

INDEPENDENT EVALUATION UNIT
OFFICE OF EVALUATION AND INTERNAL OVERSIGHT

INDEPENDENT TERMINAL EVALUATION

Start-up and first operational phase of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) – A Centre of Excellence to Promote Inclusive and Sustainable Energy Industries

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Acronyms and abbreviations

Acronyms	Definition
ADA	Austrian Development Agency
BLOOM	Barbados Clean Tech Cluster
BMC	Borrowing Member Countries (of CBD)
BP	Business Plan
C-SERMS	Caribbean Sustainable Energy Roadmap and Strategy
CARICOM	Caribbean Community of countries
CBD	Caribbean Development Bank
CCCCC	Caribbean Community Climate Change Centre
CCREEE	Caribbean Centre for Renewable Energy and Energy Efficiency
CDF	CARICOM Development Fund
CEKH	CARICOM Energy Knowledge Hub
CICTs	Caribbean Island Countries and Territories
CIMH	Caribbean Institute of Metrology Hydrology
COTED	Council for Trade and Economic Development
CREDP	Caribbean Renewable Energy Development Programme
CREEBC	CARICOM Regional Energy Efficiency Building Code
CREF	Caribbean Renewable Energy Forum
CROSQ	CARICOM Regional Organization for Standards and Quality
DFI	Development Finance Institutions
EB	Executive Board
ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EMS	Environmental Management Standards
ERC	Energy Report Cards
ET	Evaluation Team
EU	European Union
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GN-SEC	Global Network of Regional Sustainable Energy Centres

Acronyms	Definition
IDB	Inter-American Development Bank
IRRP	Integrated Resource and Resilience Plans
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
MS	Member State
NFI	National Focal Institutions
OAS	Organization of American States
EIO/IEU	UNIDO's Independent Evaluation Unit
OECS	Organization of Eastern Caribbean States
PCREEE	Pacific Centre for Renewable Energy and Energy Efficiency
PD	Project Document
PPF	Project Preparation Facility
PPP	Public-Private Partnership
PRF	Project Result Framework
RBM	Results-based Management
RE&EE	Renewable Energy and Energy Efficiency
REEESAP	Renewable Energy and Energy Efficiency Strategy and Action Plan
RQI	Regional Quality Infrastructure
RUN	Regional Universities Network
SC	Steering Committee
SDG	Sustainable Development Goals
SEEC	Sustainable Energy Programme for the Eastern Caribbean
SEforALL	Sustainable Energy for All
SIDS	Small Island Developing States
SIDS DOCK	Small Island Sustainable Energy and Climate Resilience Organization
SME	Small and Medium Enterprises
STEAM	Science, Technology, Engineering, the Arts and Mathematics
TAPSEC	Technical Assistance Programme for Sustainable Energy in the Caribbean

Acronyms	Definition
TC	Technical Committee
TE	Terminal Evaluation
TH	Thematic Hub
ToC	Theory of Change
UNIDO	United Nations Industrial Development Organisation

Glossary of evaluation-related terms

Term	Definition
Quality at Entry	It refers to the quality of the project design. Whether the defined timeframe, the identified stakeholders, and assigned roles were adequate, and the indicators were SMART, etc.
Coherence	Logical relationship between the parties so that there is no contradiction or opposition between them, including within the UN system.
Exit Strategy	A strategy established so that results persist in the future, after project completion.
Effectiveness	The extent to which objectives stated were achieved.
Efficiency	This is a measure of how the resources invested in the activities were converted into results.
Impact	Positive and negative intentional, and unintentional, direct and indirect effects produced by an intervention in the long-term.
Smart Indicators	The criterion used to assess whether the indicators to measure progress towards objectives are specific, measurable, achievable, realistic, and time-bound.
Intervention	External action to support a national effort to achieve specific development goals.
Lessons Learned	Generalizations based on evaluation experiences to be applied in broader contexts.
Baseline	The pre-intervention status against which the impact of the intervention is measured.
Logical Framework	Planning and management tool used to guide the planning, implementation, and evaluation of an intervention, in keeping with an objectives/results-based management system.
Outputs	Outputs in terms of physical and human capacities resulting from an intervention.
Relevance	The extent to which the objectives of an intervention are consistent with the beneficiary's requirements, country needs, global priorities, and partners' and donors' policies.
Results	The expected effects of an intervention's outputs.
Risks	Factors, usually beyond the scope of the intervention that could affect the fulfilment of objectives.
Sustainability	The likelihood for a continuation of an intervention's benefits after completion.
Theory of Change	A tool to identify causal relationships between outputs, outcomes, and impacts, as well as the drivers and barriers to achieving them.

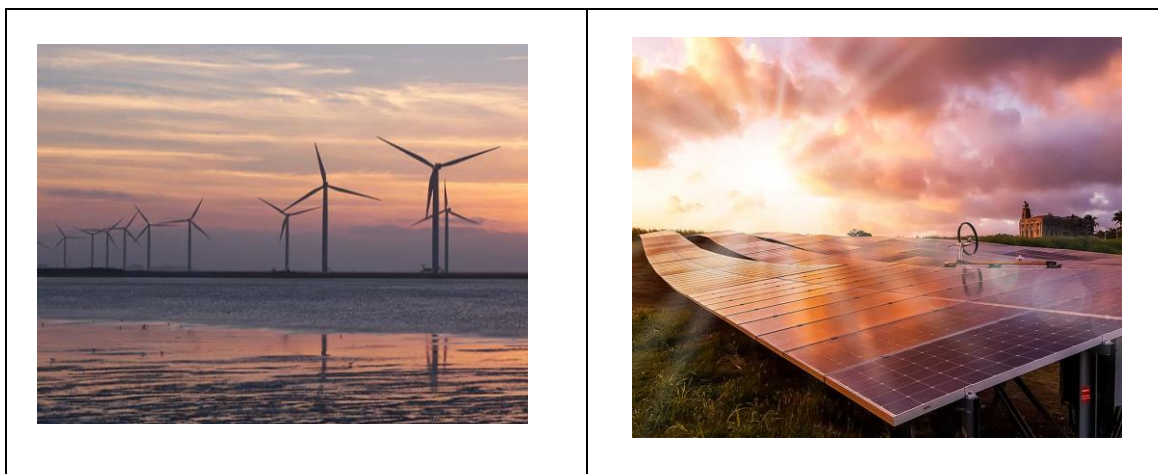
Executive summary

This report presents the results of the terminal evaluation (TE) of the project “Start-up and first operational phase of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) – A Centre of Excellence to Promote Inclusive and Sustainable Energy Industries”. The project aimed at supporting the Caribbean Community (CARICOM) and its 15 Member States (MS) in the design and establishment of CCREEE, under the umbrella of the Global Network of Regional Sustainable Energy Centers (GN-SEC) programme coordinated by UNIDO.

CCREEE stems from a registered SDG-7 SAMOA Pathway partnership which, in turn, is a component of a wider Memorandum of Understanding (MoU) signed by UNIDO, the Government of Austria and the Small Island Sustainable Energy and Climate Resilience Organization (SIDS DOCK) to assist Small Island Developing States (SIDS) in the Caribbean, Pacific, Africa and Indian Ocean in the establishment of regional sustainable energy centres.

Evaluation methodology: The TE was conducted as an independent in-depth evaluation in accordance with the UNIDO Evaluation Policy and the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle. The evaluation was carried out using a participatory approach whereby all key parties associated with the project were informed and consulted throughout the evaluation. A survey and semi-structured interviews were carried out, as well as a focus group meeting with CCREEE staff. There has been a constant communication between the evaluation team (ET) and the UNIDO Independent Evaluation Unit (EIO/IEU) on the conduct of the evaluation and methodological issues.

The evaluation applied the theory of change using mixed qualitative and quantitative methods to collect data. The evaluation framework was structured along 4 main questions. Findings have been supported by data triangulation, ensuring a sound evidence-base. Data collection tools included: i) documentary review, ii) visit to Barbados, to CCREEE office and other regional players; iii) interviews with 20 project stakeholders and beneficiaries (distance call /video conferences), iv) a quantitative and qualitative survey targeting all contacts provided by CCREEE, and v) organization of Focus Group Discussions at CCREEE with staff.



Key Findings

Relevance and Coherence: CCREEE is aligned with the existing Caribbean regional energy policy and MS national policies and is a facilitator of policy and strategy implementation. The relevance of CCREEE is confirmed by the high-level approval of the Centre by the Caribbean region's Ministers of Energy, by CARICOM the SIDS DOCK, and CDB. In line with the consultations with stakeholders and analyzing the project context, the ET recognizes the CCREEE remains highly relevant. The idea behind the CCREEE and its aims, objectives and the mandate of the organization are as relevant today as they were prior to the initial creation of the Centre. CCREEE can become even more relevant now that a precursor project, TAPSEC, has reached its end, and the COVID19 pandemic restrictions have lessened and travelling has resumed, allowing closer contact with MS and regional entities.

Project Design: The project design is similar to other GN-SEC centers and benefited from lessons learnt by other centers. The project design was adapted to the specificities of the Caribbean region, and was innovative in establishing a governance mechanism for the Centre, which included a Technical Committee and Technical Hubs. CCREEE has been designed following a high-level consultation and a needs assessment, and the project document included components and activities similar to other regional "RE&EE" centers as that was the foreseen approach. However, reality turned out differently and entities such as CARICOM Energy Unit, CROSO, and CCCCC ended up leading some processes, such that CCREEE became more a convener or facilitator than a doer, and in some activities was just a participant or service provider.

Under the above circumstances, the Project Result Framework, although structurally well designed, presents some indicators and targets that are either beyond the center's scope (see effectiveness), do not match the outputs or the activities foreseen to achieve them, or are unrealistic.

Efficiency: The establishment of CCREEE was affected by the long ratification process required for the legal agreement, which hindered a smooth uptake of the Centre as an entity able to submit projects and sign contracts. However, in line with the GN-SEC model, UNIDO bridged this time through its own rules and procedures, which allowed the Centre to start operating. This delay (4 years instead of 6 months) required more than 50% of budget support from ADA. Eight years after the beginning of the project, it might be expected that CCREEE by now would be at a more advanced stage and generating a stronger impact. Currently, 90% of CCREEE staff is still dependent on donor contributions (which hinders the Centre's capacity to establish its own agenda). According to positive audit reports, CCREEE has been financially well managed and was able to secure at least 60% of the total amount foreseen in the Project Document, not accounting for any in-kind contributions.

Effectiveness: CCREEE is established, has staff and working conditions, and is delivering services. CCREEE was designed as a matrix organization that needs to work with many players at regional and national level (in the MS) through National Focus Institutions (NFI) and thematic hubs. With the multitude of stakeholders working on energy transition in the region, CCREEE alone cannot achieve any outcomes but depends on joint efforts with national governments and national and regional institutions. Some targets included in the Project Document are too ambitious and could not be reached. Also, it is noticeable that CCREEE's activities are not yet mainstreamed and its intervention capacity in MS is still limited. Nevertheless, CCREEE was able to overcome barriers and make progress. These achievements are detailed in the report and include the following, among others:

- a functioning Centre with staff, rules and procedures;
- high visibility in international, regional, and national events;
- establishment of thematic hubs while engaging with Members States;

- developing comprehensive capacity building actions on technical and grid integration and integrated resource planning; and
- developing ERC in 15 countries and territories and of CARICOM itself, and involved in the IRRP or Vulnerability Risk Assessment in 8 countries.

In its first strategic plan, CCREEE identified 7 strategic programmes; however, in 2020 it became clear that not all programmes could be implemented simultaneously. Due to various factors, including the COVID-19 pandemic,

CCREEE subsequently opted to focus on 3 pillars, through which several programmes could be implemented while bringing together and facilitating different institutions to deliver other outputs. This is enabled by the CCREEE structure with a Technical Committee and Thematic Hubs. In this sense, CCREEE has acquired a certain autonomy (in terms of implementing its own agenda) that is not found in other centres, although it is still financially dependent on donors. It should be noted that some stakeholders criticize CCREEE, stating that activities of these pillars were already being implemented by other entities in the region and that CCREEE should focus on its core mandate, which they consider to be to promote energy transition in the MS.

Cross cutting issues: Gender and poverty are inextricably linked in the region where over 50% of households are headed by women and where women and children are largely responsible for household cooking and cleaning. While both gender mainstreaming and poverty alleviation have specific targets in the CCREEE programme documents, most interviewees indicate that they are unable to see how CCREEE has addressed these issues and to see linkages or the effects of CCREEE activities on them. Although over 50% of CCREEE staff are women (there is no information available on levels of engagement or pay gaps), this has not translated into decision making. Gender representation on the EB, Technical Committee, and executive direction of CCREEE is highly unbalanced. Reportedly, gender is also not fully integrated in programming tools or products. CCREEE, therefore, still has a long way to go in terms of inclusive programming and outcomes.

Environmental aspects are addressed in the IRRP (mostly the climate component) and in terms of energy efficiency. Nevertheless, one needs to keep in mind that work in renewable energy does not automatically mean addressing the environment, and that CCREEE can do more on environmental sustainability.

On **governance and internal management**, entities which are members of the Executive Board, of the Technical Committee, and of Thematic Hubs have engaged willingly and are providing good support to CCREEE.

However, the wide range of entities involved makes the exchange of sensitive information and the sense of ownership challenging. This is typical of an inter-governmental institution, where there is greater need for consistent process management and consensus-building. At the same time, as each Hub is coordinated/led by a specialized entity, there might also be some healthy competition among the Thematic Hubs.

With some divergence in programmatic focus and with the travel limitations imposed by COVID19, CCREEE has not been able to mainstream its activities in all Member States, and some staff have moved to other entities. As a result, the staff turnover at CCREEE has been high.

Sustainability: There are challenges regarding the Centre's sustainability in the following areas:

- CCREEE's influence at the regional level as not all MS collaborate effectively with the Centre;

- CCREEE's niche of operation in the region, accompanied by a strong agenda, which addresses Member States' needs while gauging their collaboration and buy-in;
- increased impact on RE and EE technologies throughout the Caribbean through the expansion and development of new synergies and alliances, new donors and broad range of funding sources;
- attraction and retention of staff, especially women, at decision making level.

Stakeholders and partners participation: The preparatory process for the establishment of CCREEE was coordinated by CARICOM in close partnership with UNIDO. In line with the established GN-SEC “twinning” support modality¹, UNIDO provided services related to mentoring, consensus and institution building, as well as technical program development. The process was supported by the Austrian Cooperation and Austrian Development Agency (ADA), SIDS DOCK, and Spanish Cooperation. German cooperation and GIZ, funded by the European Union, involved CCREEE in TAPSEC project, which was pivotal for CCREEE strengthening.

CARICOM Member States demonstrated high commitment regarding the establishment of CCREEE by approving its creation on the level of Ministers of Energy and Heads of State even against reluctance of some international partners.

Overall, the project “Establishment and First Operational Phase of Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)” **is classified as Satisfactory** by the evaluation team (ET).

Recommendations

The following recommendations highlight practical next steps for CCREEE and are presented by topic to maximize clarity.

Recommendation 1 - Governance:

It is recommended that CCREEE build on its long-term business plan, including the Funds Mobilization Strategy and Key Performance Indicators, and the Human Resources Strategy and Action Plan, to create a common roadmap for CCREEE and MS going forward in sustainable energy transition.

Recommendation 2 - Programming:

It is recommended that CCREEE programming focus on the following:

- mainstreaming clean energy technology in the region;
- promoting technology transfer from academia to the private sector (industry, construction, mobility); and
- gender mainstreaming and social inclusion in programming.

Recommendation 3 - Communications:

CCREEE should improve marketing and communication, as well as one-on-one outreach to MS, and aim to make CCREEE the automatic partner of choice for renewable energy and energy efficiency initiatives.

Recommendation 4 - Partnerships and Coordination:

CCREEE should enhance its partnerships with other regional bodies (similar to the ongoing collaboration with Caribbean Export) and national bodies through the NFI, but not be limited

¹ Institutional peer-to-peer learning.

to them, and deepen the partnership and coordination with the Caribbean Development Bank (CDB).

Recommendation 5 - Member States:

MS should reach out to CCREEE to develop their national programmes jointly and verify the added value the centre brings. Each country has its own context and might be at a different stage in the transition to sustainable energy. Through CCREEE, MS can benefit from other experiences and new processes, reducing the time and learning curve they would endure otherwise.

Recommendation 6 - Donors:

It is recommended that donors routinely consult CCREEE from the beginning of bilateral or multilateral programming on RE&EE in the region, as the Centre is a knowledge repository and has the capacity to reduce duplication, facilitate implementation, and enhance cooperation.

Lessons Learned

Lesson 1: The regional processes to establish an organization take time. Greater emphasis needs to be placed on planning and implementing a strategy to ensure that the Legal Agreement establishing a centre can be taken into regional (CARICOM) ministerial meetings sooner, and that the MS are able to sign the Legal Agreement. A back-up strategy, including direct work with parliamentarians, could be considered to address major constraints of MS to sign the Agreement.

Lesson 2: Flexibility should be built into project design and/or results framework to take into account the possibility of change in institutional and political conditions.

Lesson 3: Marketing is very important for a small entity that wishes to grow and to become a regional reference in the sector. A vibrant and dynamic website is a very important tool for that purpose, as it can showcase successes as they are achieved (and they do regardless of the amount of staff) and show value to stakeholders across the region.

Lesson 4: Building of one-on-one relationships with MS is a powerful way of promoting programming, strengthening project management teams at the country level and fostering successful results.

Lesson 5: It is expected that Business Plans will be realistic having learned from experience. However, it would be preferable to start with a few core actions, and as the centre grows, expand activities (starting small and focused and then growing sustainably rather than to starting all components at once). Unrealistic targets can deter results-based management, and might generate a negative marketing of the centre (perception of limited capacity).

Evaluators' assessment of the project

Evaluation Criteria	Comments	Rating
Progress to impact	The CCREEE has been established and is functioning, with some regional initiatives, and providing some services. However, its sustainability is challenging. CCREEE is at a cross-roads regarding what its role should be: a service provider, an incubator of innovative ideas, a regional project implementation agency, a facilitator agency. At the end of the project, which has been extended several times, the impact of the creation of CCREEE is still not noticed throughout the region, as its relationship with some MS is still limited, and some regional development players state all CCREEE activities were already being done by some other entity previously. Some donors active in the region still do not view CCREEE as THE entity to go to for the implementation of regional RE&EE projects.	MS
Project design		MS
Overall design	The project design is similar to other GN-SEC centres and benefited from lessons learnt by other centres. The project design took into account some specificities of the Caribbean region and was innovative in relation to the establishment of CCREEE's governing structure with technical committee and technical hubs. However, the regional institutional setting has changed from what was written in the project design, which had activities similar to other regional REEE centers. Therefore, project design did not fully adjust to the Caribbean context where entities such as CARICOM Energy Unit, CROSQ, University Network, CCCCC do exist, and no efforts were made to update the design.	MS
Logframe	Although structurally well designed, the Project Result Framework presents activities that are not the responsibility of CCREEE. In addition, it contains indicators and targets to which CCREEE can only contribute if requested, or that are beyond the Centre's scope. Some of the indicators and targets do not match the outputs or the activities foreseen to achieve them.	MU
Project performance		S
Relevance	CCREEE is aligned with the existing Caribbean regional policy and MS national policies and is a facilitator of policy and strategy implementation. The relevance of CCREEE is confirmed by the high-level approval of the Centre by the Caribbean region's Ministers of Energy, by CARICOM the SIDS DOCK, and CDB. CCREEE has some procedures that might be an example to other centres of the GN-SEC.	HS
Effectiveness	CCREEE is established, has staff and working conditions and is delivering services. Due to the reported issues on the logframe, it is difficult to objectively estimate CCREEE's effectiveness. CCREEE has been in many ways a facilitator/supporter rather than a doer. It is noticeable that CCREEE's activities are not yet mainstreamed and its intervention capacity in MS is still limited. Eight years after the beginning of the project, it could be expected that CCREEE by now would be at a more advanced stage and generating stronger impact.	S

Evaluation Criteria	Comments	Rating
Efficiency	There have been delays with the setting up of CCREEE, and with the transition from the Start-up Phase to the 1 st Operational Phase, which required additional 50% of budget support from ADA, and a project duration of 8 years. About 90% of CCREEE staff is still dependent on donor contributions, and CCREEE still does not have a strong regional agenda working with all MS. CCREEE was able to secure, at least 60% of the total amount foreseen in the Project Document, not accounting for in-kind contributions, directly funded actions and funds mobilized (which CCREEE does not account for).	MS
Sustainability of benefits	CCREEE is a reality and is seen as a useful institution to facilitate implementation of transition to sustainable energy. The major challenges identified with the sustainability of CCREEE are matching its relevance and finance. CCREEE is yet to establish or consolidate its niche and to become an added value in the region. There is a debate regarding CCREEE's business model. Similarly, there is no consensus among stakeholders regarding financing. CCREEE is just concluding a resource mobilization strategy that presents several revenue streams, including provision of services, earning a facilitation fee on PPF, and including both public and private sector sources of income.	ML
Cross-cutting performance criteria		MS
Gender mainstreaming and other vulnerabilities	CCREEE governing bodies (EB and TC) have only 11% women. CCREEE top management has no women. Two senior staff women resigned over the summer. Reportedly, despite efforts, it was not possible to establish a gender sensitive culture in CCREEE. There is not enough data on women to elicit a gender-based approach to programming. About 67% of questionnaire respondents indicated that they do not know if a gender analysis was undertaken on their CCREEE proposals. The majority (64%) of respondents say that they do not know if CCREEE activities are accessible to vulnerable populations. However, 57% of respondents indicated that their institution does target marginalized populations' access to energy. Most respondents (77%) agree that CCREEE activities take into account a balance between mitigation of climate change and other environmental concerns (biodiversity, desertification, pollution, etc.).	MS
M&E design and implementation	Steering Committee meetings and later EB meetings have been taking place, where progress is discussed and important decisions are taken. However, planning of activities and budget is not being performed since 2020, and only CCREEE's three pillar actions seem to be taken into account. At the first operational phase no monitoring and evaluation system including indicators measuring the CCREEE progress and impact were produced. The KPIs have just been approved recently (2022). CCREEE has not updated project design and Logframe, following the change on regional institutional setting. CCREEE is not collecting financial information on in-kind contributions, activities directly funded by donors and funds that the Centre is mobilizing to MS via the PPF. CCREEE is also not monitoring its technical impact in the region.	MU
Results-based Management	CCREEE has not yet taken a series of strategic steps to enhance the Centre. The first strategic model was not realistic, but was able to	MS

Evaluation Criteria	Comments	Rating
(RBM)	shift to a more realistic set of activities. Financial management has been adequate but continues to be highly dependent on donors' financing. Co-financing was not properly reported. Some governance issues need to be solved.	
Performance of partners		MS
Stakeholder engagement	Stakeholders interviewed and those who answered the questionnaire indicate that CCREEE can, by facilitating implementation, change the implementation deficit occurring in the region. However, some national focal points indicate they never used CCREEE products. Often the level of engagement depends on prior/existing working relationships with CCREEE officials. Member States claim that increased engagement with CCREEE would in turn lead to more requests and faster approvals for CCREEE activities.	MS
Regional counterparts	The regional institutional setting on RE&EE has been evolving and CCREEE is part of it, as it has worked directly with CARICOM Energy Unit and with the TAPSEC project, which allegedly started processes that CCREEE is supposed to inherit and take forward. Other entities in the region are also working with CCREEE such as CROSQ, CCCCC and Universities Network, and/or are part of the Center's EB and TC. But work is yet to be done, for the region to benefit of articulation between all these stakeholders. Under the SIDS DOCK framework, the Centre works closely with the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) and the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) on common SIDS sustainable energy issues and solutions.	MS
Donors	Austrian Development Agency, Spanish Cooperation and UNIDO have provided the financial and in-kind contributions as promised. The core international partners have agreed to project extensions several times, and ADA has provided further funding to allow the project to thrive. About 50% of respondents to the questionnaire believed that UNIDO's support to CCREEE was either good or very good, while about 38% indicated they did not know what to answer.	S
Overall assessment		S

1. Introduction

1.1 Evaluation objectives and scope

United Nations Industrial Development Organization (UNIDO) launched a bid for an international evaluation to undertake an independent final evaluation of the project “Start-up and first operational phase of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)² – A Centre of Excellence to Promote Inclusive and Sustainable Energy Industries”. This Report contains the general approach to the evaluation, the proposed theory of change, and presents the main findings of the evaluation, recommendations for the sustainability of the center and lessons learned.

CCREEE stems from a registered SDG-7 SAMOA Pathway partnership which, in turn, is a component of a wider Memorandum of Understanding (MOU) signed by UNIDO, the Government of Austria and the Small Island Sustainable Energy and Climate Resilience Organization (SIDS DOCK)³ to assist Small Island Developing States (SIDS) in the Caribbean, Pacific, Africa and Indian Ocean in the establishment of regional sustainable energy centres⁴.

The project under evaluation aimed at supporting the Caribbean Community (CARICOM)⁵, and its 15 Member States in the design and establishment of CCREEE, under the umbrella of the Global Network of Regional Sustainable Energy Centers (GN-SEC) programme⁶ coordinated by UNIDO. The preparatory process for the establishment of CCREEE was coordinated by CARICOM in close partnership with UNIDO and was supported by the Austrian Cooperation and Austrian Development Agency (ADA), SIDS DOCK, Spanish Cooperation, German cooperation and GIZ, and the European Union. In line with the established GN-SEC “twinning” support modality⁷, UNIDO provided services related to mentoring, consensus and institution building, as well as technical program development.

The evaluation team is composed of one international evaluation team leader, José de Bettencourt, assisted by a regional expert, Tara Lisa Persaud, with energy experience, located in Barbados. The evaluation is managed and supervised by an evaluation manager appointed by UNIDO ODG/EVQ/IEV, Ms. Adot Killmeyer-Oleche. The UNIDO Project Manager and his team at HQs, the local CCREEE team, as well as the UNIDO Cluster Manager, located in Bridgetown, Barbados, participated and provided support to the works of the individual consultants and the evaluation manager by providing contacts and data gathering support.

The purpose of the evaluation is to independently assess the project to help UNIDO to improve performance and results of ongoing and future programmes and projects. The terminal evaluation (TE) covers the whole duration of the project from its starting date December 2014 (including preparatory phase) and its completion in March 2022.

The evaluation has two specific objectives:

² www.ccreee.org

³ www.sidsdock.org transformed from an initiative to an intergovernmental organisation during project implementation

⁴ The SIDS DOCK request was based on UNIDO’s technical work and experience in the context of the Global Network of Regional Sustainable Energy Centers (GN-SEC), and led to the establishment of the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE).

⁵ www.caricom.org

⁶ www.gn-sec.net

⁷ Institutional peer-to-peer learning.

- (i) Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability and progress to impact; and
- (ii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO related to institution building and technology centres.

The key evaluation questions are the following:

- a. What are the key drivers and barriers to achieve the long-term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?
- b. How well has the project performed? Has the project done the right things? Has the project done things right, with good value for money?
- c. What have been the project's key results (outputs, outcome and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent the achieved results will sustain after the completion of the project?
- d. What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?

The evaluation assessed the likelihood of sustainability of the project results after the project completion. The assessment has identified key risks (e.g. in terms of financial, socio-political, institutional, and environmental risks) and explains how these risks may affect the continuation of results after the project ends. The evaluation criteria and rating criteria are shown in Annex I.

1.2 Overview of the project context

The creation of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) responded to the difficult energy situation in many of the Caribbean Island Countries and Territories (CICTs). In 2014, when the process started, the countries were facing the challenges of affordable energy services, energy security and climate change mitigation and adaptation simultaneously. The specific challenges (at that time and continuing today) can be summarized as follows:

- High electricity tariffs and generation costs represent a high cost for the economy, private households and local companies,
- The financial status of some utilities is weak due to high diesel generation costs and technical and commercial efficiency losses,
- Frequent power cuts have led to the installation private diesel generator capacity,
- Low energy efficiency (EE) in buildings, appliances, industrial processes and technical and commercial grid losses cause power cuts and load shedding,
- National access rate to modern energy services remains at low levels on some islands,
- The available renewable energy and energy efficiency (RE&EE) potentials remain unused,
- Increasing extreme weather events impact infrastructure and energy planning.

A number of regional and international partners' programmes and projects were assisting CICTs in addressing some RE&EE barriers (e.g. coordination, policy advisory and pre-investment support for projects). For example, the Caribbean Renewable Energy Development Programme (CREDP) successfully supported the development of national RE policy

frameworks and the execution of pre-investment activities. Development Finance Institutions (DFIs) such as the Caribbean Development Bank (CDB) and the Inter-American Development Bank (IDB) were gradually increasing their lending to sustainable energy projects.

Despite considerable progress in the creation of enabling national environments for the promotion of RE&EE achieved by some countries, there were still many limitations and barriers, and the development was not even among countries. Policy commitments had not transformed into real investments or created a vibrant market and industrial sector, as the local private sector and industry in the Caribbean were not taking full advantage of the growing sustainable energy market and job opportunities. There was a need for targeted RE&EE programs to enhance the productivity and competitiveness of key industries with high job leverage in the Caribbean (e.g. food processing, fishery, manufacturing, tourism). Small and medium-sized grid-connected renewable energy plants, as well as energy efficiency improvements in different aspects (e.g. buildings, grid losses, appliances, industry) needed a further boost.

The CARICOM Energy Policy (2013), the SIDS DOCK Goal of 25-50-25⁸ (2014) and the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS, 2015) established a common regional framework for RE&EE. SIDS DOCK had established an indicative pipeline of RE&EE priority projects with an estimated investment volume of 630 million USD in the Caribbean. However, the existing regional institutional support framework was not prepared to support Member States effectively to reach the established RE&EE targets. CARICOM's Energy Unit focused on the entire energy sector, as well as policy and political issues, and faced limited human capacities available for technical implementation (for periods of time there was no staff in the unit).

Therefore, there was a need for strengthened regional technical and institutional capacities to effectively assist the governments in implementing the established policy commitments, improve technical coordination and donor harmonization and complementarity, and ensure long-term sustainability of project interventions. This besides the need of a knowledge hub with information and documented lessons learned to inform regional and national policies and strategies.

