(\$)</b>
UNEP	GET	St. Kitts and Nevis	Climate Change	CC STAR Allocation	3,318,995	315,305	3,634,300.00
<b>Total Grant Resources(\$)</b>					<b>3,318,995.00</b>	<b>315,305.00</b>	<b>3,634,300.00</b>

**E. Non Grant Instrument**

NON-GRANT INSTRUMENT at CEO Endorsement

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Includes Non grant instruments? **No**

Includes reflow to GEF? **No**

F. Project Preparation Grant (PPG)  
PPG Required **true**

PPG Amount (\$)  
60,000

PPG Agency Fee (\$)  
5,700

Agenc y	Trus t Fun d	Countr y	Focal Area	Programmin g of Funds	Amount(\$ )	Fee(\$)	Total(\$)
UNEP	GET	St. Kitts and Nevis	Climat e Change	CC STAR Allocation	60,000	5,700	<b>65,700.0 0</b>
Total Project Costs(\$)					<b>60,000.00</b>	<b>5,700.0 0</b>	<b>65,700.0 0</b>

## Core Indicators

### Indicator 6 Greenhouse Gas Emissions Mitigated

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO <sub>2</sub> e (direct)	16015	8370	0	0
Expected metric tons of CO <sub>2</sub> e (indirect)	455540	486650	0	0

### Indicator 6.1 Carbon Sequestered or Emissions Avoided in the AFOLU (Agriculture, Forestry and Other Land Use) sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO <sub>2</sub> e (direct)				
Expected metric tons of CO <sub>2</sub> e (indirect)				
Anticipated start year of accounting				
Duration of accounting				

### Indicator 6.2 Emissions Avoided Outside AFOLU (Agriculture, Forestry and Other Land Use) Sector

Total Target Benefit	(At PIF)	(At CEO Endorsement)	(Achieved at MTR)	(Achieved at TE)
Expected metric tons of CO <sub>2</sub> e (direct)	16,015	8,370		
Expected metric tons of CO <sub>2</sub> e (indirect)	455,540	486,650		
Anticipated start year of accounting	2023	2023		
Duration of accounting	20	20		

### Indicator 6.3 Energy Saved (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)

Total Target Benefit	Energy (MJ) (At PIF)	Energy (MJ) (At CEO Endorsement)	Energy (MJ) (Achieved at MTR)	Energy (MJ) (Achieved at TE)
Target Energy Saved (MJ)	998,837,401	909,289,000		

### Indicator 6.4 Increase in Installed Renewable Energy Capacity per Technology (Use this sub-indicator in addition to the sub-indicator 6.2 if applicable)



Technology	Capacity (MW) (Expected at PIF)	Capacity (MW) (Expected at CEO Endorsement)	Capacity (MW) (Achieved at MTR)	Capacity (MW) (Achieved at TE)
Solar Photovoltaic		0.11		

**Indicator 11 People benefiting from GEF-financed investments**

	Number (Expected at PIF)	Number (Expected at CEO Endorsement)	Number (Achieved at MTR)	Number (Achieved at TE)
<b>Female</b>	50	50		
<b>Male</b>	50	50		
<b>Total</b>	100	100	0	0

Provide additional explanation on targets, other methodologies used, and other focal area specifics (i.e., Aichi targets in BD) including justification where core indicator targets are not provided

The emission reduction estimate (indicator 6) is based on 20-year projections (2023 ? 2042) for the baseline and the alternative scenario. Population on the islands increases equally in both scenarios and in line with the growth observed in the last five years of data. The grid emission factor was estimated in line with UNFCCC's methodology. Emission reductions take into account both supply (renewable vs. fossil fuel sources, transmission losses) and demand (i.e., reductions in consumption from the adoption of energy efficiency measures). Direct mitigation over technology lifetime (10 years): For the pilot demonstration seven investment projects identified based on the technical energy audits for public buildings have been used for the estimation: CFBC College, Ministry of Finance, Court house, Alexandra Hospital, Charlestown secondary school, Administration Building, Long Point (Port). The estimation of indirect emission reduction is based on the potential emission reduction due to the complete decarbonisation of the electricity grid in St. Kitts and Nevis, with a causality factor of 15% applied. See annex L for further information. The project's direct beneficiaries (indicator 11) are those whose capacity is strengthened in the project's capacity-building sessions. It should be noted that St. Kitts and Nevis is the smallest country in the western hemisphere, with a population of just over 50,000. While most workshops contribute to strengthening the capacity of the participants, the training sessions under outputs 1.6, 3.1 and 3.2 are specifically considered for the purpose of this estimate. The figures consider unique individuals attending the training sessions, to be selected among officials from government ministries, the electricity utilities and other key stakeholders. Further information may be found in Annex L.

## **Part II. Project Justification**

### **1a. Project Description**

#### **i) Global environmental and/or adaptation problems, root causes and barriers that need to be addressed**

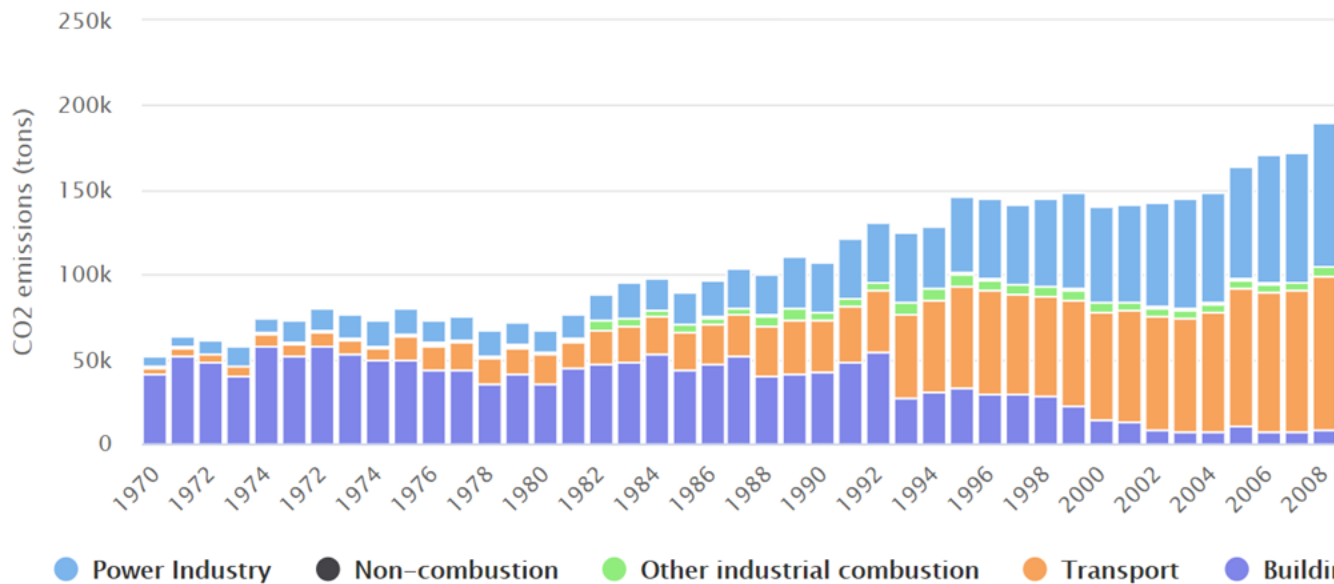
##### **Global environmental problem**

To achieve the Paris Agreement targets, the transition to a low-carbon energy sector is critical, as energy accounts for two-thirds of global emissions. Deployment of renewable energy technologies, coupled with energy efficiency gains, can provide an estimated 90% of the CO<sub>2</sub> emissions reductions needed by 2050 while advancing economic growth and development.

Small Island Developing States (SIDS) are committed to the global effort to reduce the rate of global warming as they are expected to be disproportionately more impacted by the effects, even though their contribution to climate change is significantly smaller. The Federation of St. Kitts and Nevis is fully aligned with these commitments. It is a ratified signatory to the UNFCCC, the Kyoto Protocol, the Paris Agreement, and subscribes to the sustainable development goals (SDGs). In October 2021, St. Kitts and Nevis submitted its revised NDC to the UNFCCC. The revised and strengthened NDC pledges a significantly more ambitious mitigation target of reducing economy-wide CO<sub>2</sub> emissions by 61% by 2030, compared to the base year 2010, conditional upon adequate access to resources including climate finance as well as capacity building support. This shall be achieved by switching to 100% renewable energy in electricity generation and increasing the share of electric vehicles in the vehicle fleet to at least 2%.

Notwithstanding its commitment and ambition, St. Kitts and Nevis continue to depend on fossil fuel combustion for its energy needs. It is estimated that most country emissions come from the energy sector, mainly, the power industries and the transport sub-sectors (Figure 1). Although its overall emissions are minute (203,036 tCO<sub>2</sub> in 2016), its per capita emissions are relatively large due to its very small population. Electricity generation is responsible for close to 65% of total GHG emissions, as the country relies almost entirely on diesel generators. As a result, the emission intensity per MWh of the electricity consumed is around 0.67 (St. Kitts) and 0.73 (Nevis) tCO<sub>2</sub> per MWh generated, above the global average of 0.47 tCO<sub>2</sub>/MWh. The reliance on fossil fuel imports for electricity generation and road transport has a substantial impact on the country's gross domestic product (GDP). Annual expenditures on such imports reach up to 5.2% of the country's GDP. This may even increase due to rising oil prices due to the challenges witnessed in the post-COVID-19 era and the economic impact on both the private and public sector globally due to the war in Ukraine. Transitioning to clean electricity supply is also complicated by high usage, with adoption of energy efficiency measures slow. Per capita consumption in St. Kitts and Nevis is among the highest of all Eastern Caribbean countries.

**Figure 1. Estimated CO<sub>2</sub> emissions by sector in St. Kitts and Nevis**



This project will support the country in accelerating decarbonization by transitioning towards a highly ambitious target of 100% renewable energy generation. To achieve this, the Government of St. Kitts and Nevis intends to harness renewable energy sources, namely geothermal, solar and wind. It also aims to reduce consumption through achieving 100% high energy efficiency public buildings. As noted earlier, the grid accounts for approximately 65% of the country's emissions and is therefore the target with the highest potential ? especially considering that a decarbonized electricity grid is also a pre-condition for the future decarbonization of the transport sector.

#### **Root causes of the global environmental problem and barriers to change**

The root causes and barriers holding Saint Kitts and Nevis from transitioning to a low-emission and climate resilient electricity sector are summarized below. Note that while these barriers are presented as conceptually separate, in practice they are often interdependent, reinforcing, and inseparable. This is the fundamental reason why an integral approach is intended for this project. Moreover, the barriers need to be understood in the context of SIDS, which face specific economic and environmental challenges, including:

- o A narrow resource base that deprives SIDS from the benefits of economies of scale
- o Small domestic markets and heavy dependence on a few external and remote markets
- o High costs for energy, infrastructure, transportation, communication and servicing
- o Long distances from export markets and import resources
- o Low and irregular international traffic volumes
- o Little resilience to natural disasters
- o High volatility of economic growth
- o Limited opportunities for the private sector and a proportionately large reliance of their economies on their public sector
- o Fragile natural environments

On top of these common challenges affecting SIDS, the following root causes and barriers affecting St. Kitts and Nevis transition to 100% renewable electricity generation and 100% high energy efficiency public buildings are:

## **1. No overarching, operational vision and insufficient institutional arrangements that foster a transition towards a 100% green grid**

### **1.1. Absence of a consistent, overarching vision that is made operational through a feasible, integrated roadmap**

The current National Energy Policy (NEP, 2014) in St. Kitts and Nevis established the goal of a 100% renewable-based electricity grid for the year 2020. However, the steps, funding, and projects to achieve this were not defined, and by 2020 approximately 95% of the electricity generation still came from diesel generators. In its updated NDC (2021), the Government of St. Kitts and Nevis indicated an intention to increase the use of renewable energy generation to 100% of all generation by 2030. This is a highly ambitious declaration and major shift from the current state of play. The NDC Implementation Plan and Financing Strategy (2021) provides recommendations to facilitate the transformation of electricity generation through accelerated uptake of geothermal, solar photovoltaic, and wind power, alongside considerations related to distributed solar sources. Measures recommended include the identification and addressing of barriers for developing geothermal energy on both islands; exploration of incentives to enhance solar PV uptake; and the conclusion of negotiations to introduce wind power capacity. The NDC target and the related implementation plan do provide estimation of needed funding, formulate capacity needs and indicate that the national policy framework is required. However, it does not provide a detailed policy roadmap and schedule for the energy sector for achieving the desired transition or overall goal. According to the Implementation Plan and Finance Strategy significant funds will need to be mobilized for St. Kitts and Nevis to achieve its NDC. The indicative cost of implementing the identified mitigation measures through 2030 is USD 637 million, while the adaptation measures are estimated to cost USD 127 million over the same period. To enable the Government and funders an enhanced coordination is needed to implement the NDC in an effective and efficient way. So far investors, the utilities, and the Government have mixed priorities on the mandate for increasing renewable energy in the grid or energy efficiency targets, as well as difficulties in assessing progress towards the desired goals. For instance, the country does not have a portfolio of concrete proposals at different levels of maturity for catalysing investments in renewable energy projects aligned with a national strategy or roadmap.

Without a clear guidance on the schedule for adding renewables (currently under development through the Integrated Resilient Resource Plan (IRRP) supported by CCREEE), a supportive policy roadmap and framework as well as the access to financing required to achieve this, reverting back to conventional fossil fuel plants will be required to prevent dire economic and social consequences. Without a roadmap with a generation expansion plan aligned to a grid integration study for high penetration levels of variable renewable energy (VRE), a strategic projection for addition of new renewables in a stable and reliable grid environment is not possible. Without such information, the power utilities of each of St. Kitts and Nevis would be averse to high penetration levels of new renewables as they would be unsure of the effects such technologies would have on grid performance.

### **1.2. Insufficient inter-island coordination on energy issues**

The energy sectors on the two islands operate independently, with different institutions and regulatory frameworks, and no single designated regulatory authority in charge of overseeing the entire energy sector at the federal level. Instead, energy matters are the competency of the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport for the island of St. Kitts, and of the Nevis Island Administration for the island of Nevis, with coordination between the two taking place through informal mechanisms. This barrier further enhances the already challenging issues of scale, as both islands pursue their own goals. Lack of coordination has created challenges for the development of joint projects at a larger scale, such as the development of geothermal sources; instead, each island is pursuing its own

studies and projects. While some topics get legislated twice, regulatory gaps also persist, with uncertainty surrounding issues such as the potential energy interconnection of the islands and the arrangements for one of them exporting energy to the other.

### 1.3. Energy efficiency insufficiently reflected in legislation

The institutional framework of the energy sector is relatively robust and is adequate for the initial stages of a clean energy transition. In April 2011, the St. Kitts Electricity Services Act was passed which resulted in the corporatization of the former Electricity Department into a semi-autonomous utility, the St. Kitts Electricity Company (SKELEC). The Nevis Electricity Company Limited (NEVLEC) is the sole provider of electricity on the island of Nevis and operates as a fully owned subsidiary of the Nevis Island Administration. Energy generation is regulated in Nevis's Revised Electricity Ordinance (2009). While both islands operate with self-regulated, centralized utilities, both have legislations which authorize private generation and provide a degree of flexibility for scaling up each grid.

Energy efficiency, on the other hand, needs an improved legislation and policy framework to facilitate even the initial stages of a clean energy transition. The 2014 National Energy Policy (NEP) sets the mandate to promote energy efficiency and conservation in all sectors through, inter alia, the promotion and implementation of energy audits, the review and amendment of mandatory building codes, and the review of the electricity tariff structures and rates. However, there has been limited progress on this direction, with advances only in undertaking energy audits of public buildings (see barrier 2.2 below). As for the adoption of renewables, the NEP does not provide specific targets, sectors, or guidelines. The islands are yet to adopt guidelines on labelling of energy-related products, as well as a mandatory building code and standards applicable to lighting, equipment, motors and appliances. Moreover, no action has been undertaken for the preparation and enactment of energy efficiency legislation nor electricity tariff structures.

### 1.4. Lack of transparency and data in the energy sector

St. Kitts and Nevis has well documented challenges in terms of public availability of data. The NEP acknowledges this, as it includes directions to enhance related institutional capacity and legislation in the energy sector. However, there has been no progress in the implementation of these and there is no strategy to systematically collect, compile, manage and publish sectoral data required for transparency and effective decision-making.

## **2. Lack of local evidence of the economic, technical and social viability of and experience in implementing low-emission energy solutions**

### 2.1. Insufficient experience with renewable energy generation and its integration into the grid

Despite the NEP goals, renewable generation is still marginal in terms of the entire grid. In 2022, eight years after the NEP's revision, 95% of the energy is still produced by fossil fuels. Only 4.25 MW of solar capacity are installed in St Kitts, whereas a single 2.2 MW wind farm operates in Nevis since 2011. The scaling up of renewables in St. Kitts and Nevis requires focusing on different type of issues, mainly, grid stability (frequency, rotor angle and voltage) in the growing presence of renewable energies. The country has not yet had to confront these topics, which will become more relevant as the clean energy transition progresses. A lack of local companies providing the services needed for significant renewable energy deployment was likewise noted.

### 2.2. Insufficient awareness regarding energy efficiency measures and regulations

Adoption of energy efficiency measures has been slow on the twin-islands, with per capita consumption in St. Kitts and Nevis the highest of all Eastern Caribbean countries. As for other SIDS, energy savings potential lies mostly in air conditioners, residential refrigerators and lighting. Energy audits were

undertaken with the support of the Sustainable Energy Facility for the Eastern Caribbean (Caribbean Development Bank, CDB) on seventeen public buildings and twenty water pumping stations in St. Kitts and Nevis in 2018. However, funding to implement the majority of these recommendations has not yet been identified and mobilised. Recommendations from the current NEP such as the adoption of labelling guidelines and mandatory standards for appliances have also not yet been implemented.

There is also an absence of a structured national promotional programme for energy efficiency measures across sectors and specially in the public sector to stimulate market demand and supply dynamics for energy commodities. Although some accompanying promotions are undertaken annually for clean energy and energy efficiency during the annual CARICOM energy month, these are not sufficient to sustain a clean energy products and services market. In particular, poor households face constraints in putting relevant measures in place to conserve energy and pay electricity bills. In the Caribbean, single-parent female-headed households face a higher likelihood of being poor. Therefore, public education on renewables and energy efficiency measures, as well as socially inclusive and gender-responsive residential programmes are needed in line with Sustainable Development Goal 7, to ensure universal access to affordable, reliable and modern energy for all.

### 2.3. Limited government capacity in terms of planning and regulating in the energy sector

The Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport has responsibility for the energy sector in St. Kitts. In Nevis, oversight is provided by the Office of the Premier together with the Geothermal Advisory Committee, chaired by the Minister of Natural Resources. The ministries of both islands with responsibility for planning, managing and monitoring the energy sector have small complements of staff to execute the tasks. The Ministries are not equipped with the expertise required to assess the contribution of renewable energy technology or the activities required to optimize integration.

Given the limited technical expertise, the energy sector is left vulnerable in terms of ensuring competent guidance of the ongoing developments, policy formulation and appraising renewable energies and their impact from an economic, social and environmental perspective. The intended transition in the energy sector will put considerable pressure on the sectorial capacities, including with regards to: planning activities; requirements for updates and development of the requisite legislative, policy and policy tools; management of bids and administrative additions of new generators, including regulation; and monitoring and verifying energy data. Inadequate staffing would quickly become a bottleneck for a smooth and efficient transition to renewables.

The transition to a green grid will also require coping with infrastructure and logistical issues, including dealing with port facilities, roads to project sites and access to specialty equipment such as cranes for wind turbine deployment. These challenges often increase the risk of renewable energy projects, which ultimately ends up reflecting in its price.

## 3. Limited financing materialized for renewable energy and energy efficiency

### 3.1. Limited funding from banks and private actors for the deployment of renewable energies and energy efficiency measures

Local equity and government funding are insufficient to achieve the scale of funding required for a clean energy transition, and access to public and private finance is a challenge for SIDS. Moreover, in many SIDS the absence of a domestic private sector to supply sustainable energy quality products and services has become a bottleneck for the uptake of sustainable energy markets, and this is no different in St. Kitts and Nevis. In the country, the framework to attract domestic and foreign investments into renewables has been scarce and ineffective in attracting the necessary investment, including foreign direct investment (FDI). Furthermore, assistance from regional and multi-lateral development banks needs to be channelled in a more dynamic way. While the country has made recent progress in advancing with investment in geothermal energy, significant challenges remain in terms of the scaling up of investments in the energy

sector. This challenge is magnified by the lack of a long-term roadmap for achieving the NEP and an accompanying investment plan, giving less clarity to investors on possible opportunities.

### 3.2 Limited resources and experience in structuring and assessing bankable financial proposals

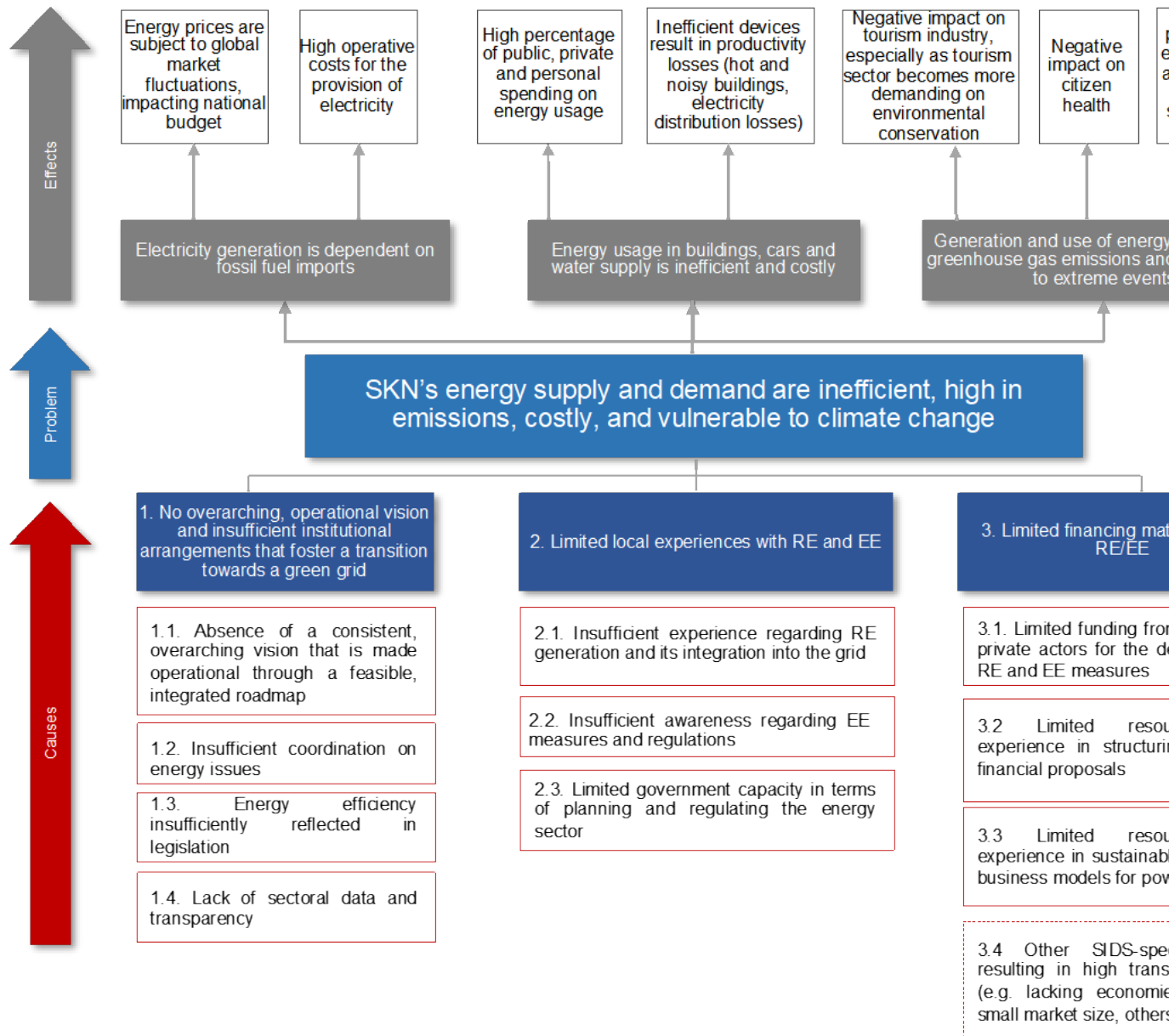
In addition to having a lack of vision and roadmap on how to achieve a transition to 100% renewable energy (as noted in barrier 1.1 above), St. Kitts and Nevis has limited capacity to assess the relevance and soundness of proposals presented to them by public and private regional and international financiers. The establishment of bankable power purchase agreements (PPAs) requires high levels of certainty and understanding on issues such as connection, guaranteed off-take, predictable long-term revenues and possible curtailment events within an appropriate regulatory framework. Having such technical understanding is key for ensuring that projects chosen are well aligned with national priorities, such as the NDC, take into consideration the national technical context and are financially sound from a national point of view. Furthermore, the federation has limited capacity to develop project concepts that align with the three elements of the previous sentence. For instance, while geothermal is the central source of renewable energy to support the energy transition, the federation is yet to define a proposal that covers all the main angles required by financiers, including legal, environmental, economic, institutional and social points of view.

### 3.3 Limited resources and experience in sustainable and viable business models for power utilities

On a smaller scale, building owners do not have access to sufficient financing to support energy efficiency measures and small renewable energy projects in buildings through-out the two islands. The public sector has limitations on financing energy efficiency measures due to limitations on public spending and restrictions on committing to additional loans (due to the financial situation of the country). These restrictions limit the capacity of public institutions to subscribe debt or undertake expenditures that go beyond the current year's budget. However, the island utilities, SKELEC and NEVLEC, as private entities, have no such limitations. However, to date the two utilities have not had the opportunity to implement business models that can support the transition to high energy efficient buildings, building on their significant activities and presence on both islands.

## **Summary: project problem tree**

**Figure 2. Summary of St. Kitts and Nevis barriers and root causes**



Note: root cause 3.4. not directly addressed by the project

## ii) Baseline scenario and any associated baseline projects

This section provides an outline of the organization, the status, and trends of the electricity sector, along with information that is relevant to contextualize and understand the baseline scenario.



#### Governance of the islands

Saint Kitts and Nevis is the smallest sovereign country in the Americas, both in terms of population and area. Approximately 52,441 people live in St. Kitts (41,333) and Nevis (11,108) in 2020. The combined area of the two islands is 260 km<sup>2</sup>. The constitution identifies St. Kitts and Nevis as a sovereign democratic federal state, with the island of Nevis having a high degree of autonomy. The energy sectors on the two islands operate independently, with different institutions and regulatory frameworks.

The island of St. Kitts has no local government, and its administrative structures are those of the Federal Government. The Parliament of St. Kitts and Nevis has the prerogative to pass energy legislation on St. Kitts. The responsible ministry for the energy sector is the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport. The Minister may grant licenses(s), exclusive or nonexclusive, for the generation, transmission, and distribution of electricity for a period of up to 25 years from fossil or renewable energy sources. Under the Public Utilities Commission Act of 2011, a new governance instance was introduced, namely, the Public Utilities Commission (PUC), which would be responsible for regulation and oversight of the electricity sector, including tariff setting, ensuring quality and reliability of service, and long-term planning of the sector. However, the Commission has not been established to date. As for the utilities, SKELEC is a vertically integrated government

owned-corporation; the sole provider of grid-connected electricity on St. Kitts under the Saint Christopher Electricity Supply Act.

**Table 1. Main entities related to the electricity sector in St. Kitts**

Entity	Type	Tasks and responsibilities
Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport	Government ministry	Responsible for direction of overall national energy policy, strategic direction and future development of the energy sector. Responsible for regulation and oversight of SKELEC. Tasked with consumer protection and ensuring quality of service.
Ministry of Sustainable Development	Government ministry	Responsible for development of policies and strategic direction to achieve long-term sustainable development
Ministries of Foreign Affairs, Economic Development, International Trade, Investments, as well as Industry and Commerce	Government ministry	Responsible for the import and regulation of petroleum products.
SKELEC	State-owned, vertically integrated utility	Responsible for the generation, transmission, distribution, and sale of electricity.

**Table 2. Legislation applicable to the electricity sector in St. Kitts**

Key legislation and latest update	Content	Regulator
St. Christopher Electricity Supply Act (2011), Amendment (2015)	Main regulatory legislation for the provision of the electricity service in St. Kitts. The legislation was amended in 2015 to include provisions on the promotion of renewables such as feed-in-tariffs, net metering, among others.	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport
Public Utilities Act (2002)	Regulates public utilities, including the setting of the rates and tariffs.	

The island of Nevis has an island authority, the Nevis Island Administration, which is a local government within the Federation. The Nevis Island Assembly has the exclusive right to make laws relating to the generation, transmission, and distribution of electricity on Nevis, which is operationalized through the Office of the Premier, which has responsibility for the energy. Similar to St. Kitts, there is no independent regulator for the energy sector. Nevis's utility, NEVLEC, is also a vertically integrated, wholly state-owned incorporated subsidiary and the sole provider of grid-connected electricity on the island. On July 8, 2008, the Nevis Island Assembly passed the 2008 Nevis Geothermal Resources Development Ordinance to give oversight to geothermal exploration and exploitation. NEVLEC is self-regulating and responsible for setting consumer tariffs.

**Table 3. Main entities related to the electricity sector in Nevis**

Entity	Type	Tasks and responsibilities
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Nevis Island Administration (NIA)	The governing body for the island of Nevis	Responsible for certain administration and public matters on the island of Nevis as prescribed under Chapter X of the Constitution of Saint Christopher and Nevis (1983).
The Office of the Premier	Executive of the Nevis Island Administration	Responsible for oversight of energy sector, NEVLEC, cooperation for and development of renewable resources through the Energy Unit.
NEVLEC	Vertically integrated utility, established by statute and owned by the NIA	Responsible for the generation, transmission, distribution, and sale of electricity. Self-regulates and sets electricity tariffs.
Geothermal Advisory Committee	Chaired by the Minister of Natural Resources, with the participation of the Premier of Nevis	Leads the development of geothermal resources on Nevis, including negotiating the terms of geothermal development.

**Table 4. Legislation applicable to the electricity sector in Nevis**

Key legislation and latest update	Content	Regulator
Electricity Ordinance (2009)	Regulates the provision of electricity in Nevis, including licenses (except for geothermal), metering,	Ministry of Communications, Works, Public Utilities, Posts, Physical Planning, Natural Resources and Environment, Nevis Island Administration
Nevis Geothermal Resources Development Ordinance (2008)	Regulates reconnaissance, exploration, drilling, production and use of geothermal resources. Regulates licenses, concessions, PPAs, prices.	

#### Current status of the electricity grid

St. Kitts and Nevis relies almost entirely on fossil fuel imports to cover its energy demands, as a result of which it releases, on average 0.67 (St. Kitts) and 0.73 (Nevis) tCO<sub>2</sub> per MWh of electricity it produces. The power supply systems in the Federation are currently operated independently and are not interconnected. SKELEC is headquartered in Basseterre, St. Kitts, and NEVLEC is headquartered in Charlestown, Nevis. Total installed capacity by SKELEC, NEVLEC, and the only independent power producer, WindWatt, stands at a nominal 72 MW, with a peak demand of around 35 MW on the two islands. The operational reserve, provided to

ensure adequate power supply in the event of plant failure, including to ensure resilience during cyclone events, is considerably less, as several of the units that are reported by the utilities were commissioned as early as 1987 and have a reduced effective capacity. Outages are required to facilitate maintenance on both islands. It has been the policy of the Government to have developers invest in the power supply, particularly large investments, to offset the financial commitments that would be required to upgrade and expand the grid capacity in order to keep pace with the growth of private capital investment. Thus, some business - especially in the tourism sector - rely on partial self-generation. One example is the Marriott Hotel on Saint Kitts, which has a self-generation capacity of 4MW using diesel generators.

SKELEC provides approximately 74% of the country's electricity and is the sole provider of grid-connected electricity in the island of St. Kitts. It has 53.15 MW of total nominal capacity, of which almost 50 MW (93%) are comprised of diesel generators. Its power station is located at the Needsmust station and electricity is transmitted along twelve 3-phase, 3-wire, 11kV radial feeders, both above and below ground. The 11kV electricity is then stepped down for distribution to 3-phase, 4-wire, 400V and single phase, 2-wire, 230V. The system frequency is 60Hz.

Over the past two decades, SKELEC commissioned a number of new generators to either add new capacity to the system or replace ageing inventory. Between 2011 and

2021, 19.8 MW of diesel capacity has been added into the grid. It purchased two 4 MW diesel generators between 2006 and 2008, replaced a damaged 4 MW generator in 2009, and added additional capacity in 2011 when it installed four additional 4 MW diesel generators. It also installed 2.25 MW of solar PV since 2013, of which 1 MW, located at the Eastern Caribbean Central Bank (ECCB), is currently operational. It is also estimated that 1.2 MW of distributed rooftop solar PV exists island wide.

**Table 5. Selected grid indicators (2021 data)**

<b>Indicator</b>	<b>St. Kitts (SKELEC)</b>	<b>Nevis (NEVLEC)</b>	<b>Total / Average</b>	<b>%</b>
Nominal installed capacity (MW)	53.15	22.60	72.85	100%
Diesel	48.90	20.40	66.40	91%
Solar	4.25	0.00	4.25	6%
Wind	0.00	2.20	2.20	3%
Peak demand (MW)	26.00	9.30	34.70	
Generation (MWh)	171,491	58,916	230,407	
Transmission and distribution losses (%)	9%	9%	9%	

NEVLEC provides the remaining 26% of the country's electricity. It owns and operates generators with a capacity of 22.6 MW, with peak demand of around 9.3 MW (1.1-1.2 MW coming from the Four Seasons Hotel alone) and a base load of 5.6 MW. It operates through an 11kV feeder system, with electricity stepped down to 400V and 230V. The average age of the capacity is almost 15 years. The eldest unit being a 2.5 MW diesel generator set commissioned in 1995, and the most recent (3.8 MW) commissioned in 2017. In 2010, the utility entered into a power purchase agreement (PPA) with WindWatt Power Inc., the first such agreement in Saint Kitts and Nevis.

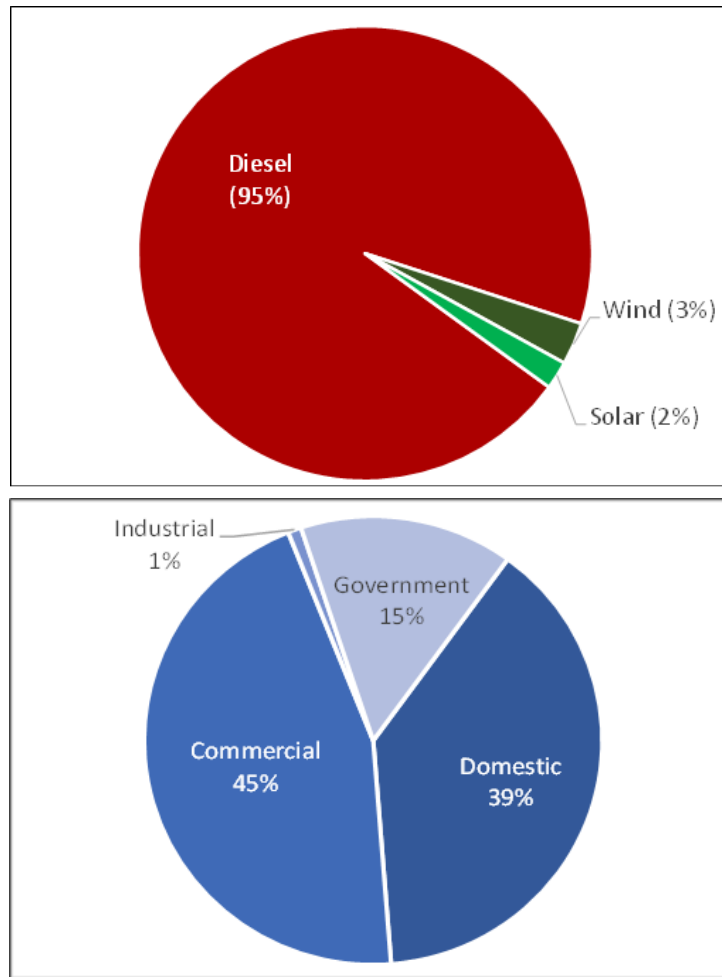
With a nominal output of 2.2 MW, WindWatt's output to the island's grid is limited to 1.6MW under the existing

PPA. The experience from the PPA showed that sales were much higher than expected and the reliability has been inconsistent, especially in the last 5 or 6 years. This apparently is due to poor maintenance of the turbines. The energy unit and the utilities have in recent years further investigated the possibility of new PPAs. Most recently, a 35 MW large-scale PV plant on St. Kitts was under consideration but has not materialised yet. For new PPAs, the procurement process needs to be more competitive and the scale needs to be taken into consideration as smaller projects result in higher tariffs. St. Kitts and Nevis is prioritizing the exploration of the geothermal resources and the promotion of innovative integrated utility service models at this point in time, as those of most relevance and potential for the country to achieve its long-term decarbonization targets.

**Figure 3. Electricity generation mix and consumption by sector**

(a) Generation (MWh)

(b) Consumption (MWh)



There are data limitations in the energy sector, which typically requires secondary sources or ad-hoc requests to the utility authorities. While no long-term time series with the evolution and projection of consumption for each of the utilities is available, the slow growth in population (0.9% in the 1990 ? 2018 period, according to World Bank estimates ), paired with the opportunities for reducing consumption, imply that a projection of the aggregated electricity consumption will have a soft slope. However, per capita consumption is estimated at 3,540 kWh per capita per year, higher than the average for the Eastern

Caribbean region , and the developing hotel sector may also drive consumption figures up.

#### Electricity rate

In practice, SKELEC and NEVLEC operate as self-regulating utilities. SKELEC's tariff consists of a base rate, a demand charge, a standing charge, and a fuel surcharge that translates fuel price variations to the consumers. The Federal Government routinely provides subsidies on an ad hoc basis to SKELEC. For residential consumers that use less than 250 kWh per month, the government fully subsidizes the fuel surcharge. About 65 percent of residential consumers benefit from this subsidy. NEVLEC's electricity charge is likewise composed of a base rate, demand charge, a standing charge, and a fuel surcharge, which NEVLEC began billing in 2005. In both cases, it is unclear how an increase in the share of renewables (e.g. through renewable electricity purchases to an independent power producer (IPP) with a PPA) would affect the electricity price charged to consumers.

Electricity costs are high and volatile due to the country's dependence on imported petroleum-based fuels. For reference, the average electricity price in Latin America is 0.16 US\$/kWh, whereas available data for SKELEC and NEVLEC shows prices between 0.24 - 0.28 US\$/kWh, depending on the type of user. Electricity tariffs for



costumers have been unchanged since 2011 in St. Kitts comprising a general service charge of minimum of US\$ 4 per month and an energy charge for domestic services between 0.22 ? 0.25 US\$/kWh. Industrial and commercial customers are charges between 0.26 ? 0.30 US\$/kWh (plus demand charge of US\$ 5.5 per every kVA). Energy charges in Nevis are slightly lower, however, fuel surcharge subsidies needed to keep costumer?s tariffs stable (due, for example to the increased oil price) are covered by the utilities, putting financial pressure on the companies. Oil price volatility is thus a major risk for sustainable operation of the utilities on both islands, demonstrating the country?s economic vulnerability to the dependency of importing fuel oils. In addition, despite the relatively high rates, maintenance outages are still frequent in both islands due to the age of the generators. Irrespective of price level, price volatility derived from variations in oil prices pose an additional threat to the country. In June 2022, The Government of St. Kitts and Nevis announced three new measures designed to provide relief to consumers facing high electricity bills. External factors such as the conflict in Ukraine have driven up the cost of oil with a dramatic spike in the price of fuel also in St. Kitts and Nevis. The measures include a moratorium (hold) on arrears of electricity bills, a freeze on disconnection of electricity service provided that consumers pay the current portion of their bills, as well as a waiver of the XCD \$150 electricity reconnection fee. According to the Government, the cost of fuel more than doubled in June 2022 resulting in subsidy being provided

by the Government. Without the subsidy (XCD \$9.5 million), it is estimated that the cost of electricity bills per household would have increased by XCD \$500 (USD 185) per household. The current situation showcases the high dependency and volatility of the energy supply in St. Kitts and Nevis.

#### Sources of renewables and their integration into the grid

St. Kitts and Nevis are part of the Volcanic Islands of the Antilles arc, which have significant geothermal potential. It has been identified that both islands have a combined geothermal potential in the range of at least 50 MW up to 300 MW of base load capacity. The country is participating in the GCF project Sustainable Energy Facility for the Eastern Caribbean (FP020), which aims to finance commercial geothermal energy projects and strengthen legal and regulatory frameworks to underpin the development of such potential in the East Caribbean region. Harnessing geothermal energy would be a game changer for the islands, as it would lead to a renewable energy source of large magnitude which can serve as base load. However, significant technical and economic challenges and unknowns remain with regards to the extent of the geothermic source and as to the economic and technical viability of drawing on it, and further studies are underway.

For this project, exploratory drilling on geothermal development in Nevis has been completed and the Nevis Island

Administration (NIA) intends to advance the process to facilitate the supply to the NEVLEC grid. It is estimated that the potential size of supply could be anywhere between 10 and 30 MW. A 10 MW plant would exceed the energy needs on the island and would offer the potential to also serve St. Kitts ? if an island interconnection as envisaged in the National Energy Policy (NEP) was established. Under the NEVIS Island Climate Enhancement (NICE) project (as part of the GCF project FP020), the NIA and NEVLEC with support of the Fraunhofer Institute (Germany), investigated the development of the geothermal potential. In Phase 1A the local demand on Nevis shall be met. It would comprise a new 9-30 MW Geothermal Plant at N3 site (Hamilton), a new 66 kV System with links to St. Kitts, a distribution system upgrade (incl. 15 MW/15 MWh Battery Energy Storage System (BESS) at Liburd Hill to help stabilize system, and digitalization of electricity system (incl. SCADA, AMI, Other Smart Grid Initiatives). In the mid- to long-term (Phase 1B and Phase 2) additional geothermal capacity is envisaged to allow the export of electricity to St. Kitts and other islands and to install a Power-to-X facility on Nevis. Through this project, on 9 December 2022, the Caribbean Development Bank approved USD\$17 million in financing through to St. Kitts and Nevis to pursue drilling of up to two geothermal production wells and one injection well.

On the island of St. Kitts, in September 2015, the Government of St. Kitts and Nevis signed a letter of intent

with the French company Teranov for the exploration of geothermal potential and development of a geothermal plant on this island. Teranov has undertaken geothermal exploration exercises and found that there is potential in St. Kitts to develop at least 18 to 36 megawatts of geothermal power. Thus, at the moment, each island is pursuing their own geothermal plans, each of which would exceed their internal requirements. Lack of coordination between the islands has been a barrier preventing the establishment of a common, coordinated approach towards geothermal power.

An EU-funded technical assistance in 2014 emphasized the relevance of the interconnectivity between the two island grids in order to reduce risk in disaster management and to maximize the benefits of geothermal development. The Department of Sustainable Development from the Organization of American States (OAS) had already performed a first interconnection assessment in 2008, as part of a pre-feasibility study for an electrical connection between St. Kitts and Nevis. This study found that the electrical interconnection between St. Kitts and Nevis is justifiable and would ease the strained energy supply systems of both islands by adding extra capacity. In 2015, Deloitte and Black & Veatch undertook a technical and financial assessment on the potential of the geothermal resource in St. Kitts and Nevis in which they have estimated that the interconnection would trigger annual savings of slightly over USD 10 million per year over a

20-year period from a 10 MW (megawatt) geothermal power plant in Nevis. If a 30 MW geothermal facility was installed, for which the geothermal potential on Nevis would also suffice, savings of up to USD 85.5 million in Net Present Value (NPV) could be generated for the Federation.

Beyond geothermal, St. Kitts and Nevis also has identified potential other sources including solar, wind and, to a lesser extent, biomass:

? Solar. Solar PV has high potential in St. Kitts and Nevis, as the country's global horizontal irradiation exceeds 5 kWh/square meter per day. The estimated solar PV potential approximately amounts to 16 MW. IRENA is currently undertaking a study on the solar PV rooftop potential of the cities of Basseterre and Charlestown in Saint Kitts and Nevis;

? Wind. The estimated wind energy potential ranges from 6 to 23.4 MW. St. Kitts and Nevis have average wind speeds of 6.6 meters per second (m/s) to 7.9 m/s. Short-term development plans include 5.4 MW of wind on the island of St. Kitts. An additional 20 MW of wind energy projects are planned:

? Biomass. The potential of biomass as an energy source in the country is estimated between 4.2 and 14 MW. To date, this potential remains entirely untapped. A 7 MW waste-to-energy gasification power generation plant on St. Nevis is currently in the early planning stage.

Despite the considerable solar PV and wind energy potential in St. Kitts and Nevis, the government has focused firstly on exploring the full potential of its geothermal capacity. This is because preliminary studies prepared by both SKELEC and NEVLEC suggest that the existing electricity networks would not tolerate a penetration of intermittent electricity (such as wind and PV) higher than 20%.

#### Energy efficiency

At 2,776 BTU/US\$ unit of output, the overall energy intensity index (EII) in St. Kitts and Nevis is moderate for a developing country. At the utility level, electricity systems losses are high: 17% for St. Kitts and 20.3% for Nevis. St. Kitts and Nevis therefore targeted a 20% reduction in electricity demand by 2015 through energy efficiency measures. The Government has declared its intention of putting a policy and legislative framework in place to support that objective including energy efficiency standards, restrictions on incandescent bulbs, and minimum energy performance standards, including through adapting to national circumstances the CARICOM Energy Efficiency Building Code, developed under the GEF-5 project 4171 ? Energy for Sustainable Development in Caribbean Buildings. However, to date a legislative framework has not been implemented. Furthermore, the St. Kitts and Nevis Bureau of Standards participated in the regional Eastern Caribbean Energy Labelling Project (ECELPL) towards improved national energy efficiency by introducing efficiency standards and labels for electrical household appliances and lighting equipment and promoting the use of energy-efficient products.

The Government has also set an example by executing level I, II and III energy audits for 35 facilities owned by the government in 2018. As summarized in Table 6, the

audits identified potential savings of US\$ 2.1 million per year (equivalent to 5,176 tCO<sub>2</sub>/yr.), i.e., less than 4 years average payback to recover the US\$7.8 million that the measures would cost. However, to date only 1 of the 35 facilities has managed to implement some of the identified measures. This occurred at the Alexandra Hospital complex in Nevis, where NEVLEC completed the recommended measures on lighting (replacing 919 fluorescent, incandescent, CFL lighting with LED lights) and air conditioning (replacing 56 low efficiency AC units with high efficiency multi split variable refrigerant flow units) funded through the EU's 11th European Development Fund supported by GIZ and CCREEE. For the installation and commissioning of the devices NEVLEC used its own staff and technicians. This is because the utilities have the technical experiences partially in-house, and there are no large energy service companies (ESCOs) existing in the country and only very few regionally operating.

