UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

- SIDS DOCK -
SMALL ISLAND DEVELOPING STATES SUSTAINABLE ENERGY MECHANISM[1]

AUSTRIAN DEVELOPMENT AGENCY (ADA)

Project Number:	Project ID: 130200
Project Title:	**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**
Relationship to IP:	N/A
Thematic area code:	EAE FC31
Starting date:	December 2014
Duration:	3.5 years (42 months)
Project site:	Regional project covering the CARICOM Member States, Cuba, Dominican Republic and interested Caribbean territories[2]
Counterpart(s):	The main counterpart is SIDS DOCK. The centre will provide key services to the Caribbean Community (CARICOM) and Organization of Eastern Caribbean States (OECS).
Executing agency:	United Nations Industrial Development Organization (UNIDO)
UNIDO:	€ 1,300,000 from ADA (through UNIDO - incl. 13% support costs) € 550,000 from UNIDO (cash and in-kind starting from 2015)
Support Costs to UNIDO (13%):	€ 149,558 (from the ADA contribution)
Counterpart(s) Inputs:	SIDS DOCK: € 1,351,070[3] Host country: € 482,880 Other local sources: 860,399 (to be mobilized) Expected co-funding of other partners: € 5,784,391[4] (to be mobilized)
Total:	€ 10,328,740
Project Manager:	Martin Lugmayr, PTC/ECC

On 17th March 2014 the United Nations Industrial Development Organization (UNIDO), the Government of Austria and SIDS DOCK signed a Memorandum of Understanding (MOU) to assist Small Island Developing States (SIDS) in the Caribbean, Pacific, Africa and Indian Ocean in the establishment of

[1] SIDS DOCK is an initiative of the member countries of the Alliance of Small Island States (AOSIS). On 17th March 2014 the Government of Austria, UNIDO and SIDS DOCK signed a Memorandum of Understanding (MOU) on support for the establishment of a SIDS network of regional sustainable energy centres.

[2] 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.

[3] The SIDS DOCK contribution will be provided directly to the centre. The contribution of ADA will be managed by UNIDO.

[4] 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. Promising discussions with partners such as the European Commission and GIZ are already ongoing on different levels. The support will partly go to UNIDO, directly to the centre or will co-und certain activities.

regional sustainable energy centres. The SIDS DOCK request was based on UNIDO´s technical work and experience in the context of the Global Network of Regional Sustainable Energy Centres (GN-SEC). To determine the technical and institutional design of the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) a consultative preparatory process was undertaken. The process was closely coordinated with the existing regional organizations (e.g. OECS, CARICOM, SPC and SPREP) and included the development of needs assessments and project documents for the first operational phase of the centres. The CCREEE design and documents were successfully validated by key stakeholders during a regional workshop held from 21 to 22 July 2014 in Dominica. The creation of the centre responds to the urgent need for enhanced south-south cooperation and regional capacities to promote sustainable energy investments, markets and industries in the Caribbean. The centre will act locally and internationally as a regional hub and think-tank for sustainable energy issues and activities. It will address existing barriers and strengthen drivers through regional methodologies and tools. The centre will particularly focus on up-scaling and replication of national efforts in the areas of policy implementation, capacity development, knowledge management and awareness raising, as well as investment and business promotion. It will support targeted RE&EE programs to enhance the productivity and competitiveness of key industries with high job leverage in the Caribbean (e.g. agriculture, fishery, manufacturing, creative industry). The centre will act as technical energy for CARICOM, OECS, SIDS DOCK, SE4ALL and other international partners. It will work closely with the other regional centres in the Pacific and Africa on sustainable energy-related SIDS issues. The institutional set-up of CCREEE reflects the principles of maximising the impact, avoiding duplication of efforts, strengthening and up-scaling of already existing local capacities. It will demonstrate local ownership and work according to the local rules under the umbrella of CARICOM/SIDS DOCK's decision-making process and policy framework. The centre will develop and execute its activities through a network of Thematic Hubs (THs) and National Focal Institutions (NFIs). It will be guided by an Executive Board (EB) and a Technical Committee (TC). The project comprises of a sixth-months start-up phase and a thirty-six months operational phase. UNIDO will assist in institution building as well as the establishment of the technical program of the centre.

Table of Contents

LIST OF ACRONYMS

ADA	Austrian Development Agency
ADC	Austrian Development Cooperation
C-SERMS	Caribbean Sustainable Energy Roadmap and Strategy
CARICOM	Caribbean Community
CARILEC	Caribbean Electric Utility Service Corporation
CCREEE	Caribbean Centre for Renewable Energy and Energy Efficiency
CDB	Caribbean Development Bank
CEIS	Caribbean Energy Information System
CICTs	Caribbean Island Countries and Territories
CIMH	Caribbean Institute for Meteorology and Hydrology
CHENACT	Caribbean Hotel Energy Efficiency and Renewable Energy Action
COTED	Council for Trade and Economic Development
CREDP	Caribbean Renewable Energy Development Programme
CROSQ	CARICOM Regional Organisation for Standards and Quality
¢US	Cents of United States Dollars
EB	Executive Board
EC$	Eastern Caribbean Dollars
ECELP	Eastern Caribbean Energy Labelling Project
ECERA	Eastern Caribbean Energy Regulatory Authority
ECLAC	Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EU	European Union
FIT	Feed-in-Tariff
IADB/IDB	Inter-American Development Bank
IRENA	International Renewable Energy Agency
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GN-SEC	Global Network of Regional Sustainable Energy Centres
KW	Kilowatt
KWh	Kilowatt-hour
MW	Megawatt
MWh	Megawatt-hour
NFIs	National Focal Institutions
OAS	Organisation of American States
OECD	Organisation for Economic Co-operation and development
OECS	Organisation of Eastern Caribbean States
OLADE	Latin American Energy Organization
REETA	Renewable Energy & Energy Efficiency Technical Assistance
RCREEE	Regional Centre for Renewable Energy and Energy Efficiency for Arab States
SACREEE	Southern African Centre for Renewable Energy and Energy Efficiency
SIDS	Small Island Developing States
SIDS DOCK	Sustainable Energy Island Initiative
TC	Technical Committee
THs	Thematic Hubs
UNIDO	United Nations Industrial Development Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFCCC RCC	UNFCCC Regional Collaboration Centre
US$/USD	US Dollars
UWI	University of the West Indies
WB	World Bank

0. Introduction and Summary

Background

The Sustainable Energy Island Initiative (SIDS DOCK) represented by the Caribbean Community Climate Change Centre (CCCCC) in partnership with the United Nations Industrial Development Organization (UNIDO) and the Austrian Development Agency (ADA) are assisting the Caribbean Island Countries and Territories (CICTs) in the establishment of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE). The partnership is based on the official **request of the SIDS DOCK to UNIDO and the Austrian Government to assist in the creation of regional sustainable energy centres for small island developing states (SIDS)** in the Caribbean, Pacific, Africa and the Indian Ocean. The preparatory process is closely coordinated with the Secretariat of the Caribbean Community (CARICOM) and other regional (e.g. OECS, OAS, and OLADE), national and international partners.

The SIDS DOCK request was based on **previous efforts to establish a regional renewable energy agency** for the Caribbean (e.g. led by different countries such as Trinidad Tobago) and UNIDO´s technical work in the context of the **Global Network of Regional Sustainable Energy Centres (GN-SEC)**. The creation of such a centre was recommended by several policy processes and programs (e.g. C-SERMS, CREDP). The Global Network of Regional Sustainable Energy Centers is a south-south multi-stakeholder partnership which is coordinated by the UNIDO Energy and Climate Change Branch in partnership with various regional economic communities and organisations.

The regional centres respond to the urgent **need for enforced south-south cooperation and regional capacities to promote inclusive and sustainable energy investments, markets and industries** in developing and transformation countries in the post-2015 era. The centres enjoy high-level support by the Energy Ministers and respond to the individual needs of the respective national Governments. The network currently comprises the ECOWAS Centre for Renewable Energy and Energy Efficiency (www.ecreee.org), the East African Centre for Renewable Energy and Energy Efficiency (www.eacreee.org), the Southern African Centre for Renewable Energy and Energy Efficiency (SACREEE) and the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) for Arab States. The GN-SEC provides a common umbrella to promote south-south cooperation between the centres and regions.

A concept note on potential technical and institutional design options for CCREEE was presented at the regional CARICOM-GIZ workshop for the introduction of the Renewable Energy and Energy Efficiency Technical Assistance (REETA) Project, which was held from 11 to 12 February 2014 in Georgetown, Guyana. **On 17th March 2014 the Government of Austria, UNIDO and SIDS DOCK signed a Memorandum of Understanding (MOU)** on support for the establishment of a SIDS network of regional sustainable energy centres. The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), based in Cape Verde, a small island developing state in Africa and a founding member of SIDS DOCK, was nominated by the SIDS DOCK Steering Committee to coordinate the sustainable energy activities for African SIDS.

UNIDO, in close partnership with SIDS DOCK and the regional organisations in the Pacific and the Caribbean, launched a consultative **preparatory process for the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)**. The process included the development of needs assessments and project documents on the technical and institutional design of the centres. The Second Meeting of Pacific Ministers of Energy and Transport, held from 2 to 4 April 2014, in Nadi, Fiji, endorsed the project document and the creation of PCREEE.

The CCREEE project document and needs assessment was validated during a regional workshop held from 21 to 22 July 2014 in Dominica (see minutes of the workshop in the annex). The creation of CCREEE was recommended and it was agreed to submit the revised project document for consideration by the Ministerial Council for Trade and Economic Development (COTED) of CARICOM in their next meeting.

Results of the CCREEE needs assessment

The undertaken needs assessment revealed that a considerable number of **Caribbean islands have made considerable progress in the creation of enabling national environments** for the promotion of renewable energy (RE) and energy efficiency (EE). However, in some of the areas the implementation of policy commitments are still in the initial stages and have not transformed into real investments or created a vibrant market and industrial sector. The areas of small and medium-sized grid-connected renewable energy plants, as well as energy efficiency improvements in different sectors (e.g. buildings, grid losses, appliances, industry) need a further boost. There is also 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). Moreover, currently there **still exists a broad range of barriers which need to be addressed, in order to take full advantage of RE&EE potentials.**

There are already a number of regional and international partners' programmes and projects that **assist CICTs in addressing parts of the remaining RE&EE barriers** (e.g. coordination, policy advisory and pre- investment support for projects). Through the CARICOM Energy Policy, the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) and the SIDS DOCK Goal of 25-50-25 **a common regional target framework for RE&EE has been established**. SIDS DOCK established an indicative pipeline of RE&EE priority projects with an estimated investment volume of 630 million USD in the Caribbean. Development Finance Institutions (DFIs) such as the Caribbean Development Bank (CDB) and the Inter-American Development Bank (IDB) are gradually increasing their lending to sustainable energy projects. The closing Caribbean Renewable Energy Development Programme (CREDP) successfully supported the development of national RE policy frameworks and the execution of pre-investment activities. A new GIZ Renewable Energy and Energy Efficiency Technical Assistance (REETA) Project is supposed to support key interventions and to strengthen the CARICOM Energy Unit.

However, the **needs assessment revealed that the existing regional institutional support framework is not prepared to support Member States effectively to reach the established RE&EE targets**. There is an urgent need for enforced regional technical and institutional capacities to assist the Governments and the CARICOM and OECS Energy units effectively to implement the established policy commitments. This goes hand in hand with the need for better technical coordination, donor harmonisation and assurance of long-term sustainability of project interventions as well as documentation of lessons learned. The assessment has identified a common understanding that some soft barriers for RE&EE can be addressed more effectively and at lower cost through regional approaches and methodologies in the Caribbean. The centre is expected to be an important partner for the Renewable Energy and Energy Efficiency Technical Assistance (REETA) project and other project-based initiatives.

The assessment **identified major regional thematic opportunity gaps** in the areas of capacity development, knowledge and data management, awareness raising as well as investment and business promotion in the sustainable energy sector. Growing sustainable energy investments and the introduction of appropriate regulations and standards go hand in hand with the need for local institutional capacities and qualified human resources. An increased trained labour force will be, therefore, demanded, implying the need but also an opportunity to address gender participation gaps. There is the impression that **the local private sector and industry in the Caribbean do not take advantage of the growing sustainable energy market and job opportunities**. These developments endanger the long-term sustainability of existing and future investments as they are often conducted by external enterprises without local representation.

The **creation of a specialised regional RE&EE promotion agency under the umbrella of the existing institutional and decision-making framework of CARICOM/SIDS DOCK is recommended**. The centre will address RE&EE holistically and in an equal way. The centre will act as a **think-tank and hub for sustainable energy** and will play a key role in creating economies of scale and a competitive sustainable energy market and business sector. It will address existing barriers and strengthen drivers through regional methodologies and tools. All the centre's activities shall demonstrate high relevance for the local private sector and industry. The centre will act as technical service provider for CARICOM, OECS, SIDS DOCK, SE4ALL and other international partners. It will assist SIDS DOCK in the implementation of the established project pipeline. Moreover, it will work

closely with the other regional sustainable energy centres in the Pacific and Africa and establish a platform of knowledge exchanges on sustainable energy-related SIDS issues. The centre and its interventions are fully in line with the priorities of the 2015-2019 Strategic Plan of CARICOM adopted by the Heads of Government in their Thirty-Fifth Regular Meeting held in Antigua and Barbuda, from 1-4 July 2014. Climate change adaptation and mitigation[5] were identified as priority activities for the Centre.

Proposed Technical and Institutional Design of CCREEE

The centre will support and execute RE&EE activities and projects which cover one or more CARICOM Member States (Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago). **Non-CARICOM Member States such as Cuba and the Dominican Republic or Caribbean territories can opt-in to become members of CCREEE** (during the preparatory process or later). The Executive Board of CCREEE will decide on the membership (and the modalities) of new countries and/or territories.

The centre demonstrates local ownership and will **work according to the local rules under the umbrella of CARICOM/SIDS DOCK's decision-making process and policy framework**. The centre will have a technical mandate and action- and service-oriented operations. It will work closely with the energy units of CARICOM and OECS and report to the Ministerial Council for Trade and Economic Development (COTED). It will provide the Unit and other local and international partners with the required technical implementation and execution capacities. To ensure ownership it is **recommended that a competitive selection process be launched for the host country of the Secretariat of the centre**. CARICOM Member Countries (and opt-in countries) would be invited to submit offers in accordance with the proposed format and selection criteria included in the annex of the project document.

The institutional set-up of CCREEE reflects the principles of **maximising the impact, avoiding duplication of efforts, strengthening and up-scaling of already existing local capacities**. CCREEE will develop and **execute its activities through a network of Thematic Hubs (THs) and National Focal Institutions (NFIs)** among all CARICOM countries (incl. opt-in countries). The thematic hubs (for policy, investment, capacity development and knowledge management) and the NFIs will be nominated during the start-up phase of the centre.

The centre will be guided by an Executive Board (EB) and a Technical Committee (TC) which will be established during the start-up phase. The detailed descriptions of the functions and composition of the bodies cans be found in the project document. The centre will work on the basis of a long-term business plan and annual work plans.

CCREEE **complements and strengthens ongoing national/regional activities** in the areas of policy and capacity development, knowledge management and awareness raising, as well as investment and business promotion. It will support targeted RE&EE programs to enhance the productivity and competitiveness of key industries in the Caribbean (e.g. food processing, fishery, manufacturing, tourism). CCREEE will position itself as a regional RE&EE promotion agency rather than an implementer on micro- and grass-root levels. To **maximize the local added value** the execution of specific assignments or services will be, in many cases, delegated to national institutions and/or the private sector. In general, the Centre is expected to perform only up to the level of programme/project development, fund raising, oversight, quality assurance as well as coordination, monitoring and evaluation of project/programme implementation.

The **centre will demonstrate strong local identity, employ local staff and operate in the official languages of CARIFORUM (English, French, Dutch and Spanish).** The centre will also make use of other local languages (e.g. Haitian Creole and other creoles) if it increased the impact of activities (e.g.

[5] Between climate change mitigation and adaptation efforts exist a lot of interrelationships. The reduction of diesel imports through the usage of renewable energy technologies and services will free-up financial recourses for financing adaptation projects in the Caribbean. Under this perspective mitigation is also adaptation. Moreover, the planning and design of mitigating energy projects need to consider the impacts of climate change (e.g. changing river flows for hydro power use, impacts of extreme weather events on grids and power generation facilities); Climate change becomes an important factor in energy planning.

for training materials for local planners, standards for equipment). It will be strengthened through the secondment of temporary international experts (e.g. UNIDO and others). The small initial staff structure will expand gradually in accordance with the mobilised funding.

The developed **CCREEE project document provides a comprehensive planning and implementation framework** for the proposed institutional design of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE), as well as the envisaged key objectives, outcomes and outputs for its start-up and first operational phase. It is expected that the centre's start-up phase will be launched end of 2014 and it will become fully operational in 2015. This project document gives an outlook on the envisaged activities to be implemented by the centre, as well as their budgetary requirements. Once the centre is fully operational, its business plan and annual work plans will be developed under the leadership of the Centre Director and the direction of the CCREEE Executive Board. In the annual work plans the partners will agree on the priority activities to be implemented by the centre.

Budgetary requirements

In the advanced development scenario of the centre the **total indicative budget requirement for the running and technical programme costs amount to € 10,328,740**. This estimate covers the 6 months start-up phase and the 36 months first operational phase. It shall be noted that the indicated budget has to be seen as a target of the centre. **In an optimistic development scenario the centre will mobilize the envisaged financial resources during the first operational phase.** However, it shall be underlined that the centre is also able to operate under a more conservative development scenario with a smaller budget and technical program. During the first operational phase the centre will **reach financial sustainability** through core funding from donor partners, local partners, the host country, mobilised project funding and provision of remunerated services. **During the first operation phase, member states will not be expected to provide monetary contributions to the Centre.** The financial commitments received so far will allow the centre to start its administrative and technical core activities in accordance with the established results based management framework. The Austrian Government made a commitment to provide at least one million Euro for the first operational phase of the centre.

A. Context and Results of the Needs Assessment

A.1 Energy Context in the Caribbean region

The following chapter **gives a short overview on the results of the consultative needs assessment on the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)**. The assessment was prepared with assistance from the contracted consultancy company, AETS. The elaboration of the assessment involved various stakeholder consultations in the Caribbean Island Countries and Territories (CICTs). The assessment is also **based on the findings of recently developed sustainable energy baseline reports** prepared by CREDP, SIDS DOCK and CARICOM.[6] The following project document does not repeat the findings of these reports. Unfortunately, the reports do not include sex-disaggregated data and information on the gender sustainable energy nexus.

The following chapter summarizes the status and trends of renewable energy and energy efficiency markets in CICs. Moreover, it highlights the ongoing national and regional efforts to make use of the unharnessed opportunities. The needs assessment revealed that **the existing regional institutional support framework is not prepared to support Member States effectively to reach the established RE&EE targets**. The assessment **identified major regional thematic opportunity gaps** in the areas of capacity development, knowledge and data management, awareness raising as well as investment and business promotion in the sustainable energy sector. Based on the identified gaps the creation of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) was recommended.

[6] e.g. CARICOM Baseline Report and Assessment for the Caribbean Sustainable Energy Roadmap (C-SERMS - 2014); SIDS DOCK Appropriate Sustainable Energy Technology Assessment (2012);

A.1.1 Energy challenges in the Caribbean region

The creation of CCREEE responds to the difficult energy situation in many of the Caribbean islands. They are facing the **challenges of access to modern, reliable and affordable energy services, energy security and climate change mitigation and adaptation**[7] simultaneously. The challenges are intertwined with the region's economic and social challenges. The success of socio-economic and industrial development strategies in the Caribbean region will highly depend on the improvement of the current energy situation. The energy challenges can be summarised as follows:

- Lack of access to modern, reliable and affordable energy services is still a challenge in some of the Caribbean islands (Belize, Guyana, Haiti, and Suriname). This includes also lack of access to modern cooking services.
- Very high electricity tariffs and generation costs represent a burden for the economy, private households and local companies and key industries in most Caribbean islands. Electricity tariffs charged to residential consumers in CARICOM states range from as low as 4.5 U.S. cents per kWh to over 38 cents per kWh.
- There is a widening demand–supply gap in urban areas.
- The financial status of some utilities is weak due to high diesel generation costs and technical and commercial efficiency losses.
- Low energy efficiency in buildings, appliances, industrial processes and technical and commercial grid losses result in power cuts and load shedding in some countries;
- Frequent power cuts have led to the installation of private diesel generators in some countries
- National access rate to modern energy services remains at low levels on some islands;
- The available RE&EE potentials remain largely untapped;
- Increasing extreme weather events impact infrastructure and energy planning;

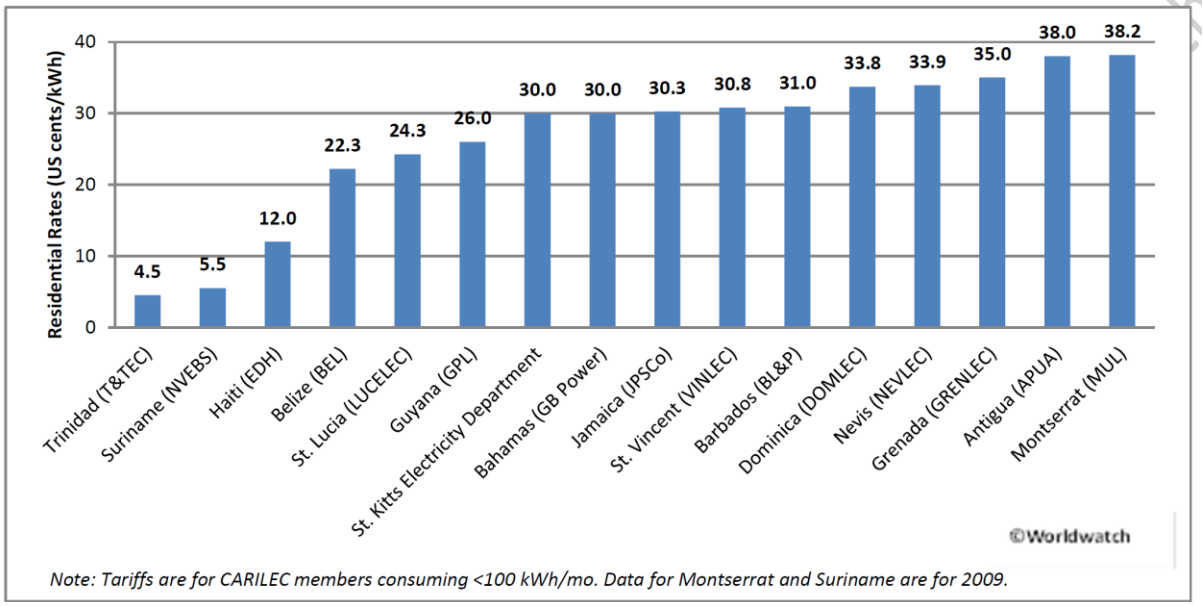


Figure 1: Residential Electricity Tariffs of CARILEC Members, 2009/2010 (source: C-SERMS Baseline Report)

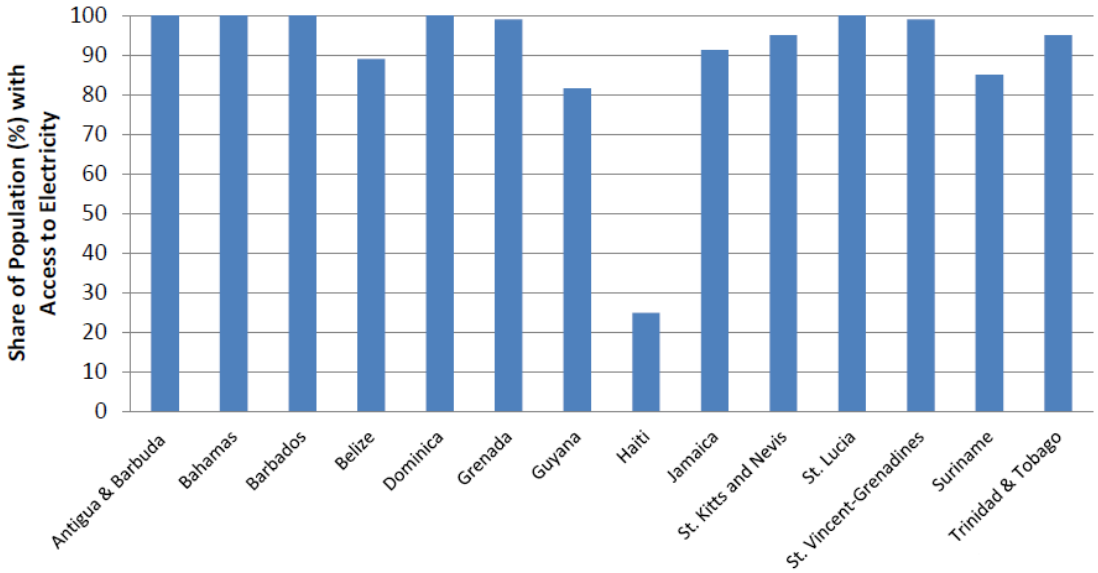
Energy Access and affordability

Energy access to modern and reliable energy services is not a significant issue in most of the Caribbean islands. **CARICOM member states have universal or near-universal access to electricity, except for Belize, Guyana, Haiti, and Suriname**. The dispersed rural populations in these countries are the

[7] Between climate change mitigation and adaptation efforts exist a lot of interrelationships. The reduction of diesel imports through the usage of renewable energy technologies and services will free-up financial recourses for financing adaptation projects in the Caribbean. Under this perspective mitigation is also adaptation. Moreover, the planning and design of mitigating energy projects need to consider the impacts of climate change (e.g. changing river flows for hydro power use, impacts of extreme weather events on grids and power generation facilities); Climate change becomes an important factor in energy planning.

main reason for their lower electrification rates. Adopted rural electrification strategies of these countries usually include the use of renewable energy to supply electricity to the rural populations. Cuba and the Dominican Republic have also significant rates of electricity access with 97% and 95%, respectively (Source: IEA, World Energy Outlook 2010). Due to the high electricity tariffs energy affordability is a challenge particularly for low-income groups on the islands.