Within the above referred MoU between SIDS DOCK, ADA, and UNIDO, the latter, in close coordination with CARICOM and the Organization of Eastern Caribbean States (OECS) implemented a consultative preparatory process. The process included broad stakeholder consultations, the development of a need's assessment and the elaboration of the project document on the first operational phase of the centre. The centre would work closely with the CARICOM Energy Unit on implementation issues. The resulting technical and institutional design of CCREEE was validated during a regional workshop, organized by UNIDO and SIDS DOCK, from 21 to 22 July 2014 in Roseau, the capital of the Commonwealth of Dominica.

CCREEE (as a regional center to promote sustainable energy, as depicted in figure x) was considered during the Fifty-Fourth Special Meeting of the Council for Trade and Economic

⁸ SIDS DOCK aims to increase energy efficiency by 25 per cent (2005 baseline), to generate a minimum of 50 per cent of electric power from renewable sources and to achieve a decrease of 25 per cent in conventional transportation fuel use by 2033: "Island Energy for Island Life: 25-50-25 by 2033".

Development (COTED), and as well during the Fifty-Fifth Special Meeting of the COTED (Energy and Environment), held in Guyana from 2-5 February 2015.

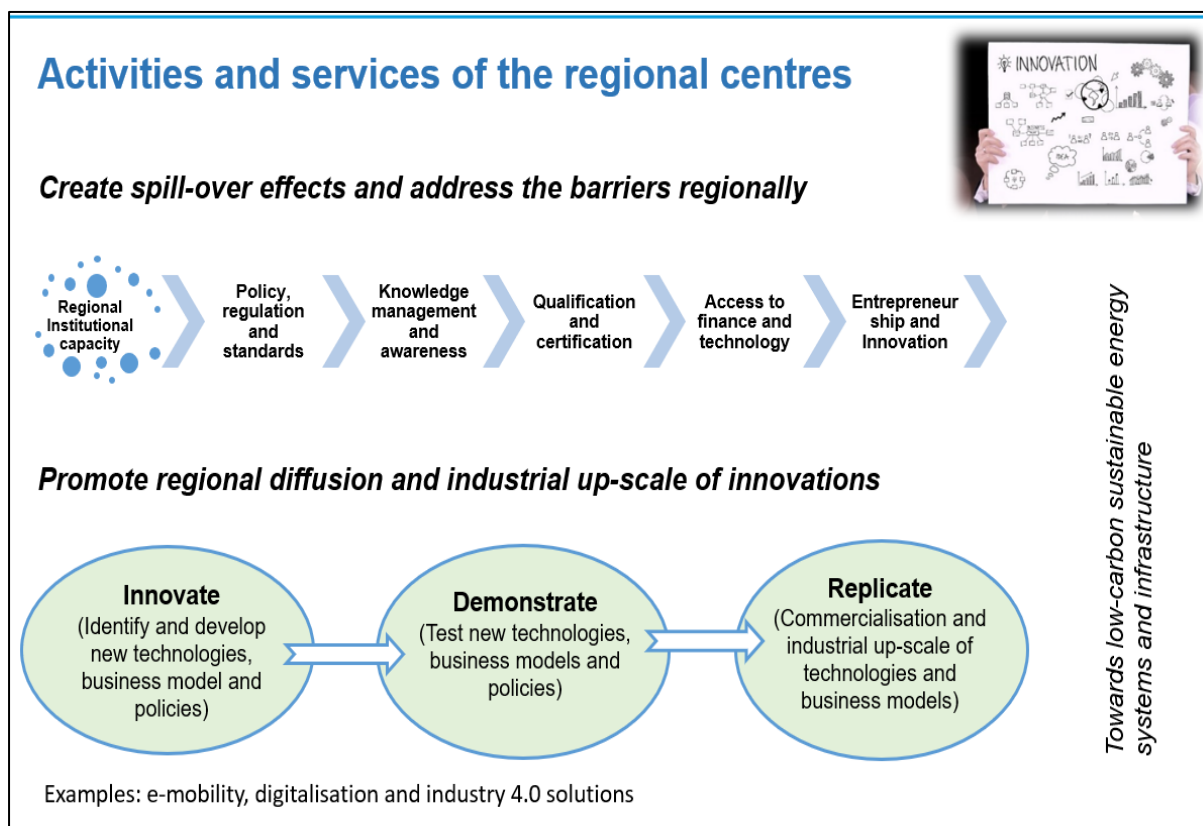


Figure 1: Activities and Services usually provided by regional centers of the GN-SEC⁹

CCREEE was endorsed as the implementation hub for sustainable energy activities and projects within the region at the Thirty-Sixth Regular Meeting of the Conference of Heads of Government of the Caribbean Community, held in Bridgetown, Barbados, 2 to 4 July 2015. The legal agreement establishing CCREEE was opened for signature at the Thirty-Eighth Regular Meeting of the Conference of Heads of Government of CARICOM in Grenada in July 2017, and after receiving a sufficient number of ratifications, CCREEE went into force on 19 May, 2018. In parallel, the offer of the Government of Barbados to host CCREEE in Bridgetown was accepted, based on the results of a competitive selection process. On 22 May, 2018 the CCREEE Headquarters Agreement was signed between the Government of Barbados and the CCREEE. With the effectiveness of both agreements the Center received full legal standing in line with CARICOM laws and regulations.

⁹ A GN-SEC member center undertakes regional actions in support of productive uses in key industrial sectors and in the promotion of energy entrepreneurship and innovation. This requires a supply(ier) oriented focus throughout all activities, e.g. policy, fiscal and non-fiscal incentives, R&D, quality infrastructure and standards, qualification, incubation, cluster building, and investment/funding partners). Moreover, the GN-SEC's centers often have the capacity to facilitate and promote access to and testing of the latest technology innovations and business models in the respective region. This includes a coordinated approach for testing, demonstration, as well as replication, commercialization and industrial up-scale.

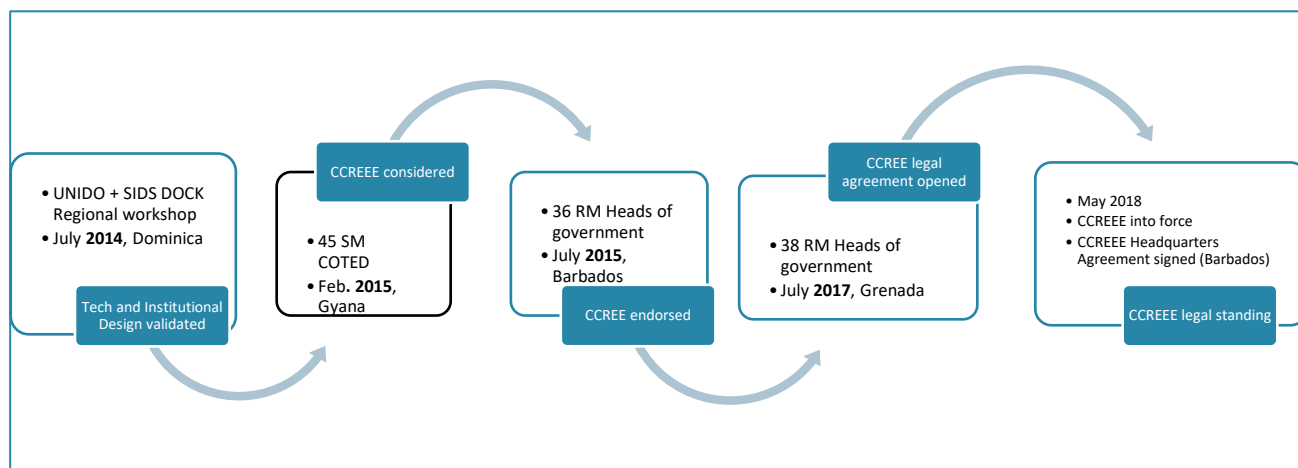


Figure 2: CCREEE evolution

The sustainable energy sector has been evolving during the period of this project (2014-2022), but reportedly at a much slower pace than the policy’s regional targets. The Caribbean Development Bank’s (CDB) reports¹⁰ that the share of Renewable Energy (RE) capacity installed is 12% in 2022, compared to target of 47% by 2027, and 55% by 2030. CDB estimated that, between 2023 and 2030, there will be need for sustainable energy investments of at least US\$40 billion across the borrowing member countries (BMCs). The main energy issues identified in the CDB’s BMCs are:

Table 1. The current main energy issues identified by CDB in the CARICOM MS

Issues	Detail
Climate Change	very low resilience in the face of increased flooding, stronger hurricanes, rising temperatures and sea levels, droughts, and other natural disasters.
Energy security (<i>manifested as: supply risk, high cost, unaffordability, price instability</i>).	i) over-dependency of BMCs on one source of energy (generally fossil fuel); ii) fuel is generally imported, depending on marine transport, and utilizing precious foreign exchange, iii) energy costs are subject to market vagaries and geo-political conditions

During this period (2014-2022), besides the SIDS DOCK¹¹’s and CARICOM¹² Energy’s extensive initiatives, other institutions in the Caribbean have also evolved and several activities are ongoing regarding renewable energy and energy efficiency.

The Caribbean Renewable Energy Forum (CREF) is a networking conference designed to drive forward renewable energy implementation across the Caribbean region. CREF is intended to explore bottle-neck issues of financing, regulation, and long-term project profitability. CREF's participants include regional governments, utilities, the Caribbean private sector, as well as regional and international investors, technology providers, and other key stakeholders in this emerging sector. In 2022, CREF held its 14th Annual Conference which was focused on actioning the energy transition in the region.

¹⁰ CDB President, Dr Gene Leon, speech at the Caribbean Development Bank’s (CDB) 52nd Annual Meeting in June 2022.

¹¹ www.sidsdock.org transformed from an initiative to an intergovernmental organisation during project implementation

¹² www.caricom.org

The CARICOM Regional Organization for Standards and Quality (CROSQ) involvement in energy arose from a 2013 mandate by the CARICOM Council for Trade and Economic Development (COTED) Energy aimed at contributing to the reduction of energy consumption and meeting national determined contributions through efficiency measures. To date CROSQ has successfully completed several projects to support the Harmonized Energy Efficiency Labelling Scheme (CEE Labelling Scheme) and the CARICOM Regional Energy Efficiency Building Code (CREEBC), through strategic collaborations and partnerships. Additionally, CROSQ has developed energy efficiency standards for various appliances and renewable energy technologies, and will develop such standards also for light industry. CROSQ is also implementing its Regional Quality Infrastructure (RQI) in Energy Road Map¹³.

The Caribbean Climate-Smart Accelerator¹⁴ aims at helping to transform the region's economy by fast-tracking sound public and private investment opportunities that support climate action and economic growth through sustainable development. The accelerator was established by "twenty-seven Caribbean Governments, alongside some of the largest global companies, financial institutions, and foundations" in order to "make the Caribbean a beacon of climate-smart development." The Accelerator endeavours to convene and create economies of scale to strengthen the ability of projects to attract resources. It encourages innovation and engages the private sector to execute through cross-sector partnerships. The primary goals of the Accelerator are: i) Create a Climate-smart roadmap detailing the key milestones with costs, implications, and timelines for moving at pace; ii) Place the region on an irreversible path to generate 90% of electricity from renewable resources and electrify the transport sector by 2035; iii) Place the region on a firm path to protect 30% of its ocean and land by 2030; iv) Strengthen the region's economic resilience against exogenous shocks by building climate action as an economic industry. The Accelerator is also a knowledge hub, particularly on climate financing, and organized an investors forum at the side event of UNFCCC COP 27th.

The Caribbean Development Bank is a player on energy transition and has been supporting many energy projects across the region, namely collaborating with governments and development partners to expand and improve access to energy and promote the transition to sustainable energy. CDB has a Sustainable Energy Programme for the Eastern Caribbean (SEEC), established in 2015 by the bank and the European Union-Caribbean Investment Facility, which is a multi-donor trust fund and grant facility that assists countries in addressing energy security issues. SEEC assists eligible countries in reducing dependency on imported fossil fuels through capacity-building and support for implementing energy efficiency initiatives. The programme has been performing energy audits, facilitating the retrofitting of government buildings to improve energy efficiency and facilitating replacement of streetlights with energy-efficient lamps. In 2022, CDB announced its framework called ASERT – Accelerated Sustainable Energy and Resilient Transition 2030¹⁵. The ASERT framework will contain the CDB's new policy for energy and various programme phases which will include transformative initiatives and strategies on how to move quickly and inclusively to sustainable energy, through building strong partnerships for coordination and resource mobilization. Initiatives are expected to include: (i) *Leap-frogging* Regulatory Reforms for expedited private investments; (ii) *A Resilient Roof* Initiative; (iii) *Wide-scale* Greening of Public Sector Initiative; (iv) *Revving up* E-mobility Initiative; (v) *Connecting and expediting* - Green Hydrogen Initiative; (vi) *Rapid de-risking* of offshore wind -initiatives; (vii) *Expanded GeoSmart* for geothermal Initiative; (vii) *Jump-starting* Battery energy storage Initiative.

Worth mentioning for this evaluation is the Technical Assistance Programme for Sustainable Energy in the Caribbean (TAPSEC). TAPSEC, funded by the EU and German Cooperation, was in a certain way a precursor of CCREEE, as the project paved the way for CCREEEs current

¹³ <https://energy.crosq.org/research/crosq-rqi-in-energy-strategy-2020-to-2030/>

¹⁴ <https://www.caribbeanaccelerator.org/our-work/>

¹⁵ <https://www.caribank.org/newsroom/news-and-events/cdb-urges-bold-and-urgent-actions-transform-regions-energy-landscape>

activities, and was designed during CCREEE's startup phase by the CARICOM Energy Unit that oversaw both initiatives. See Annex 2

1.3 Overview of the project

Table 2: Project Fact Sheet

Project title	Start-up and first operational phase of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)
Project ID	3181
Region	Caribbean Community (CARICOM)
Country	Regional project covering fifteen CARICOM Member States ¹⁶
Project donor(s)	Austrian Development Agency (ADA) and Government of Spain
Project implementation start date Project implementation start date Project implementation start date Project implementation start date	12/01/2014
Project duration	87 months (project extended due to increased funding from Austria and Spain to UNIDO during implementation)
Expected implementation end date	31/03/2022
Implementing agency	UNIDO
Executing partners	<ul style="list-style-type: none"> • Energy Unit of the Caribbean Community (CARICOM) • Government of Barbados (host country) • Small Island Sustainable Energy and Climate Resilience Organization (SIDS DOCK) • CARICOM Member States (National Focal Institutions)
Funding inputs (cash/in-kind)	<p><u>Managed by UNIDO</u> ADA: Euros 1,300,000 (increased to 2,1 million in 2018) Spain: Euros 316,400 provided in 2016 UNIDO funding (cash/in-kind): Euros 550,000</p> <p><u>Funds mobilized for CCREEE activities:</u> SIDS DOCK/CARICOM Secretariat: Euros 1,4 million (in-kind and through donor partnerships) Other donors: at least Euro 5,8 million Euro (e.g. EU TAPSEC, GIZ/BMZ, Spain, US)¹⁷</p>
Total project funding (incl. mobilized co-funding)	Euros 10,3 million

UNIDO received funding to supervise and lead the establishment of CCREEE in partnership with the CARICOM Secretariat and SIDS DOCK in 2014. During the following years, UNIDO provided support services related to institution-building, technical program development, as

¹⁶ CARICOM Member States include Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago. It was decided that the centre will be also open for non-CARICOM members (e.g. Dominican Republic and Cuba and Caribbean territories if they express official interest to join.

¹⁷ Co-funding was defined in the project document as follows: Based on the example of ECREEE in West Africa, it is expected, that once CCREEE becomes fully operational it will attract significant co-funding from other donors. The support will partly go to UNIDO, directly to the centre or will co-und certain activities. It shall be noted that significant parts of the indicated funding might not be handled by the centre directly as it will be provided in form of services or equipment to specific activities of the centre by different donor partners or institutions. The structure of fund flows from the various partners will depend on the different agreements entered into with the respective partners.

well as consensus-building. As CCREEE evolved, UNIDO closed its institution-building support to focus on technical project partnerships. Between 2016 and 2018, CCREEE was headed by the Interim Executive Director, Mr. Al Binger. As a result of a competitive selection process, Dr. Gary Jackson was appointed as Executive Director in October 2018.

Currently CCREEE operates in accordance with its established Strategic Plan (2019 to 2023) and rules and procedures. CCREEE aims at addressing RE&EE holistically and in an equal way, is acting as a think-tank and hub for sustainable energy. It strives to play a key role in creating economies of scale and a competitive sustainable energy market and business sector. In addition, the centre provides technical support to CARICOM, OECS, SIDS DOCK, SE4ALL and other international partners. CCREEE strives to develop regional methodologies and tools, relevant for the local private sector and industry. CCREEE has managed to find its niche, performing a two-fold role:

- (i) executing directly activities that respond to needs in a complementary way to other initiatives and entities, and
- (ii) as a facilitator, establishing synergies with and between existing entities in the region, to promote the realization of activities.

As stated, the main objective of the UNIDO Project was to support CARICOM, SIDS DOCK and its 15 Member States in the design and establishment of CCREEE under the umbrella of GN-SEC programme,¹⁸ coordinated by UNIDO. This was to be achieved through 5 outcomes: (i) Enhanced regional institutional capacities through the creation of the efficiently managed and financially sustainable CCREEE; (ii) Accelerated development, adoption and execution of regional and national gender sensitive RE&EE policies, targets and incentives through targeted regional interventions; (iii) Strengthened capacities of local key institutions and stakeholder groups through the up-scaling and replication of certified training and applied research programs and mechanisms; (iv) Enhanced awareness of key stakeholder groups on RE&EE opportunities through the up-scaling of regional mechanisms for data and knowledge management and advocacy; and (v) Increased RE&EE business opportunities for local companies and industry through the execution of regional investment promotion programs and tailored financial schemes.

The CCREEE's start-up phase and first operational phase project has been implemented in close partnership with the CARICOM Secretariat's Energy Unit, the SIDS DOCK, the government of (the host country) Barbados, and CARICOM Member States. As envisaged, during project implementation, the newly established legal entity CCREEE has gradually assumed the role of the main executing partner.

The main stakeholders of the project under evaluation are described in Annex 3. Until the centre became a legally established entity in 2018, the project implementation was overseen through a Steering Committee, which met either physically or by online means. Particularly in the beginning, when the legalization of the centre faced challenges, many meetings were held in various formats. After the official signing and ratification of the CCREEE legal agreement and host country agreement, the foreseen governance structure became effective.

CCREEE has established its Governance structure in line with the UNIDO project document, the GN-SEC and CARICOM practice. The CCREEE Governance structure includes: the Executive Board (EB) and its sub-committees (human resources, finance and administration, strategic partnerships, fund raising); the Technical Committee; The Secretariat, that receives guidance and reports to COTED on Energy; National Focal Institutions; Thematic Hubs; and Regional Universities Network (RUN). The structure is depicted in Figure 3.

¹⁸ www.gn-sec.net

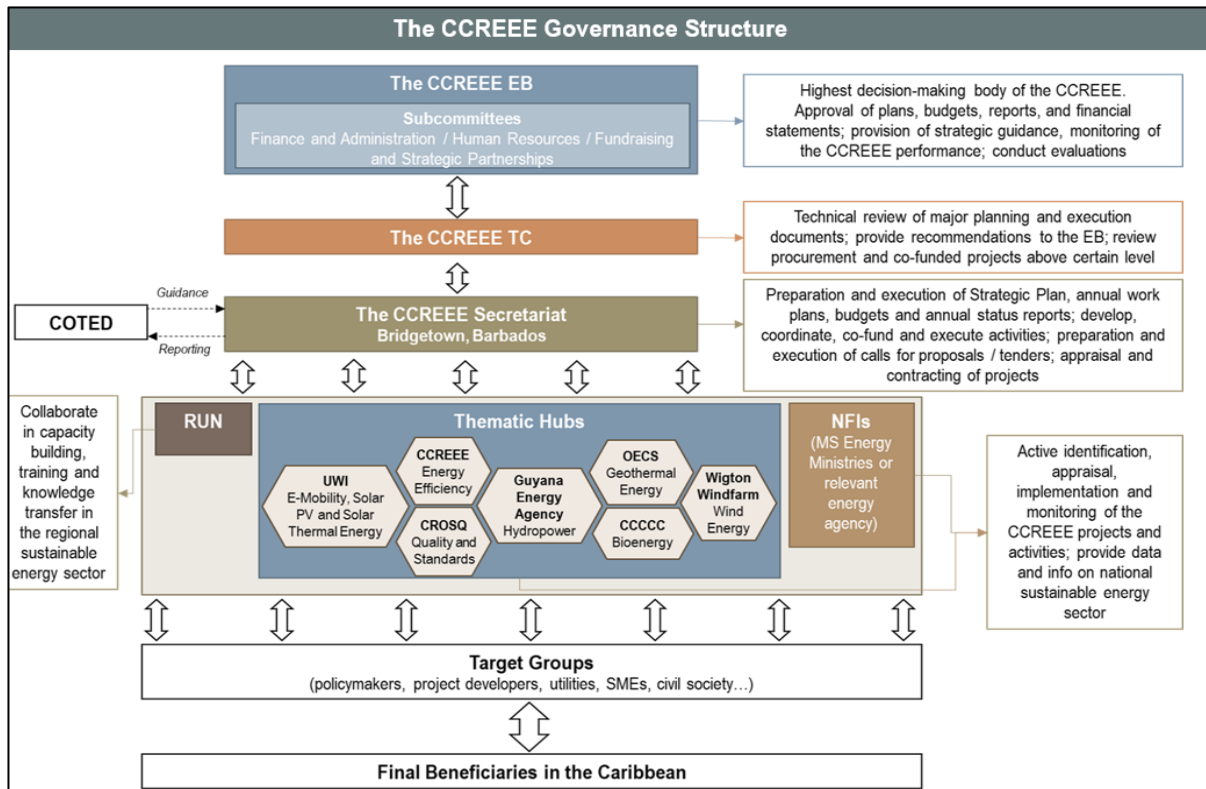


Figure 3: CCREEE Governance Structure

The Executive Board, Technical Committee and other sub-committees

The Executive Board (EB) provides oversight for the CCREEE, which includes the review and approval of annual work plans and budgets, progress reports and financial statements. EB provides recommendations to the Council. The EB consists¹⁹ of representatives of CARICOM Member States and Institutions of CARICOM, as well as core development partners (e.g. UNIDO, ADA). These development partners contribute to the organizational and technical budget of the centre. The EB is supported by the Technical Committee (TC) and other sub-committees. The TC is composed of technical experts from major regional institutions and the international development partners (also non-core partners). This technical advisory committee provides recommendations to the EB on technical documents provided by the Centre (e.g. work plans, project documents).

National Focal Institutions

The Secretariat undertakes its activities in coordination and cooperation with a network of National Focal Institutions²⁰ (NFIs) distributed throughout all CARICOM Member States. The purpose of this network is to increase the impact and effectiveness of programmes, projects and activities developed, coordinated, co-funded and/or implemented under the leadership of the CCREEE. Moreover, having a network of NFIs communicating and working with the CCREEE is intended to avoid duplication of activities and guarantee alignment with the individual needs of each CARICOM Member State.

¹⁹ EB Members rotate occasionally.

²⁰ The list of NFIs is available here: <https://www.ccreee.org/national-focal-institutions>

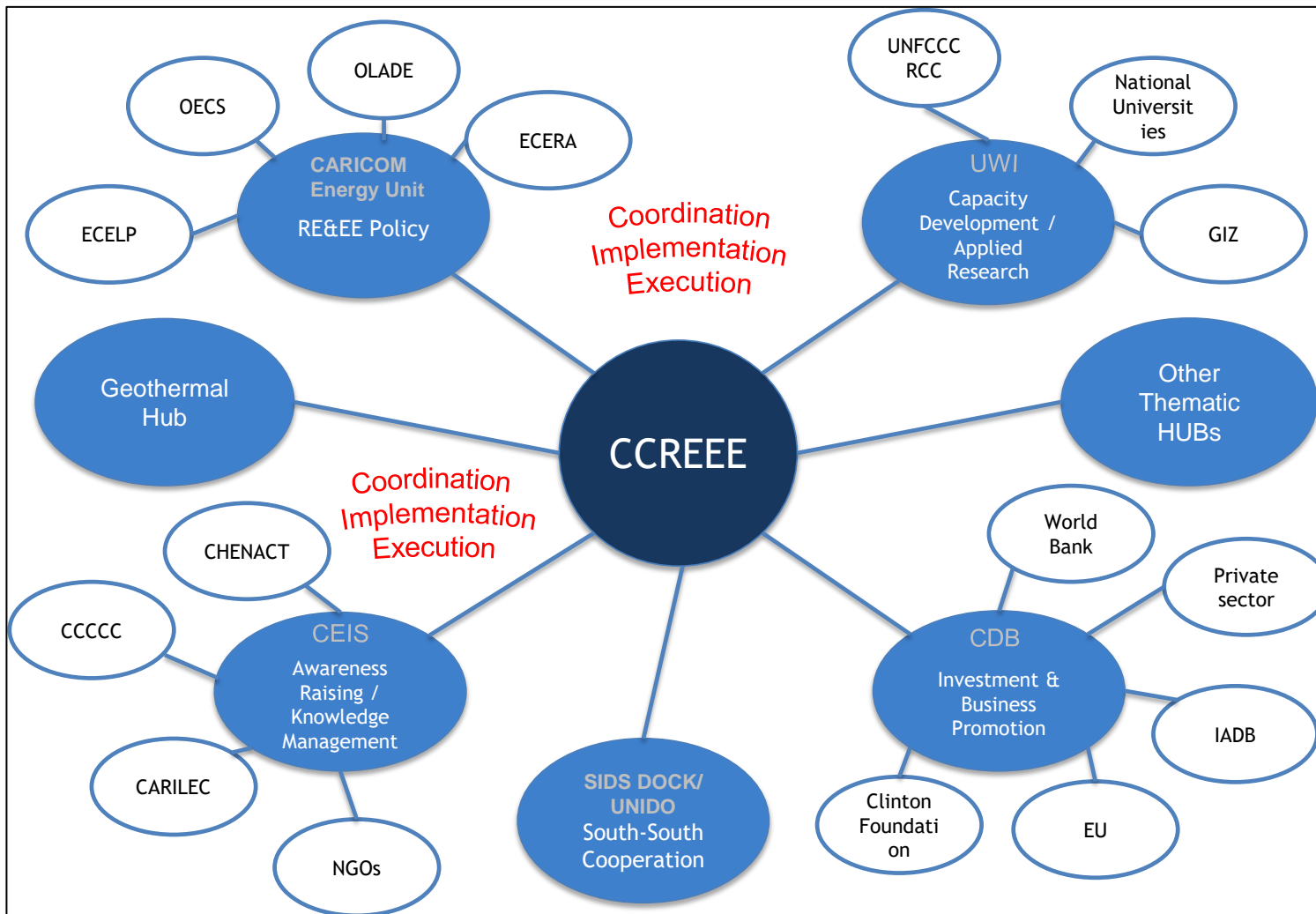


Figure 4: Relationship between the CCREEE as a technical coordinator for energy activities and thematic hubs responsible for implementation of activities

1.4 Theory of Change

The Project Document does not provide a Theory of Change, therefore the ET had to build one to be able to perform the evaluation. Following the model of other centers (Figure 5), the flow of change envisioned for CCREEE is depicted in Figure 6.