**Table 6. Summary of the results from the 2018 energy audits in public facilities**

<b>Location / type</b>	<b>Facilities covered</b>	<b>Measures identified</b>	<b>Potential electricity savings (kWh/yr.)</b>	<b>Value of identified savings (US\$/yr.)</b>	<b>Cost of proposed measures (US\$)</b>	<b>Emission reductions (kg CO<sub>2</sub>/yr.)</b>
<b>St. Kitts</b>	<b>21</b>	<b>6</b>	<b>6,622,857</b>	<b>1,706,773</b>	<b>6,264,222</b>	<b>4,577,716</b>
Administrative buildings	8	2	2,591,426	718,163	2,591,481	1,790,787
Water Pumping Stations	13	3	4,031,431	988,610	3,672,741	2,786,929
<b>Nevis</b>	<b>14</b>	<b>4</b>	<b>1,471,334</b>	<b>398,891</b>	<b>1,565,562</b>	<b>598,416</b>
Administrative buildings	8	3	1,123,888	302,091	1,249,562	358,279
Water Pumping Stations	6	1	347,446	96,800	316,000	240,137

		11	8,094,	2,105,6		
<b>Total general</b>	<b>35</b>	<b>4</b>	<b>191</b>	<b>64</b>	<b>7,829,784</b>	<b>5,176,132</b>

Note: The category 'administrative buildings' in the table covers a wide range of facilities including hospitals, schools, the airport, the courthouse, the post office and public dependencies. The measures proposed in the study are all-encompassing in the sense that they cover efficiency actions and identify opportunities for renewable energy generation.

Additional actions being considered to reduce consumption include domestic funding for rooftop solar panel installations. While these measures can help reduce demand, beyond a certain threshold these systems can have a destabilizing effect on the grid, and an impact on the financial sustainability of the utility. An understanding of such thresholds is currently not available for the utilities in St. Kitts and Nevis and a sustainable finance and business model for the utilities under an energy transition scenario including high energy efficiency measures still missing. While the utilities are companies owned by the government, which in general allows for flexibility with regards to the finance (i.e., taking up loans), other public entities, such as school or authorities struggle to finance energy efficiency measures since they cannot sign up for a loan like a private company would. These restrictions may limit the capacity of public institutions to subscribe debt or undertake expenditures that go beyond the current year's budget to finance sustainable energy solutions at their premisses and buildings.

While no comprehensive, country-wide analysis on energy efficiency exist, preliminary estimates of the potential of energy efficiency measures highlight that the



largest potential comes from air conditioners (used mainly in residential, public and tourism), lighting, and residential refrigerators (Figure 4 and Figure 5 below), estimating potential savings of 9.1% GWh by 2030 even for a minimum ambition scenario. A high ambition scenario could produce over 20% of savings.

Figure 4. Potential for electricity savings over time

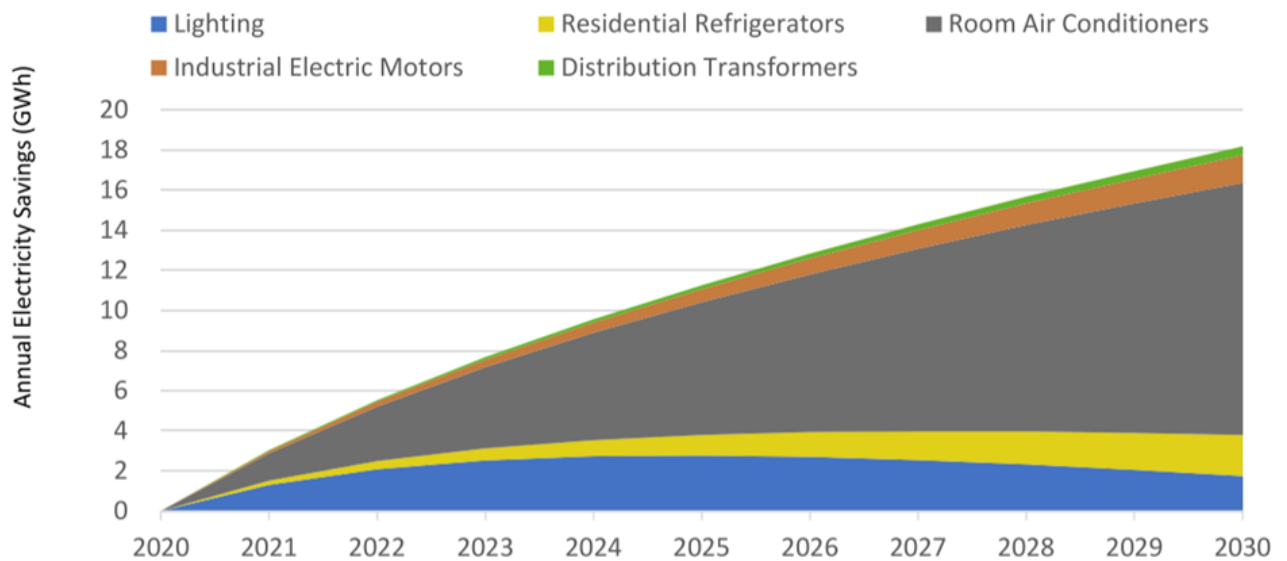
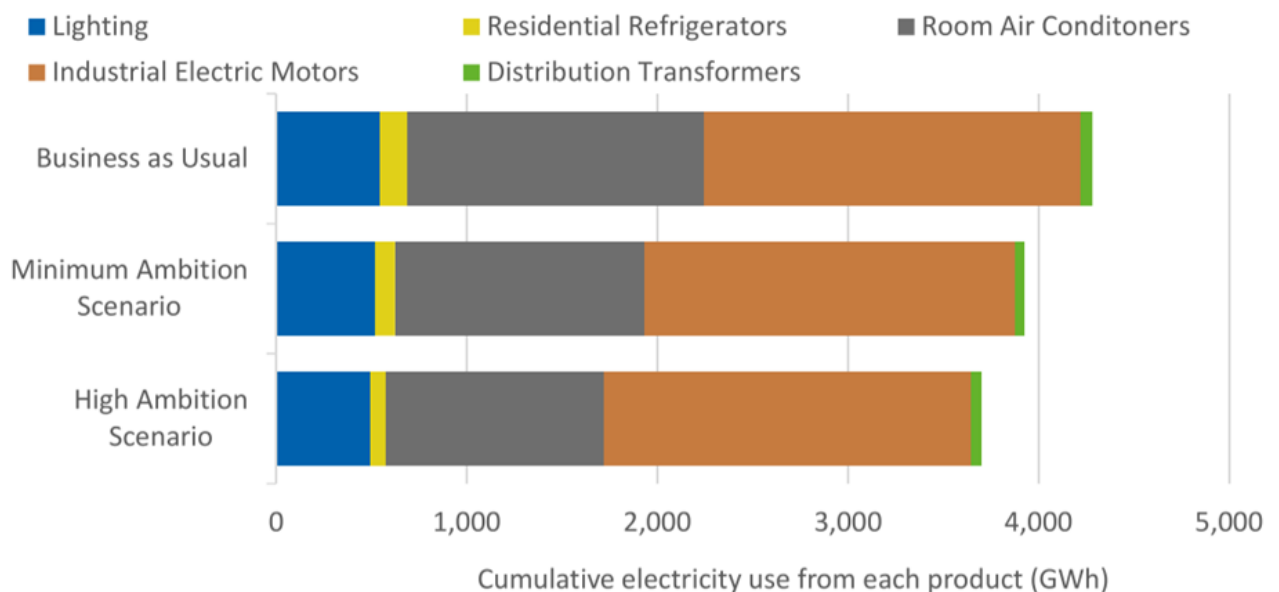


Figure 5. Potential contribution to cumulative electricity use by 2040



St Kitts and Nevis has also been able to access funding through the Caribbean Development Bank (CDB) for its street lighting programme and from other sources for its IT Center. Furthermore, it has accessed funding through regional collaboration from the EU for an Organization of Eastern Caribbean States (OECS) energy efficiency standard and labelling programme. There are however no commercial financing portfolios specifically designed for renewable energy or energy efficiency projects for local investors, which instead must rely on traditional financing options.

### **Policies and strategies in the energy sector**

In 2009, to address any supply challenges and support a transition to clean energy, the government began work on a draft National Energy Policy (NEP) and National Energy Action Plan (NEAP). The NEP was subsequently published by the Ministry of Public Works, Utilities, Energy and Housing of the Federal Government of Saint Kitts and Nevis in April 2011 and approved later that year. The draft NEAP, which lays out specific steps to implement the NEP, was never adopted and implemented.

With the support of the EU utilizing the technical assistance budget line under the General Budget Support Annual Action Plan (AAP) 2013, the Government of St. Kitts and Nevis received technical assistance to revise and adopt its National Energy Policy to facilitate the incorporation of alternative energy and include measures for feed-in-tariffs and net metering. These revisions were introduced in 2014 and remain to this day. The 2014 revision changed the vision in the NEP from ?(becoming) a twin-island nation with a sustainable energy sector where reliable, renewable, clean and affordable energy services are provided to all its citizens? to ?(becoming) an island nation with a sustainable energy sector where reliable, renewable, clean and affordable energy services are provided to all its citizens, where energy efficiency and the replacement of fossil energy by renewable energy sources will be promoted in all sectors of the economy, and where by 2020, 100% of the electricity supplied in the country will be produced from renewable energy sources?.

With regard to the electricity sector, the NEP calls for: (i) improvement of efficiency in generation, transmission and distribution; (ii) stimulation of environmentally, economically, financially, and socially appropriate and viable renewable energy sources for electricity generation; (iii) fair access to transmission and distribution infrastructure for both utility and small-scale generation, allowing for strong and competitive participation of the private sector; and (iv) collection, monitoring, and reporting of greenhouse gas emissions by the electricity sector. The policy also specifies a number of policies for the transportation sector, such as increased use of fuel-efficient motor vehicles and regular emissions inspections, and general energy use, such as improved efficiency and conservation practices, new building codes, and mandatory installation of solar thermal collectors for major water users.

The lack of a feasible, technically realistic pathway underneath the NEP and the NEAP ultimately played against the ambition of achieving a 100% renewable-based grid in the period between 2014 - 2020. The policy and the draft implementation plan failed to lay out a clear path for the implementation of its recommendations; nor did it describe which institutions will be responsible for implementing which specific actions, provide measurable goals and targets, or set priorities and timelines. Its language often remained vague and non-prescriptive.

Despite the slow pace of implementation, the NEP captures the country's determination to undertake a transition towards a cleaner grid and many of its recommendations are still relevant and needed as of today, e.g., improving the capacities of the National Statistics Department to collect, compile, and make available to the public relevant energy data, and the recommendations to scale-up energy efficiency efforts.

## **Integrated planning**

In the past there was no centralised and integrated planning for the electricity sector of both islands, St. Kitts and Nevis. The island utilities cooperate but operate independently. A centralized and integrated planning for the electricity sector and the deployment of renewable energies at scale will be decisive to future success for the energy transition in the country and has been identified among the key barriers.

To address the aforementioned lack of feasible, technically realistic decarbonization pathways for their electricity grids, the Government of Saint Kitts and Nevis (along with the Governments of Belize, Guyana, Trinidad and Tobago, and Jamaica) partnered with the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) in 2021 to undertake the development of Integrated Resource and Resilience Plans (IRRPs). IRRPs are plans for how countries can supply their need for electricity in the future. The plans aim to ensure reliable sources of power, minimize negative impacts on the environment and enhance the resilience of power systems to hazards and risks, while minimizing costs to consumers. Building resilience in this way guarantees energy security, as the Caribbean seeks to adapt to climate change and reduce GHG emissions. The common elements of an IRRP include: a core power system expansion plan, a climate and vulnerability assessment, a deep examination of critical power sector impacts and a clear presentation of gaps, insights, recommendations and actions to develop

the power sector with 'least regret'. Along with these elements, the assumptions made, and data collected are made available to primary stakeholders, as well as all maps and models developed with these inputs.

At the 82nd Special Meeting of Council for Trade and Economic Development, CARICOM endorsed the methodology, principles and practices of integrated resource and resilience planning as the preferred mechanism for electricity sector planning in Member States, and urged Member States to develop IRRPs by 2023.

In mid-2021, the IRRP capacity-building programme began its second iteration with the kick-off of the IRRP programme for Saint Kitts and Nevis. Capacity building is a critical component of the IRRP programme and runs in parallel with the development of the IRRPs. Stakeholders from Saint Kitts and Nevis were given modules and live review sessions on data collection, scenarios and key performance indicators, and basic demand projections and demand side management (DSM). In late 2021, the IRRP capacity-building programme continued with a session on modelling tools and grid modelling. It is the foundation to more specific, advanced and hands-on sessions on various modelling tools later in the capacity-building programme. During this time, the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) also began the

process of modifying the programme for Saint Kitts and Nevis to include a session on geothermal. Given the fact that geothermal energy is a marginal resource in the first three IRRP countries, the initial curriculum had not included the topic. The immediate goal of the programme is to build regional IRRP stakeholder capacity to be able to participate in all aspects of the power sector planning process. Long-term, its ultimate outcome is to enable those in regional utilities, regulatory bodies, government agencies and educational institutions to drive the region's resilient energy transition themselves.

The complete IRRP process also started in late 2021. The first stakeholder meeting reviewed the key elements of the programme, allowed the Rocky Mountain Institute (RMI) to introduce the expansion planning component and the methodologies to be followed and spoke to some next steps. The programme of activities is expected to run through the summer of 2022, with final deliverables and closeout by late 2022. The goal of the IRRP is to develop a least-cost expansion plan for St. Kitts and Nevis's electricity sector to reach the renewable energy target. The plan will be based on the characterization of electricity demand and projection of demand over the next decade. It will consider the demand-side, supply-side and transmission and distribution (T&D) resource options which can adequately and reliably contribute to meeting that demand. The development of the plan will include selected scenarios, which represent possible future

possible pathways for the sector to reach 100% renewable energies by 2030, in alignment the development goals and commitments in the country's NDC. Each scenario is defined through selected resources, targets and constraints. Mathematical optimization tools are then applied to determine the specific combination of resources which optimize each scenario for least-cost. The scenarios will be evaluated based on sectoral priorities and agreed strategic objectives, to derive a preferred least-cost plan.

The IRRP for St. Kitt and Nevis supported by CCREEE will be a first important step for enhancing the integrated planning and provide technical inputs for revising the National Energy Policy and its implementation strategy. However, the IRRP project focuses mainly on technical recommendations, without creating the policy environment required to ensure that these are effectively implemented. It will also provide a list of priority projects (reflecting what is proposed in the NDC and its Implementation and Financing Strategy) but will not work on the required regulations and financial incentives needed. Hence, the GEF project will take into account the results of the IRRP and build upon the scenarios and recommendation to develop an appropriate energy (policy) roadmap and will help to implemented first major steps of the energy transition (support in setting up the legislative and regulative framework, where still missing, and stimulating finance for the further uptake of

renewable energies and energy efficiency measures).

### **Policies and strategies in terms of sustainability and climate change**

St. Kitts and Nevis is a signatory to the UNFCCC, the Kyoto Protocol and the Paris Agreement and subscribes to the sustainable development goals (SDGs). St Kitts and Nevis also ascribes to the CARICOM Regional Framework for Achieving Development Resilience to Climate Change and its implementation plan, the CARICOM Energy Policy, and the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS). These regional and international commitments are part of the framework for achieving a low-carbon energy sector, specifically utilizing renewable energy technologies, coupled with energy efficiency gains.

The National Climate Change Policy, November 2017 provides the legal mandate and policy framework for climate action in St. Kitts and Nevis. Under the National Climate Change Policy, mitigation inclusive of energy efficiency, renewable energy (energy sector) and bio-energy (transportation sector), will be the means for reducing GHG emissions.

In October 2021, St Kitts and Nevis submitted its revised NDC to the UNFCCC. The revised and strengthened NDC

pledges a significantly more ambitious mitigation target of reducing economy-wide CO<sub>2</sub> emissions by 61% by 2030, compared to the base year 2010, conditional upon adequate access to resources including climate finance as well as capacity building support. The Government developed the NDC iteratively by engaging a range of stakeholders to identify an ambitious yet achievable mitigation target and brings together mitigation, adaptation, and loss and damage components.

In absolute terms, the revised NDC proposes to reduce emissions to 124,000 tCO<sub>2</sub>e. The base year 2010's emissions were 253,000 tCO<sub>2</sub>e excluding forestry. This emissions reduction largely comes from the energy sector, namely from power generation and transportation, which emit the largest share of GHG emissions in the country.

The mitigation and adaptation measures expected to be implemented within the scope of the revised NDC are described in more detail in St. Kitts and Nevis' NDC implementation plan and financing strategy, launched in 2022. The strategy lays the groundwork to reduce and adapt to the effects of climate change and translate the NDC target to real actions, interventions, and support identifying potential funding sources and mechanisms to help achieve the NDC target. The following mitigation measures were proposed in the NDC implementation plan and financing strategy:

• 35.7 MW of utility-scale solar PV capacity for Saint



Kitts;

?6.6 MW of wind power capacity in Saint Kitts;

?25 MW of geothermal power capacity (10 MW in Nevis and 15 MW in St. Kitts);

?Two solar PV plants of 0.75 MW each to supply two desalination plants;

?5% reduction in the power demand by introducing Solar Water Heaters; and

?Penetration of EVs reaching 2% of the vehicle fleet.

The Government of St. Kitts and Nevis considers the implementation of its revised NDC and the implementation plan and finance strategy, which integrates adaptation and mitigation priorities, as a critical strategic framework for building the country's adaptive capacity, reduce CO<sub>2</sub> emissions and building climate resilience. The NDC plan was developed in 2021 with the ambition to reduce economy-wide CO<sub>2</sub> emissions by 61% by 2030 by converting to 100% renewable in electricity generation and increasing the shares of electric vehicles in the vehicle fleet to at least 2%. To meet this ambitious goal, the country will need to seek financing and capacity building to enable swift decarbonization of the transport sector and to carry out adaption actions to build the country's resilience in key sectors such as agriculture, water, health, tourism, coastal zone, and infrastructure. The implementation plan is focused on resolving the challenges specific to coordination, legislation and policy,

national capacity, data availability, research and monitoring.

The National Climate Change Adaptation Strategy, 2018, operationalises the National Climate Change Policy and was developed using a participatory approach, gaining input and recommendations from diverse stakeholder groups through national consultations. The strategy details specific adaptation objectives and measures across eight sectors (agriculture, coastal and marine ecosystems, forest and terrestrial ecosystems, finance and banking, human health, infrastructure and physical development, tourism and water) and five cross-cutting areas (stakeholder capacity building and engagement, information management, research and monitoring, integrated adaptation and disaster risk reduction and inter-sectoral coordination) for the time period of 2018-2030. Adaptation measures included in the strategy largely focus on building adaptive capacity and readiness including the enabling conditions needed for implementing effective adaptation; reducing exposure to climate hazards; and reducing inherent sensitivities to climate impacts.

### **Public procurement**

A Procurement Reform in St. Kitts and Nevis is being spearheaded by the Ministry of Finance in partnership with the Caribbean Development Bank (CDB) under the Public Procurement Reform in the Eastern Caribbean Project. This initiative commenced in January 2020 with

the provision of Technical Assistance to revise towards modernization of the Procurement and Contracts Administration Act (2012) to address gaps identified during the execution of a Methodology for Assessing Procurement Systems (MAPS) completed in 2019. The legislation will also serve to more clearly articulate its applications which will include all public corporations which encompasses both the St. Kitts Electricity Company Ltd (SKELEC) and the Nevis Electricity Corporation Ltd (NEVLEC). The legislation is also expected to include matters pertaining to sustainable procurement, through the development of a Sustainable Procurement Policy.

The drafting process is ongoing and after months of discussion on the first draft ? the undertaking of which was been challenged by the impact of the pandemic - the second round of review of the revised legislation will commence shortly. This reform process is a critical component in the national agenda of the Government of St. Kitts and Nevis in its efforts to ensure sustainable growth and development while ensuring value for money, poverty reduction, addressing inequality, climate change and environmental degradation.

### **Access to finance**

The climate finance landscape remains complex and fragmented, placing a considerable burden on SIDS as it relates to their ability to navigate climate financing options and arrangements and to make effective use of

available funds. Particular obstacles also include high transaction costs for accessing resources and changing criteria for eligibility, access, implementation, monitoring, and reporting. International Financial Institutions (IFIs) also tend to prefer larger projects over smaller or medium sized, which places SIDS in a disadvantaged position.

At present, basic operating costs are covered by tariffs, but there are not sufficient funds for adequate maintenance and replacement of systems. While financial performance has reportedly improved in recent years, SKELEC and NEVLEC are still without a fully integrated asset management framework that ensures regular maintenance and sets aside funds for asset replacement. This is clearly demonstrated in the difficulty in funding urgently needed new diesel generators, and the rundown nature of the networks.

The type of ambitious energy transition that St. Kitts and Nevis intends to undertake will require a considerable amount of funds. For instance, the Republic of the Marshall Islands - a similarly sized, twin island state with a similar ambition and baseline - estimated that it would need US\$ 130 million to achieve a 50% reduction of GHG emissions from its electric grid, with an additional US\$ 5 million per year in net increased costs to provide an improved service. The risk in moving to a capital-intensive system - like a renewable-based power grid - is

that they need investments after their amortisation, without which the system may fail or need to revert back to diesel generation.

The mitigation measures identified as part of the revised NDC and the estimated value for their realisation through 2030 is US\$ 637 million and the cost to realise adaption measures of the NDC which are derived from the National Climate Change Adaptation Strategy is estimated at US\$ 127 million USD, with a total estimated cost of US\$ 764 million to realize both mitigation and adaptation measures. The NDC was developed in 2021 during when the country's economy experienced the greatest economic impacts as a result of the COVID-19 pandemic. As a tourism-dependent economy, the country's travel and tourism sector's contribution to GDP fell from 52% in 2019 to 22% in 2020 due the COVID-19 pandemic. To date, the country is still being affected economically by the COVID-19 with slow signs of economic recovery as the COVID-19 pandemic dissipates. However, as articulated in the NDC, the Government of St. Kitts and Nevis (GSKN) is facing financial challenges to realise its NDC ambition and therefore requires the transformational financing from the international community through bilateral and multilateral engagements and arrangements to mobilise climate finance to realise its NDC ambitions and priorities, as articulated in the NDC implementation plan and finance strategy.

In an effort to operationalise the NEP, the Government has embarked on several negotiations with private developers, donors and government partners, yet to date only a small share of the electricity is produced from solar and wind capacity. Geothermal possibilities are being investigated closely by both islands, but these initiatives still need further de-risking. Technical assistance provided by the Caribbean Development Bank (CDB) recommended the recruitment of a Geothermal Legal Expert and the undertaking of an Environmental and Social Impact Assessment (ESIA). Both consultancies remain in the early stages of dialogue to secure financing and illustrate the challenges in preparing a solid portfolio of bankable proposals.

While St. Kitts and Nevis is a party to a facility under development utilizing funding through the GCF (e.g. FP020 Sustainable Energy Facility for the Eastern Caribbean), to date beside technical assistance no investment projects have been financed in the country through these specific funds. The main investments in the energy sector are those financed by loan or grant funds, as shown in Table 7 below. While this project shows significant potential and can work as a lighthouse for the development of the future, its path has not been without difficulties. While it was initially anticipated that the project would be completed by September 2020, the developer has only been able to break ground in December

2020, with additional 18 months for construction and commissioning.

As for the financing of energy efficiency measures, while these offer significant savings (refer to Table 6 above), investors perceive high up-front costs and the lack of a special commercial facility as a disincentive. Finance is generic and energy efficiency is not entitled to softer conditions and only large institutions consider such endeavours.

Given the fiscal constraints faced by countries in the region, including St. Kitts and Nevis, the limited amounts of concessional finance available and scale of investments needed across the region, the Eastern Caribbean Central Bank (ECCB) has initiated the development of a Regional Renewable Energy Infrastructure Financing Facility (REIFF) to remove barriers and strengthen the investment climate to attract private sector finance in clean energy. Based on the request from the ECCB, the World Bank is providing technical assistance to design the REIFF. The main objective of this technical assistance, which is expected to be finalised in 2023, is to develop the structure of a facility that will help attract private sector investments to accelerate renewable energy development in the ECCU region for affordable, clean, and resilient energy.

### **Baseline projects and activities**

The following table provides a summary of on-going projects and activities that are relevant for this project:

**Table 7. Recently completed and on-going initiatives in St. Kitts and Nevis**

<b>Project</b>	<b>Implementing Institution</b>	<b>Timeline</b>	<b>Budget allocated to St. Kitts &amp; Nevis</b>	<b>Objectives and relevance to this project</b>
NDC enhancement and implementation (national)	IRENA, UNDP, NDC Partnership	2021	Not publicly available	Activities include: the development of an energy management methodology for greenhouse gas emissions (GHGs); target tracking; roadmaps for the electrification of the transport sector; roadmaps for emerging technologies, such as green hydrogen and ocean energy; rooftop solar simulation; energy monitoring, reporting and verification (MRV); mitigation scenarios; project facilitation; and access to finance.
GEF Technology Needs Assessment (TNA) (national)	UNEP CCC	2020 ? 2023	USD 270,000	Update its 2006 TNA as well as to create a Technology Action Plan
Improving Environmental Management through Sustainable Land Management in St. Kitts and Nevis (GEF-6) (national)	UNEP, IUCN	2018 - 2023	USD 3,015,982	To transform degraded forest landscapes into biodiversity and climate-friendly areas of sustainable agricultural / agroforestry production. This project foresees updating the National Physical Development Plan (NPDP) and the National Building Codes of St. Kitts and Nevis and deliver training to ensure that sufficient capacity is enhanced to implement the updated plan (relevant for component 1, output 1.4).
Energy and Energy Efficiency Sector Budget Support (national)	European Development Fund	2018 - 2022	EUR 5,200,000	To support St. Kitts and Nevis to establish a sustainable energy sector based on local renewable energy sources by increasing integration of the renewable energy and energy efficiency in public facilities.



Project	Implementing Institution	Timeline	Budget allocated to St. Kitts & Nevis	Objectives and relevance to this project
<p>Sustainable Energy for the Eastern Caribbean Programme (SEEC),</p> <p>Sustainable Energy Facility for the Eastern Caribbean (SEF) (GCF FP020) (regional), and</p> <p>Nevis Island Climate Enhancement (NICE) Project (national)</p>	<p>Caribbean Development Bank (CDB) as executing entity and IDB as implementing agency. With funding from the <a href="#">GEF</a>, <a href="#">GCF</a>, JICA, and IDB</p> <p>Nevis Electricity Corporation Ltd (NEVLEC) with funds from the GCF FP020 project.</p>	2017 - 2025	USD 190,468,000 (23,900,000 correspond to St. Kitts and Nevis)	<p>Seeks to address the financial, technical, and institutional barriers faced by geothermal energy and to provide institutional strengthening. This project has financed a series of energy audits in public buildings that are the basis for the design of the pilots in Component 2 of this GEF-7 project.</p> <p>Within the scope of the NICE project, NEVLEC is currently conducting a series of technical studies to investigate the renewable energy potential (geothermal potential in particular), along with opportunities to produce/export green hydrogen/derivatives (including ammonia and fertilizer) on the island of Nevis. Furthermore, the project is exploring how Nevis can become central hub for renewable energy and climate research in the Caribbean.</p> <p>On 9 December 2023, the Caribbean Development Bank approved USD\$17 million in financing to St. Kitts and Nevis to pursue drilling of up to two geothermal production wells and one injection well.</p>
Building Resiliency in the Water Supply Sector in St. Kitts and Nevis (national)	GCF	2022 - 2027	USD 38,300,000	The project seeks to increase climate resilience and sustainability for the water supply sector in SKN. It is expected to develop a 7 MW renewable power plant to provide electricity to a water desalinization plant, selling surplus to the electric grid. It is important to note that that scope of the project is under further review and discussion based on feedback received from the GCF in 2020.

<b>Project</b>	<b>Implementing Institution</b>	<b>Timeline</b>	<b>Budget allocated to St. Kitts &amp; Nevis</b>	<b>Objectives and relevance to this project</b>
CDB storage (regional)	CDB	2018 ? on-going	USD 350,000 (region)	Grant to assist utilities and relevant stakeholders across the region to develop, plan and design energy storage and grid modernization solutions to accelerate the Caribbean's shift to clean energy.
CDB Street and Flood Light (national)	GSKN with funds from the CDB	2018 - 2021	USD 5,792,000	GSKN requested financing from CDB to replace all of its High-Pressure Sodium (HPS) and Mercury Vapour (MV) street lights with high efficiency LED systems as well as flood lights on identified playfields.
Solar Carport Project For The Eastern Caribbean Central Bank In Basseterre, St. Kitts (Two phases of solar carports totalling 1.1 MW) (national)	Eastern Caribbean Central Bank (ECCB)	2018 - 2021	Not publicly available	This project will offset about half of the energy usage on the bank's headquarters in St. Kitts. The project is designed considering hurricane survivability (up to 180 mph winds) and corrosion protection. It is also expected to introduce energy efficiency measures for the entire compound, as the ECCB expects to achieve full carbon neutrality by 2022.

Project	Implementing Institution	Timeline	Budget allocated to St. Kitts & Nevis	Objectives and relevance to this project
Development of Integrated Resource and Resilience Plans (IRRPs) (regional)	Caribbean Centre for Renewable Energy and Energy Efficiency's (CCREEE) with funds from the German Federal Ministry of Economic Cooperation and Development (BMZ) and technical support from the German Corporation for International Cooperation (GIZ).	2021 ? on-going	Not publicly available	<p>The Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) has partnered with the Governments of Belize, Guyana, Trinidad and Tobago, Saint Kitts and Nevis, and Jamaica to undertake the development of Integrated Resource and Resilience Plans (IRRPs).</p> <p>IRRPs are plans for how countries can supply their need for electricity, in the future. The plans will ensure reliable sources of power, minimize negative impacts on the environment and enhance the resilience of power systems to hazards and risks, while minimizing costs to consumers. Building resilience in this way guarantees energy security, as the Caribbean seeks to adapt to climate change and reduce greenhouse gas emissions.</p>

Project	Implementing Institution	Timeline	Budget allocated to St. Kitts & Nevis	Objectives and relevance to this project
Designing a Regional Renewable Energy Infrastructure Financing Facility (REIFF) in the Eastern Caribbean Currency Union (ECCU) (regional)	Eastern Caribbean Central Bank (ECCB) in collaboration with the World Bank	2022 ? on-going	USD 250,000	The main objective of this technical assistance is to develop the structure of a facility that will help attract private sector investments to accelerate renewable energy development in the ECCU region for affordable, clean, and resilient energy. This work would build on ongoing work in the region on renewable energy financing, technical assistance for renewable energy development, and Integrated Resilient Resource Planning (IRRP) that lays out investment plans for the power sector in individual countries. This work will be carried out in close collaboration with regional partners. Since the REIFF once established would aim at private investors, it will be important complementary element for the GEF project and the proposed financing mechanism therein which focus on the utilities and the public sector (Component 3).
Development of an Urban Resilience Plan as part of the GCF Readiness Proposal for St. Kitts and Nevis for Institutional Capacity and Coordination and Country Programming (national)	Caribbean Development Bank (CDB)	2019 ? on-going	USD 590,000	Together with adding technical expertise within the National Designated Authorities (NDA) and among key sectors, this GCF Readiness proposal aims to facilitate the development of a new National Development Plan, inclusive of technical assistance in climate finance to minimize capacity constraints in the development and execution of climate change initiatives as well as the creation of an Urban Resilience Plan for Greater Basseterre. The urban resilience plan responds to the pressure points of shelter, employment creation, food supply, water, waste disposal, energy, transport, health and social services in the city of Basseterre.

Project	Implementing Institution	Timeline	Budget allocated to St. Kitts & Nevis	Objectives and relevance to this project
Operational Framework and Training Plan for Energy Units in St. Kitts and Nevis (national)	Caribbean Development Bank (CDB)	2021	Not publicly available	The Government of Saint Kitts and Nevis, acting through its Ministry of Sustainable Development has received funding assistance from the Caribbean Development Bank (CDB) to develop an Operational Framework and Training Plan for the Energy Units in St. Kitts and Nevis. This operational framework comprises of: (i) The Energy Units mandates, core functions, and responsibilities; (ii) The recommended unit structure for each of St. Kitts and Nevis and how they relate to key policy units and stakeholders; (iii) staff positions, competencies and qualifications; (iv) job descriptions; (v) 3-Year Training plan and technical assistance requirements; (vi) software costs; (vii) an indicative recurrent budget for personnel and software costs (3-years); (viii) A prioritised list of actions for implementation.
Public Procurement Reform in the Eastern Caribbean Project (regional).	Caribbean Development Bank (CDB)	2018 ? on-going	USD 700,000	This project aims at assisting with the establishment of modern procurement systems in the Organization of Eastern Caribbean States (OECS). Procurement processes that arise from this project will be applicable during the energy transition to renewables that will take place as a result of the proposal described in this CEO Endorsement Document.

In addition to the abovementioned baseline projects and activities, the GCF readiness project ?Strengthening strategic framework and institutional capacity to enhance NDC implementation in Saint Kitts and Nevis? is currently under development (at concept note stage). The

goal of this readiness support is focused on advancing the country's NDC implementation by strengthening the institutional capacity and coordination of national actors particularly for the Department of Public Sector Investment Planning in the Ministry of Sustainable Development and the Department of Environment by enhancing the availability of climate evidence, updating its strategic framework and building awareness for effective delivery of national climate resilient investment projects and activities in line with national planning, programming and sustainable development goals. On the mitigation side, a transmission and distribution of efficiency assessment shall be conducted as well as a barrier assessment for Grid Upgrade and Tariff Structure. This outcome is closely aligned with the NDC implementation plan, which in turn should also be aligned with this GEF-7 project and the NEP and roadmap that will be developed. The project also foresees the development of a roadmap and recommendations to support the integration of EVs into the transport sector as a low emission development technology, reduce its emissions and advance the implementation of the NDC implementation plan.

### **iii) Proposed alternative scenario with a description of project components, outcomes, outputs and deliverables**

## **Overview**

The objective of this project is to accelerate national decarbonization through a transition towards 100% renewable electricity generation and 100% high energy efficiency public buildings in St. Kitts and Nevis. Essentially, this project aims to support St. Kitts and Nevis to become the first Caribbean country to be net-zero in terms of its electricity grid. Furthermore, it will also aim for the country to become net-zero in terms of public building energy usage.

As highlighted in the baseline section, the country is advancing with a series of initiatives and investments with the aim of moving towards these targets. However, the country faces a series of barriers to achieve these (as described in section 1). A key challenge is to build a comprehensive enabling environment that can support St. Kitts and Nevis to manage and achieve a transition to decarbonization in a controlled, resilient and economically, socially and environmentally viable manner. The GEF incremental logic is that through GEF financing St. Kitts and Nevis will be able to build upon existing investments and studies to address such barriers to decarbonization and achieve its ambitious climate targets. The project is organized into three components:

? Component 1 supports St. Kitts and Nevis in developing a comprehensive enabling environment for achieving the decarbonization of its electricity grid. It sets the ground by delivering a revised National Energy Policy (NEP). The NEP will be prepared in together with a roadmap that starts from the current situation and determines a pathway for achieving 100% renewable energy electricity generation by 2030, in accordance with the 2021 NDC. Other key institutional arrangements that are needed for the implementation of the roadmap are also included as part of component 1; this includes an inter-island coordination commission, the drafting of energy efficiency regulations, the establishment of a knowledge management system and gender-sensitive training on planning and regulatory aspects for government and utility officials.

? Component 2 provides the first steps towards the implementation of the roadmap, by demonstrating to local stakeholders the technical, economic, social and environmental feasibility of achieving its ambitious targets. Pilots will demonstrate resilient high energy efficiency buildings and innovative grid-integrated renewable electricity generation, building on the outcomes identified by the 2018 energy audits financed by the Sustainable Energy Facility (SEF) for the Eastern Caribbean. Furthermore, the component will demonstrate the feasibility of an innovative integrated utility service model for facilitating a transformation to high energy efficiency for all public buildings on the two islands.

? Component 3 supports St. Kitts and Nevis with stimulating investment for implementing its roadmap (output 1.2) in order to achieve the goals of its National Energy Policy. A key aspect of this will be to support the island electricity utilities to operationalize integrated utility service models (output 3.2) together with an injection of capital by regional and international financiers (output 3.4) through a dedicated financial instrument (output 3.3).

## **Desired transformation and theory of change**

The following table maps the barriers presented earlier in this document with the outputs that are part of the project (described in further length in the subsections below). It highlights the desired transformation that is expected to stem from the project intervention. This is the basis for the theory of change that is depicted in Figure 6.

**Table 8. Desired transformation as a result of this project's implementation**

The current context	Desired transformation of behaviour to be achieved through the project
No overarching, operational vision and insufficient institutional arrangements that foster a transition towards a 100% green grid (barrier 1).	The Government of St. Kitts and Nevis makes decisions on energy based on an ambitious, technically feasible National Energy Policy (NEP) which guides their efforts in the sector for the short, medium and long term. The Government executes a roadmap for implementing the NEP, including identified phases, technologies, roles, responsibilities, timelines which together close the identified gaps. Investments between St. Kitts and Nevis happen in a coordinated way and are aligned towards the NEP's goals.
Lack of local evidence of and experience with the economic and social viability of low-emission energy solutions (barrier 2)	All dimensions of the energy transition are visible and understood by the stakeholders, and in particular by the Energy Units (in the Federal Government and the Nevis Island Administration) and the utilities, SKELEC and NEVLEC. The potential - but also the challenges - in the transition towards a 100% renewable grid are identified, quantified, feeding back into the roadmap. This transformation will be achieved mainly by Component 2 (i.e., the pilots in output 2.1), as well as through capacity building activities (outputs 1.6, 3.1) and the knowledge management mechanism (1.5).
Limited financing materialized for renewable energy and energy efficiency (barrier 3)	The needs and opportunities arising from the transition are understood by the entities that can provide the required funding. The roadmap is supported by a sound, fully bankable portfolio of renewable projects with a thorough risk analysis that are prioritized by the Government of St. Kitts and Nevis. The timing of each investment is known in advance and represents the most effective pathway for the development of the country. Project risks in the electricity sector are minimized to the largest extent possible, facilitating the involvement of targeted partners. Fiscal risk analysis is undertaken based on an analysis of financing options. Renewable energies and energy efficiency improvements are perceived as a part of a dynamic, transformative energy sector. Component 3 will capitalize on the certainty and de-risking brought up by Component 1, further improving the conditions under which renewable energy and energy efficiency projects have access to funds, creating local capacities to prepare robust project proposals, and engaging with banks and multilateral institutions to orient their resources to the milestones in the NEP's roadmap.

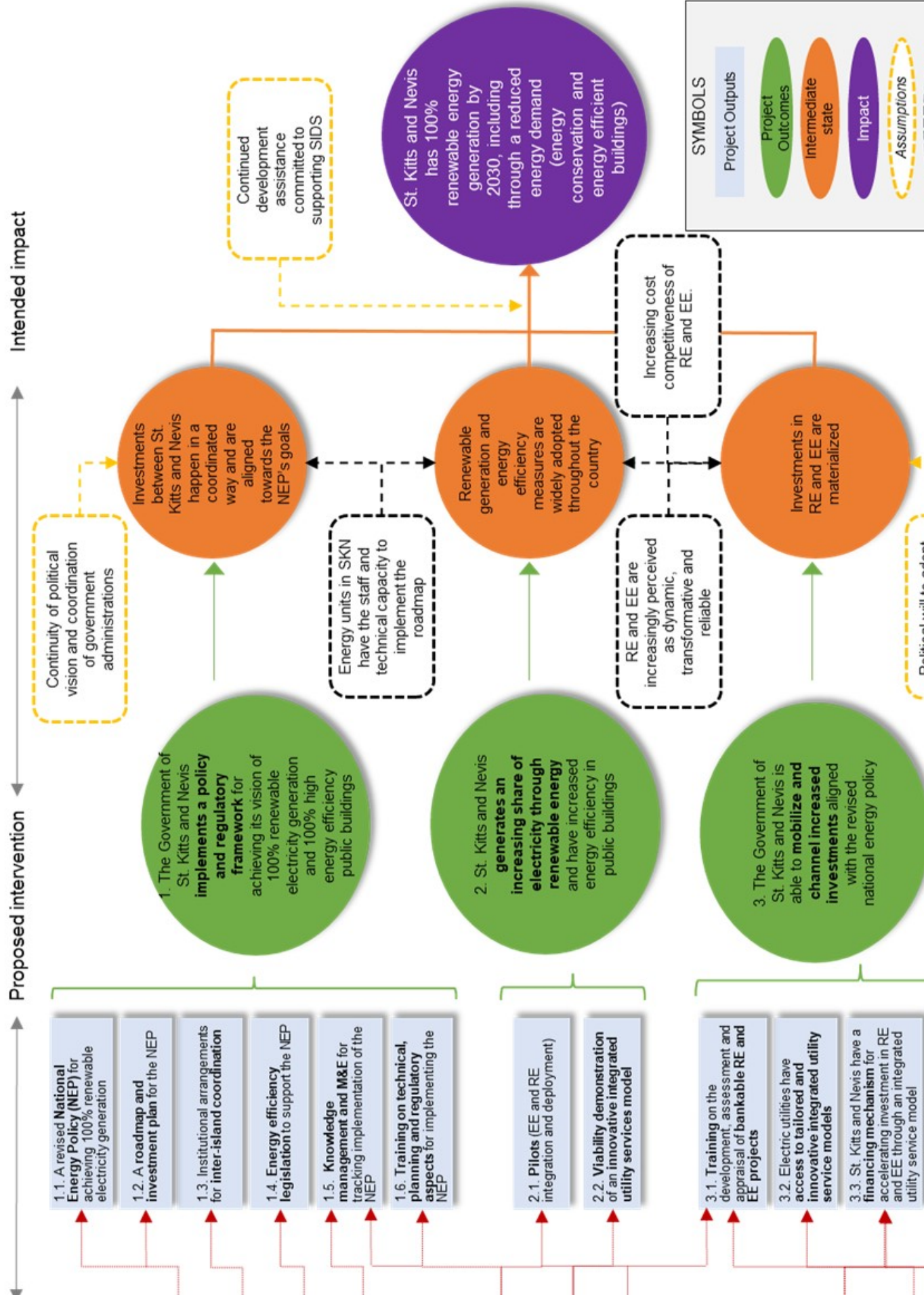
The theory of change behind this project is summarized in Figure 6. The left side of the diagram starts with the barriers and the root causes, the latter of which inform the outputs included in this project. The outcomes resulting from these outputs depict a scenario where these barriers have been addressed and alleviated, with institutional arrangements, policies, capacities, and resources in place to gradually increase the share of renewables in the grid. Political continuity in terms of the commitment assumed



through the NEP and the retention of technical capacity created through the project, together with interest in adopting transparent and innovative financing mechanisms will allow for a deeper penetration of renewables. Due to the inherent challenges faced by SIDS (e.g., lack of economies of scale, large distances from production and consumption centres, high exposure to extreme events, etc.), it is nonetheless important that international public development assistance continues to support the country, which in turn will be able to channel these resources faster, more transparently, and more efficiently, achieving a smooth transition towards a fully decarbonized grid.

**Figure 6. Project theory of change (\*)**

(\*) Note: output names have been summarized to fit the page. *Drivers* are external conditions necessary for project results to lead to next-level results, over which the project has a certain level of control; *assumptions* refer to external conditions necessary for project results to lead to next-level results, over which the project has no control e.g., turn-over of government officials, global financial situation, technological advances, etc.



The next sub-sections present each of the components in the project, together with their respective outcomes and outputs, and with a focus on describing the general aim and rationale behind each of the proposed interventions. Deliverables are included for each of the outputs complemented with specifics regarding the administrative and technical arrangements for the implementation at the output level. A general overview of the overall implementation arrangements is presented in section 6. The table below shows how each barrier is addressed by at least one of the project's outputs.

**Table 9. Barriers and root causes**

Barrier and root cause	Project output
<b>1. No overarching, operational vision and insufficient institutional arrangements for fostering a transition to a 100% green grid</b>	
<i>Absence of a consistent, overarching vision that is made operational through a feasible, integrated roadmap</i>	1.1, 1.2, 1.3
<i>Insufficient inter-island coordination on energy issues</i>	1.3, 2.1
<i>Energy efficiency insufficiently reflected in legislation</i>	1.4, 2.1
<i>Lack of transparency and data in the energy sector</i>	1.5, 2.1
<b>2. Lack of local evidence of and experience with the economic and social viability of low-emission energy solutions</b>	
<i>Insufficient experience with renewable energy generation and its integration into the grid</i>	2.1, 2.2, 1.6
<i>Insufficient awareness regarding energy efficiency measures and regulations</i>	1.4, 2.1
<i>Limited government capacity in terms of planning and regulating the energy sector</i>	1.1, 1.2, 1.6, 2.2
<b>3. Limited financing materialized for renewable energy and energy efficiency</b>	
<i>Limited funds from banks and private actors for deploying renewable energies and energy efficiency measures</i>	3.2, 3.3
<i>Limited resources and experience in structuring bankable financial proposals</i>	3.1, 3.4

## **Component 1: Policy and institutional arrangements for decarbonizing the electricity sector and enhancing energy efficiency of public buildings**

This component will address barrier 1: No overarching, operational vision and insufficient institutional

arrangements that foster a transition towards a 100% green grid. In particular sub-barriers:

- 1.1. Absence of a consistent, overarching vision that is made operational through a feasible, integrated roadmap
- 1.2. Insufficient inter-island coordination on energy issues
- 1.3 Energy efficiency insufficiently reflected in legislation
- 1.4 Lack of transparency and data in the energy sector

For descriptions of these barriers see section 1b(i)1 and the problem tree in Figure 2. The component builds upon co-financing of the Ministry of Sustainable Development, Ministry of Finance and Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport. This component has six outputs, each focusing on a different aspect of strengthening the country's enabling environment for facilitating a transition to 100% renewable electricity generation and 100% high efficiency public buildings.

**Outcome 1: The Government of St. Kitts and Nevis implements a policy and regulatory framework for achieving its vision of 100% renewable electricity generation and 100% high energy efficiency public buildings.**

**Output 1.1. The Government of St. Kitts and Nevis develops a revised National Energy Policy for achieving 100% renewable electricity generation and 100% high energy efficiency public buildings.**

This output will update the national energy policy (NEP) to support St. Kitts and Nevis to achieve its NDC target of 100% renewable electric generation target by 2030. The revised NEP will include a set of definitions that are needed for organizing and planning the electricity sector and its gradual transition to renewables, including the chosen grid model (centrally-planned versus decentralized), tariff structure for utilities and independent power producers (e.g., full recovery of costs and asset amortization versus recovery of operation and maintenance costs only), key sectors for electrification, energy efficiency targets for public and private buildings, and basic aspects related to the stability, reliability, security and resilience of the grid infrastructure ? including in the event of natural hazard such as hurricanes, floods, and heatwaves. By providing a concrete framework, the revised NEP will convey the country's position on a series of high-level matters that will shape the form and set the course for the electricity sector.

