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**Progress Report**  
(06 May 2018 – 30 June 2019)

**Name of country:** *Barbados*

<b>Title<sup>1</sup></b>	Strategic Platform to Accelerate Sustainable Energy Technology Innovation, Industry Development and Entrepreneurship in Barbados
<b>GEF ID:</b>	9648
<b>UNIDO SAP ID:</b>	150123
<b>GEF Replenishment Cycle:</b>	GEF-6
<b>GEF Focal Area:</b>	Climate Change (CC)
<b>Integrated Approach Pilot (IAP) Programs<sup>2</sup>:</b>	Not applicable
<b>GEF Project Size:</b>	Medium-sized Project (MSP)
<b>UNIDO PTC Department:</b>	ENE/CPP
<b>UNIDO Project Manager:</b>	Mr. Martin Lugmayr

## **I. Brief description of the project**

### **I.1 Objective:**

The Ministry of International Business and Industry (MIBI), the United Nations Industrial Development Organization (UNIDO), the Barbados Investment & Development Corporation (BIDC) and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) are jointly implementing the Global Environment Facility (GEF) funded project “Strategic platform to promote sustainable energy technology innovation, industrial development and entrepreneurship in Barbados”.

The project contributes to the implementation of the National Strategic Plan 2005-2025, which aims at making Barbados a “green circular economy” and the “most environmentally advanced green country in Latin America and the Caribbean”. The realisation of this vision depends on a rapid transformation of the energy system from fossil fuels to renewable energy and energy efficiency. The development of a “clean-tech market” requires an equilibrium between demand for and quality supply of renewable energy and energy efficiency products and services. Most of the current public and international support is focused on creating demand through enabling policies, incentives and concessional finance. However, there is only limited support for the creation of an enabling environment for green businesses and entrepreneurs. Therefore, the GEF Project focuses particularly on the strengthening of the supplier-side and the development of respective value chains and business models.

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<sup>1</sup> As per approved CEO Endorsement document

<sup>2</sup> Only for **GEF-6 projects**, if applicable

In business-as-usual scenarios, Barbadian clean-tech businesses and start-ups will continue to face barriers related to policy and regulatory frameworks, knowledge, capacity, access to R&D, quality infrastructure and finance. Moreover, there exists only very limited coordination and cooperation within the sector. Therefore, the GEF project will strengthen private sector capacities in sustainable energy technology areas with high GHG emission, market and value creation potential. It will contribute to make the clean-tech industry an important value-creating pillar of the industrialisation and modernisation aspirations of the Government. The project will:

- establish a public-private platform for regular policy dialogue to promote coherent demand and supplier oriented cross-sectoral policies, regulations and incentives;
- establish a physical sustainable energy and climate cluster hub which provides businesses with communication and networking space, start-up support (e.g. co-working and maker space, incubation services, common marketing/branding), as well as capacity building;
- strengthen the cluster members by establishing a funding window which provides grants and concessional loans for the commercialization innovative business ideas and industrial up-grading;
- promote networking and joint ventures between the cluster members and entrepreneurs, investors, venture capitalists, financiers in the Caribbean, other SIDS, internationally (incl. the diaspora);
- contribute to the creation of qualification and certification frameworks for personal, equipment and services and provide targeted training to current and future members of the cluster;

## **I.2 Baseline:**

Despite promising and pioneering developments, the sustainable energy industry in Barbados has still not reached the required economies of scales and is facing various barriers for a further uptake. Barbados has a small sustainable energy manufacturing and servicing industry, which comprises mainly SMEs in the areas of solar-thermal (SWH), PV, LED lighting and electric vehicles. The undertaken Sustainable Energy Industry Market Assessment estimates the current employment in the sustainable energy industry at about 200 full time equivalents (FTE).

Most of the domestic industrial activities are limited to services (e.g. installation, design) and only a few assembling/manufacturing businesses are ongoing. In some traditional sectors, the industry seems to have lost its initial innovation capacity (e.g. solar thermal). There is a lack of capacities in some promising growth areas (e.g. energy efficient and climate (hurricane) resilient buildings and appliances, solar-thermal cooling). The small market, high cost of labour and shipping costs (40% higher than in Trinidad and Tabago) remain a limiting factor.

In the Business as Usual (BAU) scenario the uptake of sustainable energy markets in Barbados will continue to be hindered by the weak innovation and productive capacity of the local sustainable energy industry. Under this scenario, the attainment of the set sustainable energy, climate and green economy objectives would remain very uncertain. This would jeopardize the vision of the Government to transform into a green circular economy. The local value and job creation effects along the value chain of sustainable energy investments would remain limited. Equipment and services would continue to be imported.

## **II. Targeted results and progress to-date**

During the first year of implementation, the project achieved a number of important mile-stones and the progress can be summarized as satisfactory. Two inception meetings and a first project steering committee (PSC) were organised. The Project Management Unit (PMU) was established within MIBI. A senior expert was appointed to act as project coordinator. Also the establishment of the physical hub of the Barbados Green Technology Cluster has commenced and the cluster office has kick-started its business operations.

The Barbados Investment Development Cooperation (BIDC) is increasingly taking ownership of the cluster and is providing key administrative and in-kind support. An experienced international cluster manager was recruited and relocated to Barbados. He is assisted by a local team provided by BIDC (e.g. deputy manager, secretarial and communication support). The cluster has already implemented a broad range of stakeholder consultations and at least three sub-clusters were already identified. First businesses/start-ups agreed to start their operations at the Cluster hub Newton Industrial Park. Moreover, the cluster has submitted first funding proposals to competitive project calls. UNIDO and BIDC have agreed on the execution and contracting modalities for the execution of the project cluster component.

However, some of the activities could not be implemented as planned. The governmental change following the parliamentary elections in May 2018 and the fiscal crisis of the country delays the inception phase of the project. Due to the difficult fiscal situation, the new Government had to enter into the five-year Barbados Economic Recovery and Transformation (BERT) Program with the International Monetary Fund (IMF). The developments caused a number of unforeseen bottlenecks.

Due to the restructuring and reprioritisation of the Government, all public institutional and co-funding arrangements needed to be reconfirmed under the new leadership. The main Ministerial counterpart was split into two Ministries – the Ministry of International Business and Industry (MIBI) and the Ministry of Small Business, Entrepreneurship and Commerce (MSBEC). In the meantime, the MIBI and its agency, the Barbados Investment Development Cooperation (BIDC) remained the main project counterparts.

Due to the BERT program, MIBI informed that it might be difficult to contribute with the full committed co-funding amount to the project. End of January 2019 the Board of BIDC reconfirmed the provision of the hub space at the Newton Industrial Park free-of-charge to the cluster as in-kind contribution to the GEF project. However, BIDC informed also that it will not be able to commit the cash-contribution as originally committed. Currently, the partners try to open up other funding streams.

A detailed overview on the made project progress can found in the matrix below.