The situation in Haiti is drastically different with an electrification rate of only 25%. Moreover, the Haitian power grid is in dire conditions as a result of a long lasting lack of investment and the 2010 earthquake. Due to the economic situation of the country and its electric utility, the energy picture for Haiti is not expected to change in the near future. For this reason, institutions and the private sector have started investing in systems designed for self-generating purposes, many integrating renewable sources. Energy affordability remains a central challenge to the socio-economic and industrial development efforts of most islands in the region. The high energy prices are a major cause for low productivity and competitiveness of the local industry and companies. In "business as usual" scenarios – without a major shift to more sustainable energy sources – energy affordability will continue to be the predominant challenge in 2030. There is a need for targeted RE&EE programs to enhance the productivity and competitiveness of key industries with high job leverage (e.g. food processing, fishery, manufacturing, tourism).



Note: Electrification rate in Cuba is 97% and in the Dominican Republic 95% (source: IEA, 2010)
Figure 2: Electrification rates in CARICOM member states (source: C-SERMS Baseline Report)

Energy Security Concerns

Most Caribbean islands are vulnerable to **volatile prices of global oil markets** due to their almost exclusively dependence on imported refined oil products to meet their power generation and transportation needs. The Caribbean countries are, therefore, at the mercy of volatile global oil market prices and this, in conjunction with the financial crises that started in 2007/2008, further increases the pressure upon these countries. **Only Trinidad and Tobago is a net exporter of hydrocarbon.** Suriname, Barbados and Belize are producers of crude oil but rely on imports to meet their domestic demand of refined petroleum products. All other CARICOM Member States are net importers of hydrocarbons. As a consequence, a good proportion of the individual countries imports comprise fuel for either transport or energy production. Due to price increases, the urgency to become more sustainable and adopt new technologies and policies has now taken centre stage in the region. Almost all the countries rely significantly on fossil fuels to meet their electricity demands as shown in the following table.

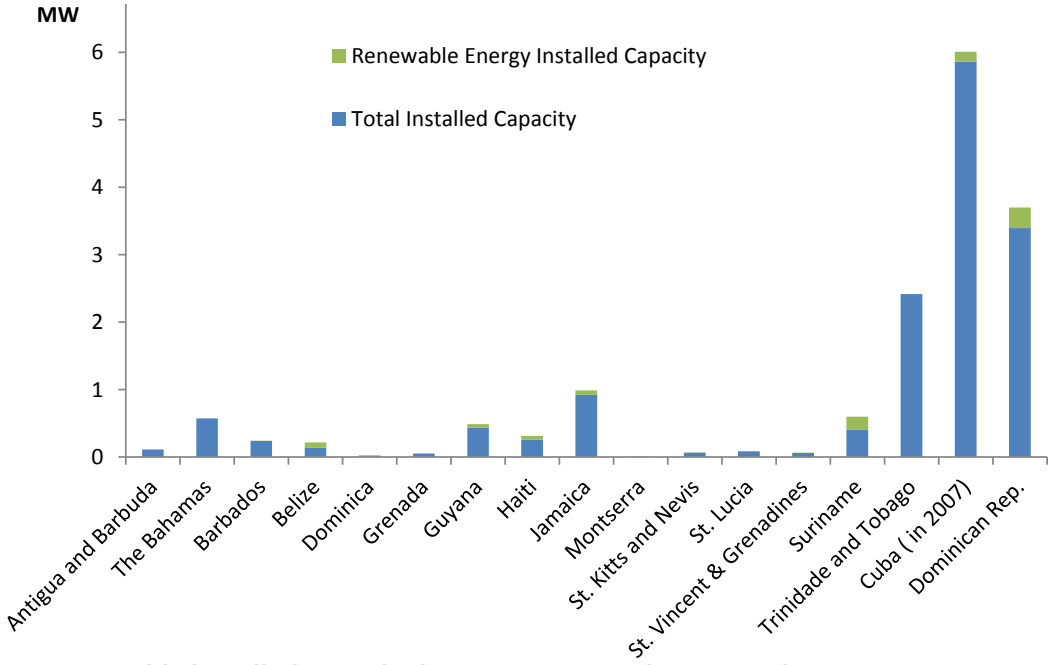


Figure 3: Renewable installed capacity in CARICOM member states (source: C-SERMS Baseline Report, CNE for Dominican Republic and CUBAENERGÍA for Cuba)

There is also a **growing gap between predicted urban electricity demand, scarce supply capacities and lack of capital to invest**. The need for further investments and the high costs of diesel generation puts many countries in a very difficult situation.

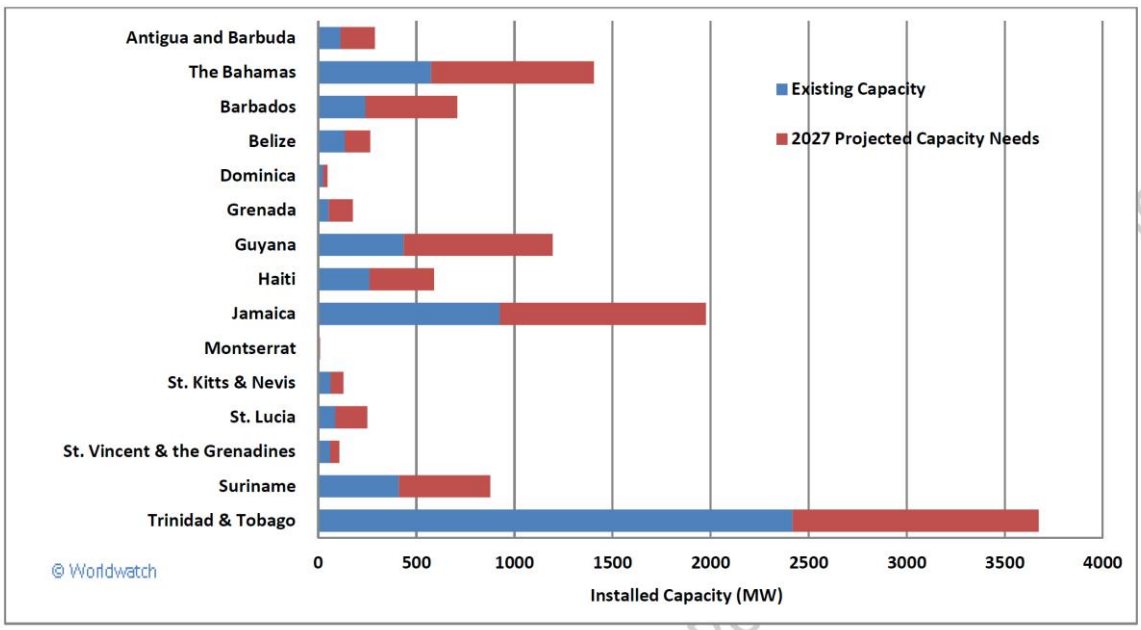
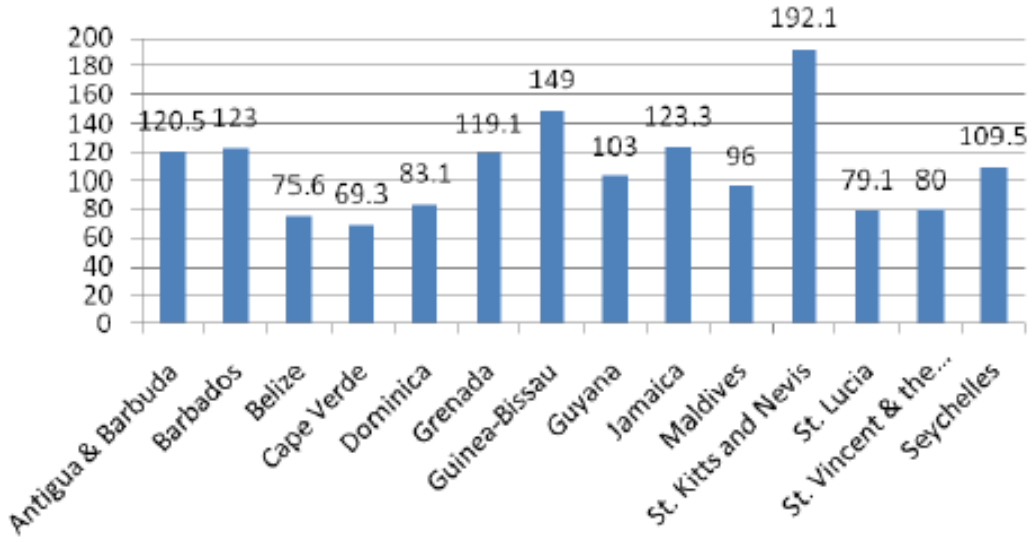


Figure 4: Existing Power Capacity and Projected Capacity Needs in 2027 (business-as-usual scenario not including future energy efficiency and conservation policies and measures) - (source: C-SERMS Baseline Report)

Most of the countries in the Caribbean have high debt rates. In some countries the payments for petroleum imports - depending on prices and global and national economic conditions - can consume 100% of foreign exchange earnings.

Figure 5: SIDS with debt in excess of 60% of GDP in 2010 (source: SIDS DOCK)



With the impacts of climate change a further major concern was added to the heavy energy agenda in the Caribbean region. The region is, so far, only responsible for a fraction of global energy related GHG emissions. However, the energy sector is highly impacted by climate change and will continue to be so in the forthcoming decades. Climate change impacts such as extreme weather events are challenging the energy security of Caribbean countries and have to be mainstreamed into energy policy planning. Climate change risks and the need for reliable and affordable energy supply to ensure energy security and energy access are currently creating a dilemma in the region.

The Caribbean basin is frequently crossed by hurricanes. These hurricanes occur almost every year with some of them crossing the region with devastating effect. In 2010, when hurricane Tomas hit the region, the economies of St Lucia and St Vincent suffered losses equivalent to about 43% and 4% of GDP, respectively, due to extensive damage to agriculture and housing (ECLAC, 2011).There was extensive damage to agriculture and housing (ECLAC, 2011). Hurricane Ivan, in 2004, affected a number of Caribbean islands, in particular, Grenada, the Cayman Islands and Jamaica, with damages exceeding US$ 1 billion dollars.

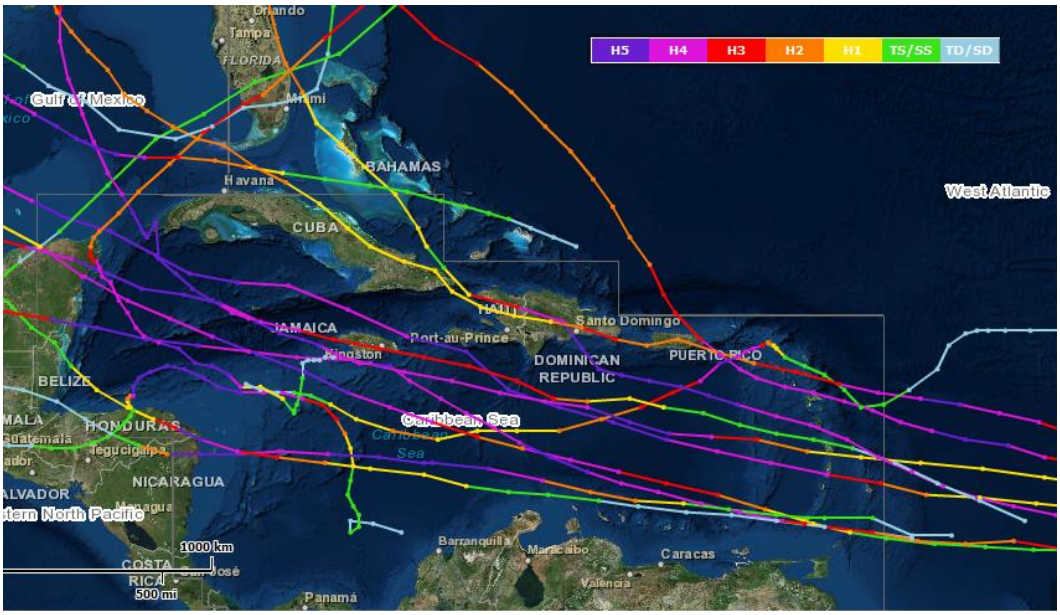


Figure 6: Historical Hurricane Tracks 1970 to 2012 (source: NOAA)

As can be seen from the figure above of the historical tracking of hurricanes in the region over a 40 year period, every country in the region has been hit by a major storm at least once. All of these storms

cause damage that has a major effect on the economy. Solutions need to be adopted in order to be able to adapt to these climatic challenges and to address this problem. Currently most of the technologies used within the existing generation of RE and EE products have been tested to these extremes, so are suitable to be installed within the region. The change of rain patterns has to be taken into account in the planning of hydro-electric plants. The rise of temperature usually is interlinked with the increasing demand for energy for cooling.

Of the other natural disasters that affect this region, the issues of both volcanoes and floods have to be taken into account. Volcanoes still do erupt, as Montserrat showed to devastating effect on the 12th July 1997. However, these seismic activities only make up 2% of natural disasters affecting the region. The issue of floods and the related landslips have been occurring more frequent in the region and make up 21% of all the recorded natural disasters. As scientists have predicted an increase in the frequency of heavy rainstorms, many communities in the region are at risk from these disasters.

A.1.2 Sustainable energy perspectives in the Caribbean region

The adoption of RE&EE technologies is generally seen by the Caribbean stakeholders as an opportunity to boost the regional economies, in comparison with the current situation where energy production is a drain. The benefits are twofold: one relates to the savings on reduced importation of fuels for power generation, the other is based on the additional labour requirements[8] for incorporating these newer technologies, which will lead to a knock on effect within the target countries' economies. The costs of wind and solar (both thermal and PV) powered technologies have dropped also. They have become more efficient and are now more cost effective than the diesel fuel-powered generators currently used in many Caribbean countries. The other technologies, such as biomass, hydropower and even geothermal, also have added benefits and can also be seen as very cost-efficient compared to conventional power generation as demonstrated in the following figure.

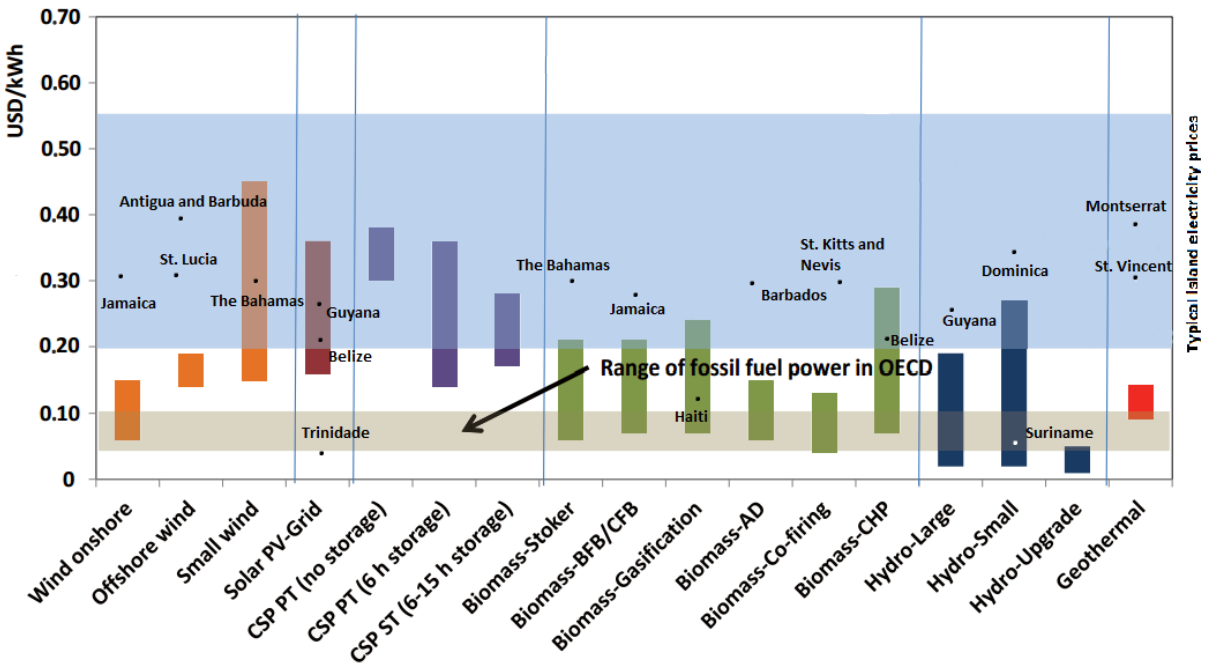


Figure 7: The levelised cost of renewable energy generation technologies in comparison with consumer electricity tariffs in CARICOM member states (source: adapted from IRENA Renewable Energy Generation Costs, 2012 and C-SERMS Baseline)

EE technologies continue to evolve and are also benefiting from price reductions. The Caribbean region is increasingly seeing the need for efficiency, particularly within the energy sector. For example, Barbados has been promoting the use of smart grids which allow a more intelligent control of electricity and the use of sustainable resources, even in the transport sector. It should be noted that owing to

[8]The technical nature of RE often require more labour per unit of energy than conventional energy generation. [Green Jobs: Towards decent work in a sustainable, low-carbon world (UNEP, 2008)]

unique differences among Caribbean countries, that it is critical that all new types of technology used fit the target countries' individual structures. The majority of Caribbean countries require assistance when choosing the right mix of technologies to suit their needs and environment.

A.1.3 Renewable Energy and Energy efficiency opportunities

By developing their renewable energy sources and putting in place energy efficiency measures, many of the islands would have **significant opportunities to reduce their overall fossil fuel consumption and thus improve their energy security**, while at the same time promoting clean economic growth and lessening dependence on costly, imported petroleum fuels. The development of the sustainable energy potentials is interrelated with a broad range of positive socio-economic impacts (e.g. reduction of fossil fuel imports, increased affordability for low-income groups through the reduction of electricity consumer prices in the long term, improved financial situation of utilities, increased competitiveness of companies and industry, reduction of stand-by diesel generators, creation of green jobs). The region is endowed with a broad range of renewable energy sources (bioenergy, solar, wind, hydro, tidal and geothermal energy). Large-scale and medium-scale renewable energy plants could meet part of the increasing urban energy demand. There are also opportunities for the use of sustainable biofuels and other innovations (e.g. electric cars for short distances) particularly in the transport sector. There is significant potential for EE improvements with regard to lighting, appliances, buildings, transmission and distribution and industrial processes particularly in urban areas. Small-scale decentralized renewable energy (RE) solutions can be cost-effective options to satisfy the needs of the rural population located far away from the main grid (relevant for parts of Belize, Guyana, Haiti, and Suriname). RE&EE solutions can be an important driver to increase the productivity and competitiveness of industrial key sectors - such as food processing, fishery, manufacturing of high value niche products and services and tourism. A growing sustainable energy market offers also new income and job opportunities for energy service and manufacture companies.

Figure 8: RE potential in CARICOM Member States according to C-SERMS (source: C-SERMS Baseline Study)

	Hydro	Wind	Geothermal	Solar	Biomass/ Other
Antigua and Barbuda	None	400 MW	None	27 MW	Unknown
The Bahamas	None	229 MW	None	58 MW	1 MW
Barbados	Unknown	40 MW	None	39.7 MW	23.5 MW
Belize	70 MW	Unknown	None	63,174,807 MWh/year	Unknown
Dominica	17 MW	30 MW	1,390 MW	45 MW	Unknown
Grenada	500 kW	20 MW	1100 MW	21 MW	Unknown
Guyana	7,000 MW	Unknown	None	575,822,086 MWh/year	Unknown
Haiti	102 MW	10 MW	None	1,654 MW	5 MW (waste-to-energy)
Jamaica	33.4 – 56.1 MW	122 - 1313 MW	None	650 - 1876 MW	192 MW ;65 Waste-to-energy
Montserrat	Unknown	Unknown	940 MW[2]	Unknown	Unknown
St. Kitts and Nevis	None	5 MW	300–1,280 MW[2]	16 MW	7[15] - 10 MW
St. Lucia	150 kW	40 MW	170 –680 MW	36 MW	1.2 MW
St. Vincent and the Grenadines	10 MW	8 MW	100 –890 MW	23 MW	0.9 - 4 MW
Suriname	1,700 MW	Unknown	Unknown	Unknown	Unknown
Trinidad and Tobago	Unknown	50 MW	Unknown	308 MW	Unknown

Figure 9: Summary of RE potential by technology and countries (source: SIDS DOCK Energy Technology Assessment, 2012)

Caribbean Sea RE Potential (MW) (unless otherwise indicated)	Solar		Biomass	Wind	Hydro	Geothermal-med. term	Ocean Energy –Long term				TOTAL per Country
	PV	Cooling					OTEC	Tidal	Wave	Current	
Antigua and Barbuda	>>27	*High*	*Low*	*400*	*NO*	*NO*	*High*	*Med*	*Low*	*High*	N/A
Bahamas	58	*High*	*Low*	*15*	*NO*	*NO*	*High*	*Med*	*Low*	*High*	N/A
Barbados	>>26	*High*	*Low*	*>10*	*NO*	*NO*	*Med*	*Med*	*Low*	*Med*	N/A
Belize	High	*High*	*High*	*High*	*High*	*NO*	*Low*	*Med*	*Med*	*Med*	N/A
Dominica	>>45	*High*	*Med*	*30*	*17*	*1,390*	*High*	*Med*	*Low*	*High*	N/A
Dominican Republic	2,900	*High*	*High*	*3,200*	*210*	*NO*	*High*	*Med*	*Low*	*High*	N/A
Grenada	>>>8	*High*	*NO*	*5*	*0.5*	*1,100*	*High*	*Med*	*Low*	*High*	N/A
Jamaica	High	*High*	*70*	*60*	*>80*	*NO*	*High*	*Med*	*Low*	*High*	N/A
St. Kitts and Nevis	16	*High*	*Low*	*5*	*NO*	*300*	*High*	*Med*	*Low*	*High*	N/A
St. Lucia	>>36	*High*	*Low*	*40*	*0.2*	*680*	*High*	*Med*	*Low*	*High*	N/A
St. Vincent and the Grenadines	>>23	*High*	*4*	*8*	*10*	*890*	*High*	*Med*	*Low*	*High*	N/A
Suriname	High	*High*	*High*	*Med*	*High*	*NO*	*Low*	*Med*	*Med*	*Low*	N/A
Trinidad and Tobago	308	*High*	*Low*	*50*	*Low*	*NO*	*Med*	*Med*	*Low*	*Low*	N/A
TOTAL Region per Technology	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Figure 10: Detailed overview on RE status and potentials in the Caribbean (source: SIDS DOCK Energy Technology Assessment, 2012)

			per capita (US$)				Consumption (GWh) (2009)	Allowed (yes/no)	(2009)						to electricity
Antigua and Barbuda	440	81,799	$13,552 (N) $17,980 (P)	Yes- NEP 2011	Gov. – No independent	Pub-Act-Indefinite	120/110	NO	0.35	100% Thermal based on fossil fuel	Hydro: NO Wind:400 Geo: NO Solar PV:>>27 Biomass: Low Ocean: High	0%	-	Isolated and private small Solar PV systems -SWH	100
Bahamas	13,878	353,658	$23,175 (N) $30,958(P)	Yes- NEP 2011	Gov. – No independent	Pub/Privt. 1.BEC - Gov.- Perpetual 2.GBC- Joint venture of foreign utilities-Lic 2054	2,050/1,910	NO	0.31	100% Thermal based on fossil fuel	Hydro: NO Wind:15 Geo: NO Solar PV:58 Biomass: Low-Med Ocean: Med	0%	-	Isolated and private small Solar PV systems -SWH	99-100
Barbados	431	279,912	$16,148 (N) $23,416(P)	Yes- NEP 2007	Fair Trading Committee	Private-Lic 2028	1,010/910	NO		100% Thermal based on fossil fuel	Hydro: NO Wind:>10 Geo: NO Solar PV:>>26 Biomass: Low Ocean: Med	0%	-	Isolated and private small Solar PV systems -SWH	100
Belize	22,966	333,200	$4,349 (N) $8,263 (P)	NEP - Draft since 2010	PUC-Multi Sectorial	Private-Lic 2015	260/240	NO		66% Thermal 44% Hydro >>1% Biomass	Hydro: High Wind: High Geo: NO Solar PV: High Biomass: High Ocean: Med	44% from Hydro >>1% Biomass	Hydro Biomass	Hydro-Dam Cogeneration	89
Dominica	750	72,660	$6,909 (N) $13,815(P)	NEP - Draft since 2009	Independent -IRC	DOMLEC-Public/Private –Lic 2015	80/80	YES	0.43	75% Thermal 24% Hydro <1% Wind	Hydro:17 Wind:30 Geo:1,390 Solar PV:45 Biomass: Med-Low Ocean: Med	24% from Hydro <1% Wind <<1%Solar PV	Hydro Wind	Hydro-dam SWH	100
Dominican	48,442	9,378,818	$5,638 (N)	Yes-		Private and	11,560/9,88	YES		82.5% Thermal	Hydro:210	17.5% Hydro	Hydro		