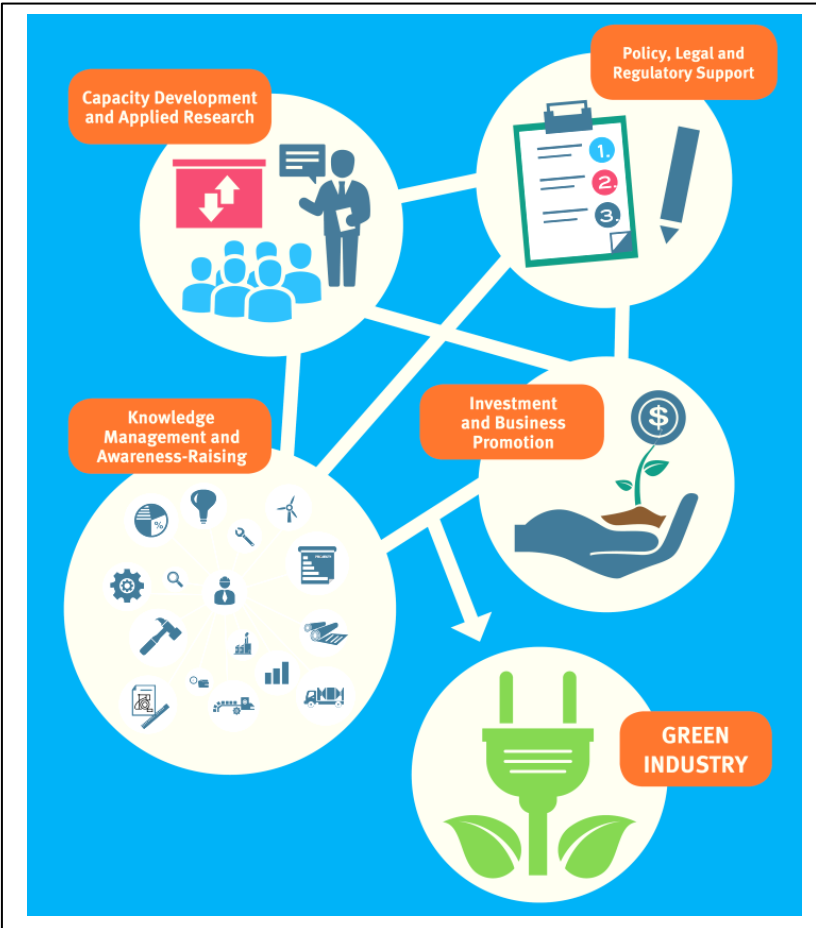


Figure 5: CCREEE promotes "soft" activities to enable hardware investments (source: Project Document)

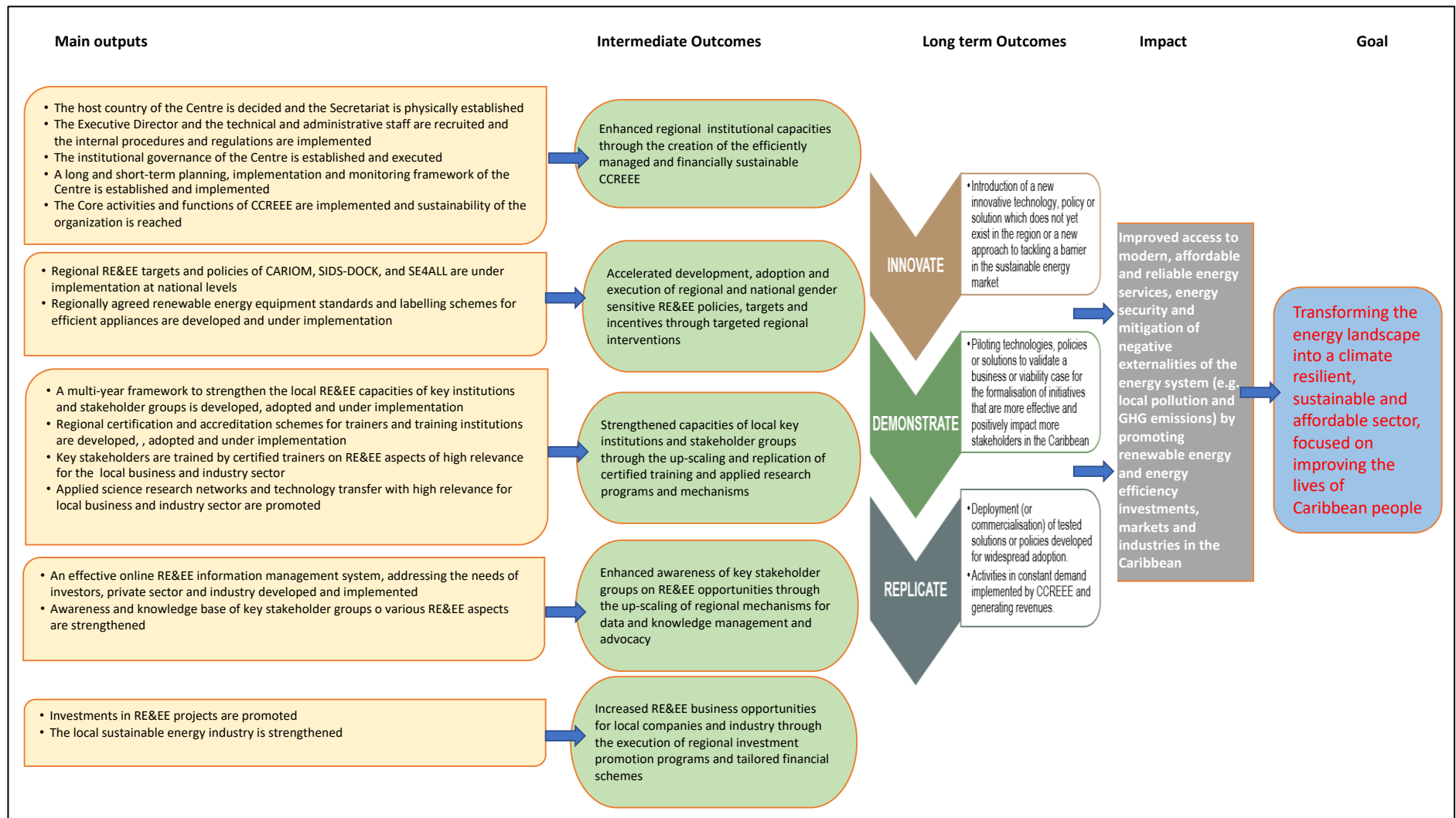


Figure 6: CCREE's Theory of Change Flow Chart

The start-up phase corresponds to the establishment of CCREEE, including its governance, its staffing, elaboration of procedures for planning, implementing and monitoring, and the definition of pathways to reach financial sustainability. The remaining outputs are linked to the activities and services of the center (facilitating policy implementation, establishment of standards, training and capacity development, establishment of an information management system, research and development, and fund mobilization). These outputs lead to intermediate outcomes which consist of achieving an active RE&EE industry and market, with different types of capable actors involved (government entities, universities, operators), attracting investors, in a context of abundant information both technical and related to opportunities. Once the market is stirred, it is possible for the center to establish its longer-term vision and business plan and achieve the capacity to innovate, demonstrate and replicate.

All this effort aims at improving access to modern, affordable and reliable energy services, energy security and mitigation of negative externalities of the energy system (e.g. local pollution and GHG emissions), with the final goal of transforming the energy landscape into a climate resilient, sustainable and affordable sector, focused on improving the lives of Caribbean people.

The project document foresaw some causal links and some enablers for the change foreseen in Figure 6 to occur. In fact, change will not be brought about just by the existence of CCREEE, as there are other entities acting and providing services in the Caribbean in some of CCREEE’s areas of focus. To name a few, CARICOM Energy unit for policy, CROSQ for standards development and certification, several entities working on facilitating access to finance, and networks of Universities/Applied Research Centers to advance science and technology.

As depicted in Figure 7, for CCREEE to be able to contribute to change, the different entities should be aligned regarding CCREEE’s role and the roles of each institution regarding CCREEE.

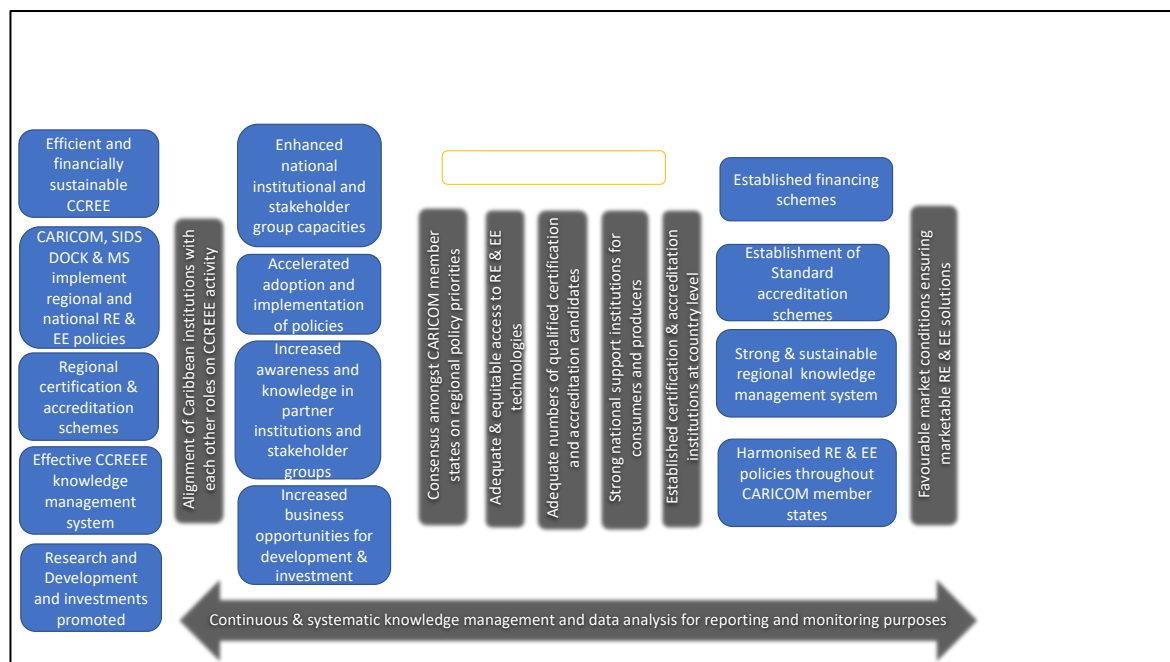


Figure 7: CCREE’s Theory of Change

Assuming that CCREE performs its role and the key outputs are achieved, the outcomes will only be achieved if an enabling environment is established (when the enablers listed on Figure 7 occur). This requires interest from technicians, access to technologies, a certification scheme and strong support and commitment towards energy transition from the MS governments. Although the change from immediate to intermediate outcomes is not only dependent on CCREE, as the occurrence of enablers is beyond the control of CCREE, the

centre can provide its contribution. In the end, the effort is compensated if there are favourable market conditions ensuring marketable RE&EE solutions. Again, this is beyond the scope of CCREEE but there is space for CCREEE to contribute to the impact.

Through this evaluation, the analysis will be undertaken based on the above theory of change. Is CCREEE well integrated in the regional context? What contribution was CCREEE able to provide? What enablers did not occur and why? Could CREEE have done something different? What can CCREEE do in order change to come about at a faster pace?

Currently CCREEE has defined a set of strategic priorities and strategic imperatives (Figure 8), materialized through a set of strategic programmes (Figure 9), though which CCREEE expects to promote change.

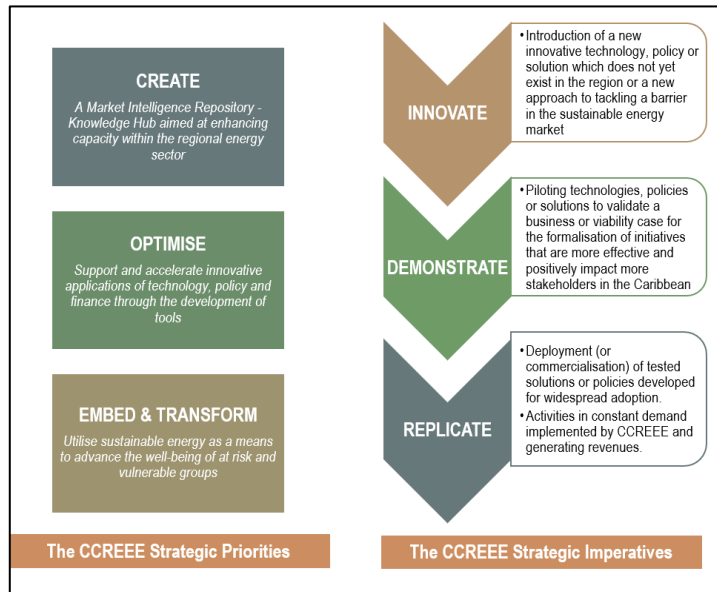


Figure 8: CCREEE strategic Priorities and Strategic Imperatives.



Figure 9: CCREEE Strategic Programmes and flagship projects

Although this strategy is beyond the scope of the evaluation (startup and first operational phase of CCREEE), the way this strategy is contributing to energy transition in the region is

also focus of the present evaluation, namely in the section on progress towards impact, where the impact of the creation of CCREEE is assessed. It should be highlighted that CCREEE still does not have flagship projects to all strategic programmes.

1.5 Evaluation methodology

The evaluation was carried out as an independent in-depth evaluation using a participatory approach whereby all key parties associated with the project were informed and consulted throughout the evaluation. There has been a constant communication between the evaluation team and the UNIDO Independent Evaluation Unit (EIO/IEU) on the conduct of the evaluation and methodological issues.

The evaluation was implemented in six phases which were not strictly sequential, but in many cases iterative, conducted in parallel, and partly overlapping:

- a) Briefing with UNIDO HQ
- b) Inception phase: preparation of the inception report providing details on the methodology for the evaluation including an evaluation matrix with specific issues for the evaluation;
- c) Desk based literature review and data analysis (see below);
- d) Country visit: data collection to build the evidence trail; validation and supplementing desk review results; interaction with project stakeholders, including beneficiaries; direct observation of stakeholders' behavior and project results;
- e) Phone interviews and remote discussion group with CCREEE team;
- f) Data analysis and report writing (debriefing UNIDO HQ).

In conducting the evaluation, the following methodological approaches were followed:

- Participatory approach: through an online questionnaire and phone interviews information was shared and consultations undertaken with all key stakeholders and partners, with full respect for the rules of confidentiality;
- Triangulation approach: combination of different sources/types of information (literature review, interviews, data collection, etc.) and their integration during the implementation phase;
- The evaluation also considered issues that may have affected gender mainstreaming in the project.

The desk and literature review of documents related to the project, include the documents provided by UNIDO. Table 3 contains the sub-folders names which illustrate the type of documents that have been consulted. Each sub-folder has different contents, from a couple of files to several sub-sub-folders.

Table 3. Bibliography list

Name of the sub-folder	Name of the sub-folder
Project Document and initial assessments	Annual work plans
EB strategic decisions and CCREEE policies	Project Implementation Reports
CCREEE Business plans	Financial reporting
CCREEE Recruitment	Procurement and ongoing contracts
Documentation on strategic programmes, including lists portfolio of past and ongoing supported projects	Project Steering Committee meetings and BTO mission reports

During the field mission to Barbados, the ET undertook to: conduct interviews with UNIDO management and staff involved in the project or related projects, key donors and international organizations active in Caribbean energy sector located in Barbados, senior staff of stakeholder public and private entities, and members of professional associations. Later, officials from National Focal Institutions, and senior staff of stakeholder public and private entities were interviewed by phone²¹.

Stakeholder consultations included the questionnaire presented in Annex 6, and interviews. Interview protocols were developed for different types of stakeholders, and in particular common questions for common situations were used to enable results to be compared.

The ET considered the following stakeholders' categories:

- UNIDO Management and staff involved in the project;
- UNIDO country representative and any UNIDO staff involved in energy related projects locally;
- CCREEE host country (Barbados) government representatives
- CCREEE National Focal Institutions (NFIs) and Thematic Hubs (THs) – face to face and online interviews
- Regional organizations (e.g. CARICOM, CARILEC, OECS, OAS, CROSO, CCCCC, CDB)
- Key donors in the Caribbean energy sector (e.g. USAID, EU, GIZ, ADA, Spain, Norway)
- International organizations active in the Caribbean energy sector (e.g. UNEP, UNDP, WB, IADB, IEA, NREL, SIDS DOCK)
- Universities and educational institutions
- SMEs and Corporations
- Business Associations
- Standard and certification institutions
- Other stakeholders and beneficiaries of CCREEE activities.

The list of contacts is presented in Appendix 1.

The ITE was conducted through the application of theory-based evaluation methods (quantitative and qualitative) and made use of the following tools:

- Theory of Change (ToC): analysis of the ToC built by the ET based on the project document to assess how the establishment of CCREEE can be achieved, responding to the needs of the region, and with a sustainability perspective;
- Evaluation Matrix: based on the ToC and the Project Results Framework - an Evaluation Matrix with SMART indicators was established by the consultant to be used as a basis to elicit information for the evaluation. The Evaluation Matrix looks into several evaluation criteria: project design and relevance; efficiency; effectiveness; impact; sustainability and cross cutting issues such as gender mainstreaming.
- Project Document Implementation Matrix: developed to substantiate the evaluation of the criteria "Progress to Impact". This matrix was used to track if there is qualitative and quantitative evidence on the progress towards the overall goal of the project, as per the project document (i.e. tracking the progress of the achievement of all of the outcomes/outputs).

²¹ The people interviewed is presented in Appendix I.

- A brief questionnaire to get a general overview on the CCREEE, and more generally of the project, and to collect feedback on what to improve, Annex 6, and interview protocols to collect stakeholders' views and recommendations.

1.6 Main evaluation limitations

It was not possible during the field mission to do one-on-one interviews with CCREEE staff, as many people were still working remotely due to the COVID pandemic. The number of answers to the questionnaire was limited, meaning that it might not be representative. But, as the ET used mixed methods, the results are triangulated.

It was difficult, given the time limitations and the restricted travel, to reach the wide range of project stakeholders. Therefore, the ET's assessment of the management model is restricted.

It was difficult to estimate co-financing and amounts mobilized by CCREEE as the centre did not establish any measuring mechanism for in-kind contributions and some project activities might have been paid directly by donors and are not present on CCREEE accounts. Also, CCREEE is not accounting for the amounts the center helps to mobilize in result of PPF or IRRP.

An aspect to be taken into account, although it is not a limitation but an external factor, is the fact that the outreach CCREEE management intended to do was complicated by the COVID pandemic. This was an unusual event that might have influenced the results.

2. Project's contribution to development results – Effectiveness and impact

2.1 Project's achieved results and overall effectiveness

The achievements of CCREEE and the status of ongoing processes is presented in Annex 5. It includes a comparison with the expected targets, outputs and outcomes included in the project document. The Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) is established and is functioning. CCREEE is efficiently managed vis a vis its present activities, but it is still not financially sustainable.

CCREEE is currently developing its longer-term business model. The previous business model (short-term) has established 7 CCREEE's strategic programs, of which 4 have been developed. A fund mobilization strategy for the Centre is being finalized in 2023; subsidiary business plans for several strategic projects and pillars are also being developed. CCREEE is defining Key Performance Indicators have been approved in 2022.

The Centre has a broad and vague mandate as a CARICOM and SIDS DOCK specialized agency, officially tasked to promote renewable energy and energy efficiency investments, markets and industries in the Caribbean. Under the SIDS DOCK framework, the CCREEE is intended to work closely with the equivalent centres from Africa and the Pacific on common SIDS sustainable energy issues and solutions. Regionally, CCREEE is tasked to assist the CARICOM Energy unit and CARICOM Member States in the technical implementation of sustainable energy commitments.

However, two main challenges face CCREEE. One is to find its niche (i.e. to figure how it can more effectively work in conjunction with other stakeholders in the region) and to be recognized by other entities in its role (see Figure 7). In fact, there are other regional bodies that have been established in the Caribbean to cover issues such as policy development (C-SERMS and CARICOM Energy unit), energy standards (CROSQ), a free knowledge hub (CARIGREEN, Caribbean Energy Information System, etc.), and University Network for training and research. CCREEE is also mandated to have a coordinating role between agencies in its areas of scope (RE&EE). A second challenge is that international organizations are already working closely with CARICOM MSs and might not see the value in using the CCREEE as a go-between. This is why CCREEE's KPIs (2022), assume that some of the barriers for the development of sustainable energy markets can be addressed more effectively and at lower cost at regional level, and measure how CCREEE complements and accelerates national efforts in the areas of policy and regulation, capacity development, knowledge and data management, awareness raising, as well as the promotion of investment, innovation, and entrepreneurship.

It is critical to note that CCREEE can offer various services to member countries but cannot undertake programming in any country unless invited. From the interviews of NFIs it can be concluded that CCREEE's niche is different in each country because each country is at a different stage in terms of energy efficiency and renewables. Having said that, countries that have worked closely with CCREEE, have found it has added significant value and suggest that without CCREEE's support, their ministries would be working in silos and achieving less. If CCREEE's can build its convening power, energy project implementation could be significantly improved in the region.

“CCREEE could shift the landscape in the region by making things happen, in spite of changing government administrations, personnel and resources.”

Stakeholder comment

For example, CCREEE can act as convener or partner and facilitator of implementation, cobbling the region’s implementation deficit. This requires outreach to MSs, and in that sense some stakeholders state that CCREEE cannot be a catch all institution and needs to focus in order to increase effectiveness. Additionally, stakeholders state that there is the need for more openness and transparency in CCREEE’s operations. The CCREEE previous strategic plan was not clear to all stakeholders’

“CCREEE cannot be a catch all institution and needs to focus in order to increase effectiveness.”
Stakeholder comment

At national level, CCREEE supports MS to develop their Integrated Resource and Resilience Plans (IRRP). The IRRPs establish how a country can supply its need for electricity for the foreseeable future, considering different resources including existing conventional power plants (diesel engines, gas turbines etc.) and renewable energy sources, like solar farms, wind farms, hydropower and geothermal power plants. To develop the IRRP, CCREEE partners with Caribbean Institute of Metrology Hydrology (CIMH) to develop vulnerability assessments, based on which the IRRP establishes the “least regret” path to ensure that the entire power system, including power plants, power lines and substations must be able to resist or rapidly recover from natural hazards such as hurricanes, floods and heatwaves, making the IRRP a key component of the Climate Resilience Programme. CCREEE also performs energy audits that guide energy efficiency programmes for the benefit of Member States.

CCREEE has been assisting the CARICOM Secretariat within the development and/or enforcements of some regional initiatives, such as the process to develop and enforce the Regional Energy Efficiency Strategy, the Regional Quality Infrastructure for Sustainable Energy and Regional EE building code (the latter two working with CROSQ), and the Regional Electric Vehicles Strategy Framework in consultation with the Regional Electric Vehicle Working group. However, the target of adoption of RE equipment standards and labelling schemes for efficient appliances in at least 7 countries was not reached. The contribution of CCREEE for an accelerated development, adoption and execution of national gender sensitive RE&EE polices, targets and incentives is still limited. Part of this has to do with limitation to travelling imposed by COVID.

The ET organized a questionnaire which answers allow to assess the perception of respondents regarding CCREEE and its results. The majority of respondents considers that the Integrated Resource and Resilience Plans (IRRP) are “very relevant” (7) or “relevant” to their work and answer needs of the region (Figure 10).

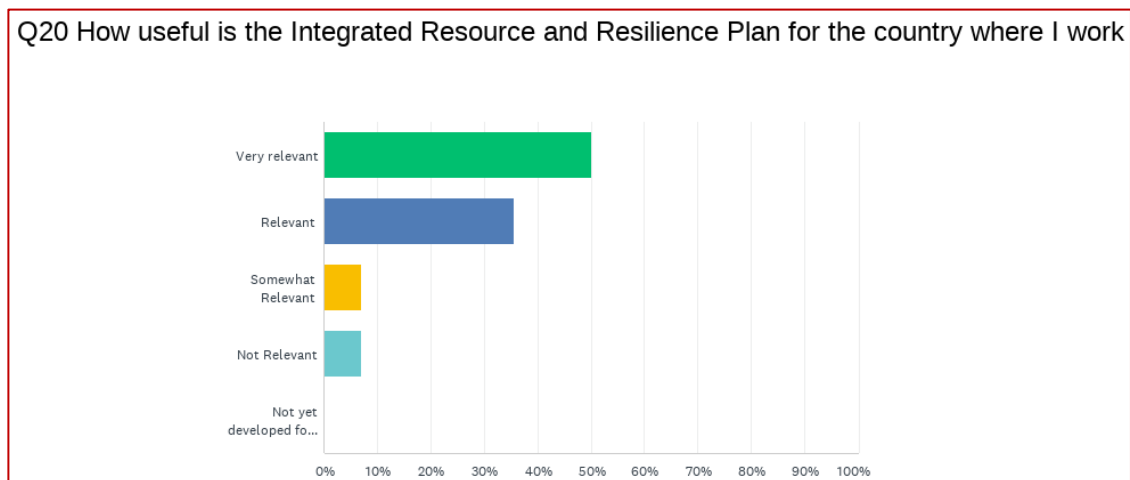


Figure 10 – Relevance of the IRRP

In what concerns capacity development (up-scaling and replication of RE&EE certified training and applied research programs and mechanisms), a multi-year framework to

strengthen the local RE&EE capacities of local key institutions and stakeholder groups is currently established under the C-SERMS process²². CCREEE is actively involved in the Technical Working Group on capacity building and articulates with CXC and TAPSEC projects on the implementation of their activities on this matter. Besides CCREEE Thematic Hubs have been involved in CARICOM Energy Unit and TAPSEC support to establish a RE&EE component on the Regional University Network. CCREEE has also participated in the elaboration of the “Online Capacity Building and Certification Program on Sustainable Energy Solutions for Islands and Territories in the Pacific, Caribbean, Africa and Indian Ocean”, sponsored by UNIDO and developed by a Spanish research center. CCREEE has launched an Internship Programme for persons across 20 Caribbean territories to be trained and engage on the region’s energy transition. CCREEE and the CARICOM Energy Unit also launched the CARICOM Energy Innovation Challenge that invites submissions of primary and secondary school students interested in Science, Technology, Engineering, the Arts and Mathematics (STEAM) on novel concepts for use and management of the STEAM Centre in their school aiming at maximizing positive impact in community and everyday life. The best proposal for bringing the STEAM Centre and student network to life will determine the first pilot CARICOM STEAM Centre. CCREEE has been also organizing trainings such as on grid modelling, on IRRP scenario building and KPI development, on project concept development, on knowledge management, database management. Some training data are disaggregated by gender, and female attendance do not always reach 30%. CCREEE cannot be realized by the targets included in the PD, but is contributing to their achievement.

On up-scaling of regional mechanisms for data and knowledge management and advocacy, CCREEE is developing CARICOM Energy Knowledge Hub (CEKH), a repository of energy related data and information for the region. It involves collaborations with the International and regional institutions including CEIS. The CEKH also includes documents and information produced by the thematic hubs, such as state of the art of technologies, and is making efforts to produce and host the Caribbean Integrated Renewable Energy Atlas, and also GIS tools. CCREEE is helping MS to produce Energy Report Cards on a yearly basis. This is a way to monitor the energy transition of the MS. CEKH also tries to collate training materials. There is still a long way to go to mainstream CEKH, as shown by the number of visits and searches done in the platform (Figure 11).

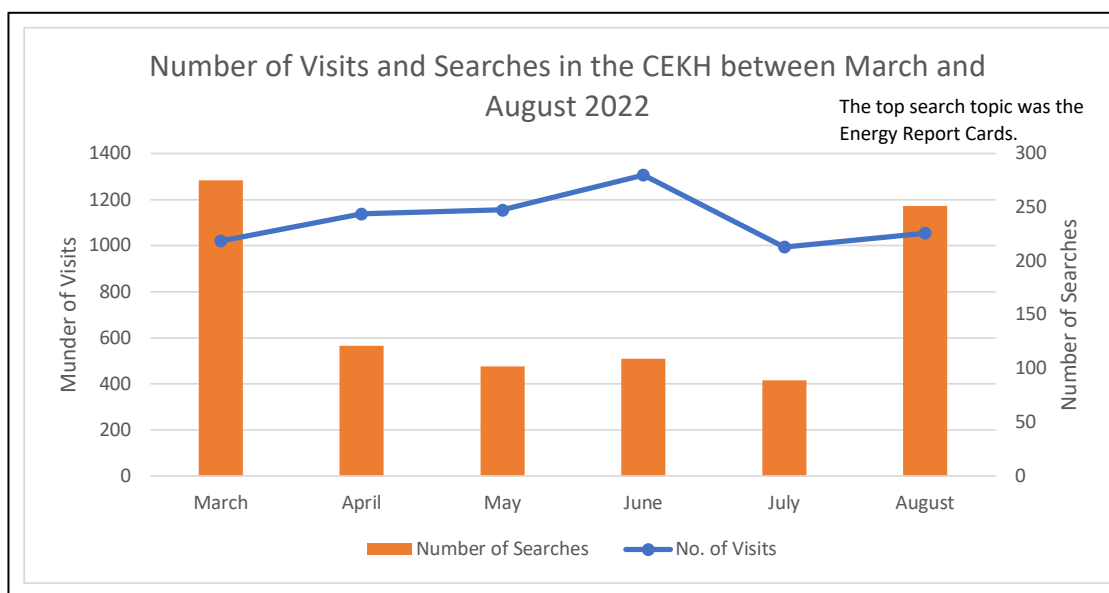


Figure 11 – Visits and searches in the CEKH in 2022 (source: CCREEE Director’s Report to EB)

²² <https://www.ccreee.org/our-work/capacity-development/>

The respondents to the questionnaire consider the CEKH is addressing the data and information gaps currently existing within the CARICOM region, provides technology updates and regional information, supports secondary research in relation to strengthening legislation, regulations and implementation, and brings all the information together in one portal. On the other hand, respondents claim CEKH needs more traction, needs to include further detailed information of whole of energy sector and its discussion forum does not have many meaningful exchanges. The survey shows that CEKH is still not mainstreamed, as nearly 60% of participants said they had NOT collaborated or used the CEKH. Figure 11 shows the visits and searches in the CEKH in 2022.

Currently, online tools and platforms play an important role to expose persons to information and to sensitize different sectors of the society regarding subjects. The CCREEE has a website containing information on the center’s structure, organization, etc and about the projects and activities it implements. The website is also the entry door to CEKH.

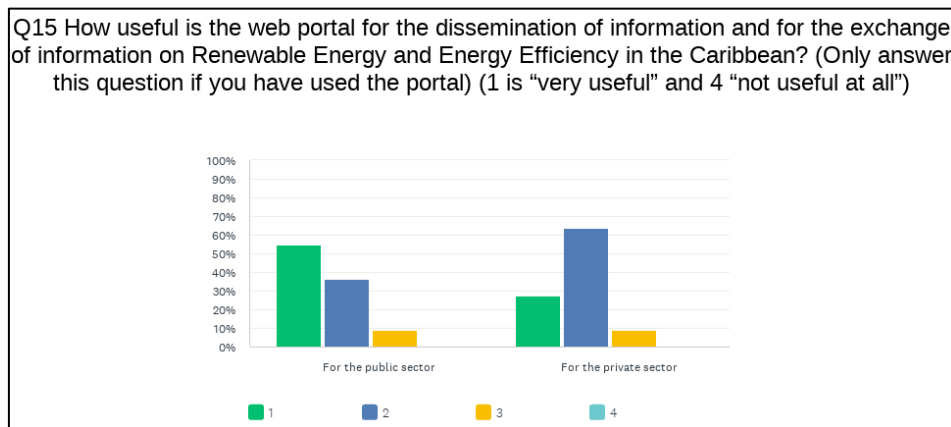


Figure 12 – Perception on the website

About 70% of respondents of the survey have used the website a few times. Only 1 person had never used the portal. Most respondents thought the website is “very useful” to the public sector, while it is “useful” to the private sector (Figure12). The majority (85%) of those respondents who have used the portal said the information was thorough/complete, while 3 (18%) said it was limited/inadequate.

CCREEE is also present in social network. Figure 13 illustrates the number of followers across the CCREEE’s social media platforms. Following a page suggests interest in the subject matter being posted.

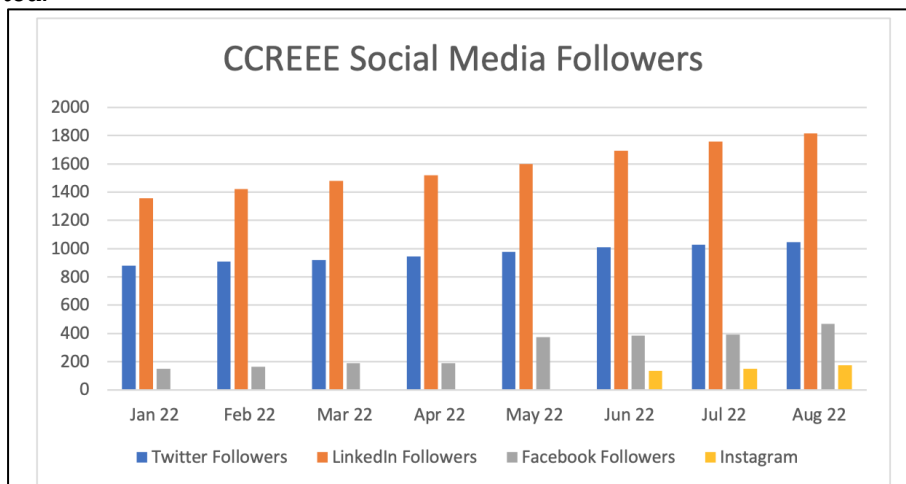


Figure 13 – CCREEE followers on social media

Reach and engagement are social media metrics. Reach corresponds to the number of persons who have been exposed to the content posted, and is usually passive. A user sees a CCREEE post in its account that comes from another user. Engagement rate is active, reported as a percentage²³, and corresponds to the number of times a post was liked, shared, commented etc. against the number of times the post appeared on feed/timeline. Figure 14 provides these metrics to CCREEE, and it can be seen that they are still low as compared to expectations.