**Progress to-date:**

Results	KPIs/Indicators	Baseline	Target	Progress to-date (FY 2018-19)
<b>Project Objective</b>	Strengthened capacities of the SEC industry lead to direct GHG (in tons of CO <sub>2</sub> e) emission reduction over the project duration of 4 years Indirect GHG emission reduction over a period of 20 years (% contribution of the project to the advanced NDC scenario) % annual increase of the turn-over of the SEC technology industry in Barbados (e.g. through increased sales, contracts) over a period of five (5) years Number of additional primary and secondary jobs (full time equivalents (FTE) in the SE industry created over a period of five (5) years (overall 400 jobs (FTE) in the sector after five years) (at least % occupied by women is envisaged)	In the NDC BAU scenario, GHG emissions will reach approximately 2,400 Mt CO <sub>2</sub> eq. by 2026. In the advanced „with intervention “scenario, GHG emissions are estimated at 1,450 Mt CO <sub>2</sub> eq. by 2026. Indicator for the current turn-over will be confirmed during the inception meeting 200 jobs - full time equivalents (FTE) - currently in the SE sector;	Direct GHG emission reduction of 82,000 tons over 4 (four) years in Barbados Indirect GHG emission reduction of 3.2 million tons of CO <sub>2</sub> e over the next 20 years (20% contribution of the project to the advanced NDC scenario) 5% annual increase of the turn-over of the SEC technology industry in Barbados (e.g. through increased sales, contracts) over a period of five (5) years 200 additional primary and secondary jobs (full time equivalents (FTE) in the SE industry created over a period of five (5) years (overall 400 jobs (FTE) in the sector after five years) (at least 40% occupied by women is envisaged)	It is still too early to report on the higher level impacts and indicators. Currently, the monitoring and evaluation plan is under establishment. There is currently no reliable data on sustainable energy jobs and turnover available. The data is essential to track the progress and impact of the project in relation to the business-as-usual scenario. The market data on sales is also important to clarify the impact of the project with regard to GHG emission reductions.
<b>Project Component 1 – Policy and regulatory framework</b>				
<b>Outcome 1.1</b>	% annual demand increase for SEC services and technologies in key economic sectors (e.g. generation and distribution of power and energy services, construction, fisheries and agro-processing, tourism, transport, waste management, as well as water/desalination) Satisfaction of the SECs industry	Stagnating demand for SECs due to policy and regulatory issues (e.g. solar-thermal, LED lighting, EE in buildings and appliances) Low satisfaction of the private sector with the current policy, regulatory and incentive framework	<b>5%</b> annual demand increase for SEC services and technologies in key economic sectors (e.g. generation and distribution of power and energy services, construction, fisheries and agro-processing, tourism, transport, waste management, as well as water/desalination) over 5 years. Satisfaction of the SECs industry	It is still too early to report on the higher level impacts and indicators. Currently, the monitoring and evaluation plan is under establishment. There is currently no reliable data on sustainable energy jobs and turnover available. The data is essential to track the progress and impact of the project in relation to the business-as-usual scenario. The market data on sales is also important to clarify

	with the adapted policy, regulatory and incentive framework after 5 years		with the adapted policy, regulatory and incentive framework after 5 years	the impact of the project with regard to GHG emission reductions.
<b>Output 1.1.1</b>	<p>Public-private dialogue platform is operational</p> <p>Number of private and public platform members (at least % female)</p> <p>Number of meetings and consultations to discuss policy and legal key issues</p>	<p>Weak coordination and communication on SE industry issues:</p> <p>between Ministries</p> <p>between businesses</p> <p>between public and private sector</p>	<p>Platform is operational.</p> <p>At least 50 platform members (it is envisaged that 40% are represented by women).</p> <p>20 meetings and consultations to discuss policy and legal key issues organized</p>	<p>There are discussions to establish the platform as part of the high-level dialogue platform and the cross-sectoral coordination mechanism of the Partnership for Action on Green Economy (PAGE) was reached between the main national and international stakeholders (e.g. UN Agencies). The implementation of the PAGE program in Barbados is based on the Green Economy Scoping Study developed in 2012. The coordination of the PAGE is led by UNDP in partnership with the Ministry of Environment and National Beautification (MENB) and in coordination with other UN Agencies (e.g. UNIDO, ILO, UNEP, UNITAR). The PAGE aims to identify the main barriers/gaps which hinder Barbados to transform into a Blue and Green Economy. The increased use of renewable energy and energy efficiency technologies is an important pillar of the green and blue economy scenario. The strengthening of the manufacturing and servicing capacities of local "green" businesses and entrepreneurs is an important measure to increase the local value creation in terms of jobs and turnover. The Barbadian Green Technology Cluster (BGTC) established under the GEF project is an important action in this context. The cluster might expand from sustainable energy technologies to other "green" solutions in a second step.</p>

				<p>Currently the detailed design of the platform (task-force) is being discussed between UNIDO and the other PAGE partners. At least 25 national and international members were identified. Currently, discussions are held how to formalise the membership. The membership base will be increased in close coordination with the Barbados Green Technology Cluster (BGTC) and the PAGE Program.</p> <p>A first PAGE high-level dialogue meeting involving the Prime Minister and other Ministers was organised in November 2018. The ties between the GEF project/cluster will be further strengthened in the upcoming months. A first workshop involving all platform members is expected to be organised in 2020. BGTC also contributes to the consultations on the development of the new national industrial policy of Barbados. A first stakeholder meeting was held.</p>
<b>Output 1.1.2</b>	<p>Vision statement and strategy for the “B-Greentech” hub as part of the National Plan vision</p> <p>Off- and online promotion material disseminated in various sectors (e.g. tourism)</p>	<p>Currently, no real vision statement and marketing of Barbados as a hub for SEC technologies</p> <p>Barbados is not promoted systematically as hub</p>	<p>Vision statement and strategy developed (a gender dimension will be included). At least 80% of the foreseen activities in the strategy implemented during the project duration. Promotion material disseminated in at least 5 different sectors (a gender dimension will be included)</p>	<p>A vision statement and strategy to promote the country as a hub for SEC technologies and services is currently under development in close coordination with the BGTC. It will be finalised in 2020 once the cluster is more established.</p> <p>The marketing material for the BGTC is currently under development and will be released soon.</p>
<b>Output 1.1.3</b>	<p>Number of high-level policy dialogues organized</p> <p>Number of CEOs and senior</p>	<p>No high-level policy dialogues on SE industry and entrepreneurship</p>	<p>At least three (3) high-level policy dialogues are organized.</p> <p>At least 200 national, regional</p>	<p>A first high-level policy workshop will be organised in 2020 in partnership with BGTC, PAGE and CCREEE.</p>

	officials participated in the dialogues (at least % female)		and international senior officials of the public and private sector (businesses, banks, investors) participate in the dialogues (participation of 40% women participation is envisaged)	<p>A first high-level policy workshop will be organised in 2020 in partnership with BGTC, PAGE and CCREEE.</p> <p>A first high-level policy workshop will be organised in 2020 in partnership with BGTC, PAGE and CCREEE.</p>
<b>Output 1.1.4</b>	<p>Number of proposals developed and discussed in policy and legislative processes</p> <p>Number of demand-creating and supplier-oriented policies, laws or standards on SEC technologies approved and under implementation</p> <p>Number of inputs to mainstream SEC technologies into cross-cutting policies in key economic sectors (e.g. generation and distribution of power and energy services, construction, fisheries and agro-processing, tourism, e-transport, EE of the buildings waste management, as well as water/desalination)</p>	Contradictive policies and incentives (see baseline analysis) hinder the uptake of SEC technologies and limit business opportunities for domestic entrepreneurs	<p>At least 30 proposals developed and discussed in policy and legislative processes.</p> <p>At least 10 of demand-creating and supplier-oriented policies, laws or standards on SEC technologies are approved and their implementation facilitated.</p> <p>At least ten (10) inputs to mainstream SEC technologies into cross-cutting policies in key economic sectors (e.g. generation and distribution of power and energy services, construction, fisheries and agro-processing, tourism, transport, waste management, as well as water/desalination).</p>	<p>This activity will start in 2020 once the BGTC and the PAGE are in a more advanced stage and the membership base has consolidated.</p> <p>This activity will start in 2020 once the BGTC and the PAGE are in a more advanced stage and the membership base has consolidated.</p> <p>This activity will start in 2020 once the BGTC and the PAGE are in a more advanced stage and the membership base has consolidated.</p>
<b>Project Component 2 – Investment and Business Promotion</b>				
Outcome 2.1	% increase of annual investments in sustainable energy and climate technology businesses by project end (baseline 2017)	Low investments in the domestic manufacturing and servicing industry	5% increase of annual investments in sustainable energy and climate technology businesses (baseline 2017)	It is still too early to report on the higher level impacts and indicators. Currently, the monitoring and evaluation plan is under establishment. There is currently no reliable data on sustainable energy jobs and turn-over available. The data is essential to track the progress and