The process to develop the NEP will reconsider the feasibility of the alternative pathways available to the country. Here, the project will build on the Integrated Resource Planning and Resilience Plan (IRRP) that is currently under development by CCREEE (expected in the first half of 2023). As described in the baseline section, the IRRP will include a least-cost expansion plan for the electricity sector to reach the renewable energy target in

St. Kitts and Nevis based on assumptions and forecasts for the expected evolution of demand and resource availability, creating potential pathways under different optimization criteria using energy modelling software. In this output the project will expand this technical analysis to include an assessment of its fiscal and socio-economic implications for St. Kitts and Nevis, as well as a thorough climate change risk assessment and gender and just transition considerations. The revised NEP will also set as action plans a roadmap (developed under output 1.2) and the IRRP, thus adopting them as official policy instruments. Additionally, the project will investigate the implications of further electrification of other sectors, such as the transport sector, and its implications for the national electricity supply and grid.

The revised National Energy Policy will play a crucial role in attracting and securing necessary investments in renewable energy and energy efficiency measures by providing a clear and consistent investment framework for private and public investors. The clear and consistent investment framework will be achieved by:

? Establishing clear renewable energy and energy efficiency targets: A revised National Energy Policy will set ambitious but achievable targets for renewable energy production and consumption, as well as energy efficiency improvements. This will provide a clear roadmap for investors and signal the government's commitment to supporting renewable energy and energy efficiency (see related Output 1.2.)

? Ensuring policy stability: The policy can provide long-term policy stability and certainty to give private investors and the utilities confidence in the required technology investments. This can be achieved by setting out clear and consistent policies and regulations (e.g., under Output 1.3.), avoiding sudden policy changes, and engaging with stakeholders to ensure that the policy meets the needs of the private sector and the public.

? Creating a regulatory framework that supports renewable energy and energy efficiency: The policy will establish a regulatory framework that supports the development and deployment of renewable energy and energy efficiency measures, such as energy efficiency standards for buildings, and net metering policies etc. (see Output 1.4). A clear regulatory framework can provide investors with the certainty and stability they need to invest in renewable energy and energy efficiency (e.g. under Output 3.2).

? Providing financial incentives: The policy can offer financial incentives such as tax credits, rebates, and grants to attract private and public investment in renewable energy and energy efficiency measures (see Output 1.4 for energy efficiency). These incentives can help reduce the cost of renewable energy and energy efficiency projects, making them more attractive to investors.

? Promoting innovation: The project will encourage innovation in accessing financing windows for accelerating investment in renewable energy and energy efficiency through an integrated utility service model considering the revised policy and its targets (see Output 3.2 and 3.3). This can help attract and up-scale private investment in renewable energy and energy efficient technologies.

By providing a clear investment framework for private and public investors, the revised National Energy Policy in Saint Kitts and Nevis will help attract and secure the necessary investments in renewable energies and energy efficiency measures, accelerate the deployment of renewable energy infrastructure and energy efficiency upgrades, and support the transition to a decarbonised energy system in the country. Furthermore, supporting private and public investors to become aware of St. Kitts and Nevis's

ambition and policy coherence on accelerating the transition to decarbonized energy sector will occur through output 3.4.

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders
D1.1.1	Consultation and engagement workshops	<p>Minimum of 3 workshops at the beginning, middle and end of the NEP revision process and shall cover:</p> <ul style="list-style-type: none"> <li>- Presentation of the scope and methodology that will be followed for the preparation of the NEP and its accompanying roadmap,</li> <li>- Establishment of agile communication channels for the engagement of stakeholders</li> <li>- Presentation of the results from the deliverables covered under output 1.1 and 1.2</li> </ul> <p>Following guidance from the National Project Director, the project team will decide on other relevant topics such as technical aspects of the energy transition to renewables, climate risk and resilience, presentation of similar projects in other SIDS, gender aspects, and socio-economic elements of the transition.</p>	Intended for a broad group of stakeholders: public and private actors, multilateral agencies, representatives from the academy and civil society. For a detailed list please refer to the ?Stakeholders? section.
D1.1.2	Social and gender assessment and strategy for mainstreaming gender in the revised national energy policy (NEP) and its roadmap	<ul style="list-style-type: none"> <li>- Baseline of existing energy-related gender gaps</li> <li>- Definition of gender indicators and targets for the timeframe considered in the NEP, including means of verification</li> <li>- Workplan with gender actions for the roadmap (timeline: 2023 ? 2030 or longer)</li> <li>- Consideration and incorporation of elements to facilitate a just transition</li> </ul>	Energy Unit; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis



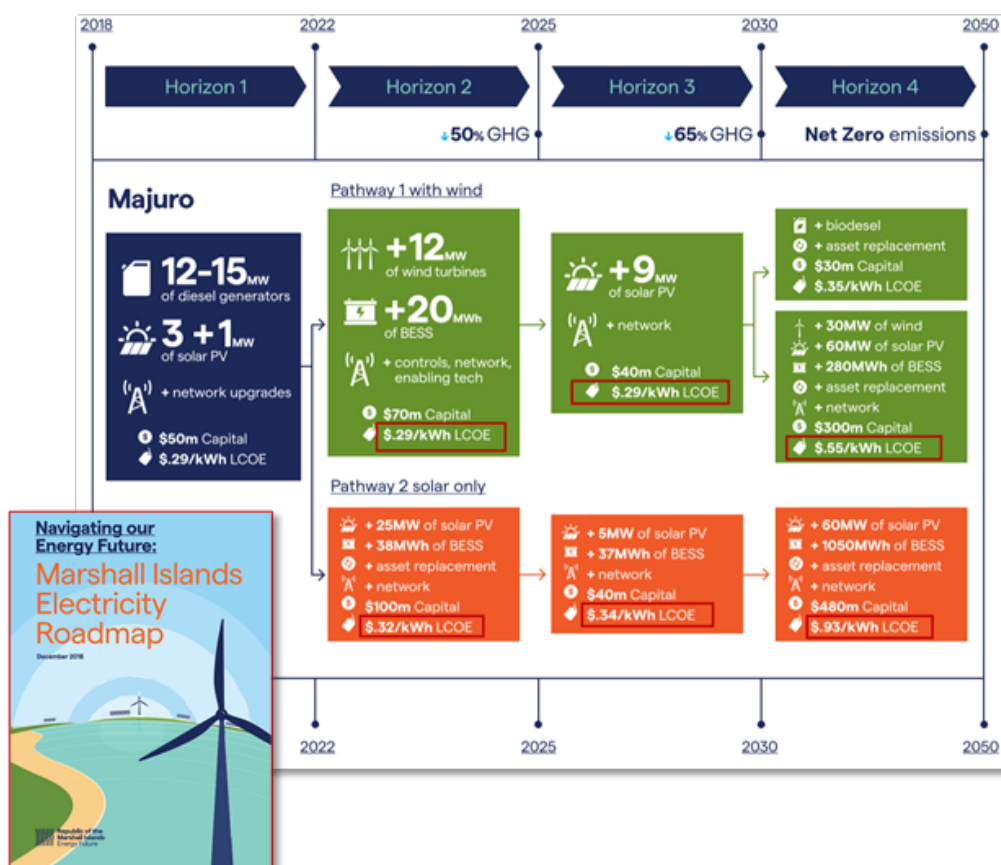
D1.1.3	Fiscal and equity effects report: baseline and proposed decarbonization pathways	<p>Report and supporting documents including:</p> <ul style="list-style-type: none"> <li>- Building upon the IRRP scenarios, detailed financial model that quantifies the fiscal impact of the selected grid decarbonization pathway(s) from the point of view of a) St. Kitts, b) Nevis and c) the national government.</li> <li>- Risk analysis identifying variables that have the largest impacts on the model's results. Provide ranges for likely variation of the main results depending on likely / probable variations in the identified key variables (e.g., oil prices, geothermal capacity and generation, island interconnection costs, interconnection with other islands, among other uncertain factors identified by the consultants);</li> <li>- Complementing the IRRP with a socio-economic and just transition impact assessment of the potential redistributive effects of the potential pathway(s) proposed for decarbonization. The analysis will identify and quantify distributional impacts a) by sector and b) by income level of the population (e.g., burden of electricity costs per decile of income, differentiated by gender in the baseline and in the decarbonization scenario(s)). Develop recommendations and a costed strategy (identifying sources of funding) to mitigate any negative impacts in the most vulnerable sectors.</li> </ul>	<p>Main stakeholder for this deliverable will be the Ministry of Finance.</p> <p>Other stakeholders may include: Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Ministry of Sustainable Development; Energy Unit; Department of Physical Planning, Nevis.</p>
D1.1.4	Climate risk assessment: baseline and proposed pathways	<p>Minimum contents to include, considering the results of the IRRP and complementing these:</p> <ul style="list-style-type: none"> <li>- Assessment on how different levels of projected climate change impacts, including climate variability, in the project location can affect the pathways established in the roadmap ? including generation estimates and firm load capacity factors from geothermal, wind and solar resources.</li> <li>- Recommendations to mitigate potential negative impacts derived from climate change</li> <li>- Resilience recommendations for the transition to renewables: diversification of generation, distributed energy solutions and other measures that improve adaptive capacity of physical assets and key infrastructure, grid response to natural disasters along the different stages of the transition to renewables, safety measures, potential for renewable-based desalination, decentralized water supply solutions and solar- and wind-powered systems for water purification, etc.</li> </ul> <p>Other topics may be added by the project team following consultation with the country and other key stakeholders.</p>	<p>Energy Unit; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Ministry of Environment, Climate Action and Constituency Empowerment; Ministry of Sustainable Development; Department of Physical Planning, Nevis</p>

D1.1.5	Draft revised National Energy Policy (NEP)	<p>The revised policy will include, inter alia:</p> <ul style="list-style-type: none"> <li>- Summaries, including: <ul style="list-style-type: none"> <li>o one-page executive summary, history of the NEP and lessons learned,</li> <li>o energy digest including key sectoral information</li> <li>o summary of fiscal and socio-economic impacts and rationale, gender considerations, adaptation and climate risks, geopolitical considerations, etc. This section summarizes the conclusions from deliverables presented under this output and output 1.2.</li> </ul> </li> <li>- Policy decisions covering: <ul style="list-style-type: none"> <li>o Timeframe considered in the policy (covering at least up to 2030)</li> <li>o Grid model, i.e., the decision to have a centrally-planned and controlled grid versus a de-centralized system, or a mix of both depending on circumstances;</li> <li>o Affordability of tariff and utility business model (e.g., full recovery or costs + amortization of capital expenditures vs cost recovery only). Affordability must consider equity issues and different users' ability to pay.</li> <li>o Definitions on the electrification of key sectors, e.g., transport and mobility.</li> <li>o Definitions and broad targets in terms of energy efficiency, aligned with the long-term target of 100% high energy-efficient public buildings.</li> <li>o Definitions and broad targets in terms of energy security and resilience.</li> <li>o Definitions and broad targets in terms of grid stability and reliability.</li> <li>o Definitions of environmentally sound management measures of replaced units and appliances resulting from accelerated replacements and end-of-life management of renewable energy facilities</li> </ul> </li> <li>- Linkage of the NEP with the roadmap (i.e. explicit statement to establish the roadmap developed under output 1.2 as the official action plan of the revised NEP) and IRRP</li> </ul> <p>The exact content of the draft may vary depending on the interaction with numerous stakeholders (particularly, the Project Steering Committee and country ministries).</p>	Presented by Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport for adoption by the Cabinet.
1.1.6	Report on technical assistance to support the approval process	<p>Technical assistance, in the form of expert support to answer questions or provide further analysis and studies as required by the Ministry and Cabinet</p>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Cabinet

**Output 1.2. The Government of St. Kitts and Nevis develops a roadmap for implementing the National Energy Policy**

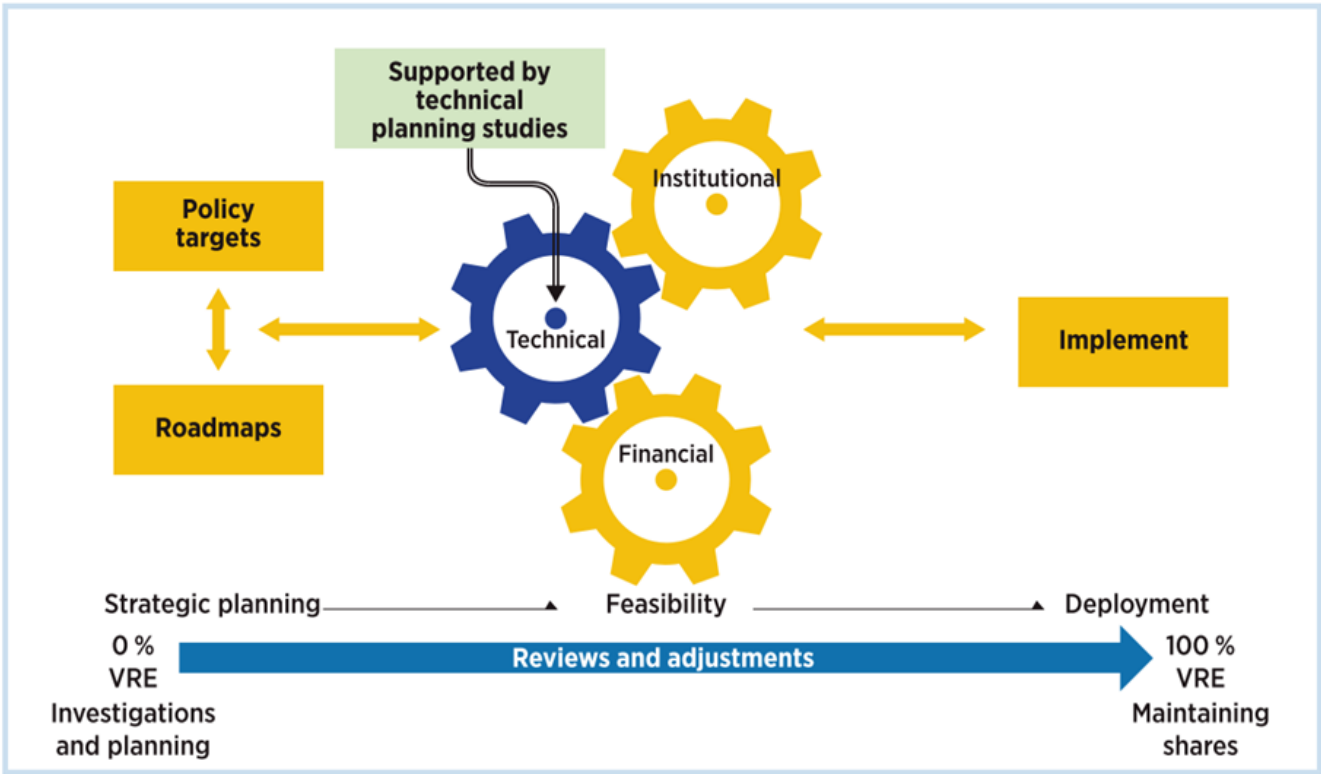
The roadmap consists of a detailed plan for achieving the national policy, with partial targets, goals, budgets, and responsible entities. It will provide the Federation of St. Kitts and Nevis with costed, technically sound pathways for the electricity sector to meet its targets, facilitating access to public and private financing and reducing uncertainty and risks. The proposed roadmap will be an intrinsically holistic tool, as it is not limited to a technological dimension (Technical Roadmap, utilising the result of the IRRP). It will also include guidelines for required regulations, institutional development, and the human and financial resources to ensure a successful rollout of the technology with the related financial risk analysis (policy and financial roadmap). While its recommendations are still high-level, this plan will be more concrete than the NEP by providing specific pathways. Inter alia, the pathway will address the challenges of transitioning from a power system based on fossil fuels, in which costs are driven by fuel consumption, to a system dominated by renewables and in which costs are driven by upfront investments but with lower marginal costs. The roadmap process will start from the scope and timeline given by the NEP (output 1.1), and the default pathway given in the IRRP. The roadmap will include its recommendations and expand the technology aspects covered in the latter to include policies, regulations, governance structures, human resources, financing (including tariffs, grants, loans), and equity considerations (e.g. subsidies) to an integrated energy sector plan/roadmap, which will complement the IRRD which is focused on electricity. Hence, the roadmap builds upon and complement the IRRD by going from electricity to the entire energy sector, incl. transportation, cooling and heating etc. As an additional risk management measure, additional pathways will be clearly depicted for the event that any of the assumptions in the IRRP fail to materialize.

**Figure 7. Example of a roadmap with costed, alternative pathways and intermediate horizons in a SIDS**



Potential partners with experience in conducting this type of analysis in the region have been identified. These include the Caribbean Centre for Renewable Energy & Energy Efficiency (CCREEE), which is supporting countries in the preparation of the Integrated Resource and Resilience Plans (IRRP) (as noted in the baseline). Another partner may be IRENA, through its SIDS Lighthouse Initiative, which also has also extensive experience providing similar studies in the Caribbean region.

Figure 8. From policy targets and roadmaps to deployment



Deliverables			
Code	Title	Minimum indicative content	Key stakeholders

Deliverables			
D1.2.1	Consultation and engagement workshops	<p>These workshops (at least 3) will focus on technical aspects of the transition, taking place at the beginning stages of the development of the NEP's roadmap. As the NEP will include high-level decisions regarding the future of the grid and its business model, it is essential to ensure that the long-term vision embedded in these policy documents is shared by all key actors. Thus, the objective of these workshops is mainly to ensure ownership of the long-term vision of the grid, in alignment with the recommendations from the IRRP. Scope shall cover, <i>inter-alia</i>:</p> <ul style="list-style-type: none"> <li>- Presentation of the main questions and choices to be settled by the NEP and the roadmap, including grid model, tariff structure, electrification of key sectors and its implications to the electricity grid, feasibility of energy efficiency targets, feasibility of targets regarding energy security and resilience, grid stability, etc.</li> <li>- IRRP implications for the operation of the grid: what will change, why and when.</li> <li>- ?Design Philosophy? of the energy transition (simplicity, scalability, fully commercial/proven technologies versus less mature innovations, viable technologies for the country).</li> <li>- Portfolio / pipeline of existing projects in St. Kitts and in Nevis. Level of maturity of each project and identified risks.</li> <li>- Scenarios for the expansion of the grid.</li> <li>- Stages of an energy transition in a SIDS.</li> </ul> <p>Presentation of similar projects in other SIDS</p> <p>Note: presentations of results are included under the scope of deliverable D1.1.1.</p>	<p>Energy Unit, SKELEC and NEVLEC, Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Nevis? Department of Physical Planning; Ministry of Sustainable Development; CCREEE, IRENA.</p>

Deliverables			
D1.2.2	Pipeline of existing projects and measures	<p>Detailed report including a database of existing projects (generation, transmission, interconnection) and identified energy efficiency measures including at least:</p> <ul style="list-style-type: none"> <li>- Location, size (nominal capacity, yearly generation)</li> <li>- Project status and phase (pre-feasibility, feasibility, tender, construction, operation)</li> <li>- Available studies for each project, including name and contact details of institution responsible for their development</li> <li>- Permits required (including environmental feasibility, if applicable), and permits already received</li> <li>- Ownership and other relevant information of the land / project site</li> <li>- Financing status</li> <li>- Key feasibility indicators: net present value (NPV), equity internal rate of return (IRR<sub>e</sub>), project internal rate of return (IRR<sub>p</sub>), payback period, others.</li> <li>- CAPEX, OPEX</li> <li>- Actors involved and roles</li> <li>- Expected duration of financial closure and construction phases</li> <li>- Identified risks and potential impact on key parameters such as commissioning date, NPV, IRR, etc.</li> </ul> <p>Range estimates should be used whenever possible.</p>	<p>Energy Unit, SKELEC and NEVLEC, Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Nevis? Department of Physical Planning; Ministry of Sustainable Development; CCREEE, IRENA.</p>
D1.2.3	Alternative technological pathways to achieve decarbonization of the electric grids of St. Kitts and Nevis.	<p>Aim of this deliverable is to provide a minimum three (3) alternative technological pathways to decarbonization (i.e., additional to the one identified by the IRRP). These alternative pathways would be triggered if one of the assumptions in the IRRP does not hold (e.g., delays in the commissioning of a generation or an island interconnection project, increase in costs or risks, others). These alternative pathways clearly identify the risks and/or scenarios that would trigger them and include required timeline (and adjusted timeline for the decarbonization of the grid), required investments, and impact on the levelized cost of energy (against a 2022 baseline and the IRRP pathway).</p>	<p>Energy Unit, SKELEC and NEVLEC, Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Nevis? Department of Physical Planning; Ministry of Sustainable Development; CCREEE, IRENA.</p>

Deliverables			
D1.2.4	Roadmap for the implementation of the NEP	<p>The roadmap shall include an executive summary and chapters that cover:</p> <ul style="list-style-type: none"> <li>- Objectives, approach and ?design philosophy? aligned to the NEP</li> <li>- Depiction of stages of the energy transition. Each stage shall include an estimate of the (incremental) capacity and generation (in MW, MWh and \$) for each technology type, levelized cost of electricity, investments in the grid (transmission, distribution), as well as targets, goals, and responsible entities. Examples that are to be considered include a target for 100% of the public buildings adopting energy efficiency measures, milestones for the deployment of e-mobility and a target for a ?diesel-off? day, i.e., the instant were all the electricity being provided to the country is entirely sourced from renewables.</li> <li>- Depiction of the preferred pathway (aligned with the IRRP). This should include details on the selected technology, demand side and energy efficiency improvements (including the development and enforcement of building codes), identification of human resources and capacity building, financing and implementation arrangements; governance, policy and regulations; electricity tariff and subsidy setting, etc.)</li> <li>- Prioritization of alternative pathways to achieve decarbonization, and their impact on the conclusions from the previous item regarding required human resources, sources of financing, governance, policy, regulations, tariff and subsidy setting, etc.</li> <li>- A medium-term (i.e., 7-10 years) detailed workplan including all relevant actions, studies and investments (generation, transmission/distribution).</li> <li>- Detailed MRV system for tracking the implementation of the policy transition towards renewables, stating data that is available and data that needs to be compiled.</li> <li>- Technical annexes, as needed. This may include: <ul style="list-style-type: none"> <li>o Alternatives for the integration of renewables into the grid, including infrastructure investments (e.g., storage, smart transmission, grid reinforcements, distribution automation) and operational measures (e.g., demand-response programmes, adapted generation dispatch and control, network monitoring, improved resource forecasting), to allow for generation intermittency from variable renewables.</li> <li>o Assessment of the impact of a transition to electric mobility (including additional load on the grid and investments required in terms of charging infrastructure).</li> <li>o Pipeline of bankable projects, classified along the spectrum of required finance (i.e., from grants and concessional loans to commercial loans)</li> </ul> </li> </ul>	Presented by Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport for adoption by the Cabinet.

Deliverables			
		The roadmap report is delivered along with any software models developed in the roadmap process (to be open source) and with presentations and infographics useful for communicating the findings.	
1.2.5	Technical assistance to support the approval process	Technical assistance, in the form of expert support to answer questions or provide further analysis and studies as required by the Ministry and Cabinet	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Cabinet

### **Output 1.3. The Government of St. Kitts and Nevis have a Federal Energy Commission for coordinating the transition towards 100% renewable electricity generation.**

The Ministries with responsibility for energy in the Federal Government and the Nevis Island Administration (NIA) currently collaborate using an informal mechanism. This output will create a framework for inter-island cooperation and coordination on energy matters through a Federal Energy Commission (FEC). The commission will be composed of representatives of the ministries responsible for energy and sustainable development and meet periodically to assess, discuss, concentrate, coordinate and advance reforms required to create the enabling framework for transitioning to a clean grid. It will also keep track of an inventory of on-going initiatives, aligning and coordinating multilateral support, identifying support needed, and leading the periodic updates to the grid expansion plans. The FEC will build upon work funded by the Government of St. Kitts and Nevis, as well



as support provided by the Caribbean Development Bank (CDB) to develop an Operational Framework and Training Plan to strengthen each island's energy unit. This FEC goes beyond this work in developing a far reaching and participatory twin-island commission. The FEC may constitute the governance instance responsible for giving continuity to the NEP and its roadmap.

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders

Deliverables			
D1.3.1	Proposal and consultation for the creation of a Federal Energy Commission	<p>This deliverable will consist of a proposal for the creation of the FEC. The proposal will consist of, inter alia:</p> <ul style="list-style-type: none"> <li>- Statutes including mandate, scope, and limitations of the FEC's authority, including reporting structure</li> <li>- Internal operational structure and procedures (including any required funding)</li> <li>- Initial 3-year workplan</li> <li>- Budget required for the long-term sustainability of the commission</li> </ul> <p>The initial workplan shall be aligned to the National Energy Policy and identify actions with roles and responsibilities. The workplan shall reflect the formalization process of the FEC itself, as well as prioritized areas of work in terms of legislation, regulations, norms, and standards, assigning roles and responsibilities and a timeline for its implementation. This will include the regulatory reforms depicted in this component of the proposal. It is expected that a first draft will be discussed during year 1 of the project, with revisions in year 2 and year 3 (final version).</p> <p>Based on the current version of the NEP, functions and powers of this commission should include:</p> <ul style="list-style-type: none"> <li>- Advise and assist the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport in the formulation and review of the National Energy Policy;</li> <li>- Advise, assist and make recommendations to the Ministry on: <ul style="list-style-type: none"> <li>o efficiency in all sectors;</li> <li>o reviewing and amending the energy planning;</li> <li>o actions necessary for the implementation of the National Energy Policy and attainment of the objectives;</li> <li>o actions necessary for the promotion of investments in renewable energy alternatives and energy efficiency in all sectors;</li> <li>o any aspect related to the electrical interconnection between the islands of Saint Christopher and Nevis, and between them with other countries and islands of the region;</li> <li>o any other issue linked to the National Energy Policy adoption and implementation.</li> </ul> </li> <li>- Identify all aspects related to the promotion of use of renewable energy sources and energy efficiency</li> <li>- Identify and propose: <ul style="list-style-type: none"> <li>o opportunities for cooperation between the islands, in order to internalize economies of scale, streamline sector regulations, and avoid duplication of efforts</li> <li>o arrangements for such cooperation, for the consideration of authorities on both islands,</li> <li>o studies and analysis related to the potential, economic and technical feasibility of different renewable energy technologies and sources available in the country;</li> <li>o actions related to information and education campaigns necessary for the attainment of the objectives of this</li> </ul> </li> </ul>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis; Energy Units; SKELEC and NEVLEC

Deliverables			
		<p>National Energy Policy and the reduction of gender gaps in access to energy;</p> <ul style="list-style-type: none"> <li>o any other aspect related to the formulation, review and implementation of the National Energy Policy.</li> <li>o Gender considerations <ul style="list-style-type: none"> <li>- Ensure an institutional framework of cooperation and coordination of policies between the federal authorities and the authorities of Nevis, and between the country with other countries of the region and regional institutions;</li> <li>- Lead and supervise, directly or with the support of appointed consultants, any kind of studies or advise on matters of a technical or financial nature as necessary to carry out its functions and powers. This includes the periodic revision of grid capacity expansion plans, grid studies, transmission expansion studies, etc.</li> <li>- Ensure that the commission is gender balanced</li> </ul> </li> </ul> <p>The proposal will be presented for adoption by the Federal Government and the Nevis Island Administration (NIA).</p>	
D1.3.2	Technical assistance to support the approval process	Technical assistance to support the Federal Government and Nevis Island Administration (NIA)'s consideration of the proposal, in the form of expert support to answer questions or further analysis and studies as may be required	Presented by Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport and Department of Physical Planning, Nevis for approval by the Parliament.

### **Output 1.4. The Government of St. Kitts and Nevis develops energy efficiency legislation to achieve the goals of the National Energy Policy.**

This output will draft and pursue the adoption of a Federal Energy Efficiency Act (FEEA) for St. Kitts and Nevis. The legislative framework needed to achieve the energy efficiency goals set out in the revised NEP (output 1.1) will be created, building upon recommendations from previous studies and the experience from other similar

countries. The FEEA will set building energy codes, minimum energy performance standards, restrictions on incandescent bulbs, fuel economy standards and establish a framework for the adoption of innovative business models such as the Integrated Utility Service Model (IUS, discussed further below, and also components 2 and 3). In particular, the proposed legislation will adopt the recommendations on energy building codes from the project ?Improving Environmental Management through Sustainable Land Management in St. Kitts and Nevis? (GEF-6, ID: 9785), which in turn are aligned with the 2018 CARICOM Regional Energy Efficiency Building Code (supported by GEF-5 project ID: 4171); and incorporate the recommendations from the Eastern Caribbean Energy Labelling Project. The consultancy for developing the building codes under GEF-6 Project is currently being tendered by IUCN Regional Office for Mexico, Central America and the Caribbean (ORMACC) as part of the development of a National Physical Development Plan for St. Kitts and Nevis. The finalisation is expected mid-2023 (August).

In addition to incorporating recommendations from previous studies, this output will also assess and provide recommendations in terms of the tariff structure used by the utilities and the subsidy scheme used by the Government for facilitating the transition to a grid powered by renewable energy. The transition to renewables will bring new challenges in terms of how the utilities collect revenue and how the Government deals with equity concerns through subsidies. For example,

when households or businesses install their own solar power they are also likely to retain their connection to the grid, which means that the revenue stream from these users is reduced while they still add to the peak demand and, consequently, to the sizing of the system. Likewise, new challenges will arise during the transition in terms of the subsidies. Currently, the Government pays a subsidy whenever the fuel surcharge in the tariff increases, which in effect creates a distortion in benefit of fossil fuels that will become more problematic as renewables take over a larger share of the generation mix.

The proposal for a Federal Energy Efficiency Act will also prepare the ground for the deployment of an Integrated Utility Service (IUS) Model, wherein the utilities facilitate the implementation of energy efficiency measures, recovering its investment from the savings that are generated. As mentioned in the baseline, these mechanisms are being considered by the country and a few pilots have been undertaken in the region. Such a model will be simulated in component 2 and developed under output 3.2.

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders

Deliverables			
D1.4.1	Recommendations for a Federal Energy Efficiency Act	<p>The report will include:</p> <ul style="list-style-type: none"> <li>- a detailed baseline and gap-analysis for energy efficiency in St. Kitts and Nevis;</li> <li>- a review from previous and on-going pilots and studies in the Caribbean and other SIDS</li> <li>- recommendations including on: <ul style="list-style-type: none"> <li>o building energy codes, i.e., related to the building insulation and performance of the building envelop, leading to a recommended maximal specific energy consumption for new constructions, integrate energy efficiency and resilience measures and options such as solar roof heating and other renewable energy technologies to reduce electricity loss and structural damage as result of extreme climate events.</li> <li>o minimum energy performance standards, e.g., for appliances and ACs</li> <li>o energy efficiency labelling (e.g. for lightning CFL/LED, ACs and refrigerators)</li> <li>o restrictions on incandescent bulbs and</li> <li>o fuel economy standards</li> <li>o import standards for equipment</li> <li>o measures for the environmentally sound management of replaced units and appliances, e.g. ACs, refrigerators and light bulbs</li> <li>o integrated Utility Service (IUS) model, including innovative contractual arrangements;</li> <li>o electricity tariff structure that is aligned with the principles in the NEP, the sustainability of the utility and the grid's transition towards renewables.</li> <li>o Other measures</li> </ul> </li> </ul>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis

Deliverables			
D1.4.2	Draft Federal Energy Efficiency Act	<p>Draft proposal for a Federal Energy Efficiency Act. The proposal should include:</p> <ul style="list-style-type: none"> <li>- Definition of main terms and units of measure regarding energy efficiency and energy performance</li> <li>- Identification of lead institutions for planning, coordinating, implementing, and monitoring energy efficiency policies and programmes</li> <li>- Information requirements to be collected and fed into the Knowledge Management System (output 1.5)</li> <li>- Definition of tools and instruments under the policy, such as: <ul style="list-style-type: none"> <li>o building energy codes,</li> <li>o minimum energy performance standards,</li> <li>o energy labels for lighting, appliances and equipment (for households, businesses and industry)</li> <li>o restrictions on incandescent bulbs</li> <li>o vehicle efficiency and labelling</li> </ul> </li> <li>- Adoption of existing tools and instruments in the region.</li> <li>- Definition of a broad, general framework for the application of Integrated Utility Service business models, including contractual and tariff arrangements compatible with energy efficiency incentives (such as on-bill tariff, energy services charge, on-bill financing, metered energy efficiency transaction structure, energy services business, or others).</li> </ul> <p>The FEEA will be presented for adoption by the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport, which will pursue the legal approval in parliament.</p>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis
D1.4.3	Consultation workshop on Federal Energy Efficiency Act	Stakeholder consultation workshop before adoption to discuss and validate the draft proposal for a Federal Energy Efficiency Act.	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis Energy Unit, SKELEC and NEVLEC, Ministry of Sustainable Development

Deliverables			
D1.4.4	Technical assistance to support the approval process	Technical assistance, in the form of expert support to answer questions or provide further analysis and studies as required by the Ministry, the Department of Physical Planning and Parliament	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis; Parliament

**Output 1.5. The Government of St. Kitts and Nevis develops a strengthened knowledge management and monitoring systems for tracking the implementation of the National Energy Policy, roadmap and related investments.**

This output will enhance the data management of public entities in St. Kitts and Nevis for the energy sector. This will be undertaken to support such entities in the developing, implementing, monitoring and evaluating public policy and investments in the energy sector. The output develops a complete record of all activities concerning electricity production, transmission, distribution, and consumption. It will also support the preparation, evaluation of progress and subsequent revisions of the roadmap. The system will also be used to monitor and record the data generated by the pilots detailed in component 2 and as a support for training and communications campaigns specific in component 3. The output will analyse the current and future necessities of relevant public entities in terms of data management for these sectors. Based on this and other international good practice, software for data management will be selected for implementation. It will be investigated if the system can be merged with and integrated into the interactive website of the NDA (to be developed under GCF Readiness in 2023) used as a knowledge sharing platform that will house all climate change information and data. The output will result in a data management system based on criteria including system sustainability post project, its implementation and the deployment of required training.

The platform will also play a key role in generating local public awareness on the benefits of decarbonization, to stimulate greater bottom-up support from civil society for the roadmap and adoption of the goals stated in the NEP. Aspects to be highlighted through the platform will include the implementation of measures on public buildings as part of the pilots (component 2), the benefits of a transition to a cleaner, more resilient grid, and an overview of the phases involved in the transition (as determined by the NEP and roadmap).

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders



Deliverables			
D1.5.1	Detailed design of the knowledge management system for the electricity sector	<ul style="list-style-type: none"> <li>- Define the design, purpose and procedures for a gender-sensitive data management system for the electricity sector</li> <li>- Covering full record of all activities concerning electricity production, transmission, distribution, and consumption</li> <li>- Identification of dataflows and data acquisition procedures</li> <li>- Proposed nesting for the system.</li> </ul> <p>Investigate the compatibility and integration of the data management system in the interactive website for the Ministry of Sustainable Development (to be developed under GCF Readiness in 2023) as a knowledge sharing platform that will house all climate change information and data.</p> <ul style="list-style-type: none"> <li>- Define required technical and staff requirements for its implementation</li> <li>- Roll-out plan for the platform/software, and workplan for the acquisition of data</li> <li>- Define sustainability post project</li> </ul>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Ministry of Environment, Climate Action and Constituency Empowerment; Ministry of Sustainable Development; Nevis Island Administration
D1.5.2	Design of public awareness modules and user-friendly platform for raising public awareness	Design and develop public awareness modules on renewable energy and energy efficiency.	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Ministry of Environment, Climate Action and Constituency Empowerment; Ministry of Sustainable Development; Nevis Island Administration
D1.5.3	Platform required for the knowledge management system	This deliverable consists of the knowledge management system itself, including any hardware and software requirements for its operation according to the design (D1.5.1 and D1.5.2). Focus on ensuring that the system is endowed with enough resolution to capture gender differences.	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Ministry of Environment, Climate Action and Constituency Empowerment; Ministry of Sustainable Development; Nevis Island Administration

Deliverables			
D1.5.4	Training sessions for the operation of the knowledge management mechanism	<p>1. One (1) two-day capacity building workshop to train public officers on the methodological procedures and the knowledge management mechanism. The workshop will include a discussion on gender asymmetries and required gender information to be compiled for a gender-sensitive KMS.</p> <p>2. Ad-hoc service (help desk) for public officers on data management and operation of data management system during the project duration</p>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Ministry of Environment, Climate Action and Constituency Empowerment; Ministry of Sustainable Development; Nevis Island Administration

**Output 1.6. St. Kitts and Nevis government representatives and other key stakeholders demonstrate increased capacity on gender-sensitive implementation of the national energy policy, roadmap and related investments.**

This output will support the building of capacity of public policy makers and operators to facilitate the transition to 100% renewable energy generation and 100% high-efficiency public buildings. This output will focus on building key aspects of capacity on:

- ? Planning for the grid expansion and a transition towards renewables
- ? Regulatory, economic, and social aspects of the transition to 100% renewables and high energy efficiency
- ? Planning the transition from single to multiple sourced grid electricity dispatching models

Other key aspects of capacity required for the transition, that is financing and operation of innovative integrated utility services models, are covered by outputs 3.1 and 3.2 respectively. This output will coordinate with and build upon other capacity building efforts, such as those provided by the European Development Fund and CDB (discussed in the baseline section). These efforts primarily focus on existing needs, whereas this output's capacity building will focus on challenges that will arise during the different stages of the transition.

While the output's capacity building activities will cover most of the ground required for a transition towards renewables and energy efficiency, the list of specific topics in the many areas involved can be well above any reasonable scale for an Energy Unit/Department in a SIDS. Thus, support from regional and international institutions will still be required even after this project. To facilitate such support, the output will identify areas in which St. Kitts and Nevis will require continued external support, identifying key experts and streamlining access of these to St. Kitts and Nevis' officials. This will include providing a clearer understanding of the country's needs to CCREEE, IRENA and the Climate Technology Centre and Network (CTCN).

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders

Deliverables			
D1.6.1	Training: planning for the grid expansion and a transition towards renewables	<p>1. Conduct a 2-day capacity building workshop to train public officers, management and technicians at the utilities on electricity grid analysis:</p> <ul style="list-style-type: none"> <li>- power distribution grid? current state and future grid requirements to respond to renewable energy additions identified.</li> <li>- required grid capacity in different parts of the country.</li> <li>- stabilization and resilience of the grid, how to improve its current reliability and how to ensure resilience against major climate events, such as hurricanes.</li> </ul> <p>2. Two (2) virtual follow-up meetings (one after 3 months and one after 6 months) with trainees on how they have practically applied the training content in their daily work. Through the meetings trainees will receive on the job recommendations and coaching.</p>	Energy Units under the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport and Nevis Island Administration; Ministry of Environment, Climate Action and Constituency Empowerment; Ministry of Sustainable Development; SKELEC and NEVLEC
D1.6.2	Training: regulatory, economic, and social aspects of the transition to 100% renewables and high energy efficiency	<p>1. Two-day training on:</p> <ul style="list-style-type: none"> <li>- Regulatory, institutional and contractual challenges of the transition to renewables / high energy efficiency</li> <li>- Financial aspects and feasibility of sustainable energy solutions (RE / EE), including economics, socio-economic benefits, impacts in terms of income distribution.</li> <li>- Financing sources and commercialization methods</li> <li>- Fiscal and tax implications</li> <li>- Discussion on gender access to energy services and a discussion on gender issues during the transition</li> </ul> <p>2. Two (2) virtual follow-up meetings (one after 3 months and one after 6 months) with trainees on how they have practically applied the training content in their daily work. Through the meetings trainees will receive on the job recommendations and coaching.</p>	Ministry of Finance, Energy Units under the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport and Nevis Island Administration; Ministry of Environment, Climate Action and Constituency Empowerment; Ministry of Sustainable Development; SKELEC and NEVLEC

Deliverables			
D1.6.3	Training: from single to multiple sourced grid electricity dispatching models	<p>1. Conduct a 2-day capacity building workshop to train public officers, management and technicians at the utilities on:</p> <ul style="list-style-type: none"> <li>- available load shifting capacity of the current grid.</li> <li>- identify additional ancillary capacity needed for grid frequency control and required grid distribution investment</li> <li>- future enhancements to stabilize the grid, such as weather forecasting system optimization to minimize the additional reserve capacity of dispatchable power in a high renewable penetration future and storage facilities.</li> </ul> <p>2. Two (2) virtual follow-up meetings (one after 3 months and one after 6 months) with trainees on how they have practically applied the training content in their daily work. Through the meetings trainees will receive on the job recommendations and coaching.</p>	Energy Units under the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport and Nevis Island Administration; SKELEC and NEVLEC

Deliverables			
D1.6.4	Identification of outstanding capacity needs	<p>The purpose of this deliverable is to prepare a concrete list where the capacity needs are clearly identified, quantified and assessed, to align and facilitate support from international cooperation, development banks or other support agencies beyond the duration of the GEF project. This will consist of a detailed report of relevant administrative, technical, commercial, environmental, and legal/contractual issues beyond the long-term capacities of the energy units, including i) justification/rationale, ii) potential sources of support, and iii) recommendations for a streamlined access &amp; modalities of cooperation. The report shall also include recommendations on future enhanced coordination between the island's energy administrations, and cover at least the following issues:</p> <ul style="list-style-type: none"> <li>- administrative, e.g., related to the closer cooperation and coordination, incl. shared and merged responsibilities</li> <li>- technical, e.g., common planning in technical solutions such as renewable energy expansion plans and grid extension, incl. interconnection of the island</li> <li>- commercial, e.g., common commercial approached and tariff settings, incl. PPP, BOO, BOT, PPAs</li> <li>- environmental, e.g. environmental impact assessments and land use; and</li> <li>- legal/contractual issues, e.g., operation under new Federal Energy Commission and the NEP.</li> </ul> <p>Public aspects of the report shall be shared with key technical supporting institutions, including CCREEE, IRENA and the CTCN.</p>	Energy Units under the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport and Nevis Island Administration; SKELEC and NEVLEC

## **Component 2: Demonstration of energy efficient buildings, grid-integrated renewable electricity generation and innovative scale-up models**

This component will address barrier 2: Lack of local evidence of the economic, technical and social viability of and experience in implementing low-emission energy solutions. In particular sub-barriers:

2.1. Insufficient experience with renewable energy generation and its integration into the grid

2.2. Insufficient awareness regarding energy efficiency measures and regulations

For descriptions of these barriers see section 1b(i)2 and the problem tree in Figure 2. The component builds upon co-financing of the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport. This component has two outputs. Output 2.1 will demonstrate to key stakeholders the technical, economic, social and environmental feasibility of energy efficient and renewable energy measures in public buildings. Output 2.2 will create confidence amongst key stakeholders as to the benefits of an innovative utility operation model, called an integrated utility services model (IUS), for accelerating the implementation of energy efficiency measures and renewable energy capacity on the two islands.

**Outcome 2: St. Kitts and Nevis generates an increasing share of electricity through renewable energy and has increased energy efficiency in public buildings**

## **Output 2.1. Key stakeholders demonstrate increased awareness of the technical, economic, social and environmental feasibility of energy efficient buildings and grid-integrated renewable electricity generation**

Energy efficiency and renewable energy measures in public buildings constitute an important showcase to stimulate market transformation towards more efficient products, buildings and services, as well as to trigger behavioural changes in energy consumption by citizens and enterprises. Furthermore, decreasing energy consumption through energy efficiency improvement measures can free up public resources for other purposes. Public buildings can therefore fulfil an exemplary role as regards to energy efficiency, having a large demonstrative effect that increases the general public's buy-in of the energy efficiency legislation that will be introduced as part of output 1.4. With this in mind, high-visibility buildings (e.g., finance administration, hospitals, schools) are prioritized for this pilot.

The project will implement energy efficiency measures (EEM) and renewable energy technologies (including battery infrastructure) in seven high-visibility public buildings in St. Kitts and in Nevis. Implementing these measures will constitute an important showcase to stimulate market transformation towards more efficient products, buildings and services, as well as to trigger behavioural changes in energy consumption by citizens

and enterprises. Measures that are not implemented directly through GEF funds as part of this output will be compiled and further developed into fully bankable proposals through output 3.1, ensuring the replicability of the pilot to the remaining public buildings in the country.

In output 2.1, energy efficiency and renewable energy (including battery infrastructure) measures will be implemented in seven high-visibility public buildings in St. Kitts and in Nevis:

?Ministry of Finance, St. Kitts

?Clarence Fitzroy Bryant College, St. Kitts

?Court House, St. Kitts

?Alexandra Hospital, Nevis

?Administration building (including the Ministry of Finance and the Legal Department), Nevis

?Charlestown secondary school, Nevis

?Long Point Port building, Nevis

Energy audits for these buildings were undertaken in 2018 with financing of the Caribbean Development Bank's Sustainable Energy Facility. The energy audit study prepared in 2018 investigated

the potential energy enhancement potentials and measures (EEM and renewable energies) for 16 public buildings and 19 water pumping station on both islands (see Table 6). During the PPG phase and the stakeholder consultations, the 7 public buildings were identified as being most promising and desired by the stakeholders to be addressed under the pilots taking into account the following reasons: 1) focus on public buildings instead water pumping stations, 2) high-visibility of selected public buildings, 3) equal spread over both island, 4) priorities of the utilities and the ministries, 5) replication potential and spill over effects to other buildings (residential and commercial). Detailed descriptions of



each pilot, including estimated energy savings and technical details are contained in Annex R. Through these demonstrations, a critical mass of beneficiaries and decision-makers will develop awareness of the viability of sustainable energy solutions in St. Kitts and Nevis, thus stimulating demand and the scaling-up of related technologies in the country. The pilots will also provide key information and experiences for scaling up procurement of energy solutions and finance through an integrated utility service model (see outputs 2.2, 3.2 and 3.3).

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders
D2.1.1	Pilot energy measures detailed design	Detailed design of the energy efficient and renewable energy (including battery infrastructure) measures to be installed in each pilot building, based on the energy audit report (GFA, 2018). This deliverable will include the final definition of activities and measures, an environmental impact assessment, <b>incl. measures for the environmentally sound management of replaced units and appliances, e.g., ACs, refrigerators and light bulbs etc.</b> , an execution plan and a waste management plan. The design shall include clear depiction of roles and responsibilities between the project team and the utilities, as well as all procurement and tender documents and specifications.	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis; SKELEC and NEVLEC
D2.1.2	Pilot energy measures commissioned and implemented	Procurement and installation of the pilots in accordance with D2.1.1., <b>incl. environmentally sound management of replaced units and appliances</b>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis; SKELEC and NEVLEC

## **Output 2.2. The energy units and electric utilities of St. Kitts and Nevis demonstrate awareness of the viability of an innovative integrated utility services model**

This output will simulate the benefits of an integrated utility services model to the energy units and electric utilities of St. Kitts and Nevis, based on data obtained from the output 2.1 pilot buildings.