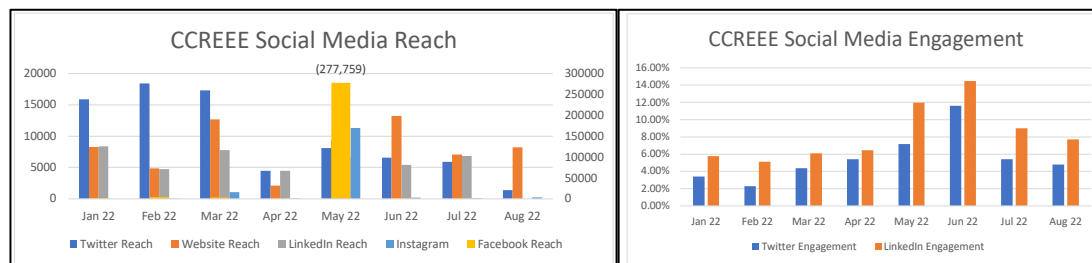


Figure 14 – CCREEE’s Social Media Reach and Engagement

CCREEE also strives to appear in the traditional media, and to generate CCREEE publications as technical experts.

Besides, CCREEE co-organized and contributed to a number of CARICOM Energy conferences/workshops. In many events, the Centre was very visible. Several videos were co-organized by CCREEE. Currently, CCREEE is also heading a regional campaign to inform on quality aspects of electric vehicles and batteries. The targets proposed in the project document were not reached, and in particular the gender-RE&EE nexus was not addressed. Over 80% of the respondents to the questionnaire had participated in CCREEE’s technical workshops. All the respondents classified the capacity building actions as “very good” or “good”.

One of the main objectives of CCREEE is to facilitate implementation of RE&EE business opportunities and steer up markets, through the execution of regional investment promotion programs and tailored financial schemes. The targets for this outcome are over ambitious and some are beyond the control of CCREEE. As a way to facilitate the occurrence of project, CCREEE has established Project Preparation Facility, consisting of support to project development through advisory services, technical assistance and match-making between project developers and potential financiers. By helping MS on project preparation through the PPF, CCREEE works on both supply and demand sides. CCREEE has conducted a needs assessment for the establishment of the PPF which include identification of stakeholders needs that can be addressed by the PPF. Besides, CCREEE engages in capacity development initiatives to target various stakeholder groups including financial institutions, project developers and public sector proponents to inform about opportunities and its service. However, MS have so far shown limited appetite to what has been proposed. About 64% of survey respondents had never benefited from PPF, while 21% had used it only once and 7% used it frequently. Stakeholders regard PPF as being mainly useful for finding financial resources and see it useful to both the public and private sectors Within the scope of IRRP, CCREEE continues to engage with MS to maintain a pipeline of projects. CCREEE was supposed to be a implementation partner of the project “*Strategic platform to promote sustainable energy technology innovation, industrial development and entrepreneurship in Barbados*” that could be a pilot project for a potential replication and regional upscaling of the technology platform. However this line of action has not materialize.

CCREEE has no record on the amounts the center was able to mobilize for projects in MS, for example through support provided by PPF or other means. CCREEE has analyzed cooperation

²³ For example, if a post has appeared 456 times and was engaged with 17 times the engagement rate is $(17/456) \times 100 = 3.7\%$.

agreements with the CARICOM Development Fund (CDF), the Organization of American States (OAS), and the Caribbean Development Bank (CDB) for fund mobilization – e.g. establishment of regional projects/initiatives the MS can join - and to facilitate project implementation processes. But given the outputs and outcomes achieved so far, it can be stated that the role of CCREEE on overcoming the implementation problem in the Caribbean region is still limited. Table 5 (section 3.3. Efficiency) shows that CCREEE was able to mobilize so far, at least, US\$4 million for project implementation and due to provision of services; as already referred the funds mobilized by CCREEE can be higher but are not accounted for.

The CCREEE exists, has staff and working conditions and is delivering services. As such, the outmost objective of the project was achieved. However, from Annex 5 and the above discussion, it can be concluded that part of the targets is too ambitious, the project includes outputs and targets to which CCREEE can contribute, but are beyond CCREEE realm. Based on the targets it can be stated that CCREEE’s evolution occurs at a significant smaller pace than expected.

Overall, Effectiveness can be considered **Satisfactory (S)** with significant room for strengthening the positive impact of CCREEE by establishing which path to follow and taking over from TAPSEC.

2.2 Progress towards impact

The above-mentioned survey (see Annex 6) was not very participated, the response rate was below 30%²⁴. By itself, the willingness to talk about an institution is a measure of the importance the institution has for the stakeholders. Nearly one third of respondents believe they are very well informed about CCREEE, but the perception of knowledge about CCREEE differs widely among the majority of respondents.

Q4 In your opinion, how well are you informed about CCREEE and its activities? 1 is “very well” and 5 is “not at all”. (please select only one of the categories below)

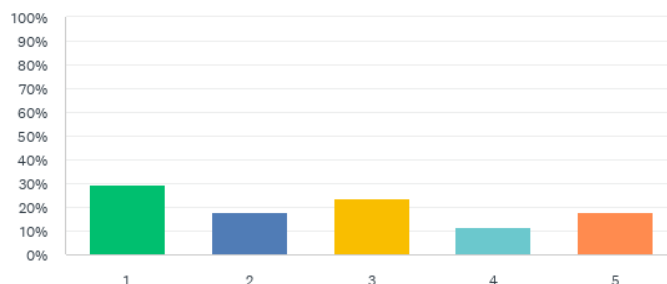


Figure 15 Perception of knowledge about CCREEE of the survey respondents

When asked to rate the support provided in various areas (sustainable energy policy, capacity building, knowledge management, and promotion of investment – according to the project components), most respondents scored CCREEE support as a 3 out of 5 (1 being the highest).

It is expected that the impact CCREEE may generate as a regional center will soon increase. In fact, the TAPSEC project, that is considered a precursor of CCREEE and has been designed and implemented while CCREEE was being established, has reached its end. CCREEE is sensed to continue and expand the work started by TAPSEC. To note that within the context of the present evaluation, the ET considers that the achievements of TAPSEC cannot be attributed to

²⁴ Out of the about 60 persons to whom the survey (Annex III) was sent, 17 have answered.

CCREEE, but no doubt TAPSEC has been implemented in collaboration with CCREEE, so the center has contributed to some of the TAPSEC results.

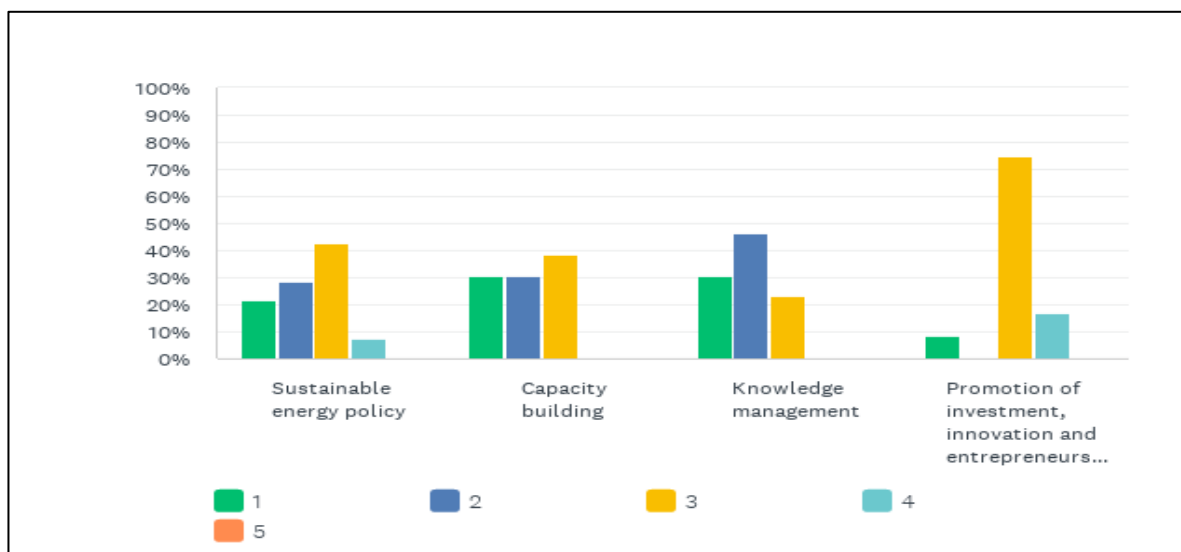


Figure 16 – Stakeholders’ opinion of the results delivered by CCREEE (1 highest to 5 lowest)

A discussion on the visible changes the existence of CCREEE brought follows.

2.2.1 Behavioural change

2.2.1.1 Economically competitive - Advancing economic competitiveness

As stated above, although CCREEE can contribute to fill in the implementation gap in the Caribbean, the center is still in its early operational phase, and is not recording its contributions to fund mobilization.

CCREEE is developing IRRPs which identify investment needs, and on the other hand CCREEE has established the PPF. However, potential donors are still not regarding CCREEE as a project implementation entity, and MS are still not adhering to the PPF.

The exception so far is CDB who signed a US\$750,000 worth threefold MoU with CCREEE within the context of the Accelerated Sustainable Energy and Resilience Transition 2030 (ASERT)²⁵. Under this MoU, CCREEE is engaged as consultant, as project facilitator and potentially as implementation agency. As consultant (services provider), the CEKH data might be accessed or generated (e.g. market research); assessments can be performed, particularly within the IRRP that due to its strong emphasis on vulnerability and climate resilience and its multi stakeholders and inclusive approach can be very important to ASERT; and some specific technical assistance can be procured particularly on subjects both institutions need (while CBD is interested in results, CCREEE develops needed expertise for the region). As project facilitator, CCREEE is expected to engage in preparation of smaller projects that can be aggregated in a typified portfolio that CDB can finance; CBD is not configured to work on projects below a certain threshold. As an implementation agency, the MoU allows CCREEE to execute grants on behalf of CDB, and allows CCREEE to be programmatic and seek CDB to finance project ideas/proposals based on shared information.

²⁵ This CDB initiative is intended to accelerate the sustainable energy framework and support its borrowing member countries to urgently ramp up their energy sector transition, especially in key sectors such as health, agriculture, and tourism. <https://today.caricom.org/2022/04/29/cdb-urges-bold-and-urgent-actions-to-transform-the-regions-energy-landscape/>

The capacity to fully implement this MoU, and the implementation results might be a game changer for CCREEE.

2.2.1.2 Environmentally sound – Safeguarding environment

The majority (64%) of respondents consider that CCREEE activities take into account environmental safeguards. Most respondents (77%) agree that CCREEE activities take into account a balance between mitigation of climate change and other environmental concerns (biodiversity, desertification, pollution, etc.).

It should be taken into account that while Energy Efficiency is often times a sound environmental measure, investments on RE are in principle better than the use of fossil fuel, but are not free of potential negative impacts, depending on the type of energy to be harvested given the context. Similarly, climate proof investments are not necessarily environmentally sound investments. For example, if a forest is cut to make a solar power plant, only emission reduction is addressed, as CO₂ absorption, biodiversity and barriers against desertification are also being reduced.

CCREEE is supporting implementation of the Sustainable Business and Industry Programme which aims at enhancing energy and resource efficiency, supporting the deployment of renewable energy systems and more sustainable practices in the commercial and industrial sectors, including tourism. To support the improvement of the energy performance and deployment of renewable energy technologies in the sectors, the CCREEE facilitates implementation of energy audits and energy management systems of targeted energy efficiency measures in line with existing minimum energy performance standards and codes (like the Caribbean Regional Energy Efficiency Building Code – CREEBC). The Project Preparation Facility (PPF) further supports the development of energy efficiency and renewable energy projects through to the bankability stage.

The IRRP is more concerned with climate proofing of infrastructure, as stated in CCREEE's website: "The IRRP planning iterates on the traditional integrated resource planning process that electricity sector utilities regularly undergo by integrating analyses of climate vulnerability." However, IRRP also presents the renewable energy resources that allow for a judicious choice of adequate solution(s). The IRRP is accompanied by governments' and utilities' capacity development, supported by CEKH, on systems modelling and planning, which will enable the reduction of the impact of climate events on electricity systems at the national level.

2.2.1.3 Socially inclusive – Creating shared prosperity

In the Caribbean region there are vulnerable groups to be considered by CCREEE to facilitate shared prosperity. For example: indigenous peoples in Guyana, Suriname, and Belize who tend to use off grid energy sources (especially people living in the interior of these countries); women and children in Haiti who operate cookstoves (according to the IEA (2014), 78% of national energy demand in Haiti is met by wood consumption, 93% of household energy for cooking comes from wood charcoal and wood, while only 3% of households use LPG, natural gas, or biogas); and more generically poorer and disenfranchised groups of population, etc. CCREEE can partner with international and multilateral agencies that work with such groups and are currently focusing on climate resilience (e.g. UN Women), in order to increase its internal capacity for gender, diversity and inclusion, while also building awareness and encouraging such programming in Member States.

The majority (64%) of respondents say that they do not know if CCREEE activities are accessible to vulnerable populations. However, 54% do believe that RE and EE technologies are being promoted for vulnerable populations. And 57% indicated that their institution does target marginalized populations' access to energy.

2.2.2 Broader adoption

2.2.2.1 Mainstreaming

The Caribbean region, on the whole, suffers from an implementation deficit and CCREEE could be key to changing this on RE&EE by facilitating implementation. But it needs to be a stronger, better recognized, valued, and networked organization.

Looking at the activities CCREEE has been developing and through stakeholder consultations it is noticed that CCREEE is still not reaching out to each Member State individually and systematically to support their priorities. The COVID 19 restrictions have for sure contributed to that, but CCREEE needs to further work on communication and public relations to get known and build reputation.

Each MS is at a different stage regarding sustainable energy transition and its importance on the political agenda. There is no one solution fits all. The lack of partnership and engagement of CCREEE with climate agencies, ministries and units within countries to support undertaking implementation and climate goals is seen as a barrier, and broadening the relationships and partnerships within Member States is a must for CCREEE management. One of the ways to achieve a better involvement is for CCREEE to organize more meetings with national counterparts, virtually or otherwise. It may also be useful to have focus group or round table meetings with stakeholders/clients. Another way is by helping MSs to address the bottlenecks impacting effective implementation, including: support to the reform of the legislative framework to facilitate investment and innovation on energy; identifying constraints and helping to improve processes in order to reduce bureaucracy and lengthy procurement; building capacity and skills for the future of work; and encouraging a cultural change in mindset which promotes action.

In the interviews performed by the ET it was noted that, while there are some national focal points that are not highly engaged, nor use the CCREEE products, oftentimes the level of engagement depends on prior/existing working relationships with CCREEE officials. For example, one focal point explained that he only knew about CCREEE activities when a former colleague (currently CCREEE staff) informed him.

"I only knew about CCREEE activities when a former colleague, currently CCREEE staff, informed me."

Several stakeholders consider that CCREEE has limitations on its integration into regional engagements, and that establishment of engagements and implementation of the CCREEE's flagship programs occurs at slow pace. It should be taken into account that CCREEE serves MS that are sovereign states so it can only do what it is requested or approved by governments. On the other hand, MS say that increased engagement would in turn lead to more requests and faster approvals.

Stakeholder comment

Reportedly this is due to the fact that CCREEE it is still a growing entity, with limited financial resources and number of staff, despite its broad mandate. Several stakeholders consider that the lack of financial contributions from MS to CCREEE causes challenges for the management as international funds for core budget operations are difficult to mobilize. Potential contributions from MS would be accompanied with increased accountability of CCREEE regarding MS could spark further joint work.

2.2.2.2 Replication

CCREEE three main pillars have large replication potential.

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 MS, and urged MS to develop Integrated Resource and Resilience Plans (IRRPs) by 2023.

The PPF business model is based on CCREEE's role as a facilitator, and the relationships it forges with distinct categories of customers and partners, upstream and downstream. PPF can be easily adapted to different contexts and therefore has high replication potential. The PPF works with developers to refine high potential projects and links them with needed investment to make them happen. The PPF serves project developers in the public and private sectors, including public-private partnerships (PPPs). Investment funding sources for projects may be in both sectors as well.

The CEKN portal is connected to the global GN-SEC platform, and has thus a strong replication effect.

The Thematic Hubs are considered by the EB to be a significant opportunity for the advancement of CCREEE's programmes and for a coordinated regional focus and approach. However, it has been identified that greater coordination as well as an outline of clear objectives and targets with the THs is required.

2.2.2.3 Scaling-up

As stated above CCREEE is preparing its business model, and has just finalized its fund mobilization strategy and defined its KPI. There is still no consensus among stakeholders regarding CCREEE business model and financing.

It is this very early in the process to allow scaling up. Baseline issues need to be in consensus in order to be able to implement actions and implementation momentum needs to be reached.

Overall, Progress to Impact can be considered **Moderately Satisfactory (MS)**

3. Project's quality and performance

3.1 Project Design

As stated above, the CCREEE Project Document was prepared within the context of a consultative preparatory process implemented by UNIDO in close coordination with CARICOM and OECS, as a result of a needs assessment, and taking into account lessons learnt from GN-SEC (see Annex III). The project was designed to mitigate the identified barriers and was adequate to overcome those barriers and meet the needs of the Caribbean region, its Member States and of the several target groups.

In terms of the establishment and start-up of the center, the activities included in the CCREEE Project Document (PD) were adequate overall. However, concerning the operational phase activities, there are some inconsistencies. Although the PD acknowledges the existence of other entities in the Caribbean that lead processes such as policy (CARICOM Energy Unit), quality infrastructure and standards (CROSQ), and training (Universities' network), the activities, goals and targets included in the PD are similar to the ones included in the PD of other regional RE&EE centers where such entities do not exist. Although CCREEE has been designed like a matrix institution that interacts with other entities and works with them, contributing (when allowed) to the achievements, the center cannot be held responsible to achieve some of the targets and goals. CCREEE's action depends on the recognition of its role by other stakeholders (as stated in the Theory of Change). This situation is not acknowledged in the PD. There has been an institutional change in the region through which some activities initially thought to be implemented by CCREEE ended up being implemented by other entities. An update of the PD has not been performed.

The ultimate outcome and corresponding targets are not in line with the project. True that CCREEE activities contribute to *% increase of people with access to modern, reliable and affordable energy services provided by RE technologies; % increase of the RE contribution to the electricity mix of the Caribbean (baseline 2013); or % decrease of fossil fuel import spending in the Caribbean due to the introduction of RE&EE technologies and solutions (baseline 2013)*. But there are so many other factors contributing and/or influencing the above indicators that it is not possible to identify the contribution of CCREEE for the regional change.

Critical risks related to financial, socio-political, institutional, environmental and implementation aspects have been identified and assessed and, for those, mitigation measures have been identified. Nonetheless there were risks that were underestimated at the PD stage. In fact, there was an underestimation of the Financial sustainability beyond the support by development partners, in which it was stated that *"The level of support from the Centre partners is anticipated to be in excess of what the Centre requires for its operational costs"*. However, in order to expand its team and to be able to deliver its proposed activities, CCREEE requires more funding. In addition, CCREEE is not necessarily a project implementation entity as in other countries. CCREEE can be involved in project implementation, but it is evolving in a way that does not place project implementation at the core of its priorities. The PD also envisaged that the Centre business plan would include income generating activities, which is being seriously considered in the new business plan.

The PD contained a M&E section, describing the information to be gathered, the evaluation periods and responsibilities namely of the Director of CCREE. There was no indicative budget for carrying out the M&E. The Project Document refers that three types of monitoring were to be carried out on an annual basis – (1) output and performance monitoring, focusing on the immediate results and the efficiency and effectiveness of CCREEE activities; (2) impact monitoring, linked to medium-term and long-term results of the CCREEE Business Plan; and (3) process monitoring, aiming to keep on top of the changes in the internal and external

environment, relevance of CCREEE and the assumptions and risks of the project and its processes.

The project design is considered **Moderately Satisfactory (MS)**.

3.1.1 Project Results Framework/Logframe

The Project Result Framework (PRF) includes an adequate structure, outcomes and outputs, specific, measurable, attainable, reachable and timebound (SMART) target indicators and the identification of the risks and assumptions. However, there are issues regarding outputs and targets. Reportedly, it was a requirement to align the project with the CARICOM C-SERMS indicator framework. CCREEE contributes to the achievement – but for sure – not alone. In figure 7 we see that there are enablers, beyond the control of CCREEE, that need to be verified in order for the intermediate outcomes to occur. Besides, some targets are too ambitious.

The main issues are:

- the role of CCREEE as a contributor or facilitator of certain activities lying within the realm of the mandate of other entities (eg. Development of Standards, Development of Energy Strategies) is not explicit in the PRF, which generates confusion to some stakeholders²⁶;
- although Outcome 2 states: *Accelerated development, adoption and execution of regional and national gender sensitive RE&EE policies, targets and incentives through targeted regional interventions*, gender is absent from corresponding outputs and indicators that do not look into *if* and *how* gender is integrated in those products.
- there are some indicators that are not connected to activities in which CCREEE engages, for example: *Volume of investments [in USD] for the execution of the SIDS DOCK project pipeline mobilized* – SIDS DOCK does not resort to CCREEE to finance the projects in its pipeline; *Number of small to medium-scale RE&EE projects co-funded by national institutions [e.g. banks] with the support of newly created regional support schemes* - CCREEE does not have the mandate to establish financial instruments in the region;
- there is a large gap between the indicators selected to measure the overall objective/impact of the Centre and the indicators used to measure the implementation of the outputs/outcomes, as it is not possible to determine the contribution of CCREEE to the achievement of the targets (e.g. % increase of the RE contribution to the electricity mix of the Caribbean (baseline 2013), Increase of investments in RE&EE projects in the Caribbean (% of it addressing key industries in the Caribbean - baseline 2013) in USD) – it is difficult to judge whether the progress happens due to regional interventions or only national efforts.

The PRF is considered **Moderately Unsatisfactory (MU)**.

3.2 Relevance

Sections 1.2 and 1.3. clearly express the relevance of the establishment of CCREEE. CCREEE is aligned with the existing regional and national policies and is a facilitator of policy and strategy implementation. The relevance of CCREEE is confirmed by the high-level approval of

²⁶ A response of the survey stated *“Regional Standards on Energy Efficiency is an outcome/output of CROSO as outlined in the CARICOM Energy Policy and so cannot be considered as being a direct responsibility of CCREEE”*.

the centre by the Ministers of Energy of the Caribbean, by CARICOM and SIDS DOCK. The support from CDB and its willingness to work together is also a strong sign of the relevance of the centre. Under the GN-SEC platform, CCREEE exhibits some particularities in its way of working compared with similar centres in other regions (e.g. SACREE). This is as a result of the co-existence of separate Caribbean regional entities which take on the work that other regional centres are wholly responsible for doing, and given the CCREEE’s success in working with technical hubs.

When asked about the relevance of the Centre, over 90% of respondents (16 people) felt that the CCREEE initiative was “very relevant” to the Caribbean region, with only one respondent indicating that it was just “relevant”. No one thought that CCREEE was irrelevant. The interviewed authorities and stakeholders were also unanimous regarding the high relevance of CCREEE for the region. However, there are differences among stakeholders regarding what the role of CCREEE should be.

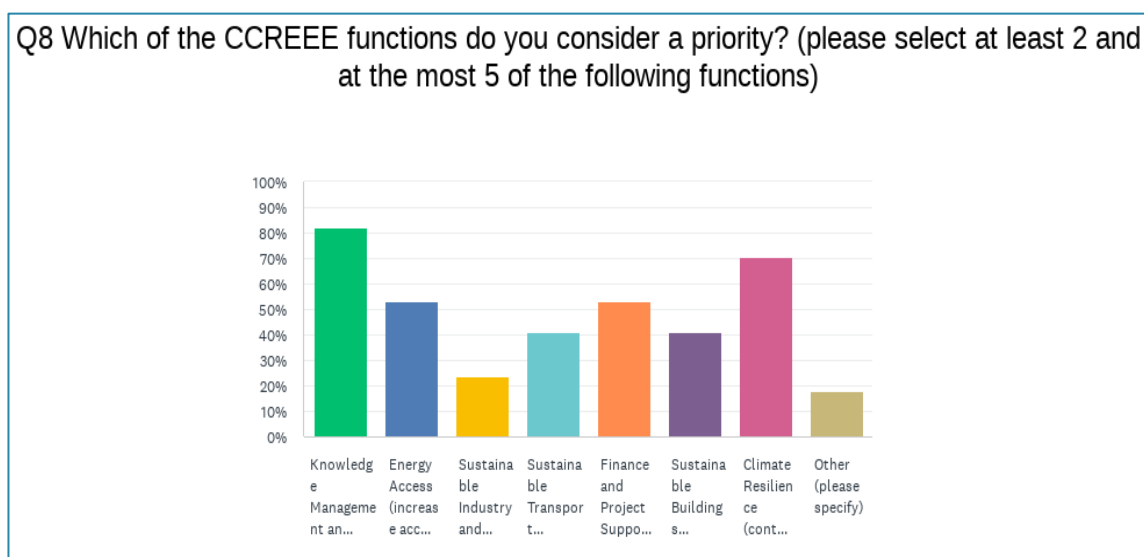


Figure 17 – Relevance of CCREEE functions according to initial mandate

In identifying which CCREEE functions are considered priority, the largest number of respondents identified the function of Knowledge Management and Transfer (increase the knowledge base, data exchange and local capabilities to provide goods and services to the local sustainable energy market) as the most important (82%) and the second highest priority was Climate Resilience (contribute to increasing climate change resilience of the CARICOM countries, 71%). The next highest priority with 53% was Finance and Project Support (address financial constraints and finance capacity / knowledge challenges impacting the development of sustainable energy projects).

Regarding CCREEE’s outputs, the most relevant according to respondents are: (i) Programs and projects (e.g. CEKH EMREV, STEAM Mini-grids, PPF, IRRP, CCREEE visitor centre) with 82% and Regional Standards, namely on energy efficiency (59%). In partnership with CROSQ, CCREEE works on EV standards or RE equipment standards. CCREEE brings in the energy expertise while CROSQ the QI and relevant processes expertise. CCREEE also helps to implement the CARICOM’s EE standards framework and the regional building code spearheaded by CROSQ.

“Regional Standards on Energy Efficiency is an outcome/output of CROSQ as outlined in the CARICOM Energy Policy and so cannot be considered as being a direct responsibility of CCREEE.”

Stakeholder comment

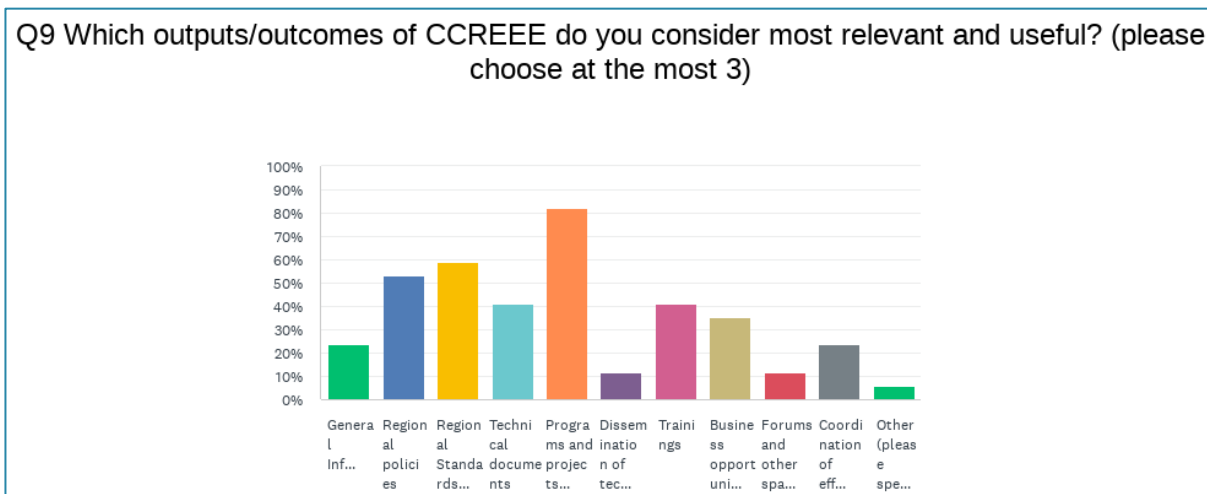


Figure 18 – Relevance of CCREEE outputs according to initial mandate

Overall, the Relevance is considered **Highly Satisfactory (HS)**.

3.3 Efficiency

Efficiency looks into several aspects of the project: (i) cost of the project and value for money; (ii) mobilization of co-finance; (iii) use of inputs (if CCREEE could have achieved more with the same input regarding facts under the control of the Centre); and (iv) production of results, outputs and outcomes in a timely manner.

The CCREEE project implementation started in January 2014, and the 1st Preparatory Phase was envisioned to last 6 months, while the first operational phase would last 36 months; the project conclusion expected by July 2017. The 1st Operational Phase was supposed to start 6-8 months after the start of the project, but CCREEE went into force on 19 May, 2018, 51 months after the start of the project. This was mainly due the fact that regional treaties take time to be approved and ratified as they need to be included in regional political agenda, and also due to the process of selecting the host country and the legalizing and recognition process that follows. In addition, there have been some initial conflicting interests of some countries and personalities, which hindered the full ratification of the CCREEE statute. This could have been resolved through “smart diplomacy”.