				impact of the project in relation to the business-as-usual scenario. The market data on sales is also important to clarify the impact of the project with regard to GHG emission reductions.
<b>Output 2.1.1</b>	<p>One (1) technology clusters is operational</p> <p>Number of working groups established after 5 years</p> <p>Study tours to Latin America, Europe, Israel related to RE and Climate Technology Clusters and Innovation Agencies</p> <p>Number of paying cluster members after 5 years</p> <p>Number of prototypes and business ideas developed and tested after 5 years</p> <p>USD of funding for the activities of the cluster raised by the cluster management after 5 years</p> <p>USD of raised investment for business ideas developed in the scope of the cluster (committed not contracted) after 5 years</p> <p>Biannual sustainable energy and climate technology survey and industry report</p> <p>% of satisfaction with the services of the cluster services by its members after 5 years (survey)</p>	<p>Lack of cooperation between companies in the sector</p> <p>No formalised strong cooperation between businesses in the moment (expect from BREA)</p> <p>Lack of start-up support in the sector</p> <p>No collaborative R&amp;D and prototyping in the moment</p> <p>Lack of test labs and maker space</p> <p>No data gathering on the industry and no reports to attract investors</p>	<p><b>One (1) technology cluster</b> is fully operational.</p> <p>At least 10 private sector working groups established after 5 years (at least 40% women participation is envisaged).</p> <p>At least 30 contributing private-sector cluster members after 5 years (at least 40% women participation is envisaged).</p> <p>At least 5 prototypes and business ideas developed and tested after 5 years. At least USD 4 million of funding for the activities of the cluster raised by the cluster management .</p> <p>At least 10 million USD of raised investment for business ideas developed in the scope of the cluster (committed not contracted) after 5 years.</p> <p>Biannual sustainable energy and climate technology survey and industry report prepared and distributed.</p> <p>At least 70% of satisfaction with the services of the cluster services by its members after 5 years (survey)</p>	<p>The governmental change following the parliamentary elections in May 2018 and the fiscal crisis of the country marked a major shift of paradigm. Due to the difficult situation, the new Government had to enter into the five-year Barbados Economic Recovery and Transformation (BERT) Program with the International Monetary Fund (IMF). The country's debt to GDP ratio was close to 175%. Barbados was amongst the most indebted countries in the world. The BERT program included the requirement to significantly reduce public spending and service. Several governmental agencies were privatised. The developments caused a number of unforeseen bottlenecks and delays for the implementation of the GEF project which was supposed to start in June 2018. For example, all national co-funding arrangements needed to be reconfirmed and reapproved. The office and hub space for the Barbados Green Technology Cluster (BGTC) could not be provided by the Barbados Investment Development Cooperation (BIDC) as planned. Finally, end of January 2019 the Board of BIDC reconfirmed the provision of the hub space at the Newton Industrial Park as committed. However, at the same time BIDC also informed that due to the tight national budget the originally committed cash-</p>



			<p>contribution to the GEF project and the cluster cannot be provided as planned. Due to these developments, also the BIDC renovation works at the cluster hub got delayed. The hub space was only finalised in August 2018. In the meantime, BIDC hosted the interim-cluster office at BIDC Headquarters. The initial cluster space is approximately 400 square meters (with 4 individual offices of approximately 12x10 feet each, a boardroom/training room) and can be expanded later on (free space available).</p>
			<p>In the GEF project kick-off meeting end of May 2018, MIBI and BIDC informed on their preference to recruit the international Cluster Manager through UNIDO rules and procedures. In Barbados exist only a few potential experts which have experience with the management of technology clusters. A twinning-model was preferred by the counterparts. The international expert would work as integrated expert within BIDC and build the capacities of the local cluster team during the project duration. Mid of 2018, UNIDO advertised the vacancy and an experienced international expert was selected by a joint selection panel involving UNIDO, BIDC and MIBI. The expert has vast experience in the incubation sector and has managed similar clean-tech cluster in Finland. The expert relocated to Barbados in May 2019. The expert worked at offices in MIBI and BIDC and relocated</p>

				<p>afterwards to the renovated Cluster Hub.</p>
				<p>BIDC provided a Deputy Cluster Manager as committed. The expert started working early 2018. It is planned that the Deputy will take over the management of the Cluster once the international cluster manager leaves.</p>
				<p>BIDC provides administrative, IT and secretary support to the cluster team as committed. Moreover, the cluster team can rely on BIDC communication experts. Currently, the cluster is operationalising its incubation centre and is establishing its internal rules and procedures and governance structure. Currently, UNIDO and BIDC are finalising the execution agreement on the GEF project. The earmarked GEF funding for the Cluster component will be executed by BIDC as foreseen in the project document. In September 2019, UNIDO financial and procurement experts will hold final discussions and provide training to BIDC experts. The Governance structure of the cluster will be operational by end of 2019. Currently the cluster is also working on its Business Plan (Manual and Strategy) which will outline a feasible, viable and sustainable long-term scenario beyond the GEF project duration. Two models are discussed. Either the cluster</p>

				<p>continues to be hosted by BIDC or it will be registered as an independent legal entity in the mid-term. The options will be discussed in the GEF Project Steering Committee (PSC). Both have advantages and disadvantages. The Cluster is currently also developing its service packages to be offered to its cluster members (e.g. information exchange, training, applied R&amp;D, entrepreneurial support, shared facilities, matchmaking and networking, lobbying &amp; policy inputs, fund raising, joint tendering &amp; sourcing, joint project, product and patent development, market intelligence, export promotion). The cluster will provide its members with a business incubator facility that includes workshop floor and makers space, training rooms, open office space and meeting rooms. This workshop space is mainly designed for assembly, testing and R&amp;D activities. To sustain itself the cluster will need to generate income from its members and other sources (e.g. fee-for-service, project competitions) in the mid-term. Therefore, the cluster is also participating in innovation related competitions and project calls. An USD 375.000 project proposal was prepared for the <i>Compete Caribbean</i> by Smart EV Cluster. Within the framework of the GEF project, UNIDO is currently discussing with IDB potential support for the creation of a National Innovation Agency (NIA) in Barbados. The national agency would be part of a regional network in the Caribbean.</p>
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				<p>The Cluster has already mobilised first members and established two sub-clusters and various working groups. There is agreement on the following first three sub-clusters: a.) the Barbados Bioenergy Cluster in partnership with the Bioenergy Association, Barbados National Oil, University of West Indies (UWI) and Think Design Barbados, b.) the Smart Electric-Mobility Cluster (EV Cluster) in association with Barbados Light &amp; Power, Megapower and Emera, as well as c.) the EE for Buildings Cluster. Barbados Light &amp; Power and Barbados Bioenergy Association have expressed their interest to establish a R&amp;D unit in the Cluster Hub. The first companies to be located in the Newton Business Incubator unit are: a.) Barbados Light &amp; Power, Smart battery charging and testing laboratory and the Barbados Bioenergy Association. The sub-clusters intend to develop joint prototypes and raise financing for testing and their commercialisation. Currently three (3) prototypes are discussed. It is intended to organise the following working group meetings in 2019: a.) Green Building Cluster workshop, b.) Bioenergy Cluster Workshop and c.) Smart EV Cluster Workshop. It is also intended to establish a solar-thermal working group by end of 2019. Moreover, the cluster is currently signing MOUs with the University of West Indies (UWI) and Caribbean Climate Innovation Center (CCIC) supported by the World Bank. The cluster manager was invited to act</p>
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				as jury member in a climate launchpad pitching event supported by the Climate-KIC Europe and CCIC. Several study tours to innovation centres and technology centres start-up accelerators in Latin America (Colombia, Costa Rica and Uruguay) and Europe are planned. In this context, a partnership with IDB and Climate-KIC was established. There is also the intention to organise a solar thermal/bioenergy study study tour to the 2020 ISEC in Austria, Vienna.
Output 2.1.2	<p>Number of calls for proposals of the facility on technology priority areas implemented</p> <p>Number of specific calls for women entrepreneurs undertaken</p> <p>Amount of USD of facility funding contracted and implemented (in USD) after five (5) years</p> <p>Number of businesses supported through grants and/or concessional loans after five (5) years</p>	Lack of funding for start-ups and SEC ideas and technologies (Private Sector Assessment)	At least 3 calls for proposals of the facility on technology priority areas implemented. At least 1 specific call for women entrepreneurs undertaken. USD 2 million of facility funding contracted and implemented (in USD) after five (5) years. At least 30 businesses supported through grants and/or concessional loans after five (5) years	The creation of a funding window to support cluster members and start-ups is of highest importance for the sustainability of the cluster. Benefiting businesses and start-ups would need to become members of the Cluster. In this context, several meetings with the European Commission and IDB were organised. MIBI has directed an official request to the Ministry of Energy and Water Resources (MEWR) to earmark part of the IDB Smart Energy Funding Phase II to this facility. Up to now, there is no final decision on this. Within the framework of the GEF project, UNIDO is currently discussing with IDB potential support for the creation of a National Innovation Agency (NIA) in Barbados. The national agency would be part of a regional network in the Caribbean.