Caribbean	Total area – Size (Km^2)	Population (2009)	GDP Nominal (N) and PPP (P) per capita (US$)	Energy Policy	Regulation	Elect Utility	Net Electricity Generation / Consumption (GWh) (2009)	Self-Generation Allowed (yes/no)	Average Electricity Tariff (US$/Kwh (2009)	Energy Resource in use for electricity	RE potential available by RE sources (MW) or any other data available	% of electricity from RETs	Primary RES utilized	RETs in use	% of Household with access to electricity
Republic			$9,286 (P)	National Energy Plan 2004-2015		Public-	0			17.5%Hydro	Wind:3,200 Geo: NO Solar PV:2,900 Biomass: Med-High Ocean: Med	<<1%Solar	Tiny fraction of Solar PV		
Grenada	344	110,000	$7,878 (N) $13,895 (P)	Yes - NEP adopted in 2011	Gov-No Independent	GRENLEC-Lic 2041	200/180	YES-<10kW net-metering with a cap of 1% peak demand-	0.37	100% Thermal-Fossil Fuel	Hydro:0.5 Wind:5 Geo: 1,100 Solar PV: >>8 Biomass: NO Ocean: Med	<1% Wind	Wind	Isolated and private small Solar PV systems -SWH	99
Jamaica	10,991	2,889,187	$5,402 (N) $9,029 (P)	Yes - NEP Adopted 2009	Off of Utility Regulation	Pub-Private and some IPP. Lic 2021	5,210/4,800		0.40	95% Thermal 5%Wind and Hydro	Hydro:>80 Wind:60 Geo: NO Solar PV: High Biomass:70 Ocean: Med	5% (3% Hydro—2%Wind)	Wind and Run–off Hydro	small Solar PV systems-SWH	95
St. Kitts and Nevis	261	51,300	$12,728 (N) $15,573 (P)	Draft since 2009	Gov.-No Independent	Pub.-Indefinite	130/120	Only Wind, Solar PV in NEVLEC	0.30	98%Fossil Fuel and 2%Wind Energy	Hydro: NO Wind:5 Geo:300 Solar PV: >>16 Biomass: Low Ocean: Med	2% Wind	Wind Energy	Very small Solar PV systems-SWH	95
St. Lucia	617	173,765	$7,435 (N) $12,607(P)	Yes-NEP Adopted in 2010	Gov.-No Independent	Private-Lic 2045	340/320	YES	0.32	99.6%Fossil Fuel <1% Solar	Hydro:0.2 Wind:40 Geo:680 Solar PV:36 Biomass: Low Ocean: Med	<1%Solar	Solar	Solar PV technology -SWH	100
St. Vincent and the Grenadines	389	120,000	$6,342 (N) $11,700(P)	Yes - NEP Adopted in 2009	Gov.-No Independent	Public-Act.-to 2033	130/120	By License from utility	0.36	90%Thermal 10%Hydro	Hydro:10 Wind:8 Geo:890 Solar PV:23 Biomass:4	10% Hydro	Hydro	Isolated small PV systems -SWH	99

Caribbean	Total area – Size (Km^2)	Population (2009)	GDP Nominal (N) and PPP (P) per capita (US$)	Energy Policy	Regulation	Elect Utility	Net Electricity Generation / Consumption (GWh) (2009)	Self-Generation Allowed (yes/no)	Average Electricity Tariff (US$/Kwh (2009)	Energy Resource in use for electricity	RE potential available by RE sources (MW) or any other data available	% of electricity from RETs	Primary RES utilized	RETs in use	% of Household with access to electricity
											Ocean: Med				
Suriname	163,821	560,157	$7,096 (N) $9,475 (P)	Draft since 2009	Gov.-No Independent	Public-Act.-to 2022	1,600/1,460		0.15-hinterlands~ 0.6	73% Hydro 27% Thermal	Hydro: High Wind: Med Geo: NO Solar PV: High Biomass: High Ocean: Med	73% Hydro	Hydro	Small pilot project in solar PV	85
Trinidad and Tobago	5,131	1,227,505	$17,158 (N) $20,053 (P)	Draft since 2009	Independent Multi Sectorial	Pub and Private-Indefinite	7,220/7050	NO	0.05	100% Thermal-Fossil Fuel	Hydro: Low Wind:50 Geo: NO Solar PV: 308 Biomass: Low-Med Ocean: Med	0%	-	Small pilot project in solar PV	95

Solar power

The potential of solar is probably one of the greatest and its use could reduce the dependence on hydrocarbon-based power in the Caribbean. Until recently, the main issues that limited its use were cost, regulatory frameworks and technical capacity. However, the cost of the different solar technologies has been continuously dropping so that it is now cheaper to use than diesel. Some countries in the Caribbean have been experiencing success stories with solar hot water systems. These systems, if correctly designed, require minimal maintenance and can achieve paybacks of as little as 2 years. One of the leading examples in the region is Barbados which has since the 70's a thriving industry operating in this sector due to the application of tax benefits, low-interest loans and the use of quality products that increased consumer confidence. For the past several years, panels manufactured in Barbados have been exported to other countries in the region.

The Caribbean has seen the application of solar photovoltaic (PV) systems from rural applications to large scale (MW sized) solar plants. Some countries have been promoting this technology through the application of net-metering/billing policies. As the electricity generated by PV panels is usually cheaper than the electricity from the grid (when the grid is based exclusively on diesel plants), the local economies can benefit from lower energy costs. However, if PV is to be further used in the Caribbean, technical support to utilities, energy storage technologies and grid investments will be required to allow the integration of this intermittent energy source in the local grids.

Wind power

The CREDP 2011 study, *Wind Power in the Caribbean,* mentions that wind potential has been well documented in the Caribbean countries. A significant number of countries have a good potential, however, inadequate policy and regulatory framework, lack of technical capacity and high investment costs are hindering the application of this technology in the region. Moreover, the fuel surcharge on diesel powered electricity does not provide the incentive for utilities to pursue alternative forms of energy as their revenues are independent from the oil/diesel price.

Hydropower

The majority of the Caribbean countries (see Table 1) have adequate hydro resources due to topography and rainfall to support hydro power plants. Most of these countries currently have installed hydropower capacity; though, they have potential for much more. Potential small to medium scale hydro power sites have already been identified;[9] however, they lack the detailed feasibility studies (and subsequent environmental and social impact assessments) to better understand the viability of the resource and take the projects to the next level. It should also be highlighted that hydro pump-storage is currently the cheapest form of storing large quantities of energy. This has special interest to small grids, as seen in SIDS, as it would allow the use of higher quantities of renewable energy[10].

Biofuels/Biomass

This area of energy resource comes in a multitude of forms, be they solid, liquid or gaseous fuels all derived from biomass in some form. Like most of the Caribbean, biomass to energy potential should not be a problem to develop, as each country is blessed with plenty of sunshine and rain. Nonetheless, the total potential resource amounts for each country are largely unknown. Sugar cane and waste (urban and agricultural) could be used and have been investigated to generate energy, especially in the larger countries. However, waste logistics are usually a problem in this type of power plants. Either the resource is not enough or is too costly to collect to make the system financially or the resource/waste is not available throughout the year (e.g. sugar cane). The use of alternative fuels such as carbon is often a solution to mitigate the later issue; however, their use often raises local opposition, as was the case in Barbados.

[9] up 30 MW

[10] The use of pump-storage would allow pumping water at times of low electricity demand that can be later passed through a turbine when demand is higher. Solar and wind power (two of the cheapest forms of energy, even in comparison with conventional power plants) are intermittent resources. The use of this technology could be used to adapt their energy output to the demand.

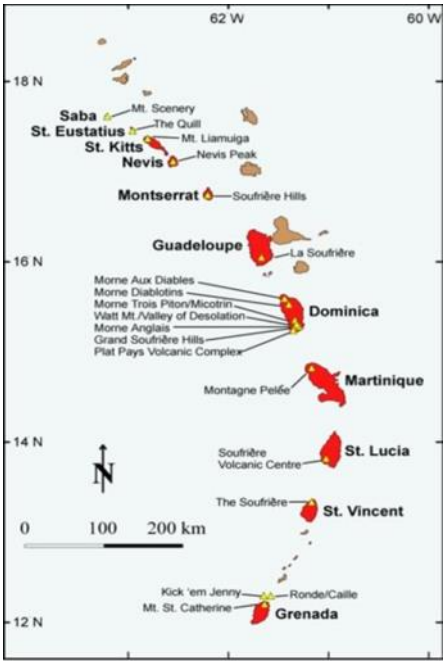
Nevertheless, waste is an important issue in the Caribbean. Waste from the agricultural and food processing industry (e.g. banana, pig farms and slaughterhouses) have important environmental consequences. The application of biogas technologies could help mitigate these consequences. However, only if the right political and financial incentives are put in place as these types of systems are usually not financially attractive without taking into consideration the environmental costs.

Geothermal

Geothermal is seen as an excellent useable resource in the Caribbean, with several countries being located in the volcanic arch of the Lesser Antilles, where high-temperatures can be found near the Earth's surface. However, the high cost of geothermal exploration has held back these projects in the feasibility stage. Moreover, the small size of the islands' populations makes projects unfeasible, although, a solution would be to invest in connecting the grids through underwater power cables. In the Caribbean, only Guadeloupe has actually tapped this resource with a 4.5MW plant. Other countries are at different stages of development and several development partners are supporting initiatives to promote this resource through capacity building activities and finance assistance. GEF with the partners OAS, AfD/FFEM and the UNEP funded a program of initiatives in the Eastern Caribbean called Geo-Caraibes, this programme focussed on the islands of St. Lucia, St Kitts & Nevis and Dominica. The programme's focus was initially on proving the potential resource exploration and consisted of the initial surface studies, the preparation of government policy, a feasibility financing tools, and finally and a drilling design risk tool.

This programme was to pull together a number of on-going works and to help to kick-start a commercial geothermal project and an inter-island transmission line. The results of Geo-Caraibes programme have been positive and has led to further work to define the actual physical resource with three test wells in Dominica that were successful in proving a workable resource. The catalyst of this work has also led to early stage surveys of the other islands within the region, St Vincent and the Grenadines and Grenada. Even though the potential of the islands is not questioned anymore, the issues of the size of the local market demand from these high cost intensive plants is now an issue and could delay or even stop further work being carried out. Dominica, which is the most advanced in terms of determining/harnessing its geothermal potential, still has issues with the negotiating of contracts for the operation and building of a geothermal plant. St Vincent, on the other hand, has had issues in the past with contracts that delayed the initial surveying and test drilling, but is now in talks with a reputable geothermal development company to iron out these early issues that so often have been seen to plague geothermal projects in the region. The private company's geologists have been on St Vincent & the Grenadines since October 2013 looking at the potential and if they could develop the resource further.

Figure 11: Geothermal potentials in the Caribbean (Source: Univ. of the West Indies 2008)



Ocean energy

The situation of the Eastern Caribbean on the eastern side of the islands lends itself to the potential for the use of ocean energies. However, the potential of the Caribbean is difficult to evaluate as there are only limited records of these resources. In any case, it should be noted that the technologies used to convert tidal and wave energy into electricity have not yet reached commercial stage. Moreover, the region faces frequent extreme waves during hurricanes which could affect the survival of equipment being installed on the coast or in the sea.

Energy Efficiency

In April 2013, the Inter-American Development Bank approved US $50 million for the launch of the Energy Efficiency Finance Facility. Its aim is to help companies to overcome financial barriers through small-scale loans. The access to this type of finance would address some of the worries and issues raised by the governments and stakeholders in the region. EE projects are seen as being expensive and having less immediate visibility than RE initiatives. Yet, the benefits of EE may be even greater than investing in renewables. These benefits are seen to increase productivity and sustainability and have a significant impact upon social and economic development within communities and industries where they are deployed.

The issue of funding is not the only barrier to have been addressed recently. Nearly all the utilities within the region have reported implementing programmes that inform their customers on the need for energy efficiency measures. Attitudes towards EE within the countries are changing with the help of a number of different programmes, including some effective ones funded by the EU, such as the CEEBIP (Caribbean Energy Efficiency Business Information Platform).

Energy Efficiency measures by their nature have a high initial cost and long lead time, although the returns are good and do have a noticeable benefit to the population. A critical issue with these systems is raising of financing and funding from the private sector, as it is very uncommon for Private Equity houses to fund EE projects. The risk is seen to be considerably higher than RE projects, because of such issues as ownership, maintenance and insurance.

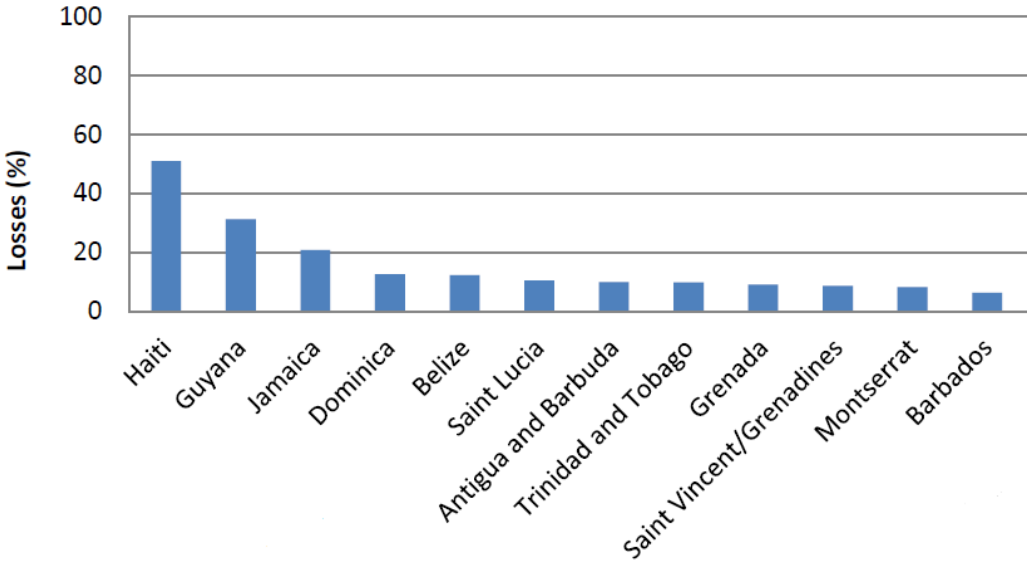
There have also been more recent initiatives, starting in 2013, focussing on EE. One of these has focussed on EE in buildings and is co-sponsored by UNDESA, UNEP/GEF, CCCCC and a number of Caribbean countries. The project is called the Energy for Sustainable Development in Caribbean Buildings (ESDCB). This programme will seek to address a number of barriers to development of EE in buildings, by focusing;

- Capacity and baseline projections,
- Capacity development,
- Financing borrowing issues,
- Information programmes, and
- Inter-partner knowledge transfer.

This approach, if successful, could be extended to other countries within the region as well and build upon other past initiatives.

Losses in the transmission and distribution network are also a major issue in the region with countries reaching losses of 50% (see figure below). The observed losses are the result of inefficient power generating plants and transmission lines and, especially in the worse cases, of electricity theft and un-billed customers (non-technical losses). This further increases the strain on the local utilities, hindering investments in the modernisation and expansion of the electric network. Moreover, due to the level of observed losses, it makes even more sense to invest in EE as for every unit of energy saved another significant percentage is saved in avoided losses during the transport and transmission.

Figure 12: Estimated Technical and Non-Technical Electricity Losses in CARICOM Member States (source: C-SERMS Baseline Study)



A.2 Results of Consultative Needs Assessment Survey

In order to identify the need and added value of CCREEE a survey was undertaken as part of a needs assessment among the RE&EE stakeholders in CICTs to ascertain the Centre mandate, priority activities and issues that should be addressed by CCREEE. The consultancy company AETS was contracted for executing the assessment. The project team consisted of local consultants with an excellent regional understanding of the RE&EE market in the Caribbean. The project team has undertaken the needs assessment with government institutions, the private sector, training and research institutions and the donor community. The needs assessment report was finalized based on the inputs received at the CCREEE validation workshop held July 21-22, 2014.

Method

The questionnaires were disseminated via email to representatives of the targeted stakeholder institutions. Telephone and in-person interviews were then conducted, with the outcome being registered by the project team. The questionnaire focused on four major areas:

1. Design of the Centre
2. Recommendations for an effective Centre
3. Information regarding Country/Territory situation
4. Identification of synergies with existing efforts to promote sustainable energies

Results

The questionnaires were distributed to over 80[11] Caribbean energy stakeholders, such as government entities, electric utility companies, regional associations, multilateral/donor institutions, electricity sector regulators and standards bodies. Approximately 85% of emails were sent May 27-28, 2014. The rest were disseminated over subsequent days, along with multiple follow-up emails and calls to the targeted stakeholders. Email and telephone responses were received from approximately 50 institutions (public and private) with majority being in support of the Centre's establishment (see

Table 1). In addition, the stakeholder consultation process was continued at the validation workshop, where over 50 representatives from various Caribbean countries, regional and international institutions indicated their support to the Centre's establishment, provided the mandate and scope were appropriate and relevant (see **Table 2**).

Table 1: Summary of the stakeholder consultation

[11]This figure may be higher as some stakeholders were requested to distribute the questionnaire, for example, CARILEC was asked to distribute the questionnaire to its 33 electric utility members and UNFCCC RCC distributed the questionnaire to its network (national ministries/departments responsible for environment and CC)

Country/ Location	Institutions contacted	Responses Received	Interviews Conducted
Barbados	10	5	2
Jamaica	11	6	
St. Lucia	9	6	2
Anguilla	4	2	1
Belize	4	3	2
Dominica	4	3	2
Grenada	4	1	-
Guyana	4	2	1
St. Vincent & the Grenadines	4	1	1
Trinidad & Tobago	5	1	
Antigua and Barbuda	3	3	2
St. Kitts/ St. Christopher	4		
Bahamas	2		
Haiti	2		1
Nevis	2		
British Virgin Islands	1		
Montserrat	1		
Dominican Republic	1	1	
Cuba	2		
Regional, LAC (e.g. OLADE)	2	1	
International (e.g. USA[12] based and private companies)	5	3	2
Total	**84**	**38**	**16**
Total feedback received during consultation			**54**

Table 2: Breakdown of validation workshop participants

Type of Attendee/Workshop Participant	Number
Host Country	7
Host country partners	18
Country delegations	12
Regional and International Organizations	15
Total	**52**

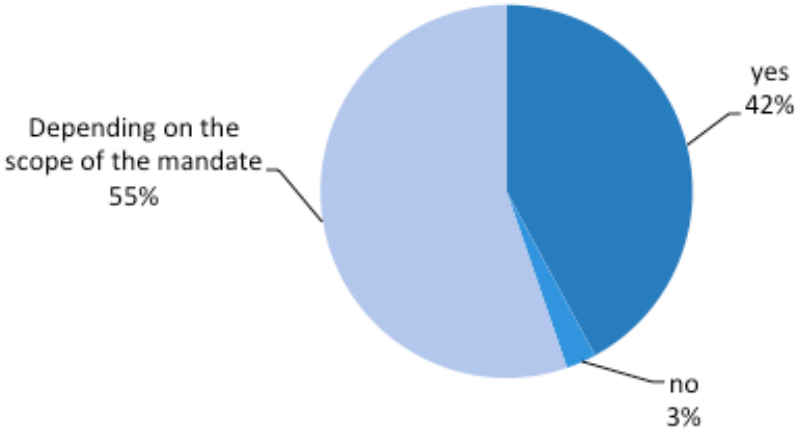
***The table does not include attendees representing workshop sponsors, organisers, national media and consultants undertaking the needs assessment.

Feedback Summary

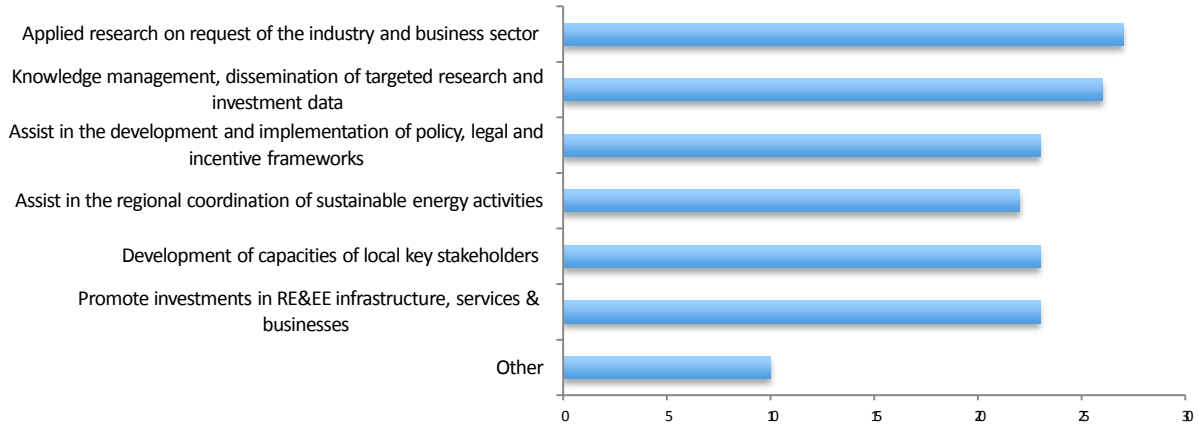
The response rate was lower than desired despite multiple follow-up emails and calls to the stakeholders. As such, in an attempt to mitigate this, the questionnaire was also conducted via interview, with the exception of some questions not suited to the telephone interview method. A summary of the responses has been provided below.

[12]Including Inter-American Development Bank, Organization of American States

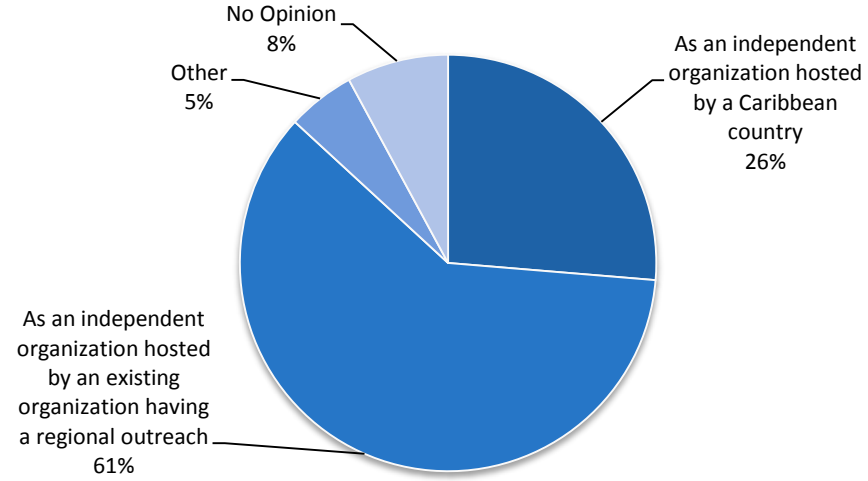
Do you think a specialized Regional Centre to promote renewable energy and energy efficiency is needed and would add value in the context of the existing regional and national Caribbean energy framework?



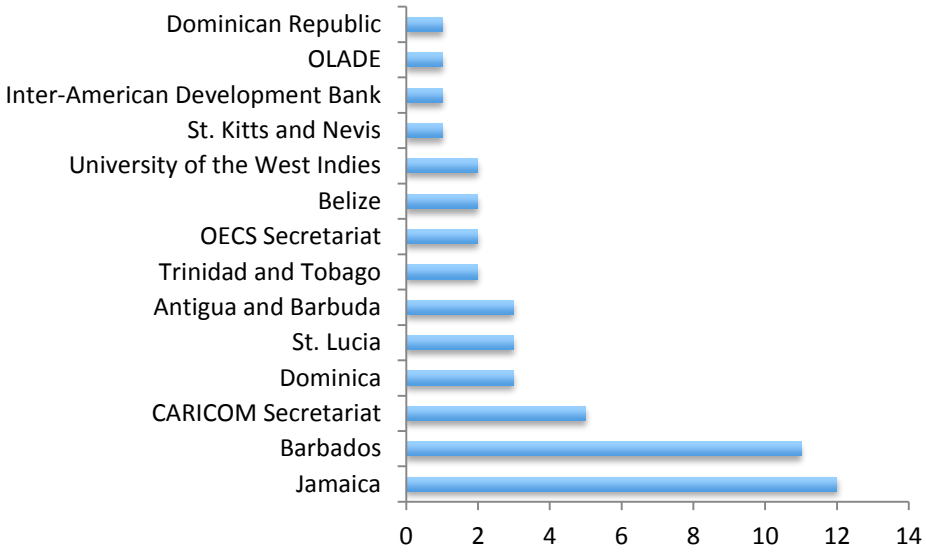
What scope should the mandate of the Regional Centre cover?



In your opinion how should the Centre be set-up?



Please suggest countries and/or organisations to host such a Regional Centre? *(Multiple responses per respondent were allowed)*



How do you see the Centre assisting with your current and future RE and EE efforts?

In general, respondents answered this question by focusing on the following subjects:

- Creation of an enabling environment for RE and EE, especially promoting relevant policies, legislation and guidelines and by engaging main stakeholders.
- Provision of technical assistance for the development and management of EE&RE projects.
- Leveraging finance for RE/EE projects.
- Being a clearinghouse for regional energy information – e.g., collect, compile, analyse and disseminate energy statistics for each country.
- Leading/Supporting awareness raising and capacity building efforts.

Validation Workshop

The 52 key participants (excluding representatives from the media, sponsor and donor organizations and the consultants undertaking the needs assessment) attending the validation workshop were in support of the establishment of CCREEE. Several country representatives expressed interest in hosting the Centre, including Dominica, Barbados, Bahamas, and Saint Vincent and the Grenadines. The general opinion of the workshop participants was that the Centre should be established as an independent, autonomous entity, which reports to CARICOM. It was also felt that the Centre should establish a strong bridge to CCCCC, SIDS DOCK, the CARICOM Energy Unit, CARILEC, OECS, and the Energy Unit of CDB. Additional details on the workshop proceedings have been included in the annex.

A.2.1 General Barriers

Despite the potential contribution of renewable energy and energy efficiency technologies and services to resolving some of the energy challenges in the region, markets for these technologies and services remain largely underdeveloped. This is mainly due to unfavourable market environment and bottlenecks that are faced by the different market players. The needs assessment identified the barriers presented below to the development and expanded use of renewable energy and energy efficiency technologies in the region which the establishment of the CCREEE hopes to address. The barriers were complemented by a similar assessment undertaken during the preparatory phase of the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE).

Inadequate project development and implementation expertise: Within the region, several energy projects have failed/stalled on account of a range of issues relating to environmental, social, technical, and/or financial factors. For example, assistance (human resource, technical, legal, financial, administrative) in developing RE/EE solicitations understanding and evaluating RE and EE proposals

is required so that the best proposals are chosen to meet the specific needs of the individual country and/or region. SIDS DOCK highlighted the urgent need for implementation capacities for the indicative RE&EE project pipeline with an investment volume of more than USD 630 million in the Caribbean. The regional level can play an important role to strengthen national efforts.