Designed especially for Caribbean small island developing states, an integrated utility service (IUS) model allows an electric utility to coordinate the execution of demand-side measures (DSM) and subsequent repayment. The utility accesses finance from a financial mechanism and uses it to fund the execution of DSM measures for public or private end-users (such as building owners). These end-users are thus able to implement DSM measures without having to reflect a loan on their own balance sheets. The end-users then pay a pre-agreed electricity tariff to the utility to repay for the cost of the DSM capital. Once the DSM is fully paid off, they assume full ownership of the assets. For example, the end-user may pay the same total amount on their electricity bill that they had before the DSMs were installed, until the DSM assets are paid off. Consequently, during this time they pay a tariff which covers their reduced energy usage and the capital cost of the asset, but the cost of their energy bill will be the same as they have paid historically. Once the DSM asset is paid off, the end-user's tariff reduces to

reflect only their reduced energy usage, and they are now owners of the DSM asset. At the same time, the utility pays back the finance received through the financial mechanism by using the income generated from the end-user repayments. The DSMs can either be implemented by the utility itself or through the support of private technology service providers. See annex Q for further information on the integrated utility services model.

In this output, a simulation of the IUS model will take place on both the St. Kitts and Nevis islands based on the pilot buildings installed in output 2.1. As part of the simulation, the output will:

- Measure the energy savings in each pilot building;
- Develop and model a series of hypothetical utility IUS tariff options and corresponding repayment periods for the beneficiary (pilot building owner) to receive full ownership of the EE and RE assets, based on the energy savings. Tariff options may include high ambition (quick payback, more expensive), medium ambition (payback based on existing tariff levels), low ambition (cheaper energy bill, longer payback time);
- Determine and model new business opportunities and income streams for each utility (SKELEC and NEVLEC)

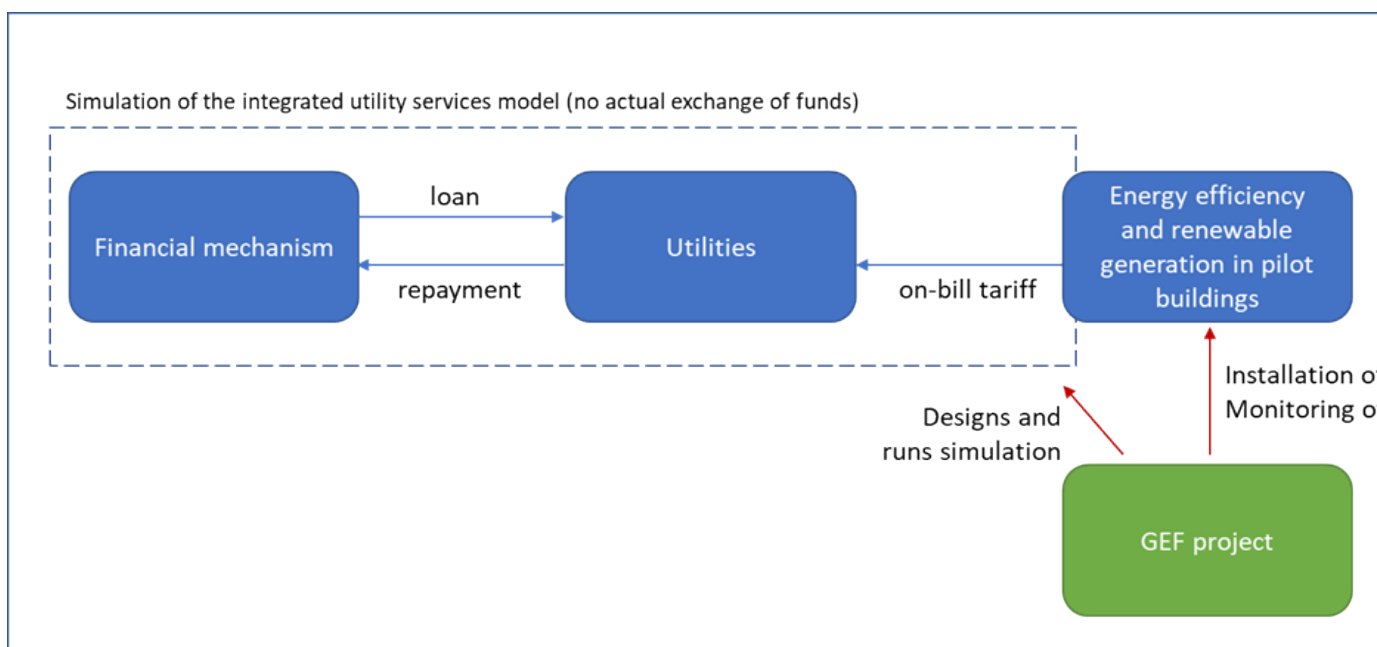
based on the implementation of the IUS model for the pilot buildings for different ambition options;

- Determine and model hypothetical utility repayments to a hypothetical financial model based on different loan sizes and conditions for funding the implementation of the EE and RE measures in the pilot buildings;

- Develop a final report on conclusions and recommendations for each utility on using the IUS model, as inputs into outputs 3.2 and 3.3.

Ultimately, this output, together with the previous, will serve to generate information and confidence for the development and potential implementation of SKELEC and NEVLEC IUS models under output 3.2, together with a supporting financial window developed under output 3.3.

**Figure 9: Simulation of an Integrated Utility Services (IUS) model through output 2.2**



Deliverables			
Code	Title	Minimum indicative content	Stakeholders
D2.2.1	Pilot building monitoring design	<p>The plan for pilot monitoring shall include:</p> <ul style="list-style-type: none"> <li>- Scope and objectives</li> <li>- Monitoring methodology, detailing the technical aspects of metering</li> <li>- Definition of performance indicators</li> <li>- Data processing protocols</li> <li>- Before and after customers / users? questionnaires (in particular in public buildings).</li> </ul>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis; SKELEC and NEVLEC
D2.2.2	Pilot building monitoring reports	<p>This deliverable consists of monthly completed reports on the energy savings and generation of each pilot building. A minimum of 12 reports should be prepared (one year of pilot building operation).</p>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis; SKELEC and NEVLEC

Deliverables			
D2.2.3	Integrated utility service model simulation report	<p>Report on, inter alia:</p> <ul style="list-style-type: none"> <li>- Logistic and procurement aspects,</li> <li>- Utility IUS tariff options and corresponding repayment periods for the beneficiary (pilot building owner) to receive full ownership of the EE and RE assets, based on the energy savings. Tariff options may include high ambition (quick payback, more expensive), medium ambition (payback based on current energy costs), low ambition (reduced energy bill, longer payback time);</li> <li>- Potential new business opportunities and income streams for each utility (SKELEC and NEVLEC) based on the implementation of the IUS model for the pilot buildings for different ambition options;</li> <li>- Determine and simulate hypothetical utility repayments to a hypothetical financial model based on different loan sizes and conditions for funding the implementation of the EE and RE measures in the pilot buildings;</li> <li>- Conditions and parameters for the sustainability of the financial mechanism (interest rate, payback period, guarantees, risks), informing Output 3.3</li> <li>- Recommendations regarding contractual design under an IUS model (informing Output 3.2)</li> <li>- Recommendations for the utilities and the Energy Unit regarding roles, responsibilities, outstanding gaps and future lines of work (also informing the energy roadmap under Output 1.2 and its institutional mechanism under Output 1.3)</li> <li>- Develop a final report on conclusions and recommendations for each utility on using the IUS model, as an input into outputs 3.2 and 3.3.</li> </ul>	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis; SKELEC and NEVLEC

### **Component 3: Financing and delivering the transition towards a 100% renewable grid**

This component will address barrier 3: Limited financing materialized for renewable energy and energy efficiency. In particular sub-barrier: 3.2 Limited resources and experience in structuring bankable financial proposals.

For descriptions of these barriers see section 1b(i)3 and the problem tree in Figure 2. Component 3 supports St. Kitts and Nevis with obtaining investment for implementing its roadmap (output 1.2), to achieve the goals of its national energy policy (output 1.1). It aims to ensure that the regional and international financing community are fully aware of the opportunities contained in the roadmap, including the developed pipeline of projects (output 1.2). It also aims to ensure that as investment is mobilized, St. Kitts and Nevis has the capacity, tools and systems in place to efficiently translate this investment into implementation on the ground. This component consists of four outputs.

**Outcome 3: The Government of St. Kitts and Nevis is able to mobilize and channel increased investments aligned with the revised national energy policy**

**Output 3.1. Officials in governmental, technical academic and private institutions demonstrate increased capacity in the development, assessment and appraisal of renewable energy and energy efficiency projects aligned with the National Energy Policy**

This output will provide professional training to key national actors on developing project concepts and assessing and appraising renewable energy and energy efficiency projects aligned with the NEP and the NDC. It will build upon the capacity building activities undertaken through the 11th European Development Fund Sector Budget Support. The project will follow a train-the-trainers approach to maximize impact and sustainability, with an academic institution (such as the Clarence Fitzroy Bryant College) engaged for participating in this output's execution. Two training courses will be developed jointly with the academic institution, one on renewable energy and one on energy efficiency. Training material will be developed and the knowledge be transferred to dedicated trainers at the institution allowing the joint implementation of two (2) five-day training sessions on sustainable energy finance targeting domestic institutional, commercial, private sector investors, and then ongoing training

execution of a course curricula for minimum five years. The training will lead to the development of concepts aligned with the NEP for achieving 100% renewable energy by 2030 that will be shared with regional and international financiers through the marketing campaign in output 3.4. Furthermore, participants will develop understanding on how to assess proposals presented by such financiers, including as to their (i) alignment with the NDC and NEP, (ii) technical soundness with regards to national technical conditions, and (iii) financial soundness from a national point of view. The output will target women and socially disadvantaged groups as a way of empowering them to access the new jobs that the energy transition will offer.

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders
D3.1.1	Memorandum of understanding signed with a local / regional academic institution(s)	<p>The MoU will cover:</p> <ul style="list-style-type: none"> <li>- Curricula of the training module on sustainable energy finance including determination of qualification to be obtained</li> <li>- Capacity building needs</li> <li>- Number of train-the-trainer modules to be financed by the project (two (2) modules, one on RE and one on EE)</li> <li>- Learning material to be prepared</li> <li>- 5 year workplan for periodically delivering curricula at the training institution</li> <li>-</li> </ul>	Clarence Fitzroy Bryant College (manifested interest during the PPG phase) / regional institutions



Deliverables			
D3.1.2	Training material	<p>1. Academic institution course curricula (Training material and transfer of knowledge) on the development, assessment and appraisal of renewable energy and energy efficiency projects comprising:</p> <ul style="list-style-type: none"> <li>- Financial aspects and feasibility of sustainable energy solutions (RE / EE), including main indicators used</li> <li>- Phases of project development (pre-feasibility, feasibility, detail design, financial closure, construction, implementation, closure, etc.)</li> <li>- Permits and licenses</li> <li>- Common contracts and legal aspects</li> <li>- Risks, including feasibility thresholds, break-even and sensitivity analyses</li> <li>- Financing sources and commercialization methods.</li> <li>- How to determine alignment with the NEP and NDC</li> <li>- How to assess if the proposal sufficiently takes into consideration the national technical and regulatory context (particularly with regards to electricity)</li> <li>- How to assess if the proposal is financially sound from a national point of view</li> </ul> <p>2. Revision of course curricula following implementation of training sessions (D3.1.3), taking into account lessons learned from such trainings.</p>	Clarence Fitzroy Bryant College / regional institutions
D3.1.3	Training sessions	<p>1. Two (2) 5-day training sessions on curricula of D3.1.2 jointly implemented with Clarence Fitzroy Bryant College / other academic institutions.</p> <p>2. Two (2) virtual follow-up meetings (one after 3 months and one after 6 months) with trainees on how they have practically applied the training content in their daily work. Through the meetings trainees will receive on the job recommendations and coaching.</p>	Domestic commercial / private sector investors; investors under the St. Kitts? Citizenship by Investment Programme and owners of premises; financial institutions; institutional domestic investors (such as St. Kitts and Nevis Social Security Fund)

Deliverables			
D3.1.4	Project package: NEP investment concepts	<p>During the training sessions, the participants will develop a package of 3-5 project concepts aligned with the revised NEP. These will be shared with financiers through the marketing campaign (output 3.4). Contents will include:</p> <ul style="list-style-type: none"> <li>- Underlying measures</li> <li>- Identification of different available technologies</li> <li>- Associated risks</li> <li>- Cost analysis, including thresholds and break-even assessment</li> <li>- Financing sources and commercialization methods, incl. possibility to utilize funds from the CBI programme or foreign direct investment (FDI) (channelled and arranged through SKIPA and NIPA).</li> </ul>	Domestic commercial / private sector investors; St. Kitts Investment Promotion Agency (SKIPA) and Nevis Investment Promotion Agency (NIPA); investors under the St. Kitts? Citizenship by Investment Programme and owners of premises; financial institutions; institutional domestic investors (such as St. Kitts and Nevis Social Security Fund); SKELEC and NEVLEC

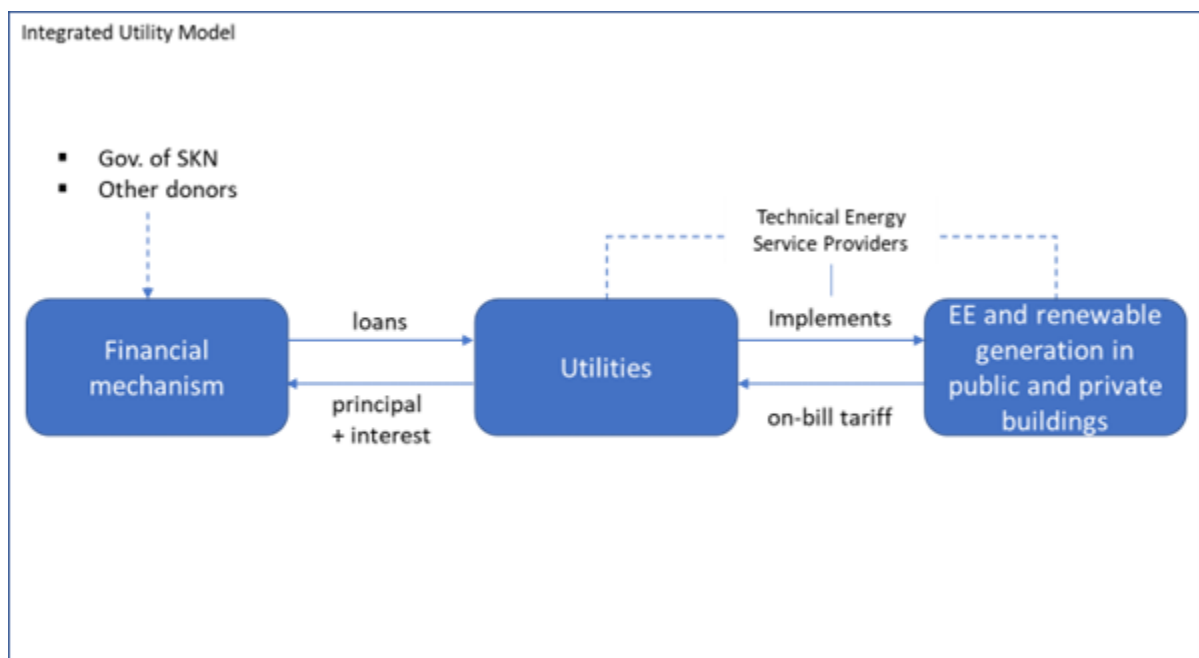
**Output 3.2. The electric utilities SKELEC and NEVLEC have access to tailored and innovative integrated utility service models for accelerating the scale-up of energy efficient and renewable energy generation measures**

Drawing on the successful simulation of the IUS model on both islands in component 2, this output will support the development and implementation of innovative IUS models for both utilities, SKELEC and NEVLEC. These models will support both islands to replicate, accelerate and scale-up energy efficiency and renewable energy measures in public and private buildings. This output aims to achieve this by eliminating the initial capital cost requirements of public building entities for such measures. It will take in consideration the result of pilot IUS projects in Barbados, Belize and Guyana financed by the Caribbean Development Bank (CDB) and the recently started up-scale programme in Barbados, Belize, Guyana and Jamaica financed by GCF project preparation funding and implemented by the CDB. The project will also consider the cooperation with the CDB to support the financial mechanism for the IUS (see Output 3.3.), which may allow accessing future sources of funding from the GCF.

Under an IUS model, the utility invests in the client's energy efficiency or renewable energy measures and pays the upfront CAPEX financed through a loan. The repayment and expenses are recovered through an on-bill tariff for the client. Under this output, the IUS model will be structured and

operationalized, including with regards to the IUS operational manual and tariff structure. The financial mechanism which provides the loan for the upfront CAPEX will be developed under output 3.3. The general function of the IUS is depicted in Figure 10. Two tailored IUS models will be developed, one for each island, and operated by each island's respective utility, SKELEC and NEVLEC. Both utilities are privatized and are able to have debt. This output will also build the capacity of the national utilities, SKELEC and NEVLEC, and the energy units to implement the IUS model for accelerating the adoption of energy efficient and renewable energy technologies in St. Kitts and Nevis. The design of the IUS models will draw directly upon the IUS simulation undertaken in output 2.2. It will also draw upon and be aligned with the development of the NEP (output 1.1) and the Federal Energy Efficiency Act (output 1.4), which will define and set the framework for the IUS model.

Figure 10: Implementation of the integrated utility service model



Deliverables			
Code	Title	Minimum indicative content	Key stakeholders
D3.2.1	Transition strategy to IUS model for SKELEC	<p>5-year strategy for the transition to an IUS operation for SKELEC. Minimum contents include:</p> <ol style="list-style-type: none"> <li>1. A detailed appraisal of the baseline situation of each utility, including an assessment of the tariff and its ability to recovery of costs, capacity of each institution to access debt, potential debt liability (in case of no or low repayment), long-term financial sustainability, etc. This baseline analysis will serve as the basis for the development of the proposals in the strategy.</li> <li>2. Proposal on the tariff structure that is aligned to the NEP and the Federal Energy Efficiency Act (outputs 1.1 and 1.4) and reflect at least 3 operation scenarios for the IUS model (e.g., high, mid and low demand for energy efficiency services from the public and the private sector; as well as any other relevant scenarios to be suggested by the consulting team). The strategy shall also include a 5-year projection of all relevant financial statements (cash flow, income, balance sheet)</li> <li>3. Yearly workplan for each utility, indicating activities and responsibilities for a 5-year period.</li> <li>4. Definition of a Key Performance Indicator Dashboard for each utility. Including baseline metrics and 5-year projections for indicators of operational performance; commercial, billing and collection metrics; financial performance; customer service quality, energy efficiency and demand-side management, etc.). The KPI should be linked to the project's KMS (output 1.5)</li> <li>5. Development of a standardized methodology for estimating the energy savings due to different EE measures and the reduction of fossil fuel consumption due to RE deployment, to support the development of tariffs for beneficiary payback of DSM measures</li> <li>6. Capacity development needs and necessary measures to accompany the change process at all levels of the utility.</li> </ol>	SKELEC; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; as well as any other officials appointed to the Federal Energy Commission.

Deliverables			
D3.2.2	Transition strategy to IUS models for NEVLEC	<p>5-year strategy for the transition to an IUS operation for NEVLEC. Minimum contents include:</p> <ol style="list-style-type: none"> <li>1. A detailed appraisal of the baseline situation of each utility, including an assessment of the tariff and its ability to recovery of costs, capacity of each institution to access debt, potential debt liability (in case of no or low repayment), long-term financial sustainability, etc. This baseline analysis will serve as the basis for the development of the proposals in the strategy.</li> <li>2. Proposal on the tariff structure that is aligned to the NEP and the Federal Energy Efficiency Act (outputs 1.1 and 1.4) and reflect at least 3 operation scenarios for the IUS model (e.g. high, mid and low demand for energy services, incl. RE and EE, from the public and the private sector; as well as any other relevant scenarios to be suggested by the consulting team). The strategy shall also include a 5-year projection of all relevant financial statements (cash flow, income, balance sheet)</li> <li>3. Yearly workplan for each utility, indicating activities and responsibilities for a 5-year period.</li> <li>4. Definition of a Key Performance Indicator Dashboard for each utility. Including baseline metrics and 5-year projections for indicators of operational performance; commercial, billing and collection metrics; financial performance; customer service quality, energy efficiency and demand-side management, etc.). The KPI should be linked to the project's KMS (output 1.5)</li> <li>5. Development of a standardized methodology for estimating the energy savings due to different EE measures and the reduction of fossil fuel consumption due to RE deployment, to support the development of tariffs for beneficiary payback of DSM measures</li> <li>6. Capacity development needs and necessary measures to accompany the change process at all levels of the utility.</li> </ol>	NEVLEC; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis, as well as any other officials appointed to the Federal Energy Commission.

Deliverables			
D3.2.3	Utility IUS operation manuals	<p>Develop operation manual for tailored IUS model for each utility with the following minimum content:</p> <ul style="list-style-type: none"> <li>- Description of the IUS for the utilities</li> <li>- Identify suitable distributed RE and EE technologies and practices that will be eligible under the IUS model</li> <li>- Set of eligibility criteria, including methods, guidance and tools to facilitate assessments of compliance with/performance against these criteria</li> <li>- Definition of the implementation arrangements for typical business cases and assess its operational feasibility</li> <li>- Description of capacity needed at the utilities to reinforce the operational feasibility of the model in the long-term</li> </ul>	SKELEC and NEVLEC; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis
D3.2.4	Report on technical assistance provided to facilitate the adoption of the IUS model by SKELEC and NEVLEC	Additional studies and technical responses to questions to support the utilities in adopting the IUS model.	SKELEC and NEVLEC; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis
D3.2.5	Training workplan	<p>Prepare workplan and curriculum meeting the needs of the utilities to understand and to accompany the change process all levels of the organisation:</p> <ul style="list-style-type: none"> <li>- Baseline assessment of both utilities, including supply-demand analysis</li> <li>- How to establish the Integrated Utilities Services (IUS) model and administer it at scale</li> <li>- Business models and operations to facilitate the adoption of distributed RE and EE among a wide range of customers</li> <li>- Access to finance (i.e. through financing mechanism under Output 3.3)</li> <li>- Minimizes risks and other barriers for end-users</li> <li>- Estimating and monitoring of energy savings for application of tariffs and determining payback periods</li> </ul>	SKELEC and NEVLEC; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis

Deliverables			
D3.2.6	Capacity building workshops	<ul style="list-style-type: none"> <li>- Two (2) 2-day capacity developing workshops to train public officers, management and technicians at the utilities on the IUS model and the transition strategy</li> <li>- Two (2) virtual follow-up meetings (one after 6 months and one after 12 months) to address new technical questions, trouble-shooting and provide refresher training on the IUS model</li> <li>- Continued technical support on a needs basis (help desk) for officers, management and technicians at the utilities during the strategy development and implementation during the GEF project of the IUS model (D.3.2.1 and D.3.2.2)</li> </ul>	SKELEC and NEVLEC; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport; Department of Physical Planning, Nevis

**Output 3.3. The electric utilities SKELEC and NEVLEC have access to a financing window for accelerating investment in renewable energy and energy efficiency through an integrated utility service model**

As noted in the baseline section, the Eastern Caribbean Central Bank (ECCB) and the World Bank are developing a Regional Renewable Energy Infrastructure Financing Facility (REIFF) for removing barriers and attract private sector investment in clean energy. To complement that initiative, this output will focus on the public sector, by attracting finance for investment in renewable energies and energy efficiency measures by the electricity utilities through an IUS model. Through an existing financial entity, competitive debt instruments will be made available to the utilities for covering the CAPEX of the demand-side measures in public and private buildings. The mechanism will be hosted by one of the Development Bank of St. Kitts and Nevis, the St. Kitts-Nevis-Anguilla National Bank or the St. Kitts Co-operative Credit Union (SKCCU). The mechanism will be elaborated with consideration of catalysing synergies and complementarities with other concepts currently under consideration, including the Regional Renewable Energy Infrastructure Financing Facility (REIFF) in the Eastern Caribbean Currency Union and the Revolving Adaptation and Mitigation Fund Facility (RAMFF). Under this output, the financial window will be structured and operationalized, including with regards to its features and related debt instrument conditions and features. Its design will draw

directly upon the IUS simulation undertaken in output 2.2 and the application of the IUS model under output 3.2. The financial window will be seed funded through the project (USD \$100,000) with output 3.4 aiming to stimulate additional capitalization. The capital will help consolidate and initiate the IUS model while ongoing discussions and loans with CCREEE and financial institutions crystalize. With the seed funding the utilities will be enabled to start directly implementing first sub-project under the finance window. Out of the remaining 9 public buildings seven buildings require investment cost of less than USD 100,000 for energy efficiency measures (investment / measure cost for the remaining 9 public buildings assessed in 2018 through energy audits, see Table 6 and Annex R). With the initial investments covered by the seed capital due to the related returns, the utilities will hence be able to reinvest the funds in other projects. Over time it is expected that approximately USD 2.35 million of investment can be leveraged by replicating the pilots in the remaining public buildings (potentially through CDB with CCREE's support). Additionally, there is the potential for other project investments, e.g., in commercial buildings.

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders
D3.3.1	Detailed design of the IUS financial mechanism	<ul style="list-style-type: none"> <li>- Legal framework and applicable regulations for lending to the utilities</li> <li>- Loan structure for utilities for RE and EE works, considering payback period through the IUS model</li> <li>- Mechanism chosen (direct funding, guarantees, other types of blended finance)</li> <li>- Determination of operation costs and resources needed (staff, equipment, etc.)</li> <li>- Identification of risk</li> <li>- Defined governance structures, roles and responsibilities</li> <li>- Define 5-year workplan</li> <li>- Discuss potential co-finance possibilities and mechanisms for scaling-up the fund</li> <li>- Design to draw on the lessons learned from the pilot data (output 2.2).</li> </ul>	Development Bank of St. Kitts and Nevis, St. Kitts-Nevis-Anguilla National Bank, or the St. Kitts Co-operative Credit Union (SKCCU); Caribbean Development Bank; SKELEC and NEVLEC



Deliverables			
D3.3.2	Financial model simulating the operation of the IUS financial mechanism	5-year financial model identifying key parameters (interest rate, payback period, typical lending amount, etc.). Include: <ul style="list-style-type: none"> <li>- Different utilisation scenarios</li> <li>- Application of different eligibility criteria and concessional levels</li> <li>- Risk, inc. impact of different nonperforming loan (NPL) rates</li> <li>- Break-even analysis, from the point of view of the main actors in the mechanism (i.e. bank, utilities)</li> </ul>	Development Bank of St. Kitts and Nevis, St. Kitts-Nevis-Anguilla National Bank, or the St. Kitts Co-operative Credit Union (SKCCU); Caribbean Development Bank
D3.3.3	IUS financial mechanism operational manual	Operational manual to contain information as per the detailed design in D3.2.4.	Development Bank of St. Kitts and Nevis, St. Kitts-Nevis-Anguilla National Bank, or the St. Kitts Co-operative Credit Union (SKCCU); Caribbean Development Bank
D3.3.4	Report on additional technical assistance provided to facilitate the adoption of the financial mechanism by the determined financial entity	Additional studies and technical responses to questions to support the financial entity in its adoption process	Development Bank of St. Kitts and Nevis, St. Kitts-Nevis-Anguilla National Bank, or the St. Kitts Co-operative Credit Union (SKCCU); Caribbean Development Bank
D3.3.5	Letter of understanding between the financial entity and the federal government on the establishment of the IUS financial mechanism	The letter of understanding will state that the financial entity will make available the IUS financial mechanism for funding specific types of operations (as per D3.3.1 and D3.3.2), and that the funds received through the utilities are only used to re-capitalize this mechanism.	Development Bank of St. Kitts and Nevis, St. Kitts-Nevis-Anguilla National Bank, or the St. Kitts Co-operative Credit Union (SKCCU); Caribbean Development Bank; SKELEC, NEVLEC

**Output 3.4. Regional and international investors demonstrate increased awareness of the business opportunities in the renewable and efficient energy sector in St. Kitts and Nevis.**

This output has two aims. One the one hand, it (i) aims to stimulate the interest of federal, regional and international financiers in funding St. Kitts and Nevis's transition to 100% renewable electricity generation and 100% high energy efficiency public buildings. One the other hand, it (ii) also aims to

ensure the buy-in of local, regional and international stakeholders in the implementation of the roadmap and for achieving the ambitious NEP goals.

On financing, the output will implement a marketing campaign for promoting match-making between federal actors and high-capital regional and international financiers, encouraging the development of partnerships for implementing the roadmap and capitalizing the IUS financial mechanism (output 3.3).

The campaign will focus on raising awareness about St. Kitts and Nevis's ambition and its preparedness through the development of a comprehensive enabling environment in component 1. Designed as an advertising and marketing campaign, it will aim to retain the engagement level of key players, attract potential new ones, present the key elements of the roadmap and the investment opportunities that arise from it (including the project concepts prepared under output 3.1), as well as progress made in terms of the pilots and the implementation of other elements of this GEF project.

Target actors will include:

- o Development partners, e.g. World Bank, Inter-American Development Bank, OECD, European Union, Japan International Cooperation Agency (JICA), U.S. Agency for International Development (USAID), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Agence Française de Développement (AFD), and others;
- o Regional entities, e.g., CARICOM, Eastern Caribbean Central Bank (ECCB), Caribbean Development Bank (CDB), the Economic Commission for Latin America and the Caribbean (ECLAC), among others;
- o Technical organizations, e.g. IRENA, the Technical Assistance Programme for Sustainable Energy in the Caribbean (TAPSEC), CCREEE, the Climate Technology Centre and Network (CTCN), and others;
- o Private sector and local entities, e.g., Development Bank of St. Kitts and Nevis, St. Kitts Co-operative Credit Union, St Kitts-Nevis-Anguilla National Bank, First Caribbean International Bank, Bank of Nevis; SKELEC, NEVLEC, Chamber of Industry and Commerce (SKNCIC), SKN Hotel & Tourism Association, SKIPA and NIPA.

On stakeholder engagement, while the NEP and its roadmap aim to generate top-down momentum for transitioning to a 100% renewable, high efficiency and resilient grid, this output will focus on developing and executing an engagement strategy to ensure bottom-up momentum and local ownership of the clean energy transition. The output will develop and implement an engagement strategy to ensure that the views of key local, regional and international stakeholders are involved in the development of project activities. In particular, this stakeholder engagement will be key for revising the national energy plan (output 1.1) and for developing the roadmap and the investment plan (output 1.2). Stakeholder engagement will also be critical for the successful adoption and implementation of the IUS models by SKELEC and NEVLEC. This output's engagement strategy will seek to incorporate local stakeholder views, needs and priorities into the planning process, to ensure their social and economic viability and sustainability. The results of the consultations will be shared with the Federal Energy Commission (output 1.3), as a way to enhance coordination for the development of a feasible and efficient policy. This information will also serve as a key input for the detailed design and successful operationalization of the IUS model (output 3.2) and financial window (output 3.3). Furthermore, the active engagement of stakeholders will be critical for the replication of the pilots (component 2). To ensure ongoing stakeholder engagement and participation post project, this output will develop and deliver to key government actors recommendations for a long-term consultation mechanism.

The deliverables from this output will be fed into the data management system (output 1.5).

Deliverables			
Code	Title	Minimum indicative content	Key stakeholders

Deliverables			
D3.4.1	Design of a gender-sensitive multi-stakeholder engagement strategy and a funder marketing campaign	<p>The strategy will consist of a series of activities including:</p> <ul style="list-style-type: none"> <li>- Multi-stakeholder consultation workshops on the NEP and the roadmap (output 1.2), regulations (outputs 1.3) and financial incentives (output 3.2) (the workshops are deliverables of those outputs);</li> <li>- Holding of surveys and preparation of community-led inputs for the development of the strategy, pilot, regulations and financial incentives;</li> <li>- Three (3) policy briefs on the three topics covered in the capacity building activities (output 1.6), uploaded to knowledge management system (output 1.5);</li> <li>- Open door mechanism for sharing of ideas and concerns related to the energy transition. This shall also serve as a first point of contact for local stakeholders to express grievances if they feel they may be adversely affected by the GEF UNEP project.</li> <li>- Recommendations for the development of a long-term consultation mechanism.</li> </ul> <p>Marketing campaign</p> <ul style="list-style-type: none"> <li>- Campaign to promote interest among regional and international financiers, including a high-level national investment expo for regional and international investors</li> <li>- Promotion of the project concepts developed under output 3.1</li> <li>- Social media and communication campaigns, online forums and other consultation activities</li> </ul>	Ministry of Environment, Climate Action and Constituency Empowerment; Ministry of Sustainable Development; Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport
D3.4.2	Stakeholder engagement strategy implementation	Execution of strategy activities designed and described in D3.4.1	Communities and general public in St. Kitts and Nevis
D3.4.3	Marketing campaign implementation	Execution of communication campaign activities designed and described in D3.4.1	Regional and international stakeholder, including financial institutions, investors and project developers.

#### iv) Alignment with GEF Focal Area and/or Impact Program strategies

The project is aligned with Objective 1 of the GEF-7 Climate Change Focal Area on ?Innovation and technology transfer for sustainable energy breakthroughs?:

? CCM-1-1: Promote innovation and technology transfer for sustainable energy breakthroughs for decentralized power with energy usage (i.e., through promotion of renewable energies deployment etc.)

? CCM-1-3: Promote innovation and technology transfer for sustainable energy breakthroughs for accelerating energy efficiency adoption (i.e., through promotion of energy efficiency measure etc.)

**v) Incremental/additional cost reasoning and expected contributions from the baseline, the  
GEFTF, LDCF, SCCF, and co-financing**

The project aims to set in motion an energy transition from a 95% diesel-fuelled electricity grid towards a 100% renewable-based system in St. Kitts and Nevis. The grant funds provided by the GEF and complemented by co-financing aim at de-risking investments in renewable power generation and energy efficiency measures in the context of a Caribbean small island developing state with less than 60 thousand inhabitants and vulnerable to extreme weather events, as well as to attract additional funding from private actors and climate finance mechanisms and other means of concessional financing.

GEF-financing will assist St. Kitts and Nevis in overcoming the persistent barriers depicted in this project document, setting the path towards a green electricity grid. The revision of the National Energy Policy, the provision of a detailed set of actions to implement it, and the strengthening of the local institutional capacity will be instrumental in catalysing the shift towards a sustainable, zero-emission electricity grid. The project will thus provide an initial contribution that will lead to a fundamental transition in the system, reducing St. Kitt and Nevis' dependence on imported fossil fuels that affect its balance of payments. Funds will be used to revise the outdated National Energy Policy, as well as for the preparation of a detailed roadmap and to facilitate the regulation required for its implementation. Moreover, a portion of the funds will be used to implement small scale renewable generation pilots that are relevant for the demonstration of all the dimensions of the roadmap: technology and grid integration, logistic and business models, human resources and financing. The envisaged pilot project are going to have potential higher upfront costs compared to less efficient energy solutions; hence investment would not take place in the baseline scenario. In addition, services that are currently not

available will be supported by the project so the executing entity can offer them to local stakeholders, such as energy information, investor support and the matchmarking.

The project will build on activities and programmes of Government of St. Kitts and Nevis, UNEP and other actors (such as CCREEE and the GCF, see baseline section) and extend the scope and raise the ambitions of these activities towards a streamlined national energy policy and an implantation roadmap. This shall in particular be achieved through upscaling and spill over of demonstrations at specific public building in the country. In addition, the project will work to promote the localisation of energy production and utilisation as well as regional / local supply chains and services.

The additionalities of the project are further summarised in the table below:

**Table 10: Incrementality of the project**

Components	Business as usual	Incremental cost reasoning	Main outcomes expected
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<p>1. Policy and institutional arrangements for decarbonizing the electricity sector and enhancing energy efficiency of public buildings</p>	<p>Lack of coordination between administration and absence of a consistent, overarching vision that is made operational through a feasible, integrated roadmap on both island, St. Kitts and Nevis; insufficient coordination between ministries at national, and horizontal coordination across ministries / departments leads insufficient integration of sustainable energy strategies, policies and regulation at government level.</p> <p>Energy efficiency insufficiently reflected in legislation</p> <p>Lack of transparency and data in the energy sector</p>	<p>The Government of St. Kitts and Nevis has revised National Energy Policy for achieving the energy transition and NDC targets.</p> <p>The coordinative capacities for sustainable energy solutions are strengthened and coordinated efforts are followed to implement the energy roadmap for implementing the National Energy Policy.</p> <p>Through the FEC the institutional mechanisms for achieving the transition towards 100% renewable electricity generation are improved.</p> <p>Energy efficiency legislation to achieve the goals of the National Energy Policy is developed.</p> <p>A strengthened knowledge management and monitoring systems for tracking the implementation of the National Energy Policy, roadmap is established.</p>	<p>Policy and institutional arrangements for decarbonizing the electricity sector and enhancing energy efficiency of public buildings</p>
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2. Demonstration of feasibility of high energy efficiency buildings and resilient grid-integrated renewable electricity generation	<p>National experiences and understanding of sustainable energy technology and solutions will remain stagnant in immediate term.</p> <p>Limited priority of sustainable energy aspects within public buildings and private investments.</p> <p>Energy supply will continue to rely on fossil fuels.</p> <p>There are still insufficient baseline and energy data.</p>	<p>Project will demonstrate application of sustainable energy solution for public buildings.</p> <p>Lessons learned from the sustainable energy pilot demonstration activity are derived.</p> <p>Knowledge about best practice examples for low-emission activities in St. Kitts and regional are disseminated amongst the general public, the administration and the commercial sector.</p>	<p>Benefits and application of innovative, sustainable energy solutions are understood and considered in decision making and planning of energy systems, at small-scale level (public and private buildings) and at utility scale.</p> <p>Public administration and utilities, as well as the private sector including businesses gain confidence and sufficient evidence of the technical, economic, social and environmental viability of sustainable energy solutions in the local context.</p>
3. Scaling up financing for 100% renewable energy and energy efficient measures	<p>Perceived investment risks for sustainable energy solutions will persist.</p> <p>Scaling up the target of renewable energies are not addressed with innovation and sustainable solutions.</p>	<p>A mechanism for scaling up sustainable energy interventions programme is in place.</p> <p>Key regional and international investors are catalysed for supporting the country in its transition to 100% renewable energy.</p> <p>The understanding of key stakeholders on financing options for sustainable energy activities are strengthened.</p>	<p>The Government and the financial sector enhance the financial and investment environment to de-risk investments in sustainable energy infrastructure.</p>

In addition, the following describes the incremental cost logic of the project in building upon these key existing efforts:

- o The Sustainable Energy for the Eastern Caribbean Programme (SEEC) creates the Sustainable Energy Fund (SEF), a multi-donor effort that is split across various countries in the Easter Caribbean. 16.35 million (68%) of



the SEF funds assigned to St. Kitts and Nevis represent GCF funding, which focuses specifically on Geothermal Energy. While geothermal energy is one of the main sources of energy that is expected to play a role in the energy transition, other issues are also expected to be fundamental (wind and solar energy, battery storage, centralized vs distributed generation, grid integration, adaptation & resilience, among others). Thus, the incremental logic of the GEF project is to build upon the SEEC/SEF investments in geothermal, by building a broad and sound enabling environment for facilitating the country's transition to decarbonization. SEF GEF funding, on the other hand, is limited only to interventions in Antigua and Barbuda, Grenada and St. Vincent and the Grenadines. The remaining funds in the SEF that are available to St. Kitts and Nevis include mostly loans from JICA and the IADB; these are the sources that funded the energy audits that are used as one of the main inputs for the conceptualization of the pilot under this project. Here the incremental logic is to build upon these audits by piloting these and demonstrating the feasibility of building retrofitting and RE introduction, as well as initiation creation of required market actors.

- o Assistance from the European Development Fund (EDF) consists of a grant to promote the integration of renewable energy and energy efficient technology in public facilities. The programme also supports the government to build resilience within the energy and

water sectors, to ensure that the population has access to the basic needs of water and electricity when the country is severely impacted by natural disasters such as hurricanes. Some specific outcomes will include the installation of energy efficient streetlights, the installation of underground electrical power supply to three pumping stations and the development of an operational framework and training plan for energy units in the country. These efforts will be essential to the achievement of the objectives in the proposed GEF project. EDF assistance will also be used to create technical capacity through the strengthening of Energy Units in St. Kitts and Nevis, which will be among the main stakeholders for the trainings on regulatory and technical elements involved in a transitioning grid (output 1.6) of the current GEF project. The energy efficient lighting and the implementation of underground electrical power supply will be direct contributions aligned with this GEF proposal, increasing energy efficiency as a direct contribution towards outcome 2).

**vi) Global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF)**

<b>Total top down emission reduction potential 2023 to 2043, tCO<sub>2</sub></b>	
(1) Total direct emission mitigation	<b>8,370</b>
(2) Total indirect impact emission mitigation	<b>486,650</b>

The emission reduction estimate is based on 20-year projections (2023 ? 2042) for the baseline and the alternative scenario. Population on the islands increases equally in both scenarios and in line with the growth

observed in the last five years. The grid emission factor was estimated in line with UNFCCC's methodology. Emission reductions take into account both supply (renewable vs. fossil fuel sources, transmission losses) and demand (i.e., reductions in consumption from the adoption of energy efficiency measures). For the indirect impact, as a conservative approach, this ex-ante estimate uses a 20% causality factor.

? Direct mitigation over technology lifetime (10 years):

For the pilot demonstration 7 investment projects identified based on the technical energy audits for public buildings have been used for the estimation: CFBC College, Ministry of Finance, Court house, Alexandra Hospital, Charlestown secondary school, Administration Building, Long Point (Port).

? Indirect mitigation over projection period (20 years):

The estimation of indirect emission reduction is based on the potential emission reduction due to the complete decarbonisation of the electricity grid in St. Kitts and Nevis, multiplied by a project causality factor of 20%.

vii) Innovativeness, sustainability and potential for scaling up

Innovativeness:

The project is ambitious in terms of the changes it intends to mobilize in the energy sector, by setting the conditions for a radical change to business-as-usual

operations. The core of the project is innovative, in focusing on promoting the adoption of an integrated utility service model. This model, designed specifically for Caribbean countries, is yet to be operationalized in a country in the region and thus this GEF project will be highly innovative in operationalizing such models. Furthermore, the project will also be innovative in terms of:

- o Technical: Renewable energies are incipient in St. Kitts and Nevis, with only 5% of its generation mix being provided by renewable energies according to latest data. The intended energy transition will require planning, assessing and deciding upon a path that will bring different technological challenges depending on the stage. Initial stages of renewable energy penetration will require modernizing the grid, setting the institutional framework and advancing on the studies for projects in the pipeline. As renewables take over a more predominant share of the grid, the country will require the introduction of storage, along with sophisticated control systems, synchronous condensers, dump loads, and other enabling technologies to maintain system stability in diesel-off mode. In addition, implementing energy efficiency measures will require innovative and state of the art technologies. Hence, the project will support the technology transfer of high energy efficient devices and applications.

- o Institutional: In its core, the project is designed to create a bridge between technical feasibility and actual implementation. By establishing the actual steps required to implement the goals set out in the NEP and the NDC, the project will add substance to the policy discussion, bringing light to the achievements from the past and the challenges of the future. It will also introduce a formal coordination structure between the two islands (output 1.3), which is expected to avoid duplication of efforts and facilitate cooperation in addressing common barriers. Moreover, the pilots in Component 2 will also bring in institutional innovations. The proposed IUS model will support the institutional transition of the utilities from integrated utilities to modern energy service companies.

- o Business: In setting the enabling conditions that are required for the implementation of the roadmap, the project will introduce a number of innovations in the way that the sector conducts business. The transition towards a grid that is increasingly intense in the use of renewables will demand innovative elements such as public-private partnerships for the implementation of capital-intensive projects, modern business plans for the utilities, standardized contracts for land and rooftop access for the installation of solar PVs and for the compensation of ancillary services from IPPs. In particular the IUS model will open up new business opportunities and revenue streams for the two utilities on St. Kitts and Nevis.

- o Social: While most of the elements in this project are technical, several elements pose social innovations too. By introducing gender aspects into the NEP, the revised policy framework will be endowed with enough resolution to capture and confront gender inequalities in access to energy (in particular, renewables) and benefits derived from energy efficiency improvements.

### Sustainability:

This project was conceived to drastically reduce GHG emissions in the electricity sector of St. Kitts and Nevis. By providing a roadmap with concrete actions that are aimed at the core elements in the market and that take into account the specific national circumstances, the project is expected to identify and establish a feasible path towards full decarbonization of the country. The project is holistic in the sense that it leaves no aspect outside of its scope, covering both demand and supply elements, as well as institutional, financial and human resource aspects of relevance to fulfil the objectives.

In order to ensure that its outputs have the intended long-term outcome and impact, i.e., that St. Kitts and Nevis has a 100% renewable grid, several assumptions will need to hold true, including the involvement of stakeholders in project implementation, coordination with ongoing projects, alignment of incentives for the private sector, availability of affordable capital and

qualified labour to implement the numerous technological changes, and a persistent political will. However, significant emphasis is being placed in the identification of the key assumptions, drivers, and thresholds under which the greening of the grid can materialize. Several outputs in the log-frame are expected to ensure the sustainability of the project outcomes:

- o The update of NEP and the related roadmap plan will provide both a strategy for government authorities and a clear signal and incentive for private and institutional stakeholders to invest and support the development of sustainable energy solutions.

O The revised NEP will play a crucial role in attracting and securing necessary investments in renewable energy and energy efficiency measures by providing a clear and consistent investment framework for private and public investors. Investment in sustainable energy solutions (renewable energies and energy efficiency measures) will be facilitated by regulatory reforms and the promotion of the IUS model which will help to overcome the current barrier of upfront costs; the demonstration and capacity building of the IUS model will support the de-risking of investments and the establishment of a long-term finance mechanism.

- o The creation and operationalization of IUS models for each of the utilities, SKELEC and NEVLEC, will play a major role in ensuring project sustainability by

facilitating the operation of a new business model for both which focuses on promoting RE and EE measures.

- o The restructuring of the business models at the utilities will be investigated and a transition strategy for each utility will be formulated. This will include necessary measures to accompany the change process of the first 5 years of the IUS roll-out (subject to the eventual decision by the utilities to adopt the IUS model).

- o Investment in energy efficiency measures will be facilitated by the creation of a financing mechanism to support the IUS model that will make funds readily available for the utilities to implement further energy efficiency measures.

- o The creation of a Federal Energy Commission with representatives from both islands will help coordinate and connect projects, determine synergies amongst them, identify unattended requirements and/or barriers and establish an overall comprehensive approach. This will help maximize the impact of both private and public investment and activities.

- o The draft Federal Energy Efficiency Act will include instruments and measures for the environmentally sound management of replaced units and appliances, e.g., ACs, refrigerators and light bulbs.