<b>Output 2.1.3</b>	<p>Number of business intelligence briefs on key SEC growth market areas in the Caribbean are available for cluster members</p> <p>Number of SEC match-making and/or investment forums organised in the Caribbean</p> <p>Number of Barbadian businesses participate in Caribbean and international match-making and/or investment forums (at least % female)</p> <p>Number of consolidated business partnerships between Barbadian and Caribbean or international companies in the scope of the cluster are created</p>	<p>Lack of systematic investor and business match-making in the SEC sector</p> <p>Only a very small number of Caribbean business to business partnerships in the SEC sector</p>	<p>At least 5 business intelligence briefs on key SEC growth market areas in the Caribbean are available for cluster members.</p> <p>At least 3 SEC match-making and/or investment forums are organised in the Caribbean. At least 40 Barbadian businesses participate in match-making and/or investment forums (at least 40% female participation is envisaged).</p> <p>At least five (5) consolidated business partnerships between Barbadian and Caribbean or international companies in the scope of the cluster are created</p>	<p>Discussions with various stakeholders on potential partnerships on the provision of tailored Caribbean market intelligence have been held. Currently, the Cluster and the CCREEE are defining the scope of cooperation. Moreover, the cluster is currently signing MOUs with the University of West Indies (UWI) and the Caribbean Climate Innovation Centre (CCIC). Both have a regional mandate and network within the Caribbean. UNIDO is also discussing the involvement of the cluster within the IDB supported regional network of national innovation centres. The cluster intends to recruit two university graduate of UWI to develop first business intelligence briefs.</p>
<b>Project Component 3 – Capacity Building and Knowledge Management</b>				
<b>Outcome 3.1</b>	<p>Reported accelerated implementation of SE support programs through improved private sector capacities after five (5) years</p> <p>Annual % increase in the use of domestic contractors, services and content throughout the value chain of SE investments</p> <p>Number of SE patents submitted for registration after five (5) years</p>	<p>Slow progress of the two major SE promotion programs due reported lack of private sector capacities</p> <p>Relatively high import dependence in some SE sectors</p> <p>Very low level of SEC patents submitted</p>	<p>Reported accelerated implementation of SE support programs through improved private sector capacities after five (5) years. Annual 3% increase in the use of domestic contractors, services and content throughout the value chain of SE investments. At least 3 SE patents submitted after five (5) years</p>	<p>It is still too early to report on the higher level impacts and indicators. Currently, the monitoring and evaluation plan is under establishment. There is currently no reliable data on sustainable energy jobs and turn-over available. The data is essential to track the progress and impact of the project in relation to the business-as-usual scenario. The market data on sales is also important to clarify the impact of the project with regard to GHG emission reductions.</p>

<b>Output 3.1.1</b>	<p>Number of proposals for improved product, service and qualification standards and certifications are formulated</p> <p>Number of qualification and certification standards in priority technology areas are adopted and their application is facilitated</p>	<p>Currently no qualification and certification standards for training in the SE sector</p> <p>Currently no standards for SE product and service certification in place (e.g. solar-thermal systems, PV installation)</p>	<p>At least 10 proposals for improved product, service and qualification standards and certifications are formulated. At least 5 qualification and certification standards in priority technology areas are adopted and their application is facilitated</p>	This activity will start in 2020 once the BGTC is in a more advanced stage and the membership base has consolidated.
				This activity will start in 2020 once the BGTC is in a more advanced stage and the membership base has consolidated.
<b>Output 3.1.2</b>	<p>Online-training program operational</p> <p>Number of institutions include the tool in the curricula</p> <p>Number of Barbadians have taken the online-training (at least % women participation is envisaged)</p>	<p>Currently only very few island-specific training tools in Barbados available</p>	<p>Online-training program operational. At least 5 institutions use the tool in their curricula. At least 100 Barbadians have taken the online-training (at least 40% women participation is envisaged)</p>	<p>The activity is in an advanced stage. The e-learning program was already developed and is currently in the testing phase. The program will be promoted by CCREEE in partnership with the cluster and UWI. Several training sessions will be organised in 2020.</p>
<b>Output 3.1.3</b>	<p>Number of trainers trained in key technology areas</p> <p>Number of experts from various sectors are trained in priority technology and skill areas (at least % women participation is envisaged)</p> <p>Number of entrepreneurs (incl. cluster management) participating in training missions to international cluster/technology hubs focusing on solutions with high GHG emission reduction and value creation potential (e.g. solar-thermal, efficient buildings, climate technology) (at least % women participation is envisaged)</p>	<p>SEC capacity building more ad-hoc</p> <p>Lack of certified trainers and trainings available in SEC priority areas</p> <p>Lack of knowledge transfer in some priority areas</p>	<p>At least 50% of the trained trainers provide regular trainings to others either as a free-lancer or as trainer of an institution . At least 300 experts from various sectors are trained in clean-tech entrepreneurship, VC financing, export marketing of high-tech products, HRM of project teams and technology and innovation management (at least 40% women participation is envisaged). At least (five) 30 entrepreneurs (including cluster management) are participating in training missions to international cluster/technology hubs (at least 40% women participation is envisaged)</p>	<p>This activity will start in 2020 once the BGTC is in a more advanced stage and the membership base has consolidated.</p>

<b>Output 3.1.4</b>	Number of R&D partnerships on technology priorities created Number of prototypes and business ideas developed and under testing	Currently no R&D partnerships	2 (two) R&D partnerships on technology priorities created. At least two (2) prototypes and business ideas developed and under testing	There is agreement on starting first joint R&D activities in at least two sub-clusters: a.) the Barbados Bioenergy Cluster in partnership with the Bioenergy Association, Barbados National Oil, University of West Indies (UWI) and Think Design Barbados, b.) the Smart Electric-Mobility Cluster (EV Cluster) in association with Barbados Light & Power, Megapower and Emera. The first companies to be located in the Newton Business Incubator unit are: a.) Barbados Light & Power, Smart battery charging and testing laboratory and the Barbados Bioenergy Association. For example, It is intended to create technology partnerships with Chinese EV companies with regard to the production of e-buses, including the development of a load management software to be used in buses and e-vans and passenger Evs. Another technology partnership is being discussed with Landis & Gyr on the optimization of biogas plants. It is also the intention that the Green Technology Cluster is operating an EV for marketing and communication purposes.
<b>Project Component 4 - Monitoring and Evaluation</b>				
<b>Outcome 4.1</b>	Timely implementation of the project and project targets and indicators properly monitored throughout the project duration	N/A	Project progress and an overall project impact assessment periodically monitored and evaluated	



<b>Output 4.1.1.</b>	List of all progress reports prepared Mid-term review (optional) and terminal evaluation conducted Number of project steering committee meetings Number of dissemination materials	N/A	M&E Plan ready within 3 months of project start. Mid-term review (optional). Terminal evaluation completed by end of project closing time. Project terminal report completed by end of project. At least one (1) project steering committee meeting per year. Dissemination materials ready by the end of project	The draft M&E Plan is available and will be discussed in the PSC. A Project Cycle Management Tool was developed and is available. There is need to improve the market data to be better in the position to track progress with regard to the project indicators. Currently, there is only rudimentary data on sustainable energy jobs and turn-over available. An xls tracking sheet is under development.
				Project preparatory and inception meetings were held in April and May 2018 in Bridgetown, Barbados. The meetings were combined with the CCREEE Executive Board meetings. The Terms of Reference for the PSC were developed and a first PSC meeting was organised in April 2019. Another one is planned to be held in September 2019.