Lack of regional technical coordination, implementation and harmonisation capacities: The institutional capacities on regional level need an urgent strengthening. The energy units of CARICOM and OECS remain understaffed and are working more on the policy and political level. They are in need of a technical arm to implement the established regional policy commitments (e.g. C-SERMS, SIDS DOCK). The current situation **tends to support donor driven approaches and agenda setting**. There is a need for a stronger use of local implementing systems (e.g. procurement) and experts (e.g. consultants, companies). A regional entity is needed which ensures that projects are coordinated on technical level and duplication of efforts and loss or resources is avoided. **The ownership and local setting of the agenda and priorities needs to be strengthened.**

There is a real **need for a regional coordination system/entity that considers specific characteristics of individual territories** and provides solutions that maximize individual and regional strengths and reduces individual and collective vulnerabilities. This could have a range of applications ranging from knowledge transfer between countries to electricity transfer between countries to promote regional energy security. In addition, timely implementation of RE and EE initiatives could be supported by coordinating best practice approaches and highlighting scope for rapid implementation, where such opportunities exist. That is, established frameworks focusing on electricity generation, transmission and distribution need to be established at the regional level so that individual countries can take advantage of combined opportunities for exploiting RE/EE potentials and improving economies of scale.

Existing RE&EE support policies in many cases are considered insufficient by the private sector: Project developers usually require financial support from bilateral and multilateral institutions, in the form of grants and concessional loans, to pass the different stages of project development. Moreover, they do not often consider energy efficiency improvement as a complementary activity.

Low grid stability: The reliability of some Caribbean power systems is low due to lack of investments in the generation, transmission and distribution networks. Adding intermittent sources of energy, as is the case of the majority of RE sources such as solar and wind, could contribute to further interruptions in the grid when the power plants are not able to meet the demand. As many CICTs only have intermittent RE sources available, an efficient interplay with the conventional production units is of high importance. The outdated diesel engines in some CICTs make that difficult.

Subsidies to fossil fuels: One of the key constraints to investments in renewable energy and energy efficiency is the biased subsidies to fossil fuels. The existence of mechanisms such as the fuel surcharge also reduces the attractiveness of RE projects to the utilities.

Land use/availability: Land in small islands is limited as its use is often sensitive. As most RE technologies require significant land usage, investors can be weary of projects that entail land acquisitions/leases. This is particularly a challenge for grid-connected PV and wind power projects. For example, various wind power and hydro projects on different islands were not implemented due to reluctance of private land owners.

Low electrification rates: Efforts to electrify peri-urban and rural areas, especially in Guyana, Haiti and Suriname need to be significantly scaled-up in order to tackle their low electrification rates. Besides availability of finance, the lack of regulatory framework to allow private businesses such as RE services companies to operate in this market is also seen as a barrier. It is also important to link these mechanisms with other access-to-energy programmes (e.g. rural electrification and efficient cooking stoves).

A.2.2 Knowledge and Awareness Barriers

Stakeholders/General public sometimes do not possess sufficient RE&EE knowledge and awareness to make informed decisions. As such, there is a definite need for advocacy, awareness raising, information dissemination and stakeholder engagement efforts. In several of the countries, external support is required in order to effectively engage stakeholders and obtain their buy-in. This support is usually required to be in the form of an objective and authoritative voice that can provide informed, relevant and expert advice, based on up-to-date empirical data. For example, stakeholder engagement support and awareness activities may be required in issues related to electricity tariffs and net-metering/net-billing legislation. It should be noted that while there is a need for external support services, care should be exercised to ensure that the provider of such services continues to maintain credibility as an objective and authoritative voice on energy matters.

Incomplete and decentralized regional data collection, compilation and analysis: Within the Caribbean, there are a few entities, e.g., CARILEC and CEIS, which collect energy sector data. However, such data collection efforts are decentralised and in some cases pertinent data is yet to be collected on a consistent basis and disaggregated by sex If the region is to collectively move forward as it relates to energy reliability and security, there is a need to understand and characterize the current energy situation within the individual countries, so that appropriate and targeted solutions and interventions can be developed and implemented. These efforts need to be coordinated at a regional level so that relevant comparisons, possible collaborative ventures and assistance support between and among countries can be identified and implemented. That is, there is a need for energy information compilation, energy statistics and analysis to facilitate strategic planning and effective decision-making at the country, sub-regional and regional levels. There is no gender-specific data available.

There is also a **lack of institutionalized memory** on sustainable energy projects and issues. Many activities are implemented on a project basis and after closure of the project the knowledge and lessons learned are lost. There is a need for a regional information hub which keeps record of the lessons learned and knowledge.

Data on cost benefits to the public and reliable available information for the public awareness
RE and EE technology is still viewed as being very expensive and may be environmentally or socially damaging to communities, the processes on how to pick and work with stakeholders is still not institutionalised.

Lack of feasibility studies for RE and EE assessments: There is sometimes a greater focus on political matters, instead of technical issues, and this, in some cases, leads to the requisite studies not being (properly) conducted. In some instances, data is not communicated or disseminated widely to key stakeholders, regular regional policy and project manager staff meetings are not held, all of which can negatively impact RE/EE project development.

A.2.3 Policy Barriers

Twenty-one out of twenty-nine respondents listed the development and execution of policy, legal and regulatory framework for RE and EE as one of the priority areas of intervention for the Centre. However, it should be noted that several of the respondents explicitly listed policy developments as one area in which the Centre should not work. This seeming contradiction is most likely on account of the fact that while many of the countries have draft or final energy policies (owing to work done by organizations such as OAS, CARICOM etc.) the development and implementation of RE and EE initiatives has been slow. That is, for many of the countries, the requisite legal and regulatory framework is yet to be established in support of the existing energy policies. As such, the policy gaps are in relation to translating policy to enforceable measures that facilitate easier and smoother introduction of RE and EE projects. Specific policy gaps/barriers identified by respondents included:

Absence of an enabling framework: While there are existing draft or final energy policies, there is a noticeable deficiency as it relates to clear sustainable energy action plans/road maps and supporting policies/legislation that would be expected to provide the enabling environment for development of RE and EE projects. For example, the lack of policies or guidelines and the revision of electrical codes and legislation pertaining to RE interconnection, wheeling, net-billing, net-metering and appropriate incentive structures have stymied RE and EE development in several countries.

Inadequately defined policy targets: In some cases, it is felt that some policy goals and targets were set without proper and complete analysis, consultation and collaboration with key stakeholders. Some of these policies may need to be refined to ensure that the defined targets are achievable and actionable. Moreover, policies are mostly not gender sensitive. In some cases, additional studies, e.g., grid impact and stability studies may be required to ensure that policy targets and action plans are attainable and sustainable.

A.2.4 Market Barriers

The RE/EE market in most of the Caribbean territories is nascent or emerging and a range of support mechanisms are required to promote growth and investment within the market. Twenty-four out of twenty-nine respondents identified knowledge management, dissemination of targeted research and investment data, as well as strategic studies on the further development of the local RE&EE energy market as one of areas that should be of focus for the Centre. The specific needs of individual countries as it pertains to the development of a RE/EE market/industry are summarized as follows:

RE/EE Market structure not (fully) defined: For many countries, the scope/potential of the RE/EE market has not been properly defined. There is little or no data to suggest how the individual markets and the collective regional market can grow. As such, there is a need for market definition and sustainability guidelines. For example, it is necessary to understand the scope for the development of local facilities/institutions to manufacture, assemble, recycle and repair RE&EE equipment.

Inadequate support mechanisms for increasing the market share of renewable energy and energy efficiency. In some countries, RE and EE potentials remain largely unexploited and untapped. This is on account of several reasons relating to location of the resources, investment costs, lack of technical expertise etc. However, in many instances it is on account of the fact that market drivers are lacking. For example, tariffs for RE projects are sometimes too low, discouraging market growth. In other instances there are caps on RE addition to the grid, even in the absence of grid dynamic impact studies. This speaks to a need for these kinds of studies to be done to inform the market potentials within the various Caribbean islands. This also applies to least cost expansion plans and ESCO contract models.

There are **weak or no minimum energy performance standards** for new buildings, building renovations, appliances, lights, air conditioning and refrigeration, vehicles, etc. This leads to the construction of building where investments are based on initial costs, not operating or life-cycle costs.

Local companies and industry are currently not taking sufficiently advantage of the growing sustainable energy market and job opportunities. There is a need for strengthening the capacities of the local private sector and to promote entrepreneurship. Women stay underrepresented in the energy sector of the Caribbean.

Small market size does not allow economies of scale especially among the smaller countries. Moreover, distance between islands and from manufacturers significantly increases the cost of equipment and spare parts.

Limited data is available for linkage industries/sectors, such as agriculture, transport, food storage, etc. which tend to be large energy users. Limited baseline studies have been carried out in most energy using industry sectors within the region. Some organisations and government departments have conducted some research; however, a lot of the data has not been collated, updated or acted upon.

Monopoly by utilities: Utilities in the CICTs are vertically integrated (usual practice in small island states) combining generation, transmission and distribution. There are instances where the state-owned utilities are regulated by the Government. This can be seen as a conflict of interest on the part of the utilities in terms of dealing with independent power producers.

Metering: There was a good understanding of the different forms of metering, but only a few countries seemed to be addressing/ implementing any such activities to date.

A.2.5 Finance Barriers

Financing is a critical issue within the Caribbean, as governments typically do not have the financial resources to develop and implement RE/EE projects. Therefore, private sector interests/external investors are expected to drive RE/EE initiatives. Several RE/EE projects to date have been stalled/postponed on account of a lack of available financing. Twenty-one out of twenty-nine respondents chose “Promote investments in RE&EE infrastructure, services & businesses” as one of the areas that the mandate of the Centre should cover. The specific needs of the individual countries as it relates to financing were outlined as:

Inadequate low-interest and innovative financing programs: Business loans for the development of RE/EE projects sometimes have high interest charges, which tend to be viewed as prohibitive for small, medium sized businesses. There is a definite need for low-interest financing mechanisms, “Pay as you Save Programs” and other innovative financial mechanisms and incentives for small and large enterprises operating/seeking to develop RE/EE projects. Specific barriers for women entrepreneurs to access credit will also need to be taken into account and addressed by new financing mechanisms.

Inadequate financial policies: Policy and regulation needs to be developed to provide financial incentives for RE and EE initiatives. This will help to stimulate growth and investment within the industry.

Apprehension in making new investments: The economic slowdown and the increase in frequency of extreme climate events (e.g. hurricanes and floods), have led to some business owners/backers holding back on potential RE&EE investments.

A.2.6 Capacity Barriers

Regional capacity, particularly as it relates to development of RE/EE projects is sometimes limited. As such, external capacity, in the form of imported labour, is usually brought on to support project implementation. One of the concerns with this type of arrangement is that knowledge transfer is typically very limited and so local capacity is not enhanced or developed. Twenty-one out of Twenty-nine respondents identified “Development of capacities of local key stakeholders on various RE&EE aspects and issues” as one of the areas that the Centre should work on. The capacity gaps/barriers were outlined as:

Lack of technical capacity to formulate and enforce policies: The technical capacity in some of the Caribbean islands is confined to the staff of the electric utilities. In some instances, governments and regulators lack the resources to formulate consistent sustainable energy policies and regulations in line with the local environment and social aspects. This is frequently due to the limited number of persons in these institutions but also because of their technical skills.

Limited existing local capacity in both the public and private sector to develop and sustain local RE and EE technologies: In many cases, personnel needs to be trained/retrained in order to effectively implement projects. There is a need for continuous training and development to upgrade staff skills and capabilities.

Brain drain: Local trained human resources may migrate (outside the region) to seek better opportunities. There is a need for programmes focused on succession planning and that minimizes attrition rates and engender capacity retention.

Limited local educational/training programmes: Although the number of industry-relevant and industry-specific certification and degree programmes has increased in recent years, there is still a need to improve/expand such programmes in keeping with industry feedback.

The distinct differences in the geographical, environmental, cultural and social aspects in the region make it difficult to create a **one-size-fits-all approach**. This is an issue when developing capacity building activities and selecting appropriate technologies and business models for different islands.

Table 3: Capacity Requirements of Various Stakeholder Groups

Stakeholder group	Capacity needs

Policy makers in the renewable energy and energy efficiency sectors and the energy sector in general.	▪ Developing and operationalizing coherent, comprehensive and evidence-based policies, laws and regulations that create a level playing field for RE&EE technologies ▪ Implementing rural energy planning ▪ Negotiating power purchase agreement (PPAs) with independent power producers (IPPs) and setting viable feed-in tariffs ▪ Integrate environmental and social strategies in the formulation of country action plans ▪ Strengthen the capacities to appraise sustainable projects and establish standard approval procedures which particularly consider potential negative social and environmental impacts of projects (e.g. environmental impact assessments, standards for hydro power planning).
Policy makers from non-energy sectors like agriculture, health, water, private sector, transport sectors etc.	▪ Basic design of renewable energy systems ▪ Integrating gender sensitive renewable energy components and EE measures into their sectors
Entrepreneurs, project developers, equipment manufacturers, consultants and industry support bodies	▪ Development of vocational and higher education courses adapted to the RE&EE requirements and languages of the region ▪ Certification for conducting energy audits ▪ Identifying, developing and packaging a pipeline of potential RE&EE investment projects ▪ Negotiating viable power purchase agreement with investors ▪ Preparing quality business plans that are consistent with existing financing mechanisms ▪ Identifying and developing potential CDM projects ▪ Mobilizing and structuring investments in RE&EE projects ▪ Adoption of a climate change-based resilience approaching the development and implementation of energy sector plans and projects
Utilities	▪ Ability to tender RE&EE projects ▪ Negotiate power purchase agreements (PPAs) ▪ Integrate RE generation in the grid
Recipients/buyers of energy services and technologies	▪ Willingness and ability to pay for the services or technologies ▪ Ability to assess the energy implications or costs in daily choices and decisions such as selecting electric equipment

A.2.7 Technology Barriers

In the Caribbean, there are significant technology gaps, particularly as it relates to the use of advanced energy technologies. Maintenance of equipment is another area for which assistance is required, as some countries do not have a good history of repair and maintaining equipment. There has been the perception, in some areas, that advanced technologies (e.g., modern waste to energy plants) would not necessarily be a best-fit for some Caribbean islands as the repercussions could be significant if local capacity is not correctly trained in the use and maintenance of such equipment. Twenty-six out of Twenty-nine respondents chose “Applied research on request of the industry and business sector (e.g. local production of components or spare parts, adaptation of technology solutions to the local needs, testing of fuel qualities)” as part of the mandate for the Centre. Additional gaps/barriers include:

Need for demonstration projects. Demonstration projects are needed to highlight the benefits of EE & RE technologies not yet being used on a large scale in the region. This is to be supported by capacity development.

Need for technology and knowledge transfer. Technical knowledge and capacity transfer within and between countries is necessary so that individuals embarking on new RE/EE initiatives can learn from those who have already successfully implemented such projects. That is, south-south and north-south technology and knowledge transfer is required to spur growth and development.

Presence in the market of low quality equipment can lead to a negative uptake of RE technologies, and interviews in some countries confirm that this is the case. Consumers need to be educated regarding the options when purchasing equipment. It is also urgent to address waste management issues of the equipment when they reach the end of their life. There is a lack of certification of equipment such as the Lighting Africa programme from World Bank which tests and certifies off-grid lighting products.

Grid Readiness: The infrastructure for integrating RE into the existing grids is seen as an area of need. This would include having an updated map of all connections, substations, capacity levels, evacuations of electricity levels at said subs stations. And, a grid that can feed back information to the grid operator and at the same time be adaptable. The readiness of the grid would also support the uptake of electric vehicles, where it was seen in most countries as a desirable need.

A.2.8 Gender Participation Gaps

The energy sector in most of the countries, specifically for highly technical occupations, tends to be comprised of primarily males. This is a reflection of enrolment rates within applicable educational programmes at universities and other training institutions. In terms of gender participation gaps, there is a real need for initiatives that target females and that help to remove the perception that the energy-sector jobs are primarily for males. Moreover, with a growing demand for sustainable energy, it is expected that there will be a need for trained labour to fulfil the demand for experienced and skilled technicians at various levels, capable of designing, developing, installing, operating, and maintaining, and managing RE&EE projects. This represents an opportunity to foster the participation of women in this nascent sector by entering the labour force and by helping them become entrepreneurs/creating new businesses.

In countries such as Haiti and Suriname, it is women who suffer the most from conditions of poverty because of their responsibilities for collecting fuel and water for the household. Reduced drudgery for women and increased access to non-polluting power for lighting, cooking and other household and productive purposes can have dramatically improved effects on women's levels of empowerment, education, literacy, nutrition, health, economic opportunities and involvement in community activities. These improvements in women's lives can, in turn, have significantly beneficial consequences for their families and communities.

A.3. Origin of the project and justification

The United Nations Industrial Development Organization (UNIDO) in cooperation with the Sustainable Energy Island Initiative (SIDS DOCK) represented by the Caribbean Community Climate Change Centre (CCCCC) and the Austrian Development Agency (ADA) are assisting the Caribbean Island Countries and Territories (CICTs) in the establishment of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE). The partnership is based on the official **request of SIDS DOCK to UNIDO and the Austrian Government to assist in the creation of regional sustainable energy centres for small island developing states (SIDS)** in the Caribbean, Pacific, Africa and the Indian Ocean. The preparatory process is closely coordinated with the Secretariat of the Caribbean Community (CARICOM) and other regional (e.g. OECS, OAS, and OLADE), national and international partners.

The request was inspired by UNIDO´s technical work in the context of the **Global Network of Regional Sustainable Energy Centres (GN-SEC)**. The powerful global south-south multi-stakeholder partnership is coordinated by the UNIDO Energy and Climate Change Branch in partnership with various regional economic communities and organisations. The regional centres respond to the urgent **need for enforced south-south cooperation and regional capacities to promote inclusive and sustainable energy industries and markets** in developing and transformation countries in the post-2015 era. The centres enjoy high-level support by the Energy Ministers and respond to the individual needs of the respective national Governments. The network currently comprises the ECOWAS Centre for Renewable Energy and Energy Efficiency (www.ecreee.org), the East African Centre for Renewable Energy and Energy Efficiency (www.eacreee.org), the Southern African Centre for Renewable Energy and Energy Efficiency (SACREEE) and the Regional Centre for Renewable Energy and Energy

Efficiency (RCREEE) for Arab States. The GN-SEC provides a common umbrella to promote south-south cooperation between the centres and regions.

A concept note on potential technical and institutional design options for CCREEE was presented by UNIDO at the regional CARICOM-GIZ workshop on the Renewable Energy and Energy Efficiency Technical Assistance (REETA) Project, which was held from 11 to 12 February 2014 in Georgetown, Guyana. **On 17th March 2014 the Government of Austria, UNIDO and SIDS DOCK signed a Memorandum of Understanding (MOU)** on support for the establishment of a SIDS network of regional sustainable energy centres. The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), based in Cape Verde, a small island developing state in Africa, was nominated by the SIDS DOCK Steering Committee to coordinate the sustainable energy activities for African SIDS.

UNIDO in close partnership with SIDS DOCK and the regional organisations in the Pacific and the Caribbean launched a consultative **preparatory process for the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)**. The process included the development of needs assessments and project documents on the technical and institutional design of the centres. The Second Meeting of Pacific Ministers of Energy and Transport, held from 2 to 4 April 2014, in Nadi, Fiji, endorsed the project document and the creation of PCREEE. **The CCREEE project document was validated during a regional workshop organised from 21 to 22 July 2014 in Dominica**.

A.3.1 Justification and added value of CCREEE

The needs assessment revealed that a significant number of **Caribbean islands have made considerable progress in the creation of enabling national environments** for the promotion of renewable energy (RE) and energy efficiency (EE). However, in some of the areas the implementation of policy commitments is still in the initial stages and have not been transformed into real investments or created a vibrant market and industrial sector. The areas of small and medium-sized grid-connected renewable energy plants, as well as energy efficiency improvements in different sectors (e.g. buildings, grid losses, appliances, industry) need a further boost. **There still exists a broad range of barriers which need to be addressed, in order to take full advantage of RE&EE potentials.**

There are already a number of regional and international partners' programmes and projects that **assist CICTs in addressing some of the remaining RE&EE barriers** (e.g. coordination, policy advisory, (pre-) investment support for projects). Through the CARICOM Energy Policy, the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) and the SIDS DOCK Goal of 25-50-25 **a common regional target framework for RE&EE has been established**. SIDS DOCK established an indicative pipeline of RE&EE priority projects with an estimated investment volume of 630 million USD in the Caribbean. Development Finance Institutions (DFIs) such as the Caribbean Development Bank (CDB) and the Inter-American Development Bank (IDB) are gradually increasing their lending to sustainable energy projects. The closing Caribbean Renewable Energy Development Programme (CREDP) successfully supported the development of national RE policy frameworks and the execution of pre-investment activities. A new GIZ Renewable Energy and Energy Efficiency Technical Assistance (REETA) Project is supposed to support key interventions and to strengthen the CARICOM Energy Unit.

However, the **needs assessment revealed that the existing regional institutional support framework is not prepared to support Member States effectively to reach the established RE&EE targets**. There is an urgent need for enforced regional technical and institutional capacities to assist the Governments and the CARICOM Energy Unit effectively to implement the established policy commitments. This goes hand in hand with the need for better technical coordination, donor harmonisation and assurance of long-term sustainability of project interventions as well as documentation of lessons learned. The assessment has identified a common understanding that some soft barriers for RE&EE can be addressed more effectively and at lower cost through regional approaches and methodologies in the Caribbean. The centre is expected to be an important partner for the Renewable Energy and Energy Efficiency Technical Assistance (REETA) project and other project-based initiatives.

The assessment **identified major regional thematic opportunity gaps** in the areas of capacity development, knowledge and data management, awareness raising as well as investment and business

promotion in the sustainable energy sector. Growing sustainable energy investments and the introduction of appropriate regulations and standards go hand in hand with the need for local institutional capacities and qualified human resources. There is the impression that **the local private sector and industry in the Caribbean do not take advantage of the growing sustainable energy market and job opportunities**. These developments endanger the long-term sustainability of existing and future investments as they are often conducted by external enterprises without local representations.

The **creation of a specialised regional RE&EE promotion agency under the umbrella of the existing institutional and decision-making framework of CARICOM/SIDS DOCK is recommended**. The centre will address RE&EE holistically and in an equal way. The centre will act as a **think-tank and hub for sustainable energy** and will play a key role in creating economies of scale and a competitive sustainable and gender sensitive energy market and business sector. It will address existing barriers and strengthen drivers through regional methodologies and tools. All the centre's activities shall demonstrate high relevance for the local private sector and industry. The centre will act as technical service provider for CARICOM, OECS, SIDS DOCK, SE4ALL and other international partners. It will assist SIDS DOCK in the implementation of the established project pipeline. Moreover, it will work closely with the other regional sustainable energy centres in the Pacific and Africa and establish a platform of knowledge exchanges on sustainable energy-related SIDS issues. The centre and its interventions are fully in line with the priorities of the 2015-2019 Strategic Plan of CARICOM adopted by the Heads of Government in their Thirty-Fifth Regular Meeting held in Antigua and Barbuda, from 1-4 July 2014. Climate change adaptation and mitigation was identified as one of the priority activities.

The centre demonstrates local ownership and will **work according to the local rules under the umbrella of CARICOM's decision making process and policy framework**. The centre has a technical mandate and action- and service-oriented operations. It will work closely with the CARICOM Secretariat's Energy Unit and report to the Ministerial Council for Trade and Economic Development (COTED). It will provide the Unit and other local and international partners with the required technical implementation and execution capacities. To ensure ownership it is **recommended that a competitive selection process be launched for determining the host country of the Centre's Secretariat**. CARICOM Member Countries (and opt-in countries) would be invited to submit offers in accordance with the proposed format and selection criteria included in the annex of the project document.

The institutional set-up of CCREEE reflects the principles of **maximising the impact, avoiding duplication of efforts, strengthening and up-scaling of already existing local capacities**. CCREEE will develop and **execute its activities through a network of Thematic Hubs (THs) and National Focal Institutions (NFIs)** among all CARICOM countries (incl. opt-in countries). The thematic hubs (for policy, investment, capacity development and knowledge management) and the NFIs will be nominated during the start-up phase of the centre. **The centre will be guided by an Executive Board (EB) and a Technical Committee (TC)** which will be established during the start-up phase. The centre will work on the basis of a long-term business plan and annual work plans.

CCREEE **complements and strengthens ongoing national/regional activities** in the areas of policy and capacity development, knowledge management and awareness raising, as well as investment and business promotion. It will support targeted RE&EE programs to enhance the productivity and competitiveness of key industries in the Caribbean (e.g. food processing, fishery, manufacturing, tourism).
CCREEE will position itself as a regional RE&EE promotion agency rather than an implementer on micro- and grass-root levels. To **maximize the local added value** the execution of specific assignments or services will be, in many cases, delegated to national institutions and/or the private sector. In general, the Centre is expected to perform only up to the level of programme/project development, fund raising, oversight, quality assurance as well as coordination, monitoring and evaluation of project/programme implementation.

The **centre will demonstrate a strong local identity, employ local staff and operate in all relevant local languages** (e.g. English, Spanish, French and Dutch). It will be strengthened through the secondment of temporary international experts (e.g. UNIDO and others). The small initial staff structure will expand gradually in accordance with the mobilised funding. During the first operational phase the centre will **reach financial sustainability** through core funding from donor partners, local partners, the

host country, mobilised project funding and provision of remunerated services. During this phase, member states will not be expected to make monetary contributions to the Centre.