- o Training on the assessment and appraisal of renewable energy and energy efficiency projects for domestic institutional / commercial / private sector investors (anchored and jointly implemented with local / regional educational institutions) will endow the country with the know-how to produce a bankable portfolio of projects and measures, thus facilitating the participation of the private sector, climate finance mechanisms and other development partners.
- o The multi-stakeholder Technical Advisory Committee established for the execution of the project will help steer the preparation and subsequent implementation of the energy transition roadmap, including identifying social aspects of the transition in order to mitigate any distributional aspects arising from the deployment of renewables are well understood and mitigated, as needed.
- o The gender aspects embedded in the project will ensure a socially equitable distribution of costs and benefits of the transition to renewables.
- o The long-term sustainability of the outputs will be further improved through strategic partnerships with regional and global institutions, such as CCREEE. A proposal for the outsourcing of technical, regulatory and commercial services for which long-term resources in the Energy Units cannot be guaranteed will be prepared as

part of this proposal (output 1.6).

In terms of its own activities, the project will involve desk work: appraisal of existent portfolio of renewable projects, desk and on-site review of the conditions of the existent grid, compiling of sectoral data, undertaking of computer simulations and projections, preparation of reports, meetings with relevant stakeholders and preparing and delivering capacity building activities. The capacity development activities comprising training workshops will target key public stakeholders in the energy sector (Output 1.6), the cooperation with the Clarence Fitzroy Bryant College / regional

institutions to facilitate training sessions for domestic institutional, commercial and private sector investors (Output 3.1) and the close on-the-job collaboration with the utilities on the IUS model development (Output 2.1, 3.2 and 3.3). The pilot projects involving energy efficiency measures and renewable generation will demonstrate the viability of the IUS model ?in the field?.

Although a specific assessment of the environmental impact will be undertaken prior to the implementation, the small scale of the pilots (<0.5 MW) will ensure that any potential adverse impacts can be fully mitigated.

#### Potential for scaling up:

This project is conceptually conceived to be the first out of several efforts that will ultimately result in the full

decarbonization of the electrical grid in St. Kitts and Nevis:

- o By providing a streamlined pathway (i.e., the roadmap) that shows concrete, costed actions that are fully directed towards a policy backed goal (i.e., the NEP and the NDC), the country will send a clear message to potential investors and financiers, bringing clarity and reducing perceived or possible risk. The analysis of the state of the situation and future requirements in terms of capacity and grid infrastructure will help direct investment from the private sector and international cooperation, facilitating the implementation of the renewable energy transition.
- o The pilots that will be undertaken with GEF funds are expected to demonstrate innovative energy solutions under an IUS model providing further financial and technological de-risking. The pilots are designed to bring in elements that are representative of all the dimensions of the energy transition, including the technologies, their ability to interact with the grid, the required logistic to have them delivered and commissioned in St. Kitts and Nevis, the business model through which it will interact with the country and the utility, institutional arrangements, etc. Thus, the pilot will serve as a demonstration of the viability of the roadmap itself, building confidence in potential investors and financiers and enhancing the credibility of the country's political

intent. During the 2018 energy audits on which the pilots are based, it was assessed that similar measures could be applied in at least 16 main administrative buildings throughout the country (see Table 6; 7 are addressed under the pilots, see Annex R); components 1 and 3 including the potential uptake of the IUS model in the mid-term will create the enabling conditions for the replication of similar experiences across the remaining sectors of the economy.

- o A package of readily-available ?low hanging fruit? projects and energy efficiency measures, including the demonstration of the viability of the IUS model for the two utilities, will be ready for public, private or mixed investors right upon finalization of the GEF project. The pilots would provide experience to demonstrate the viability of the investments and the IUS model, decreasing the investment risks. It is expected that at least approx. USD 2.35

millions of investment can be leveraged through Output 3.3 by replicating the pilots to the remaining

public buildings (investments / measure costs for the remaining 9 public buildings assessed in 2018

through energy audits, see Table 6 and Annex R). A portfolio of larger, long-

term investments on each island including geothermal, wind, solar, battery storage and grid improvements will also be identified during the project.

- o The two utilities, SKELEC and NEVLEC, will benefit from the proposed financial mechanism, which will target sustainable energy solutions implemented under the IUS model within their operations. Starting

with the public sector, the IUS model application could be extended to the commercial and residential sector.

Beside incentivising direct investment in renewable energies (e.g., the country is currently preparing a feed-in tariff for solar home systems and wind power) this will provide an additional channel through which the private sector will be able to be involved in financing and achieving the goals set out in the NEP. The engagement and communication strategy (output 3.4) will ensure that the experiences from the pilots reach the private sector. This creates the conditions required to replicate similar energy efficiency improvements in the residential, commercial and industry sectors of the country.

- o Furthermore, incorporating civil society and other pertinent local and regional stakeholders in the project, in particular in the different capacity building activities and through the communication and engagement strategy will help forward the discussion towards a 100% renewable-based grid but also identify business opportunities that spin off the development of a new ecosystem. The growth of the latter will help consolidate investments and promote the scale-up of the entire endeavour.

- o The knowledge management mechanism will play an essential part in replication, systematically collecting and disseminating lessons learned to relevant stakeholders, identifying what works, what to avoid, potential savings in terms of electricity and emissions (and potential costs),

and gains in resilience and autonomy from the grid. It will also play a key role in terms of technical information for the management of the transition, allowing to transparently document ways in which residential and commercial users can bring in renewable capacity without compromising the stability of the grid. Thus, the knowledge management system will provide transparency and signal to the wider public the price and technical conditions to inform their investment decisions.

**1b. Project Map and Coordinates**

**Please provide geo-referenced information and map where the project interventions will take place.**

The Federation of St. Kitts and Nevis comprises of two main islands: St. Kitts and Nevis. The project will take place on both islands.

Figure 11. Map of St. Kitts and Nevis



Table 11. Coordinates

Location	Latitude	Longitude
Basseterre (Saint Kitts)	17.2948	-62.7261
Charlestown (Nevis)	17.1392	-62.6228

1c. Child Project?

If this is a child project under a program, describe how the components contribute to the overall program impact.

Not applicable.

## **2. Stakeholders**

**Select the stakeholders that have participated in consultations during the project identification phase:**

**Civil Society Organizations** Yes

**Indigenous Peoples and Local Communities**

**Private Sector Entities** Yes

**If none of the above, please explain why:**

### **● Engagement during project preparation**

This document has been prepared through extensive consultation with national stakeholders, in particular representatives of the Ministry of Environment, Climate Action and Constituency Empowerment, the Ministry of Sustainable Development, the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport, the Ministry of Finance, and representatives from the utilities (SKELEC and NEVLEC). As a country of just over 50,000 people, St. Kitts and Nevis is extremely centralized. Local decision-makers have a close connection with the twin-islands' inhabitants. As a country of such size, civil society organizations are weakly coordinated. Similarly, the local private sector is small, with many activities centralized through the Government. All key actors were consulted during the development of the project. This includes stakeholders from civil society (including women's associations) and the private sector (including financial and development institutions at the national and regional level). St. Kitts and Nevis has no indigenous peoples. Stakeholders were engaged and involved during project preparation through stakeholder workshops, consultation meetings and bilateral consultations. During its planning stage, the project has organised an inception workshop in April 2022 with approximately 25 participants from different institutions. Numerous interviews with relevant stakeholders identified have taken place during the PPG in order to identify their concerns and priorities and to integrate their know-how. Please refer to the report: 'Stakeholder Engagement Report', contained in annex P, for information on the engagement of stakeholders during the development of the CEO Endorsement document and associated annexes.

## **Background and scope**



UNEP as GEF and lead agency for the 'Achieving a rapid decarbonization of the energy sector in Saint Kitts and Nevis' project developed the necessary documents under the Project Preparation Grant (PPG) for GEF CEO Endorsement. The project is prepared in cooperation with the Ministry of Environment, Ministry of Sustainable Development, Ministry of Finance, and Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport.

The objective of this project is to accelerate national decarbonization through a transition towards a 100% renewable electricity generation and 100% high energy efficiency public buildings in St. Kitts and Nevis. It consists of the following three main components:

- **Component 1** supports St. Kitts and Nevis in the development of a **comprehensive enabling environment for achieving decarbonization of its electricity grid**.

- 

- **Component 2** provides the first steps towards the implementation of the roadmap, by **demonstrating to local stakeholders the technical, economic, social and environmental feasibility** of achieving its ambitious targets (Pilots).

- 

- **Component 3** supports St. Kitts and Nevis with **obtaining investment for implementing its roadmap** in order to achieve the goals of its National Energy Policy.

- The stakeholder consultation for the project were supported and facilitated by the government and UNEP. To ensure strong country ownership, and in line with the GEF guidelines on the implementation of the policy on stakeholder engagement and the GEF policy on gender equality, the development of the project during the PPG phase was undertaken in consultation and engagement with government, private sector, academia, civil society organizations and other relevant stakeholders – in particular those who will benefit from and be directly involved in the implementation of the project (i.e. direct project beneficiaries) and those who may be impacted (positively or negatively) by the project. Stakeholder engagement and analysis was conducted in an inclusive and gender-responsive manner, so that the rights of women and men and their different structural barriers, knowledge, needs, roles and interests are recognized and addressed. A list of stakeholders has been prepared and is attached to this document as an annex. This PPG Stakeholder Engagement Report summarizes all stakeholder consultations held and lists the stakeholders consulted.

- Regular dialogues between UNEP and the Department of Environment (DoE) in coordination with Ministry of Finance for the proper organisation and implementation of the project preparation were arranged to ensure DoE's ownership and main responsibility for project implementation.

- 

## Stakeholder engagement

In order to ensure inclusive participation and consultation, the following stakeholders have been identified for consultation. The list includes the identified social groups that are associated with the project in different ways: those directly or indirectly engaged in the outcomes of project implementation; those directly or indirectly participating in the project, and those with a capacity to influence and decide on project implementation and outcomes.

**Table 29: Overview of stakeholder engagements**

Meeting	Who?	Date, Time	Key topics and issues

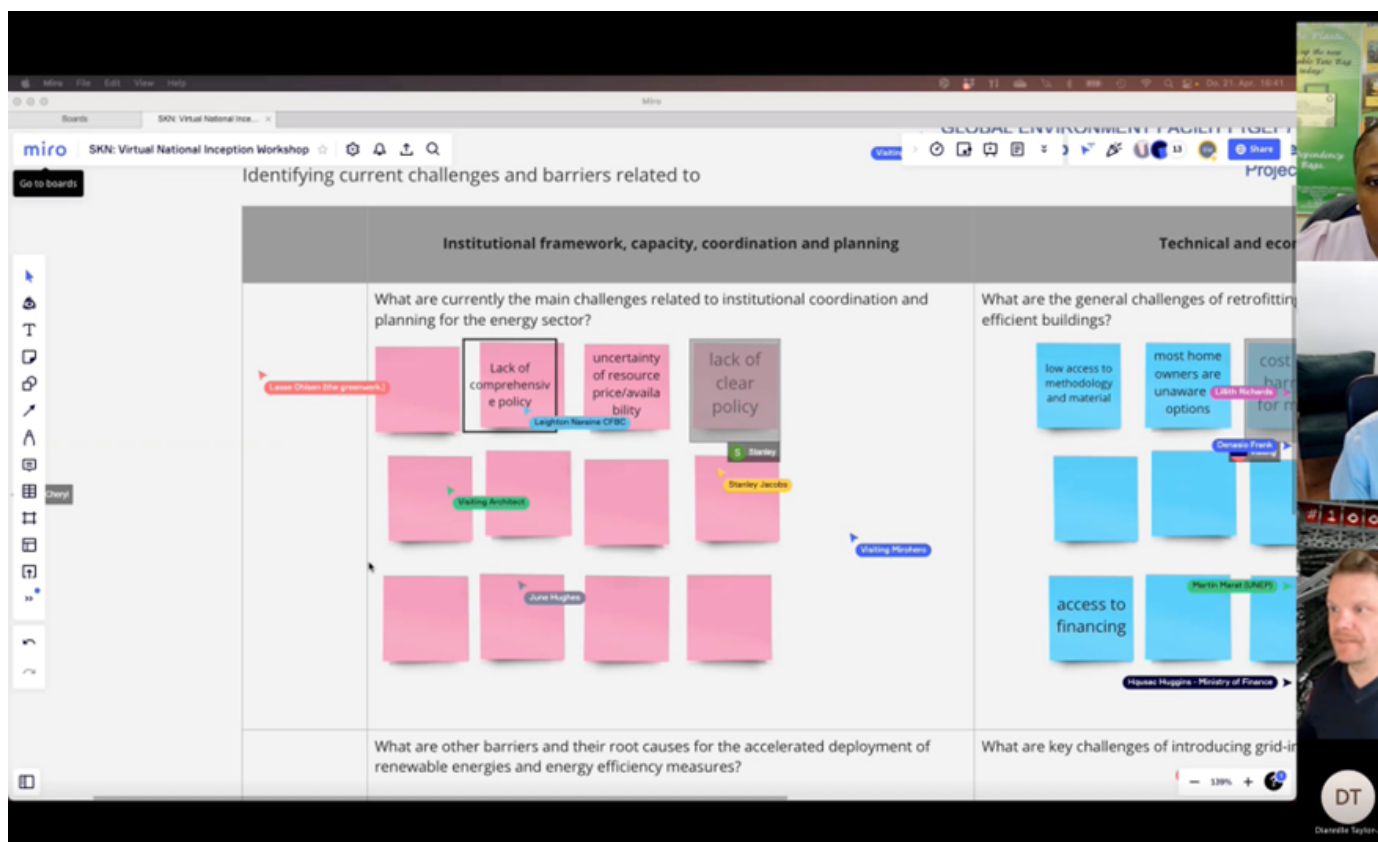
<b>Extended kick-off meeting of project</b>  <b>And continuous bi-weekly meetings</b>	<i>Project team:</i> Ministry of Environment, Ministry of Sustainable Development, Ministry of Finance, and Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport. ; UNEP; Consultants	March 2022 through September 2022	PPG management and preparation of project documents
<b>National inception workshop</b>	Approx. 25 participants. See list of stakeholders	21 <sup>st</sup> April 2022	Presentation of the project and PPG
<b>In country mission and bilateral meetings</b>	Team of Consultants meeting with key stakeholders and implementing partners	16 <sup>th</sup> May to 20 <sup>th</sup> May, 2022	Discussion and preparation of project documents:  ? Key barriers and underlying root causes
<b>Continuous virtual bilateral meetings</b>	Team of Consultants meeting with key stakeholders and implementing partners	May to August, 2022	? Intervention logic: Envisaged impact, draft objectives, outcomes  ? Proposed Implementation Structure  Preparation of project documents
<b>Validation workshop</b>		August, 2022	Validate the result of the PPG

In March and April 2022, the first round of several stakeholder consultations and engagement meetings for the project took place. On 21<sup>st</sup> April 2022 a National Inception Workshop was conducted, which was accompanied with several bilateral meetings. Due to the COVID-19 pandemic and travel bans the workshops and meetings were held virtually using MS Teams and Miro (virtual boards) to facilitate the discussion.

#### **National Inception and Validation Workshop**

To the inception workshop all key actors involved in the project preparation phase and implementation were invited. At the workshop approx.. 25 people participated. It served the purpose of consulting with the relevant national counterparts, discuss the baseline situation, map the gaps and barriers, collect relevant country data, agree upon a project intervention logic (logframe and Annex A: results framework)

aligned with the concept note and initial institutional arrangements for execution. The discussion on potential co-finance contributions to the project was also initiated during this workshop. At the national inception workshop representatives from different stakeholder groups were invited and present, including Government / Ministries, statutory bodies, civil society and private sector, financial sector, academia and NGOs and civil society organizations (CSO). The workshop allowed for active participation in breakout groups (see agenda in the Appendix 1).

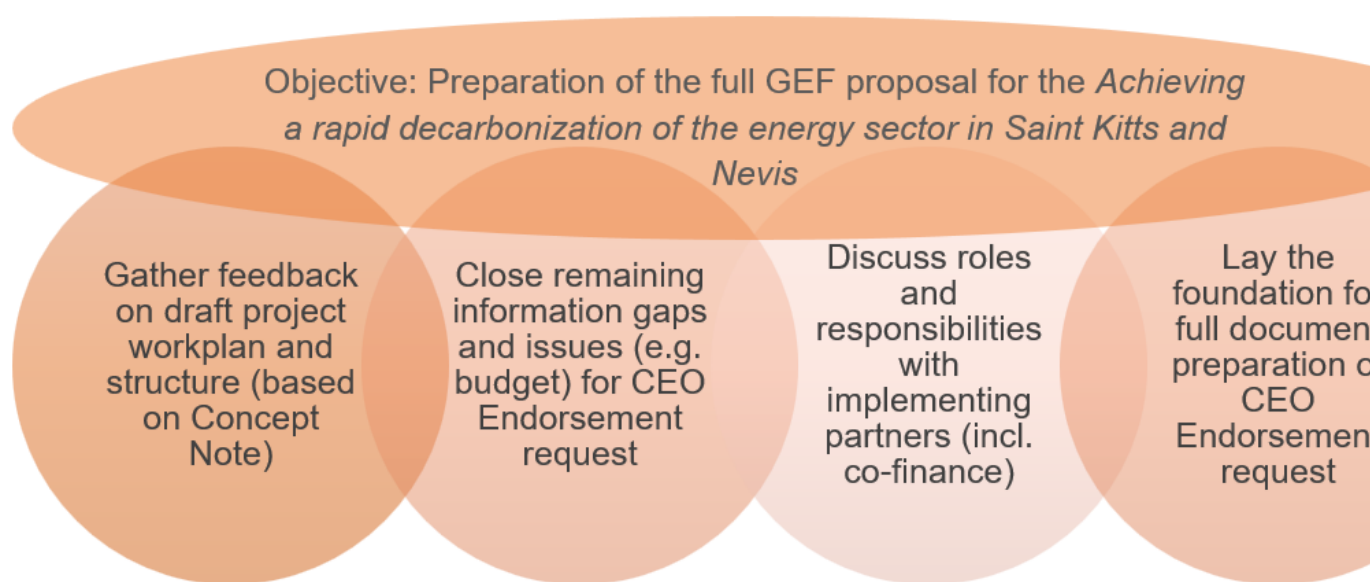


The agenda, minutes and presentations are attached as Appendix 1. The workshop has also been recorded.

### Bilateral stakeholder meetings and in country mission

Numerous interviews with relevant stakeholders identified have taken place during the PPG in order to identify their concerns and priorities and to integrate their know-how.

The bilateral meetings substantiated the discussions and helped define individual roles and responsibilities. In additions, this helped to increase the individual ownership though onboarding the stakeholder to the project. The stakeholder consultation meetings were supported and facilitated by the greenwerk. and UNEP. The following objectives were addressed during the consultation in the context of the proposal:



The following table summarises the individual bilateral and group meeting with all relevant implementing stakeholders, incl.:

- Government and National Agencies: Ministry of Environment, Ministry of Sustainable Development, Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport, Ministry of Finance (Operational GEF Focal Point), Ministry of International Trade, Industry, Commerce and Consumer Affairs, Ministry of Social Development and Gender Affairs; Ministry of Communications / Nevis Island Administration (NIA), SKELEC and NEVIS; St. Kitts Investment Promotion Agency (SKIPPA), Nevis Invest Promotion Agency (NIPA)
- Intergovernmental Organisations: UN Environment (UNEP), Caribbean Development Bank (CDB), Caribbean Centre for Renewable Energy & Energy Efficiency (CCREEE),
- Local private sectors: Chamber of Industry and Commerce (SKNCIC)
- Financial sector: Grenada Development Bank (GDB), SKN Credit Union, and National Bank, Bank of Nevis
- Academia: Clarence Fitzroy Bryant College (CFBC)
- NGOs and civil society organizations: CSO Alliance of St. Kitt and Nevis

# List of bilateral meetings during in country mission

Time slot	Monday, 16th May	Tuesday, 17th May	Wednesday, 18th May (Nevis?)	Thursday, 19th May	Friday, 20th May
<b>8:30-10:00h</b>	9:00: Mission Kick-off (Core Team) at Ministry of Environment	8:30 ? 10:00 Min. of Finance: Mrs Hilary Hazel, Financial Secretary and Ms Laverne Queeley, Senior Director Budget (GEF Focal Point) Venue: Ministry of Finance Meeting Room	9:00 - 12:00 Joint Workshop: Mr Colin Dore, PS, Finance; Mr Ernie Stapleton, PS Communications & Works; Ms Joyce Moven, Sustainable Development Unit, NEVLEC Venue: Disaster Management Conference Room	9:00 Country Programme Validation Workshop (potentially joining) Venue: Marriott Hotel (SW to be participate partially)	
<b>10:30-12:00h</b>	10:30-12:00 Mr. Clement Jomo Williams, General Manager SKELEC, and Bertill Browne, Energy Unit MPIUD Venue: Energy Unit Conference Rm	10:30 ? 12:30 Chamber of Industry & Commerce (CIC): Mr Kevin Hope, Executive Director Mrs Giselle Matthew, President Venue: CIC Headquarter		9:00am ? 10:30 am Mr Terry Morris  Venue: Ministry of Environment, Government Headquarters	10:30-11:30: St. Kitts Investment Promotion Agency (SKIPA): Mr. Stanley Jacobs, Director of Investment Promotion.  Venue: SKIPA, Koi Building
	12:00 ? 13:00h Ms. Chantal Henley / Mr. Cromwell Williams Director Water Services Department (WSD), Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport Venue: Water Services Department			11:00 ?12:00: Ministry of International Trade et al: Mrs. Jasemin Warner-Weekes, Permanent Secretary Bureau of Statistics Venue: International Trade Conference room	12:00-13:00h Technical meeting with Executing Agency / DEO Mission Wrap-up, Ministry of Environment

Time slot	Monday, 16th May	Tuesday, 17th May	Wednesday, 18th May (Nevis?)	Thursday, 19th May	Friday, 20th May
<b>13:00-14:30h</b>	13:30 ? 15:30h Min. of Environment: June Hughes/Cheryl Jeffers Director/ Conservation Officer II, Department of Environment Venue: Parliamentary Lounge	13:30 -15:00: Visit to - SKELEC generators / Needsmust Power Plant - Solar PV Plant - WSD water pumping / treatment site	13:00-15:30h: Bilateral meeting Nevis Electricity Company Ltd. (NEVLEC) NEVLEC site visit (energy generation, power grid, water pumping, geothermal) - tbc	13:00 ? 15:30 Country Programme Validation Workshop (potentially joining) Venue: Marriott Hotel (SW to be participate partially)	
<b>15:00-16:30h</b>		15:00-16:30h Ministry of Sustainable Development: Auren Manners (other staff members TBA) Venue: MSD Conference Room		15:30 ? 16:30h Clarence Fitzroy Bryant College (CFBC): Dr. Leighton Naraine, Director of Employee and Programme Venue: Marriott Lobby	

During the mission coordination with the Climate Finance Expert (CFE) Consultant for the NDA (working on GCF Country Programme) have been sought and engagement were coordinated, incl. of information exchange.

### **Main conclusion of the stakeholder consultation for the project**

### **Project structure - Component and activities**

During the consultation the draft activities under the 3 components were insensitively discussed. The project components and outputs have been confirmed and refined based on consultations with key stakeholders.

As a result, some activities were amended or shifted between output and components, including the final design of the pilot.

### **Institutional arrangements**

The coordination structure of the project as presented in the PIF was discussed and during the meetings together with the Ministry of Finance as GEF Political Focal Point, the Ministry of Environment and Cooperative and UNEP jointly revised.

### **Project budget and Co-finance**

Budget allocation among components and partners were discussed and validated considering the underlying activities.

### **National Inception Workshop Summary**

#### **PROGRAMME for Virtual National Inception Workshop**

**GLOBAL ENVIRONMENT FACILITY (GEF) Project Preparation Grant (PPG) of the**

**?Achieving a rapid decarbonization of the energy sector in Saint Kitts and Nevis? Project**

Thursday, 21st April 2022, at 9:00 ? 12:00 Eastern Caribbean time

[MS TEAMS Link\[1\]](#)<sup>1</sup>

Estimated time	Topic	Presenter
10 min	<b>Welcome, Brief Introduction &amp; House Keeping</b>	Moderator ? Ms June Hughes, Ministry of Environment, Executing Agency
10 min	<b>Opening Session</b>	Ms Lavern Queeley, SKN GEF-OFP, Senior Director, Ministry of Finance - tbc Mr Vincent Sweeney, Head, Caribbean Sub-Regional Office, United Nations Environment Programme (UNEP) - tbc

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Estimated time	Topic	Presenter
15 min	<b>The Project Overview and GEF project preparation phase</b> <ul style="list-style-type: none"> <li>? Overview of the project ? objective and rationale</li> <li>? GEF project requirements and project preparation phase</li> <li>? Timelines</li> </ul>	Mr Mart?n Rodr?guez Marat, LAC Climate Mitigation Consultant, UN Environment Programme
25 min	<b>GEF project intervention logic and structure</b> <ul style="list-style-type: none"> <li>? Intervention logic: Envisaged impact, draft objectives, outcomes, outputs</li> <li>? Addressed barriers/root causes</li> <li>? Potential Implementation structure</li> <li>? Planned stakeholder engagement activities</li> </ul>	Mr. Stefan Wehner, the greenwerk, project consulting team
<i>15 min Coffee Break</i>		
5 min	Introduction to the interactive breakout session	Mr Mart?n Rodr?guez Marat, LAC Climate Mitigation Consultant, UN Environment Programme
60 min	Group session using whiteboard Identifying current challenges and barriers related to <ul style="list-style-type: none"> <li>- Institutional framework, capacity, coordination and planning</li> <li>- Technical and economic challenges</li> <li>- Social and environmental impacts</li> </ul> <a href="#">Link to whiteboard at miro[2]<sup>2</sup></a>	Discussion of participants facilitated by Ms Cheryl Jeffers, Ministry of Environment, supported UNEP / project consulting team
5 min	Wrap up of the discussion and group session	Ms Cheryl Jeffers, supported UNEP / project consulting team
5 min	Closing remarks & next steps	Ms June Hughes, Ministry of Environment

PROGRAMME for Virtual National Inception Workshop  
GLOBAL ENVIRONMENT FACILITY (GEF) Project Preparation Grant (PPG) of the

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?Achieving a rapid decarbonization of the energy sector in Saint Kitts and Nevis? Project

Thursday, 21st April 2022, at 9:00 ? 12:00 Eastern Caribbean time

**Guiding questions for group session / discussion:**

Institutional framework, capacity, coordination and planning, policies, regulations and incentives for decarbonizing the electricity sector and enhancing EE of public buildings

? What are currently the main challenges related to institutional coordination and planning for the energy sector?

Technical and economic challenges of introducing high energy efficiency buildings and resilient grid-integrated renewable electricity generation in the local context

? What are the general challenges of retrofitting existing buildings into high energy efficient buildings? For instance, availability of technologies, infrastructure, costs and benefits perception etc.

? What are key challenges of introducing grid-integrated renewable energy sources? For instance, required space (e.g. roof top area for solar panels), high upfront capital costs, continued reliance on fossil fuels, etc.

Social and environmental impacts of introducing RE technologies and EE measures on local level

? What social aspects should be considered related to the introduction of grid-integrated renewables and EE measures in public buildings?

o For instance, local value generation (energy independence, improved public health due to the reduction of emissions), generation of financial returns for the community, etc.

? What environmental considerations should be taken into account when introducing EE measures and grid-integrated renewable energy sources?

o For instance, land use issues, challenges to wildlife and habitat, water use, etc.

[illegible]

The recording of the group discussions can be downloaded [here](#): Virtual National Inception Workshop - GEF Project ?Achieving a rapid decarbonization of the energy sector in Saint Kitts and Nevis?-20220421\_162949-Meeting Recording.mp4?.<sup>[3]</sup>

[1][https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_MWQzNTg1YjUtMWIxNS00ZDZILWFkYzYtZGU4ZWRhMmQxMzE4%40thead.v2/0?context=%7b%22Tid%22%3a%22225633e3c-c4ac-440f-a487-d92f8a43f8bd%22%2c%22Oid%22%3a%226252b254-2829-48e0-a2b7-0c72339e2b34%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_MWQzNTg1YjUtMWIxNS00ZDZILWFkYzYtZGU4ZWRhMmQxMzE4%40thead.v2/0?context=%7b%22Tid%22%3a%22225633e3c-c4ac-440f-a487-d92f8a43f8bd%22%2c%22Oid%22%3a%226252b254-2829-48e0-a2b7-0c72339e2b34%22%7d)

[2] [https://miro.com/app/board/uXjVO7ubpno=?share\\_link\\_id=586747101412](https://miro.com/app/board/uXjVO7ubpno=?share_link_id=586747101412)

[3]<https://thegreenwerk->

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NVAklUZVQMLA?e=cmVkgC

**Please provide the Stakeholder Engagement Plan or equivalent assessment.**

Engagement during project execution

The Stakeholder Engagement Plan (SEP) is designed to ensure effective engagement of all relevant stakeholders throughout the project lifecycle in St. Kitt and Nevis. This plan builds upon the interviews and workshops conducted during project preparation. The project will aim at maintaining fluid and two-way dialogue with the relevant national government institutions and agencies, the private sector, and civil society for national activities, as well as with local and international NGOs, the international community and other participating countries at the global programme level.

For this project, public consultation will follow any relevant national guidelines and the GEF Guidelines,<sup>[1]</sup> which require that all GEF-funded projects meet best international practice and specifically the requirements for stakeholder engagement and public consultations. The project stakeholder engagement activities will be robust, and disclosure of information will be made in order to promote better awareness and understanding of its strategies, policies and operations. During disclosure, the project will: (1) identify people or communities that are or could be affected by the project as well as other interested parties; (2) ensure that such stakeholders are appropriately engaged on environmental and social issues that could potentially affect them, through a process of information disclosure and meaningful consultation; and (3) maintain a constructive relationship with stakeholders on an on-going basis through meaningful engagement during project implementation. The stakeholder consultations will be an on-going process taking place during the project life and will ensure that stakeholders are informed about environmental and social consequences of the project implementation and ensure the opportunity for feedback.

In order to ensure inclusive participation and consultation, the following stakeholders have been identified for engagement. The list includes the identified social groups that are associated with the project in different ways: those directly or indirectly engaged in the outcomes of project implementation; those directly or indirectly participating in the project, and those with a capacity to influence and decide on project implementation and outcomes. The existing activities already undertaken or envisaged by key stakeholders are identified in the table below. Based on this information, their potential contributions to the project components are also identified.

The primary project activity to facilitate stakeholder engagement in the project will be output 3.4, under which a stakeholder engagement strategy will be developed and implemented.

**Table 12. Project stakeholders**

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
Government / Ministries	Ministry of Environment, Climate Action and Constituency Empowerment	The Department of Environment within the Ministry will be Executing Agency (EA). The department has been EA already for previous GEF projects, e.g., under GEF-3 and GEF-4.	Support coordination and oversee the project and the regulatory reforms under Component 1 and 3. It will co-finance the Project Director. Part of the steering committee
	Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport	Energy Unit in the Ministry of Public Infrastructure, supporting and the transition renewable energy, and in charge of the energy sector regulation. The Energy Unit oversees the utilities and is pursuing a PPA for a wind farm.	Co-financer of the project. It will provide technical expertise and support regulatory reforms under Component 3, and coordination under Component 1. Part of the steering committee
	Ministry of Finance	GEF Political and Operational Focal Policy Unit: Responsible for policy recommendation  Inland Revenue Department (IRD) within the Ministry of Finance: The IRD is responsible for the administration of Inland Revenue laws and the collection of a wide range of taxes and licenses.	Co-financer of the project. It will provide technical expertise and support financial and regulatory reforms under Component 3, and coordination under Component 1. Part of the steering committee
	Ministry of Sustainable Development	The NDA towards the GCF. Ongoing GCF Readiness Activities and concept notes in the pipeline, including elements related to energy and water.	Support coordination and reforms under Component 1 and 3. Part of the steering committee, Coordination of countries activities towards the GCF.
	Ministry of International Trade, Industry, Commerce, Consumer Affairs and Labour	The Bureau of standards is considering the introduction of energy efficiency labels, e.g. for lightning (CFL/LEDs), air conditioners and refrigerators. To develop national standards support and capacity building would be needed, e.g. related to regulatory aspect, and testing facilities.	Provide technical expertise and support regulatory reforms under Component 1.

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
	Ministry of Community Development, Gender Affairs and Social Services	Responsible, inter alia, for national gender matters.	Provide substantive support to the project team to ensure activities are gender sensitive and effectively engage the community.
Government / Statutory bodies, incl. energy utilities	SKELEC	SKELEC is the fully state-owned integrated utility providing electricity in St. Kitts.	Key national implementing partner. Investment in renewable electricity generation and dispatching of the grid. Participation in demonstration under Component 2. Contribution to Components 1 and 3.
	NEVLEC	NEVLEC is the fully state-owned integrated utility providing electricity in NEVIS. NEVIS has first experiences with wind power (2 MW IPP wind farm) and is actively exploring the deployment of renewable energies (geothermal, solar PV and wind) as well as the production of green hydrogen in the long-term,	Key national implementing partner. Investment in renewable electricity generation and dispatching of the grid. Participation in demonstration under Component 2. Contribution to Components 1 and 3.
	St. Kitts Investment Promotion Agency (SKIPA)	SKIPA proactively markets St. Kitts, internationally, regionally and locally as an attractive investment location that offers an array of investment opportunities, incl. the energy sector. SKIPA also manages the St. Kitts? Citizenship by Investment Programme (CBI)	Potential implementing partner for Component 3 in mobilising private investment.
	Nevis Investment Promotion Agency (NIPA)	NIPA is the government authority which falls under the Ministry of Finance (NIA), dedicated to attracting and promoting investment opportunities in all priority sectors for the sustainable development of the island of Nevis, incl. geothermal and other renewable energy sources	Potential implementing partner for Component 3 in mobilising private investment.

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
Government, civil society and private sector	National Climate Change Committee (NCCC)	The NCCC is currently in the process of being founded and established (supported by GCF Readiness funds). The NCCC would act as the main advisory body on climate change for the Government of SKN.	Supporting steering the project aligned with national climate change agenda.
Private sector	Chamber of Industry and Commerce (SKNCIC)	The SKNCIC represents the commercial and private sector. The private sector has indicated high interest in sustainable energy solutions and corresponding investment. Some businesses have already installed solar PV on their roof top, but they have indicated the existence of barriers for the further upscale (see baseline section in barriers)	Awareness raising under Component 1 and potential investors under Component 3.
Financial sector	Development Bank of St. Kitts and Nevis (DBSKN)	The primary purpose of the DBSKN is to assist in the economic development by providing financial and technical assistance. The Bank currently provides development financing and support to small and medium enterprises to foster economic development in various sectors of the economy including: Tourism Related Ventures, Agro-industry, Manufacturing sectors, Agriculture, Education and Housing. Limited experiences and activities on renewable energy and energy efficiency measures at the moment. The DBSKN is currently in the process of getting accredited to the GCF as direct access entity (DEA)	Loans to investors and companies. Participant in Output 1.2 (identification of investments for the long-term strategy) and Component 3 in establishing the financial mechanism.

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
	Local financial institutions, such as the St. Kitts-Nevis-Anguilla National Bank and St. Kitts Co-operative Credit Union (SKCCU)	Providing loans for private sector investments, but limited experiences and activities on renewable energy and energy efficiency measures at the moment. The SKCCU is currently in the process of getting accredited to the GCF as direct access entity (DEA)	Participant in Output 1.2 (identification of investments for the long-term strategy) and Component 3 supporting the finance of projects in the pipeline.
Academia	Clarence Fitzroy Bryant College (CFBC)	Limited activities related renewable energy and energy efficiency, but interest in scaling up activities in this regard. Concept for an CFBC Solar Training Center existing but lacking finance.	Involvement in professional training on sustainable energy solution. Partner for the capacity building system developed under Output 3.1: Initial anchoring of professional sustainable energy solutions and finance related training sessions at the college targeting domestic institutional, commercial, private sector investors.
NGOs and civil society organizations	CSO Alliance SKN	The CSO Alliance represents a number of civil society organizations in St. Kitts and Nevis.	Invited to and consulted during awareness raising under Component 1 and 4 on EV technologies.
Regional and international stakeholders	Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)	The CCREEE is a specialized agency with an official CARICOM and SIDS DOCK mandate to promote renewable energy and energy efficiency investments, markets and industries in the Caribbean.	The IRRP for St. Kitt and Nevis supported by CCREEE. The project under Component 1 will build upon the result to develop the integrated energy sector plan / roadmap. Due to CCREEE's mandate the centre will be an important partner in the long run to support the country related to further capacity development and technical assistance to the national administration which will enhance the project sustainability. Hence the project will closely coordinate the work with CCREEE.

Stakeholder main group	Stakeholder name	Existing activities with potential to be leveraged	Content engagement, contributions to the project (identified by Component)
	International Renewable Agency (IRENA), UNDP, NDC Partnership	NDC enhancement and implementation (national)	Technical assistance and coordination with initiatives in similar SIDS and in the Eastern Caribbean Region, e.g. IRENA's SIDS Lighthouse Initiative.
	Technical Assistance Programme for Sustainable Energy in the Caribbean (TAPSEC)	TAPSEC supported the region's transition to a low-carbon, sustainable and climate-compatible development pathway by increasing and improving access to modern, affordable and sustainable energy services, to the benefit of all Caribbean citizens.	TAPSEC was implemented from 2017 to 2022. The project will consider the results and knowledge gained.

[1] GEF (2014): Guidelines for the Implementation of the Public Involvement Policy. URL: [http://www.thegef.org/sites/default/files/council-meeting-documents/39\\_EN\\_GEF.C.47.Inf\\_.06\\_Guidelines\\_for\\_the\\_Implementation\\_of\\_the\\_Public\\_Involvement\\_Policy\\_4.pdf](http://www.thegef.org/sites/default/files/council-meeting-documents/39_EN_GEF.C.47.Inf_.06_Guidelines_for_the_Implementation_of_the_Public_Involvement_Policy_4.pdf)

In addition, provide a summary on how stakeholders will be consulted in project execution, the means and timing of engagement, how information will be disseminated, and an explanation of any resource requirements throughout the project/program cycle to ensure proper and meaningful stakeholder engagement

See previous section.

**Select what role civil society will play in the project:**

**Consulted only;** Yes

**Member of Advisory Body; Contractor;** Yes

**Co-financier;**

**Member of project steering committee or equivalent decision-making body;**

**Executor or co-executor;**

**Other (Please explain)**

### 3. Gender Equality and Women's Empowerment



## **Provide the gender analysis or equivalent socio-economic assesment.**

### General context

St. Kitts and Nevis has ratified a number of international and regional conventions and agreements that promote gender equality, including the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) 1979 which was ratified in 1985; the Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women (Convention of ?Belem do Para?) 1995; and among OECS Member States, the Treaty of Basseterre (1981) and the Revised Treaty of Basseterre (2010). SKN also upholds the following international and regional instruments: the Nairobi Forward-looking Strategies for the Advancement of Women (1985); the Beijing Declaration and Platform for Action (1995); the Millennium Development Goals (2000); the Commonwealth Plan of Action for Gender Equality (2005-2015); the OAS/CIM Strategic Plan of Action (2011-2016); and the Quito Consensus (2007).

The institutional arrangements in St. Kitts and Nevis to address gender issues include: (i) the Department of Gender Affairs, which was established in 1984 and was formerly known as the Bureau of Women's Affairs; (ii) a National Advisory Council on Gender Equity and Equality; and (iii) an Inter-Ministerial Committee of Gender Focal Points. The DGA is headed by a Permanent Secretary within the Ministry of Social Development and Gender Affairs. Civil society organizations are not actively engaged in advocacy on gender equality and women's empowerment in the country although gender-sensitive approaches are taken with regard to some issues. CSOs and NGOs in St. Kitts and Nevis are challenged due to their dependence on external funding for their operations. The Government has provided support and engaged in partnership for the development and implementation of the national gender mainstreaming agenda. The Government is currently undertaking the process to develop a National Gender Policy.

The most recent appraisals on gender issues include the Country Gender Assessment (CGA) of 2014 conducted by the Caribbean Development Bank and the 2013-2018 Country Report from the Federation of St. Christopher and Nevis on the twenty-fifth anniversary of the Fourth World Conference on Women and adoption of the Beijing Declaration and Platform for Action (issued in April 2019). The CGA has finalised the phase 2 of a UNESCO-funded National Gender Equality Policy and Action Plan (GEPAP). The GEPAP provides the institutional framework to assist the Government in facilitating gender equality and empowerment through gender sensitive initiatives that incorporate a rights-based approach to human development. The Saint Kitts and Nevis Gender Equality Policy and Action Plan 2022-2027 is the Government's blueprint and declared political commitment for achieving gender justice, with the underlying obligation to respect the dignity, freedoms, social, political, economic, and cultural rights of all citizens.

According to the National Gender Equality Policy and Action Plan (2021), the core challenges to a national gender equality agenda are summarised below:

1. The need to address legal reforms and protections against sexual harassment, rape, and enhanced policing and recourse against statutory rape as part of a comprehensive plan to reduce teenage pregnancy
2. Improving men's and women's understanding of their rights, recourses, and available supports.
3. Protecting women with less economic autonomy (lower-paying jobs, home, and unpaid care work) and physical autonomy (gender-related violence) as they have limited agency to claim rights or seek recourse in abuse cases.
4. Improving collection and use of sex-disaggregated data to inform discrete evidence-based policies and programming on gender and development.
5. Building resilience to the impact of natural disasters (extensive damage to housing stock and economic progression, and shocks to infrastructure, tourism, agriculture, and fishing industries) must engage women and children disproportionately affected by disasters and more prone to violence and exploitation.
6. Broadening women's economic empowerment across all sectors and addressing any barriers that exist, such as equal pay for equal work
7. Ensuring men and women's social protection for employment opportunities such as benefits in the informal sector, pensions for women who devoted productive years to care work, paternity leave for men, and making household work and care a shared responsibility.
8. Improving educational access and attainment of boys and removing gender stereotypes from education and career choices.
9. Making health-seeking behaviours and outcomes more strategic to the needs of men and boys and with equal advocacy and education as for women and girls.
10. Strengthening the national gender machinery and system to mainstream gender as a component of inclusive and sustainable development.

The project action plan will reflect the Federation's priorities for the next five years to accelerate progress for women and girls relative to social, economic, political, and environmental development.

### **Gender analysis for the project**

According to figures from the 2011 census, Saint Kitts and Nevis has a population of 47,195 persons. The largest demographic is the 15-19 age group, followed by predominant clusters in the 30 to 34 age group and the 50-54. Fifty-one per cent of the total population is female. Forty-nine per cent is male (2011 Census). Although there are world trends of an ageing population, the evidence does not yet show the proportion of older people increasing in the Federation. [\[1\]](#)

In St. Kitts and Nevis, at the primary level, females have a higher completion rate at 32.5%, as compared to males at 24%. At the secondary level also, females have a slightly higher completion rate at 52.5% as compared to males at 51.6%. As reported in the CGA, in 2012, there were almost two times the number of females than males at the Caribbean Secondary Education Certificate (CSEC) level (807 females or 64%, compared to 455 males or 36%), and almost three times the number of female than male candidates (418 girls or 71%, compared to 167 boys or 29%) at the Caribbean Advanced Proficiency Examination (CAPE) level. Although females outperform their male counterparts at school and college level, men have a higher completion rate at university level (11%)[2].

Labour and employment are marked by women's lower participation in the formal work force and higher unemployment rates, with women occupying the lower paying sectors of the economy. Women are more likely to be unemployed and defined as 'economically inactive'. As reported in the CGA, women's unpaid reproductive work in the home (or 'care economy'), and their work in the informal economy and subsistence agriculture are not quantified or taken into account in economic and social policy-making. Overall, the unemployment rate is higher for women than men, and women tend to remain unemployed for longer periods than men. There is therefore a pressing need for programmes and initiatives that aim to increase women's access to opportunities for employment, entrepreneurship and ownership, and thus empower them economically in key sectors such as agriculture and tourism.

Men and women have different experiences of poverty and its impacts. Females were more likely than males to be among the indigent in Saint Kitts. Lack of employment and poverty places a greater dependence upon men for financial support. Women reported their unemployment compromises power relationships with men and heightens their vulnerability. On the other hand, men may experience distress in meeting their expected roles as "the main provider." Feeling such frustration or inadequacy may produce adverse reactions against women and other men.[3]<sup>3</sup>

It is estimated that some 80% males and 20% females occupy farm holdings and that there is a 70:30 ratio of males to females in actual production[4]4. In addition, with the exception of the all-female Fahies Agriculture Women Cooperative Society, women's membership in cooperatives stands at 24%. While women dominate agro-processing in St. Kitts and Nevis, they face major barriers to expanding their involvement in agriculture, including domestic responsibilities, expertise, marketing, and access to Caribbean and other markets. In the tourism sector, the concentration of women is in the lower skilled, less stable 'domestic' side of the sector[5]5. In SKN, gender bias underpins economic and social decision-making, which affects communities, families and households, and individual women's lives.

In terms of decision-making authority and power, women in SKN are under-represented in positions at all levels where they can sufficiently influence the power and decision-making process. This happens to be the case at the levels of parliament, the executive (central government), local government, and in Statutory Bodies. The Country Report to the twenty-fifth anniversary of the Fourth World Conference on Women and adoption of the Beijing Declaration and Platform for Action (April 2019) indicates that the percentage of women in politics is 20%[6]6. However, in consultation with technical personnel within

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the Government of St. Kitts and Nevis it is estimated that as at 2021 women in politics is estimated between 35%-38%.