### III. Project Risk Management

III.1 Please indicate the overall risk management: (i) as identified in the CEO Endorsement document, and (ii) progress to-date.

Risk	Rating	Mitigation	Progress
<b>Political/Policy Risk:</b> Due to the upcoming national elections in the first quarter of 2018 there is some risk that the new Government might change the policy towards sustainable energy and Barbados as a „green technology hub“.	<i>Medium</i>	The risk is relatively low as also the utility and the private sector is highly committed to the 100% renewable energy scenario of Barbados. Moreover, the high costs of energy generation will be a strong incentive for that. Since the component has a strong policy dialogue component this risk will remain low. The GEF project foresees also a cooperation with BREA which has a strong advocacy role in the public.	The rating was increased from “Low” to “medium”. The governmental change following the parliamentary elections in May 2018 and the fiscal crisis of the country marked a major shift of paradigm. Due to the difficult situation, the new Government had to enter into the five-year Barbados Economic Recovery and Transformation (BERT) Program with the International Monetary Fund (IMF). The developments caused a number of unforeseen bottlenecks and delays for the implementation of the GEF project which was supposed to start in June 2018. For example, all national co-funding arrangements needed to be reconfirmed and reapproved. The office and hub space for the Barbados Green Technology Cluster (BGTC) could not be provided by the Barbados Investment Development Cooperation (BIDC) as planned. Finally, end of January 2019 the Board of BIDC reconfirmed the provision of the hub space at the Newton Industrial Park as committed. Also the commitments of MIBI had to be confirmed. After the governmental change the main counterpart Ministry – the MIICs – was split into two Ministries – the Ministry of International Business and Industry (MIBI) and the Ministry of Small Business, Entrepreneurship and Commerce (MSBEC). The MSBEC will be an important stakeholder of the project. UNIDO and MIBI is currently adapting the composition of the Project Steering Committee (PSC). MIBI informed that the committed cash-contribution to the project might not be available in

			the full amount as planned. UNIDO and MIBI are currently identifying other co-funding options (e.g. other Ministries, EU, IADB).
<b>Involvement Risk:</b> Lack of interest by the public and private sectors in the platform, resulting in limited interest of local players in developing the sustainable energy value chain	<i>Medium</i>	During project design, a consultative and participatory approach has been applied; from the very beginning of the implementation, the ownership of the platform will lie with MIICS and the local key stakeholders; A proper communication strategy will be prepared and implemented with adequate resources allocated to ensure an effective and widespread communication of the platform.	The interest in the cluster turns out to be higher as expected. UNIDO and the cluster manager are undertaking continued stakeholder consultations. There is also a lot of interest of other international partners to link their programs to the cluster (e.g. IABD Innovation agencies, Caribbean Climate Innovation Centres).
<b>Technical/Capacity risks:</b> Lack of capacity by the national counterpart	<i>Low</i>	The project is in line with national policies and the project will be executed in close coordination with the respective Ministries and authorities;	The risk remains low. Further measures to mitigate the risk will be undertaken in the near future.
<b>Management Risk:</b> Lack of effective coordination between various project partners	<i>Low</i>	A proper coordination will be sought through the Project Steering Committee and the strategic platform. Consultation between MIICS and other GEF executing and implementing agencies has already happened during the preparation of this document.	Two preparatory and inception meetings were held; one initial PSC meeting was held in April 2019. A second PSC meeting will be held in September.
<b>Financial Risk:</b> Incentive and financial support systems are insufficient.	<i>Low</i>	The capacity of financial and governmental institutions will be strengthened for the promotion of innovation and added value creation. Grant instruments will be developed and applied to ensure availability of financing resources.	The risk remains low. Further measures to mitigate the risk will be undertaken in the near future.
<b>Climate Change Risk:</b> Negative impacts of climate change	<i>Low</i>	The potential impact of extreme weather events on the industry-cluster and business models will be studied case by case and capacity will be built around climate resilient technologies. It shall be ensured that developed technology innovations shall be resilient to climate change impacts (e.g. disasters).	The risk was reduced to “low”. Further measures to mitigate the risk will be undertaken in the near future.
<b>Gender Risk:</b> Resistance against or lack of interest in, the project activities from stakeholders, especially with regard to the active promotion of gender equality.	<i>Low</i>	This Project will pursue thorough and gender responsive communication and ensure stakeholder involvement at all levels, with special regard to involving women and men, as	The risk remains low. Further measures to mitigate the risk will be undertaken in the near future.

Low participation rates of suitable female candidates due to lack of interest, inadequate project activity or missing qualified female population within the i.e. engineering sector.		well as CSOs and NGOs promoting GEEW.	
<b>Sustainability Risk:</b> There is risk that the cluster cannot be sustained after the closure of the GEF project. The same might happen regarding the envisaged financing facility.	<i>Medium</i>	The project builds on strong ownership of the counterpart. The execution of the cluster-component by BIDC as well as the high co-financing contribution of BIDC and the Government will ensure that the cluster will continue to operate after the closure of the project. Moreover, the cluster will start to generate its own revenues during the life-cycle of the GEF projects. The receipt of funding from the facility is linked to a membership in the cluster – that will strengthen the membership base of the cluster from the very beginning. Moreover, the cluster will contribute to the sustainability of the funding operations of the facility, since the supported entrepreneurs will get access to other services (e.g. incubation, cooperation with other companies).	UNIDO works closely with BIDC on the establishment of the Cluster. UNIDO and BIDC are currently finalising the subcontracting arrangements. Currently, the cluster is developing its Business Plan which will address the long-term sustainability of the Cluster. The internationally recruited cluster manager is strengthening the capacities of the local team. UNIDO and MIBI continue to consult with key partners on the establishment of a cluster funding window for cluster members, including start-up. UNIDO is also affiliating the cluster with other ongoing and starting innovation initiatives (e.g. IDB national innovation centres, Caribbean Climate Innovation Centre).

III.2 If the project received a sub-optimal risk rating (H, S) in the previous reporting period, please state the actions taken since then to mitigate the relevant risks.

#### IV Environmental and Social Safeguards (ESS) & Stakeholder Engagement

IV.1 As part of the requirements for **projects from GEF-6 onwards**, and based on the screening as per the UNIDO Environmental and Social Safeguards Policies and Procedures (ESSPP), which category is the project?

☐ Category A project

☒ Category B project

☐ Category C project

(By selecting Category C, I confirm that the E&S risks of the project have not been escalated to Category A or B).

	E&S risk	Mitigation measures undertaken during the reporting period	Monitoring methods and procedures used in the reporting period
(i) Risks identified in ESMP at time of CEO Endorsement	During the project preparation period (PPG) it has been concluded that no construction will take place, therefore no environmental risks are foreseen at this stage. If during the implementation phase, any action that may include environmental or social risks is to be undertaken, a particular ESS study will be carried out by an environmental and social consultant to track and mitigate the risks.	No special actions were required at this stage.	No special actions were required at this stage.
(ii) New risks identified during project implementation (if not applicable, please insert 'NA' in each box)	NA	NA	NA

IV.2 Please provide any feedback submitted by co-financiers, and other Partners/Stakeholders of the project (e.g. private sector, CSOs, NGOs, etc.).