The following added value of CCREEE shall be highlighted:

- Strengthened regional technical coordination, implementation and harmonization capacities: There is a common understanding that a coordinated regional approach is a cost-effective way to boost existing drivers and address barriers for sustainable energy investments and markets in the Caribbean. The more policy oriented energy units of CARICOM and OECS need a technical arm to implement the established regional sustainable energy policy commitments (e.g. C-SERMS). CCREEE will ensure that projects are coordinated on technical level and duplication of efforts and loss or resources is avoided. The ownership and setting of priorities will be strengthened. The centre will keep an overview on ongoing activities and will create a link between the different local actors in the field (e.g. CARICOM, OECS, OLADE, CDB). This links will be cleared defined during the start-up phase.
- Support for Emerging Technologies: The centre will particularly focus on integrated RE&EE projects, programs and activities. The centre will also deal with sustainable energy areas that do not get a lot of attention (e.g. waste-to-energy, sustainable transport, sustainable cooking, solar thermal heating and cooling, sustainable energy storage systems, gender). It will strengthen existing national thematic hubs to have a regional outreach. It will assist national institutions to develop regional programs and projects with other partners to be presented to international donor partners.
- Improved access to SE services: The Centre will focus on improving access to sustainable energy services which are adapted to the local environment and social factors. The Centre will assist the private sector in tapping the existing market potential for mini-grids (in countries where this is relevant). Training to local companies will be provided to facilitate the identification of appropriate technologies and business approached which take into consideration the needs of the population. Businesses will also be prepared to assist the local populations in engaging in productive activities in order to generate an income to safeguard the long-term sustainability of the projects.
- Energy Planning Support: Energy planning within this context refers to the process of developing long-range policies to help guide the future of a local, national and regional energy systems. The Centre will utilize methodologies and modelling tools for energy systems to support decision-making in the priority area of transition planning for the deployment of sustainable low carbon technologies and their supporting infrastructures within CARICOM countries.
- Finance and Legislation Support: The Centre will focus on the identification of mechanisms to eliminate barriers and gaps that currently retard or prohibit the development of suitable regulatory systems and fiscal policies which can provide greater incentives for the development of sustainable renewable energy and energy efficiency markets within the realities of the Caribbean economy. In particular, the reduction or the removal of non-cost barriers can be considered as “low-hanging fruits” and will be given priority.
- Project Planning and Management: The Centre is expected to support and execute renewable energy and energy efficiency activities and projects within CARICOM countries, focusing primarily on activities and projects with regional impact or national projects which demonstrate high potential for scaling-up or regional replication.
- Policy Advocacy and Awareness: It is apparent that the current economic situation and its impacts on the Caribbean region have made it difficult for policymakers to sufficiently focus on the medium-term strategies that are required for sustainable economic development; this is exacerbated in countries that are constrained by limited technical capacity within the public sector. The Centre should seek to address market distortions that unreasonably “discriminate” against sustainable energy systems and serve to increase their cost relative to conventional sources. Advocacy for appropriate policies, and simultaneous awareness building on the issues identified, is deemed important to “re-balancing” of the regional energy markets.
- The Centre will work with its partners in order to identify sources of finance for RE&EE projects that directly benefit local companies.

- The Centre will train local experts (men and women) and companies in the installation and maintenance of RE&EE systems and equipment through regional train-the-trainers and certification programs. The training will be associated to certification programme(s) to promote quality and the long-term sustainability of projects. The centre will work and provide training materials in the local languages.
- The centre will promote south-south knowledge and technology transfer with other SIDS through the Global Network of Regional Sustainable Energy Centres (GN-SEC) facilitated by UNIDO in cooperation with SIDS DOCK. The islands share similar challenges and potentials for sustainable energy solutions.
- The Centre will assist local research centres in the development and promotion of energy efficiency standards, qualification and certification of local companies.
- The Centre will contribute to provide continuity (and sustainability) to a large number of activities in the Caribbean being led by external partners. The Centre will be an active repository for sustainable energy project information and studies for the region. This is especially true for capacity building as much of the activities in this area tend to not take into account support material previously developed and lessons learned from past activities. The maintenance of a physical centre with regional core staff is expected to address this.
- The centre will contribute to the strengthening of the human capital of CARICOM and its institutions and Energy Unit in the area of sustainable energy. The Centre will be able to respond to requests from governments seeking to implement projects and develop and execute energy policies more effectively. There is also a wide field of possible cooperation with CARILEC and its members, i.e., utilities. The capacities need to be strengthened particularly regarding RE grid integration and demand side and supply side efficiency.
- The application of train-the-trainer approaches can facilitate national follow-up activities and regional research projects can strengthen the capacities of universities and vocational centres with regard to the development of adapted technologies.
- The centre can contribute to sustainable energy data quality, harmonisation and reliability in the region and improving the accessibility for local key market enablers to RE&EE information. CCREEE will partner with CEIS on this.
- The barriers for the dissemination and usage of sustainable energy technologies are common among the different Caribbean countries. Through regional knowledge exchange, lessons learned, capacity building and awareness raising, individual Caribbean countries can learn from existing experiences in the region.
- The experience of the European Union (EU) has shown that regional standards for equipment and training can be a useful tool to facilitate the adoption and implementation of RE&EE technologies at national levels (e.g. EU Directive on RE&EE). The introduction of minimum quality standards and labelling for RE&EE equipment or appliances can be more effective than introducing isolated and non-harmonised rules on national levels. The Centre will work in this regard, particularly with the institutions which are already conducting laudable work in the harmonisation of RE standards, i.e., the CARICOM Regional Organisation for Standards and Quality (CROSQ) and its network of national partners.
- The establishment of a specialised institution for RE&EE helps to coordinate ongoing activities in the region on access to energy and capacity building capacity building activities. The CCREEE in cooperation with CARICOM's Energy Unit shall become an early check-point for determining the relevance of regional and local level initiatives and programmes.
- Regional cooperation can also be an effective tool to facilitate the expansion of sustainable energy markets being transformed into local added value, businesses and jobs in the Caribbean. For example, regional cooperation in the field of applied research and manufacturing can contribute to the strengthening of local business sector.
- The creation of the centre is fully in line with the Paris Declaration on Aid Effectiveness and the principles of donor harmonisation and alignment with local country systems. The centre will apply local regulations and proceedings (e.g. procurement, financial rules) and employ exclusively local staff from the Caribbean. The CCREEE will contribute to the creation of a strong sustainable energy network in the region, contrary to some ongoing donor-driven

initiatives in the sustainable energy sector which do not make use of local capacities and procedures.

The Centre shall also follow the findings and recommendations from the following institutions/programmes operating in the Caribbean:

SIDS DOCK

Under its Sustainable Energy Initiative, SIDS DOCK advocates:

- **Policy harmonisation** in CARICOM countries through the empowerment of C-SERMS. This policy harmonisation would include policies to promote utility-scale renewable power generation and distributed renewable power generation.
- The **empowerment of the C-SERMS platform** would include a close consultation with SIDS in the Caribbean.
- **Support countries individually** with regards to achieving the policy harmonisation in their countries.
- Define a commonly agreed **methodology to assess the technical potential for RE** in a standardised and uniform format. And invest in the assessment of the potential to generate energy from renewables.
- Increase the transparency and availability of data and statistics regarding the energy sector.
- It is necessary to understand the energy uses of the SIDS populations before introducing RE technologies. A national energy balance and analysis is required to have a fair judgment on the energy needs in each respective SIDS.
- Support south-south sustainable energy knowledge exchange and technology transfer between the regional centres in the Pacific, Caribbean and Africa under UNIDO´s Global Network of Regional Sustainable Energy Centres.

GIZ-CREDP-REETA

- CREDP is promoting RE through supporting the political and regulatory framework. It already assisted in the implementation of a few success stories such as the Wigton-Windfarm in Jamaica. CREDP is also assisting in the identification of RE potentials in different islands and the implementation of capacity building activities. The project is promoting energy efficiency through joint activities with CHENACT and by supporting the Eastern Caribbean Energy Labelling Project (ECELP)
- GIZ believes that the market for RE and EE has now entered in the take-off phase and will, therefore, change its strategy in the next regional project. Therefore, REETA is planned to help building the necessary capacities in the relevant actors (project developers, authorities, providers of services & technology) so that they can provide services of sufficient quality.
- One of the main challenges identified by GIZ is the lack of a region-wide accepted and competent body in the field of RE and EE which would help in the clarification of roles and enhanced coordination of stakeholders.

C-SERMS Platform

- Phase I of C-SERMS identified the following priorities for Phase II of the strategy: close data gaps on the energy sector, identify innovative finance mechanisms, build technical capacity and support the implementation of regulatory frameworks that enable RE developments.
- The coordination and management of Phase II will involve significant efforts and will require strong technical implementation skills on regional levels.

Caribbean Development Bank

- The Caribbean Development Bank (CDB) has signalled its intention to increase focus and, consequently, support to the energy sector in its borrowing member countries, with special

emphasis being placed on RE&EE. It is in this context that a Renewable Energy and Energy Efficiency Unit (REEEU) has been created and an Energy Sector Policy and Strategy (ESPS) is being developed, to guide its overall interventions and lending in the sector.

- REEEU is active in providing two major areas of intervention: financing for RE&EE and technical assistance services. The latter is expected to be implemented in strong partnership with GIZ and the Government of Germany interventions in the Caribbean.

A.4 Target Beneficiaries

The main target beneficiaries of the activities of the Centre shall consist primarily of renewable energy and energy efficiency market players and enablers in the Caribbean region. More specifically, the following stakeholders will benefit from the Centre's activities:

1. Policy makers in energy and related sectors (e.g. ministries, provincial governments)
2. National institutions in charge of promoting sustainable energy and rural energy)
3. Educational and training institutions (e.g. universities, training centres)
4. Energy manufacturing and service industry (e.g. consulting, suppliers, equipment producers, installers, IPPs)
5. National utilities and regulators (incl. CARILEC)
6. Civil society (e.g. sustainable energy advocacy groups, women groups) - Ultimately, the greater population, local industry and public institutions will benefit from increased access to modern, affordable and reliable energy services.
7. Lack of access to modern energy services tends to affect women and children disproportionately. Therefore, the activities of the Centre will alleviate the plight of women and children through reduced time and labour in collecting firewood and exposure to indoor air pollution, creation of opportunities of engaging in productive activities, among others.

A.4.1 Gender and Women's empowerment

UNIDO is in the forefront regarding gender mainstreaming in the energy sector. The institution uses a systematic guide[13] to promote women's equality when designing and implementing projects. The centre will benefit from lessons learnt and best practice generated in already established RE&EE Centres specifically related to the development and support of gender responsive policies, programs and capacity development.

UNIDO will share its experience in gender issues with the Centre which will also take into consideration a number of actions that have been launched by several actors in the region. CARICOM, for example, has a gender and development sub-programme implemented by the Council of Human and Social Development (COHSOD). The regional programme aims at promoting new inter-sectoral approaches to contribute to human resource development, poverty reduction, gender equity and the protection of disadvantaged groups. At national level, most of the countries have established bureaus of gender affairs, which could be good contact points for consulting during the planning of national level projects.

Among the multilateral organisations, the IDB has recently launched a project named "Building capacity and Regional Integration for the Development of a Generation of Entrepreneurs (BRIDGE) in Sustainable Energy and Information and Communication Technologies" which includes a component related to gender equality issues. In addition, the United Nations Organisation carries out several actions through the following entities:

- UN Women, the United Nations Entity for Gender Equality and the Empowerment of Women, which has a Caribbean office in Barbados
- Economic Commission for Latin America and the Caribbean (ECLAC) which set up a gender equality observatory for Latin America and the Caribbean.

Finally, the University of the West Indies is very active in the field through the publication of a journal (Caribbean Review of Gender Studies) and training programs organised by the Institute for Gender & Development Studies: Nita Barrow Unit.

[13] Guide on Gender Mainstreaming - Energy and Climate Change Projects, UNIDO, Vienna, 2014

The Centre will develop and implement projects and activities with particular focus on sustainable energy and gender in close collaboration with the entities mentioned above. Moreover, the Centre will 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).

A.5 Policies, Strategies and plans in place

CARICOM Energy Policy

The suggestion to establish CCREEE is fully in the line with the vision and objectives of CARICOM's Energy Policy and the respective Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS). The Energy Policy was approved at the forty-first special meeting of the COTED held on March 2013, in Trinidad and Tobago. The policy was the outcome of a process initiated on February 2003, Trinidad and Tobago by the Heads of Government of the Caribbean Community that agreed to establish a task force to develop recommendation for a regional policy.

The Energy Policy is designed to provide guidance to CARICOM member states to enhance their national efforts to achieve energy security and to clarify how different sectors can assist in this effort. The objectives of the policy are:

a) sustainable and secure energy supplies through diversification of energy sources;
b) accelerated deployment of renewable and clean sources of energy supplies towards increased energy supply diversification and affordability;
c) sustained growth of intra-Community trade in energy;
d) increased energy efficiency and conservation in all sectors, including the transportation sub-sector;
e) establishment and enforcement of labelling and standards for the importation of electrical appliances as well as standards for vehicles importation;
f) increased investment in production, transformation and distribution of viable energy resources;
g) strengthening and enhancement of the human and institutional capacities in the Community energy sector;
h) programmed expansion of electricity generation, transmission, distribution and trade;
i) improved access to affordable energy by the poor and vulnerable;
j) greater use of renewable energy for electricity generation as well as in the transportation, industrial and agricultural sectors;
k) coordinated approach to exploring and establishing an institutional framework for leveraging financing mechanisms for the development of viable energy resources;
l) increased technology transfer and information sharing;
m) established regional and national targets for emissions reduction with corresponding mitigation actions;
n) strategies for maintenance of adequate energy reserves in the event of disasters; and
o) Strengthened research, development and innovation efforts in energy sector especially in areas of clean and renewable energy sources and technologies.

In order to achieve the energy security outcomes, the CARICOM Energy Policy has defined a number of objectives that will be developed through a series of programmes of regional actions. The principles guiding this important piece of energy policy are:

- Community Mandates on Energy and the Revised Treaty of Chaguaramas
- Focus on Regional Level Energy Sector Challenges and Opportunities
- Recognition that Member States' Energy Resources and Level of Energy Sector Development Vary.
- Consistency, Complementarity and Collaboration; and
- Principle of Subsidiarity

C-SERMS

This regional policy then points to the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) as the tool that will set targets for sustainable energy in the region. C-SERMS is a regional

level sustainable energy planning, management and implementation framework is aimed at facilitating the establishment of short, medium and long term targets and to develop strategies to achieve these targets. The strategy should be implemented in two phases. The first phase, which terminated in June 2013, was financed by IDB and developed with support of the World Watch Institute and resulted in:

- The development of a Baseline for the member states
- Definition of targets for RE, EE and emission reductions
- Identification of national and regional recommendations for intervention

The outcomes of C-SERMS Phase I are summarised in the following diagram:

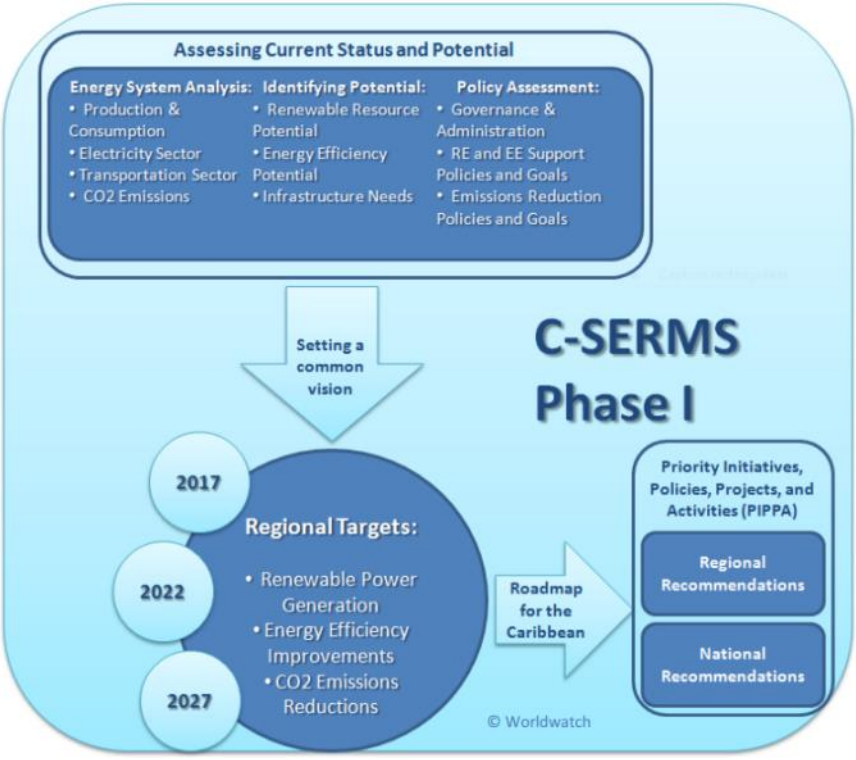


Figure 13: C-SERMS Phase I objectives

At the 41st Special Meeting of COTED, the following targets were approved **20 percent renewable power capacity by 2017, 28 percent by 2022, and 47 percent by 2027; a 33 percent reduction in energy intensity by 2027; and power sector CO_2 emission reductions of 18 percent by 2017, 32 percent by 2022, and 36 percent by 2027.** These targets will continue to undergo refining based on more rigorous assessments, especially at the country level, as part of iterative process. The identified gaps along with recommendations for strategies will form the basis for the elaboration of other important strategies going forward. The C-SERMS targets are expected to be attained through a joint regional effort consisting of national, regional and development partner-led initiatives as summarized below. **The strategy recommended the creation of a similar regional Centre such as the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE).**

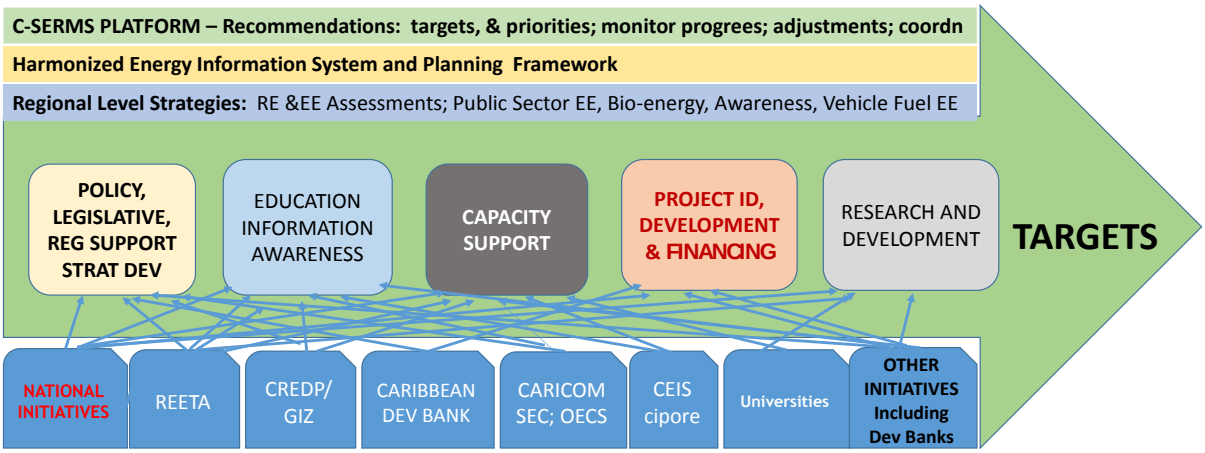


Figure 14: Platform for achieving the C-SERMS targets (source: Joseph Williams)

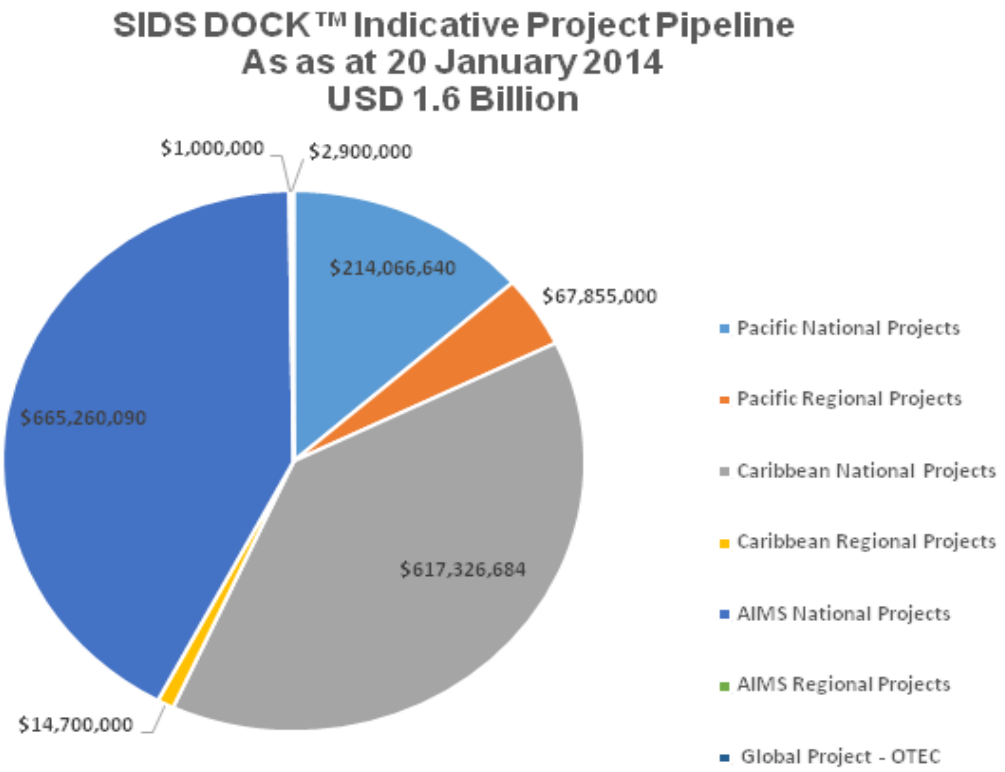
SIDS DOCK

SIDS DOCK was launched with four Partners: the Alliance of Small Island States (AOSIS), the United Nations Development Programme (UNDP), the World Bank, and the Government of Denmark, which announced a grant of USD14.5 million in start-up contributions for the SIDS DOCK Support Programme. On December 8, 2011, the SIDS DOCK Steering Committee designated Belize as the Host Country for the SIDS DOCK Secretariat. SIDS DOCK has declared that among its initial goal is the implementation of measures to:

- Secure an overall increase in energy efficiency by 25 percent (2005 baseline)
- Ensure that a minimum of 50 percent of electric power is generated from renewable sources of energy, and;
- Secure a 20-30 percent decrease in the use of conventional fuel for transportation by 2033

The initiatives and projects to be pursued within the C-SERMS framework could be supported through SIDS DOCK. In fact, both frameworks appear to be complementary whereas C-SERMS is seeking to facilitate, through policy and planning support, the promotion of sustainable energies, SIDS DOCK is focused on providing access to finance for the implementation of RE and EE. Since 2013, SIDS DOCK is cooperating closely with UNIDO on the establishment of a network of regional sustainable energy centres for SIDS countries in the Caribbean, Pacific, Africa and Indian Ocean**. It is expected that the network of centres will assist in the implementation of the indicative RE&EE project pipeline of SIDS DOCK which has an estimated volume of USD 1.6 billion.** The pipeline includes Caribbean projects with and estimated investment volume of 0.63 million USD.

Figure 15: Indicative SIDS DOCK Project Pipeline



National Level

Governments have placed a high priority on increasing the use of renewable energy to generate electricity. All of CARICOM countries have established policies setting long-term visions for sustainable energy development at national level. The following table summarises the existing national energy plans in CARICOM member states.

Table 4: Existing national energy plans in CARICOM member states (source: C-SERMS)

	National Energy Policy	Name of Policy Document
Antigua and Barbuda	In Draft (Feb. 2012)	Final National Energy Policy
Bahamas	Proposed (Sep. 2010)	Second Report of the National Energy Policy Committee
Barbados	Submitted (Dec. 2006) Proposed (June 2010)	The National Energy Policy of Barbados Sustainable Energy Framework for Barbados
Belize	In Draft (Nov. 2011) Submitted (Sep. 2012)	Draft National Energy Policy Framework MESTPU Strategic Plan 2012–2017
Dominica	In Draft (Dec. 2011)	Draft Sustainable Energy Plan of the
		Commonwealth of Dominica
Grenada	Approved (June 2011)	The National Energy Policy of Grenada
Guyana	Approved (May 2010)	National Low Carbon Development Strategy
Haiti	In Draft (Feb. 2011)	National Energy Sector Development Plan
Jamaica	Approved (Oct. 2009)	Jamaica's National Energy Policy 2009-2030
Montserrat	Approved (Sep. 2008)	Montserrat Energy Policy, 2008-2027
St. Kitts and Nevis	In Draft (Apr. 2011)	Draft National Energy Policy
St. Lucia	Approved (Jan. 2010)	Saint Lucia National Energy Policy
St. Vincent and the Grenadines	Approved (Mar. 2009)	The Government's National Energy Policy
Suriname	Submitted (Nov. 2010)	Renewable Energy Policy of Suriname
Trinidad and Tobago	In Draft (Jan. 2011)	Framework for Development of a Renewable Energy Policy for Trinidad and Tobago

In order to meet the energy targets, countries have also started establishing direct support mechanisms for renewable energy and energy efficiency. Although such measures have been implemented across the region, there is still a need to evaluate their effectiveness in promoting SE.