In line with the ownership-driven GN-SEC “twinning model”,²⁷ gradually more and more functions and responsibilities were transferred by UNIDO to the management of the centre, while UNIDO has gradually moved out of the institution-building. According to the PD, “in the optimistic development scenario of the centre the total indicative budget requirement for the

²⁷ Institutional peer-to-peer learning

running and technical programme costs amount to € 10,328,740” but the center is “also able to operate under a more conservative development scenario with a smaller budget and technical program” with funding ensured by Austria Cooperation, SIDS DOCK, and UNIDO.

The initial funding for the project is shown in Table 4. It was planned that the SIDS DOCK contribution would be provided directly to the centre, and that the contribution of ADA would be managed by UNIDO. The host country, that came to be Barbados, should provide a certain amount – mostly in kind for office space and utilities. The initial budget took into account the possibility of attracting significant co-funding from other donors once CCREEE would become fully operational, as it happened for example at ECREEE in West Africa. It is referred in the PD: “Promising discussions with partners such as the European Commission and GIZ are already ongoing on different levels.” That support would partly go to UNIDO, directly to the centre or to co-fund certain activities.

Table 4: Initially available funding commitments to the CCREEE project (in Euro)

Envisaged funding commitments from different partners funding sources	Start-Up Phase	Year 1 (2015-2016)	Year 2 (2016-2017)	Year 3 (2017-2018)	Total (€)
SIDS DOCK/CARICOM Secretariat (cash and in-kind) / confirmed	34,293	374,259	432,259	510,259	1,351,070
ADA (cash contribution / confirmed)	111,257	585,753	333,149	269,841	1,300,000
UNIDO (cash and in-kind / confirmed)	71,276	217,439	151,405	109,881	550,000
Host country (confirmed) Barbados	67,393	140,896	140,896	133,696	482,880
Local sources to be mobilized (e.g. in-kind by member states)	3,200	263,600	271,600	322,000	860,399
Other donors to be mobilized (e.g. GIZ, EU, Spain) / mob	7,740	1,863,350	1,935,750	1,977,550	5,784,391
Total	295,159	3,445,297	3,265,058	3,323,227	10,328,740

Source: ITE ToR document

CCREEE Start-up Phase and 1st Operational Phase was extended until March 2022. This has been possible due to increased funding from Austrian Development Agency (ADA) and Spanish Cooperation and Development Agency (AECID) to UNIDO during implementation. In 2021, ADA signed an additional funding agreement of € 1 million directly with the CCREEE. This will ensure the core operations of the centre. Moreover, the Government of Spain provided around € 300 thousand for CCREEE activities through UNIDO and another € 300 thousand contribution through the CARICOM-Spanish fund directly to the centre.

Table 5 contains the amount mobilized by CCREEE according to different reports (UNIDO and CCREEE’s). The purpose of the table is to pick on order of magnitude, rather than on exact numbers, as different reports use different currencies and it is not possible within the scope of this report to identify exchange rates. It should be referred that CCREEE is not accounting for the amounts the center helps to mobilize in result of PPF or IRRP.

CCREEE did not establish any measuring mechanism for in-kind contributions. However, according to the project manager, It is clear that the CARICOM MS, Secretariat and SIDS DOCK have provided their in-kind support as promised.

Still according to the project manager, significant parts of the indicated funding might not be handled by the centre directly as it was provided in form of services or equipment to specific activities of the centre by different donor partners or institutions. The structure of fund flows

from the various partners will depend on the different agreements entered into with the respective partners.”

Table 5: Amounts actually mobilized (in Euro and USD)

Envisaged funding commitments from different partners funding sources	until 2019 ²⁸	2020	2021	2022	Total
SIDS DOCK/CARICOM Secretariat (cash and in-kind) / confirmed ²⁹					
ADA (cash contribution / confirmed)					2,020,000
UNIDO (cash and in-kind / confirmed)	221500	339397	294858		424,670
Host country (cash and in-kind / confirmed) Barbados	131667	65000	50000	38109	284,776
Local sources to be mobilized (e.g. in-kind by member states)					Not available See below
Other donors to be mobilized					3,488,571
Spain (through UNIDO)					299408
Spain (through CARICOM Sec)					300.000
EU/GIZ ³⁰ (TAPSEC and Cli-RES contribution through CCREEE)	195970	546168 319190	228394 463150	587002 161743	2501617
ADA ³¹				687546	687546
TAPSEC contributions to CCREEE activities (not operated by CCREEE)					
CDB, USAID, IADB, EIB, NREL for CCREEE related activities					
Private investment commitments for RE/EE projects facilitated by CCREEE					
Total					6,218,017
CCREEE generated income	51058	88896	113813	122600 (until August)	376,367

All items which are cash and in kind in Table5 cannot be fully compared with Table 4, as the in-kind amounts are not accounted for. However, from analysis of reports and from

²⁸ According to Auditor’s report: The year ended 31 December 2019 is CCREEE’s first reporting period and therefore represents its first-time adoption of IPSAS. The need to restate or revalue any prior period reporting items does not arise.

²⁹ As it is not possible to identify on the financial reports the contributions from SIDS DOCK and the only CARICOM Secretariat contribution is the channelling of amount provided by Spain, this row contains the amounts provided by Spain channelled via CARICOM Secretariat.

³⁰ CCREEE is hired by GIZ to implement services within the EU funded Technical Assistance Programme for Sustainable Energy in the Caribbean (TAPSEC) project closeout ending June 30 2022 and the EU/BMZ (Germany) funded Climate Resilient and Sustainable Energy Supply in the Caribbean (Cli-RES) project close out ending September 30 2022

³¹ This amount is registered in the financial record of 2021, and seems to be related to an amount provided by ADA directly to CCREEE.

interviews, it seems that the host country, Barbados, has been complying with the agreement. SIDS DOCK / CARICOM contribution seems to be below expectations (a difference of 900 thousand euros), as the CARICOM contribution (support from Spain) corresponds to 30% of the expected total amount. According to the project manager, not all the contributions are accounted for in the CCREEE and UNIDO reports, as there are activities funded directly, and in-kind contributions are not accounted for. ADA has contributed 55% more than initially committed to be implemented through UNIDO.

Member States of the Caribbean Community do not pay a financial contribution towards the Centre. CARICOM MS support the CCREEE through in-kind contributions in the form of working hours and commitments undertaken by the NFIs to contribute to the CCREEE's activities at local level. In addition, each year some MS, as well as the CARICOM Secretariat provide in-kind contributions through the participation on the Executive Board and the Technical Committee. These amounts are not estimated by CCREEE. EU and Germany, through GIZ have provided most of the "other donors" funds, while Austria and Spain have also contributed directly to CCREEE. The total amount mobilized corresponds to 60% of the expected total on "other donors to be mobilized".

It should be mentioned that CCREEE has generated US\$376,000 (according to the most recent reports) through provision of services. Examples of such services are the agreement with CDB to undertake IRRPs in CDB's borrowing MS, and other advisory services such as energy audits. CCREEE is also bidding for projects in partnership with non-profits and private companies, and recently has won a bid with USAID for the development of IRRP for applicable USAID supported Caribbean countries in the next 4 years. CCREEE expects to increase its capacity to generate income in order to increase its financial sustainability.

At the end of 2021, the number of CCREEE's employees was 19 inclusive of 7 interns, growing from a team of 15 including 3 interns and 1 on secondment in 2020. For the year ended December 31, 2021, the emoluments of seventeen (growing from 11 in 2020) staff members were funded by CCREEE's development partners. The income generated by CCREEE in 2021 pays half of the incurred costs with staff that are not paid by development partners. This situation shows a very high level of dependency from donors. Stakeholders consider that CCREEE has a limited team with a very broad mandate which makes it difficult for CCREEE's integration into regional engagements, causes delays on establishing engagements. This limitation is also seen as the cause of the perceptible slow pace implementation of the CCREEE's flagship programs.

In summary, there have been delays with the setting up of CCREEE, and with the transition from the Start-up Phase to the 1st Operational Phase, which require more 50% of budget support from ADA. After about eight years of project implementation, 90% of CCREEE staff is still dependent on donor contributions. CCREEE was able to secure 60% of the total amount foreseen in the Project Document, not accounting with in kind contributions.

Overall, the Efficiency is considered **Moderately Satisfactory (MS)**

3.4 Sustainability

CCREEE is still striving to reach sustainability. The analysis performed by the ET, corroborated by the interviewees identified the following aspects as the main sustainability challenges facing CCREEE:

- Relevance
- Financing

A noticeable issue that might also affect CCREEE in the future is the limited sharing of tacit knowledge. This knowledge has been built up over time by the institution's leadership. While implicit knowledge is systematically recorded and can be shared, the tacit knowledge is housed by a few individuals, and risks being lost when they are no longer part of CCREEE.

At the moment of the evaluation, CCREEE was developing its longer-term business model and had just finalized the fund mobilization strategy. CCREEE has an already established set of services IRRP, CEKH and PPF, besides energy audits and is able to survive, but it still has potential not yet deployed.

No doubt that sustainability of CCREEE hinges greatly on the value added to CARICOM Member States, which is also the Centre's core mandate. It is the opinion of part of the stakeholders that CCREEE should focus on its core mandate in order to increase effectiveness. These stakeholders tend to indicate that the additionality of CCREEE is not yet clear, as the interaction with MS is still limited while at regional level other regional bodies have been established to cover issues such as policy and strategy development (C-SERMS and CARICOM Energy), energy standards (CROSQ), a free knowledge hub (CARIGREEN, Caribbean Energy Information System, etc.). This even if recognizing that CCREEE is mandated by CARICOM Energy Unit to implement certain policy and standards setting activities, for which it needs to work with other entities such as CROSQ (who might not have RE&EE expertise).

But the results of survey and interviews indicate that sustainability is also highly dependent on the capacity that CCREEE can demonstrate to:

- (i) be a key partner (facilitator and/or promoter) of regional and international entities, including development banks, and
- (ii) to integrate the private sector.

CCREEE must remain relevant, and its key niche can be as convener or partner and facilitator of implementation, cobbling the region's implementation deficit. A part of stakeholders indicates that if CCREEE's can build its convening power, energy project implementation could be significantly improved in the region. Besides, the involvement of private sector is crucial for energy transition in both the supply and demand sides and in financing (from larger financial institutions to the bottom of the impact investment pyramid). Some stakeholders also mention the potential role of CCREEE as an incubator of innovative ideas that can be tested and, when suitable, further developed with adequate funding.

Besides the example mentioned above of the MoU with CDB within the scope of ASERT, CCREEE has recently signed a cooperation agreement with Caribbean Export Development Agency (Carib-Export) to work on the region's private sector capacity³² on renewable energy and energy efficiency. Under the agreement, Carib-Export and CCREEE will assist businesses to enhance climate resilience, increase energy access, develop sustainable buildings, facilitate knowledge management and transfer, and promote sustainable industry and business growth. Stronger and more numerous partnerships involving CCREEE are seen as essential to its sustainability and effectiveness. This will contribute to the notoriety of CCREEE and for the Center to become a key player in the region, in particular if CCREEE is able at the same time to engage more with the MS and present it as an asset.

Financing is also a matter of concern regarding sustainability of CCREEE. At present, CCREEE risks getting into a position in which the staff salaries are mostly paid by projects which in practice, as verified in other regional centres, represents a lack of independence to implement its mandate.

As it happens regarding CCREEE's business model, there is no consensus among stakeholders regarding financing. There are several views:

³² ILO and IADB studies have estimated that decarbonization can lead to 400,000 new jobs in the region.

- Some suggest CCREEE should develop a full-blown commercial arm and monetize some of its services (such as research) while keeping others as public goods.
- Some advocate CCREEE needs to explicitly state that administrative fees would be charged on any work undertaken by the center which would cover its overhead/operating costs.
- Some stakeholders claim CCREEE should figure out how to leverage current and former Executive Board members to expand its membership base.
- Some claim that CCREEE should charge privately owned entities but not the public ones.

The above-mentioned MoU with CDB shows that hybrid models are also possible. However, it should be noted that COTED has been advised that the CCREEE would not charge fees, but that contributions would be voluntary. This is because CCREEE was set up as a CARICOM organization and should not ask for funding or fees from the MS.

The CCREEE was tasked to look at other agencies to get inspiration to produce its own resource mobilization strategy (RMS). CCREEE's RMS being concluded presents several revenue streams, including provision of services, earning a facilitation fee on PPF, and including both public and private sector sources of income. Other potential resources can be secondment of staff from partner agencies.

A business model for PPF has been established in 2022. The business model suggests that Initially, the PPF relies on core funding from donors and other sources but that it can move towards self-sufficiency over time by charging fees for their advisory services to private sector project developers, and success fees for investment transactions arranged. PPF can also generate income by charging a service fee for bringing together the investor and the entity seeking funding. A method to facilitate this was strengthening ties with development partners to see if funding could be realized sooner rather than later. Stakeholders also agree on the integration of private financial institutions in the RMS, as they may finance RE and EE projects on the ground. The bottom of the impact investment pyramid (smaller investors) can also play a key role through the PPF by collective investment in projects.

There is also debate on potential income generation from CEKH, particularly on whether an access fee for non-CARICOM members can be established. Development partners operating in the Caribbean had mentioned that they might be willing to pay a subscription fee to access info in the CEKH as it would save them time and money.

Stakeholders suggested the sustainability challenges to be met with:

- Better marketing and communication, as well as one on one outreach to member countries, in order to make CCREEE the automatic partner of choice for renewable energy and energy efficiency initiatives;
- Better focus, bridge the gaps which lead to the implementation deficit;
- Improved and increased partnerships with other regional bodies;
- Increased sharing of information with all stakeholders;
- Sharing of information on future pipeline of activities;
- Deeper partnership and coordination with the CDB.

An additional challenge that might affect short-term sustainability is governance. Several interviewed stakeholders expressed their feeling that the Executive Board (EB) sits "outside" the actual functions of CCREEE, is not well informed, does not meet often enough, and cannot be expected to make decisions or determinations on programming or budgeting if it is so disconnected. Similarly, the EB may feel like the leadership of CCREEE does not listen to it. Allegedly, there is an EB feeling detached and an institution feeling a lack of guidance from its EB and taking decisions independently of the EB. A CCREEE retreat held in 2022 concluded that understanding and fulfilment of the roles and functions of the Executive Board, respective

Sub-Committees and the Technical Committee is limited. Challenges were also identified regarding the effective functioning and composition of the Technical Committee to ensure genuine support by its members towards CCREEE's successful outcomes. An example is the treatment by the TC of sensitive planning information that provides a competitive advantage to CCREEE. It has been noticed by some members at the retreat, that CCREEE is viewed as a competitor instead of a strategic partner by some participants in the TC, and that some sensitive information is diffused. Interviewed stakeholders suggest that meetings of the EB and of the TC should be more frequent than twice per year, and be shorter, more focused, better prepared and engaged in the work of the institution.

The retreat also considered that reporting and supervisory responsibilities were not and should be clearly defined. The specific functions of leading the mobilization of resources for CCREEE and initiating/determining RE&EE projects in Contracting Parties based on recommendations from the Technical Committee are also deficiently defined.

As such, CCREEE's governance instruments need to be explicit and better articulated and roles and responsibilities as well as the functions of the various parts of the governance structure need better clarification and improved accountability.

Although CCREEE is likely to strive there is significant work to do for the Center to fulfill its mandate.

In view of the above-mentioned challenges, the rating for sustainability is **Moderately Likely (ML)**.

3.5 Gender Mainstreaming

The PD states that "CCREEE will develop and implement projects and activities with particular focus on sustainable energy and gender, in close collaboration with" the University of West Indies, IDB, UNIDO and UNWomen and other UN agencies and gender equality observatory of Economic Commission for Latin America and the Caribbean (ECLAC). CCREEE was charged to "mainstream gender throughout its institutional governance structure and staff policy (e.g. minimum representation of women in the Executive Board and Technical Committee, minimum representation of women in the technical and administrative staff of the Centre)."

However, on the Executive Board there is only one woman (1 in 9, 11%), who is from UNIDO Head-quarters. On the Technical Committee there is also only one woman (1 in 9, 11%). The senior management of CCREEE is composed on 3 men. The CCREEE website shows a woman leading the Administrative Office and one woman leading the Knowledge and Capacity Development Hub. CCREEE had one person as its Project Development and Gender Unit head, who has resigned in the summer 2022. Another senior staff woman, the Communication and Public Relation Specialist, also resigned over the summer. It is not known to the ET if CCREEE has tracked the reasons for this. CCREEE needs a gender specialist devoted to gender and inclusion in all its programming and activities.

While over 50% of CCREEE staff may be women, there is no gender audit available and there is no data on levels of engagement or pay gaps. There have been institutional steps to increase the equitable participation of various stakeholders, including women. Reportedly, despite efforts, it was not possible to establish a gender sensitive culture in CCREEE. So far CCREEE has imparted training on gender for NFI and for Regional Institutions, among other objectives to develop capacities to collect gender-disaggregated data. A "gender café" regular meeting was also established to meet bi-monthly to discuss gender issues in policy and programing. Reportedly, most participants were already aware of some issues, and limited additionality to overall staff capacity was increased. Part of the problem is that there is not enough data on women to elicit a gender-based approach to programming. Resources to produce this data may be limited, for example CDB has provided funding for baseline gender studies in three

Member States, but there are 15 Member States and 5 Associate Members of CARICOM. Funding seems to be a challenge.

Interviewed stakeholders confirm (79%) that CCREEE's training is open to men and women. However, 67% of respondents indicated that they do not know if a gender analysis was undertaken on their CCREEE proposals. Regarding gender-disaggregated data on renewable energy and energy efficiency, only 2 persons confirmed to have access to such data, while 38% claim they do not have access and 46% of respondents do not know.

Overall, the Gender Mainstreaming in CREEE does not seem to be working, rate is **Moderately Satisfactory (MS)**.

4. Performance of partners

4.1 UNIDO

UNIDO has provided technical assistance as agreed, from needs assessment and project design to support and management of resources. UNIDO has also bridged the time it took for CCREEE to start operating through its own rules and procedures, in line with the GN-SEC model.

About 50% of respondents to the questionnaire believed that UNIDO's support to CCREEE was either good or very good, while about 38% indicated they did not know what to answer.

4.2 National and regional counterparts

CARICOM MS demonstrated high commitment regarding the establishment of the center by approving its creation on the level of Ministers of Energy and Heads of State even against some reluctance of international partners. A major barrier to the establishment of CCREEE was the long ratification process required for the legal agreement, which hindered a smooth uptake of the center as entity able to submit projects and sign contracts. In fact, decisions at regional level are taken in MSs ministerial meetings which occur a few times a year, and with tight agendas. According to some persons interviewed, there continues to be a need for more ministerial level meetings to identify what are the needs and priorities that CCREEE can address. Also, the knowledge about CCREEE is still not mainstreamed in the countries, and performance of MS is therefore limited. More communication and high-level visits by CCREEE to MS are deemed necessary to match needs and support opportunities, as different countries have different contexts.

Another hindering factor for the sustainability of the center is the reluctance of CARICOM MS to provide membership contributions. This is a major issue for CARICOM itself, as well as most CARICOM agencies. A number of MS are highly indebted and some of them are under monitoring programs of the IMF. At the beginning, another financial related barrier was the reluctance of some international partners to create another CARICOM institution, which could become a competitor for funding (e.g. from EU, climate funding). In the meantime, this barrier became irrelevant.

CARICOM Secretariat and SIDS DOCK officially recognized CCREEE and ensured its successful preparation and operation. Under the SIDS DOCK framework, the Centre works closely with the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) and the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) on common SIDS sustainable energy issues and solutions. With UNIDO, CCREEE is involved in the GN – SEC benefiting from sharing of experiences worldwide and also contributing to it. Within the CARICOM structure, the current CCREEE's Head of Technical Programs was former head of CARICOM Energy Unit and while at that position was already involved with the processes of establishing CCREEE and of the TAPSEC project. Allegedly TAPSEC project started processes that CCREEE is supposed to inherit and take forward.

Both CCREEE's Executive Board and Technical Committee are composed of representatives from MS and regional or international entities. The relationship with the EB and Technical committee, although positive, is challenging with some important aspects to improve. There is a recommendation that EB and the TC meet more often than twice per year, in shorter more focused meetings, in order to be better engaged in the work of the center.

Within the establishment of Thematic Hubs (TH), CCREEE has expanded its strategic partnerships, to include the following institutions, University of the West Indies (UWI), Guyana Energy Agency (GEA), Wigton Windfarm Limited, the Caribbean Community Climate Change Centre (5Cs), the Organization of Eastern Caribbean States (OECS) Commission and

CARICOM Regional Organization for Standards and Quality (CROSQ). The TH are useful for the development of several programmes such as CEKH, capacity building and project preparation/implementation, on the following technologies Solar Photovoltaic, Solar Thermal, Hydro, Geothermal, Wind, Electric mobility, Bioenergy and for Quality Infrastructure. UWI is also currently developing work on ocean energy which will also be integrated in the CEKH. CCREEE is negotiating a cooperation agreement with the Caribbean Institute of Meteorology and Hydrology to undertake Vulnerability Assessment for IRRP in four MS. Other development partners include cooperation agencies and state-owned laboratories from several countries, including from outside the Caribbean.

CCREEE has also been achieving agreements with major institutions in the region, such as the University Platform (a legacy of C-SERMS), TAPSEC, CDB , CROSS Q, with good results.

Besides all this, about 30% of the survey respondents mention stakeholder engagement and communication as a weakness of CCREEE. Stakeholders claim that, for example:

- “CCREEE should incorporate more dialogue between implementation partners, focus groups and round table talks.
- There needs to be more interaction with the Caribbean countries.
- Not enough regional stakeholders are aware of the work of CCREEE.
- Improve communications and public relations in the energy sector.”

The engagement and commitment of national and regional counterparts is **Moderately Satisfactory**.

4.3 Donor

ADA, Spanish Cooperation and UNIDO have provided the financial and in-kind contributions as promised (Table 6). It shall be noted that despite the delays the core international partners have agreed to project extensions for several times, and ADA has provided further funding to allow the project to strive.

Co-financing from SIDS DOCK is only registered in the component provided the Spanish cooperation.

The analysis is complicated by the fact that co-financing to the project has not been registered, and by the fact that several donors in the Caribbean operate their funding on their own – for example most funding of TAPSEC was implemented by GIZ directly. There is also a debate on whether TAPSEC activities can be accounted as CCREEE activities (e.g. EVs, EE, documents produced that currently enrich the CEKH).

The analysis is inconclusive regarding achievement of what was expected from local sources and other donors.

Table 6: Indicative budget for the start-up and first operational phases (optimistic development scenario) vs Total Spent as reported by UNIDO

Outcome	Optimistic development scenario			Total spent as reported by UNIDO
	Start-Up Phase (6 months)	First operational phase	% of total	
1: Enhanced regional institutional capacities for RE&EE through the creation and efficiently managed and financially sustainable Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)	295,159	2,943,546	28%	1,308,965.08

Outcome	Optimistic development scenario			Total spent as reported by UNIDO
	Start-Up Phase (6 months)	First operational phase	% of total	
2: Accelerated development, adoption and execution of regional and national gender sensitive RE&EE polices, targets and incentives through targeted regional interventions	-	1,222,355	12%	333,870.70
3: Strengthened capacities of local key stakeholder groups through the up-scaling and replication of certified training and applied research programs and mechanisms	-	2,071,858	20%	370,994.01
4: The awareness and knowledge base of local key institutions and stakeholder groups on RE&EE are strengthened	-	1,209,442	12%	319,158.29
5: Increased RE&EE business opportunities for local companies and industry through the development and implementation of regional investment promotion programs and tailored financial schemes	-	2,881,540	28%	411,075.02
Total	295,159	10,328,740	100%	2,744,063.10

From what is expressed above, Performance of partners is considered **Satisfactory**.

5. Factors facilitating or limiting the achievement of results

5.1 Monitoring and evaluation

Monitoring and evaluation has been taken into account throughout the project, and it can be stated that strategic and management changes have been sparked by analysis of monitoring results.

CCREEE has evolved from the most common regional centre model in GN-SEC, to a centre that has three main areas of focus: the knowledge management and capacity development (CEKH), climate change and energy transition planning (IRRP), and promoting access to finance for concrete actions on sustainable energy (PPF), this is in addition to providing services such as energy audits. This is because CCREEE had to find how to best contribute to the sustainable energy transition amidst a number of other entities in the region that tackle aspects such as developing policies and strategies, developing standards, training networks, etc.

All these changes have been occurring gradually through 10 Executive Board meetings and, prior to that (until 2017), 3 regular Steering Committee meetings, 8 extraordinary Steering Committee meetings (in particular dealing with the agreement with host country and recruitment of the CCREEE Executive Director). In all those meetings, the progress of the project (during the start-up phase) and of CCREEE (during the first operational phase) was analyzed based on project reports. But effectively no monitoring and evaluation system including indicators measuring the CCREEE progress and its impact on the region were produced. The KPIs have just been approved recently.

As stated, reporting has been key in this process. The project document required that the Director of the Centre would be responsible for compiling detailed progress reports on an annual basis and present them to all parties involved in the management and funding of the CCREEE. The annual reports have been produced and approved by the Executive Board. The Director of the Centre is also responsible for producing abridged progress reports in between EB meetings (i.e. six months after each main progress report). These reports were also made available to all parties.

However, at the first operational phase no monitoring and evaluation system including indicators measuring the CCREEE progress and impact were produced. The KPIs have just been approved recently (2022). CCREEE has not updated project design and Logframe, following the change on regional institutional setting. CCREEE is not collecting financial information on in kind contributions, activities directly funded by donors and funds that the center is mobilizing to MS via the PPF. CCREEE is also not monitoring its technical impact in the regional.

Therefore, project Monitoring and Evaluation is considered **moderately Unsatisfactory (MU)**

5.2 Results Based Management

In July 2015, the 36th Regular Meeting of the Conference of Heads of Government (CHG) of the CARICOM endorsed the establishment of the CCREEE and accepted the offer of the Government of Barbados to host the centre in Bridgetown. In October 2015, the interim phase of the Centre was officially launched. Between 2016 and 2018, the CCREEE was headed by the

Interim Executive Director, Dr. Al Binger, and operated based on the results framework of the initial CCREEE GEF PD.

The main goal of the interim phase was to fully operationalize the Centre as a legal entity under the CARICOM laws and regulations. The agreement was opened for signature at the 38th Regular Meeting of the Conference of Heads of Government of CARICOM in July 2017 and in May 2018 a sufficient number of CARICOM Member States had signed and ratified the CCREEE legal agreement. The host country agreement between the CCREEE and the Government of Barbados was signed soon after.

During start-up phase and the UNIDO managed first operational phase, management was anchored in the UNIDO GEF project. UNIDO applied its rules and procedures and the reporting was done according to following year. Regular steering committee meetings were held to discuss achievements and challenges and plan that UNIDO has presented the financial records and, as explained above, due to delays, the amount spent ended up being larger than initially planned.

With the establishment of CCREEE, a permanent Executive Director, Dr. Gary Jackson, was appointed in October 2018. A first strategic planning retreat of the Executive Board (EB) was held in November 2018 and helped to identify the vision and the mission statements—the priority areas for the CCREEE—and how it would work towards achieving them as part of an overall Strategic Framework. As part of the CCREEE Strategic Plan (2019 to 2023), the centre has drawn up an indicative overview on the budget requirements to implement the envisaged priority programs (Table 7). The budget was not over ambitious, and accounted for a stabilization in terms of total value; but it could not be achieved.

Table 7 – Budget indicated in CCREEE’s first business plan

Outcome/output / item	Total Budget	Budget distribution Per year				
		2019	2020	2021	2022	2023
Component 1: Implementation of the CCREEE's Strategic Flagship Projects						
Outcome 1.1: CEKH (CARICOM Energy Knowledge Hub) Project successfully implemented	\$2 869 229	\$985 963	\$1 082 046	\$263 448	\$267 073	\$270 699
Outcome 1.2: Project Preparation Facility (PPF) Project established and implemented	\$1 207 250	\$53 000	\$268 750	\$218 000	\$331 500	\$336 000
Outcome 1.3: EMREV-Energy Modelling and Renewable Energy Integration Virtual Laboratory Project established and implemented	\$2 186 113	\$13 250	\$1 023 938	\$121 717	\$510 142	\$517 067
Outcome 1.4: STEAM Centres with Mini-grids Project	\$2 371 911	\$0	\$145 125	\$716 348	\$742 118	\$768 320
Outcome 1.5: The CCREEE Residence & Visitor Centre Project	\$1 602 013	\$0	\$145 125	\$1 424 848	\$15 912	\$16 128
Outcome 1.6: Emergency Response Mechanism Project	\$1 809 092	\$0	\$72 563	\$1 712 499	\$11 934	\$12 096
Total of Component 1	\$12 045 607	\$1 052 213	\$2 737 546	\$4 456 860	\$1 878 679	\$1 920 310
Component 2: Supporting activities, Management and Operations						
Outcome 2.1: Functional office with IT infrastructure	\$469 614	\$105 523	\$132 273	\$64 273	\$103 273	\$64 273
Outcome 2.2: Qualified and trained staff and trained NFIs	\$5 335 150	\$488 575	\$865 200	\$840 725	\$1 570 325	\$1 570 325
Outcome 2.3: Long-term financial sustainability of the CCREEE achieved	\$205 381	\$90 181	\$28 800	\$28 800	\$28 800	\$28 800
Outcome 2.4: Updated internal rules and procedures and establishment of guidelines to be used by the Centre and NFIs	\$593 858	\$134 158	\$157 100	\$99 200	\$99 200	\$104 200
Outcome 2.5: Communication, promotion, awareness raising, and public relation and marketing strategies successfully developed and implemented	\$371 100	\$13 900	\$101 800	\$76 800	\$101 800	\$76 800
Outcome 2.6: Finalized thematic areas and thematic hubs (THs)	\$688 177	\$124 177	\$141 000	\$141 000	\$141 000	\$141 000
Outcome 2.7: Regional capacities strengthened through specialised training and schemes implementation	\$605 814	\$96 325	\$237 811	\$76 448	\$118 782	\$76 448
Total of Component 2	\$8 269 094	\$1 052 839	\$1 663 984	\$1 327 246	\$2 163 179	\$2 061 846
Total Component 1 + Component 2	\$20 314 702	\$2 105 052	\$4 401 530	\$5 784 106	\$4 041 859	\$3 982 156

The year 2019 was an inception year of creating capacity with hiring of human resources, building working procedures, attempts to establish partnerships and keeping the technical hubs and sub-committees working together. Since 2019 CCREEE has been managing its own funds, presenting accounts during the EB meetings which usually occur every 6 months. The accounts have been professionally audited and discussed at the EB meetings.