IV.3 Please list and provide any **relevant stakeholder consultation documents**:

- Agenda and Presentation of the 1<sup>st</sup> Steering Committee
- TOR of the Cluster Manager
- Presentation on the Barbados Green Technology Cluster
- Final MOUs
- Final version of the *Barbados Sustainable Energy Industry Report*
- Final version of the *Pre-Feasibility Study on the Barbados Green Technology Cluster*


## **V Knowledge Management**

V.1 Please provide any **relevant knowledge management mechanisms / tools** that the project has generated:

Further information will be provided in the 2<sup>nd</sup> PIR. The final versions of the *Barbados Sustainable Energy Industry Report* and *Pre-Feasibility Study on the Barbados Green Technology Cluster* is available.

## VI Financial report

### VI.1 Financial implementation of the project:

	<b>PROJECT DELIVERY REPORT</b>		<b>Project:</b>	150123 - STRATEGIC PLATFORM TO PROMOTE SUSTAINABLE ENERGY TECHNOLOGY INNOVATION, INDUSTRIAL DEVELOPMENT AND ENTREPRENEURSHIP IN BARBADOS	<b>Project Manager:</b>	Martin Lugmayr	<b>Project Validity: Status:</b>	31.05.2017 - 05.06.2022 Implement
	<b>Reporting Period:</b>	06.01.2017 - 30.06.2019	<b>Project Theme:</b>	Energy and Environment	<b>Country:</b>	Barbados	<b>Region</b>	The Americas
<b>Sponsor Nr.</b>	<b>Sponsor</b>	<b>Grant</b>	<b>Grant Description</b>	<b>Fund</b>	<b>Currency</b>	<b>Grant Status</b>	<b>Grant Validity</b>	
400150	Global Environment Facility	2000003671	BARBADOS SUST ENERGY	GF	USD	Closed	06.06.2017 - 06.06.2018	
400150	Global Environment Facility	2000003915	BARBADOS_SUSTAINABLE	GF	USD	Authority to implement	05.06.2018 - 05.06.2022	

	Description	Released Budget Current Year (a)	Obligations Current Year (b)	Disbursements Current Year (c)	Expenditures Current Year (d=b+c)	Total Agreement Budget (e)	Released Budget (f)	Obligations + Disbursements (g)	Funds Available* (h=f-g)	Support Cost (i)	Total Expenditures (j=g+i)
2000003671											
150123-0-01-01	Project document endorsed by GEF	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1500	Local travel	0.00	0.00	0.00	0.00	2,327.07	2,327.07	2,327.07	0.00	0.00	2,327.07
1700	Nat.Consult./Staff	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2100	Contractual Services	0.00	0.00	0.00	0.00	47,670.00	47,670.00	47,670.00	0.00	0.00	47,670.00
5100	Other Direct Costs	0.00	0.00	0.00	0.00	(94.05)	(94.05)	(94.05)	0.00	0.00	(94.05)
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,750.00	4,750.00
<b>150123-0-01-01</b>	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>49,903.02</b>	<b>49,903.02</b>	<b>49,903.02</b>	<b>0.00</b>	<b>4,750.00</b>	<b>54,653.02</b>
<b>2000003671</b>	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>49,903.02</b>	<b>49,903.02</b>	<b>49,903.02</b>	<b>0.00</b>	<b>4,750.00</b>	<b>54,653.02</b>
<b>2000003915</b>											
<b>150123-1-01-01</b>	<b>1.1 Policy and regulatory framework</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>
1100	Staff & Intern Consultants	99,000.00	21,894.84	7,009.07	28,903.91	141,000.00	141,000.00	28,903.91	112,096.09	0.00	28,903.91
1500	Local travel	18,000.00	0.00	0.00	0.00	27,000.00	27,000.00	0.00	27,000.00	0.00	0.00
1700	Nat.Consult./Staff	19,500.00	0.00	0.00	0.00	25,500.00	25,500.00	0.00	25,500.00	0.00	0.00
5100	Other Direct Costs	3,500.00	0.00	0.00	0.00	6,500.00	6,500.00	0.00	6,500.00	0.00	0.00
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,745.87	2,745.87
<b>150123-1-01-01</b>	<b>Total</b>	<b>140,000.00</b>	<b>21,894.84</b>	<b>7,009.07</b>	<b>28,903.91</b>	<b>200,000.00</b>	<b>200,000.00</b>	<b>28,903.91</b>	<b>171,096.09</b>	<b>2,745.87</b>	<b>31,649.78</b>
<b>150123-1-01-02</b>	<b>1.2 Investment and business promotion</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>
1100	Staff & Intern Consultants	242,500.00	25,739.01	12,024.97	37,763.98	466,500.00	466,500.00	37,763.98	428,736.02	0.00	37,763.98
1500	Local travel	20,000.00	0.00	0.00	0.00	26,000.00	26,000.00	0.00	26,000.00	0.00	0.00
1700	Nat.Consult./Staff	146,500.00	8,404.05	3,102.38	11,506.43	281,500.00	281,500.00	11,506.43	269,993.57	0.00	11,506.43
3500	International Meetings	81,000.00	0.00	0.00	0.00	121,000.00	121,000.00	0.00	121,000.00	0.00	0.00



4500	Equipment	86,000.00	0.00	0.00	0.00	178,000.00	178,000.00	0.00	178,000.00	0.00	0.00
5100	Other Direct Costs	24,000.00	0.00	0.00	0.00	27,000.00	27,000.00	0.00	27,000.00	0.00	0.00
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4,680.68	4,680.68
<b>150123-1-01-02</b>	<b>Total</b>	<b>600,000.00</b>	<b>34,143.06</b>	<b>15,127.35</b>	<b>49,270.41</b>	<b>1,100,000.00</b>	<b>1,100,000.00</b>	<b>49,270.41</b>	<b>1,050,729.59</b>	<b>4,680.68</b>	<b>53,951.09</b>
<b>150123-1-01-03</b>	<b>1.3 Capacity building and knowledge</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>
1100	Staff & Intern Consultants	68,500.00	21,894.84	7,009.06	28,903.90	152,500.00	152,500.00	28,903.90	123,596.10	0.00	28,903.90
1500	Local travel	4,000.00	0.00	0.00	0.00	6,000.00	6,000.00	0.00	6,000.00	0.00	0.00
1700	Nat.Consult./Staff	24,700.00	0.01	3,933.85	3,933.86	54,700.00	54,700.00	3,933.86	50,766.14	0.00	3,933.86
3500	International Meetings	21,785.00	0.00	0.00	0.00	51,785.00	51,785.00	0.00	51,785.00	0.00	0.00
5100	Other Direct Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3,119.58	3,119.58
<b>150123-1-01-03</b>	<b>Total</b>	<b>118,985.00</b>	<b>21,894.85</b>	<b>10,942.91</b>	<b>32,837.76</b>	<b>264,985.00</b>	<b>264,985.00</b>	<b>32,837.76</b>	<b>232,147.24</b>	<b>3,119.58</b>	<b>35,957.34</b>
<b>150123-1-51-01</b>	<b>Project Management and Monitoring</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>	<b>USD</b>
1100	Staff & Intern Consultants	0.00	2,653.92	849.58	3,503.50	0.00	0.00	3,503.50	(3,503.50)	0.00	3,503.50
1500	Local travel	10,000.00	0.00	0.00	0.00	20,000.00	20,000.00	0.00	20,000.00	0.00	0.00
1700	Nat.Consult./Staff	53,400.00	0.00	0.00	0.00	131,400.00	131,400.00	0.00	131,400.00	0.00	0.00
5100	Other Direct Costs	6,000.00	0.00	0.00	0.00	10,099.00	10,099.00	0.00	10,099.00	0.00	0.00
9300	Support Cost IDC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	332.83	332.83
<b>150123-1-51-01</b>	<b>Total</b>	<b>69,400.00</b>	<b>2,653.92</b>	<b>849.58</b>	<b>3,503.50</b>	<b>161,499.00</b>	<b>161,499.00</b>	<b>3,503.50</b>	<b>157,995.50</b>	<b>332.83</b>	<b>3,836.33</b>