On education, male gross enrolment ratio in secondary education (2011) (UNESCO Institute of Statistics, 2015): 97.24%, with women 96.27%.<sup>[7]</sup>

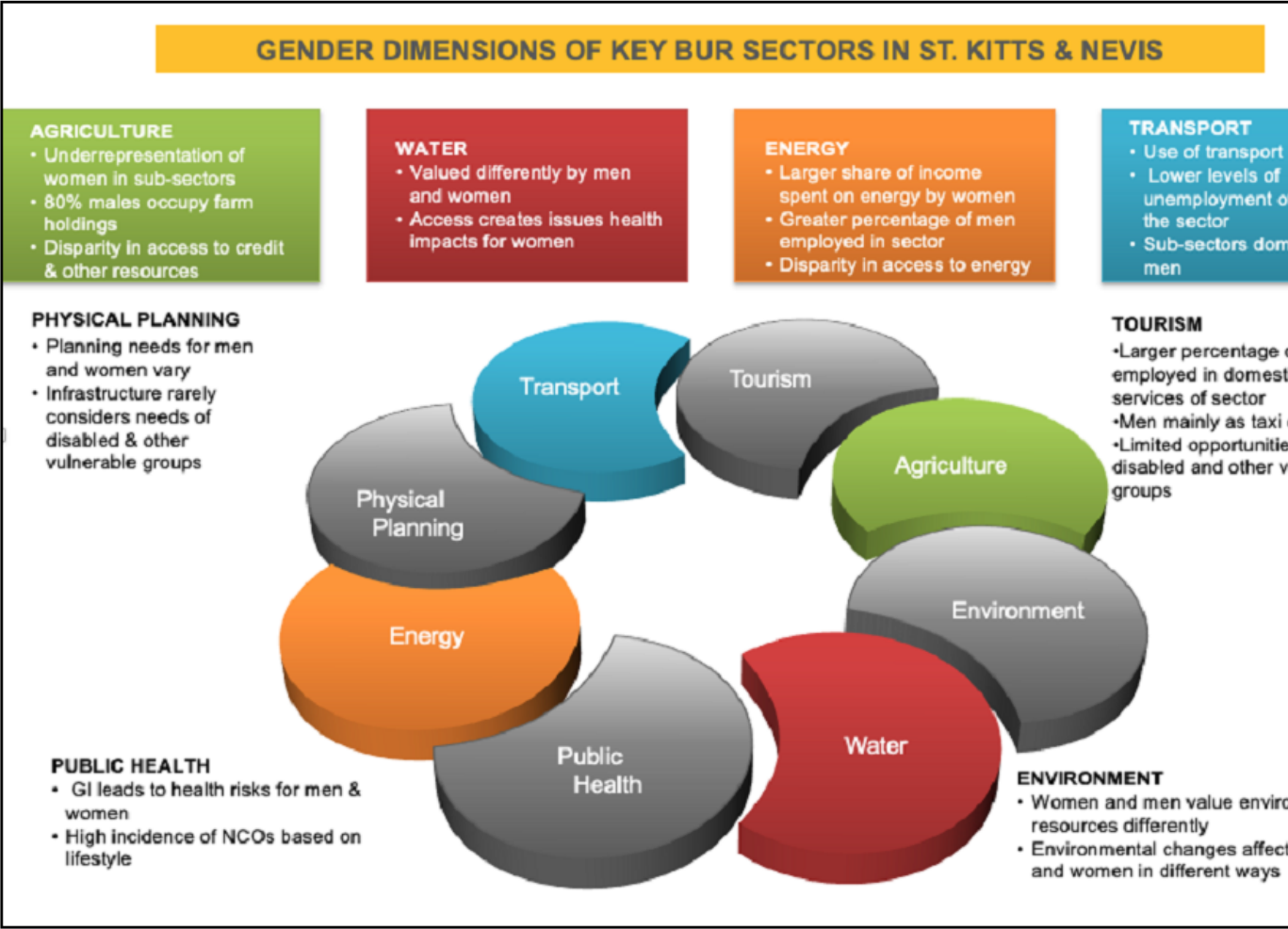
### **Gender equality and climate change**

The 2021 Biennial Update Report (BUR) for Saint Kitts and Nevis conducted an assessments with varying publics on the current level of engagement and inclusion of gender issues and vulnerable groups in climate change planning engagement and processes. The report also assessed ways to enhance their adaptive capacity. Among the findings of relevance to the Policy are<sup>[8]</sup>:

- ? Climate change affects and impacts men and women and other vulnerable groups differently,
  - o they have different roles and responsibilities at the household and community levels.
  - o gender inequalities persist around the world, affecting individuals? and communities? ability to adapt.
- ? Women are more exposed and vulnerable to climate change because they are often poorer, receive less education, and are not involved in political and household decision- making processes that affect their lives.
- ? Cultural norms related to gender sometimes limit the ability of women to make quick decisions on whether to move to safer grounds in disaster situations until it is too late.
- ? Different physical and social realities shape how climate affects youth, the elderly, migrants and disabled persons (special groups for gender mainstreaming).
- ? Shared vulnerabilities of the different groups affect their participation in productive processes and decision-making and hampered climate change awareness.
- ? Respondents demonstrated an understanding of the need for gender-responsive climate planning, the need to ensure equal access to resources, and to avoid discrimination of any group concerning access to resources.

The National Gender Equality Policy and Action Plan advocates for comprehensive eco-system-wide attention to incorporating the gender perspective into environmental and sustainable development policies and strengthening women?s participation and decision-making on environmental sustainability, climate-related planning, policy-making, and implementation consistent with the BUR sectors in Saint Kitts and Nevis, as shown in the following figure.

Figure 12: Gender dimensions of climate change impacted sectors in SKN



Source: Ministry of Environment, Climate Action and Constituency Empowerment, chapter on climate change gender & other vulnerable groups: enhancing gender integration in the BUR process of St. Kitts and Nevis, 2021

**How can the project improve gender equality?**

The following table summarizes recommendations on how this project can contribute to enhance gender equality and empower women at various levels to contribute to SDG5.

Gender-responsive log frame, gender analysis and Gender Action Plan	In the project design UNEP has conducted a gender analysis to ensure that the relevant gender dimensions are considered, and the project log-frame developed reflects key gender dimensions of the respective outputs, activities, indicators and targets. The (draft) Gender Action Plan (GAP) identifies how the project can improve gender equality and proposes gender specific targets to be monitored and evaluated throughout the project implementation period. The GAP will be reviewed early in the project and where necessary the review will allow for adjustments of the gender related targets, will capture the gender dimension in the first year of the project and define the ways in which the project can achieve, or improve on, its gender-specific targets. The GAP, when finalized and adopted, shall be subject to regular monitoring and evaluation.
Collection of gender-disaggregated data.	When relevant and possible, indicators measuring the progress and impact of the project implementation shall be sex-disaggregated. Gender-disaggregated data are key to better understanding women's green resilient economy and climate change adaptation features and designing sustainable energy concepts with women's needs in mind, therefore optimizing the positive impacts of present and future applications of innovative technologies. Gendered analysis helped assess whether specific gender needs were met properly and what the impact of innovation on green economy could be.
Gender-sensitive recruitment	Mechanisms to ensure gender balanced representation and participation in project activities and decision-making process shall be established along with the gender-specific targets or indicators that track gender results and impact. To the greatest possible extent, <b>Gender-sensitive recruitment</b> at all levels where possible, especially in selection of project staff. Gender responsive TORs will be used to mainstream gender in the activities of consultants and experts. In cases where the project does not have direct influence, gender-sensitive recruitment will be encouraged. Furthermore, whenever possible existing staff will be trained and their awareness raised regarding gender issues.
Women-focused interventions	<b>The project will consider women-focused interventions</b> to promote gender equality, encourage women's participation, and enhance women's empowerment. For instance, this can include application of gender lens investing principles. All required efforts shall be made by the project to attract women and to give equal opportunities for men and women to join its planned training activities, both at management and technical levels.
Gender responsive decision-making processes	<p>Considering gender dimensions in all <b>decision-making processes</b> (this will consider but will not be limited to efforts to achieve gender balance/ representation in such processes), including Project Steering Committee meetings.</p> <p>Consultations with and <b>involvement of stakeholders</b> focusing on gender equality and women's empowerment issues, such as gender focal points of involved stakeholders, gender experts and organizations, CSOs and NGOs (providing them with equal voice).</p>

Sensitization and capacity building of project stakeholders	<p>Across all components of the project, it is recommended to initiate the process of gender integration with a series of gender sensitization workshops for all stakeholders.</p> <p>The first one would involve staff and project management units (PMUs) to ensure a shared understanding of gender across the project. In addition, all consultants and contractors providing training under the project will have to complete the 'I know gender' course from UN Women. The aim is that all those involved will understand gender-bias, the importance for gender equality and how they can apply a gender lens to their respective work. It is expected that once the stakeholders have a shared understanding of gender, its role in the project, they can take it forward and integrate gender in their own contexts. This would also mean that the stakeholders would be more involved and hence improve the overall outcome of the project. Such an approach would also lead to a more sustainable project implementation, where individual stakeholders own the project even after the withdrawal of the handholding support by UNEP and its consultants.</p>
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### **Gender Action Plan**

The Global Environment Facility (GEF) and the UN Environment Programme (UNEP) have made strong commitments to gender-responsive approaches throughout their work, and it is therefore highly important that this project aligns to these mandates. The project will thus follow the GEF Policy on Gender Mainstreaming and [UNEP's Gender Policy](#).

The GEF Policy on Gender Equality requires that any planned gender-responsive measures to address differences, as well as identify impacts, risks, and opportunities, are provided through a Gender Action Plan or equivalent. A Gender Action Plan (GAP) is the roadmap for gender activities that a project or institution has adopted for itself for the purpose of redressing existing gender inequalities in a systematic way. The gender action plan is a bridge between gender analysis and implementation, and it is a tool to help translate and make visible findings of the gender analysis in program/project implementation and evaluation.<sup>[9]</sup>

The approach to gender in this project will be based on the UN's [Women Empowerment Principles](#)<https://www.weeps.org/about>, and aligned with the National Gender Equality Policy and Action Plan (2021). The approach proposed consists of two main elements. The draft **Gender Action Plan** assesses each of the project's outputs and interventions, identifying risks, opportunities, and concrete measures in the context of each of the proposed project's interventions. The Gender Action Plan provides output-by-output assessment on gender considerations, identifying risks, opportunities, mitigation measures, responsibilities within the project team, timelines, indicators, and targets. It will allow the project to engage gender issues in terms of its own activities, trainings, governance structure and recommendations.

**Table 13. Gender Action Plan**

Component	Objective/result	Risk if gender actions not implemented	#	Deliverables	When	Indicators / Goals	Delivered by whom
1	Revised national energy policy (NEP) and its roadmap are gender sensitive	Policy and roadmap are not gender-sensitive, resulting in policy documents which do not take into account the different needs of women, men and LGBT+.	1.1.2	Social and gender Assessment and strategy for mainstreaming gender in the revised national energy policy (NEP) and its roadmap	Y1	The Ministry of Community Development, Gender Affairs and Social Services confirms that the NEP is gender-sensitive	Consultancy on Environment, Gender and Equity dimension of the energy transition  Supervised and cleared by the Chief Technical Advisor
	Ensure a gender balanced Federal Energy Commission	Lack of legitimacy of the project and lacking diversity of views in its comprehensive implementation	1.3.1	Proposal for the creation of a Federal Energy Commission	Y2	Percentage [%] of women in the Federal Energy Commission Goal: at least 30% are women in its first year of operations, with an aim of 50% by its third year	Consultancy on Policy and governance dimensions of the energy transition  Supervised and cleared by the Regulatory Framework Expert and Legal Advisor
	Achieve gender-sensitive data collection and analysis	Root causes for gender disparities in the energy sector remain unidentified	1.5.1	Detailed design of the knowledge management system for the electricity sector	Y1	The Ministry of Community Development, Gender Affairs and Social Services confirms that the knowledge management system has relevant gender-sensitive data	Consultancy on data dimension of the energy transition  Supervised and cleared by the Chief Technical Advisor



Component	Objective/result	Risk if gender actions not implemented	#	Deliverables	When	Indicators / Goals	Delivered by whom
	Capacity-building content and training sessions are gender sensitive	Limited participation of women in pilot activities leads to replication business-as-usual patterns	1.6.2	Training: regulatory, economic, and social aspects of the transition to 100% renewables and high energy efficiency	Y2, Y3, Y4	Training includes discussion on gender access to energy services and a discussion on gender issues during the transition	Consultancy on Policy and governance dimensions of the energy transition  Supervised and cleared by the Chief Technical Advisor
3	The project stakeholder engagement strategy is gender-sensitive	Men and women are not effectively engaged in the transition to 100% renewable energy and consequently the project policy documents are ineffective due to a lack of consideration of different societal needs and interest.	3.4.1	Design of a gender-sensitive multi-stakeholder engagement strategy and a funder communication campaign	Y2, Y3	The Ministry of Community Development, Gender Affairs and Social Services confirms that the NEP, IUS models and funder communication campaigns are gender-sensitive	Consultancy on gender-sensitive community engagement  Supervised and cleared by the Chief Technical Advisor

[1] National Gender Equality Policy and Action Plan (GEPAP) for Saint Kitts and Nevis, 2021, p. 16

[2] Caribbean Development Bank, *Country Gender Assessment, St. Kitts and Nevis Vol.1* (2014), p. 24

[3] National Gender Equality Policy and Action Plan (GEPAP) for Saint Kitts and Nevis, 2021, p. 19

[4] Ibid. p. 14

[5] Ibid. p. 15

[6] Government of Saint Christopher and Nevis, *Country Report to the twenty-fifth anniversary of the Fourth World Conference on Women and adoption of the Beijing Declaration and Platform for Action* (2019), p. 41

[7] <https://oasis.col.org/colserver/api/core/bitstreams/66c8d8f2-75c8-4df4-9958-cadcb25012a2/content>.

[8] See 2021 Draft Report Climate Change, Gender and Other Vulnerable Groups of the Department of Environment, Ministry of Environment and Cooperatives.

[9] Global Environmental Facility, *Guidelines on Gender Equality* (2017), para. 23

**Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment?**

Yes

**Closing gender gaps in access to and control over natural resources;**

**Improving women's participation and decision making** Yes

**Generating socio-economic benefits or services or women**

**Does the project's results framework or logical framework include gender-sensitive indicators?**

Yes

#### **4. Private sector engagement**

**Elaborate on the private sector's engagement in the project, if any.**

This project will create several entry points for the private sector.

In component 1, the revised National Energy Policy will play a crucial role in attracting and securing necessary investments in renewable energy and energy efficiency measures by providing a clear and consistent investment framework for private and public investors. The private sector will be involved in the Consultation and engagement workshops (D.1.1.1 and D.1.2.1) under Output 1.1 and 1.2 to inform the policy making process. The roadmap and its associated investment plan (output 1.2) will provide a clear path for the development of the entire electricity sector, thus bringing long-term certainty on the type of investments that will be required and when. This will provide a clear signal to the private sector, reducing uncertainty and risk. Engagement of the private sector will be crucial to ensure that the roadmap is put in practice, as the flow of investments associated with it will surely exceed public funds available in the country. Similarly, engagement will occur through targeted consultation and engagement activities under both outputs 1.1 and 1.2.

In component 2, national, regional and international private sector service providers will be engaged to provide the renewable energy and energy efficient technologies and install such into public buildings on

both islands. Such experiences will strengthen markets on these goods to the islands and create greater awareness amongst such private sector actors as to future opportunities on both islands.

In component 3, the development of an innovative financial mechanism backed by the government will seek to attract and channel public and private funds for supporting the electricity utilities in executing integrated utility service models. The mechanism will provide funds for the utilities for their implementation of energy efficiency measures, further driving down demand and materializing savings also potential within the private sector. The implementation of the pilot (output 2.1.) will also have a strong demonstrative effect with private actors from the tourism and hotel sector, which are large energy consumers.

Finally, in component 4, a marketing campaign (output 3.4) will be developed to attract large regional and international private sector investors by demonstrating the country's ambition, developed project pipeline ready to be financed and its progress in recent years. A wide range of private sector actors - from banks to regional IPPs and potential local suppliers - will be the main targets for this campaign.

## 5. Risks to Achieving Project Objectives

**Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation.(table format acceptable):**

Risks have been identified during project design through detailed stakeholder consultations and tools such as the UNEP Safeguard Risk Identification Form (SRIF), the gender analysis and the theory of change. A qualitative 1-5 scale has been used to characterize the risk with regards to likelihood (probability of occurrence: 1 = not likely, 5 = expected) and potential negative impact on achieving project objectives (1 = negligible; 5 = extreme). In accordance with the combination of likelihood and impact, each risk is assessed as low (green), moderate (yellow), substantial (orange) or high (red) as follows:

**Table 14: Risk Categorization**

		Likelihood				
		1	2	3	4	5
Impact	5					
	4					
	3					
	2					
	1					

Project risks, climate and COVID risks are discussed in the following sections.

### 5.1 Project risk table

**Table 15: Project risks**

#	Risk	Category	Risk rating: likelihood	Risk rating: impact	Risk mitigation strategy	By Whom	When
1	High impact climatic events (mainly storm surges and floods, very low probability of other extreme events) disrupt pilot or other project activities, destroys infrastructure, and effect overall project execution. <i>For details see the ?climate risk assessment? section following this table.</i>	Climate	3	3	Project activities of components 1 and 3 are primarily desk activities and will not be overly affected by such events. On the pilots, all measures will be installed in accordance with national and regional building regulations, taking into account extreme weather events.	Executing agency	Throughout the project, and particularly during hurricane season (June 1 to November 30)

#	Risk	Category	Risk rating: likelihood	Risk rating: impact	Risk mitigation strategy	By Whom	When
2	Lack of political buy-in and support for the uptake of renewable energy and energy efficiency measures (including due to causes such as COVID, civil unrest, civil push-back, or force majeure), including by the utilities SKELEC and NEVLEC leads to reduced support for the project and a lack of adoption of project strategies, policies and regulations.	Political and institutional	2	4	<p>The likelihood of this risk is low as the project will be directly executed by a government ministry, and other ministries are project co-financers and part of the steering committee. The project aims to address this risk through the implementation of an outreach strategy (output 3.4) and the development of the national energy policy with participation of all key government actors.</p> <p>In addition, with regards to the participation of the utilities, component 2 will focus on de-risking the adoption of IUS models by simulating the performance of such with real data. This will work to convince both utilities of the technical, economic and social viability of such models.</p>	Executing agency (EA)	Throughout the project.

#	Risk	Category	Risk rating: likelihood	Risk rating: impact	Risk mitigation strategy	By Whom	When
3	Slow or complex processes (inc. due to external factors such as supply chain delays) lead to delays in budget execution	Procurement	3	3	Develop conservative annual procurement plans that take into account possible supply chain delays. Revise the procurement plans annually in January of each year.	Executing agency, UNEP	At the start of the project and then annually in January.

#	Risk	Category	Risk rating: likelihood	Risk rating: impact	Risk mitigation strategy	By Whom	When
4	Lack of civil society and or public interest leads to a reduced materialization of co-finance and/or project outputs and outcomes that do not reflect their needs and interests	Social	1	3	The project will mitigate the risk of reduced stakeholder involvement through the inclusion of key stakeholders in the Project Steering Committee, and also through the development and implementation of a multi-stakeholder consultation, communication, and engagement strategy (output 3.3), which will focus on establishing and maintaining and active engagement. consultation and communication with the civil society. In the event that such concerns are not resolved at the local level, such stakeholders may access UNEP's Stakeholder Response Mechanism, operated through the Independent Office for Stakeholder Safeguard-related Response (IOSSR). <a href="#">[1]</a>	Executing agency, UNEP	Throughout the project, with key focus on year 1.

#	Risk	Category	Risk rating: likelihood	Risk rating: impact	Risk mitigation strategy	By Whom	When
5	The pilot works result in negative local environmental impacts (air, water and soil contamination).	Environmental	1	2	1. Undertake an environmental impact assessment before each pilot work and execute the pilot only if the assessment is positive. 2. Develop and execute a plan for effective waste disposal for any waste from the pilots.	Executing agency, project manager	Year 1. Environmental impact assessment Year 2-4. Waste disposal plan.
6	Gender issues are not effectively incorporated into project processes and products, leading to project outputs and outcomes that are not gender sensitive.	Social	1	3	The project will mitigate this risk by executing a gender action plan (see section 3), which reviews each output in the project through a gender perspective, identifying specific risks and mitigation measures in each case. One of the project's consultants will be charged with implementing this plan.	Executing agency, gender consultant	Year 1: revise plan and begin implementation. Year 2-4, implement plan and monitor progress

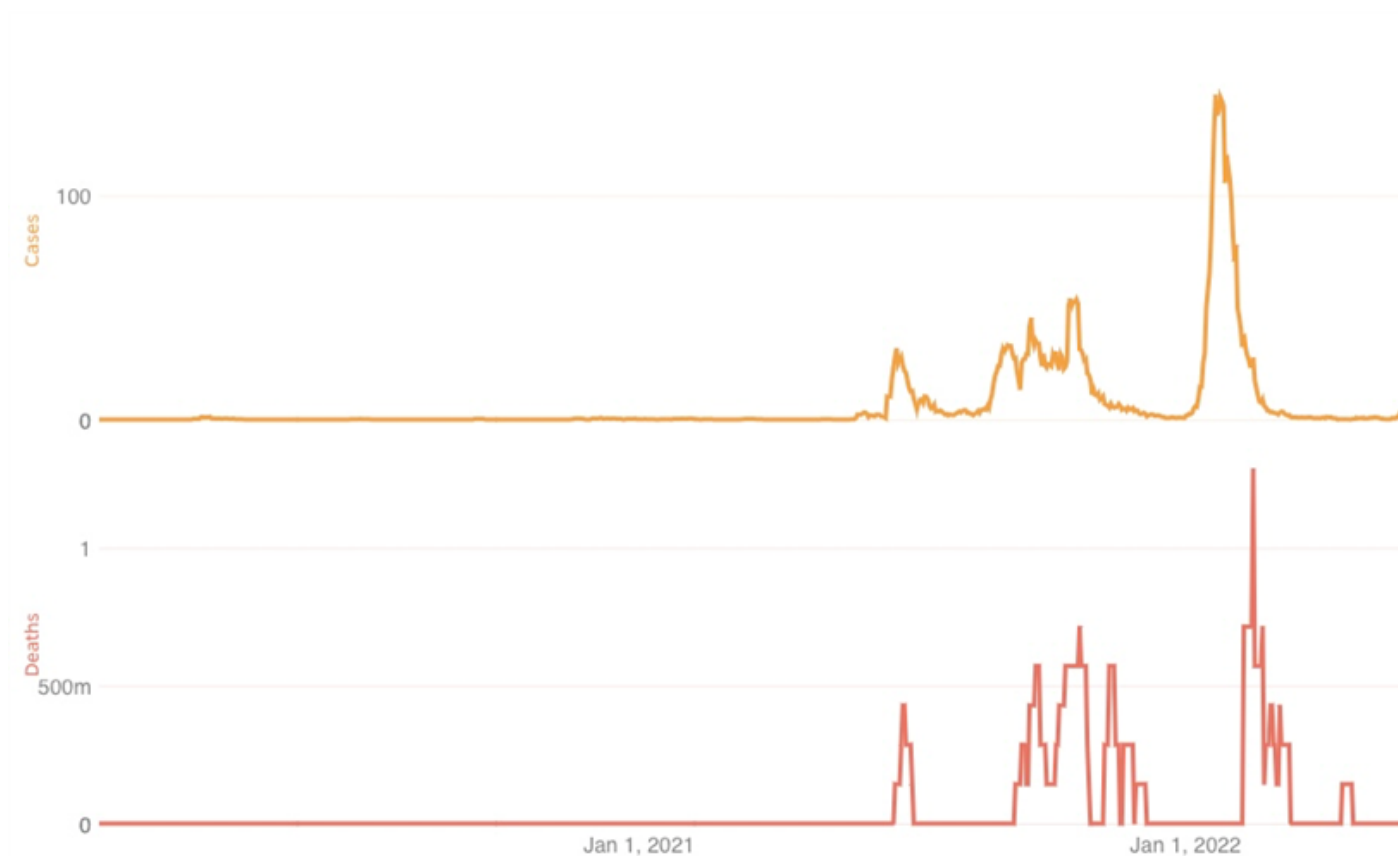
## 5.2 COVID risks

### COVID-19 risk analysis[2]

As of July 25, 2022, the country recorded a total of 6,422 confirmed COVID-19 cases and 46 deaths.[3] More than 26,000 people are fully vaccinated, corresponding to approx. 50% of the population.

**Figure 13: Overview of COVID-19 cases in St. Kitts and Nevis (July 25th, 2022)**





Source: Johns Hopkins Coronavirus Resource Center (CRC), 25th July 2022 [\[4\]](#)

Ways in which the COVID-19 pandemic can potentially affect the project are listed below:

- Lockdown and movement restrictions: mobility restrictions and the need for social distancing due to the pandemic could lead to reduced possibility for activities that have traditionally required in-person participation, such as workshops, meetings, trainings and consultations.
- Slowdown of procurement processes, i.e., procurement processes can be paralysed or slowed down depending on the evolution of the pandemic and the offices it affects.
- Staff turn-over due to the illness: long leave periods to recover from the symptoms can cause delays in the execution of project activities.

#### *Mitigation measures*

Prompt government action helped to contain the pandemic's public health impact. At the onset of the pandemic in March 2020, the government swiftly restricted inbound travel, introduced safety protocols including a month-long national lockdown, and procured protective and medical equipment. In July 2021 the Government has established new flexibilization measures that implied a gradual reopening of the economy, returning to a normal activity, due to a decline in confirmed cases. The latest measures include [\[5\]](#):

- o A night curfew from 9:00 pm to 5:00 am daily.
- o Buses are allowed a maximum capacity of 10 passengers.
- o Inter-island travel between St. Kitts and Nevis is resumed.

- o Churches can resume normal services.
- o Nurseries and day-care centres can reopen.
- o Bars and restaurants can resume normal activity, operating with full COVID-19 protocols.
- o Social gatherings will be permitted but organizers must first apply for permission from the Commissioner of Police, and beaches will be open for exercise only. No beach parties or mass gatherings will be permitted.
- o Quarantine for incoming fully vaccinated passengers will be reduced from 9 days to 3 days with testing on the 4th day and release once the test is negative.
- o Quarantine remains at 14 days for unvaccinated returning citizens and residents.

Due to the changing nature of the pandemic, a dynamic approach will be pursued to accommodate to various contingent scenarios:

- In the event of mobility restrictions and the need for social distancing, alternative and innovate forms of meeting organization and communication will be implemented (i.e., using online platforms). The impacts of the pandemic in 2020 have meant that such technologies are already becoming commonplace and acceptable for usage by a broad range of stakeholders.
- As for the procurement risk, at the beginning of project execution the project timeline and dates of execution of all project activities will be re-evaluated taking into consideration any on-going risks due to COVID-19.
- The entity acting as Executing Agency will cross-train staff so that if a worker contracts COVID-19 and is on leave during their recovery, the project can continue.
- Regarding the country's priorities, the pandemic is likely to underline the importance of having monitoring and evaluation systems for climate action.

According to the 2022 Budget Address by the Government<sup>[6]</sup>, approximately XCD\$39.5 million was expended in 2020 on COVID-19 related matters. The sum of XCD\$14.0 million was spent on the Health Sector and for National Security to secure, inter alia, medical practitioners, equipment, vaccines and quarantine sites. Another XCD\$9.6 million was injected into the Agriculture Sector to boost the food supply in the Federation and a further XCD\$15.7 million to capitalize the Severance Payment Fund as claims for severance payments reached unprecedented levels in 2020. Financial support of XCD\$7.0 million was also provided in 2020 to the St. Christopher Air and Sea Ports Authority (SCASPA) as a consequence of the severe impact of the pandemic on its finances. The Debt-to-GDP ratio, however, increased from 54.3 percent at the end of 2019 to 67.9 percent at the end of 2020.

In December 2021, the Government decided to adopt for 2022 budget the recovery scheme **‘Investing in Our People ? Putting St. Kitts and Nevis Back on Track’**. The International Monetary Fund (IMF) projections indicated that St. Kitts and Nevis could realize a 10.0 percent economic growth in 2022. The 2022 budget is seen as another tool to ensure that St. Kitts and Nevis can realize this optimistic growth forecast.<sup>[7]</sup> With the budget planning for 2022, the administration undertakes the development of a post-COVID-19 Economic Recovery Strategy, recognising that the path forward must be focused on climate resilient growth across all sectors. A major pillar in Government’s development agenda to support this paradigm shift has been identified for the development and integration of renewable energy to achieve the vision of the National Energy Policy to provide reliable, renewable, clean and affordable energy to our citizens. Hence, the project is fully aligned with will Government’s Economic Recovery Strategy and will assist the country achieving its target.

Risks related to the pandemic have two components. The first is the one related to the restriction of circulation, which would affect mainly meetings for gathering data as well as workshops and related capacity building activities. This aspect of the risk would be mitigated mostly through remote work, on which the Ministry of Sustainable Development has had successful experiences during the initial outbreak.

The second component is related to procurement processes, which can be paralysed or slowed down depending on the evolution of the pandemic. In this context, at the beginning of project execution, the project timeline and dates of execution of all project activities will be re-evaluated taking into consideration any on-going risks due to COVID-19. Moreover, the business model to be provided as output 1.2. will address this risk beyond the duration of the GEF project.

The project will fully consider the negative implications of COVID-19 and identify the most appropriate ways to conduct implementation by using safety measures and preventive precautionary procedures. Such as organizing virtual meetings and trainings where face-to-face meetings bear health risks. The project team will be in continuous consultations with the governmental project stakeholders on how COVID-19 could impact the implementation of project activities and additional challenges that may subsequently arise due to the national pandemic restrictions. That would be pinned in the project schedule to accommodate to the prolongation of activities implementation and mobilization challenges during the pandemic period.

**Table 16: COVID-19 risk analysis**

<b>Risk</b>	<b>Risk level</b>	<b>Risk mitigation measure</b>
Project implementation as per expected timelines might be hindered due to the pandemic, leading to delays	Low/ Medium	Some delays in communications with counterparts and stakeholders and implementation could occur, in case lockdown regulations and directions in the country continue to be enforced throughout the year 2023 and beyond. The project document was developed in consideration of such risk factors, and initial communications with the stakeholders will provide extra emphasis on the timelines so that the counterparts and stakeholders are fully aware of the timelines for implementation. Also, opportunities in post-recovery measure of COVID-19 will be communicated to increase level of confidence of stakeholders in how the project can support St. Kitts and Nevis in addressing not only its climate challenges, but also in supporting economic growth. In the case that delays are still foreseen, UNEP will immediately inform the GEF Operational Focal Point in St. Kitts and Nevis and the GEF Secretariat to seek support and guidance.
Availability of Technical Expertise and Capacity and Changes in timelines	Low	The project will carefully anticipate and monitor any possible implications of COVID-19 for a project start in 2023. This includes inter alia continued lockdown regulations and their respective implications on planning and working conditions (e.g., with the Ministries and the pilot activities), as well as capacity changes with the executing entity and other project partners.

Stakeholder Engagement Process	Low	Hybrid stakeholder engagement processes consisting of both virtual and face-2-face meetings are foreseen throughout the project (as successfully applied during the PPG phase). In light of experiences made with the pandemic in 2020-2022, the project will ensure that all exchanges foreseen as physical meetings (such as stakeholder meetings, conferences, workshops) will be planned with a virtual alternative scenario. The increased experience with using virtual conferencing solutions help to decrease this risk.
Enabling Environment	Low	Fostering sustainable energy (renewable energies and energy efficiency solutions) is in line with the focus of the Government's Economic Recovery Strategy and the scheme 'Investing in Our People ? Putting St. Kitts and Nevis Back on Track?', which includes priority interventions inter alia in energy security and renewable energy investments. The project will thus seek to harness opportunities with respective COVID-19 measures.
Financing (National debt crisis, availability of co-financing, price increases in procurement)	Low	As per the foreseen budgeting approach, GEF funding and a diversity in co-financing allows the project to develop a certain resilience against financing risks. A close monitoring of financing risks and an open dialogue with co-financiers will be done by the project executing entity.

### ***COVID-19 opportunity analysis***

St. Kitts and Nevis entered the Covid-19 pandemic from a position of fiscal strength following nearly a decade of budget surpluses. A significant part of the large CBI revenues were prudently saved, reducing public debt to below the regional debt target of 60 percent of GDP and supporting accumulation of large government deposits. The subsequent reopening of borders has been accompanied by strict safety protocols. The response measures effectively mitigated the pandemic's human cost with St. Kitts and Nevis having had the lowest per capita case count in the Western Hemisphere. However, as a tourism-dependent country, the economy of St. Kitts and Nevis was heavily affected by the pandemic, and the country's travel and tourism sector's contribution to GDP fell from 52% in 2019 to 22% in 2020.

As of July 2021, the borders and the economy are gradually reopening. In this way, a rebound in tourist activity should be a boost for a strong recovery during 2022, and the International Monetary Fund (IMF) expects a 10% increase for said year, with the country reaching a pre-pandemic GDP in 2024. This rebound could provide a good opportunity for the Island to introduce reforms that might help boost productivity growth, including the kick start for a transition towards a cleaner energy matrix.

For the project, opportunities in the context of measures taken in response to the COVID-19 pandemic exist regarding innovation in climate change mitigation, also in line with the Government's Economic Recovery Strategy and the scheme 'Investing in Our People ? Putting St. Kitts and Nevis Back on Track'.

**Table 17: COVID-19 opportunity analysis**

Opportunity	Opportunity level	Opportunity optimization measure
Promote local investment and business development projects which improve resilience to climate change	High	Fostering sustainable energy activities allows beneficiaries to become more resilient to the adverse impacts of climate change, e.g., concerning the reliability of energy supply and resilient energy infrastructure.
Integrated energy planning could support the localisation leading to an enhanced domestic energy generation that supports local value chains and service providers, that are currently rather scarce	High	The project will support the strengthening of the national utilities, e.g., through integrated utilities service model, and help mobilising domestic investment by establishing suitable financing mechanism. This will reduce the drain of financial resource spent for imported fossil fuels supporting in the national economy.
Promote energy efficiency improvements and low and zero-carbon technologies such as renewable energy, while not increasing the use of harmful chemicals and ensuring the ability to recapture and recycle materials at the end of life	High	By its design the project foresees fostering of sustainable energy activities and as such can harness opportunities with recovery measures in the country.

### **5.3 Climate risk assessment**

Following IPCC (2012)[8], **hazard** is defined as the potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources. **Exposure** is employed to refer to the presence (location) of people, livelihoods, environmental services and resources, infrastructure, or economic, social, or cultural assets in places in which hazard events may occur. **Vulnerability** is defined as the propensity or predisposition to be adversely affected, and it encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt. In the context of the assessment of climate impacts, **risk** results from the interaction of vulnerability (of the affected system), the likelihood of the occurrence of a climate related hazard, and exposure to the latter.

This section presents a preliminary climate risks analysis in the context of a) the duration of the project and its activities, but also (and more importantly) in the context of b) the transition towards a green electricity grid that is envisaged as its ultimate objective. A more detailed assessment of climate risk and a management plan for the amelioration of those risks will be prepared together with the full project proposal.

The twin island Federation of St. Kitts and Nevis is a state composed of two islands of the Lesser Antilles in the Eastern Caribbean Sea, with a combined area of 260 km<sup>2</sup>. The capital of St Kitts is Basseterre and the capital of Nevis is Charlestown. According to data from the 2011 census the population of the Federation of St. Kitts and Nevis is 53,192 (around 75% in St. Kitts and 25% in Nevis).

The major urban areas are Basseterre and Charlestown, the respective capitals of each island. In St. Kitts, while the population is concentrated in capital and surrounding suburban areas, a considerable portion of the population is located in coastal areas, with many villages located along coastal roads. Nevis follows a similar pattern to St. Kitts with the population being concentrated in and around Charlestown. Many of the villages in Nevis are located along the island's main road, which mirror the coast of the island. After years depending on the sugar industry, the tourism industry is now the main economic activity in St. Kitts and Nevis. The direct contribution of travel & tourism to GDP in St. Kitts and Nevis was around 10% of total GDP in 2019.<sup>[9]</sup>

The location of the population centres on the coast enhances the vulnerability of St. Kitts and Nevis to the impacts of climate change. St. Kitts and Nevis is most vulnerable to cyclones and hurricanes (and the resulting storm surge), floods, and droughts. The country lies on the southern edge of the Atlantic hurricane belt where tropical cyclones occur throughout August, September, and October. Climate change has the potential to result in changes in hurricane frequency and intensity which will have countrywide social and economic implications. Some of the major hurricanes that have affected St. Kitts include Hurricane Hugo (1989), Hurricanes Luis and Marilyn (1995), Hurricane Georges (1998), Hurricane Omar (2008), Hurricane Earl (2010) Tropical Storm Emily (2011), Tropical Storm Rafael (2012) and Tropical Storm Gonzalo (2014). Generally, it is projected that St. Kitts and Nevis will experience: an increase in average atmospheric temperature; reduced average annual rainfall; increased Sea Surface Temperatures (SST); and the potential for an increase in the intensity of tropical storms.<sup>[10]</sup><sup>10</sup> As a SIDS, St. Kitts and Nevis is particularly vulnerable to the adverse impacts arising from these effects; of particular concern are the projected rates and consequences of sea level rise in a country whose principal settlements, economic and social infrastructure and the majority of its livelihood support systems are located within or near low-lying coastal areas.<sup>[11]</sup><sup>11</sup> Specific areas that are likely to be impacted on include forests, coastal ecosystems, water resources, infrastructure, human settlements, agriculture, and one of the country's main source of income: tourism.

**Table 18. Climate risks for the project**

Category	Risk	Probability (P) & potential impact (I)	Mitigation measures
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Extreme events and climate change risk	Damage in infrastructure resulting from an extreme weather event	P: Medium I: High	<p>Owing to its location, the Federation of St Kitts and Nevis is extremely exposed to the effects of tropical storms and hurricanes. While there is still some uncertainty about the direction of change in the <i>frequency</i> of these events in a changing climate, some studies project an increase in hurricane <i>intensity</i><sup>[12][12]</sup>. Likewise, the greatest risk for flooding and landslides comes from periods of heavy rain associated with events such as hurricanes and tropical storms.</p> <p>While most part of the work under this project involves the drafting of policies, plans, business models and a roadmap, two pilots comprised of energy efficiency measures is expected to be undertaken in each island (output 2.2). This risk will need to be thoroughly assessed during the design phase, once the specific pilots are designed, to ensure that measures to minimize the likelihood of damage are in place.</p>
	Climate change related events affects implementation of project activities with identified stakeholders.	P: Low I: Low	<p>The recent experience with the COVID pandemic has resulted in a great deal of flexibility in terms of shifting face-to-face activities to a virtual modality with relatively short anticipation. As a default, all communications, training and stakeholder engagement activities will be designed under two modalities (i.e. in-person and virtual) and the project team will be ready to switch between the two depending on the circumstances. This same approach will be followed in case of extreme events affecting the implementation of any project activities that involve external stakeholders, from workshops to training to communication seminars.</p>

*(i) How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?*

The outputs in this project involve mostly desk work, e.g. the update of the NEP and the preparation of a roadmap, the knowledge managements system and the various capacity building activities. Potential climate-related effects that may play a role during execution include disruptions in data collection/data storage and difficulties to undertake capacity building activities. Hence, the design phase will choose the location and the timing of the activities in a way that reduces vulnerability; and the knowledge manage system will incorporate best practices to enhance its resilience.

More importantly, the pilots in output 2.1 will have to incorporate design and mitigation measures against extreme events (e.g. by considering a 50-year-return period for hurricanes in its design), increasing not just their own resilience but also that of the grid. This way, the pilot would also allow assessing (and preparing measures against) the risks faced by the country through the energy transition. These elements will be further discussed once the specific design of the pilots is decided upon.

In particular, the project's approach towards climate risks will be tackled in different manners throughout its lifetime. The following actions are planned for the design and the execution phase:



Table 19. Proposed approach towards climate risks during project design and execution	
Design phase	Execution phase
<ul style="list-style-type: none"> <li>o Information on how the targeted project components (e.g., the pilots, the capacity building activities) could be impacted by extreme events during project execution, and the level of severity.</li> <li>o Information on how the proposed interventions may contribute to reducing the vulnerability to climate risks</li> <li>o Preparation of a monitoring plan for the execution phase that indicates what needs to be measured, when, and by whom ? specially in relation to the project's pilot (i.e. definition of a concrete research question)</li> </ul>	<ul style="list-style-type: none"> <li>o Assessment on how different levels of projected climate change impacts, including climate variability, in the project location can affect the pathways established in the roadmap</li> <li>o Assessment of the effect of the proposed pathways to decarbonization of the grid on climate vulnerability and adaptation, and measures for preventing potential risks.</li> <li>o Preparation of a post-project monitoring plan and contingency plan to track and mitigate risks during the energy transition that is to be set in motion by the project</li> </ul>

(ii) Has the sensitivity to climate change, and its impacts, been assessed?

The following table summarizes the range of future scenarios presented in St. Kitts and Nevis' Second National Communication to the UNFCCC:

**Table 20. Expected impacts according to climate change projections for St. Kitts and Nevis**<sup>[13]</sup>

<p><b>Temperature:</b> Regional Climate Model (RCMs) projections indicate increases ranging from 2.1°C - 3.2°C by the 2080s in the higher emissions scenario.</p> <p><b>Precipitation:</b> General Circulation Models (GCM) projections indicate overall decreases in annual rainfall of between -41 to +13 mm per month by 2080 for the higher emissions scenario. RCM projections indicate a decrease of 7-22% in <i>total annual</i> rainfall.</p> <p><b>Sea Surface Temperatures (SST):</b> GCM projections indicate increases from +0.7°C and +2.8°C by the 2080s.</p> <p><b>Tropical Storms and Hurricanes:</b> North Atlantic hurricanes and tropical storms appear to have increased in intensity over the last 30 years. Observed and projected increases in SSTs indicate potential for continuing increases in hurricane activity and model projections indicate that this may occur through increases in intensity of events but not necessarily through increases in frequency of storms.</p>
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These scenarios will inform the pathways that result from the roadmap to decarbonization that is to be obtained as part of the project, evaluating sensitivity and capacity to cope and adapt (?adaptive capacity?) as the main components of vulnerability. Moreover, the possibility of concrete extreme events during project execution will be factored in during the project design.

*(iii) Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with?*

Resilience measures and practices will be established at two levels:

- at the level of **outputs and activities**, to establish mitigation measures in the event of extreme events during project execution. This will be defined during project design.
- at the **outcome** level, to assess possible interactions between the different climate projections and the proposed decarbonization pathways, and to establish a post-project monitoring and contingency plan to track and mitigate risks during the energy transition that is to be set in motion by the project. This will be defined during project execution, and is to be included as actual deliverables in output 1.2.

*(iv) What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?*

Actual execution of the project will take place during a relatively short timeframe (i.e. three years); hence, the main relevant risk during execution will be related to extreme events. These will be assessed during the PPG phase, once the details of the project are further defined. Mitigation measures will include remote alternatives for capacity building activities, cloud-based solutions and systematic backups of relevant information in the knowledge management system, as well as detailed specifications for the infrastructure that will be commissioned as part of the project.

Long-term effects of climate change, on the other hand, will be of major relevance for the assessment of possible decarbonization pathways for the electricity grid. The possible interactions between climate projections and the pathways proposed in the roadmap for the implementation of the NEP will be assessed as part of the project outputs. In particular, the project will assess the effect that the pathways proposed for the grid will have on climate vulnerability and adaptation (e.g. in terms of the vulnerability and resilience of the infrastructure in the power sector), and define specific measures for preventing potential risks.

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[1] UNEP's Stakeholder Response Mechanism fulfils two primary functions (1) a compliance review process to respond to claims by stakeholders alleging that activities implemented or executed as part of UNEP-funded projects and programs are not in compliance with UNEP's Environmental and Social Sustainability Framework (ESSF); and (2) a grievance redress process that provides people allegedly affected by activities implemented or executed as part UNEP-funded projects and programs access to appropriate dispute resolution processes for hearing and addressing project-related disputes. The

mechanism will receive and address complaints in a timely and culturally appropriate manner and adhere to UNEP's ESSF requirements.

<https://wedocs.unep.org/bitstream/handle/20.500.11822/32023/ESSFRM.pdf?sequence=1&isAllowed=y>.

[2] Refer to

[http://www.thegef.org/sites/default/files/documents/GEF\\_COVID\\_Project\\_Design\\_Review\\_Considerations\\_20200925.pdf](http://www.thegef.org/sites/default/files/documents/GEF_COVID_Project_Design_Review_Considerations_20200925.pdf)

[3] <https://covid19.gov.kn/2021/07/18/st-kitts-nevis-covid-19-situation-report-no-478/>

[4] <https://coronavirus.jhu.edu/region/saint-kitts-and-nevis>

[5] covid19.gov.kn, *St. Kitts and Nevis moves to a near full reopening of the economy with significant easing of restrictions*. [Article](#) accessed on 19/07/2021.

[6] ST. CHRISTOPHER AND NEVIS, 2022, BUDGET ADDRESS, retrieved from: <https://www.sknis.gov.kn/wp-content/uploads/2022/01/Budget-Address.pdf>

[7] ST. CHRISTOPHER AND NEVIS, 2022, BUDGET ADDRESS, retrieved from: <https://www.sknis.gov.kn/wp-content/uploads/2022/01/Budget-Address.pdf>

[8] IPCC, 2012: *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change* [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

[9] Statista, *Travel and tourism sector as percentage of gross domestic product in Saint Kitts and Nevis from 2010 to 2019*. [Data](#) accessed on 17/07/2021.

[10] Government of St. Kitts and Nevis, *National Climate Change Policy* (2017), p.9.

[11] Government of St. Kitts and Nevis, *Second National Communications Report under the United Nations Framework Convention on Climate Change* (2015), p.36.

[12] Second National Communication (2015)

[13] Government of St. Kitts and Nevis, *National Climate Change Policy* (2017), p.10.