CCREEE first budget (year 2020) was organized in line with the strategic plan and was discussed at the 3rd Executive Board (EB) meeting. The reality became very different from

initial expectations³³, as seen in Table 8. The CCREEE 2020 work programme had expected to mobilize around US\$5,8 million most of which to a Virtual Laboratory on Energy Modelling and Renewable Energy Integration, a Centre of Science, Technology, Engineering, Arts and Mathematics, and a CCREEE Residence and Visitor Centre. This has not been possible, and these ideas were abandoned. Outcome 1.6 (Table 7) became the IRRP. The COVID 19 pandemic affected the result, no doubt, but does not explain everything.

However, After this first year, the priorities were concentrated on the three flagship projects (IRRP, PPF and CEKH), on supporting some regional activities and on trying to be known and build reputation, as well as provide services to generate income. Judging from the minutes of the EB meetings, the preparation of working plan and budget has apparently decreased importance as an issue. The EB meeting in November 2020 discussed and approved the budget for next year amidst a wide range of topics in the agenda, and the EB meetings of November 2021 and November 2022 do not even mention the budget for the subsequent year. The budget prepared for 2021 was much more realistic.

Table 8. Comparison of CCREEE budgets vs executed in each fiscal year

	2019		2020		2021		2022
	Executed	Budget	Executed	Budget	Executed	Expected ³⁴	
Human Resources	278626	909,648	148,524	147,909	234,143	1,281,093	
Operating Expenses	120551	442,264	75,892	61,939	121,337	899,252	
Capital Costs		263,983				123,951	
Work Programme Activities	*	5,838,500	988,948	1,122,993	1,494,907	**	

*Phasing out of the UNIDO – GEF project, and expenses can be somehow considered work programme activities.

** The budget in the report does not discriminate which of the above expenses are related to Work Programme Activities. It should be noted that CCREEE started 2022 with US\$543,509 unspent fund and expects to end 2022 with US\$936,014. A large portion of this amount comes from ADA, as projects CCREEE has been implementing such as TAPSEC and Cli-RES will end in June and September 2022.

CCREEE has been keeping a ‘flat’ structure of the current organizational chart and EB considers that it works well and should be maintained. The number of human resources has been increasing steadily, but there were recently two important resignations, both senior females, the Project Development and Gender Expert and the Communication and Public Relation Specialist. The two joined other institutions.

CCREEE has just concluded its resource mobilizing strategy (reported in the 9th EB meeting in March 2022), and has a new set of key performance indicators dated June 2022. The path for CCREEE ensuing from those documents is to continue strengthening the three flagship projects (IRRP, PPF and CKH), while trying to build reputation and establishing partnerships.

In February 2022, the CCREEE Executive Board organized its second retreat, in which the first operational period was analyzed. Only two (2) countries have enacted the CCREEE Act, which provides legal status and support for operations of the Centre under the national jurisdiction

³³ The three projects are not exiting in the KPI of 2022, the most similar is the KPI #18: Design and develop one virtual net-zero building, and related tools, to improve knowledge and understanding on the CREEBC specifications, applications, and benefits across the professional bodies for building architecture, engineering, and construction and civil society.

³⁴ As reported in the CCREEE Report March to August 2022

of each CARICOM country. It can be considered that high-level advocacy to the countries to encourage the promulgation of the act are beyond CCREEE management power, but the availability of draft legislation to facilitate an easier process for enactment by the countries is within the realm of the Centre and could help.

Although CCREEE exists and has an equilibrated financial situation (with a slight surplus in 2021), CCREEE continues to be highly dependent on donors' financing and has not yet taken a series of strategic steps to enhance the centre. Although the COVID 19 pandemic severely affected required traveling, required strategic documents have not yet been produced.

Therefore, project results-based management is considered **moderately satisfactory (MS)**.

5.3 Overarching assessment and rating table

Table 9 - Evaluators' assessment of the project

Evaluation Criteria	Comments	Rating
Progress to impact	The CCREEE has been established and is functioning, with some regional initiatives, and providing some services. However, its sustainability is challenging. CCREEE is at cross-roads regarding what its role should be: a service provider, a nursery of innovative ideas, a regional project implementation agency, a facilitator agency. At the end of the project, which has been extended several times, the impact of the creation of CCREEE is still not noticed throughout the region, as relationship with some MS is still limited, and some regional development players state all CCREEE activities were already being done by some other entity previously. Some donors active in the region still do not see CCREEE as the entity to go for the implementation of regional projects.	MS
Project design		MS
Overall design	The project design is similar to other GN-SEC centers and benefited from lessons learnt by other centers. The project design took into account some specificities of the Caribbean region and was innovative in relation to the establishment of CCREEE's governing structure with technical committee and technical hubs. However, the regional institutional setting has changed from what was written in the project design, which had activities similar to other regional REEE centers. Therefore, project design became not fully adjusted to the Caribbean context where entities such as CARICOM Energy Unit, CROSQ, University Network, CCCCC do exist, and no efforts were done update the design.	MS
Logframe	Although structurally well designed, the Project Result Framework presents activities which are not responsibility of CCREEE, contains indicators and targets to which CCREEE can only contribute if requested, or that are beyond the center's scope. Some of the indicators and targets do not match the outputs or the activities foreseen to achieve them.	MU

Evaluation Criteria	Comments	Rating
Project performance		S
Relevance	CCREEE is aligned with the existing Caribbean regional policy and MS national policies and is a facilitator of policy and strategy implementation. The relevance of CCREEE is confirmed by the high-level approval of the centre by the Caribbean region Ministers of Energy, by CARICOM the SIDS DOCK, and CDB. CCREEE has some procedures that might be an example to other centers of the GN-SEC.	HS
Effectiveness	CCREEE is established, has staff and working conditions and is delivering services. Due to the reported issues on the logframe it is difficult to objectively estimate CCREEE's effectiveness. CCREEE has been in many ways a facilitator/supporter rather than a doer, but It is noticeable that CCREEE's activities are not yet mainstreamed and its intervention capacity in MS is still limited. Eight years after the beginning of the project, it could be expected that CCREEE would by now be at a more advanced stage and generating a stronger impact.	S
Efficiency	There have been delays with the setting up of CCREEE, and with the transition from the Start-up Phase to the 1 st Operational Phase, which required additional 50% of budget support from ADA, and a project duration of 8 years. About 90% of CCREEE staff is still dependent on donor contributions, and CCREEE still does not have a strong regional agenda working with all MS. CCREEE was able to secure, at least 60% of the total amount foreseen in the Project Document, not accounting with in kind contributions, directly funded actions and funds mobilized (which CCREEE does not account for).	MS
Sustainability of benefits	CCREEE is a reality and is seen as a useful institution to facilitate implementation of transition to sustainable energy. The major challenges identified with the sustainability of CCREEE are matching its relevance and finance. CCREEE is yet to establish or consolidate its niche and to become an added value in the region. There is a debate regarding CCREEE's business model. Similarly, there is no consensus among stakeholders regarding financing. CCREEE is just concluding a resource mobilization strategy that presents several revenue streams, including provision of services, earning a facilitation fee on PPF, and including both public and private sector sources of income.	ML
Cross-cutting performance criteria		MS
Gender mainstreaming and other	CCREEE governing bodies (EB and TC) have only 11% women. CCREEE top management has no women. Two senior staff women resigned over the summer. Reportedly, despite efforts, it was not possible to establish a gender sensitive	MS

Evaluation Criteria	Comments	Rating
vulnerabilities	culture in CCREEE. there is not enough data on women to elicit a gender-based approach to programming. About 67% of questionnaire respondents indicated that they do not know if a gender analysis was undertaken on their CCREEE proposals. The majority (64%) of respondents say that they do not know if CCREEE activities are accessible to vulnerable populations. However, 57% respondents indicated that their institution does target marginalized populations' access to energy. Most respondents (77%) agree that CCREEE activities take into account a balance between mitigation of climate change and other environmental concerns (biodiversity, desertification, pollution, etc).	
M&E design and implementation	The Steering Committee meetings and later the EB meetings have been occurring and progress is discussed, and important decisions are taken. However, planning of activities and budget is not being performed since 2020, and only CCREEE three pillar actions seem to be taken into account. At the first operational phase no monitoring and evaluation system including indicators measuring the CCREEE progress and impact were produced. The KPIs have just been approved recently (2022). CCREEE has not updated project design and Logframe, following the change on regional institutional setting. CCREEE is not collecting financial information on in kind contributions, activities directly funded by donors and funds that the center is mobilizing to MS via the PPF. CCREEE is also not monitoring its technical impact in the regional.	MU
Results-based Management (RBM)	CCREEE has not yet taken a series of strategic steps to enhance the centre. The first strategic model was not realistic, but was able to shift to a more realistic set of activities. Financial management has been adequate but continues to be highly dependent on donors' financing. Co-financing was not properly reported. Some governance issues need to be solved.	MS
Performance of partners		MS
Stakeholder engagement	Stakeholders interviewed and those who answered the questionnaire indicate that CCREEE can by facilitating implementation change the implementation deficit occurring in the region. However, some national focal points indicate they never used CCREEE products. Often the level of engagement depends on prior/existing working relationships with CCREEE officials. Member States claim that increased engagement with CCREEE would in turn lead to more requests and faster approvals for CCREEE activities.	MS
Regional counterparts	The regional institutional setting on RE&EE has been evolving and CCREEE is part of it, as it has worked directly with CARICOM Energy Unit and with the TAPSEC project, which allegedly started processes that CCREEE is supposed to inherit and take forward. Other entities in the region are also working with CCREEE such as CROSQ, CCCCC and Universities	MS

Evaluation Criteria	Comments	Rating
	<p>Network, and/or are part of the Center's EB and TC. But work is yet to be done, for the region to benefit of articulation between all these stakeholders.</p> <p>Under the SIDS DOCK framework, the Centre works closely with the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) and the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) on common SIDS sustainable energy issues and solutions.</p>	
Donors	<p>Austrian Development Agency, Spanish Cooperation and UNIDO have provided the financial and in-kind contributions as promised. The core international partners have agreed to project extensions for several times, and ADA has provided further funding to allow the project to thrive. About 50% of respondents to the questionnaire believed that UNIDO's support to CCREEE was either good or very good, while about 38% indicated they did not know what to answer.</p>	S
Overall assessment		S

6. Conclusions, Recommendations and Lessons Learned

6.1 Conclusions

This project evaluation was carried out using UNIDO's guidelines with the aim of identifying the relevant effectiveness, efficiency, impact and sustainability of the CCREEE and its interventions and activities for promoting RE&EE in the Caribbean region.

Overall, the "Establishment and First Operational Phase of Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)" is classified as Satisfactory by the evaluation team (ET).

In this section, a summary of why the ET reached its overall conclusion and score can be found. Detailed scores for individual aspects of the Centre, which provide more insight than an overall score, can be found in the body of the report.

The CCREEE stems from a registered SDG-7 SAMOA Pathway partnership which, in turn, is a component of a wider Memorandum of Understanding (MOU) signed by UNIDO, the Government of Austria and the Small Island Sustainable Energy and Climate Resilience Organization (SIDS DOCK) to assist small island developing states in the Caribbean, Pacific, Africa and Indian Ocean in the establishment of regional sustainable energy centres (SEC). The project being evaluated aimed at supporting the Caribbean Community (CARICOM) and its 15 Member States in the design and establishment of CCREEE, under the umbrella of the Global Network of SEC (GN-SEC) programme³⁵ coordinated by UNIDO. In line with the established GN-SEC "twinning" support modality³⁶, UNIDO provided services related to mentoring, consensus and institution building, as well as technical program development. The preparatory process for the establishment of CCREEE was coordinated by CARICOM in close partnership with UNIDO and was supported by the Austrian Development Agency (ADA), SIDS DOCK, Spanish Cooperation, German cooperation and GIZ, and the EU. CCREEE project document was similar to the one of other GN-SEC regional centers, but taking into account lessons learned from those exercises.

The ET recognizes the CCREEE remains highly relevant, given the analysis performed on the project context, and consultations carried out to stakeholders. The idea behind the CCREEE and the aims, objectives and the mandate of the organization are as relevant today as they were prior to the initial creation of the Centre. CCREEE can become even more relevant now that the TAPSEC project closes and the COVID19 pandemic restrictions have lessened and travelling has resumed, allowing closer contact with Member States and regional entities.

CCREEE operates in a context in which there are different institutions responsible for policy development and implementation (CARICOM Energy Unit, and C-SERMS), a regional entity that is responsible for standards (CROSQ), entities responsible for training certifications (Universities Network), and some regional banks, such as CDB and IDB, supporting national and regional sustainable energy initiatives. As such CCREEE needs to be a convener and facilitator more than a doer. This reality is different from other regions, in which there are not so many entities in the sector, but the Project Results Framework did not take this into account. There are indicators and targets to which CCREEE contributes but are beyond its responsibility. CCREEE has charted and evolved (followed a change path) that is a bit different from the theory of change that can be extracted from the project document (which is in line with other GN-SEC centres).

Efficiency of the project was affected by the long ratification process required for the legal agreement to the establish CCREEE. This caused the need for further funding which continued to be provided by ADA. In line with the GN-SEC model, UNIDO bridged this time through its

³⁵ www.gn-sec.net

³⁶ Institutional peer-to-peer learning.

own rules and procedures, which allowed the center to start operating. In addition, the COVID19 pandemic hit at a time in which CCREEE was implementing its first yearly action plan, after having hired core staff and having prepared its internal rules, procedures and operation guidelines. As such, the travel restrictions, work disruptions, and the necessity to telework has complicated the consolidation of processes and the awareness of the Member States about CCREEE.

CARICOM MS demonstrated high commitment regarding the establishment of the center by approving its creation on the level of Ministers of Energy and Heads of State even against some reluctance of international partners. However, the sustainability of the center and its financial autonomy is affected by the reluctance of CARICOM MS to provide membership contributions. This is a major issue for CARICOM itself, as well as most CARICOM agencies. A number of MS are highly indebted and some of them are under monitoring programs of the IMF. Due to the heavy impact of COVID on public finances and foreign direct investment, the situation has become even more critical and there are debates at UN level on debt release, as well as increased international support for the energy transition.

Despite those challenges, CCREEE has made progress, of which it can be highlighted:

- the CCREEE formally launched in 2018 and opened its office with support from the Government of Barbados, after a start-up period headed by Dr. Al Binger (2016-2018), guided by a steering committee, and operated based on the results framework of the initial CCREEE GEF project document;
- CCREEE Executive Director, Dr. Gary Jackson, was appointed in October 2018, and hosted a strategic planning retreat of the Executive Board (EB) in November 2018 that helped to identify the vision and the mission statements of CCREEE, the priority areas for the Centre, and how it will work towards achieving them as part of an overall Strategic Framework;
- the development of the CCREEE Rules, Procedures and Operating Guidelines;
- the hiring of staff for CCREEE, all of them were being paid by projects or donors;
- achieving high visibility and being included in international, regional and national events;
- the development of 3 pillar actions that integrate the 7 strategic programmes, and the engagement with some Member States;
- developing Energy Report Cards in 15 countries and territories and of CARICOM itself, and involved in the Integrated Resource and Resilience Plan Programme or Vulnerability Risk Assessment in 8 countries;
- Having established thematic hubs, participating the Regional University Network and established the CEKH;
- developing comprehensive capacity building actions on technical and grid integration and integrated resource planning;

In its first business model, CCREEE identified 7 strategic programmes, however in 2020 it became clear that not all programmes could be implemented simultaneously, or not all should be driven by the centre. CCREEE has subsequently opted to focus on 3 pillars, through which several programmes could be implemented, while bringing together and facilitating different institutions to deliver other outputs. This is enabled by the CCREEE structure with a Technical Committee and Thematic Hubs. In this sense, CCREEE has acquired a certain autonomy (in terms of implementing its own agenda) that is not found in other centres, although it is still financially dependent on donors. Some stakeholders criticize CCREEE that activities of these pillars were already being implemented by other entities.

Through the Energy Score cards, CCREEE has been monitoring the evolution of sustainable energy in Member States, using an internship scheme. However, CCREEE does not yet seem able to align its programming with these findings; perhaps because they tend to be diversified and country specific. Furthermore, while both gender mainstreaming and poverty alleviation have specific targets in the CCREEE programme documents, most interviewees indicate that

they are unable to see the linkages or the effect to which the initial phases of CCREEE has addressed these issues. Gender and poverty are inextricably linked in the region where over 50% of households are headed by women and where women and children are largely responsible for household cooking and cleaning. Reportedly, no CCREEE's programming tools or products address gender, except for some trainings and a "gender cafe", and while over 50% of CCREEE staff may be women (there is no information available on levels of engagement or pay gaps), this has not translated into decision making (gender representation on the EB, Technical Committee, and executive direction of CCREEE is highly unbalanced). CCREEE therefore still has a long way to go in terms of inclusive programming and outcomes.

While the wide range of entities involved in the Executive Board and Technical Committee is quite positive, it tends to make the exchange of sensitive information and the sense of ownership, challenging. There might also be competition among the Thematic Hubs, although each Hub is coordinated/led by the specialized entity. Much dialogue is required to reach consensus, synergies, and complementarity. With some divergence in programmatic focus and the travel limitations imposed by COVID19, CCREEE has not been able to mainstream its activities in all Member States, and some staff have moved to other entities with higher rates of implementation. As a result, the staff turnover at CCREEE has been high.

All the above facts render it difficult for CCREEE to:

- have influence at a regional level (although some progress has been made) as not all Member States are involved with the Centre;
- receive core funding from other donors, as some donors may be reluctant to provide funding to the centre if that is not through a concrete programme/project;
- pursue its own agenda, backed by Member States' resources (in addition to assist donors in implementing its projects, design its own and mobilise resources from donors and others for its implementation);
- attract and retain staff due to the ongoing uncertainties in funding going forward.

Some of the actions in the original CCREEE Project Document remain incomplete or have not yet started. Some of the major actions include:

- There is no established internal quality and appraisal framework to support RE&EE activities.
- CCREEE is still not engaging deeply with in all Member States;
- The Centre did not develop a multi-year framework to strengthen the local RE&EE capacity of key institutions and stakeholder groups;
- There is limited technology transfer with high relevance for the local business and industry;
- There is no database of contacts across RE&EE yet developed and no list of RE&EE investment projects. As such, there is no online RE&EE information management system addressing the needs of investors, private sector and industry;
- A Regional Cleantech accelerator program for SMEs of Caribbean countries has not been initiated.

The nature of CCREEE as a facilitator rather than a doer opens a range of possibilities for the future development of the centre. CCREEE can be a services provider, an incubator of ideas that potentially become innovative projects, a project developer and implementation agency. Current CCREEE staff sees the first two as the way to go. According to the CDB, CCREEE can be all.

6.2 Recommendations

The following recommendations highlight practical next steps for CCREEE and are presented by topic to maximize clarity.

Recommendation 1 - Governance:

It is recommended that CCREEE build on its long-term business plan, including the Funds Mobilization Strategy and Key Performance Indicators, and the Human Resources Strategy and Action Plan, the Center strives for coherence and harmonization between all these documents and they become the basis for a common roadmap for CCREEE and MS going forward in sustainable energy transition. The documents should be approved by the EB and the TC by consensus to enable and facilitate a continuous and focused dialogue with partners throughout the region. The same applies for three subsidiary business models for the core pillars of action.

The approval decision will have to define CCREEE's role in the region: a service provider, an incubator of innovative ideas on sustainable energy, a project implementation agency or a facilitator. Indeed, CCREEE can perform all these, making it more resilient in responding to different challenges and circumstances, and it should aim for a mix of these functions. This will need the support of all MS.

The drive towards a CCREEE based purely on fee-for-service should be carefully considered. Around the world, there are very few regional environmental or energy agency with public mandate that operate on a commercial basis. Regional agencies tend to operate with public funds and only mobilize limited income through commercial activities, where they do not compete with the private sector (e.g. standardization, testing, quality infrastructure). There is a risk that CCREEE starts to compete with private sector and creates barriers particularly for local companies and experts, which cannot afford to pay for services or analytics. Rather, it is recommended that CCREEE focuses on partnerships to optimize synergies and collaboration with existing agencies in the region (see also Recommendation 4 below).

Recommendation 2 - Programming:

It is recommended that CCREEE programming focuses on the following:

- mainstreaming clean energy technology in the region
- promoting technology transfer from academia to the private sector (industry, construction, mobility), and
- gender mainstreaming and social inclusion in programming.

M & E: CCREEE must document and record both learned and tacit knowledge as high staff turnover means that invaluable knowledge is lost.

Recommendation 3 - Communications:

CCREEE should improve marketing and communication, as well as one-on-one outreach to MS, and aim to make CCREEE the automatic partner of choice for renewable energy and energy efficiency initiatives. Additional outreach effort is needed to reach all MS, in particular sharing information on future pipeline of activities, and build up knowledge of MS needs and existing barriers. Some stakeholders recommend CCREEE to create a calendar of events to support forward planning in a more seamless manner.

Recommendation 4 – Partnerships and Coordination:

CCREEE should enhance its partnerships with other regional bodies (similar to the ongoing collaboration with Caribbean Export) and national bodies through the NFI, but not be limited to them, and deepen the partnership and coordination with the Caribbean Development Bank (CDB).

Recommendation 5 - For Member States:

MS should reach out to CCREEE to develop their national programmes jointly and verify the added value the centre brings. Each country has its own context and might be at a different stage in the transition to sustainable energy. Through CCREEE, MS can benefit from other experiences and new processes, reducing the time and learning curve they would endure otherwise.

Recommendation 6 – for Donors:

It is recommended that donors routinely consult CCREEE from the beginning of bilateral or multilateral programming on RE&EE in the region, as the Centre is a knowledge repository and has the capacity to reduce duplication, facilitate implementation, and enhance cooperation.

Lessons Learned

Lesson 1: The regional processes to establish an organization take time. Greater emphasis needs to be placed on planning and implementing a strategy to ensure that the Legal Agreement establishing a centre can be taken into regional (CARICOM) ministerial meetings sooner, and that the MS are able to sign the Legal Agreement. A back-up strategy, including direct work with parliamentarians, could be considered to address major constraints of MS to sign the Agreement.

Lesson 2: Flexibility should be built into project design and/or results framework to take into account the possibility of change in institutional and political conditions.

Lesson 3: Marketing is very important for a small entity that wishes to grow and to become a regional reference in the sector. A vibrant and dynamic website is a very important tool for that purpose, as it can showcase successes as they are achieved (and they do regardless of the amount of staff) and show value to stakeholders across the region.

Lesson 4: Building of one-on-one relationships with MS is a powerful way of promoting programming, strengthening project management teams at the country level and fostering successful results.

Lesson 5: It is expected that Business Plans will be realistic having learned from experience. However, it would be preferable to start with a few core actions, and as the centre grows, expand activities (starting small and focused and then growing sustainably rather than to starting all components at once). Unrealistic targets can deter results-based management, and might generate a negative marketing of the centre (perception of limited capacity).

ANNEXES

Annex 1 - Evaluation and rating Criteria

The evaluation criteria are shown below.

Table A1: Project Evaluation Criteria

#	Evaluation criteria	Mandatory rating
A	Impact	Yes
B	Project design	Yes
1	<ul style="list-style-type: none"> Overall design 	Yes
2	<ul style="list-style-type: none"> Logframe 	Yes
C	Project performance	Yes
1	<ul style="list-style-type: none"> Relevance 	Yes
2	<ul style="list-style-type: none"> Effectiveness 	Yes
3	<ul style="list-style-type: none"> Efficiency 	Yes
4	<ul style="list-style-type: none"> Sustainability of benefits 	Yes
D	Cross-cutting performance criteria	
1	<ul style="list-style-type: none"> Gender mainstreaming 	Yes
2	<ul style="list-style-type: none"> M&E: <ul style="list-style-type: none"> ✓ M&E design ✓ M&E implementation 	Yes
3	<ul style="list-style-type: none"> Results-based Management (RBM) 	Yes
E	Performance of partners	
1	<ul style="list-style-type: none"> UNIDO 	Yes
2	<ul style="list-style-type: none"> National counterparts 	Yes
3	<ul style="list-style-type: none"> Donor 	Yes
F	Overall assessment	Yes

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Unit uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory), except sustainability and gender issues, as follows:

Table A2. Project rating criteria

Score		Definition	Category
6	Highly satisfactory	Level of achievement presents no shortcomings (90% - 100% achievement rate of planned expectations and targets).	SATISFACTORY
5	Satisfactory	Level of achievement presents minor shortcomings (70% - 89% achievement rate of planned expectations and targets).	
4	Moderately satisfactory	Level of achievement presents moderate shortcomings (50% - 69% achievement rate of planned expectations and targets).	
3	Moderately unsatisfactory	Level of achievement presents some significant shortcomings (30% - 49% achievement rate of planned expectations and targets).	UNSATISFACTORY
2	Unsatisfactory	Level of achievement presents major shortcomings (10% - 29% achievement rate of planned expectations and targets).	
1	Highly unsatisfactory	Level of achievement presents severe shortcomings (0% - 9% achievement rate of planned expectations and targets).	

Source: ToR of the ITE

The rating systems used for remaining aspects of the evaluation are:

Criteria	Evaluation Rating
C.4. Sustainability and external risks; external factors	Four (4) points scale: <u>Likely (L)</u> : no or negligible risks to sustainability <u>Moderately likely (ML)</u> : moderate risks <u>Moderately unlikely (MU)</u> : significant risks <u>Unlikely (U)</u> : severe risks
D. Cross-cutting issues: Gender mainstreaming	Four (4) points scale: <u>Focus on gender</u> <u>Significantly addresses gender</u> <u>Somewhat addresses gender</u> <u>Does not addresses gender</u>

Annex 2 - TAPSEC overview

Resulting from an agreement signed between CARIFORUM Directorate and the European Union (EU), TAPSEC was funded by European Union (€ 9.0 million, 11th EDF) and the German Federal Ministry of Economic Cooperation and Development (€ 1.5 million). TAPSEC was implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH from 2017 to 2022, in collaboration with the CARICOM Secretariat, the CCREEE and the Ministry of Energy and Mines in the Dominican Republic. Through collaboration and strategic interventions within the thematic areas of Policy, Information and Capacity Building, and Finance, TAPSEC's team supported, through capacity development activities, the implementation of the CARICOM Energy Policy (CEP), the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS), the CROSQ energy efficiency initiatives, and the various national energy policies and strategies of Caribbean countries.

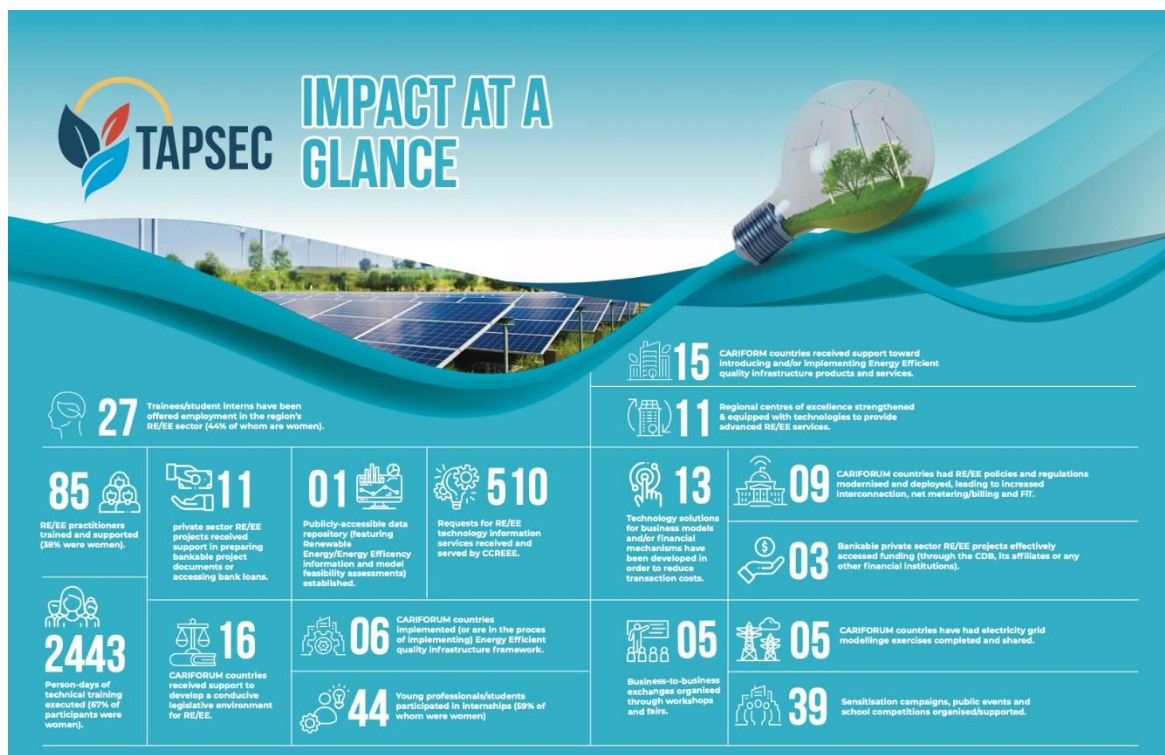
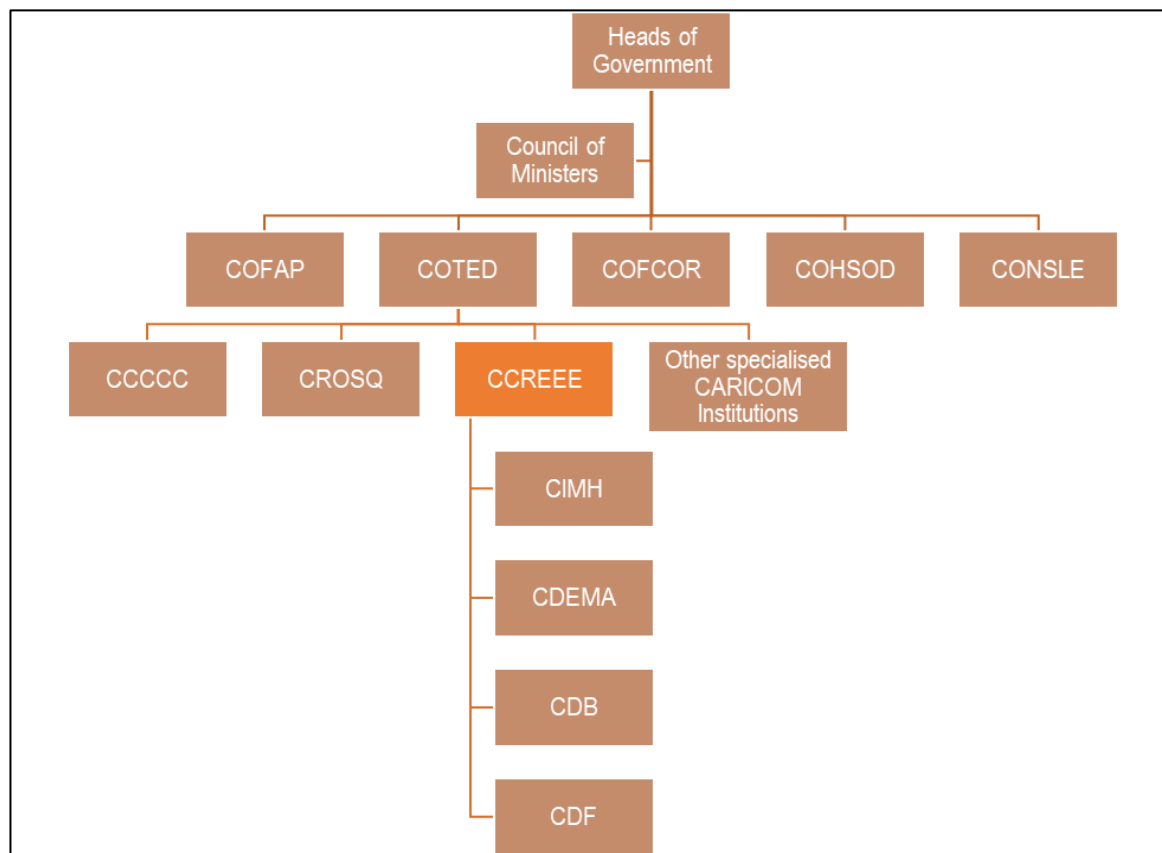


Figure 1: TAPSEC results

Annex 3 - Main CCREEE Stakeholders

Regional Institutional context



CARICOM

The CARICOM works in 15 Member States and 5 Associate Members to create a community that is integrated, inclusive and resilient. CARICOM's role was to provide the CCREEE with the required support to ensure its successful start-up phase and operation. The support included empowering the CCREEE through its recognition as a central institution in the RE&EE market, provide an official mandate to CCREEE, and through active participation in the Executive Board of the Centre. As the custodian of the center, CARICOM facilitated the deliberations of relevant matters about CREEE in its meetings and conferences. In addition, CARICOM co-financed some of the activities of the CCREEE as presented in Table 2.