150123-1-53-01	Evaluation	USD	USD	USD	USD	USD	USD	USD	USD	USD	USD
1100	Staff & Intern Consultants	0.00	0.00	0.00	0.00	22,500.00	22,500.00	0.00	22,500.00	0.00	0.00
1500	Local travel	0.00	0.00	0.00	0.00	5,000.00	5,000.00	0.00	5,000.00	0.00	0.00
1700	Nat.Consult./Staff	10,000.00	0.00	0.00	0.00	16,500.00	16,500.00	0.00	16,500.00	0.00	0.00
3500	International Meetings	0.00	0.00	0.00	0.00	6,000.00	6,000.00	0.00	6,000.00	0.00	0.00
150123-1-53-01	Total	10,000.00	0.00	0.00	0.00	50,000.00	50,000.00	0.00	50,000.00	0.00	0.00
2000003915	Total	938,385.00	80,586.67	33,928.91	114,515.58	1,776,484.00	1,776,484.00	114,515.58	1,661,968.42	10,878.96	125,394.54
150123	USD Total	938,385.00	80,586.67	33,928.91	114,515.58	1,826,387.02	1,826,387.02	164,418.60	1,661,968.42	15,628.96	180,047.56

## VII Work Plan and Budget<sup>3</sup>

VII.1 Please provide **an updated project work plan and budget** for the remaining duration of the project, as per last approved project extension. Please expand/modify the table as needed.

Project Strate gy	Target	Items/Activities	Time shedule and milestones																UNIDO GEF still available in USD	
			Year 1 (completed)				Year 2				Year 3				Year 4					
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Project Component 1 – Policy and regulatory framework																				USD 171,096.09
Output 1.1.1	Platform is operational. At least 50 platform members (it is envisaged that 40% are represented by women). 20 meetings and consultations to discuss policy and legal key issues organized	A public-private dialogue platform is fully operational							X											
		At least 50 platform members (it is envisaged that 40% are represented by women) are identified								10 mem bers				30				50		
		20 meetings and consultations to discuss policy and legal key issues organized; meeting minutes are available								2 meet ings				8				8		

<sup>3</sup> Please note that the project budget is almost finished (further details in the above mentioned financial report). The remaining budget will mainly be used for the contract extension of the National Project Coordinator and the preparation of advocacy materials.

Output 1.1.2	Vision statement and strategy developed (a gender dimension will be included). At least 80% of the foreseen activities in the strategy implemented during the project duration. Promotion material disseminated in at least 5 different sectors (a gender dimension will be included)	Vision and Road Map for the Climate Change abatement and Greentech Cluster developed (a gender dimension will be included) and published in cooperation with stakeholders and line ministries.							publi shed								
		Marketing material on the Green Technology Hub developed and disseminated; integrate the vision into cleantech ecosystem							publi shed								
Output 1.1.3	At least three (3) high-level policy dialogues are organized. At least 200 national, regional and international senior officials of the public and private sector (businesses, banks, investors) participate in the dialogues (participation of 40% women participation is envisaged)	At least three (3) high-level policy dialogues are organized.							1 dialo gue			1 dialo gue			1 dialo gue		
		At least 200 national, regional and international senior officials of the public and private sector (businesses, banks, investors) participate in the dialogues (participation of 40% women participation is envisaged)							50 parti cipa nts			70 parti cipa nts			80 parti cipan ts		
		Develop and disseminate results of policy dialogues							5				15				15

Output 1.1.4	At least 30 proposals developed and discussed in policy and legislative processes. At least 10 of demand-creating and supplier-oriented policies, laws or standards on SEC technologies are approved and their implementation facilitated. At least ten (10) inputs to mainstream SEC technologies into cross-cutting policies in key economic sectors (e.g. generation and distribution of power and energy services, construction, fisheries and agro-processing, tourism, transport, waste management, as well as water/desalination)	At least 30 policy proposals developed and discussed in policy and legislative processes.						5				10			15	
		At least ten (10) policy inputs to mainstream SEC technologies into cross-cutting policies in key economic sectors (e.g. generation and distribution of power and energy services, construction, fisheries and agro-processing, tourism, transport, waste management, as well as water/desalination)								5				5		
		At least 10 of demand-creating and supplier-oriented policies, laws or standards on SEC technologies are approved and their implementation facilitated.								5				5		
<b>Project Component 2 – Investment and Business Promotion</b>																USD 1,050,729.5 9

Output 2.1.1	One (1) technology cluster is fully operational. At least 10 private sector working groups established after 5 years (at least 40% women participation is envisaged). At least 30 contributing private-sector cluster members after 5 years (at least 40% women participation is envisaged). At least 5 prototypes and business ideas developed and tested after 5 years. At least USD 4 million of funding for the activities of the cluster raised by the cluster management . At least 10 million USD of raised	Establishment of the project coordination office at BIDD HQ in Saint Michael, Access to secretarial, marketing and IT services provided by BIDD.						X									
		Recruitment and employment of the international cluster manager in line with the agreed twinning model													hand over		
		Recruitment and employment of the domestic deputy cluster manager in line with the agreed twinning model															
		Access to BIDD secretarial, IT and PR, marketing and communication services as required (secretary, IT consultant, marketing & communications, research work)															

investment for business ideas developed in the scope of the cluster (committed not contracted) after 5 years. Biannual sustainable energy and climate technology survey and industry report prepared and distributed. At least 70% of satisfaction with the services of the cluster members after 5 years (survey)	Operationalise the Incubator Centre at Newton Industrial Park with IT infrastructure, equipment, laptops and make it available to cluster businesses and startups in partnership with the BIDC Management and in line with its rules and procedures; identify the best modality and register the cluster as legal identity and get the registration done;							X								
	Support the Project Management Unit (PMU) of the GEF Project in the coordination, execution and reporting tasks as assigned; Cooperate closely with the PAGE program and its focal point in Barbados; coordinate closely with the UNIDO team;															
	Establish the cluster governance structure and organize regular Steering Committee (SC) meetings; act as a Secretary to the SC and provide regular updates to its members;							SC				SC				SC
	Establish the website of the cluster including community functions; ensure effective public relations and dissemination of information on the cluster;							publi shed								
	Develop and implement the Cluster Business Plan and Strategy for the period of 2019 to 2024 (incl. organizational chart, budget, results framework with indicators, as well as financial sustainability scenario); make use of international cluster methodologies and handbooks (e.g. UNIDO, GIZ);							publi shed								

		Develop the annual work plans and budgets, progress reports and externally audited financial statements of the cluster in line with BIDC, MIBI and UNIDO/GEF requirements and submit the documents for approval to the Steering Committee;														
		Establish an effective project cycle management and monitoring system to ensure efficient implementation of the work plans and to track progress in relation to the long-term objectives and indicators in the Business Plan;														
		Establish and implement the internal administrative, procurement and financial rules and procedures of the cluster in line with BIDC, MIBI and UNIDO/GEF requirements;														
		Develop a strong gender-sensitive “vision statement” and “corporate identity” of the Cluster and contribute to the national efforts to promote Barbados as a hub for green industry and climate innovation centre						publi shed								
		Develop the key support policies (incl. gender) of the cluster and ensure strong client-orientation; continuously (re)adapt its strategy and provided services to the needs of the cluster members and international developments in the sector;														
		Define the membership policy of the cluster and ensure sustainable growth of the membership base, comprising businesses, research institutions and other relevant key stakeholders;														



		Develop a cluster membership fee policy and pricing policy to charge for offered services to members or external partners;														
		To act as one-stop shop develop a practical set of customer-oriented service packages to sustain cluster memberships and attract new members (e.g. information exchange, training, applied R&D, entrepreneurial support, shared facilities, matchmaking and networking, lobbying & policy inputs, fund raising, joint tendering & sourcing, joint project, product and patent development, market intelligence, export promotion);														
		Mobilise at least 30 contributing private-sector cluster members (at least 40% women participation is envisaged)														
		At least USD 4 million of funding for the activities of the cluster raised by the cluster management, mobilization of funding to startups and SMEs														
		Develop the rules and procedures of the cluster working groups and take leadership in convening, coordinating, providing quality assurance and coherence, and results-orientation; undertake continued stakeholder consultations; At least 10 private sector cluster working groups (at least 40% women participation is envisaged) are established;						<b>2 sub-clusters</b>				<b>6 sub-clusters</b>				<b>10 sub-clusters</b>