## **6. Institutional Arrangement and Coordination**

**Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.**

### **6.1 Institutional arrangements**

Figure 14. Project institutional arrangements

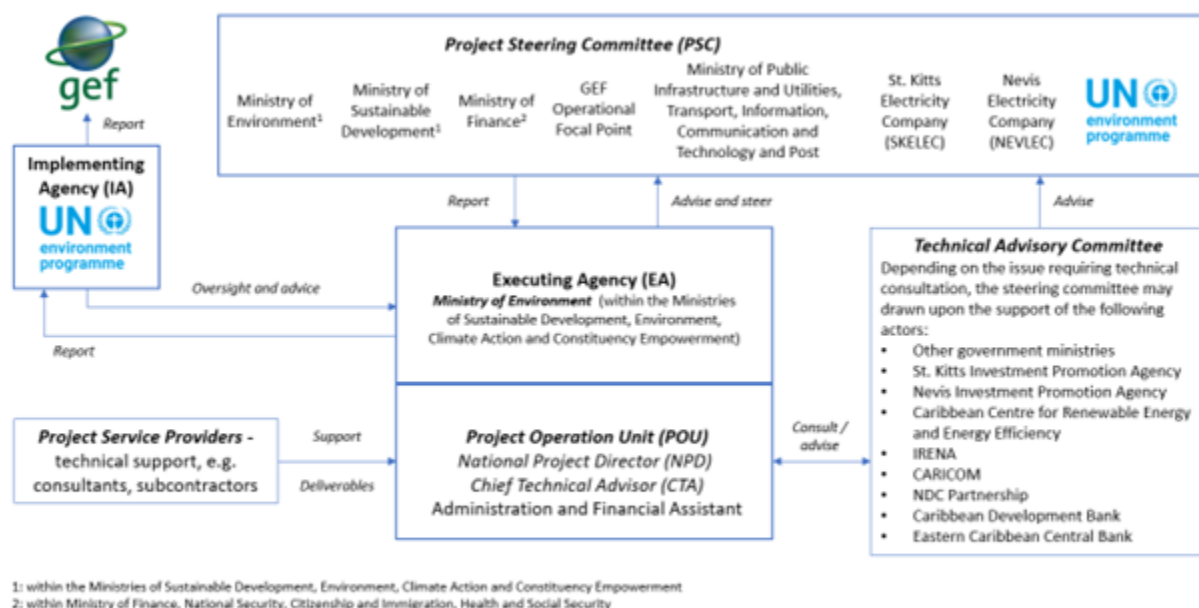


Table 21. Institutional arrangement and roles

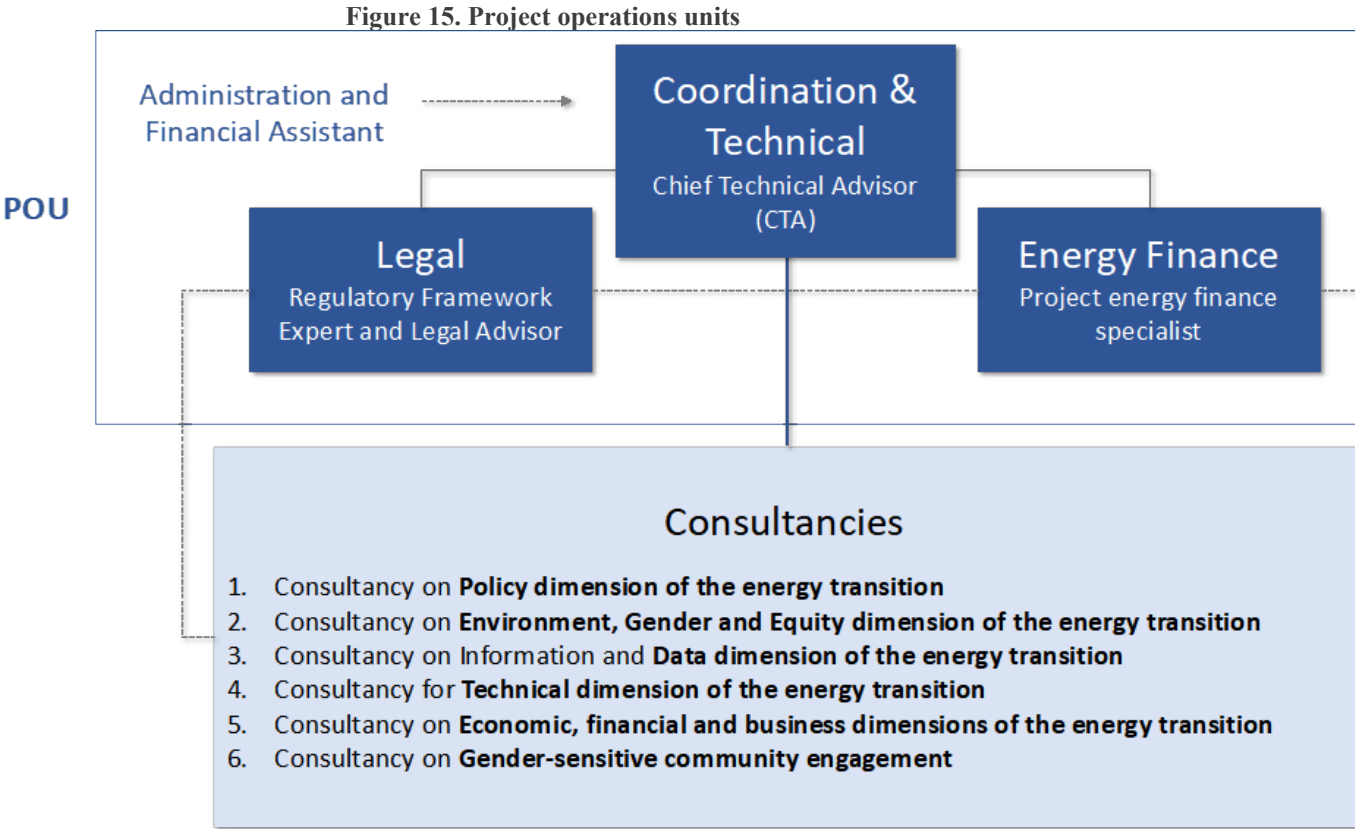
Body	Constitution and role
Executing agency	The project executing agency will be the Ministry of Environment, Climate Action and Constituency Empowerment.
Implementing agency	UNEP. UNEP will build upon its experience as implementing agency for other GEF mitigation projects in the region, including a GEF-5 energy efficiency and renewable energy project with Antigua and Barbuda, Belize, Grenada, St. Lucia and St. Vincent and the Grenadines, and a GEF-5 energy efficiency and renewable energy project in Grenada. It has also drawn upon experiences in developing and executing GEF-7 electric mobility projects in Antigua and Barbuda, Grenada and St. Lucia. Furthermore, it will draw on in-house expertise on energy efficiency and renewable energy housed with its Energy Branch, Economy Division. In developing this project, UNEP has drawn upon experiences, good practices and lessons learned in the GEF-5 projects, including the terminal evaluations. UNEP's significant experience in the region on energy efficiency and renewable energy holds it in good stead to be the project implementing agency vis-?-vis other GEF agencies. UNEP is also currently implementing a GEF-funded technology needs assessment project in St. Kitts and Nevis.

Steering committee	<p>The project steering committee will supervise and provide overall guidance to the executing agency and its management team for project execution. This will include as related to political alignment, technical quality, procurement, and financial management of the project. The steering committee will consist of the following entities:</p> <ul style="list-style-type: none"> <li>? Ministry of Environment, Climate Action and Constituency Empowerment</li> <li>? Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport</li> <li>? Ministry of Finance</li> <li>? Ministry of Sustainable Development</li> <li>? GEF Operational Focal Point</li> <li>? Nevis Island Administration (NIA)</li> <li>? St. Kitts Electricity Company (SKELEC)</li> <li>? Nevis Electricity Company (NEVLEC)</li> <li>? United Nations Environment Programme (UNEP)</li> </ul>
Project operations unit	<p>A project operations team facilitate the day-to-day operations of the project. It will consist of, inter alia:</p> <ul style="list-style-type: none"> <li>? A co-financed National Project Director, pertaining to and to be appointed by the Ministry of Environment, Climate Action and Constituency Empowerment</li> <li>? A project-financed Chief Technical Officer, who will serve as the project manager as well as undertake technical work related to the project. See annex H (terms of reference) and annex J (project implementation arrangements) for descriptions of this person's functions.</li> <li>? A project-financed Administration Assistant, who will be responsible for project administrative and financial management. See annex H (terms of reference) for a description of this person's functions.</li> </ul>
Technical advisory committee	<p>The technical advisory committee will serve to support the project on a upon request basis with regards to any technical questions that the project steering committee desires assistance on. Depending on the issue requiring technical consultation, the steering committee may draw upon the support of the following actors:</p> <ul style="list-style-type: none"> <li>? Other government ministries</li> <li>? St. Kitts Investment Promotion Agency</li> <li>? Nevis Investment Promotion Agency</li> <li>? Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)</li> <li>? IRENA</li> <li>? CARICOM</li> <li>? NDC Partnership</li> <li>? Caribbean Development Bank</li> <li>? Eastern Caribbean Central Bank</li> </ul>
Project service providers	<p>Project-financed goods and services provided by consultants and consultancies to prepare project deliverables and support the achieving of project outputs.</p>

#### Additional information on the project operations unit

The project operations unit (POU) will be integrated by local professionals to maximize the development of local capacities. A series of consultancies (which can bring in international experts, as needed) have been included for specific assistance. The workplan was built assigning one single responsible for each deliverable according to its scope (technical, legal, financial, gender, etc.). Likewise, each deliverable that is to be prepared by consultancies is assigned to a single POU member for revision, supervision, and clearance - again depending on its scope. This ensures a clear delimitation of roles and responsibilities throughout the project's workplan, preventing any duplication of efforts. The full list of deliverables assigned to each member of the POU and for each consultancy is available in Annex H of this document, which presents the

terms of reference for staff members and consultancies required. Annex J provides further details on the roles and responsibilities of the implementing and executing agencies.



## 6.2 Coordination with other initiatives

As listed in **Table 7**, there are several on-going and expected projects that will provide support to the proposed activities. These are related to the deployment of renewable energy and energy efficiency measures, and energy sector reforms. Furthermore, other GEF projects already being executed in the country, however these do not relate in thematic content to this project.

As a small country, St. Kitts and Nevis has strong governmental coordination on international support for domestic activities. The key ministries and actors engaged with the different initiatives are the aforementioned members of the project steering committee. As such, the committee will serve as an important opportunity for ensuring coordination. However, due to the country's size, the majority of the governmental actors are also involved in (or leading) other related activities. The following table revisits Table 7 from the baseline section, adding a brief discussion in the last column to reflect how the proposed project will take advantage of synergies arising from coordination of efforts.

**Table 22. Coordination with on-going initiatives**

Project	Objectives and relevance to this project	Intended coordination and synergies
<p>GEF Technology Needs Assessment (TNA) (IV), GEF ID 10171</p> <p>UNEP DTU Partnership. 2020 ? 2023, USD 270,000 (GEF)</p>	<p>Update its 2006 TNA as well as to create Technology Action Plans.</p>	<p>A draft of the TNA and action plans are expected for 2023 and will inform the development of regulations and plans under component 1.</p>
<p>Improving Environmental Management through Sustainable Land Management in St. Kitts and Nevis, GEF ID 9785 (GEF-6)</p> <p>UNEP, IUCN 2018 ? 2023; USD 3,015,982</p>	<p>To transform degraded forest landscapes into biodiversity and climate-friendly areas of sustainable agricultural / agroforestry production. This project foresees updating the National Physical Development Plan (NPDP) and the National Building Codes of St. Kitts and Nevis and deliver training to ensure that sufficient capacity is enhanced to implement the updated plan.</p>	<p>Adoption of building codes will have an important impact in terms of energy efficiency (relevant for component 1, output 1.4). This GEF-6 activity will inform the proposed project, as the latter would be starting execution by the time the former is closing technical implementation.</p>
<p>Energy and Energy Efficiency Sector Budget Support</p> <p>11<sup>th</sup> European Development Fund 2018 ? 2022 EUR 5,200,000</p>	<p>To support St. Kitts and Nevis to establish a sustainable energy sector based on local renewable energy sources by increasing integration of the renewable energy and energy efficiency in public facilities.</p>	<p>Among other targets, EU funds will be used to strengthen the energy units and finance capacity building activities. Training activities of the GEF-7 project will build upon the efforts of the EU partnership.</p> <p>The strengthening of the Energy Unit will allow for the Government to enhance institutional capacity in terms of identifying the conditions necessary to provide an enabling environment for the Sector. The Energy Unit will also provide advice and assist the government in reviewing the National Energy Policy which sets the framework for the Energy Sector.</p>

Project	Objectives and relevance to this project	Intended coordination and synergies
<p>Sustainable Energy Facility for the Eastern Caribbean (GCF FP020)</p> <p>GEF, GCF, JICA, IDB 2017 ? 2025 USD 23,900,000</p> <p>Nevis Island Climate Enhancement (NICE) Project</p> <p>NEVLEC 2021 ? on-going Budget: n/a</p>	<p>Seeks to address the financial, technical, and institutional barriers faced by geothermal energy and to provide institutional strengthening.</p> <p>Within the scope of the NICE project, NEVLEC is currently conducting a series of technical studies to investigate the renewable energy potential (geothermal potential in particular), along with opportunities to produce/export green hydrogen/derivatives (including ammonia and fertilizer) on the island of Nevis.</p> <p>Furthermore, the project is exploring how Nevis can become central hub for renewable energy and climate research in the Caribbean.</p>	<p>This project focuses on geothermal energies, which is a fundamental source for St. Kitts and Nevis. Although the GEF-7 project will be more oriented towards an integrated resource roadmap that considers all types of renewables (and their interaction with diesel generators in the initial phases of the transition), the roadmap will integrate the findings from the Sustainable Energy Facility and integrate them into their technical scenarios. Any additional work on sectorial policy and/or legislation will be coordinated between both projects, which should be facilitated by the fact that both advance the policy direction of the Ministry of Public Infrastructure, Energy, Utilities and Domestic Transport.</p> <p>The NICE project further investigates the technical feasibility of geothermal and offshore wind energy on Nevis, a grid interconnection between Nevis and St. Kitts, distribution system upgrades and a ?Power-to-X-facility? (consisting of an electrolyser with a capacity of at least 5 MW to produce hydrogen/ammonia/fertilizer and storage facilities) on Nevis. The GEF-7 project will be oriented towards an integrated resource roadmap that considers all types of renewables (and their interaction with diesel generators in the initial phases of the transition). The roadmap (output 1.2) will integrate the findings from the NICE project into their technical scenarios. Any additional work on sectorial</p>

Project	Objectives and relevance to this project	Intended coordination and synergies
		<p>policy and/or legislation will be coordinated between both projects.</p> <p>In the context of this project, on 9 December 2023, the Caribbean Development Bank approved USD\$17 million in financing through to St. Kitts and Nevis to pursue drilling of up to two geothermal production wells and one injection well.<a href="#">[1]</a></p>
<p>Building Resiliency in the Water Supply Sector in St. Kitts and Nevis</p> <p>GCF; 2022 - 2027 USD 38,300,000</p>	<p>The proposed project (currently at concept note stages) seeks to increase climate resilience and sustainability for the water supply sector in SKN. It is expected to develop a 7 MW renewable power plant to provide electricity to a water desalinization plant, selling surplus to the electric grid.</p>	<p>This GCF project is likely to enter after the GEF-7 project has started execution. While the former is more focused on water desalinization, the nexus between water and energy is of utmost importance for St. Kitts and Nevis as water potabilization is one of the main consumers of energy. Moreover, the GCF project intends to build a renewable power plant that is intended to feed back into the power grid, an element upon which the GEF-7 project will bring clarity.</p>
<p>Sustainable Energy Facility (SEF) for the Eastern Caribbean (GEF-5)</p> <p>GEF, IADB, CDB 2016 ? 2021; USD 3,013,698 (total grant for the entire region)</p>	<p>Reduce the dependency on fossil fuels by promoting the implementation of energy efficiency measures and renewable energy projects and solutions, including geothermal energy projects, as a way to reduce fossil fuel consumption and costs. This project has financed a series of energy audits in public buildings that are referred to throughout this proposal.</p>	<p>The audits funded by the SEF have already been completed and include measures in terms of energy efficiency but also in terms of micro-scale power generation. These results informed the pilots of the GEF-7 project. The GEF-7 project will implement the measures identified in the energy audits.</p>
<p>CDB storage</p> <p>CDB 2018 ? on-going USD 350,000 (region)</p>	<p>Grant to assist utilities and relevant stakeholders across the region to develop, plan and design energy storage and grid modernization solutions, which could accelerate the Caribbean's shift to clean energy.</p>	<p>Energy storage will be a critical technological input for the stabilization of the grid under the presence of variable renewable energies. Any studies resulting from the CDB funds will be available for consideration by the GEF-7 project.</p>



Project	Objectives and relevance to this project	Intended coordination and synergies
<p>CDB Street and Flood Light</p> <p>GSKN 2018 ? 2021; USD 5,792,000</p>	<p>GSKN requested financing from CDB to replace all of its High-Pressure Sodium (HPS) and Mercury Vapour (MV) street lights with high efficiency LED systems.</p>	<p>These measures will reduce energy consumption and are likely to have a demonstrative effect. The GEF-7 project will build upon the lessons learnt by the CDB lights replacement project.</p>
<p>Solar Carport Project For The Eastern Caribbean Central Bank In Basseterre, St. Kitts (Two phases of solar carports totalling 1.1 MW)</p> <p>Eastern Caribbean Central Bank (ECCB) 2018 ? 2021 Budget: n/a</p>	<p>This project will offset about half of the energy usage on the bank's headquarter in St. Kitts. The project is designed considering hurricane survivability (up to 180 mph winds) and corrosion protection. It is also expected to introduce energy efficiency measures for the entire compound, as the ECCB expects to achieve full carbon neutrality by 2022.</p>	<p>The project will generate clean electricity and is likely to have a demonstrative effect of climate-resilient energy infrastructure. The GEF-7 project will build upon the lessons learnt by the ECCB solar carport project.</p>
<p>Development of Integrated Resource and Resilience Plans (IRRPs)</p> <p>CCREEE 2021 ? on-going Budget: n/a</p>	<p>The Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) has partnered with the Governments of Belize, Guyana, Trinidad and Tobago, Saint Kitts and Nevis, and Jamaica to undertake the development of Integrated Resource and Resilience Plans (IRRPs).</p> <p>IRRPs are plans for how countries can supply their need for electricity, in the future. The plans will ensure reliable sources of power, minimize negative impacts on the environment and enhance the resilience of power systems to hazards and risks, while minimizing costs to consumers. Building resilience in this way guarantees energy security, as the Caribbean seeks to adapt to climate change and reduce greenhouse gas emissions.</p>	<p>The GEF-7 project will assess at least three alternative time horizons for the decarbonization of the electric grids of St. Kitts and Nevis. These assessments will be built on and formalized referring to the recommendations and results of the IRRP developed by the government supported by CCREEE. Based on the IRRP and scenarios, this GEF-7 project (under component 1, output 1.1) will identify additional ancillary capacity needed for grid frequency control and required grid distribution investment. The roadmap proposed under component 1, output 1.2 of this project is will also utilise the results of the IRRP.</p>

Project	Objectives and relevance to this project	Intended coordination and synergies
<p>Designing a Regional Renewable Energy Infrastructure Financing Facility (REIFF) in the Eastern Caribbean Currency Union (ECCU)</p> <p>Eastern Caribbean Central Bank (ECCB) 2022 ? on-going USD 250,000</p>	<p>The main objective of this TA is to develop the structure of a facility that will help attract private sector investments to accelerate RE development in the ECCU region for affordable, clean, and resilient energy. This work would build on ongoing work in the region on RE financing, TA for RE development, and Integrated Resilient Resource Planning (IRRP) that lays out investment plans for the power sector in individual countries. This work will be carried out in close collaboration with regional partners.</p>	<p>The GEF-7 project, which under output 3.3 will create a blended mechanism for the financing of renewable energy and energy efficiency measures that are aligned to the NEP (output 1.1) and the roadmap (output 1.2), aims to collaborate closely with the ECCB project, which will set up a facility to help attract private sector investments to accelerate RE development in the ECCU region.</p>

Project	Objectives and relevance to this project	Intended coordination and synergies
<p>Development of an Urban Resilience Plan as part of the GCF Readiness Proposal for St. Kitts and Nevis for Institutional Capacity and Coordination and Country Programming</p> <p>CDB 2019 ? on-going USD 590,000</p>	<p>Together with adding technical expertise within the NDA and among key sectors, this GCF Readiness proposal aims to facilitate the development of a new National Development Plan, inclusive of technical assistance in climate finance to minimize capacity constraints in the development and execution of climate change initiatives as well as the creation of an Urban Resilience Plan (URP) for Greater Basseterre. The URP responds to the pressure points of shelter, employment creation, food supply, water, waste disposal, energy, transport, health and social services in the city of Basseterre.</p>	<p>The URP proposes a variety of projects (43 in total) to address the environmental, social, infrastructural, economic, and institutional aspects of urban resilience for Basseterre. Under the ?Project 1.2 Strengthen or introduce legislative and regulatory changes? of the URP, an amendment of building regulations, code and guidelines (Act No. 7 of 2000) to enable zero carbon and hazard resistant new construction and retrofits are foreseen. Adoption of building codes will have an important impact in terms of energy efficiency (relevant for component 1, output 1.4).</p> <p>Furthermore, the URP ?Project 2.5 Program to Incentivize Disaster Resilient Housing? is an intervention for improving housing conditions to better withstand disasters. This intervention involves the introduction of a disaster resilient building code and relies on home improvement grants and concessionary loans tied to improving specific building components as part of a targeted retrofit program (relevant for component 2, output 2.1). The URP?s findings will inform the project GEF-7 project activities.</p>

Project	Objectives and relevance to this project	Intended coordination and synergies
<p>Operational Framework and Training Plan for Energy Units in St. Kitts and Nevis</p> <p>CDB 2021 Budget: n/a</p>	<p>The Government of Saint Kitts and Nevis, acting through its Ministry of Sustainable Development has received funding assistance from the Caribbean Development Bank (CDB) to develop an Operational Framework and Training Plan for the Energy Units in St. Kitts and Nevis. This operational framework comprises of: (i) The Energy Units mandates, core functions, and responsibilities; (ii) The recommended unit structure for each of St. Kitts and Nevis and how they relate to key policy units and stakeholders; (iii) staff positions, competencies and qualifications; (iv) job descriptions; (v) 3-Year training plan and technical assistance requirements; (vi) software costs; (vii) an indicative recurrent budget for personnel and software costs (3-years); (viii) a prioritised list of actions for implementation.</p>	<p>This assessment guides the development of an Operational Framework and Training Plan for the Energy Units of the Federation. The approach involved an assessment of the legislative and regulatory environment, an assessment of the government's human resource policy and framework for recruitment, and a needs analysis using stakeholder consultations. The assessment shows that there is a significant barrier in the lack of establishment of a Public Utilities Commission on each island.</p> <p>It is expected that the Federal Energy Commission (FEC), which will be created as part of this GEF-7 project (component 1, output 1.3), will build upon the support provided by the Caribbean Development Bank (CDB) to develop the Operational Framework and Training Plan to strengthen each island's energy units.</p>
<p>Public Procurement Reform in the Eastern Caribbean Project (regional).</p> <p>CDB 2018 ? on-going USD 700,000</p>	<p>This project aims at assisting with the establishment of modern procurement systems in the Organization of Eastern Caribbean States (OECS). Procurement processes that arise from this project will be applicable during the energy transition to renewables that will take place as a result of the proposal described on this PIF.</p>	<p>The procurement reform will further contribute to creating the enabling conditions needed to accelerate the introduction of renewable energies in the country.</p>

[1] <https://www.caribank.org/newsroom/news-and-events/cdb-approves-us17-million-geothermal-energy-development-nevis>.

## 7. Consistency with National Priorities

Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions from below:

NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, INDCs, etc.

UNFCCC Nationally Determined Contribution (NDC) towards the Paris Agreement. The project is aligned with St. Kitts and Nevis's Updated Nationally Determined Commitment (NDC as of October 2021) to the UNFCCC, through which the country notes that the energy and transport sectors are the primary sources of GHG emissions. The revised and strengthened NDC pledges a significantly more ambitious mitigation target of reducing economy-wide CO<sub>2</sub> emissions by 61% by 2030, compared to the base year 2010, conditional upon adequate access to resources including climate finance as well as capacity building support. This shall be achieved by switching to 100% renewable energy in electricity generation and increasing the share of electric vehicles in the vehicle fleet to at least 2%.<sup>[1]</sup>

UNFCCC national communication. The project is also consistent with St. Kitts and Nevis's second national communication to the UNFCCC (October 2015), which notes that the energy sector is one of the key emitting sectors, primarily through transport and the burning of gas and diesel oils for electricity generation.<sup>[2]</sup>

National Poverty Reduction Strategy and the National Adaption Strategy. Both of these documents expired in 2016 and 2017 respectively. However, the Government of St. Kitts and Nevis continues to advance a people-centric development agenda which aims to ensure socio-economic sustainability. This is evident through initiatives and structures which have facilitated positive outcomes such as but not limited to a strong education, health and social protection apparatus. This project is consistent with the overall national policy priorities established by the Government of St. Kitts and Nevis (GSKN). While aligned with the overall goal of 100% renewable grid in the present version of the National Energy, this project aims to update the National Energy Policy (NEP) and to prepare a feasible roadmap that identifies the steps towards its materialization. In fact, this project will ensure that the NEP and the NDC are perfectly aligned. The latter are currently under discussion with the support of IRENA. The development goals achieved or identified prior to and during the implementation of this project and other ongoing work will be incorporated into the documentation, operational procedures and mechanisms which result from this GEF initiative.

National Climate Change Policy. As stated in its National Climate Change Policy (2017), St. Kitts and Nevis strives to be at the forefront with respect climate resilient development in the Caribbean region. The Government of St. Kitts and Nevis intends to foster and guide a national process of addressing the short-, medium-, and long-term effects of climate change at the individual, community and national level. The Government of St. Kitts and Nevis will pursue a low carbon development strategy as well as build and strengthen climate resilience in its national development framework across all sectors. The proposed project represents an ambitious step forward in this direction for the sector that contributes the most to the country's GHG emissions.

National Energy Policy: The current National Energy Policy (NEP, 2014) in St. Kitts and Nevis established the goal of a 100% renewable-based electricity grid for the year 2020. The project will update the policy, providing a revised target along with the pathways to achieving it.

Saint Kitts and Nevis National Gender Equality Policy and Action Plan (GEPAP, 2021) is the Government's commitment to mainstream gender. The Policy provides a platform for gender equality in all sectors and areas of social, economic, political, and environmental development so that all citizens and residents can reap the benefits of inclusive, sustainable development. The project's own Gender Action Plan (for the project execution phase) and the Gender Strategy (for the implementation of the roadmap, including after the end of the project) will be aligned to the national policy.

UN Sustainable Development Cooperation Framework<sup>[3]</sup>. The project is also consistent with the United Nations Multi-Country Sustainable Development Framework in the Caribbean (UN MSDf / UNDAF), priority area 4: A Sustainable and Resilient Caribbean. This priority area focuses on UN system support to strengthen institutional and community resilience at both regional and national levels, in terms of natural resources management; the protection and sustainable use of terrestrial, coastal and marine ecosystems; renewable energy systems; and inclusive and sustainable societies. It is also based on an integrated approach to the sustainable use and management of the natural resources and ecosystems.

#### United Nations Resident Coordination Office:

The CTA will annually update the Resident Coordinator of the Multi-Country Office of Barbados and Eastern Caribbean (OECS) on project activities and progresses, and invite that person to participate in project events.

UNFCCC technology needs assessment. Finally, the proposed project tackles the recommendations in the latest (2007) Technology Needs Assessment (TNA), which highlights technologies and barriers that are addressed by this proposal. These include the appraisal of small-scale renewables and the strengthening of technical capacities to support these technologies. UNEP and UNEP DTU, with financing from the Global Environment Facility, are implementing a fourth phase of Technology Needs Assessments (TNAs). The fourth phase of the project will support seventeen Least Developed Countries (LDCs) and Small Island Developing States, including St. Kitts and Nevis, in carrying out new or improved TNAs, from 2020 to 2023. UNEP as the Implementing Agency of that project will ensure coordination with this on-going initiative.

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[1] Government of St. Kitts and Nevis (2021): *Updated Nationally Determined Contribution ? Communicated to the UNFCCC October 2021*, p. 2. URL: [https://unfccc.int/sites/default/files/NDC/2022-06/St.%20Kitts%20and%20Nevis%20Revised%20NDC\\_Updated.pdf](https://unfccc.int/sites/default/files/NDC/2022-06/St.%20Kitts%20and%20Nevis%20Revised%20NDC_Updated.pdf)

[2] <https://unfccc.int/sites/default/files/resource/Knanc2.pdf>.

[3] Formerly UN Development Assistance Framework (UNDAF)

## **8. Knowledge Management**

**Elaborate the "Knowledge Management Approach" for the project, including a budget, key deliverables and a timeline, and explain how it will contribute to the project's overall impact.**

#### Overview of existing lessons and best practice that inform project concept

This project builds upon experiences, lessons learned and good practices that UNEP garnered during its experience as implementing agency for other GEF mitigation projects in the region, including a GEF-5 energy efficiency and renewable energy project with Antigua and Barbuda, Belize, Grenada, St. Lucia and St. Vincent and the Grenadines, and a GEF-5 energy efficiency and renewable energy project in Grenada. It has also drawn upon experiences in developing and executing GEF-7 electric mobility projects in Antigua and Barbuda, Grenada and St. Lucia. UNEP is also currently implementing a GEF-funded technology needs

assessment project in St. Kitts and Nevis. These experiences, lessons learned and good practices include the importance of:

- Having a local focal point during project development for gathering information and facilitating stakeholder participation in project design and implementation;
- Having a project champion from a national ministry to lead the project;
- Undertaking extensive stakeholder consultations to ensure the project incorporates views of diverse stakeholders;
- Having an understanding of country budgetary processes as a way of facilitating greater public involvement in the project pilots;
- Developing a deep understanding of the local challenges for ensuring project design takes into account these potential risks;
- Developing a nuanced understanding of the potential economic and social impacts of possible project regulatory changes, as basis for understanding what exactly is ambitious and innovative in a small island developing state.

#### Plans to learn from relevant projects, programs, initiatives and evaluations

The project will incorporate lessons learned, experiences and good practices from other initiatives through its steering committee and the project operations unit. These entities contain all essential stakeholders who are leading on other relevant initiatives.

#### Proposed processes to capture, assess and document info, lessons, best practice and expertise generated during implementation

The capturing and documenting of information will primarily be undertaken through output 1.5, through the:

- Detailed design of a knowledge management system for the electricity sector;
- Creation of an online platform required for the knowledge management system;
- Holding of training sessions for the operation of the knowledge management mechanism.

#### Proposed tools and methods for knowledge exchange, learning& collaboration

The primary tools for knowledge exchange, learning and collaboration will be:

- Output 1.5: A The Government of St. Kitts and Nevis develops a strengthened knowledge management and monitoring systems for tracking the implementation of the National Energy Policy, roadmap;
- Output 1.6: St. Kitts and Nevis government representatives and other key stakeholders demonstrate increased capacity on gender-sensitive implementation of the national energy policy, roadmap;
- Output 3.4: Deliverable 3.4.1: Design of a gender-sensitive multi-stakeholder engagement strategy and a funder communication campaign.

#### Proposed knowledge outputs to be produced and shared with stakeholders

Knowledge management will be addressed and achieved through several key project outputs: training and capacity development materials and activities, and energy and emission-related data collection for planning and MRV.

- Training and capacity development materials are included in Component 1 (output 1.6)

- Data collection, analysis and recommendations are included in Component 1 (through the development of the plans and regulations), Component 2 (measurement of the pilots) and 3 (overview of the utility service model, and financial mechanism) etc.

Knowledge management is undertaken mainly by the project management unit through supporting actions:

- The data management system, as established under Component 1 (providing access to project deliverables through a variety of channels such as policy briefs, training materials, summaries of workshops, reports, strategies and other knowledge products etc.).

#### Further information on the knowledge management system to be developed under output 1.5

The current lack of a repository of sectoral information (both in terms of activity data but also on on-going initiatives), as well as systematic processes and procedures to identify, capture, store, create, update, represent, and distribute knowledge for public and private decision-making and planning, awareness and learning across and beyond the energy sector, has been identified among the main barriers that are relevant for this project (see Figure 2 in the barrier analysis).

The Knowledge Management (KM) approach of the project will be tackled through a dedicated output (output 1.5). Data will be an integral part of the roadmap, as plans are data-driven and data-intensive, requiring comprehensive technical data on electrical demand and demand-side matters, the existing grid infrastructure, electrical supply assets and their performance. In addition to the technical energy system dataset, information on policy, social and economic statistics and hazard and vulnerability data are also needed to align the various stakeholders that are involved in the transition to renewables, to provide the right market signals and to keep track of the progress. Thus, a robust information and knowledge management platform is paramount to the project's objective to accelerate St. Kitts and Nevis' transition towards a zero-carbon grid.

The KM and monitoring system to be created by this project seeks to create an information repository that is regularly updated and useful to understand, communicate and steer the energy transition to a 100% renewable grid in St. Kitts and Nevis. It is envisioned that the successful implementation of this framework within the life span of the project will result in a solid foundation for the extended dissemination and exchange of climate and energy knowledge in St. Kitts and Nevis, contributing directly to the objectives in the relevant national policies (i.e. the NEP and the National Climate Change Policy). The KM approach is thus expected to meet the initial needs of the project as a temporary project/organizational structure, but with KM investments, structure, processes and systems, which will continue to be functional beyond the life of the project, with clear capacity building and institutionalization across St. Kitts and Nevis. Moreover, the KM system will play an essential part in the replication of the pilots, systematically collecting and disseminating lessons learned to relevant stakeholders, identifying what works, what to avoid, potential savings in terms of electricity and emissions (and potential costs), and gains in resilience and autonomy from the grid. It will also play a key role in supporting the integration of renewables in the grid, collecting and making available technical information for managing the transition, and allowing to transparently document and disseminate ways in which residential and commercial users can bring in renewable capacity without



compromising the stability of the grid. Thus, the knowledge management system will provide transparency and signal to the wider public the price and technical conditions to inform their investment decisions.

The Knowledge Management System for the project will be part of the data management system (Output 1.5.). Through the project, the data collecting entity will have:

- Constant communication with as many of the data sources as possible, a capacity that will be developed throughout the project (supported by the public engagement and communication campaign, output 3.4).
- Technical capacity to clean the data, check for validity, and fill in gaps in fundamental data.
- Identified resources to host large data sets in an online, searchable format.

#### Key knowledge management elements of the project

The elements in this project that are relevant for the knowledge management include the following:

**Table 23. Pillars of the KM strategy for the proposed project / KM budget**

Description	Output and deliverable	Envisaged timeframe	Budget USD
The Government of St. Kitts and Nevis develops a gender-sensitive knowledge management and monitoring systems for tracking the implementation of the National Energy Policy, roadmap, made available for use by policy makers and key stakeholders	Output 1.5	Month 6 to 17	128,000
St. Kitts and Nevis government representatives and other key stakeholders demonstrate increased capacity on gender-sensitive implementation of the national energy policy, roadmap and related investments.	Output 1.6	Month 18 to 30	82,000
The energy units and electric utilities of St. Kitts and Nevis demonstrate awareness of the viability of an innovative integrated utility services model. KM for the project's pilot, including: <ul style="list-style-type: none"> <li>- Pilot building monitoring design</li> <li>- Pilot building monitoring reports</li> <li>- Integrated utility service model simulation report</li> </ul>	Output 2.2	Month 14 to 22  (annual monitoring reports in month 32 and month 42)	91,000
Officials in governmental, technical academic and private institutions demonstrate increased capacity in the development, assessment and appraisal of bankable renewable energy and energy efficiency projects aligned with the National Energy Policy	Output 3.1	Month 19 to 33	152,000

Description	Output and deliverable	Envisaged timeframe	Budget USD
The electric utilities SKELEC and NEVLEC have access to tailored and innovative integrated utility service models for accelerating the scale-up of energy efficient and renewable energy generation measures	Output 3.2	Month 7 to 34	178,000
Regional and international investors demonstrate increased awareness of the business opportunities in the renewable and efficient energy sector in St. Kitts and Nevis.	Output 3.4	Month 6 to 18 and month 34 to 44	169,547
<b>Total</b>			<b>800,547</b>

The exact design, architecture and tools of the Knowledge Management and Monitoring System will be defined as part of the project itself (output 1.5). Potential KM solutions that will be considered in the context of this project include intranet-based systems, content management systems, BI tools, knowledge map systems and knowledge & information portals. Each of these different tools will be tailored to the needs (and capacities) of the different stakeholders and their roles in the energy sector (utility technicians, government officials, academics, civil society, banks, companies, etc.). Activities will include the development of standardized energy data collection, standardized definitions of common terminologies to be used with respect to the energy transition, KM Guidelines and Communication Guidelines for training key personnel in the use, a repository of existing literature and reports, the systematization of experiences and lessons learned as a result of past and present interventions; implement national and regional institutional partnerships through technical exchange programs, internships, and collaborative research agreements, and a Memorandum of Understanding for the establishment of a National KM Partnership Network across key institutions of the country. The project also will support regional and south-south cooperation by assisting the GSKN in participating in national, regional and global knowledge exchanges on the topic of energy transition.

**Learning from experiences:** As a platform for knowledge transfer, the data management system (Output 1.5) will be used. It will be investigated if the system can be merged and integrated in the interactive website of the NDA (to be developed under GCF Readiness in 2023) used as a knowledge sharing platform that will house all climate change information and data.

**Results assessment and documentation:** The results of the pilot activities will be captured in knowledge products, e.g., fact sheets (see Deliverables for Output 2.2). The fact sheets will present the lessons learnt and main technical, environmental and economic characteristics. The sheets will be informed by project documentation and the first performance reports summarizing the results in terms of energy performance, GHG mitigation and sustainable development impact, if available in the initial phase already.

**Outreach and dissemination to stakeholders:** The knowledge products focus on sharing information and results of the project and on sustainable energy solutions to relevant stakeholders and the public. This will be done as described through training sessions, workshops and multi-stakeholder meetings tailored to the

needs of each stakeholder (utility technicians, government officials, academics, civil society, banks, companies, etc.). Output 3.4, on engaging project stakeholders, will play a key role in disseminating the project's primary knowledge products.

**Gender mainstreaming:** All training materials and knowledge management activities will be gender mainstreamed. This includes integration of gender dimensions into publications, for instance presenting gender-disaggregated data, gender-energy nexus theory, gender sensitive language in publications, photos showing both women and men, and avoid presenting stereotypes, as well as assuring that women, men and the youth have access to and benefit from the knowledge created.

## **9. Monitoring and Evaluation**

### **Describe the budgeted M and E plan**

In line with the GEF Evaluation requirements and UNEP's Evaluation Policy, all GEF funded projects are subject to a performance assessment when they reach operational completion. This performance assessment will be either an independent Terminal Evaluation or a management-led Terminal Review. In case a Review is required, the UNEP Evaluation Office will provide tools, templates, and guidelines to support the Review consultant. For all Terminal Reviews, the UNEP Evaluation Office will perform a quality assessment of the Terminal Review report and validate the Review's performance ratings. This quality assessment will be attached as an Annex to the Terminal Review report, validated performance ratings will be captured in the main report.

If an independent Terminal Evaluation (TE) of the project is required, the Evaluation Office will be responsible for the entire evaluation process and will liaise with the Task Manager and the project implementing partners at key points during the evaluation. The TE will provide an independent assessment of project performance (in terms of relevance, effectiveness and efficiency), and determine the likelihood of impact and sustainability. It will have two primary purposes: (i) to provide evidence of results to meet accountability requirements, and (ii) to promote learning, feedback, and knowledge sharing through results and lessons learned among UNEP staff and implementing partners. The direct costs of the evaluation (or the management-led review) will be charged against the project evaluation budget. The TE will typically be initiated after the project's operational completion. If a follow-on phase of the project is envisaged, the timing of the evaluation will be discussed with the Evaluation Office in relation to the submission of the follow-on proposal.

The draft TE report will be sent by the Evaluation Office to project stakeholders for comment. Formal comments on the report will be shared by the Evaluation Office in an open and transparent manner. The project performance will be assessed against standard evaluation criteria using a six-point rating scheme. The final determination of project ratings will be made by the Evaluation Office when the report is finalized. The evaluation report will be publicly disclosed and will be followed by a recommendation compliance process. The evaluation recommendations will be entered into a Recommendations Implementation Plan template by the Evaluation Office. Formal submission of the completed Recommendations Implementation Plan by the Chief Technical Advisor is required within one month of its delivery to the project team. The Evaluation Office will monitor compliance with this plan every six months for a total period of 12 months from the finalisation of the Recommendations Implementation Plan. The compliance performance against

the recommendations is then reported to senior management on a six-monthly basis and to member States in the Biennial Evaluation Synthesis Report.

Monitoring and Evaluation (M&E) activities and related costs are presented in the costed M&E Plan (see below) and are fully integrated in the overall project budget. The project budget for M&E activities is USD 70,000.

**Table 24. M&E activities and related costs**

M&E activity	Responsible party(ies)	GEF budget	Timeframe
Inception Report	CTA	As part of CTA budget	1 month after project inception meeting
Measurement of project progress and performance indicators	CTA	As part of CTA budget	Annually
End-point measurement of project outcome indicators, GEF Core indicators	CTA	As part of CTA budget	End Point
Half-yearly progress reports	CTA	As part of CTA budget	Within 1 month of the end of reporting period i.e. on or before 31 January
Project Steering Committee (PSC) meetings	CTA, National Project Director	Co-financed by Ministry	Once a year minimum
Reports of PSC meetings	CTA	As part of CTA budget	Annually
Project Implementation Review (PIR) report	CTA	As part of CTA budget	Annually, part of reporting routine
Monitoring visits to field sites	CTA	As part of CTA budget	As appropriate
Mid-Term Review / Evaluation	UNEP	USD 30,000	Typically initiated after the project's first half of operational duration
Terminal Review / Evaluation	UNEP	USD 30,000	Typically initiated after the project's operational completion

M&E activity	Responsible party(ies)	GEF budget	Timeframe
Project Operational Completion Report	CTA	As part of CTA budget	Within 2 months of the project completion date
Co-financing report (including supporting evidence for in-kind co-finance)	CTA	As part of CTA budget	Within 1 month of the PIR reporting period, i.e. on or before 31 July
Publication of lessons learnt and other project documents	CTA	As part of CTA budget	Annually, part of half-yearly reports & Project Final Report
CTA budget for M&E	CTA	USD 10,000	Throughout the project duration
Total		USD 70,000	

## 10. Benefits

**Describe the socioeconomic benefits to be delivered by the project at the national and local levels, as appropriate. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCE/SCCF)?**

According to the "Global Energy Transformation: Roadmap to 2050" report by the International Renewable Energy Agency (IRENA)[1], the transition to renewable energy will significantly improve the global socio-economic footprint of the energy system. The report forecasted that globally by 2050, the decarbonization of the energy system will generate a 15% increase in welfare, one percent increase in gross domestic product (GDP), and 0.1% in employment. Impacts on specific economies may differ based on potentials, national endowment, and current economic output. In St. Kitts and Nevis, a tourism-based economy that relies on petroleum imports, a positive impact can be expected for the balance of payments and the GDP if the tourism sector capitalizes the benefits of a country with 100% green electricity. Moreover, gains in welfare from the energy transition will further emphasize the impact in GDP in the long run.

### Social benefits

In terms of social benefits, through the introduction and expansion of sustainable energy sources, the project will contribute to St. Kitts and Nevis' transition to a low-carbon environment, reducing air pollution and CO<sub>2</sub> emissions and thus improving air quality for the citizens of the country. This has the co-benefit of improving citizen's health and lowering associated health care costs and potential death rates. For employment, the energy transition as the one proposed in this project is also expected to generate positive

impact in almost all regions and countries, although it will fluctuate over time. The expected impact of the measures to be proposed by this project will be assessed in a dedicated deliverable, where redistributive aspects of the transition will be considered (see output 1.2).

#### Economic benefits

In terms of economic benefits, Saint Kitts and Nevis currently spends around 5% of its GDP on fuel imports annually, and it is highly dependent on energy imports with the risks of high volatility and external price shocks (as currently seen in 2022 due to the war in Ukraine). St. Kitts and Nevis have an abundance of renewable energy resources. Investing into renewable energy sources opens new opportunities for the local economy and job seekers. Although the introduction of renewable energy technologies and energy efficiency measures requires imports and thus also substantial infrastructure investments, in the medium- to long-term the transition will make the country less dependent on global oil prices and external price fluctuations and crises. Over time this will support the fiscal health of the Government of Saint Kitts and Nevis, as it won't have to provide such significant fuel subsidies. A reduced dependency on fossil fuel imports will slowly reduce investment uncertainties, which in turn should lead to a more favourable investment environment, lowering interest rates and expected short-term returns, and making long-term investments more attractive. In addition, the transition to clean energy is likely to create a new market for electro-mobility (and the associated charging infrastructure) in Saint Kitts and Nevis.

#### Environmental benefits

In terms of environmental benefits, use of fossil fuel-based energy generation is reduced and shifts to sustainable energy solutions, including renewable energies, which decreases the demand for fossil fuels, mainly diesel and fuel oil in St. Kitts and Nevis. Eventually, this leads to a reduced environmental footprint of electricity sector, which is expressed in mitigated GHG emissions (tCO<sub>2</sub>e/a) and renewable energy capacity installed (MW). At the same time a shift to sustainable energy solutions furthers resource efficiency and circular economy practices. This includes reduced levels of key pollution, e.g., air pollutants stemming from combusting diesel and fuel oil such as SO<sub>2</sub>, PM, CO, and VOCs, due to more efficient use of resources, which can have co-benefits for residents' health and the preservation and protection of the local biodiversity.

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[1] IRENA, *Global energy transformation: A roadmap to 2050* (2019). Available [here](#).

## **11. Environmental and Social Safeguard (ESS) Risks**

Provide information on the identified environmental and social risks and potential impacts associated with the project/program based on your organization's ESS systems and procedures

**Overall Project/Program Risk Classification\***

PIF	CEO Endorsement/Approval	MTR	TE
Medium/Moderate	Low		

#### Measures to address identified risks and impacts

Elaborate on the types and risk classifications/ratings of any identified environmental and social risks and impacts (considering the GEF ESS Minimum Standards) and any measures undertaken as well as planned management measures to address these risks during implementation.

### Section 1: Project Overview

<b>Identification</b>	10856
Project Title	<i>Achieving a rapid decarbonization of the energy sector in Saint Kitts and Nevis</i>
Managing Division	<i>Economy division</i>
<b>Type/Location</b>	<i>National</i>
Region	<i>Latin America and the Caribbean</i>
List Countries	<i>St. Kitts and Nevis</i>
<b>Project Description</b>	<p><i>The objective of this project is to accelerate national decarbonization through a transition towards 100% renewable electricity generation and 100% high energy efficiency public buildings in St. Kitts and Nevis. Essentially, this project aims to support St. Kitts and Nevis to become the first Caribbean country to be net-zero in terms of its electricity grid.</i></p> <p><i>The GEF incremental logic is that through GEF financing St. Kitts and Nevis will be able to build upon existing investments and studies to address such barriers to decarbonization and achieve its ambitious climate targets. The project is organized into three components:</i></p> <ul style="list-style-type: none"> <li><i>- Component 1: Policy and institutional arrangements for decarbonizing the electricity sector and enhancing energy efficiency of public <u>buildings</u></i></li> <li><i>- Component 2: Demonstration of energy efficient buildings, grid-integrated renewable electricity generation and innovative scale-up models</i></li> <li><i>- Component 3: Scaling up financing for 100% renewable energy and energy efficient measures</i></li> </ul>
<b>Relevant Subprogrammes</b>	<i>Climate Change Mitigation</i>
<b>Estimated duration of project</b>	<i>48 months</i>
<b>Estimated cost of the project</b>	<i>3,318,995</i>
<b>Name of the UNEP project manager responsible</b>	<i>Asher Lessels</i>
<b>Funding Source(s)</b>	<i>GEF Trust Fund</i>
<b>Executing/Implementing partner(s)</b>	<i>Ministry of Environment, Climate Action and Constituency Empowerment (within the Ministries of Sustainable Development, Environment, Climate Action and Constituency Empowerment)</i>
<b>SRIF submission version</b>	<i>1</i>
<b>Safeguard-related reports prepared so far</b>  <i>(Please attach the documents or provide the hyperlinks)</i>	<ul style="list-style-type: none"> <li>• <i>Feasibility report [ ]</i></li> <li>• <i>Gender Action Plan [X ]</i></li> <li>• <i>Stakeholder Engagement Plan [ X ]</i></li> <li>• <i>Safeguard risk assessment or impact assessment [ ]</i></li> <li>• <i>ES Management Plan or Framework [ ]</i></li> <li>• <i>Indigenous Peoples Plan [ ]</i></li> <li>• <i>Cultural Heritage Plan [ ]</i></li> <li>• <i>Others</i></li> </ul>



## Section 2: Safeguards Risk Summary

### A. Summary of the Safeguards Risk Triggered

Safeguard Standards Triggered by the Project	Impact of Risk[1] (1-5)	Probability of Risk (1-5)	Significance of Risk (L, M, H)  <i>Please refer to the matrix below</i>
SS 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management	1	1	L
SS 2: Climate Change and Disaster Risks	2	2	L
SS 3: Pollution Prevention and Resource Efficiency	2	2	L
SS 4: Community Health, Safety and Security	1	1	L
SS 5: Cultural Heritage	1	1	L
SS 6: Displacement and Involuntary Resettlement	1	1	L
SS 7: Indigenous Peoples	1	1	L
SS 8: Labor and working conditions	2	2	L

### B. ESS Risk Level[2]

Refer to the UNEP ESSF (Chapter IV) and the UNEP's ESSF Guidelines.