During project implementation the Energy Unit of CARICOM has been the main direct beneficiary of the project. Whereas in the beginning of project implementation the unit did not have any staff, it now has a well-established management unit. There exists an excellent cooperation and division of labour between the Energy Unit, which focuses more on wider policy and cooperation issues, and the CCREEE, which acts as executing arm.

COTED

The CARICOM Council for Trade and Economic Development (COTED) has special meetings on Energy, attended by Energy Ministers of each Member State. CCREEE reports to COTED and matters are discussed in COTED meetings. The Council shall, on the basis of recommendations of the Executive Board, provide overall strategic policy guidance. It also evaluates the performance of the CCREEE and appoints the Executive Director of the Centre.

SIDS-DOCK

During project implementation, SIDS DOCK transformed from an initiative to an intergovernmental organization under the umbrella of the Alliance of Small Island States

(AOSIS). SIDS DOCK assists SIDS to transform their national energy sectors into a catalyst for sustainable economic development and helps generate financial resources to address adaptation to climate change. SIDS-DOCK's role in the start-up and first operational phase of CCREEE was to provide technical assistance and finance to the center besides assisting in promoting the CCREEE profile and reputation internationally.

Government of the Host Country - Barbados

The Government of Barbados, through its line ministry of energy, provides office space and possibly furniture, telephone, fax and Internet connection for the CCREEE. The Host country also takes over parts of the running costs without time limit.

Member States

CARICOM member states (and opt-in countries)³⁷, as key beneficiaries of the activities of CCREEE, are central to the continued relevance of the Centre's activities. In this connection, countries are expected to support the CCREEE through nominating focal institutions and supporting their activities, and in providing financial contributions to the Centre, when required. Member states are also expected to provide co-funding for projects being implemented in their countries. Progress of the CCREEE will be periodically discussed during regular meetings of the member state Energy Units.

CCREEE's supporters

Austrian Development Agency (ADA)

The Austrian Government, through the Austrian Development Agency, ADA, contributed to the CCREEE as captured in the budget (Table 2). ADA channeled the funding through UNIDO, who was assigned to provide key technical assistance to establish the Centre and its technical program in cooperation with CARICOM. The funding operated by UNIDO was implemented in line with the UNIDO procurement rules.

UNIDO

Besides assisting in the conceptualization and design the CCREEE, UNIDO continued to provide technical assistance to the centre to ensure quality delivery, and work towards sustainability of the CCREEE and its ability to receive direct funding from other donors. UNIDO also mobilized its own funding for the first operational phase as indicated in the budget. It was anticipated that UNIDO support would be time limited to the first operational phase; after which the relationship would transform to a project-based partner cooperation (e.g. implementation of GEF projects). UNIDO intended to subcontract specific implementation tasks and funding to the Centre, as soon as the procedures and processes of the Centre are sustained. In addition, UNIDO helped CCREEE to join the GN-SEC and other international networks, managed by UNIDO, in order for the center to leverage expertise and technologies. Examples of international networks include: UNIDO Centre for South-South Industrial Cooperation in India (UCSSIC), UNIDO International Centre for Hydrogen Energy Technology in Turkey; UNIDO International Centre for Promotion and Transfer of Solar Energy (ISEC) in China; Hangzhou Regional Centre on Small Hydropower in China, UNIDO Regional Centre for Small Hydro Power in India, UNIDO Observatory for Renewable Energy in Latin America and the Caribbean, among others.

³⁷ CARICOM Member States include Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago. It was decided that the centre would be also open for non-CARICOM members (e.g. Dominican Republic and Cuba and Caribbean territories) if they express official interest to join.

Annex 4 - GN-SEC's Learnt Lessons used to guide the establishment of new centers

The following table contains the lessons learnt by UNIDO and GN-SEC, that they used to set up other regional centers and that were used in CCREEE design.

Institutional aspects
<i>Involving key regional and national stakeholders and ensure local ownership of the centre from the very beginning.</i> Involvement of energy stakeholders is necessary from the initial stages to gather inputs for the design, the technical program and demanded services; create awareness and attract interest.
<i>Local ownership and use of local procedures should be mainstreamed and encouraged for the sustainability of the centre.</i> The centre should be owned by the local counterpart. The initial UNIDO institution building support should be directed to build a centre with strong EAC identity, ownership and ability to mobilize and implement its own financial resources. The UNIDO support should have a clear exit-strategy.
<i>Fund mobilization should be a core activity of the centre and should not be limited to funding commitments at the beginning.</i> The expansion of the project portfolio should be a requirement for the expansion of staff and administrative costs: form should follow function.
<i>Early establishment and capacity strengthening of the NFIs is crucial of the functioning of the centre.</i> The network allows high level access to national policy makers and national support services (e.g. workshops, project monitoring, awareness creation and data collection)
<i>It is essential to employ high-quality staff from the very beginning.</i> In the best case such an expert should combine technical-economic energy skills with sound management skill and good relations and contacts with PS, partners and international donors for fund raising.
<i>Efficient and effective institutional structure with high level of legitimacy in the region should be established.</i> The duties and roles of the Executive Board, Technical Committee, Secretariat, and strategic representation of member states and core donors in the governance structure should be clearly defined.
<i>It is key to mention the definition of the legal status and scope of delegation of competencies from the regional organization to the centre from the very beginning.</i> For efficiency purposes it is important that the centre has its own legal identity but should work in accordance with the rules of the regional organization.
<i>A long-term (4 to 5 years) and short-term (annually) planning, execution and monitoring framework including a set of performance indicators should be developed.</i> This allows an efficient monitoring of the progress by the donor partners and the Board of Directors. The design of the project document should leave space for changes in accordance with the priorities of the Director and demands from the national focal institutions.
<i>The annual work plans should be developed in close coordination with the NFIs.</i> NFIs and other relevant market enablers should carry out wider stakeholder consultations on the work plans.
Technical aspects
<i>The centre should act as a facilitator and supporter rather than implementer of grass-root activities.</i> By doing so, it should avoid competition and overlapping of services provided by the private sector and other institutions.

<i>It is essential to demonstrate added value on local and international levels with early start-up activities with high visibility factor. Country visits, call for applicants and/or projects, tenders, regional key conferences and workshops, data provider, partner in project submissions are some high visibility factors, which should be focused upon by the centre.</i>
<i>Permanent pro-active fund raising for the technical program of the centre should be a key performance indicator. The centre should participate in call for proposals and donor dialogues from the very beginning and should prepare high-quality project documents. It is essential to develop well designed long-term oriented flag-ship priority programs with the potential for up-scaling to be implemented during the first operational phase.</i>
<i>It is necessary to create an informative website dedicated to the centre. Availability of e-newsletter and use of electronic social media should be essential features of the website.</i>
<i>The centre should build a strong network of partnerships with local and international institutions in clean energy sector. It is important to build such partnerships to develop common projects and win-win situations.</i>
<i>The centre should establish an internal quality, appraisal and management framework for technical procurements and projects. Standard project document templates for project appraisal, procurement and project cycle management should be developed to aid the framework.</i>
<i>The centre must build up numerous partnerships with different donors and partners. Donor interests should be managed and balanced carefully by defining the priorities for their assistance through the annual work plans and business plan to strengthen the capacities of the centre and raise co-funding.</i>

Also, in line with the lessons learnt, in particular in the establishment of the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE), the project document presents the following integration of the lessons into the CCREEE process:

Lesson learned/Success factors	Incorporation in CCREEE Process
Institutional Aspects of the Centre	
Involve key stakeholders (e.g. ministries, utilities, electrification agencies, private sector, civil society) during the preparatory phase and operational phase; gather inputs for the design, the technical program and demanded services; create awareness and attract interest.	The project document has undergone a comprehensive review of local and international stakeholder consultations. UNIDO worked closely with SIDS DOCK and participated in one workshop organized by CARICOM-GIZ where a concept note of the Centre was presented. Close contact to potential donor partners has been kept throughout the preparatory process and they showed great interest in the centre and its services. The preparatory consultants held meetings with key stakeholders in most of the Caribbean countries and territories.
Mainstream and encourage ownership and strong local identity throughout the design and operations of the centre. The ECREEE experience and several other evaluations of excellence centres have highlighted the importance of local ownership and use of local procedures to ensure sustainability and long-term capacity strengthening. The	Considerable co-funding contributions from Caribbean actors (host country, SIDS DOCK and to some extent from the countries) were incorporated in the project document which was validated by the government representatives. To ensure the sustainability of the centre, local contributions will cover particularly the running and staff costs of the

Lesson learned/Success factors	Incorporation in CCREEE Process
<p>centres shall be owned by the local counterpart. The initial UNIDO institution building support shall be timely limited and directed to build a centre with strong Caribbean identity, ownership and ability to mobilize and implement its own financial resources. Co-funding from the local counterpart is one important indicator of ownership. ECOWAS covered most parts of the staff and administrative costs of ECREEE. The role of UNIDO is to provide technical assistance to the centre from the background. The host country should show high interest in the centre and see it as strategic investment. The competitive bidding procedure to host the Centre applied in the case of ECREEE was also a good strategy to ensure ownership.</p>	<p>centre. The centre will have a strong Caribbean identity and will work according to CARICOM/SIDS DOCK rules and procedures. As long as the processes are not consolidated UNIDO will implement its funding in accordance with UNIDO rules and procedures with close involvement of CCREEE staff. Once the procedures are consolidated UNIDO will start subcontracting to CCREEE. The envisaged limitation of the UNIDO institution building support for the first operational phase was incorporated in the document. UNIDO will win a long-term execution partner for projects. The main responsibility for the establishment, operation and organizational development of the centre lies with the Director from the very beginning. The ownership of the host country to be selected will be strengthened through a competitive bidding.</p>
<p>The budget of the Centre shall reflect the needs, be realistic, be ambitious and not be limited to the actual received funding commitments at the beginning. Fund mobilization shall be a core activity of the Centre and its Director. The expansion of the project portfolio shall be a requirement for the expansion of staff and administrative costs: form shall follow function. The mixture of co-funding from ECOWAS, international support and active fund raising of the centre has been the basis for the financial sustainability of ECREEE. There are numerous examples of closed centres after the first phase due to the dependence on only one financing source and very limited budget scope. A clear funding gap shall be shown to interested donor partners.</p>	<p>Fund raising is one of the key responsibilities of the Director of CCREEE from the very beginning. The centre will start with a small staff base which can be expanded based on the mobilized project funds. The budget of CCREEE tried to balance between ambition and realistic assumptions. UNIDO and CCREEE has already received concreted pledges of other donor partners which intend to support either directly or through co-funding for specific activities in the logical framework.</p>
<p>The early establishment of the network of National Focal Institutions (NFIs) is crucial for the functioning of the Centre. The network allows high level access to national policy makers and national support services (e.g. workshops, project monitoring, awareness creation and data collection); the experience of ECREEE has shown to strengthening of the capacities of the NFIs is very important; clarify the compensation of NFIs for provided services.</p>	<p>The establishment of the network of NFIs and of a competence hub were included as a priority activity of the centre during the start-up phase. Based on the experiences of ECREEE, a special program to strengthen the capacities of the NFIs was included in the project document (e.g. intern model). TORs for the NFIs will be applied from the very beginning.</p>

Lesson learned/Success factors	Incorporation in CCREEE Process
<p>The external evaluation of ECREEE has shown the importance of high-quality UNIDO staff seconded to the centres from the very beginning. Project staff shall be recruited by international tender. In the best case such an expert shall combine technical-economic energy skills with management and development cooperation experience. Good relations and contacts to international donors are of high importance for fund raising and building of trust for the centres. The expert shall assist the Director of the centre in the establishment and first operational phase (e.g. staffing, procurement, financial management, technical program, project cycle management) until the Centre is consolidated; in the beginning priority shall be given to the establishment of an effective office, as well as the creation of the internal rules, processes and templates.</p>	<p>UNIDO technical staff is foreseen in the project document.</p>
<p>The quality of the local staff and a clear management and staff strategy are a key success factors; it is important to develop the organizational chart and TORs for administrative and technical staff. The centre shall start with a small base of staff and grow with increasing demands and project funds. The recruitment of a well-known Director with extensive knowledge on the energy sector and good relationships to national governments and donor partners is a key success factor. Staff should be employed under CARICOM rules and procedures at least in the mid-term; it shall be ensured the office is functioning by a deputy while the Director is travelling.</p>	<p>The development of the organizational chart will be part of the CCREEE business plan; The procedure to agree on TORs for the Director was included in the project document.</p>
<p>Establish an efficient and effective institutional structure of the Centre with high level of legitimacy in ECOWAS. Clearly define the duties and roles of the Executive Board, Technical Committee, Secretariat, NFIs and Executive Director; strategic representation of countries, departments (e.g. technical and administrative) and core donors in the governance structure.</p>	<p>The proven ECREEE structure was adapted to the CCCREEE by considering the proposals Caribbean stakeholders.</p>
<p>The definition of the legal status (e.g. specialized agency) and scope of delegation of competencies from the regional organization to the Centre (e.g. signing of contracts, recruitment, procurement) from</p>	<p>A similar model as in the case of ECREEE was applied for the centre in the Caribbean. The centre will have its own identity, will work in accordance with CARICOM rules and procedures. It will be able to sign contracts</p>

Lesson learned/Success factors	Incorporation in CCREEE Process
<p>the very beginning is key. For efficiency purposes it is important that the centre has its own legal identity but works in accordance with the rules of the regional organization. Any conflicts between the energy unit in the regional organization and the centre shall be avoided. To ensure continued donor support the centre has to show efficient implementation.</p>	<p>with donor partners and project implementers. To ensure legitimacy the energy unit and the admin-legal unit in CARICOM are fully integrated in the decision-making structure of the centre.</p>
<p>Develop a long-term (4 to 5 years) and short-term (annually) planning, execution and monitoring framework including a set of performance indicators; This allows an efficient monitoring of the progress by the donor partners and the Executive Board. To avoid double financing all activities and co-funding received by the centre shall be included in the annual work plans. The management of the centre shall take ownership in developing the Business Plan and work plans. The design of the project document should leave space for changes in accordance with the priorities of the Director and demands from the national focal institutions.</p>	<p>The model of ECREEE has been applied in adapted form. The establishment of the annual work plan and reporting cycle, as well as the development of the business plan of the centre was included as priority activity in the start-up phase of the centre. The approach will allow that the Director takes ownership in the planning an implementation of the activities. The work plans and business plan are subject to the review and approval by the Executive Board.</p> <p>The project document defines the main pillars of the technical program of the centre but leaves space for changes by the Director. The envisaged outputs and activities of the logical framework were developed on the basis of the discussions held during the preparatory phase, the field visits, CREDP reports and experiences from the ECOWAS region. The individual starting situations of the two regions have been considered in the design of the technical program. Most of the Caribbean countries have already experiences with RE&EE policies and projects, which need support for implementation or up-scaling.</p>
<p>The annual work plans shall be developed in close coordination with the NFIs and other relevant market enablers. NFIs should carry out wider stakeholder consultations on the work plans.</p>	<p>A procedure to involve the NFIs and national stakeholders stronger in the planning of the work plans was included.</p>
<p>Technical Program Aspects of the Centre</p>	
<p>The centre acts as facilitator and supporter rather than implementer of grass-root activities. It avoids competition and overlapping of services provided by the private sector and other institutions (e.g. consultancies, audits, trainings); uses call for applicants, tenders and call for proposals;</p>	<p>The lesson learned has been fully considered (see chapter on strategic positioning of the centre). The CCREEE shall promote and upscale existing capacities in the public and private sector, rather than duplicate or compete with them. To stimulate the market and to reach a certain impact the Centre will</p>

Lesson learned/Success factors	Incorporation in CCREEE Process
<p>focus on the added value of regional cooperation and exchange (e.g. train the trainers, RE&EE data collection, regional policy processes, research networks, dissemination of lessons learned). The centre provides information and data for free, in order to ensure a strengthening of local capacities and knowledge management (www.ecowrex.org).</p>	<p>execute most of its activities in cooperation with external partners of the public and private sector. The approach assures that the added value of the centre in the region will be seen in the short-term.</p>
<p>Demonstrate added value on local and international levels with early start-up activities with high visibility factor (e.g. country visits, call for applicants and/or projects, tenders, regional key conferences and workshops, data provider, partner in project submissions). Avoid the “dead valley impression” in the beginning (long development time of programs). Establish a website and a newsletter cycle. The Director of the centre is present at important international events and maintain donor relationships;</p>	<p>A similar approach as in the case of ECREEE in West Africa has been applied. Highly visible and demanded activities were included in the logical framework. Certain technical activities were already included in the start-up phase, in order to ensure the readiness to present first results already with the inauguration of the centre. The establishment of the website of the Centre is of high importance.</p>
<p>Permanent pro-active fund raising for the technical program of the Centre shall be a key performance indicator for staff; the centre shall participate in call for proposals and donor dialogues from the very beginning; the centre shall prepare high-quality project documents in cooperation with strong partners from the region and internationally; UNIDO should involve the centre as executing partner for project in the early stage of development (e.g. SPWA).</p>	<p>During the start-up process the centre will already aggressively start with the preparation and submission of project proposals to donor partners and international call for proposals. To facilitate that process, UNIDO will involve CCREEE already in the PPG phase of GEF projects as an executing agency. Through that approach the centre in West Africa has been able to mobilize significant co-funding from different partners in only a short time. Through project funds the centre can expand its staff base.</p>
<p>Develop well designed long-term oriented flag-ship priority programs with the potential for up-scaling to be implemented during the first operational phase across all result areas (e.g. capacity and policy development, knowledge management, awareness raising, business and investment promotion); make use of innovative approaches and models with the potential for up-scaling and replication (e.g. train the trainer approaches, financing mechanisms); urban and rural areas focus;</p>	<p>Such flag-ship programs have been incorporated in the logical framework. However, these flag-ship activities shall be defined in detail by the Director in close cooperation with the Executive Board and Technical Committee.</p>
<p>Create informative website, inform regularly on updates and establish the newsletter cycle</p>	<p>It was included as a priority activity in the start-up phase.</p>

Lesson learned/Success factors	Incorporation in CCREEE Process
of the Centre; build up a contact database and make use of electronic social media features.	
Build a strong network of partnerships with local and int. institutions in the clean energy sector; develop common projects and win-win situations. Use comparative advantage of the centre due to knowledge of the local environment.	The signing of cooperation agreements and MOUs with international and local institutions was included as a priority. The centre can become a service provider for international organizations and act as a contractor of local institutions and companies. With that approach considerable co-funding can be raised for the technical program of the centre.
Establish an internal quality, appraisal and management framework for technical procurements and projects; establish a technical appraisal framework for renewable energy and energy efficiency projects and programs; develop templates for project appraisal, procurement and project cycle management; develop standard project document templates to be used by ECREEE to co-fund and monitor projects.	The establishment of such a framework was included in the logical framework. UNIDO will assist the Director in this regard and will make use of the documents from West Africa.
The country and donor interests have to be managed and balanced carefully by the Director of the Centre; The centre shall keep independence and cooperate with a wide range of local and international partners; it shall coordinate donor activities and define the priorities for their assistance through the annual work plans and its business plan. The building up of numerous partnerships with different partners will strengthen the capacities of the centre and will make it easier to raise co-funding. The funding might not be managed by the centre, but it will receive credit and visibility.	The lessons learned were integrated fully in the design of the centre. CCREEE will open up to other partners from the very beginning. UNIDO/SIDS DOCK are already in dialogue with a broad range of partners (e.g. GIZ, IRENA, IADB, DFID, and France). UNIDO will stay a core partner of the centre.

Annex 5 - Expected outcomes and outputs of the project, and results achieved

The following table shows the outputs and outcomes established in the project document and the results achieved thus far by the Start-up and first operational phase of CCREEE.

Outcome	Output	Results
1. Enhanced regional institutional capacities through the creation of the efficiently managed and financially sustainable Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)	1.1 The host country of the Centre is decided and the Secretariat is physically established	100%
	1.2 The Executive Director and the technical and administrative staff are recruited, and the internal procedures and regulations are implemented	100% Although there is still significant staff rotation
	1.3 The institutional governance structure of the Centre is established and executed	100%
	1.4 A long and short-term planning, implementation and monitoring framework of the Centre is established and implemented Targets: - 1 approved Strategic Plan by the Board; 1 work plan per year; 1 Monitoring and Evaluation Framework tracking the CCREEE progress	A longer-term business model is being developed. The previous one (short-term) has established 7 CCREEE's strategic programs, of which 4 have been developed. A fund mobilization strategy is being finalized. KPI have been approved in 2022, implementation is starting. The work plan and budget (in particular the budget) are not always discussed in the previous year.
	1.5 The core activities and functions of CCREEE are implemented and sustainability of the organization is reached Targets: At least 70% of the business plan and annual work plans are implemented; At least 7 million USD co-funding for the technical program of the centre raised.	CCREEE is performing key activities in the Integrated Resource and Resilience Plan (IRRP) Programme, the CARICOM Energy Knowledge Hub (CEKH), the Project Preparation Facility (PPF), considered the three pillars which incorporate all the Centre's seven strategic programmes. CCREEE is also preparing and imparting training courses and interacting with audiences through social networks and the

Outcome	Output	Results
		website. The center is still trying to find its niche and financial sustainability is still an issue. (MS)
2. Accelerated development, adoption and execution of regional and national gender sensitive RE&EE polices, targets and incentives through targeted regional interventions	2.1 Regional RE&EE targets and policies of CARICOM, SIDS DOCK and SE4ALL are under implementation on national levels Targets: At least 20% of the regional C-SERMS implementation monitoring framework is implemented; At least 7 countries adopt national RE&EE action plans and SE4ALL action agendas which take into account environmental safeguards, gender mainstreaming and social equity issues; At least 5 CCREEE staff and consultants are assisting the implementation process.	CCREEE assists the CARICOM Secretariat (responsible entity) in the process to develop and enforce the Regional Energy Efficiency Strategy and Regional Quality Infrastructure for Sustainable Energy. CCREEE supports the development of IRRP and Emergency Response mechanisms and performs energy audits. CCREEE developed a Regional Electric Vehicles Strategy Framework in consultation with the Regional Electric Vehicle Working group. Only the last target is responsibility of CCREEE and is achieved.
	2.2 Regionally agreed renewable energy equipment standards and labelling schemes for efficient appliances are developed and under implementation Target: Regional RE equipment standards and labelling schemes for efficient appliances are adopted by at least 7 countries	This is competence of CROSQ. CCREEE has participated in the development of a regional EE building code, and is supporting CROSQ in the MSs public awareness of the code. CCREEE also participated in the various working groups established under the C-SERMS and TAPSEC program.
3. Strengthened capacities of local key institutions and stakeholder groups through the up-scaling and replication of certified training and applied research programs and mechanisms	3.1 A multi-year framework to strengthen the local RE&EE capacities of key institutions and stakeholder groups is developed, adopted and under implementation Targets: Capacity development strategy is validated by key stakeholder groups (incl. women groups) and gender mainstreaming mechanisms are	Such a framework is currently established under the C-SERMS process ³⁸ . CCREEE is actively involved in the TGW on capacity building and the related TAPSEC activities, and also accompanies the work of the Regional University Network. The CEKH tries to collate the produced information.

³⁸ <https://www.ccreee.org/our-work/capacity-development/>

Outcome	Output	Results
	<p>incorporated; At least 30% of the activities of the regional capacity development strategy are implemented by end of the first operational phase of CCREEE.</p>	<p>CCREEE is making efforts on gender mainstreaming, so far with limited results.</p>
	<p>3.2 Regional certification and accreditation schemes for trainers and training institutions are developed, adopted and under implementation</p> <p>Targets: At least 5 training standards adopted by the centre (at least on is dedicated to gender mainstreaming); At least 80 trainers are certified across at least 15 islands (at least 30% are female); At least 5 training institutions and universities adopt the competency standards</p> <p>The targets are not responsibility of CCREEE</p>	<p>CCREEE actively participates in the C-SERMS CBRWG, and coordinates with CXC and TAPSEC projects on the implementation of their activities on this matter. CCREEE has launched an Internship Programme for persons across 20 Caribbean territories to be trained and engage on the region's energy transition. CCREEE has also participated in the elaboration of the "Online Capacity Building and Certification Program on Sustainable Energy Solutions for Islands and Territories in the Pacific, Caribbean, Africa and Indian Ocean", sponsored by UNIDO and developed by a Spanish Research Center. With the end of TAPSEC, it is probable that CCREEE will increase its responsibilities.</p>
	<p>3.3 Key stakeholders are trained by the certified trainers on RE&EE aspects of high relevance for the local business and industry sector</p> <p>Targets: At least 1.000 key stakeholders across 15 islands are trained by the certified trainers and/or institutions (being at least 30% are female); At least 50% of the trained experts apply their received skills in the energy sector of the Caribbean (at least 30% are female)</p>	<p>Trainings are mainly related to the IRRP programme and project development support (PPF): grid modelling, introduction to IRRPs, IRRP scenario and KPI development, and project concept development. Trainings also on knowledge management, database management.</p> <p>Some training data are disaggregated by gender, and female attendance do not always reach 30%</p>
	<p>3.4 Applied science research networks and technology transfer with high relevance for the local business and industry sector are promoted</p>	<p>CCREEE Thematic Hubs have been involved in CARICOM Energy Unit and TAPSEC support to establish a Regional University Network.</p>

Outcome	Output	Results
	<p>Targets: At least seven national research institutions are involved in the execution of at least (3) regional applied research programs on RE&EE; At least two (2) innovative technology transfer projects are under implementation (e.g. waste to energy, sustainable transport)</p>	<p>CCREEE has developed the project document for the Energy Modelling and Renewable Energy Virtual Lab (EMREV), that will be used for capacity development and lessons learnt sharing across the GN-SEC.</p> <p>CCREEE and the CARICOM Energy Unit also launched the CARICOM Energy Innovation Challenge that invites submissions of primary and secondary school students interested in Science, Technology, Engineering, the Arts and Mathematics (STEAM) on novel concepts for use and management of the STEAM Centre in their school, maximizing positive impact in community and everyday life. The best proposal for bringing the STEAM Centre and student network to life will determine the first pilot CARICOM STEAM Centre.</p>
<p>4. Enhanced awareness of key stakeholder groups on RE&EE opportunities through the up-scaling of regional mechanisms for data and knowledge management and advocacy</p>	<p>4.1 An effective online RE&EE information management system addressing the needs of investors, private sector and industry.</p> <p>Targets: At least 15 institutions in 15 MS provide updated RE&EE baseline data to the system on an annual basis (sex-disaggregated data); At least 500 documents, files and data-sets are available in the system by end of the first operational phase; At least 200 registered users (at least 50% of it from the Caribbean and represent private sector) visit the data system regularly and download data ; At least 70% of the responding users confirm their satisfaction with the quality and reliability of the data in annual online surveys</p>	<p>CCREEE is developing CARICOM Energy Knowledge Hub (CEKH), a repository of energy related data and information for the region. It involves collaborations with the International and regional institutions including CEIS. CCREEE is making efforts to produce and host the Caribbean Integrated Renewable Energy Atlas at CEKH, and also GIS tools. CCREEE is producing Energy Report Cards for all CARICOM countries, aiming at updating them yearly.</p> <p>Targets are not yet achieved</p>

Outcome	Output	Results
	<p>4.2 Awareness and knowledge base of key stakeholder groups on various RE&EE aspects are strengthened</p> <p>Target: At least 500 experts from the Caribbean region participate in CCREEE RE&EE conferences by end of the first operational phase (at least 30% of the invited panelists are female); At least one CCREEE conference will have a special focus on the gender-RE&EE nexus; At least 30% of the population in 15 countries is reached by regional awareness campaigns</p>	<p>CCREEE co-organized and contributed to a number of CARCOM Energy conferences/workshops. In many events, CCREEE was very visible. Several videos and national/regional workshops were co-organized by CCREEE. Currently, CCREEE is also heading a regional campaign to inform on quality aspects of electric vehicles and batteries. CCREEE and the other GN-SEC centres also participated in several conferences and meetings, high-Level or more technical, in which there is opportunity to share knowledge and experiences.</p>
<p>5. Increased RE&EE business opportunities for local companies and industry through the execution of regional investment promotion programs and tailored financial schemes</p>	<p>5.1 Investments in RE&EE projects are promoted</p> <p>Targets: - At least 130 million USD for the execution of the SIDS DOCK project pipeline (around 21%) are mobilized by end of the first operational phase of CCREEE; National institutions (e.g. banks) in at least 7 countries co-fund 100 small to medium-scale RE&EE projects with support of newly created regional support schemes (schemes consider mainstreaming of gender and environmental safeguard standards); (Pre-)feasibility studies and energy audits for innovative RE&EE projects addressing industrial key sectors (e.g. tourism, agriculture, fishery, creative industry) with an investment volume of at least 70 million USD are developed and in the SIDS DOCK project pipeline included (considering environmental safeguard standards and gender mainstreaming); At least two (2) regional key programs to promote investments in innovative technology areas are developed and</p>	<p>Within the PPF, CCREEE tries to establish match-making engagements with international partners and global funds to support the development and deployment of projects in MS (so far MS have shown limited appetite to what has been proposed). Besides, CCREEE continues to engage with MS directly to maintain a pipeline of projects, in particular projects emanating from IRRP. CCREEE also engages in capacity building initiatives to target various stakeholder groups including Financial Institutions, Project Developers and Public Sector proponents. CCREEE has conducted a needs assessment for the establishment of the PPF which include identification of stakeholders needs that can be addressed by the PPF. The targets for this sub-component were too ambitious. CCREEE is far from mobilizing such amounts and engagement with private financial</p>

Outcome	Output	Results
	<p>under implementation (e.g. waste to energy, efficient transport);</p>	<p>institutions at MS is limited. The PPF can be considered of the regional key programs.</p>
	<p>5.2 The local sustainable energy industry is strengthened</p> <p>Targets: Adopted gender-sensitive CARICOM strategy to promote local sustainable energy industry and entrepreneurship; At least 150 local sustainable energy hardware and service companies in 15 Caribbean countries receive financial support from the newly created regional facility (at least 30% are in the manufacturing sector, at least 30% start-up companies); At least 20 companies in the sustainable energy sector are awarded through the established clean tech innovation program.</p>	<p>Besides the PPF, CCREE was supposed to be a implementation partner of the project <i>“Strategic platform to promote sustainable energy technology innovation, industrial development and entrepreneurship in Barbados”</i> that could be a pilot project for a potential replication and regional upscaling of the technology platform. However, this line of action has not materialized.</p>

Annex 6 - Questionnaire and interview protocol

The survey was sent to a list provided by the CCREEE office that contained 60 stakeholders. Participants were reminded to complete the survey via emails sent on 11th April, 22nd April (by CCREEE), 16th May, 21st May, 2022, and included the survey link and the QR code to facilitate completion via mobile. In total 17 people answered the survey. This represents a completion rate of approximately 28%. About half of respondents identified as female, with two people preferring not to specify. Most respondents were from either national governments (5), or international organizations (4), or regional institutions (3). About half respondents were partners of CCREEE and 35% were employees or belong to the TC.