		At least 10 prototypes and business ideas are developed within the cluster and tested; At least 10 million USD of raised investment for business ideas and joint projects developed in the scope of the cluster (committed not contracted);										3 protot ypes				10 prototy pes
		Ensure effective communication with and among cluster members and coordinate closely with all relevant public and private stakeholders in Barbados and CARICOM (e.g. energy, environment);														
		Support start-ups in the implementation of a clear roadmap that will drive them from the technical verification of the “invention” into the full commercialization of their product/solution/service;														
		Collect market intelligence data and establish close relationship with relevant domestic and overseas government agencies, universities, research institutions, venture capital communities, trade associations and professional bodies;														
		Organizing study tours (6) to innovation agencies, technology centers startup accelerators in Latin America ( Colombia, Costa Rica and Uruguay) and Europe in association with IDB and Climate-KIC						2 stud y tours				2 study tours				2 study tours
		Undertake surveys among cluster members to check the relevance and performance of the cluster; At least 70% of satisfaction with the services of the cluster services by its members after 5 years (survey)								1st survey					2nd survey	

Output 2.1.2	At least 3 calls for proposals of the facility on technology priority areas implemented. At least 1 specific call for women entrepreneurs undertaken. USD 2 million of facility funding contracted and implemented (in USD) after five (5) years. At least 30 businesses supported through grants and/or concessional loans after five (5) years	Finalisation of consultations with MoEWR and IADB on the envisaged cluster funding window for the sustainable energy entrepreneurship facility under the Smart Energy Fund Phase II; at least USD 2 million of facility funding mobilised and under implementation;																
		Undertake 6 calls for proposals of the facility on technology clusters priority areas implemented (bioenergy, Smart EV, Green Buildings, one targeting particularly women entrepreneurs)										1st call	2nd call	3rd call	4th call	5th call	6th call	
		Provide management and financial support to at least 30 businesses and start-ups under the business incubator facility								10 businesses		20 businesses				30 businesses		
Output 2.1.3	At least 5 business intelligence briefs on key SEC growth market areas in the Caribbean are available for cluster members. At least 3 SEC	As part of the cluster a business match-maker is established; it provides market intelligence and interlinks cluster members with technology companies, investors and venture capitalist in the Caribbean, the diaspora and internationally; close coordination with CCREEE. Organization of 3 investor meetings or forums								established		1st Forum		2nd Forum			3rd Forum	

	match-making and/or investment forums are organised in the Caribbean. At least 40 Barbadian businesses participate in match-making and/or investment forums (at least 40% female participation is envisaged). At least five (5) consolidated business partnerships between Barbadian and Caribbean or international companies in the scope of the cluster are created	At least 10 business development projects will be implemented in close association with RE and climate technology startups. Business plans, investor decks and market studies will be delivered by the BI unit. BI unit staffing with 2 young graduates and Cluster Managers.										3 projects		5 projects			10 projects	
		At least five (5) consolidated business partnerships between Barbadian and Caribbean or international companies in the scope of the cluster are created										2 partnerships					5 partnerships	
<b>Project Component 3 – Capacity Building and Knowledge Management</b>																		USD 232,147.24
Output 3.1.1	At least 10 proposals for improved product, service and qualification standards and certifications are formulated. At least 5 qualification and certification standards in	Formulate at least 10 proposals for improved product, service and qualification standards and certifications												5 proposals				5 proposals
		At least 5 qualification and certification standards in priority technology areas are adopted and their application is facilitated												5 standards				5 standards

	priority technology areas are adopted and their application is facilitated																	
Output 3.1.2	Online-training program operational. At least 5 institutions use the tool in their curricula. At least 100 Barbadians have taken the online-training (at least 40% women participation is envisaged)	Online-training program operational								publi shed								
		At least 5 institutions use the tool in their curricula												5 uses				
		At least 100 Barbadians have taken the online-training (at least 40% women participation is envisaged)															100 particip ants	
		Evaluate given feedback and improve the online training											1st survey					2nd survey
Output 3.1.3	At least 50% of the trained trainers provide regular trainings to others either as a free-lancer or as trainer of an institution. At least 300 experts from various sectors are trained in cleantech entrepreneurship , VC financing, export marketing of hightech products, HRM of project teams and technology and innovation management (at	Train at least 300 experts from various sectors in priority technology and skill areas (at least 40% women participation is envisaged)								50 train ed		150 train ed		200 train ed				300 trained
		Ensure that 50% of the trained trainers provide regular trainings to others either as a free-lancer or as trainer of an institution																
		At least (five) 30 entrepreneurs (including cluster management) are participating in training missions to international cluster/technology hubs focusing on solutions with high GHG emission reduction and value creation potential (e.g. solar-thermal, efficient buildings) (at least 40% women participation is envisaged)								15 busi nesse s					30 busin esses			

	least 40% women participation is envisaged). At least (five) 30 entrepreneurs (including cluster management) are participating in training missions to international cluster/technology hubs (at least 40% women participation is envisaged)																	
Output 3.1.4	2 (two) R&D partnerships on technology priorities created.  At least two (2) prototypes and business ideas developed and under testing	2 (two) R&D partnerships on technology priorities created								1 partnership				2 partnerships				
		At least two (2) prototypes and business ideas developed and under testing											1 prototype			2 prototypes		
		Demo project in e-transportation. Project Vehicle demo for the Green Technology Cluster. Testing of NEDC driving cycles in city traffic and demonstration of braking energy regeneration for charging VE battery in different driving modes.								Vehicle available								

Project Component 4 - Monitoring and Evaluation																		USD 207,995.50
Output 4.1.1.	M&E Plan ready within 3 months of project start. Mid-term review (optional). Terminal evaluation completed by end of project closing time. Project terminal report completed by end of project. At least one (1) project steering committee meeting per year. Dissemination materials ready by the end of project	Development and implementation of the M&E Plan (incl. data-gathering for the baseline)					impr oved basel ine											
		Steering Committee				1st				2nd				3rd				4th
		Mid-Term Review																
		Terminal Report																
		Inception Workshop	do ne															
		Project Implementation Reviews																
		Annual Project Review to assess project progress and performance																
		Regular monitoring and analysis of performance indicators (technical, social, environmental, gender)																
		Subtotal 4.1.1																
Total																	USD 1,661,968.4 2	

## **VIII Synergies**

### **VIII.1 Synergies achieved:**

The project has already started to create manifold synergies. There are discussions to establish the dialogue platform under the policy component as part of the high-level dialogue and cross-sectoral coordination mechanism of the Partnership for Action on Green Economy (PAGE). The coordination of the PAGE is led by UNDP in partnership with the Ministry of Environment and National Beautification (MENB) and in coordination with other UN Agencies (e.g. UNIDO, ILO, UNEP, UNITAR). The cluster is currently strengthening its relations to other innovation centres, networks and programs. The cluster is currently signing MOUs with the University of West Indies (UWI) and Caribbean Climate Innovation Center (CCIC). The GEF project also contributes to the development of the new national industrial policy of Barbados.

UNIDO is also discussing the involvement of the cluster within the IDB supported regional network of national innovation centres. The cluster manager was invited to act as jury member in a climate launchpad pitching event supported by the Climate-KIC Europe and CCIC. Currently the cluster is discussing the work program with the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) which is based in Barbados and will contribute to the business intelligence and capacity building component of the cluster. There are also discussion on how the cluster could link up with UNIDO's Global Clean Tech Innovation Programme (GCIP) and the Private Finance Advisory Network (PFAN).