Table 5: Renewable energy and energy efficiency support policies in CARICOM member states (source: C-SERMS Summary for Policymakers

	Renewable Energy								Energy Efficiency						Transportation		
	Feed-in Tariff	Net Metering/ Billing	RPS/Quota	IPPs Permitted	Tax Credits	Tax Reduction/ Exemption	Public Loans/Grants	Green Public Procurement	National Energy Efficiency Standards	Tax Credits	Tax Reduction/ Exemption	Public Demonstration	Prohibited Use/ Import of Incandescent Bulbs	Appliance Labeling Standards	Blend Mandate	Import Tax Exemption/ Reduction	Fuel Efficiency Standards
Antigua and Barbuda		In development		In place					In development						In development		In development
The Bahamas	Suggested	In development															
Barbados	Suggested	In place		In place	In place	In place	In place			In place	In place				Suggested	In place	
Belize																	
Dominica				In place					Suggested	Suggested		Suggested					
Grenada		In place	Suggested	In place	Suggested	In place	Suggested										
Guyana		Suggested				In place					In place	In place	In place				
Haiti																	
Jamaica		In place		In place	In place	In place			Suggested		In place			In place	In place		
Montserrat					Suggested	Suggested											
St. Kitts and Nevis				In place													
St. Lucia		In place		In place		In place					Suggested					Suggested	
St. Vincent and the Grenadines		Suggested		In place	Suggested	Suggested					Suggested					Suggested	
Suriname	Suggested	Suggested		In place		Suggested			Suggested				Suggested			Suggested	
Trinidad and Tobago	Suggested			Suggested					Suggested		In place	Suggested	Suggested	Suggested		In place	

© Worldwatch

Key: In Place | In development | Suggested

A.6 Ongoing Programmes and Initiatives Matrix

There are already a number of regional and international partners' programmes and projects that **assist CICTs in addressing parts of the remaining RE&EE barriers** (e.g. coordination, policy advisory, (pre-) investment support for projects). Various regional initiatives are developing activities that may overlap with at least some of the proposed activities for the CCREEE. There are, however, a number of gaps that would be filled by the Centre. The following matrix, although not exhaustive, summarises previous, ongoing and planned sustainable projects and programmes. From the start of the preparatory phase, CCREEE will discuss with these institutions the development of joint activities in order to deliver services at reasonable quality and cost, and avoiding duplication of activities.

Figure 16: Partner Matrix for RE&EE in the Caribbean (GIZ REETA-Project)

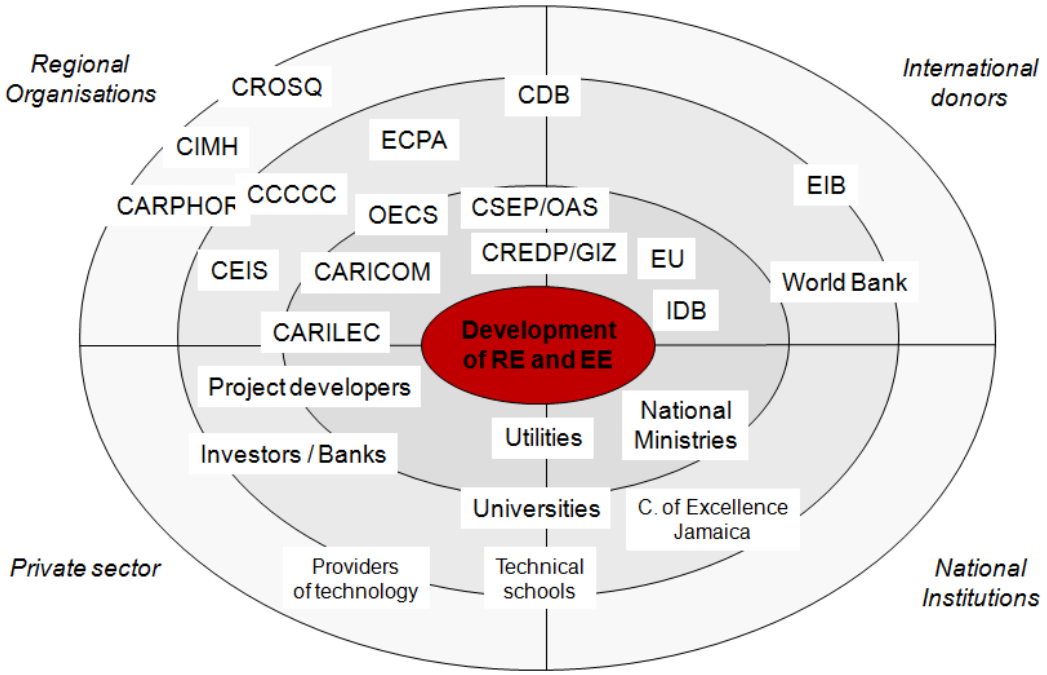


Table 6: Overview on ongoing regional energy programs and projects and opportunity gaps to be filled by CCREEE

Capacity Building and Knowledge Management - Gap Matrix		
Activity / Institution	**Details**	**Gaps / Remarks**
Building capacity and Regional Integration for the Development of a Generation of Entrepreneurs (BRIDGE) in Sustainable Energy and Information and Communication Technologies/ Implemented by INE/ENE, IDB	Ongoing project The specific objectives of this IDB-funded project are: (I) to understand the general and gender-specific dynamics of the Caribbean energy labour market in terms of RE and EE (ii) to assess the existing levels of human capital and associated gender gaps within the realm of ICT, and identify unmet skills that are key for improving the ICT ecosystem; (iii) to train young women and men on the development, installation, operation and maintenance of SE technologies and the development and provision of key ICT services; and (iv) to foster entrepreneurship of both women and men and enable an environment for regional firms to be able to compete in the provision of SE and ICT related services.	The focus is on 3 countries: Barbados, Jamaica and Trinidad and Tobago. Depending on the success of the initiative/how well it is received, there is scope for expanding to other countries. This could be a possible area of focus/collaboration for CCREEE.
Energy Efficiency and Renewable Energy Project for CARILEC/ Implemented by Caribbean Electric Utility Services Corporation (CARILEC), St. Lucia	Completed project The specific objectives of this IDB-funded project were to enhance and strengthen the capability of CARILEC to undertake a series of activities aimed at promoting energy efficiency and renewable energy use amongst its utility members. The project outcomes included completed benchmark studies of the performance of electric utilities; a prototype Power Purchase Agreement; a position paper on the minimization of barriers and establishment of incentives for renewable energy technologies (RETs) and alternative fuels; and capacity building and training programs in renewable energy technologies, energy audits, generation dispatch optimization and carbon markets.	A certified training programme was included in this project as a means of promoting continuity and building regional capacity. This strategy should be replicated. That is, where feasible, training programmes (within projects/across projects) should progress from the typical workshop structure to the inclusion of more hands-on training and/or certified programmes.
Development of the Caribbean Energy Sector	Completed project The overall goal of this IDB-funded initiative was to assist the Caribbean countries in evaluating the potential for, and advantages and disadvantages of, integration in the energy sector by examining, amongst other issues, achieving a sustainable and secure supply of energy, the economic impact of oil prices, fostering efficient energy production and consumption, and the operational aspects of energy policies on their economies.	There is a need for detailed regional analysis, strategy and action plan that looks at the development of the Caribbean energy sector (as a region, as opposed to individual countries) in light of climate change and external shocks, such as high oil prices. Such work could build on the Neat study and similar reports.

Caribbean Renewable Energy Capacity Support (CRECS) Project/ Implemented by CARICOM Secretariat, Guyana	Completed project The EU-funded CRECS sought to build the human capital in the Caribbean as it relates to RE initiatives. Key achievement/results areas included strengthened institutional capacity to support RE and to address barriers to RE deployment. Under the project, draft model regional electricity & energy supply legislations and supporting regulations with RE focus were developed for some CARICOM Member States. Also, the Project provided support to UWI for the development of graduate-level RE programmes.	As a follow-up to CRECS, the BRIDGE Project and other similar regional capacity building programmes, a review should be undertaken to define the country and sector-specific energy-related capacity needs in order to properly identify priority training areas (in terms of focus areas, level and type of training etc.) for the region.
Climate Change Resilience in the Energy Sector - Gap Matrix		
Activity / Institution	**Details**	**Gaps / Remarks**
Support for CARILEC's Climate Change Adaptation & Sustainable Energy Programming / Implemented by CARILEC, St. Lucia	Ongoing project This IDB-funded operation will support CARILEC in the development and implementation of (I) climate change adaptation strategies for its electric utilities; and (ii) strategies for optimizing generation, transmission and distribution with increased RE penetration and reduction of operational losses of its members. Components include the development of: climate change adaptation action plans and strategies; strategies for supply–side energy management; and strategies for demand-side energy management.	Possible collaborations with CCREEE include leveraging financial support for implementation of investment opportunities identified under the project.
Low Carbon Development Path Promoting Energy Efficient Lighting and Solar Photovoltaic Technologies / Implemented by Environmental Coordinating Unit, Dominica	Approved project This project (funded by GEF, through UNDP) focuses on the removal of policy, technical and financial barriers to energy-efficient applications (e.g. lighting, air conditioning, EE appliances) and solar photovoltaic technologies in Dominica's streets, outdoor areas and public buildings nationwide (initially targeting up to 5 communities including Cubic, Boeotia, Roseau, Portsmouth, for further scale up)	The outputs of this and similar projects should be reviewed with a view to properly identify gaps, facilitate Caribbean-wide replication and increased and sustainable introduction of EE and EC initiatives.
Promoting access to clean energy services in Saint Vincent/ Executed by Energy Unit of the Ministry of National Security; MOWHE, VINLEC, St. Vincent and the Grenadines.	Approved project This initiative, funded by GEF, though UNDP, focuses on the reduction of GHG emissions from fossil fuel-based power generation by exploiting the renewable energy resources for electricity generation in St. Vincent and the Grenadines	The use of RE as a climate change resilience measure should always be supported by efficiency improvements. The Centre could assist with the development of guidelines and best practices for mainstreaming EE and RE initiatives within electric utility operations.

Sustainable Pathways - Protected Areas and Renewable Energy/ Executed by Environment Division, Ministry of Agriculture, Lands, Housing and the Environment, Antigua and Barbuda	Approved project The main objective of this initiative (funded by GEF, through UNEP) is to enhance financing and management of protected areas through innovations in renewable energy capacity and arrangements. Expected outcomes include: business plan development for protected areas; financial and technical assessments of proposed RE intervention (such as 10-20 MW wind project), including grid integration studies; Capacity building on grid interconnection and control and pilot installations.	Protected areas tend to play a crucial role in preserving biodiversity and protecting ecosystems, which is critical under climate change scenarios. The use of RE innovations to assist with preserving protected areas, while contributing to national development, is key in developing countries. The Centre could assist with technical assistance and investment promotion for such initiatives. The centre should also assist in establishing standard procedures to mainstream the protection of biodiversity into project planning.
Energy Efficiency - Gap Matrix		
Activity / Institution	**Details**	**Gaps / Remarks**
Biogases Cogeneration/ Implemented by Guyana Sugar Corporation	Ongoing Project The aim of this World Bank -financed Guyana Biogases Cogeneration Project is to efficiently utilize the biogases by-product of the new Skeldon sugar factory in generating electricity for internal use as well as for sale to the national grid. The project will displace the use of light fuel oil in diesel engine driven generators operated by the Guyana Power and Light Company (GPL), the national utility, in the Berbice region. The cogeneration plant will use bagasse from the sugar factory during the cane crop seasons, and will be equipped with diesel generating capacity for co-firing fuel oil during off-crop periods when bagasse stocks have been exhausted.	There is potential for replicating the project (bearing in mind successes, lessons learnt etc.) in other sugar-producing areas/countries so that sugar factories can improve efficiencies, while providing electricity to the national grid.
The Eastern Caribbean Energy Labelling Project (ECELP)/ Implemented by OECS and CREDP- GIZ	Completed Project The project, financed by the EU, German Government and OECS, assisted the national bureaux of standards in the six independent OECS countries to test the energy efficiency of refrigerators and the durability of energy saving light bulbs. The project sought to increase energy efficiency in the OECS region by introducing energy efficiency labels and standards for electrical household appliances and lighting equipment and promoting the use of energy-efficient products. The introduction of energy labelling standards for household appliances was prepared and will be implemented by the national governments in the next phase.	As countries continue to embrace EE and RE, there is increased need for standards for RE and EE-related equipment and procedures to ensure the regional use of high quality equipment and the adoption of international best practices. This could be a potential focus area for CCREEE.

Improving Energy Efficiency in the Social Housing Sector/ Executed by Ministry of Energy and Energy Affairs, Ministry of Housing and Urban Development, Housing Development Corporation, Trinidad and Tobago Bureau of Standards and T&T Green Building Council	Approved project This initiative funded by GEF, through IADB, focuses on reducing energy consumption in the social housing sector by promotion of improved architectural designs, use of passive building elements and application of energy efficient equipment. Project components include: Residential sector analysis and savings potential identification; Development of a regulatory framework as well as capacity building to support energy efficient housing; Demonstration of energy-efficient housing constructions as well as energy-efficient refurbishment of existing dwellings; and Financial and market-based mechanisms strategy for scaling up EE measures and RE.	The development, use and application of energy efficiency, through measures such as energy efficiency building codes, will form a key part of energy security and climate change response strategies. The Centre could build on previous/current initiatives and assist with the standardization of relevant programmes (e.g., “energy efficiency in buildings”) for the region.
Deployment of Renewable Energy and Improvement of Energy Efficiency in the Public Sector/ Executed by Petroleum Corporation of Jamaica, with support from Ministry of Science Technology, Energy and Mining, Jamaica	Approved project This initiative, funded by GEF, through UNDP, proposes to advance a low carbon development path and reduce Jamaica’s public sector energy bill through the introduction of renewable energy (RE) and improvement in energy efficiency (EE) in the health sector.	As a part of energy security measures, individual countries will need to consider and address energy usage by specific sectors and introduce RE and EE measures, where required. The Centre could build on this project and others such as CHENACT that focus on introducing sector-specific efficiency improvements.
LGGE Promoting Energy Efficiency and Renewable Energy in Buildings in Jamaica/ Executed by: University of the West Indies, in corporation with the Petroleum Corporation of Jamaica/Ministry of Energy), the Scientific Research Council of Jamaica, the University of Technology, the National Housing Trust, and the Private Sector Organization	Approved project The main objective of this initiative (funded by GEF, though UNEP) is to increase EE and the use of RE in the building sector in Jamaica thus reducing energy consumption and GHG emissions. This objective will be achieved by: Identification of new design parameters; identification, assessment, planning and development of zero net energy building system, sub-systems and component technologies; Design and construction of a prototype ‘smart’ zero net energy building that will supply its own energy (electricity and gas), operate its own waste treatment facility, and be built to survive hurricane conditions; and Designing and installing of components for the zero net energy prototype building.	The Caribbean region is vulnerable to energy and climate-related shocks. The development of climate smart and climate resilient buildings should play a key role in the future advancement of the Caribbean region.

Eastern Caribbean Geothermal Development Project/ Executing Agencies: OAS and AFD	Completed project This GEF-funded project focused on the implementation of the regional strategy that will create the conditions for successful deployment of commercially viable geothermal power production and overcome the barriers to the development of geothermal power in Dominica, St. Lucia and St. Kitts & Nevis. Components include: Resource characterization; Improving financial viability via the establishment of a Risk Reduction Financial Tool for lowering the geothermal risk; and Institutional Strengthening and Capacity Building activities.	Several countries have been in the process of developing geothermal projects. The CCREEE could build on this and other related initiatives, in order to support sustainable exploitation of the geothermal resource in the Caribbean.
Energy Policy/ Legislation/ Regulation - Gap Matrix		
Activity / Institution	**Details**	**Gaps / Remarks**
Rebuilding Energy Infrastructure and Access Project/ Implemented by Government of Haiti	Ongoing Project The objectives of this World Bank-funded project are to: (a) strengthen Haiti's energy policy and planning capacity; (b) improve the sustainability and resilience of Haiti's electricity sector and restore and expand access to reliable electricity services; and (c) provide financial assistance in case of an energy sector emergency.	The CCREEE could assist with identification of needed initiatives for improving the Haitian energy sector and also leveraging financial support for the sector.
Frameworks, Policies and Instruments for mobilising renewable energy in the Caribbean/ Implemented by Caribbean Policy Research Institute	Ongoing project This EU-funded project aims to improve policy conditions for private sector driven investment in renewable energy (RE) sector in the Caribbean with a view to improving the energy security and sustainability in the region, energy access in rural areas, and economic growth. The project will include the analysis and evaluation of existing challenges in mobilising private sector investment in RE in six Caribbean countries and give input to assist the advancement of frameworks, policies and instruments for tackling these. Outputs of the project include a cost-benefit analysis tool to enable policy-makers to evaluate the potential benefits of RE.	This initiative can be adapted and replicated for other Caribbean islands, while taking into account successes, outputs and lessons learnt from similar initiatives.
Sustainable Energy for Trinidad and Tobago (T&T) -TT-L1023/ Implemented by the Ministry of Finance, Trinidad and Tobago	Completed Project The general objective of this IDB-financed loan operation is to support the transition of T&T to a more efficient, sustainable and clean energy matrix. The Program will: (i) strengthen the regulatory and legal framework to contribute to a more sustainable energy sector (focus on RE) with increased efficiency, transparency and accountability; (ii) support the preparation of new policy and legislation for EE; (iii) support environmental sustainability of alternative energy fuels in the energy matrix; (iv) promote efficient and rational production and use of fossil fuels; and (v) strengthen institutional capabilities for sustainable energy and public education awareness.	The CCREEE could assist with identifying financing for developing similar programmes for other Caribbean islands.

Support to the preparation of the Sustainable Energy Program	Ongoing project This IDB-funded initiative will support the preparation and development of TT-L1023 (see above). It will specifically: (i) support the preparation and development of the programmatic policy based loan for the Sustainable Energy Program; (ii) provide technical assistance to the Government of Trinidad and Tobago in the area of Energy Efficiency; and (iii) explore alternatives for Renewable Energy together with the funding of specific Renewable Energy pilot projects.	The CCREEE could assist with developing similar programmes for other Caribbean islands.
Investment and Business Promotion		
Activity / Institution	**Details**	**Gaps / Remarks**
Sustainable Energy Framework for Barbados (SEFB)/ Implemented by the Government of Barbados (GoB)	Completed Project The specific objectives of this Technical Cooperation (TC) are: (i) support the preparation of the SEFB;(ii) provide technical assistance to the GoB to achieve EE in public buildings, residential sector and Small and Medium Enterprises (SMEs); (iii) explore alternatives for RE; (iv) provide technical assistance in the preparation of a bioenergy (BE) program for Barbados; and (v) provide an adequate plan for institutional strengthening in the areas of EE, RE, BE, carbon finance and dissemination of findings. The TC was complemented and processed in parallel with a US$1,000,000 GEF operation that was established to finance pilot projects for EE and RE under components of this TC.	There have not been many bioenergy -elated initiatives within the Caribbean. The Centre could build on the successes and lessons learnt for this, and other similar projects, to develop and implement bioenergy strategies and action plans for the region.
Sustainable Energy Investment Program	Ongoing project The objective of The objective of this project is to facilitate the increasing use of RE and implementation of EE measures through the creation of the Smart Fund, a package of economic instruments, that will facilitate funding for investments in RE and EE. Ultimately the project will help reduce Barbados' fossil fuel dependency, promote sustainable energy and therefore contribute to the country's competiveness. The program will have one component with two subcomponents: Subcomponent 1: Encouraging EE appliances and measures and Subcomponent 2: Encouraging RE technologies	The limited access to competitive financing has been one of the barriers to EE and RE deployment in the region. The CCREEE can assist with leveraging financing for such initiatives.

Support for Sustainable Energy Framework For Barbados (SEFB) II	Completed Project The general objective of this second energy sector Policy-Based Programmatic Loan (2nd Energy PBP) is to reduce Barbados' dependency on fossil fuels by diversifying the country's energy matrix and promoting sustainable energy. The specific objectives are to: (i) support the formulation of policy and legislation that will contribute to the promotion of RE, EE and EC, and rational and efficient use of fossil fuels, and as a consequence, promote the mitigation of GHG emissions as well as initiatives for adaptation to climate change in the energy sector; and (ii) support institutional strengthening, public education and awareness and capacity building to promote sustainable energy and EC initiatives.	An enabling framework for EE and RE development will be critical to achieving energy security goals. In trying to replicate this and/or similar initiatives on a Caribbean-wide basis, the silo/isolated development of RE and EE will need to be replaced by collaborative and integrative approaches.
Public Sector Smart Energy (PSSE) Program	Ongoing Project The objective of this Program is to promote and implement the use of RE and EE measures through the creation of the Public Sector Smart Energy (PSSE) Program. Ultimately, the project will help to reduce Barbados' fossil fuel dependency, promote sustainable energy and therefore contribute to the country's competitiveness. The specific objectives of the Program are to: (i) install RE systems in government buildings in the Program and retrofit these buildings and public lights with EE technologies; (ii) implement the RE pilot project and studies; and (iii) assist with capacity building, institutional strengthening and public awareness in the energy sector.	Energy efficiency improvements within the public sector are key particularly in the face of fiscal constraints. The Centre could assist with streamlining such programmes for countries within the region.
Establishment of an Energy Efficiency Fund/	Completed Project This IDB-funded initiative sought to effectively contribute to the reduction of Jamaica's energy intensity by encouraging alternative and renewable energy applications and research, and efficient use of energy by households, institutional and industrial users as well as to seek to restructure the energy mix from its current high level of dependence on imported fuel sources.	The outputs of this, and related projects, should be reviewed prior to implementing similar initiatives.
Energy Efficiency and Conservation Technical Assistance/ Executing Agency: Ministry of Energy and Mining, Jamaica	Completed Project The objective of the Program was to support the Government of Jamaica in its efforts to improve EE and provide technical assistance to prepare a potential EE loan program. The project components included: Evaluation of Energy Consumption Patterns for Public Sector Buildings; Cost Assessment of Public Sector Energy Consumption; Cost/Benefit Analysis of Retrofitting Buildings and Public Sector Energy Demand with EE Equipment; Investment Plan for EE equipment installation; and ESCOs ToR.	There is a need for greater coordination of initiatives within individual countries and within the region. The CCREEE could possibly contribute to current coordination efforts (at national and regional levels) so as to maximize the benefits to individual countries and the region.

Wind and Solar Development Program/ Executing Agency: Wigton Windfarm Limited	Completed Project The general objective of this Program is to improve and promote the use renewable energy resources in Jamaica by undertaking wind and solar developmental studies. The specific objectives of the Program are to: (i) undertake wind resource assessments of potential wind sites in Jamaica to facilitate the development of additional wind energy installations in Jamaica; (ii) assess the design and reliability of the current Volt-Ampere Reactive (VAR) power system of the Wigton Windfarm; and (iii) conduct a feasibility study for a proposed residential solar power generation facility.	Detailed resource assessments are needed to support the implementation of EE and RE projects. Through the Centre, technical assistance and financing could be providing for accurately assessing the RE resources within the region.
Support to Promote Energy Efficiency, Energy Conservation and Sustainable Energy/ Executing Agency: Development Bank of Jamaica (DBJ)	Completed Project The general objective of this IDB-funded Program is to facilitate the use of EE practices and technologies in Jamaica. The specific objective of the Program is to support the operation of the DBJ's Energy Fund (EF), by demonstrating the benefits of EE measures within Small and Medium-sized Enterprises (SMEs) in Jamaica. The project components include: Assessment of the demand for investments in EE and conservation measures by SMEs in Jamaica; Development of a training program for energy auditors/managers; Development and implementation of an integrated demonstration program to highlight benefits of EE and conservation strategies within the SMEs sector	Low-cost financing is essential to the success of the EE and RE sector. There have been previous cases in which the low-interest financing benefits were not transferred to potential borrowers because of institutional arrangements. CCREEE could provide guidance to donors and national governments on how to avoid/reduce the possibility of such happenings.
Energy Efficiency and Conservation Programme/ Executing Agency: Cabinet Office, Government of Jamaica (GoJ)	Ongoing project The EE Loan Program will provide substantial savings to the GoJ through the installation of highly-efficient EE and energy conservation (EC) equipment in public sector buildings. The general objective is to enhance Jamaica's EE and conservation potential through the design and implementation of cost savings in EE and EC measures in the public sector. The Program will: (i) strengthen the institutional capacities of the Energy Ministry for implementing EE and EC measures; (ii) invest in EE and EC measures in the public sector; and (iii) increase awareness and knowledge among key public and private stakeholders, together with demand-side management support.	There is potential for replication once an assessment of this and comparable initiatives has been completed.
Jamaica Energy Security and Efficiency Enhancement Project/ Executing Agency: Ministry of Science, Technology, Energy and Mining, Jamaica	Ongoing project The objective of this World Bank-funded Project is to increase EE and security through the implementation of the Jamaica's national energy policy. There are three components to the project. The first component of the project is strengthening the regulatory and institutional framework to improve sector performance, increase private investment and transition to cleaner fuels. The second component of the project is developing energy efficiency and renewable energy potential. The project will include grid impact studies and feasibility studies for hydropower projects and investment promotion of such projects.	As countries continue to embrace RE, it is crucial that they are able to qualify/quantify any potential impacts of RE on the electricity grid. As such, studies such as grid impact assessments could form a part of the technical assistance activities of the Centre.

Sustainable Energy Program for Guyana/ Executing Agency: Office of the Prime Minister (OPM), Guyana	Ongoing Project The main objective of this IDB/GEF project is to improve institutional capacities of the Public Utility and OPM, through the training of said institutions' staff and promotion of the use of nonconventional RE Technologies (RETs) in the urban areas and the Hinterlands. Projects components include: Strengthening of the policy and institutional framework to implement RETs in Guyana; Strengthening of the Power Utility capabilities to improve electricity supply and promote the use of RETs; and Contribution to sector sustainability with the implementation of cost-effective RETs for on-grid and off-grid electricity generation, through the implementation of select pilot projects.	The implementation of such projects should be supported by the appropriate policies, regulations and guidelines, for example, those related net-metering, net-billing, wheeling and RE interconnection procedures. As part of its mandate, CCREEE should support the development and acceptance of such policies/legislation/guidelines etc.
Amaila Falls Hydroelectric Project Preparation Studies	Ongoing project The Technical Cooperation is intended to partially cover the project preparation costs of the Amaila Falls Hydroelectric Project (a 154 MW hydroelectric power plant and associated infrastructure). The studies partially financed by this Technical Cooperation include: i) the Environmental and Social Impact Assessment, ii) the Hydrology Review and iii) the Off-Taker and Market Assessment.	There is potential for replication for other proposed RE developments (wind, hydro, solar farms etc.) regionally.
Expanding Bioenergy Opportunities in Guyana, Executing Agency: Guyana Agro-energy Board	Completed project The specific objectives of this IDB-funded Program are: (i) improving the capacity of the GOG to identify and evaluate viable investment opportunities in the bioenergy production chain; (ii) develop a financial vehicle or instrument to promote investment opportunities and develop a strategy to harness Guyana's potential for bioenergy production; (iii) increase capacity building and the transfer of technology in order to build a critical mass of bioenergy technicians, operators, and demonstration Programs; and (iv) institutional strengthening to support Agro-energy Policy of Guyana; support for small scale bioenergy demonstration Programs and dissemination of results.	Guyana has vast and unoccupied land areas. CCREEE could examine the potential of sustainable bioenergy programmes in one country that could be used to support bioenergy targets in another.
Sustainable Energy for the Eastern Caribbean (SEEC) Program	Planned project (in preparation stage) The objective of the project is to support the sustainable energy policies for the countries of the Eastern Caribbean. The total cost of the project is estimated at US$ 47 million. IDB is expected to finance US$ 7 million through a Grant.	CCREEE could support activities under this project.