A6.1 Questionnaire

The questionnaire serves to gather feedback from a wider group of stakeholders on:

- Relevance of the CCREEE, its objectives and planned outputs;
- The Outputs produced and outcomes achieved thus far as compared to those planned;
- The analytical basis and recommendations provided for effective operation of CCREEE;
- Lessons drawn from activities to enable replication of activities and achievements.

QUESTIONNAIRE

Joint UNIDO-GN-SEC- SACREEE Independent Terminal Evaluation of the Preparatory Phase and First Operational Phase of CCREEE

On March 17, 2014 the [SIDS Sustainable Energy and Climate Resilience Initiative \(SIDS DOCK\)](#), the United Nations Industrial Development Organization (UNIDO) and the Government of Austria signed a Memorandum of Understanding (MOU) to assist Small Island Developing States (SIDS) in Africa, the Caribbean, the Indian Ocean and the Pacific in the creation of a network of regional sustainable energy promotion centres, which came to be known as the [Global Network for Regional Sustainable Energy Centres \(GN-SEC\)](#).

A consultative preparatory process was executed by SIDS DOCK and UNIDO in cooperation with the CARICOM Energy Unit and with the financial support of Austrian Development Agency (ADA). The process included broad stakeholder consultations, the development of a needs assessment. Based on the identified gaps, the creation of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) was recommended. UNIDO, based on the studies and on experience from GN-SEC prepared a project document on the start-up and first operational phase of CCREEE that provides a comprehensive planning and implementation framework for the proposed institutional design of CCREEE, as well as the envisaged key objectives, outcomes and outputs for these phases.

The technical and institutional design of the CCREEE was validated during a regional workshop, organized by SIDS DOCK and UNIDO, from 21 to 22 July 2014 in Roseau, the capital of the Commonwealth of Dominica. The Thirty-Sixth Regular Meeting of the Conference of Heads of Government of

the Caribbean Community (CARICOM), held in Bridgetown, Barbados, 2 to 4 July 2015, endorsed the establishment of the CCREEE as the implementation hub for sustainable energy activities and projects within the region. The offer of the Government of Barbados to host the centre in Bridgetown was accepted, based on the results of a competitive selection process. After receiving a sufficient number of ratifications, the legal agreement establishing the CCREEE went into force on 19 May, 2018, and on 22 May 2018 the CCREEE Headquarters Agreement was signed between the Government of Barbados and the CCREEE.

As part of the independent terminal evaluation of the preparation and first operational phase of CCREEE, the following questionnaire was developed to gather feedback from key stakeholders on:

- Relevance of the Centre, its objectives and planned outputs;
- The outputs produced and outcomes achieved thus far as compared to those planned;
- The analytical basis and recommendations provided for effective the continuation of the centre;
- Lessons drawn from activities to enable replication of activities and achievements.

The estimated time for the completion of this survey is 10 minutes.

A. Identification and General Information

1. Which type of institution are you working for? (Please select **only one** of the categories below)

- International Organization
- Regional Caribbean Organization
- National Government
- Provincial or municipal government
- Technical or scientific institution/university
- NGO / CSO
- Private company
- None/Independent
- Other

2. Please indicate the country you are based in (please select **only one** of the categories below):

- Antigua and Barbuda
- Bahamas,
- Barbados,
- Belize,
- Dominica,
- Grenada,

- Guyana,
- Haiti,
- Jamaica,
- Montserrat (a British overseas territory in the Leeward Islands),
- Saint Kitts and Nevis,
- Saint Lucia,
- Saint Vincent and the Grenadines,
- Suriname,
- Trinidad and Tobago
- Other. Please specify:

3. Please indicate the country(ies) where you carry out activities in:

- Antigua and Barbuda
- Bahamas,
- Barbados,
- Belize,
- Dominica,
- Grenada,
- Guyana,
- Haiti,
- Jamaica,
- Montserrat (a British overseas territory in the Leeward Islands),
- Saint Kitts and Nevis,
- Saint Lucia,
- Saint Vincent and the Grenadines,
- Suriname,
- Trinidad and Tobago
- Other. Please specify:
- Other. Please specify:

4. In your opinion, how well are you informed about CCREEE and its activities? 1 is “very well” and 5 is “not at all”. (Please select **only one** of the categories below)

1 2 3 4 5

5. How did you learn about CCREEE?

Please specify:

B. Specific questions on the CCREEE and its activities

6. According to you, how relevant is the initiative to establish CCREEE for the region? (Please select **only one** of the categories below)
 - Very Relevant
 - Relevant
 - Relatively relevant
 - Not relevant

7. Which of the CCREEE functions do you consider a priority? (please select at least 2 and at the most 5 of the following functions)
 - Knowledge Management and Transfer (increase the knowledge base, data exchange and local capabilities to provide goods and services to the local sustainable energy market)
 - Energy Access (increase access to reliable, affordable, cleaner and sustainable electricity services and cooking solutions for the population)
 - Sustainable Industry and Business (reduce energy intensity and resource consumption with cleaner working practices and to be more socially and environmentally responsible)
 - Sustainable Transport (reduce the environmental impacts of transport, increase energy efficiency and reduce CO2 emissions)
 - Finance and Project Support (address financial constraints and finance capacity / knowledge challenges impacting the development of sustainable energy projects)
 - Sustainable Buildings (increase energy / resources efficiency and transform the building sector into a sustainable, greener and climate-change resilient one)
 - Climate Resilience (contribute to increasing climate change resilience of the CARICOM countries)

8. Which outputs/outcomes of CCREEE do you consider most relevant and useful? (**Please choose at the most 3**)
 - General Information/news and updates on RE&EE
 - Regional policies
 - Regional Standards, namely on energy efficiency
 - Technical documents
 - Programs and projects (e.g. CEKH EMREV, STEAM Mini-grids, PPF, IRRP, CCREEE visitor center)
 - Dissemination of technical workshops and events
 - Trainings

- Business opportunities and alliances (partnerships)
- Forums and other spaces for professional exchange
- Coordination of efforts and regional activities
- Other (please specify):

9. Have you cooperated/worked with /worked for CCREEE? (Select **one** option)

Yes No

10. If Yes, in what areas and how would you rate the support provided by CCREEE (for the areas of cooperation please classify from 1 to 5 , being 1 “very good ” cooperation and 5 “very Weak):

Sustainable energy policy	1	2	3	4	5
Capacity building	1	2	3	4	5
Knowledge management	1	2	3	4	5
Promotion of investment, innovation, and entrepreneurship:	1	2	3	4	5

C. Capacity Building

11. Did you participate in any technical workshops organized by CCREEE? (select **only one** option)

Yes No

12. If yes, how would you rate the quality of the workshop(s)? (Select **only one** option)

- Very good
- Good
- Weak
- Very week

D. CCREEE Portal (www.CCREEE.org)

13. How often have you used the web portal? (Please select **only one** of the following)

- Never
- Only once
- A few times
- Frequently

14. How useful is the web portal for the dissemination of information and for the exchange of information on Renewable Energy and Energy Efficiency in the Caribbean? (**Only answer this question if you have used the portal**) (1 is “very useful” and 4 “not useful at all”)

For the public sector	1	2	3	4
For the private sector	1	2	3	4

15. How do you rate the availability of information on the web portal? (**Only answer this question if you have used the portal**)

- Thorough/complete
- Limited/scarce
- Poor/insufficient

D. CCREEE Project Preparation Facility and access to finance

16. Have you benefited from Project Preparation Facility

- Never
- Only once
- A few times
- Frequently

17. How useful is the PPF for the preparation of projects and access to finance in the Caribbean? (**Only answer this question if you have used the portal**) (1 is “very useful” and 4 “not useful at all”)

For the public sector	1	2	3	4
For the private sector	1	2	3	4

18. How do you rate the support received from CCREEE for project preparation

- Thorough/complete

- Limited/scarce
- Poor/insufficient

F. Your overall satisfaction with CCREEE

19. In your opinion, what are the strengths of CCREEE?

Please specify:

20. In your opinion, what are the weaknesses of CCREEE

Please specify:

21. In your opinion, is CCREEE staff adequate in number and type of expertise to fulfill the centre’s mandate?

Please specify:

22. In your opinion, how well does CCREEE address cross-cutting issues? 1 is “very well” and 5 is “not at all”. (please select **only one** of the categories below)

Gender	1	2	3	4	5
Environment	1	2	3	4	5
Poverty	1	2	3	4	5

23. We would be grateful for any additional information on the program’s benefits for you (and your organization/ institution/ company).

Please specify:


24. Do you have any recommendations or proposals that you would like the centre to take on board or/and might help improve CCREEE’s program performance?

Please specify:

Thank you very much for completing this survey.

A6.2 Interview Questions

Judgement Criteria	Evaluation questions	Indicator(s) proposed	Response
Background: What is your relationship with CCREEE?			R:
B. CCREEE Design			
B.1. Overall Design Assessment of the CCREEE design in general			
The CCREEE is structured adequately to address the respective issues/needs	Do you consider that the current structure of CCREEE (with the existing areas, existing staff, and thematic hubs, etc.) is adequate to address the pressing energy challenges in the country/region?	<ul style="list-style-type: none"> Perception of stakeholders on the CCREEE structure 	
C. CCREEE Performance			
C.1. Relevance Assessment of the logical framework aimed at planning the intervention			
How well does CCREEE identify and address appropriate challenges and barriers?	To what extent does CCREEE comply with CARICOM environmental development and energy policy and priorities as well as with the Sustainable Development Goals (SDGs)?	<ul style="list-style-type: none"> Perceptions of CARICOM stakeholders including energy sector practitioners, CSOs, NGOs, communities, local government, as to whether CCREEE responds to national priorities and existing capacities 	

			
	<p>Do the objectives and planned activities of CCREEE continue to be relevant for the Caribbean to achieve its regional environmental and energy policy goals at this point in time?</p>	<ul style="list-style-type: none"> Evidence of adjustment of CCREEE activities during implementation because of new information on challenges or concerns 	
	<p>Does the CCREEE programme meet the requirements for improving energy assess in your country/region?</p>	<ul style="list-style-type: none"> 	
<p>Level of stakeholder ownership and involvement in CCREEE</p> <p>CCREEE's activities/interventions</p>	<p>Which areas of your priorities are not addressed the CCREEE ?</p> <p>Are there other institutions offering these services?</p> <p>Please provide examples</p>	<ul style="list-style-type: none"> Level of involvement (by means of replies to consultations or pro-active participation) of CARICOM MS, government officials and other partners in 	

address concerns of stakeholders	If you have participated in CCREEE's activities, do you consider them relevant ?	the CCREEE design process	
	Will your institution participate/be involved in future activities promoted by CCREEE?	<ul style="list-style-type: none"> Strength of link between expected results and the needs of relevant stakeholders 	
To what extent are the CCREEE objectives still valid?	<p>In your opinion, are there any obstacles to the effectiveness of CCREEE?</p> <p>Are there rules and regulations that work against CCREEE's objectives?</p> <p>For respondents who know the project document:</p> <p>a. Are the assumptions and targets of CCREEE realistic?</p> <p>b. Are the assumptions on which the CCREEE strategy is based reflective of the operational reality in the region?</p>	<ul style="list-style-type: none"> Extent to which targets are deemed realistic by stakeholders 	
C2. Effectiveness Extent to which the CCREEE attains its objectives, in terms of how the objectives were achieved compared with the planned ones (or how likely this will be achieved)			
To what extent have the objectives of CCREEE's start-up and first operational phase been achieved?	<p>a. Has CCREEE been effective in achieving the expected outcomes and objectives?</p> <p>b. Interview question: Have your needs for support been met by CCREEE activities?</p> <p>c. What were the major factors influencing the achievement or non-achievement of the objectives so far? (indication of strengths and weaknesses)</p> <p>d. To what extent does the CCREEE have the flexibility to design and effectively execute the activities to achieve the Centre's goals?</p>	<ul style="list-style-type: none"> Degree of achievement in meeting CCREEE objective as set out in the Project Results Framework Program level of achievement (intended and unintended outputs, outcomes and impacts) Number of planned vs implemented 	

	e. Interview question: What additional support would you need from CCREEE?	activities/initiatives/programmes/projects	
CCREEE management exhibits flexibility in reaching CCREEE's objectives	To what extent does the CCREEE management have the flexibility to design and effectively execute the activities to achieve the CCREEE goals?	<ul style="list-style-type: none"> • Number of examples of changes made in approach or strategy by management after learning new information 	
Stakeholders' inclusiveness and collaboration with CCREEE	To date, has the CCREEE implementation been inclusive of relevant stakeholders (academia, public sector, private sector, NGOs/CSOs etc.) and collaboration between different partners as identified in the CCREEE Strategy (CCREEE Project Document)?	<ul style="list-style-type: none"> • Extent to which the implementation of the CCREEE has been inclusive of relevant stakeholders and collaboration between partners 	
Outcome in the absence of CCREEE	What would happen in the CARICOM energy sectors if the CCREEE was not established?	<ul style="list-style-type: none"> • Perception of stakeholders of outcome in absence of CCREEE 	
Lessons learnt	What lessons can be drawn regarding the effectiveness for the remainder of the CCREEE?	<ul style="list-style-type: none"> • Lessons learned regarding achievement of outcomes • Number of changes made (if any) to the design to improve the achievement of the results. 	

C3. Efficiency

How cost effective are resources/inputs (funds, expertise, time, etc.) converted into results? Measure the extent to which results have been delivered with the least costly resources possible (without delay and with cost effectiveness). This provides a comparison between the Provided Means/Results			
CCREEE's management structure is conducive to its objectives / CCREEE core management structure is effective and efficient	<p>How appropriate and effective is the CCREEE management structure and staffing profile in realizing a relevant, effective and efficient CCREEE?</p> <p>What changes, if any, are required to the CCREEE organizational structure and staffing profile to carry out its mandate?</p> <p>Was equipment delivered on time?</p> <p>Was the training adequate and easy to attend?</p> <p>Was gender discussed in the training?</p>	<ul style="list-style-type: none"> Stakeholder satisfaction with CCREEE as an institution: <ul style="list-style-type: none"> - performance in reaching mutual goals/objectives - receptiveness/accessibility - abilities/capabilities/skills - expertise/applicable knowledge - efficiency and timeliness - other factors 	
Lessons learnt	What lessons can be drawn regarding the efficiency for the remainder of the CCREEE?	<ul style="list-style-type: none"> No indicators. Systematization of lessons learnt. 	
C4. Sustainability of Benefits and External Factors			
The benefits of an activity are likely to continue after donor funding has been withdrawn.			
Financial sustainability	<p>To what extent will CCREEE be able to deliver its mandate after core donor funding ceased?</p> <p>Is CCREEE strong enough to continue its activities without donor support?</p> <p>In your opinion, can CCREEE finance its programmes or does it need external support?</p> <p>To what extent is your organization – financially, personnel-wise and in terms of organization –</p>	<ul style="list-style-type: none"> Evidence of likely commitments to support CCREEE beyond the end of the core funding 	

	<p>capable and prepared to engage in work with CCREEE support without external financing?</p> <p>Will your institution be able to finance CCREEE supported activities once CCREEE will no longer be supported by core funding?</p> <p>Who loses most if CCREEE is unable to continue its operations?</p>		
Sustainability of impact	<p>How sustainable will the CCREEE impact be beyond the implementation period under analysis?</p>	<ul style="list-style-type: none"> • Extent to which outputs and outcomes of CCREEE's activities are making a difference in the regional context and to which these changes will last 	
Sustainability risks	<p>What risks and potential risk exist regarding the sustainable effectiveness of CCREEE's interventions?</p> <p>How likely is their occurrence?</p> <p>Will the effectiveness of the CCREEE intervention most likely improve or worsen in the future?</p>	<ul style="list-style-type: none"> • Expectations on risks and potential risks regarding the sustainability of CCREEE • Expectation regarding the effectiveness of CCREEE in the future 	
CCREEE is effective in developing internal and external partnerships to achieve objectives	<p>How effective is the CCREEE in building and developing internal and external partnerships to achieve its objectives?</p> <p>Are you aware of any CCREEE partnerships?</p> <p>Do you think partnerships are an important modality for CCREEE to work properly?</p>	<ul style="list-style-type: none"> • Evidence of local ownership • Number and quality of local, regional and global partnerships 	

<p>Effectiveness of communication of lessons learnt</p>	<p>How effective has been the dissemination of lessons learnt to stakeholders?</p> <p>a. Have any lessons learnt during the CCREEE's implementation to date been communicated to your organization, or other organizations that you contact with?</p> <p>b. To whom and by what means have any lessons learnt to date been communicated?</p> <p>c. Has the format of communication of lessons been appropriate?</p> <p>d. Does CCREEE send you regular newsletters?</p> <p>e. How often do you use the website?</p> <p>f. Do you find information about good practice on the website?</p> <p>g. Can you use the website for learning and networking?</p>	<ul style="list-style-type: none"> • Extent to which lessons learnt have been communicated to CCREEE stakeholders and other related programs 	
<p>CCREEE-initiated activities can spread to a wider set of beneficiaries</p>	<p>To what extent can CCREEE-initiated activities be broadened to a wider and larger beneficiary group, and be leveraged to bring about even more benefits than originally intended?</p> <p>Do you know of people or institutions that could benefit from CCREEE's services?</p> <p>What benefits would you recommend to them?</p>	<ul style="list-style-type: none"> • Amount of resources (time, budget, human resources) devoted to developing stronger links between CCREEE activities and local beneficiary groups • Evidence of stakeholder interest and capacity to identify ways to broaden the beneficiary group 	
<p>CCREEE activities that achieve objectives are replicable</p>	<p>Which of CCREEE's activities do you think should be replicated in all CARICOM member states?</p> <p>Would CCREEE have to do all the work alone?</p>	<ul style="list-style-type: none"> • Replication of activities with high levels of achievement toward objectives in other countries/interventions 	

	Who should they work with (in addition to their current partners?)	<ul style="list-style-type: none"> Perceptions of clients and other partners to the effectiveness of those activities that were replicated from previous interventions 	
D. Cross-cutting issues: Gender mainstreaming How gender issues have been taken in consideration in and by CCREEE.			
Consideration of gender issues in CCREEEs planning and implementation	<p>To what extent have gender issues been taken into consideration in CCREEE's planning and implementation phases?</p> <ol style="list-style-type: none"> Have gender-differentiated activities been considered at the CCREEE's design phase and is gender analysis available? Do women and men contribute equally to the realization of the Centre's project activities? Do women and men benefit equality from the project activities? Does CCREEE have indicators to measure gender mainstreaming? <p>How does CCREEE promote and ensure gender equality?</p> <p>How do you ensure that gender equality is encouraged in your interaction with CCREEE?</p> <p>Was a gender analysis done at the beginning of your interaction with CCREEE?</p> <p>Is it easy to find gender-disaggregated data on the energy sector in your country/institution?</p>	<ul style="list-style-type: none"> Evidence/quality of gender integration strategy Evidence/quality of steps taken to ensure gender integration 	

<p>Impact of CCREEE and its activities on gender</p>	<p>What have been the intended and unintended effects of CCREEE on men and women?</p> <p>What were the project's achievements in terms of promoting gender equity and women's empowerment? (are there equal women/man access to resources, assets and services? Do women have equal influence in decision making?)</p> <p>In your opinion, did the activities have different effects on men and women, girls and boys?</p> <p>Do you think that CCREEE is an equal opportunities employer?</p> <p>Why? / Why not?</p>	<ul style="list-style-type: none"> • Evidence of CCREEE's effects on men and women • Evidence of projects achievement in terms of promotion of gender equity and women's empowerment 	
<p>Impact of CCREEE and its activities on poverty reduction</p>	<p>Have CCREEE's activities contributed to increase access to and/or affordability of energy?</p> <p>Have you noticed any changes in the market for lower-cost energy sources?</p> <p>Does CCREEE contribute to this change in the market?</p> <p>What do you think are the causes of the market changes?</p>	<ul style="list-style-type: none"> • Evidence of CCREEE's effects on poverty reduction 	

A. Progress to Impact / Achievement of objectives and results (overall ratings)

The positive and negative changes resulting from the CCREEE, directly or indirectly, intended or unintended.

Impact on the beneficiaries	Can you identify any impacts (good or bad) of the CCREEE activities so far?	<ul style="list-style-type: none">• Indicators from Project Framework	
Lessons learnt	What are CCREEE's weaknesses and strengths? What opportunities and threats does it face?	<ul style="list-style-type: none">• Lessons / future direction	

Appendix 1: List of stakeholders provided by UNIDO

	Name	Surname	Function	E-mail
CCREEE Officials				
1	Gary	Jackson	CCREEE Executive Director	gary@ccreee.org
2	Charlin	Bodley	Sustainable Energy Project Development and Gender Expert	charlin@ccreee.org
3	Penny	Bowen	Communications and Public Relations Specialist	penny@ccreee.org
4	Karen	Forte	Administrative Officer/Executive Assistant	karen@ccreee.org
5	Cherri-Ann	Farquharson	Knowledge Management and Capacity Development Expert	cherriann@ccreee.org
6	Jean-Michel	Parle	Generation expansion planning Expert	Jean-Michel@ccreee.org
7	Elson	Jordan	Finance Manager	elson@ccreee.org
8	Algon	Meikle	Power System Engineer	Algon@ccreee.org
9	Gerald	Lindo	Renewable Energy unit Lead	gerald@ccreee.org
11	Devon	Gardner	Director of Energy	Devon.Gardner@caricom.org
12	Sapphire	Vital	Sustainable Energy Junior Engineer	sapphire@ccreee.org
CCCREEE Executive Board				
1	Andrew	Gittens		andrew.gittens@barbados.gov.bb
2	Mahender	Sharma		mahendra.sharma@hotmail.com
3	Denise	Tulloch		dtulloch@mset.gov.jm
4	Kenrick	Kenrick Burke		BurkeK@gov.ms
5	Rana	Ghoneim		R.GHONEIM@unido.org

	Name	Surname	Function	E-mail
6	Al	Binger		yengar@hotmail.com
7	Joseph	Cox		joseph.cox@caricom.org
8	Danielle	Mrs. Evanson		ddevanson@gmail.com
9	Heinz	Habertheuer		Heinz.Habertheuer@ada.gv.at

CCREEE Technical Committee

1	Mr. Ryan	Cobb		energy@energy.gov.bz
2	Dr. Genora	Joseph		gjoseph@creadominica.org
3	Ms. Shevon	Wood		shevon.wood@yahoo.com
4	Mr. Manfred	Bürstmayr		manfred.buerstmayr@ada.gv.at
5	Mr. Martin	Lugmayr		m.lugmayr@unido.org
6	Mr. Thomas	Mitschke		tmitschke@carilec.org
7	Dr. Sanjay	Bahadoorsingh		Sanjay.bahadoorsingh@sta.uwi.edu
8	Dr. Colin	Young		cyoung@caribbeanclimate.bz
9	Mr. Roger	Espejo		amphilife@gmail.com
10	Ms. Judith	Ephraim		judith.ephraim@oecs.int
11	Mr. Joseph	Williams		williaj@caribank.org

	COUNTRY	NAME	ORGANISATION	ADDRESS
	CCREEE National Focal Institutions (NFIs)			
1	ANTIGUA AND BARBUDA	Mr. Edson Joseph	Ministry of Public Utilities, Civil Aviation, Transportation and Energy	APUA Building, Cassada Gardens St. John's, ANTIGUA AND BARBUDA
2	BAHAMAS	Mrs. Janice Miller	Ministry of the Environment and Housing	Charlotte House, Charlotte St, Nassau, BAHAMAS

	COUNTRY	NAME	ORGANISATION	ADDRESS
3	BARBADOS	Mrs. Francine Blackman	Ministry of Energy and Water Resources	Trinity Business Centre, Country Road, St. Michael, BARBADOS
4	BELIZE	Mr. Ryan Cobb	Ministry of Public Service, Energy and Public Utilities	North Wing, Ground Floor, Sir Edney Cain Building Belmopan, Cayo District, BELIZE
5	DOMINICA	Mr. Michael Fadelle	Ministry of Trade, Energy and Employment	18 Kennedy Avenue, Roseau, DOMINICA
6	GRENADA	Ms. Kim Frederick	Ministry of Infrastructure Development, Public Utilities, Energy, Transport and Implementation	Ministerial Complex, Sir Eric Matthew Gairy Botanical Garden, Tanteen, St. George's, GRENADA
7	GUYANA	Dr. Mahender Sharma	Guyana Energy Agency	295 Quamina Street, Georgetown, GUYANA
8	HAITI	Mr. Nicolas Allien	Energy Cell, Ministry of Public Works, Transportation and Communications	27 Rue Toussaint Louverture, Delmas 33 Port-au-Prince, HAITI
9	JAMAICA	Ms. Carol Palmer	Office of the Permanent Secretary Ministry of Science, Energy and Technology (MSET)	36 Trafalgar Road Kingston 10, JAMAICA
10	MONTSERRAT	Mrs. Beverley Mendes	Ministry of Communications, Works and Labour	Brades, MONTSERRAT
11	ST.KITTS AND NEVIS	Mr. Bertill Browne	Ministry of Public Infrastructure, Post, Urban Development and Transport	Needsmust, Basseterre, ST. KITTS AND NEVIS
12	SAINT LUCIA	Mr. Ivor Daniel	Ministry of Infrastructure, Ports, Energy and Labour	Union Office Complex, Union, Castries, SAINT LUCIA
13	ST. VINCENT AND THE GRENADINES	Mr. Ellsworth Dacon	Ministry of National Security, Air and Sea Port Development	c/o Pet & Son's Building Bay Street, Kingstown ST. VINCENT AND THE GRENADINES
14	SURINAME	Mr. Dave Abeleven	Ministry of Natural Resources	Mr. Dr. J. C. de Mirandastraat #13-15, Paramaribo, SURINAME
15	TRINIDAD AND TOBAGO	Ms. Sandra Fraser	Ministry of Energy and Energy Industries	Level 26, Tower C, Energy Trinidad and Tobago International Waterfront Centre #1 Wrightson Road Port of Spain, TRINIDAD AND TOBAGO

CCREEE Thematic Hubs across the region			
Bioenergy	Dr. Colin A. Young		CCCCC
E-mobility	Dr. Sanjay Bahadoorsingh		UWI Trinidad and Tobago
Geothermal	H.E. Dr. Didacus Jules	Director General	Organization of Eastern Caribbean States
Hydro	Dr. Mahender Sharma		Chief Executive Officer of the Guyana Energy Agency
Quality Infrastructure	Mr. Deryck Omar	Chief Executive Officer	(CROSQ) CARICOM Regional Organization for Standards and Quality
Wind	Mr. Earl Barrett	General Manager	<u>Wigton Windfarm</u>
solar thermal + ocean	Ms. Legena Henry, PhD		UWI Barbados
Solar PV	Mr. Stanley G. Smellie		UWI (Mona) Jamaica