Low risk ☒

Moderate risk ☐

High risk ☐

Additional information required ☐

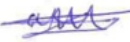
Impact ↑	5	H	H	H	H	H
	4	M	M	H	H	H
	3	L	M	M	M	M
	2	L	L	M	M	M
	1	L	L	L	L	L
	#	1	2	3	4	5
Probability						

### C. Development of ESS Review Note and Screening Decision

**Prepared by**

Name: Asher Lessels Date: 21 September 2022

Name: Alexandra Mutungi Date: 07 October 2022

Signature 

Cleared<sup>151</sup>

**D. Safeguard Review Summary (by the safeguard team)**

This is a low-risk project. However, UNEP ESSF guiding principles-- resilience and sustainability; human rights, gender equality and women empowerment, accountability and leave no one behind-- are still applicable for low-risk projects. Closely monitor the risk areas identified under safeguard standard 2,3 and 8 and apply a precautionary and adaptive management approach.

**E. Safeguard Recommendations (by the safeguard team)**

- No specific safeguard action required ☐
- Take Good Practice approach<sup>152</sup> ☒
- Carry out further assessments (e.g., site visits, experts' inputs, consult affected communities, etc.) ☐
- Carry out impact assessments (by relevant experts) in the risk areas and develop management framework/plan ☐
- Consult Safeguards Advisor early during the full project development phase ☐
- Other \_\_\_\_\_

**Section 3: Safeguard Risk Checklist**

Screening checklist	Y/N/ Maybe	Justification for the response (please provide answers to each question)
Guiding Principles (these questions should be considered during the project development phase)		

GP1 Has the project analyzed and stated those who are interested and may be affected positively or negatively around the project activities, approaches or results?	Y	The project document includes an estimate of project beneficiaries, disaggregated by gender.
GP2 Has the project identified and engaged vulnerable, marginalized people, including disabled people, through the informed, inclusive, transparent and equal manner on potential positive or negative implication of the proposed approach and their roles in the project implementation?	Y	The project considered the impacts of transitioning to renewable energies on vulnerable people.
GP3 Have local communities or individuals raised human rights or gender equality concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	N	No concerns were raised in stakeholder consultations undertaken. A grievance process has been established for the project implementation phase.
GP4 Does the proposed project consider gender-balanced representation in the design and implementation?	Y	Yes. The project includes a Gender Analysis and a Gender Action Plan.
GP5 Did the proposed project analyze relevant gender issues and develop a gender responsive project approach?	Y	Yes. Note the comment above.
GP6 Does the project include a project-specific grievance redress mechanism? If yes, state the specific location of such information.	Y	See output 3.4, deliverable D3.4.1
GP7 Will or did the project disclose project information, including the safeguard documents? If yes, please list all the webpages where the information is (or will be) disclosed.	Y	Yes. As this is a GEF project, all the project documents will be publicly available on the GEF website ( <a href="https://www.thegef.org/projects">https://www.thegef.org/projects</a> ) as the UNEP website ( <a href="https://open.unep.org/">https://open.unep.org/</a> )
GP8 Were the stakeholders (including affected communities) informed of the projects and grievance redress mechanism? If yes, describe how they were informed.	Y	During project meetings and workshops (informing of the government officials and key stakeholders).
GP9 Does the project consider potential negative impacts from short-term net gain to the local communities or countries at the risk of generating long-term social or economic burden?[5]	Y	Little to no potential negative impacts from short-term net gain are anticipated. It is more the opposite ? short term negative impacts due to increased energy and fuel prices. To mitigate this there will be a dedicated output on community engagement, and also studies on socio-economic impacts, to ensure a just transition (deliverables 1.1.2, 1.1.3 and 3.4.1).
GP10 Does the project consider potential partial economic benefits while excluding marginalized or vulnerable groups, including women in poverty?	Y	See previous answer.
<b>Safeguard Standard 1: Biodiversity, Ecosystems and Sustainable Natural Resource Management</b>		
<i>Would the project potentially involve or lead to:</i>		

1.1 conversion or degradation of habitats (including modified habitat, natural habitat and critical natural habitat), or losses and threats to biodiversity and/or ecosystems and ecosystem services?	N	Not anticipated.
1.2 adverse impacts specifically to habitats that are legally protected, officially proposed for protection, or recognized as protected by traditional local communities and/or authoritative sources (e.g. National Park, Nature Conservancy, Indigenous Community Conserved Area, (ICCA); etc.)?	N	Not anticipated.
1.3 conversion or degradation of habitats that are identified by authoritative sources for their high conservation and biodiversity value?	N	Not anticipated.
1.4 activities that are not legally permitted or are inconsistent with any officially recognized management plans for the area?	N	Not anticipated.
1.5 risks to endangered species (e.g. reduction, encroachment on habitat)?	N	Not anticipated.
1.6 activities that may result in soil erosion, deterioration and/or land degradation?	N	Not anticipated.
1.7 reduced quality or quantity of ground water or water in rivers, ponds, lakes, other wetlands?	N	Not anticipated.
1.8 reforestation, plantation development and/or forest harvesting?	N	Not anticipated.
1.9 support for agricultural production, animal/fish production and harvesting	N	Not anticipated.
1.10 introduction or utilization of any invasive alien species of flora and fauna, whether accidental or intentional?	N	Not anticipated.
1.11 handling or utilization of genetically modified organisms?	N	Not anticipated.
1.12 collection and utilization of genetic resources?	N	Not anticipated.
<b>Safeguard Standard 2: Climate Change and Disaster Risks</b>		
<i>Would the project potentially involve or lead to:</i>		
2.1 improving resilience against potential climate change impact beyond the project intervention period?	Y	The project promotes a scale up of renewable energy, reducing dependency on fossil fuel imports, whose utilization and shipments may be affected by climate impacts.

2.2 areas that are now or are projected to be subject to natural hazards such as extreme temperatures, earthquakes, extreme precipitation and flooding, landslides, droughts, severe winds, sea level rise, storm surges, tsunami or volcanic eruptions in the next 30 years?	Y	St. Kitts and Nevis is a small island developing state which annually experiences severe weather conditions (severe winds, hurricanes, storm surges). In Component 2, in locating the energy efficiency and renewable energy facilities in public buildings, climate and natural disaster factors will be factored in to minimize potential damages from hurricanes, storms, heatwave, among others.
2.3 outputs and outcomes sensitive or vulnerable to potential impacts of climate change (e.g. changes in precipitation, temperature, salinity, extreme events)?	Maybe	While this risk is beyond the control of the project, careful project planning with buffer times will be exercised to help mitigate delays due to unexpected climate events.
2.4 local communities vulnerable to the impacts of climate change and disaster risks (e.g. considering level of exposure and adaptive capacity)?	N	N/A.
2.5 increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	N	The project seeks to mitigate GHG emissions through the promotion of energy efficiency measures and renewable energies.
2.6 Carbon sequestration and reduction of greenhouse emissions, resource-efficient and low carbon development, other measures for mitigating climate change	Y	The project will lead to direct and indirect GHG emissions reduction through the promotion of sustainable energy solutions (energy efficiency and renewable energies)
<b>Safeguard Standard 3: Pollution Prevention and Resource Efficiency</b>		
<i>Would the project potentially involve or lead to:</i>		
3.1 the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	N	The proposed project seeks to improve air quality through sustainable energy solutions reducing the combustion of fossil fuels in diesel gen-sets.
3.2 the generation of waste (both hazardous and non-hazardous)?	Y	To address this issue, the activities to be undertaken under project Component 2 will include the development of a plan for effective waste disposal for any waste from the pilots.
3.3 the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	Y	To address this issue, the activities to be undertaken under project Component 2 will include the development of a plan for effective waste disposal for any waste from the pilots.
3.4 the use of chemicals or materials subject to international bans or phase-outs? (e.g. DDT, PCBs and other chemicals listed in international conventions such as the <a href="#">Montreal Protocol</a> , <a href="#">Minamata Convention</a> , <a href="#">Basel Convention</a> , <a href="#">Rotterdam Convention</a> , <a href="#">Stockholm Convention</a> )	N	Not anticipated.
3.5 the application of pesticides or fertilizers that may have a negative effect on the environment (including non-target species) or human health?	N	Not anticipated.

3.6 significant consumption of energy, water, or other material inputs?	N	The project seeks to reduce fossil energy consumption through the promotion of energy efficiency measures and renewable energy sources.
<b>Safeguard Standard 4: Community Health, Safety and Security</b>		
<i>Would the project potentially involve or lead to:</i>		
4.1 the design, construction, operation and/or decommissioning of structural elements such as new buildings or structures (including those accessed by the public)?	N	Not anticipated. Renewable energies and energy efficiency measures are integrated in existing public buildings under the pilots.
4.2 air pollution, noise, vibration, traffic, physical hazards, water runoff?	N	Not anticipated. Rather, the proposed project seeks to improve air quality through sustainable energy promotion.
4.3 exposure to water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable or noncommunicable diseases?	N	Not anticipated.
4.4 adverse impacts on natural resources and/or ecosystem services relevant to the communities? health and safety (e.g. food, surface water purification, natural buffers from flooding)?	N	Not anticipated.
4.5 transport, storage use and/or disposal of hazardous or dangerous materials (e.g. fuel, explosives, other chemicals that may cause an emergency event)?	N	Not anticipated.
4.6 engagement of security personnel to support project activities (e.g. protection of property or personnel, patrolling of protected areas)?	N	N/A
4.7 an influx of workers to the project area or security personnel (e.g. police, military, other)?	N	Not anticipated.
<b>Safeguard Standard 5: Cultural Heritage</b>		
<i>Would the project potentially involve or lead to:</i>		
5.1 activities adjacent to or within a Cultural Heritage site?	N	Not anticipated.
5.2 adverse impacts to sites, structures or objects with historical, cultural, artistic, traditional or religious values or to intangible forms of cultural heritage (e.g. knowledge, innovations, practices)?	N	Not anticipated.
5.3 utilization of Cultural Heritage for commercial or other purposes (e.g. use of objects, practices, traditional knowledge, tourism)?	N	Not anticipated.

5.4 alterations to landscapes and natural features with cultural significance?	N	Not anticipated.
5.5 significant land clearing, demolitions, excavations, flooding?	N	Not anticipated.
<b>5.6 identification and protection of cultural heritage sites or intangible forms of cultural heritage</b>		
<b>Safeguard Standard 6: Displacement and Involuntary Resettlement</b>		
<i>Would the project potentially involve or lead to:</i>		
6.1 full or partial physical displacement or relocation of people (whether temporary or permanent)?	N	Not anticipated.
6.2 economic displacement (e.g. loss of assets or access to assets affecting for example crops, businesses, income generation sources)?	N	Not anticipated.
6.2 involuntary restrictions on land/water use that deny a community the use of resources to which they have traditional or recognizable use rights?	N	Not anticipated.
6.3 risk of forced evictions?	N	Not anticipated.
6.4 changes in land tenure arrangements, including communal and/or customary/traditional land tenure patterns (including temporary/permanent loss of land)?	N	Not anticipated.
<b>Safeguard Standard 7: Indigenous Peoples</b>		
<i>Would the project potentially involve or lead to:</i>		
7.1 areas where indigenous peoples are present or uncontacted or isolated indigenous peoples inhabit or where it is believed these peoples may inhabit?	N	St. Kitts and Nevis does not have indigenous peoples. <a href="https://worldpopulationreview.com/countries/saint-kitts-and-nevis-population">https://worldpopulationreview.com/countries/saint-kitts-and-nevis-population</a>
7.2 activities located on lands and territories claimed by indigenous peoples?	N	See response to 7.1.
7.3 impacts to the human rights of indigenous peoples or to the lands, territories and resources claimed by them?	N	See response to 7.1.
7.4 the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	N	See response to 7.1.
7.5 adverse effects on the development priorities, decision making mechanisms, and forms of self-government of indigenous peoples as defined by them?	N	See response to 7.1.
7.6 risks to the traditional livelihoods, physical and cultural survival of indigenous peoples?	N	See response to 7.1.
7.7 impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?	N	See response to 7.1.

Safeguard Standard 8: Labor and working conditions		
8.1 Will the proposed project involve hiring or contracting project staff ?	Y	The project will recruit local experts and international experts.
<i>If the answer to 8.1 is yes, would the project potentially involve or lead to:</i>		
8.2 working conditions that do not meet national labour laws or international commitments (e.g. ILO conventions)?	N	Not anticipated.
8.3 the use of forced labor and child labor?	N	Not anticipated.
8.4 occupational health and safety risks (including violence and harassment)?	N	Not anticipated.
8.5 the increase of local or regional unemployment?	N	Not anticipated.
8.6 suppliers of goods and services who may have high risk of significant safety issues related to their own workers?	N	Not anticipated.
8.7 unequal working opportunities and conditions for women and men	N	Not anticipated.

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[1] Refer to UNEP Environmental and Social Sustainability Framework (ESSF): Implementation Guidance Note

to assign values to the Impact of Risk and the Probability of Risk to determine the overall significance of Risk (Low, Moderate or High).

[2] **Low risk:** Negative impacts minimal or negligible: no further study or impact management required.

**Moderate risk:** Potential negative impacts, but limited in scale, not unprecedented or irreversible and generally limited to programme/project area; impacts amenable to management using standard mitigation measures; limited environmental or social analysis may be required to develop an Environmental and Social Management Plan (ESMP). Straightforward application of good practice may be sufficient without additional study.

**High risk:** Potential for significant negative impacts (e.g. irreversible, unprecedented, cumulative, significant stakeholder concerns); Environmental and Social Impact Assessment (ESIA) (or Strategic Environmental and Social Assessment (SESA)) including a full impact assessment may be required, followed by an effective comprehensive safeguard management plan.

[3] This is signed only for the full projects latest by the PRC time.

[4] Good practice approach: For most low-moderate risk projects, good practice approach may be sufficient. In that case, no separate management plan is necessary. Instead, the project document demonstrates safeguard management approach in the project activities, budget, risks management,



stakeholder engagement or/and monitoring segments of the project document to avoid or minimize the identified potential risks without preparing a separate safeguard management plan.

[5] For example, a project may consider investing in commercial shrimp farm by clearing the nearby mangrove forest to improve the livelihood of the coastal community. However, long term economic benefit from the shrimp farm may be significantly lower than the mangroves if we consider full costs factoring safety from storms, soil protection, water quality, biodiversity and so on.

[151] This is signed only for the full projects latest by the PRC time.

[152] Good practice approach: For most low-moderate risk projects, good practice approach may be sufficient. In that case, no separate management plan is necessary. Instead, the project document demonstrates safeguard management approach in the project activities, budget, risks management, stakeholder engagement or/and monitoring segments of the project document to avoid or minimize the identified potential risks without preparing a separate safeguard management plan.

#### Supporting Documents

Upload available ESS supporting documents.

Title	Module	Submitted
<b>Safeguard Risk Identification Form (SRIF) - SKN</b>	<b>Project PIF ESS</b>	

**ANNEX A: PROJECT RESULTS FRAMEWORK** (either copy and paste here the framework from the Agency document, or provide reference to the page in the project document where the framework could be found).

Objective	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section 5)
Accelerate the transition towards 100% renewable electricity generation and 100% high energy efficiency public buildings in Saint Kitts and Nevis	A. Metric tonnes of greenhouse gas emissions avoided during the project (related to GEF core indicator 6)	0	0	6,980 tCO <sub>2</sub> e (direct and indirect) (until end of project execution. Lifetime project emission reductions is noted in annex F.)	Monitoring of energy consumption and related GHG emissions before and after implementation in demonstration projects	#1, #2, #3, #4
	B. Number of direct beneficiaries disaggregated by gender (GEF core indicator 11)	0	Women: 30 Men: 30	Women: 50 Men: 50	Workshop reports, capacity-building reports, community engagement reports, pilot reports.	#2, #4, #6

Outcome	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section 5)
Outcome 1: The Government of St. Kitts and Nevis implements a policy and regulatory framework for achieving its vision of 100% renewable electricity generation and 100% high energy efficiency	1.1: A revised National Energy Policy (NEP) is finalized and considered for adoption by the Cabinet.	NEP 2014 is out of date and not sufficiently reflecting the aim for achieving 100% renewable electricity generation and 100% public buildings with high renewable or energy efficiency	First draft of the revised NEP is finalized	Policy, including roadmap, is considered for adoption on at least one occasion by the Cabinet.	Government records.	#2, #4, #6

Objective	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section 5)
public buildings	1.2: Energy efficiency legislation to achieve the goals of the National Energy Policy are drafted and formally considered by the Cabinet.	No Federal Energy Efficiency Act exist	Finalized first draft of the Federal Energy Efficiency Act	Federal Energy Efficiency Act is presented and considered for by the Parliament on at least one occasion	Government records and publication of the act.	#2, #4, #6
Outcome 2: St. Kitts and Nevis generates an increasing share of electricity through renewable energy and has increased energy efficiency in public buildings	2.1: Electricity saved (MWh) through new energy efficiency measures implemented in public buildings since the beginning of project execution	0	500 MWh	1,190 MWh	Government records and energy bills of public buildings	#1, #2, #3, #4
	2.2: Increase in installed capacity of renewable energy (kW) in public buildings since the beginning of project execution	0	75 kW	75 kW	Government records and energy bills of public buildings; installation records by the utilities.	#1, #2, #3, #4

Objective	Indicator	Baseline	Mid-term target	End of project target	Means of verification	Risks (see section 5)
Outcome 3: The Government of St. Kitts and Nevis is able to mobilize and channel increased investments aligned with the revised national energy policy	3. Multilateral donors and financial institutions (including the private sector) committed investment aligned with the national energy policy	N/A. (the NEP's roadmap and its pipeline of project does not yet exist)	Projects for the pipeline have been identified	A minimum 1 renewable energy project and 1 energy efficiency project of the pipeline have been selected for financing by multilateral donors and financial institutions (including the private sector)	Contracts, memorandums of understanding, fund commitment letters between government and financial institutions	#2, #4

**ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and Responses to Comments from Council at work program inclusion and the Convention Secretariat and STAP at PIF).**

### STAP guidelines for screening GEF projects

PIF	What STAP looks for	Response
<p>GEF ID: 10856</p> <p>Project Title: Achieving a rapid decarbonization of the energy sector in Saint Kitts and Nevis</p> <p>Date of Screening: November 14, 2021</p> <p>STAP member screener: Saleem Ali</p> <p>STAP secretariat screener: Sunday Leonard</p> <p>STAP's overall assessment: Concur</p> <p>This project aims to take a comprehensive, integrated approach to decarbonize the energy sector in an important SIDS Caribbean country with a high energy carbon footprint per capita due to high-end tourism infrastructure and reliance on fossil fuels for baseload power delivery. The project links with the Green Climate Fund's existing work on the island and other donors' activities. The proposal reflects a degree of coordination that is much needed across donor programming.</p> <p>There is also a coupling of energy efficiency programs with decarbonization efforts reflecting a systems-oriented approach. The proponents have also provided detailed citations to earlier donor studies, which is best to suggest to other lead agency proposal submissions.</p> <p>There is an ambitious policy component and a robust technical component for upscaling the renewable energy efforts and smart grids following the pilots.</p> <p>Battery infrastructure is key to the success of such grids. STAP undertook an assessment on technology critical elements where <a href="#">battery infrastructure was also analyzed and is linked here</a>. The report noted that new battery technologies beyond the lithium-ion dominant batteries (BESS), which are noted in the proposal, should be considered for SIDS smart grids. Vanadium batteries may be particularly well suited for island usage. Please refer to the following recent citations in this regard:</p> <ul style="list-style-type: none"> <li>Huang, Z., &amp; Mu, A. (2021). Numerical research on a novel flow field design for vanadium redox flow batteries in microgrid. <i>International Journal of Energy Research</i>, 45(10), 14579–14591. <a href="https://doi.org/10.1002/er.6710">https://doi.org/10.1002/er.6710</a></li> <li>Lorenzi, G., da Silva Vieira, R., Santos Silva, C. A., &amp; Martin, A. (2019). Techno-economic analysis of utility-scale energy storage in island settings. <i>Journal of Energy Storage</i>, 21, 691–705. <a href="https://doi.org/10.1016/j.est.2018.12.026">https://doi.org/10.1016/j.est.2018.12.026</a></li> </ul> <p>Table 15 on risk management did not come through in the PDF though the text gave some context for what this might have depicted.</p> <p>The targeted island is highly vulnerable to climate impacts. The PIF includes a useful screening of the climate risks, answering the four questions that STAP expects a response to when assessing climate risk. A UNEP environmental and social safeguard screening detailing the assessment of potential risk and possible mitigation measures was also provided. This is commendable, and we recommend that the project proponent follow through in incorporating climate, environmental and social risks considerations as the project is further developed.</p>		

PIF	What STAP looks for	Response
<p>The theory of change, which is supported by a well-thought-out problem tree and narratives describing the underlying assumptions, is very well prepared. However, there should also be a note that the ultimate outcome should be maximizing energy conservation as well, and not just efficiency.</p> <p>An aspect to which we feel the project has not given adequate attention is the significant opportunities of harnessing geothermal energy on the Islands. As noted in the PIF, "harnessing geothermal energy could be a game-changer for the Islands." If rightly developed, the islands can become an importer of renewable energy as the geothermal energy potential significantly exceeds the Islands' energy needs. A lack of coordination between the Islands was identified as a barrier preventing establishing a common coordinated geothermal approach. However, it is not very clear how the proposal will help make this a reality. Given the critical role this can play in helping the Islands achieve energy security and resilience, we think creating the enabling environment for geothermal energy should be an essential aspect of the project, including by liaising with, and building on, the existing efforts identified in the PIF. It will be great to see some emphasis on this when the project is further developed.</p> <p>Further on geothermal energy, given its significant potential to solve the energy challenges of the Islands, we think, if possible, the pilot should consider including small-scale geothermal energy generation to demonstrate its potential in the Islands. With this regard, we encourage the project proponent to consider reviewing some of the following literature that discusses small-scale and pilot geothermal energy, including the possibility of geothermal/solar hybrid.</p> <ul style="list-style-type: none"> <li>• <a href="https://geothermalcommunities.eu/assets/elearning/7.10.art1.pdf">https://geothermalcommunities.eu/assets/elearning/7.10.art1.pdf</a></li> <li>• <a href="https://www.sciencedirect.com/science/article/pii/S0375650520303175">https://www.sciencedirect.com/science/article/pii/S0375650520303175</a></li> <li>• <a href="https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Aug/IRENA_Geothermal_Power_2017.pdf">https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Aug/IRENA_Geothermal_Power_2017.pdf</a></li> <li>• <a href="https://www.osti.gov/biblio/6789453-u6NH3z/native/">https://www.osti.gov/biblio/6789453-u6NH3z/native/</a></li> <li>• <a href="https://www.osti.gov/biblio/1245529">https://www.osti.gov/biblio/1245529</a></li> <li>• <a href="https://www.osti.gov/biblio/1170297">https://www.osti.gov/biblio/1170297</a></li> <li>• <a href="https://www.geocap.nl/handbook/direct-use/small-scale-geothermal-power-plant/#geocap-activity-in-this-topic">https://www.geocap.nl/handbook/direct-use/small-scale-geothermal-power-plant/#geocap-activity-in-this-topic</a></li> <li>• <a href="https://www.osti.gov/biblio/1433306-retrofitting-geothermal-plant-solar-storage-increase-power-generation">https://www.osti.gov/biblio/1433306-retrofitting-geothermal-plant-solar-storage-increase-power-generation</a></li> <li>• <a href="https://www.osti.gov/biblio/1170300">https://www.osti.gov/biblio/1170300</a></li> <li>• <a href="https://www.esi-africa.com/industry-sectors/generation/geothermal-power-plants-can-also-come-in-small-sizes/">https://www.esi-africa.com/industry-sectors/generation/geothermal-power-plants-can-also-come-in-small-sizes/</a></li> </ul>		
<b>Part I: Project Information</b>		
<b>B. Indicative Project Description Summary</b>		
Project Objective	Is the objective clearly defined, and consistently related to the problem diagnosis?	Yes – well-defined
Project components	A brief description of the planned activities. Do these support the project's objectives?	Yes

PIF	What STAP looks for	Response
Outcomes	A description of the expected short-term and medium-term effects of an intervention. Do the planned outcomes encompass important global environmental benefits? Are the global environmental benefits likely to be generated?	Yes – very clear metrics of GEB calculations are provided though it would be helpful to have some footnoting and backup of how they were calculated.
Outputs	A description of the products and services which are expected to result from the project. Is the sum of the outputs likely to contribute to the outcomes?	Yes, there are a series of outputs listed along with each outcome
<b>Part II: Project justification</b>	A simple narrative explaining the project's logic, i.e. a theory of change.	
<b>1. Project description. Briefly describe:</b> 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)	Is the problem statement well-defined? Are the barriers and threats well described, and substantiated by data and references? For multiple focal area projects: does the problem statement and analysis identify the drivers of environmental degradation which need to be addressed through multiple focal areas; and is the objective well-defined, and can it only be supported by integrating two, or more focal areas objectives or programs?	Excellent – provides rationale and country context  The multiple focal areas and the linkages and synergies are also presented.
2) the baseline scenario or any associated baseline projects	Is the baseline identified clearly? Does it provide a feasible basis for quantifying the project's benefits? Is the baseline sufficiently robust to support the incremental (additional cost) reasoning for the project? For multiple focal area projects: are the multiple baseline analyses presented (supported by data and references), and the multiple benefits	Yes, and the outcomes are benchmarked with the baseline very well.

PIF	What STAP looks for	Response
	specified, including the proposed indicators; are the lessons learned from similar or related past GEF and non-GEF interventions described; and how did these lessons inform the design of this project?	
3) the proposed alternative scenario with a brief description of expected outcomes and components of the project	<p>What is the theory of change? What is the sequence of events (required or expected) that will lead to the desired outcomes?</p> <ul style="list-style-type: none"> <li>• What is the set of linked activities, outputs, and outcomes to address the project's objectives?</li> <li>• Are the mechanisms of change plausible, and is there a well-informed identification of the underlying assumptions?</li> <li>• Is there a recognition of what adaptations may be required during project implementation to respond to changing conditions in pursuit of the targeted outcomes?</li> </ul>	Theory of change document is provided in congruence with suggested STAP guidelines.
5) incremental/additional cost reasoning and expected contributions from the baseline, the GEF trust fund, LDCF, SCCF, and co-financing	<p>GEF trust fund: will the proposed incremental activities lead to the delivery of global environmental benefits?</p> <p>LDCF/SCCF: will the proposed incremental activities lead to adaptation which reduces vulnerability, builds adaptive capacity, and increases resilience to climate change?</p>	Noted
6) global environmental benefits (GEF trust fund) and/or adaptation benefits (LDCF/SCCF)	<p>Are the benefits truly global environmental benefits, and are they measurable?</p> <p>Is the scale of projected benefits both plausible and compelling in relation to the proposed investment?</p>	<p>Yes,</p> <p>The number of beneficiaries seems to be too conservation possibly because of the method used. The number of people that will benefit from the outcome of the project will definitely exceed 100.</p>



PIF	What STAP looks for	Response
	<p>Are the global environmental benefits explicitly defined?</p> <p>Are indicators, or methodologies, provided to demonstrate how the global environmental benefits will be measured and monitored during project implementation?</p> <p>What activities will be implemented to increase the project's resilience to climate change?</p>	
7) innovative, sustainability and potential for scaling-up	<p>Is the project innovative, for example, in its design, method of financing, technology, business model, policy, monitoring and evaluation, or learning?</p> <p>Is there a clearly-articulated vision of how the innovation will be scaled-up, for example, over time, across geographies, among institutional actors?</p> <p>Will incremental adaptation be required, or more fundamental transformational change to achieve long term sustainability?</p>	Yes,
<b>1b. Project Map and Coordinates.</b> Please provide geo-referenced information and map where the project interventions will take place.		Provided
<p><b>2. Stakeholders.</b></p> <p>Select the stakeholders that have participated in consultations during the project identification phase: Indigenous people and local communities; Civil society organizations; Private sector entities.</p> <p>If none of the above, please explain why.</p> <p>In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project</p>	<p>Have all the key relevant stakeholders been identified to cover the complexity of the problem, and project implementation barriers?</p> <p>What are the stakeholders' roles, and how will their combined roles contribute to robust project design, to achieving global environmental outcomes, and to lessons learned and knowledge?</p>	Yes – stakeholder mapping is included in project design and stakeholder satisfaction also in outcome goals.

PIF	What STAP looks for	Response
<p>preparation, and their respective roles and means of engagement.</p> <p><b>3. Gender Equality and Women's Empowerment.</b> Please briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g. gender analysis). Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes/no/ tbd. If possible, indicate in which results area(s) the project is expected to contribute to gender equality: access to and control over resources; participation and decision-making; and/or economic benefits or services. Will the project's results framework or logical framework include gender-sensitive indicators? yes/no /tbd</p>	<p>Have gender differentiated risks and opportunities been identified, and were preliminary response measures described that would address these differences?</p> <p>Do gender considerations hinder full participation of an important stakeholder group (or groups)? If so, how will these obstacles be addressed?</p>	<p>Gender equity plan with clear set of question to be addressed and linkages with policies are provided.</p>
<p><b>5. Risks.</b> Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design</p>	<p>Are the identified risks valid and comprehensive? Are the risks specifically for things outside the project's control? Are there social and environmental risks which could affect the project? For climate risk, and climate resilience measures:</p> <ul style="list-style-type: none"> <li>How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?</li> <li>Has the sensitivity to climate change, and its impacts, been assessed?</li> </ul>	<p>Risk management table is also included</p> <p>Climate risk screening with adequate citations provided – however, some of the suggested linkages in general comments should be considered.</p>

PIF	What STAP looks for	Response
	<ul style="list-style-type: none"> <li>Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with?</li> <li>What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures?</li> </ul>	
<b>6. Coordination.</b> Outline the coordination with other relevant GEF-financed and other related initiatives	<p>Are the project proponents tapping into relevant knowledge and learning generated by other projects, including GEF projects?</p> <p>Is there adequate recognition of previous projects and the learning derived from them?</p> <p>Have specific lessons learned from previous projects been cited?</p> <p>How have these lessons informed the project's formulation?</p> <p>Is there an adequate mechanism to feed the lessons learned from earlier projects into this project, and to share lessons learned from it into future projects?</p>	Yes – there is listing of coordination prospects provided with public and private sector and donors.
<b>8. Knowledge management.</b> Outline the "Knowledge Management Approach" for the project, and how it will contribute to the project's overall impact, including plans to learn from relevant projects, initiatives and evaluations.	<p>What overall approach will be taken, and what knowledge management indicators and metrics will be used?</p> <p>What plans are proposed for sharing, disseminating and scaling-up results, lessons and experience?</p>	Yes adequately provided

Responses to STAP comments:

General comments	<p>? <u>Battery infrastructure</u>: Pilots will also support demonstration of battery infrastructure.</p> <p>? <u>Theory of change</u>: updated to include reference to maximizing energy conservation.</p> <p>? <u>Geothermal energy</u>: Component 1 focuses on creating an enabling environment for the country to achieve its ambitious NDC target of 100% renewable electricity by 2030. With geothermal energy one of the key renewable energy technologies for achieving that target, the project thus directly focuses on harnessing geothermal energy on the twin-island federation. The project is 'technology neutral' in not referring to one renewable energy technology or another. Rather, it focuses on establishing a policy, roadmap and investment portfolio to achieve its ambition goal. The project is thus mission or goal-orientated, rather than technology orientated, building upon Mazzucato.[1] In particular, the project seeks to:</p> <ol style="list-style-type: none"> <li>1) Revise the national energy policy for achieving the NDC target (or which geothermal energy will play a key role)</li> <li>2) Develop an investment roadmap for executing the policy and achieving the target (which will focus on harnessing the key renewable energy potential on the twin islands, primarily geothermal)</li> <li>3) Develop an energy commission for achieving twin-island coordination on energy policy (such coordination is key, as noted by the STAP, for harnessing geothermal energy)</li> </ol> <p>? <u>Project pilots</u>. We welcome the STAP's suggestion to explore small-scale geothermal energy generation. Since the development of the PIF, the country has continued to move forward on harnessing geothermal energy through a GCF project and other initiatives. In this sense, key decision-makers do not require a pilot on this technology to convince them of its viability ? they are well and truly moving ahead with investments in this area, especially the government of Nevis, the island with most geothermal resources. Furthermore, during project development and in speaking with the electricity utilities SKELEC and NEVLEC it was decided to pilot an integrated utility services model for promoting small-scale renewable energy generation and enhanced energy efficiency across the two islands. In discussions with the two utilities, the government and also CCREEE it was identified that the IUS model has the potential to support the utilities with effectively transitioning to new sustainable energy business models.</p>
Other comments	<p><u>GEF calculations</u>. Footnotes have been added.</p> <p><u>Project beneficiaries</u>. The number of project beneficiaries has been maintained as per the PIF, focusing on those beneficiaries that directly receive capacity building or are direct recipients of project activities.</p> <p><u>Climate risk considerations</u>. Extreme weather events are considered as a key risk to project execution. A detailed climate risk section has been included, considering the four key STAP questions and providing detailed responses to each.</p>

#### COMMENTS SUBMITTED BY COUNCIL MEMBERS ON THE GEF

Member	Comment	Response
Canada	Canada supports this project, which complements Canada's energy transition objectives in the region (e.g. energy policy reform to accelerate the low-carbon transition). We believe that this project is a welcome addition to December 2021 work program due to its focus on renewable energy deployment, energy efficiency and grid integration of renewable power in SIDS.	No response required.

Germany	<p>Germany approves the following PIF in the work program but asks that the following comments are taken into account:</p> <p>Suggestions for improvements to be made during the drafting of the project proposal:</p> <ol style="list-style-type: none"> <li>1. The project proposal shall take into account the outputs of the Cli-RES program (?Climate resilient and sustainable energy supply in the Caribbean?) implemented by GIZ in 2021, including a Study to determine Tariffs and Tariff Regime for implementation by Saint Kitts Electricity Company (SKELEC) as well as the preparation of the Integrated Resource and Resilience Plans (IRRP) for the electricity sector in SKN, which is based on long-term energy planning and grid modelling, climate vulnerability assessments and identification of resilience measures for the power system. Furthermore, the generated pipeline of investment projects as outcome of the IRRP should be used by the GEF project.</li> <li>2. More specific information on the size/capacity and investment cost of the proposed ?small-scale pilot projects? shall be provided by UNDP.</li> <li>3. The expertise of established entities with a track record of success in capacity building and awareness raising such as GET.invest (part of the Global Energy Transformation Programme, GET.pro) or the Project Finance Advisory Network (PFAN) should be utilized to develop bankable projects gap and design appropriate financing mechanisms. In addition, we recommend to include relevant financial institutions and potential investors at an early stage in order to increase the chances of developing and realizing joint investment projects.</li> <li>4. In general, the possibilities to collaborate with the CCREEE should be assessed, as CCREEE is currently executing the preparation of the IRRP in SKN and further involvements in all components seems to be possible. This could include bankable project</li> </ol>	<ol style="list-style-type: none"> <li>1. The project proposal has considered the previous work and will build upon relevant results. The process to develop the NEP (Output 1.1) will reconsider the feasibility of the alternative pathways available to the country. Here, the project will build on the Integrated Resource Planning and Resilience Plan (IRRP) that is currently under development by CCREEE with technical support by GIZ (expected in the first half of 2023). As described in the baseline section, the IRRP will include a least-cost expansion plan for the electricity sector to reach the renewable energy target in St. Kitts and Nevis based on assumptions and forecasts for the expected evolution of demand and resource availability, creating potential pathways under different optimization criteria using energy modelling software. The draft policy will cover aspects related to affordability of tariffs and utility business models (see D1.1.5). The deliverable D1.2.2 ?Pipeline of existing projects and measures? will make use and build upon the generated pipeline of investment projects as outcome of the IRRP. In addition, the project will promote the IUS model and consider results from the Caribbean Development Bank (CDB) collaborating with the CARICOM Secretariat and the GIZ to develop a new regional programme (?Scaling up the Deployment of Integrated Utility Services to Support Energy Sector Transformation in the Caribbean?) to help catalyse growth in energy services markets across the Caribbean.</li> <li>2. Detailed descriptions of each pilot, including estimated energy costs, savings and technical details are contained in Annex R.</li> <li>3. The financial mechanism that is promoted under Output will be developed making use of experiences gained by CCREEE (being involved in promoting the IUS model) and will be elaborated with consideration of catalysing synergies and complementarities with other concepts currently under consideration, such as the Regional Renewable Energy Infrastructure Financing Facility (REIFF) under development by the Eastern Caribbean Central Bank (ECCB).</li> </ol>
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preparation support through CCREEE's Project Preparation Facility (PPF) or Capacity Building.

5. The project proposal should demonstrate clearly what methodology is used to determine the projected emission mitigation levels in the Indicators 6 (Greenhouse Gas Emissions Mitigated) and 6.2 (Emissions Avoided Outside AFOLU Sector).

6. In addition, we invite the proposal to elaborate more extensively on the diverse socio- economic benefits that can arise from the described activities (see p. 59f.).

7. We support the conclusion of the Scientific and Technical Advisory Panel, that 'we feel the project has not given adequate attention is the significant opportunities of harnessing geothermal energy? Particularly in respect to the baseload potential of geothermal, harnessing geothermal energy would safe significant investments normally necessary for energy storage.

8. The formulation in Output 1.1 and Output 1.2 'Decision on the electrification of key sectors, e.g. regarding the electrification of the transport sector? seems rather vague. Considering the need to decarbonize the island in the long run, sector coupling particularly the transport sector should be considered in the electricity demand projections.

and the World Bank. The mechanism will be hosted by one of the Development Bank of St. Kitts and Nevis, the St. Kitts-Nevis-Anguilla National Bank or the St. Kitts Co-operative Credit Union (SKCCU). See further information under Output 3.3.

4. CCREEE has been consulted during the PPG phase and general interest of collaboration has been ensured. The IRRP for St. Kitt and Nevis is supported by CCREEE. The project under Component 1 will build upon the result to develop the integrated energy sector plan / roadmap. Due to CCREEE's mandate the centre will be an important partner in the long run to support the country related to further capacity development and technical assistance to the national administration which will enhance the project sustainability. Hence the project will closely coordinate the work with CCREEE.

5. The methodology applied for estimating the projected emission mitigation levels is provided in ANNEX L: ESTIMATES OF DIRECT AND CONSEQUENTIAL GREENHOUSE GAS EMISSION REDUCTIONS AND PROJECT BENEFICIARIES.

6. Socio-economic benefits are described under 10. Benefits. In addition, Output 1.1 (D.1.1.3) will complementing the IRRP with a socio-economic and just transition impact assessment of the potential redistributive effects of the potential pathway(s) proposed for decarbonization. The analysis will identify and quantify distributional impacts a) by sector and b) by income level of the population (e.g., burden of electricity costs per decile of income, differentiated by gender in the baseline and in the decarbonization scenario(s)). Develop recommendations and a costed strategy (identifying sources of funding) to mitigate any negative impacts in the most vulnerable sectors.

7. The opportunities and potential for geothermal energy has been emphasised in the proposal and the baseline section.

8. The outputs are formulated as follows: Output 1.1. The Government of St. Kitts and Nevis develops a revised National Energy Policy for achieving 100% renewable electricity generation and 100% high energy efficiency public buildings; Output 1.2. The Government of St. Kitts and Nevis develops a roadmap for

		implementing the National Energy Policy. The roadmap (Output 1.2) builds upon and complement the IRRP by going from electricity to the entire energy sector, incl. transportation, cooling and heating etc.
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[1] [https://www.oecd.org/naec/NAEC\\_Mazzucato.pdf](https://www.oecd.org/naec/NAEC_Mazzucato.pdf).

**ANNEX C: Status of Utilization of Project Preparation Grant (PPG).**  
**(Provide detailed funding amount of the PPG activities financing status in the table below:**

A detailed breakdown of the use of PPG finances for supporting PPG activities may be found in the following table:

PPG Grant Approved at PIF: US\$ 60,000			
Project Preparation Activities Implemented	GETF Amount (US\$)		
	Budgeted Amount	Amount Spent to date	Amount Committed
GEF consultant	30,000	30,300	0
GEF consultant travel	5,000	4,871	0
Unassigned	25,000	0	0
Total	60,000	35,171	0

Funds not spent and not committed = 60,000 ? 35,171 = USD 24,829.

The unspent of balance of USD 24,829 will spent during project execution, as per the GEF policy: *If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, agencies can continue to undertake exclusively preparation activities up to one year of CEO Endorsement/approval date. No later than one year from CEO endorsement/approval date. Agencies should report closing of PPG to Trustee in its Quarterly Report.*

The outstanding balance will be used during the project's first year (counting since CEO Approval) to undertake activities aligned with GEF/C.59/Inf.03, Annex 2, table 1. Any remaining funds will be duly returned to the GEF. Primarily, the funds will be used for:

1. Organizing a local consultation workshop to:

- Further inform national and local stakeholders on GEF purposes and procedures;

- Prepare in greater detail the project terms of reference (elaborating that agreed in annex H);

- Develop in greater detail the execution arrangements (based on the agreed structure in section 6 and annex J).

- Discuss in greater detail to ensure environmental and social safeguard standards are met (building upon annex O).

2. Travel costs for stakeholders from the islands of both Kitts and Nevis to participate in the local consultations workshop (the workshop will be held on one of Kitts and Nevis).

## **ANNEX D: Project Map(s) and Coordinates**

**Please attach the geographical location of the project area, if possible.**



Figure 16. Map of St. Kitts and Nevis



Table 25. Coordinates

Location	Latitude	Longitude
Basseterre (Saint Kitts)	17.2948	-62.7261
Charlestown (Nevis)	17.1392	-62.6228

## ANNEX E: Project Budget Table

Please attach a project budget table.

GEF budget category & detailed description	Outcome 1	Outcome 2	Outcome 3	Subtotal	M&E	PMC	Total
<b>02. Goods</b>	<b>50000</b>	<b>1554151</b>	<b>6000</b>	<b>1610151</b>	<b>0</b>	<b>0</b>	<b>0</b>
Pilots: Procurement of renewable energy and energy efficiency solutions and their installation	0	1489901	0	1489901	0	0	0
Data management system, incl. webpage integration and information platform	50000	0	0	50000	0	0	0
Procurement of electric vehicle charging infrastructure and its installation	0	39000	0	39000	0	0	0
Procurement and installation of monitoring equipment for pilots	0	25250	0	25250	0	0	0
Production of training material (online material, publications, printing, etc.)	0	0	2000	2000	0	0	0
Production of communication/marketing material (webpage, printing, etc.)	0	0	4000	4000	0	0	0
<b>05. Revolving Funds/Seed funds/Equity</b>	<b>0</b>	<b>0</b>	<b>100000</b>	<b>100000</b>	<b>0</b>	<b>0</b>	<b>0</b>
Seed capital for the financial window	0	0	100000	100000	0	0	0
<b>07. Contractual services (company)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32000</b>
Independent financial audits	0	0	0	0	0	0	32000
<b>09. International Consultants</b>	<b>469000</b>	<b>112000</b>	<b>266000</b>	<b>847000</b>	<b>40000</b>	<b>0</b>	<b>0</b>
Chief Technical Advisor	0	0	0	0	10000	0	0
Policy dimension of the energy transition	217000	0	0	217000	0	0	0
Environment, Gender and Equity dimension of the energy transition	70000	0	0	70000	0	0	0
Data dimension of the energy transition	70000	0	0	70000	0	0	0
Technical dimension of the energy transition	112000	112000	0	224000	0	0	0
Economic, financial and business dimensions of the energy transition	0	0	266000	266000	0	0	0
Terminal Evaluation	0	0	0	0	30000	0	0
<b>11. Salary and benefits/Staff Costs</b>	<b>123750</b>	<b>55000</b>	<b>292547</b>	<b>471297</b>	<b>0</b>	<b>0</b>	<b>112297</b>
Chief Technical Advisor	53750	55000	70000	178750	0	0	23750
Administration and Financial Assistant	0	0	0	0	0	0	88547
Regulatory Framework Expert and Legal Advisor	60000	0	22500	82500	0	0	0
Energy Finance Specialist	10000	0	87500	97500	0	0	0
Gender-sensitive community engagement	0	0	112547	112547	0	0	0
<b>12. Training, Workshops, Meetings</b>	<b>25500</b>	<b>0</b>	<b>27000</b>	<b>52500</b>	<b>30000</b>	<b>0</b>	<b>0</b>
Workshops	25500	0	21000	46500	0	0	0
Mid-Term Evaluation	0	0	0	0	30000	0	0
Execution of the training courses	0	0	6000	6000	0	0	0
<b>15. Other operating costs</b>	<b>0</b>	<b>0</b>	<b>10000</b>	<b>10000</b>	<b>0</b>	<b>0</b>	<b>13750</b>
Office and IT equipment	0	0	0	0	0	0	13750
Operating cost of financial window	0	0	10000	10000	0	0	0
<b>Grand Total</b>	<b>668.250,00</b>	<b>1.721.151,00</b>	<b>701.547,00</b>	<b>3.090.948,00</b>	<b>70.000,00</b>	<b>158.047,00</b>	<b>3.3</b>

#### ANNEX F: (For NGI only) Termsheet

Instructions. Please submit an finalized termsheet in this section. The NGI Program Call for Proposals provided a template in Annex A of the Call for Proposals that can be used by the Agency. Agencies can use their own termsheets but must add sections on Currency Risk, Co-financing Ratio and Financial Additionality as defined in the template provided in Annex A of the Call for proposals. Termsheets submitted at CEO endorsement stage should include final terms and conditions of the financing.

Not applicable.

#### ANNEX G: (For NGI only) Reflows

Instructions. Please submit a reflows table as provided in Annex B of the NGI Program Call for Proposals and the Trustee excel sheet for reflows (as provided by the Secretariat or the Trustee) in the Document Section of the CEO endorsement. The Agencies is required to quantify any expected financial return/gains/interests earned on non-grant instruments that will be transferred to the GEF Trust Fund as noted in the Guidelines on the Project and Program Cycle Policy. Partner Agencies will be required to comply with the reflows procedures established in their respective Financial Procedures Agreement with the GEF Trustee. Agencies are welcomed to provide assumptions that explain expected financial reflow schedules.

Not applicable.

#### ANNEX H: (For NGI only) Agency Capacity to generate reflows

Instructions. The GEF Agency submitting the CEO endorsement request is required to respond to any questions raised as part of the PIF review process that required clarifications on the Agency Capacity to manage reflows. This Annex seeks to demonstrate Agencies? capacity and eligibility to administer NGI resources as

established in the Guidelines on the Project and Program Cycle Policy, GEF/C.52/Inf.06/Rev.01, June 9, 2017 (Annex 5).

Not applicable.