Small Island Developing States (SIDS) Sustainable Energy Initiative - SIDS DOCK/	Ongoing project The SIDS DOCK is an initiative that aims to support Small Island Developing States (SIDS) to transition to low carbon economies through development and deployment of renewable energy (RE) resources and promotion of greater energy efficiency (EE). SIDS DOCK development is being jointly coordinated by the Caribbean Community Climate Change Centre (5Cs) and the Secretariat of the Pacific Regional Environment Programme (SPREP), with oversight from a Steering Committee comprised primarily of AOSIS Ambassadors to the United Nations and technical experts. The ultimate goal of SIDS DOCK is to increase energy efficiency by 25 percent (2005 baseline) and to generate a minimum of 50 percent of electric power from renewable sources and a 20-30 percent decrease in conventional transportation fuel use by 2033, some SIDS have announced more ambitious goals.	The Steering Committee of SIDS DOCK requested UNIDO to support in the establishment of regional sustainable energy centres for SIDS in the Pacific, Caribbean, Africa and the Indian Ocean in 2013. SIDS DOCK pledged support for the establishment of CCREEE. In March 2014 a MOU between SIDS DOCK, UNIDO and the Austrian Government was signed.
Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS)/ Implemented by CARICOM Secretariat, Guyana	Ongoing Project C-SERMS, being developed as a regional level sustainable energy planning, management and implementation framework, is aimed at radically changing the approach to sustainable energy development in CARICOM by facilitating the region to establish targets over short, medium and long term horizons and to develop strategies to achieve these targets based on national plans as well as collective approaches while ensuring dynamic participation of all Member States and stakeholders. The development and implementation of C-SERMS is being done in phases. The 1st phase is being funded by the IDB (US$400,000). Initial outputs from the first phase, in the form of Regional Targets for renewable energy generation over short, Medium and long terms, were approved by CARICOM Energy Ministers.	It is proposed that CCREEE provide technical support to CARICOM and its Energy Unit and member states in the implementation of C-SERMS.
Sustainable Energy Technical Assistance (SETA) / Implemented by OECS, St. Lucia	Ongoing Project The general objective of the CDB-funded SETA project is "to provide the guiding framework and create an enabling environment to support the efficient and sustainable production and use of energy in the Member Countries of the OECS". Specifically, SETA activities are delivering: (i) an OECS Sub-Regional Energy Efficiency Strategy complemented by National Energy Efficiency Strategies and Action Plans as part of an overall cost reduction programme; (ii) model legislation including regulations and rules for energy management in the OECS within the context of the OECS Economic Union that foster the implementation of initiatives for the efficient and sustainable production and utilization of energy; and (iii) a public education and awareness programme.	The Centre is expected to build-on/ expand the work conducted under projects as SETA, CSEP, CREDP and ECERA, after identifying synergies and priority intervention areas.

Caribbean Hotel Energy Efficiency Action Program (CHENACT)/ Implemented by Caribbean Tourism Organization	Completed project CHENACT is an Energy Efficiency project financed by: IDB, GTZ, CDE, UNEP, BL&P and Government of Barbados. The Objective is to improve the competitiveness of small and medium sized hotels (<400 rooms) in the Caribbean Region through improved use of energy, with the emphasis on Renewable Energy and Micro-Generation. Under the project detailed energy audits were conducted in hotels in Barbados, OECS and the greater Caribbean region.	This project could be expanded to include additional hotels. A similar initiative could be reproduced for other sectors.
Caribbean Renewable Energy Development Programme (CREDP)/ Implemented by the consortium of Projekt-Consult GmbH, Germany and Entec AG, Switzerland	Ongoing Project The overall goal of CREDP is to remove barriers for the use of RE and application of EE measures in the Caribbean. Through specific actions CREDP seeks to overcome policy, finance, capacity and awareness barriers. The project activities concentrate on: strengthening of regional energy sector institutions; government advisory with regards to RE and EE policies; preparation of RE and EE projects for investment decisions; and capacity building activities and public awareness campaigns. Conducted activities include: energy policy development; assessments for hydropower and wind projects and completion of energy audits in several countries; and development and introduction of PV courses and other capacity building programmes. CREDP is funded byThe German Federal Ministry for Economic Cooperation and Development.	CREDP is expected to terminate in the end of 2014. However, there is a significant pipeline of projects, identified as a part of CREDP, which should be included within CCREEE's investment and business promotion activities. CREDP has also accumulated many lessons learned throughout its implementation that would be useful when planning CCREEE's activities.
Caribbean Sustainable Energy Program (CSEP)/ Implemented by Energy and Climate Change Mitigation Section, OAS Department of Sustainable Development (Lead Implementer)	Completed project The primary objective of CSEP was to facilitate the adoption of energy policies and legislation that address the market conditions for the development and use of renewable energy sources and energy efficiency systems by mitigating current barriers to the use of such sources and systems in the seven project participant countries. Project outcomes include national energy policies, national energy plans, geothermal resource development bill, SE teaching/learning resources, financiers' guide for SE lending and EE guidelines for buildings.	Further to the development of energy policies, there is a need to follow through with supporting legislation, regulation and guidelines within many countries. This could be a proposed focus area for CCREEE.
Renewable Energy and Energy Efficiency Partnership	Ongoing project The Renewable Energy and Energy Efficiency Partnership (REEEP) is a market catalyst for clean energy in developing countries and emerging markets. In this role, it acts as a funder, information provider and connector for up-scaling clean energy business models. One of the initiatives funded under REEEP is "Innovative Financing for Solar Water Heating (SWH)". Activities included: Developing a model business plan for Caribbean SWH fee-for-service operations; and Building knowledge about possibilities for carbon finance in Caribbean utility SWH programmes.	There is potential for building on the Barbados SWH programme and this REEEP funded initiative in order to increase SWH usage within the region. This could form a part of the operational scope for the Centre.

Renewable Energy and Energy Efficiency Technical Assistance (REETA)	Ongoing project The REETA project is a four year project designed to support the institutional structure for the promotion of RE and EE in the Caribbean. The project is being sponsored by the German Government and the political counterpart of the project is the Energy Unit of the CARICOM Secretariat. The project is based on the achievements of CREDP, but will have a stronger focus on, capacity development, energy efficiency and energy consumer needs. The Project will explore the use of solar energy, wind power, bio-energy, and hydropower for energy cost savings in many areas including for businesses and households. It will also seek to build capacity in the private sector for implementing RE and energy saving measures, and will also support the CARICOM Energy Programme and Regional organizations involved in sustainable energy development.	It is expected that there will be significant coordination between REETA and the Centre, especially as it relates to investment promotion and the development and implementation of pilot projects.
Caribbean Climate Innovation Centre/ Implemented by Scientific Research Council, Jamaica and Caribbean Industrial Research Institute (CARIRI), Trinidad and Tobago	Ongoing project The objective of the Caribbean Climate Innovation Centre (CCIC) is to establish regional institutional capacity that will support Caribbean entrepreneurs and new ventures involved in developing locally-appropriate solutions to climate change mitigation and adaptation. Through its programs, activities and financing, the Caribbean CIC and its network of partners and stakeholders will provide a regionally-driven approach to solving climate, energy and resource challenges and support economic development through job creation. The program will provide targeted support, mentoring, training and funding facilitation to up to 80 companies in the region.	Such programmes are needed in order to spur innovation within the RE and EE sector. CCREEE could assist with investment and promotional activities for the most promising initiatives
Energy and Climate Partnership of the Americas (ECPA) Caribbean Initiative	Completed project The Organization of American States' with a grant from the U.S. Department of State launched a program (2010-2013) to facilitate regional dialogue and assist Caribbean governments to promote and implement sustainable energy policies and programs. Through this program, short term legal counsel and technical assistance was provided to support commercialization of government endorsed energy projects consistent with ECPA's focus areas of renewable energy, energy efficiency, energy poverty, and infrastructure. Furthermore, the program facilitated regional dialogue on long-term sustainable energy solutions including supporting a dialogue on possible sub-sea electrical interconnections that could address long-term Caribbean energy security challenges.	Sub-sea electrical interconnections are expected to play a pivotal role in the future development of the Caribbean energy sector. The Centre's mandate should include assisting with investment promotion, capacity building, technical assistance and other requirements for sub-regional and regional interconnections.

Eastern Caribbean Energy Regulatory Authority (ECERA)/ Implemented by OECS	Ongoing Project The objective of ECERA, financed by a World Bank loan, is to establish and operationalize a regional approach to the development of the electricity sector in participating countries. There are two components to the project. The first component of the project is setting up the ECERA. The second component of the project is operationalizing ECERA. This includes day-to-day operations and specific core regulatory tasks, such as tariff and investment plan reviews and the definition of a regional licensing framework for electricity market participants with a particular focus on facilitating the integration of electricity production from renewable sources into the supply mix.	The Centre could support ECERA by providing technical assistance that would guide the development of relevant electricity sector regulation.
Project to Provide Electrification to Marginal and Depressed Rural and Peri-Urban Communities in Belize from Renewable Energy Sources Through Grid Extensions/ Implemented by Belize Electricity	Ongoing Project The objective of the project, funded under the ACP-EU Energy Facility Call for Proposals 2009-2010, is to provide a safe and reliable source of electricity to economically depressed areas that will promote an improved standard of living and additional income earning opportunities while also providing other benefits such as the removal of hazards and crime reduction in these areas. It is also expected that this initiative will contribute to enhancing the educational opportunities for school age children in these areas by providing a reliable source of energy for the provision of lighting in the completion of their study and take home assignments.	The Centre could support such initiatives through the provision of technical assistance, where required.
Developing an Energy Services Company (ESCO) industry in Jamaica/ Implemented by Ministry of Labour and Social Security	Ongoing Project This project, funded under the ACP-EU Energy Facility Call for Proposals 2009-2010, seeks to improve the overall quality of life of Jamaicans by creating the necessary support infrastructure for the development of an Energy Services Company (ESCO) industry that has the potential to create new businesses and new jobs, deliver savings in energy consumption and cost, and provide climate change mitigation through reduced carbon emissions. The savings can be delivered by the introduction of EE and RE solutions which can be packaged to meet the needs of both public and private sector organisations. There is also the potential for replicating the model through creative packaging of the services to community-based organizations for use in urban and rural communities.	There is significant need and potential for an ESCO industry within the Caribbean territories. The Centre should support/advance similar programmes for other countries.

Preparation of Geothermal Based Crossborder Electrical Interconnection in the Caribbean/ Implemented Government of Dominica	Completed Project The project sought to increase the access to affordable electricity on Dominica and nearby islands through the introduction of a low cost, renewable energy source. The objective of the project was to explore the opportunities for establishing a geothermal resource in the project area; including surface exploration, drilling of exploratory wells and preparation of a cross-border interconnection to the nearby islands. Furthermore, a Project Management Unit was established to oversee the process, hereunder oversee subcontracted studies and prepare the institutional framework (legal, regulatory, environmental and PPP contractual issues).	Geothermal developments in the region have been advanced through support from several partners. CCREEE should contribute towards providing the support for such initiatives to get to the commissioning stage.
Fostering Green Growth in Latin America and the Caribbean	Ongoing project The IDB and the Global Green Growth Forum (3GF, a partnership of the Governments of Denmark, the Republic of Korea, Mexico, China, Kenya, and Qatar) intend to foster green growth principles and operations in LAC, in particular to promote RE/EE in the region. Promotion activities in 2013 included a high-level forum to bring together high-level policy makers, project developers, and financiers to boost public-private partnerships for large-scale deployment of RE/EE.	Possible area to be supported by CCREEE.
Sustainable Energy Access for the Latin American and Caribbean Region/ Implemented by OLADE	Ongoing Project (2012-2017) This project supports the improved access to sustainable and affordable energy needed to promote economic growth in the Latin American and Caribbean (LAC) region, by improving capacities for energy planning and regulation across countries in the region, and facilitating the dissemination and implementation of corporate social responsibility principles in the energy sector. Results achieved as of March 2013 include: (i) strategies to promote the integration of regional energy markets were developed for the Caribbean and Central America; (ii) analyses of energy market structures and regulations were prepared for Colombia, Honduras, and Peru; and (iii) a workshop on clean energy development and climate change mitigation activities was held in Jamaica and attended by 58 representatives from 12 countries.	Project activities should be replicated within the Caribbean region, where feasible, following a review of similar projects in order to facilitate improved project processes and results.
Canadian Climate Fund for the Private Sector in the Americas/ Implemented by the Inter-American Development Bank	Ongoing Project (2012-2025) This initiative aims to support projects across Latin America and the Caribbean that are focused on renewable energy, energy efficiency, reducing greenhouse gas emissions, and that help countries to adapt to the adverse impacts of climate change.	Project activities should be replicated within the Caribbean region, where feasible, following a review of similar projects in order to facilitate improved project processes and results.

Energy for Sustainable Development in Caribbean Buildings	Approved This GEF-project sought to build capacity to reduce GHG emissions in the commercial and residential buildings including appliances, demonstrate technologies to achieve reductions of 20% of GHG emissions and put in place policies or programs to roll out these technologies to the marketplace.	Project activities should be replicated within the wider Caribbean region, where feasible, following a review of similar projects in order to facilitate improved project processes and results.
Global Renewable Energy Islands Network (GREIN)	Ongoing Project Established by IRENA, GREIN is a platform for pooling knowledge, sharing best practices, and seeking innovative solutions for accelerated uptake of clean and cost-effective renewable energy technologies on islands. The network is expected to help to achieve the aspirations expressed in the Barbados Declaration on Achieving Sustainable Energy for All in Small Island Developing States (SIDS) 2012, Outcomes of the Rio+20 Conference 2012. The information provided by GREIN is expected to of value not only to islands but also to virtual islands far from transmission grids, which share the burden of high costs for energy from distant sources which renewable energy may displace.	This could be a model for some of the Centre's activities.

B. REASONS FOR UNIDO ASSISTANCE

UNIDO is strategically placed to assist to establish the CCREEE for the following reasons:

1. The Global Network of Regional Sustainable Energy Centres (GN-SEC), a powerful global south-south multi-stakeholder partnership is coordinated by the UNIDO Energy and Climate Change Branch in partnership with various regional economic communities and organizations. The regional centres respond to the urgent need for enforced south-south cooperation and capacities to promote inclusive and sustainable energy industries and markets in developing and transformation countries in the post-2015 era. The centres enjoy high-level support by the Energy Ministers and respond to the individual needs of the respective national Governments. The regional centres play an instrumental role to empower local energy industries to take advantage of the growing renewable energy and energy efficiency market opportunities. The network comprises currently of the ECOWAS Centre for Renewable Energy and Energy Efficiency (www.ecreee.org), the East African Centre for Renewable Energy and Energy Efficiency (www.eacreee.org), the Southern African Centre for Renewable Energy and Energy Efficiency (SACREEE) and the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) for Arab States. The GN-SEC provides a common umbrella to promote south-south cooperation between the centres and regions.

2. UNIDO has established similar centres in the past that include the Centre for South-South Industrial Cooperation in India, the International Centre for Small Hydro Power in India; International Centre for Solar Energy in China; International Centre for Advanced Manufacturing Technology in India. In addition, UNIDO has also established a global network of Cleaner Production Centres, which has over 40 national offices. These centres have played an instrumental role in promoting specific technologies, services and concepts that support sustainable development. UNIDO in cooperation with UNEP is also managing the Climate Technology Centre and Network (CTCN). In the process, UNIDO has acquired a wealth of experiences that would be useful in the preparation and running of the CCREEE.

3. Given the energy challenges that the Caribbean face, UNIDO is better placed to make use of its global experiences to support the Centre to ensure its effectiveness and sustainability. In addition, UNIDO's involvement will bring international recognition to the Centre, which will be instrumental in mobilizing support from development partners. UNIDO currently chairs the UN-Energy and facilitator of two sub-clusters i.e. UN-Energy Cluster and Energy Efficiency cluster and will use this platform to mobilise support for the CCREEE.

4. Energy is central for promoting Inclusive and Sustainable Industrial Development (ISID). As such, UNIDO places high importance to the issue as demonstrated by its Strategic Long-term Vision Statement that states that in the long run, the focus of UNIDO activities in the thematic programme "Environment and Energy" should be to bring about fundamental changes in both product design and technology, which provide for resource sustainability. To support this vision, one of the steps foreseen is the shift from fossil-fuel based energy systems to the increased use of renewable energy and energy efficiency technologies and services. In fact, UNIDO has in place various strategies outlining its role in promoting renewable energy and energy efficiency technologies and services that include the Energy and Climate Strategy, Bioenergy Strategy; Renewable Energy Programme. In sum, the services to be provided by the CCREEE squarely fit into UNIDO's mandate.

C. Technical and Institutional Design of the Centre

C.1. Development goal and intermediate outcome of CCREEE

The CCREEE aims at the following development objective (long-term outcome):

Improved 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) by promoting renewable energy and energy efficiency investments, markets and industries in the Caribbean.

C.1.1 Alignment with regional and international policies and strategies

The CCREEE activities will contribute to and are fully aligned with:

- The objectives of the UN Sustainable Energy for All Initiative (SE4ALL). The initiative aims at the achievement of three interlinked targets by 2030: universal access to modern, affordable and reliable energy services; doubling the rate of improvement in energy efficiency; doubling the share of renewable energy in the global energy mix.
- The SIDS DOCK objectives to improve energy efficiency by 25 percent (2005 baseline), to increase the renewable energy share in power generation to a minimum of 50 percent and to reduce fuel use in conventional transportation by 20-30 percent by 2033.
- The goal of CARICOM's Energy Policy which aims at assuring access to affordable, adequate, safe and clean energy products necessary for the development of Member States.
- The CARICOM RE&EE targets which were approved in the 41st Special Meeting of COTED based on the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS): 20 percent renewable power capacity by 2017, 28 percent by 2022, and 47 percent by 2027; a 33 percent reduction in energy intensity by 2027; and power sector CO2 emission reductions of 18 percent by 2017, 32 percent by 2022, and 36 percent by 2027.

C.1.2 Scope of mandate of the Centre

Figure 17: Potential geographic focus of CCREEE

The **geographic scope of intervention of the Centre** is defined as follows. It:

- Supports and executes RE&EE activities and projects which cover one or more CARICOM Member States (Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname and Trinidad and Tobago). In the validation workshop on CCREEE it was agreed that also non-CARICOM Member States such as Cuba and the Dominican Republic or Caribbean territories can opt-in to become members of CCREEE (during the preparatory process or later). The Executive Board of CCREEE will decide on the membership (and the modalities) of new countries and/or territories.
- Focuses primarily on activities and projects with regional impact or national projects which demonstrate high potential for scaling-up or regional replication.
- **Works in urban and rural areas**. Due to the high relevance of decentralized RE&EE technologies and services for rural areas linked with the agricultural sector.

The Centre promotes the **following energy technologies/solutions**:

- All appropriate and sustainable renewable energy and energy efficiency technologies, including also partly renewable energy based hybrid systems and mini-grids. The centre will consider important cross-cutting issues such as mainstreaming of environmental assessments and standards in project planning and approval procedures, the energy-water-food nexus, gender mainstreaming, the decommissioning and recycling of RE&EE technologies (e.g. light bulbs, wind turbines).
- Geothermal due to the region's high potential to generate significant quantities of energy and the diverse obstacles Member States are facing to promote this resource
- Waste-to-energy solutions to mitigate the environmental issues caused by urban and agricultural wastes, especially in the island states
- Small and medium-scale hydro power projects usually with a maximum capacity of 30 MW.
- Biofuel projects which prove to be sustainable. In this context, CCREEE considers 2nd generation biofuels not competing with food crops for available land, complying with the following minimum criteria: lifecycle GHG reductions, including land use change, local added value, ecological and social standards.

Table 7: Scope of intervention and stakeholders

Geographic Focus[14]	CCREEE Stakeholders	Technical Focus
CARICOM Countries 1. Antigua and Barbuda 2. Bahamas 3. Barbados 4. Belize 5. Dominica 6. Grenada 7. Guyana 8. Haiti 9. Jamaica 10. Montserrat 11. Saint Kitts and Nevis 12. Saint Lucia 13. Saint Vincent and the Grenadines 14. Suriname 15. Trinidad and Tobago Opt-In Countries and Territories • Cuba • Dominican Republic • Other territories and countries	• Government institutions (ministries, electrification agencies, municipalities) • Private, public or public–private companies (e.g. SMEs, ESCOs, utilities) • Individual consultants and project developers • Universities, schools, research centres • NGOs and cooperatives • International organizations	**Renewable Energy:** • Renewable energy (multi-focus) • Biomass (e.g. improved stoves for cooking, power generation) • Biofuels (e.g. biodiesel, bioethanol) • Biogas • Waste-to-energy • Geothermal energy • Hydroelectric power (medium, small, micro, pico) • Solar photovoltaic (PV) (e.g. grid/off-grid, stand-alone systems, lighting, pumping, desalination) • Concentrated solar power • Solar thermal (water heating, cooling, process heat, solar cooking and drying) • Wind energy (e.g. off/on-grid, on- and off-shore, small and large, water pumping, desalination, etc.) • Wave, tidal and ocean thermal • Hybrid Mini-grids • Sustainable energy Storage (batteries, hydrogen) **Energy Efficiency:** • Sustainable transport • Efficient appliances

[14] focus can expand as decided by the CCREEE Executive Board

		• Energy efficiency in buildings • Cleaner production (industry, SMEs) • Efficient transmission and distribution • Energy conservation and management

C.2. Expected immediate outcomes of CCREEE

During the first operational phase the centre aims at results under five outcome areas (immediate outcomes). The Centre will implement, coordinate and support activities in the scope of the following:

Outcome 1: Enhanced regional institutional capacities through the creation of the efficiently managed and financially sustainable Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)

Outcome 2: Accelerated development, adoption and execution of regional and national gender sensitive RE&EE polices, targets and incentives through targeted regional interventions

Outcome 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

Outcome 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

Outcome 5: Increased RE&EE business opportunities for local companies and industry through the execution of regional investment promotion programs and tailored financial schemes

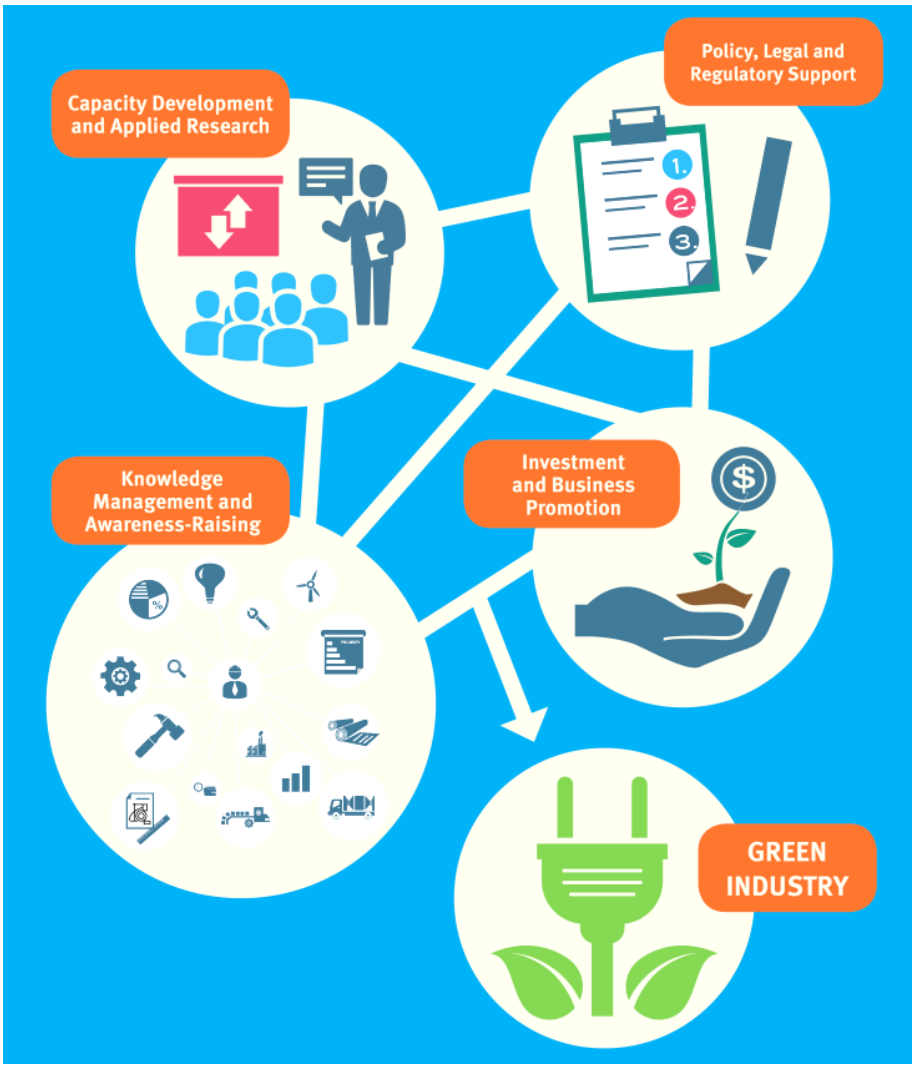
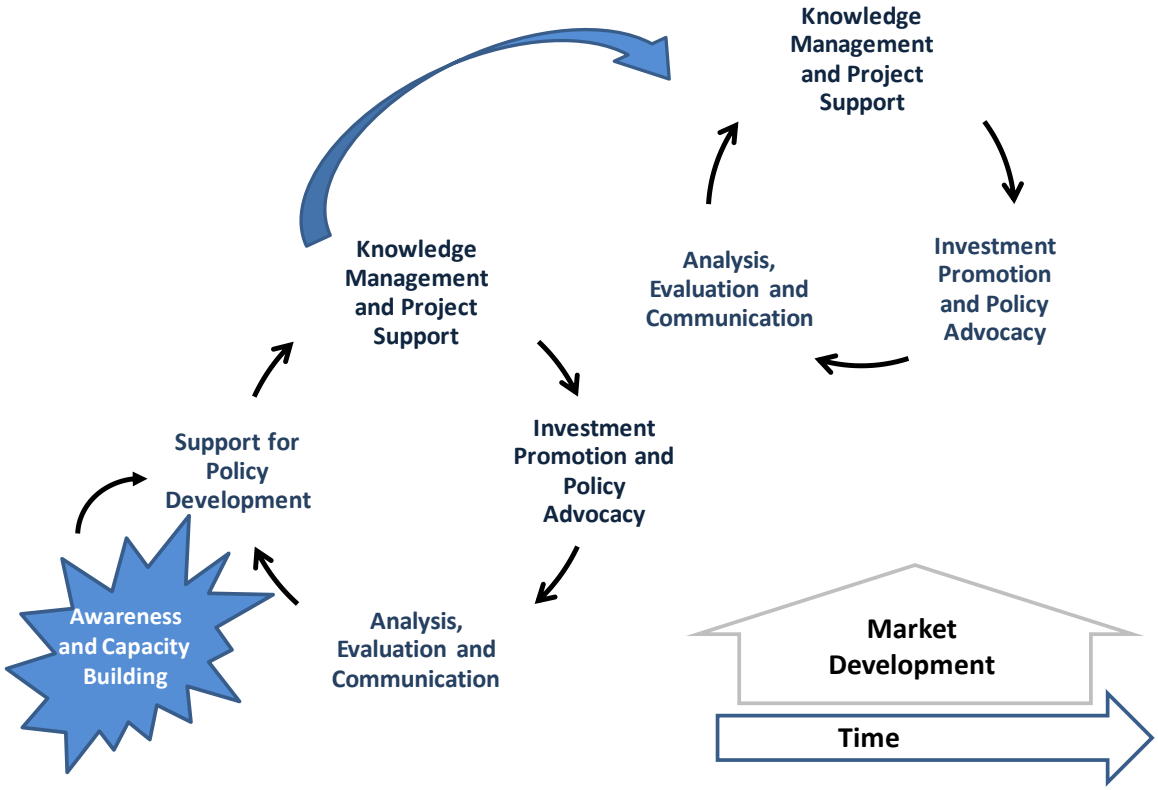


Figure 18: CCREEE promotes "soft" activities to enable hardware investments

The centre will **focus on activities which demonstrate high relevance for leveraging investments in RE&EE** infrastructure, services, local businesses and industry. Investment and business promotion will be an important activity component of the centre but also a cross-cutting issue across the other result areas (e.g. capacity development, policy). The figure below shows expected spill-over effects of the different interventions; for example awareness raising and capacity building can lead to positive developments in the area of policy implementation and investment promotion. To create a regional RE&EE market, it is crucial for CCREEE to stimulate as much as possible such spill-over effects across result areas and national borders.

Figure 19: RE&EE Market Creation through CCREEE



The institutional set-up of CCREEE reflects the principles of **maximising the impact, avoiding duplication of efforts, strengthening and up-scaling of already existing local capacities**. CCREEE will develop and **execute its activities through a network of Thematic Hubs (THs) and National Focal Institutions (NFIs)** among all CARICOM countries (incl. opt-in countries). The thematic hubs (for policy, investment, capacity development and knowledge management) and the NFIs will be nominated during the start-up phase of the centre. **The centre will be guided by an Executive Board (EB) and a Technical Committee (TC)** which will be established during the start-up phase. The centre will work on the basis of a long-term business plan and annual work plans.

CCREEE **complements and strengthens ongoing national/regional activities** in the areas of policy and capacity development, knowledge management and awareness raising, as well as investment and business promotion. CCREEE will position itself as a regional RE&EE promotion agency rather than an implementer on micro- and grass-root levels. To **maximize the local added value** the execution of specific assignments or services is in many cases delegated to national institutions and/or the private sector. Usually, the Centre performs only up to the level of programme/project development, fund raising, oversight, quality assurance as well as coordination, monitoring and evaluation of project/programme implementation.

Cooperation with a wide range of public/private and local/international stakeholders during implementation will maximize the local added value, north–south and south–south technology and know-how transfer to the Caribbean region. It also avoids duplication of effort and competition with

already existing national energy institutions and companies. Finally, the approach maximizes the impact and visibility of the small Centre in the region.

C.3. Outputs and activities of the Centre

The outputs and activities of the Centre (project) have been set aligning with the respective outcomes, as presented in the table below. The detailed result based management framework can be found in the annex of the document. However, at this stage, the corresponding activities are merely indicative. They will be detailed as soon the Centre is established. After its creation the Centre will apply an interrelated **short-term and long-term planning, implementation and monitoring framework**. After the creation of the Centre, the nominated Executive Director will develop the **CCREEE Business Plan** which will provide a long-term planning and implementation framework for the first operational phase. The **annual work plans,** which are subject to approval by the Board, provide a short-term planning framework which incorporates projects and activities to be executed by the Secretariat in a given year. The **annual status reports** monitor the implementation of the work plans and report on the achievements in the different project components.

C.3.1 Start-Up Phase

The following time schedule is proposed for the formal adoption of CCREEE as a CARICOM institution:

- Approval of CCREEE project document as a CARICOM Institution by the Council for Trade and Economic Development (COTED) November 2014/March 2015
- Launch of the Start-up Phase early 2015
- Selection of the host country of the centre
- Selection of the Executive Director of the centre

The Start-Up Phase of the Centre will be launched shortly after the approval of the project document by COTED. UNIDO will support the Secretariat from the very beginning. The Start-Up Phase will include the selection of the headquarters, the recruitment of the key staff (as indicated under the chapter CCREEE staff), the establishment of the office and the internal procedures. It will also include the official inauguration of the centre and the organization of the first Technical Committee and Executive Board meetings.

C.3.2 Output and activity matrix

Outcome 1. Enhanced regional institutional capacities through the creation of the efficiently managed and financially sustainable Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)	
Output 1.1 The host country of the Centre is decided and the Secretariat is physically established	
Outline Activities	**Responsibility**
1.1.1 Selection of the host country of the Secretariat of the Centre	CARICOM, SIDS DOCK, UNIDO
1.1.2 Establishment of a functional office with IT infrastructure	CARICOM, SIDS DOCK and host country, UNIDO
Output 1.2 The Executive Director and the technical and administrative staff are recruited and the internal procedures and regulations are implemented	
Outline Activities	**Responsibility**
1.2.1 Recruit the CCREEE Executive Director in accordance with the TORs	CARICOM, SIDS DOCK UNIDO
1.2.2 Recruit the administrative and technical staff in accordance with the organizational chart and established ToRs	CCREEE, SIDS DOCK, UNIDO
1.2.3 Establish and implement the internal procurement, staff, travel, financial and accounting rules in accordance with the host organisation guidelines, the organisational chart and TORs	CCREEE, CARICOM, UNIDO, SIDS DOCK
1.2.4 Establish an internal quality and appraisal framework for supported renewable energy and energy efficiency activities (incl. minimum standards for gender and environmental safeguards)	CCREEE, UNIDO, SIDS DOCK

Output 1.3 The institutional governance structure of the Centre is established and executed	
Outline Activities	**Responsibility**
1.3.1 Sign and implement an the host agreement of the centre	CARICOM, CCREEE, SIDS DOCK
1.3.2 Establish a network of National Focal Institutions (NFIs) and Thematic Hubs (THs) and develop their capacities	CCREEE
1.3.3 Organize the Executive Board and Technical Committee meetings as required	CCREEE, UNIDO, SIDS DOCK
Output 1.4 A long and short-term planning, implementation and monitoring framework of the Centre is established and implemented	
Outline Activities	**Responsibility**
1.4.1 Development of the CCREEE Business Plan (incl. strategic environmental assessment)	CCREEE, UNIDO, SIDS DOCK
1.4.2 Development and adoption of annual work plans, status reports and audited financial statements of the Centre in line with CARICOM/SIDS DOCK's rules	CCREEE, UNIDO, SIDS DOCK
1.4.3 Develop and implement a monitoring and evaluation system including indicators measuring the CCREEE progress and impact	CCREEE, UNIDO, SIDS DOCK
Output 1.5 The core activities and functions of CCREEE are implemented and sustainability of the organization is reached	
1.5.1 Organize the official inauguration of the Centre (back to back with the first EB and TC meetings)	CCREEE, UNIDO, SIDS DOCK
1.5.2 Secure sufficient funding for the technical program and administration of the centre to ensure financial sustainability of the centre throughout the first and second operational phase (e.g. signing of funding agreements)	CCREEE
1.5.3 Implement effectively through the signing of technical cooperation agreements with local (e.g. universities, institutions, training centres) and international partners (e.g. UNIDO, Austria, SIDS-DOCK, IADB, EU, IRENA, GIZ)	CCREEE
1.5.4 Develop at least 5 RE&EE program/project proposals (e.g. waste to energy) annually to be submitted for financing to local and international partners (at least 0.5 million EUR per project)	CCREEE

Outcome 2: Accelerated development, adoption and execution of regional and national gender sensitive RE&EE polices, targets and incentives through targeted regional interventions	
Output 2.1 Regional RE&EE targets and policies of CARICOM, SIDS DOCK and SE4ALL are under implementation on national levels	
Outline Activities	**Responsibility**
2.1.1 Assist member states in the development or reformulation of sustainable energy policies	CCREEE, CARICOM Energy Unit
2.1.2 Develop a regional framework for the development, implementation and monitoring of national RE&EE action plans	CCREEE, UNIDO
2.1.3 Assist member states in the development and implementation of their RE&EE action plans in line with C-SERMS, SE4ALL and SIDS DOCK objectives	CCREEE, UNIDO, Energy Unit
Output 2.2 Regionally agreed renewable energy equipment standards and labelling schemes for efficient appliances are developed and under implementation	
Outline Activities	**Responsibility**
2.2.1 Formulate regional standards and certification mechanisms making use of already existing efforts in the member states	CCREEE
2.2.2 Define procedures for certification of labelling and standards	CCREEE

Outcome 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	
Output 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	
Outline Activities	**Responsibility**
3.1.1 Undertake a regional capacity needs assessment (particularly reflecting the needs of local business and industry groups)	CCREEE
3.1.2 Develop a regional multi-year capacity development framework for key stakeholders in the RE&EE sector (particularly reflecting the needs of local business and industry groups)	CCREEE
3.1.3 Facilitate the adoption and implementation of the regional capacity development framework and mobilize support from various partners	CCREEE
Output 3.2 Regional certification and accreditation schemes for trainers and training institutions are developed, adopted and under implementation	
Outline Activities	**Responsibility**
3.2.1 Develop training competency standards, certification and accreditation schemes and models on RE&EE in coordination with local business and industry groups	CCREEE
3.2.2 Act as coordinative hub for the accreditation and certification of national training centres and trainers	CCREEE
3.2.3 Execution of regional train-the-trainer workshops	CCREEE, SIDS DOCK, UNIDO
Output 3.3 Key stakeholders are trained by the certified trainers on RE&EE aspects of high relevance for the local business and industry sector	
Outline Activities	**Responsibility**
3.3.1 Train key policy makers in sustainable energy policy planning and incentive mechanisms, including cross-cutting issues (e.g. waste-to-energy, mainstreaming of environmental assessments and standards in project approval procedures, energy-water-food nexus, gender mainstreaming, decommissioning and recycling procedures for RE&EE technologies)	CCREEE
3.3.2 Train utilities and regulators regarding RE integration/grid stability and energy efficiency (e.g. demand side management)	CCREEE
3.3.3 Provide targeted RE&EE business development training for clean-tech SMEs and entrepreneurs (e.g. energy auditors, equipment installers, RE service providers)	CCREEE
3.3.4 Increase the capacity of stakeholders to mainstream gender, environmental sustainability and climate resilience into RE&EE policies and projects	CCREEE
3.3.5 Increase the capacity of technical private-sector experts and start-ups to develop, install and maintain RE&EE projects and systems (including training on climate resilient energy infrastructure).	CCREEE
3.3.6 Train experts on the financial structuring, design and planning of RE&EE projects (e.g. climate finance, RETScreen, HOMER)	CCREEE
Output 3.4 Applied science research networks and technology transfer with high relevance for the local business and industry sector are promoted	
Outline Activities	**Responsibility**
3.4.1 Conduct a baseline study on the research priority needs of the Caribbean RE&EE industry and business sectors	CCREEE, UNIDO, SIDS DOCK
3.4.2 Create a regional incentive model for the establishment of regional research programmes with high relevance for the local industry	CCREEE
3.4.3 Promote south-south and north-south technology development partnerships	CCREEE

Outcome 4: The awareness and knowledge base of local key institutions and stakeholder groups on RE&EE are strengthened	
Output 4.1 An effective online RE&EE information management system addressing the needs of investors, private sector and industry	
Outline Activities	**Responsibility**
4.1.1 Maintain an effective interactive website including extensive document sharing facility (using existing platforms such as CEIS or www.CCREEE.org)	CCREEE
4.1.2 Compile an inventory of relevant experiences/projects and papers/study reports/research reports and documents on best practices, skills, know-how, knowledge, technology suppliers in the Caribbean (disseminated through the information system)	CCREEE
4.1.3 Create a database of RE&EE stakeholders, including governments, training institutes, industry and NGO's (to be disseminated through the information system)	CCREEE
4.1.4 Develop guidelines on energy data verification, quality and harmonisation in cooperation with the NFIs	CCREEE
4.1.5 Create a database of RE&EE standard investment opportunities for the region to facilitate matching available funds to real projects (particularly in alignment with the activities under outcome 5 and SIDS DOCK indicative project pipeline)	CCREEE
4.1.6 Produce and publish RE&EE resource atlas and facilitate resource mapping in the Caribbean (data to be disseminated through the information system)	CCREEE
4.1.7 Map existing sustainable energy projects including their key information (manufacturer, installer, status of operation, generated energy, etc.) and disseminate information through the information system	CCREEE
Output 4.2 Awareness and knowledge base of key stakeholder groups on various RE&EE aspects are strengthened	
Outline Activities	**Responsibility**
4.2.1 Organize at least one major annual conference on different RE&EE aspects	CCREEE, UNIDO, SIDS DOCK
4.2.2 Produce an RE&EE Industry report and regularly update it in cooperation with private sector groups	CCREEE, UNIDO, SIDS DOCK
4.2.3 Design and implement at least one regional RE&EE awareness campaign targeting the residential, commercial or industrial sectors	CCREEE

Outcome 5: Increased RE&EE business opportunities for local companies and industry through the execution of regional investment promotion programs and tailored financial schemes	
Output 5.1 Investments in RE&EE projects are promoted	
Outline Activities	**Responsibility**
5.1.1 Establish a user-friendly investment portal on the SIDS DOCK project pipeline for potential investors and financiers (to be published through the information system)	CCREEE
5.1.2 Organize annual investment and business forums (e.g. trade fare) to present the project pipeline to interested financiers and investors	CCREEE
5.1.3 Raise funding for the execution of the project pipeline and support the development of innovative projects addressing the energy needs of industrial key sectors in the Caribbean	CCREEE
5.1.4 Design and establish regional support schemes to support national institutions/banks to provide co-finance to small to medium scale projects (incl. rural off-grid projects)	CCREEE
Output 5.2 The local sustainable energy industry is strengthened	

Outline Activities	Responsibility
5.2.1 Undertake a baseline assessment and develop a strategy for the promotion of local sustainable energy industry and jobs	CCREEE
5.2.3 Design and operate a financing facility to support innovative local sustainable energy businesses and start-ups - execute two call for proposals (to be implemented in combination with activity 3.3.3)	CCREEE
5.2.3 Develop and execute a clean-tech program to promote RE&EE business innovations (including prize competition for the most innovative business idea)	CCREEE
5.2.4 Collect lessons learned and develop a manual for sustainable energy start-up companies (to be used in the trainings under output 3.3)	CCREEE

C.3.3 Provided services of the Centre

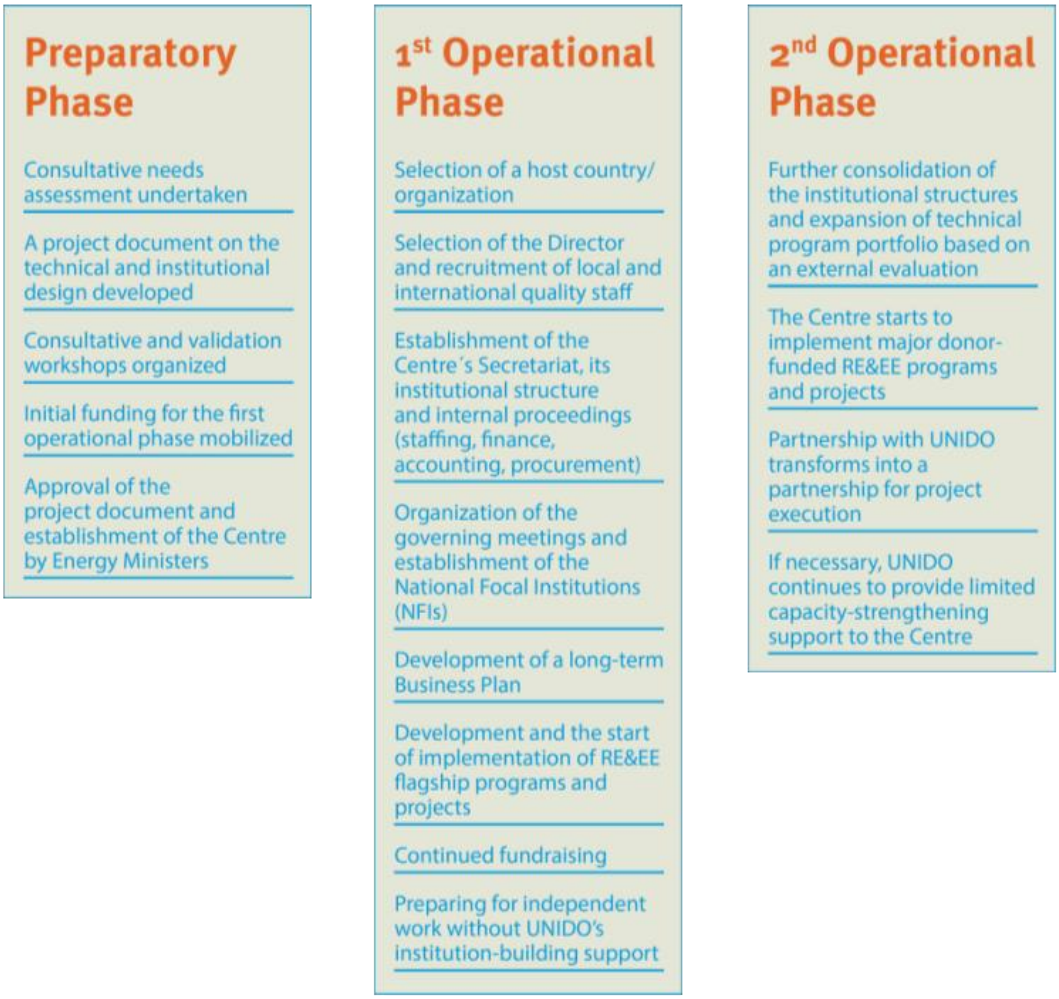
The centre will **provide the following services to different clients and target groups**:

- strengthen the CARICOM Energy Unit and OECS in technical coordination and implementation of sustainable energy issues and projects
- act as the regional Caribbean hub for the coordination of the Sustainable Energy For All Initiative (SE4ALL) in cooperation with IDB, SIDS DOCK and other donor activities
- act as facilitator to implement established regional sustainable energy targets of CARICOM/SIDS DOCK on national levels
- act as service provider to assist the Caribbean islands to implement their sustainable energy policy commitments in practice (e.g. laws, standards, incentive schemes)
- work closely with and strengthen already existing national energy institutions
- be a strong link between international climate finance and implementation on the ground
- act as think tank for sustainable energy issues in the Caribbean small islands
- act as editor of policy statements for CARICOM and the AOSIS
- act as provider of reliable RE&EE investment and market data
- promote the Caribbean region as attractive place to invest in sustainable energy
- act as implementer of regional awareness raising campaigns
- act as manager of call for proposals for sustainable energy projects and businesses
- support local businesses to take advantage of sustainable energy investment opportunities
- act as coordinator of regional train the trainer networks and applied research networks and projects
- act as executer of regional RE&EE programs, projects and activities in cooperation with international partners (e.g. UN, EU, donors, IRENA, GEF)
- participate in the Global Network of Sustainable Energy Centres (GNSEC) and coordinate closely with the other regional centres (e.g. ECREEE, SACREEE, EACREEE, CCREEE, PCREEE, RCREEE)
- act as promoter of south-south and north-south knowledge and technology transfer

C.4. The UNIDO approach

UNIDO provides key technical services for the establishment and operation of regional sustainable energy centres in partnership with regional economic communities/organizations. UNIDO´s support model is implemented in three phases: preparatory phase, first operational phase and second operational phase (see below and the attached brochure in the annex). This model has been successfully applied in other regional centres in the past.

Figure 20: UNIDO´s support model for regional centres implemented in three phases



The UNIDO and SIDS DOCK approach is guided by the following main quality principles:

- The comprehensive CCREEE preparatory process is demand-driven and participatory. Local and international key stakeholders are involved in the design phase from the very beginning.
- The support of UNIDO is directed to establish an effective regional sustainable energy centre with a strong Caribbean identity. It works in accordance with local rules, procedures and regulations (e.g. staff, financial, procurement, reporting and accounting).
- The ownership of the Caribbean islands (also expressed through CARICOM and SIDS DOCK) is considered to be a key success factor. This is also demonstrated by cash and in-kind co-funding contributions to the centre.
- The high-level approval and the incorporation of the CCREEE in the CARICOM decision making structure and SIDS DOCK network ensures alignment, sustainability, legitimacy of activities and visibility and acknowledgement on national, regional and international levels.
- The centre has a strong technical and action-oriented mandate and works client-oriented
- The centre has its own legal identity and delegated powers to sign contracts and execute recruitments and procurements
- The governance structure comprising an Executive Board (EB) and Technical Committee (TC) ensures transparency, accountability and contributes to donor confidence
- The involvement of the Network of National Focal Institutions (NFIs) and Thematic Hubs (THs) in the planning and implementation of the annual work plans ensures high impact and tailored responses to the needs of the countries. Duplication of efforts is avoided.
- The centre will keep its independence through partnerships with a broad range of local and international partners. It will try to diversify its donor base from the very beginning.

- The centre demonstrates strong fund raising abilities. Fund raising is a strong performance criteria for the Executive Director. Financial sustainability is reached through core funding, raised project funding and "fee for services".
- “Form follows function” - The centres starts with a small staff base at the beginning and can grow in accordance with mobilized funding, projects and needs.
- The centre employs highly qualified local and seconded international staff. The "twinning-model" which brings together local and international knowledge was successfully applied in other centres.
- At the beginning the centre will focus on establishing long-term flagship programs which demonstrate high visibility and impact in the Caribbean islands.
- The centre will establish an internal quality, appraisal and management framework for supported interventions and projects
- The strong base of the collaboration with the renewable energy associations of each country will bring the much needed private sector involvement to assure the industry focus, ownership, and sustainability.
- UNIDO’s technical institution building support has a clear exit strategy. In the optimum case it is time limited to the first operational phase. Then it will transform to a partnership for the implementation of specific projects and programs (e.g. EU, GEF).
- UNIDO will transfer its knowledge and experience gained from similar interventions and adopt the best practices and the success stories involved, namely, the RE&EE centres in Africa and the recent Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE).
- UNIDO will facilitate south-south cooperation between ECREEE, PCREEE and CCREEE under the umbrella of the Global Network of Regional Sustainable Energy Centres (GN-SEC).

C.4.1 Lessons learned from ECOWAS

The lessons learned and success factors concerning the establishment and first operational phase of the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) were considered in the design process of CCCREEE. These were mostly based on the external evaluation of the first phase of ECREEE in West Africa which were conducted by an external consultant. The former UNIDO technical expert which was based at the ECREEE Secretariat in Cape Verde, acts as project manager for the project and ensures the integration of the practical experiences, lessons learned and risk mitigation measures. The following table below gives an overview on the lessons learned and how they were applied in the design of CCCREEE:

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 workshops organised 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 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	Considerable co-funding contributions from Caribbean actors (host country, SIDS DOCK and to some extend 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 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

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.	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 organisational 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.
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 mobilisation 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.	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 mobilised 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.
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.	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.
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.	UNIDO technical staff is foreseen in the project document.
The quality of the local staff and a clear management and staff strategy are a key success factors; it is important to develop the organisational 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.	The development of the organisational chart will be part of the CCREEE business plan; The procedure to agree on TORs for the Director was included in the project document.
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	The proven ECREEE structure was adapted to the CCCREEE by considering the proposals Caribbean stakeholders.

administrative) and core donors in the governance structure.	
The definition of the legal status (e.g. specialised agency) and scope of delegation of competencies from the regional organization to the Centre (e.g. signing of contracts, recruitment, procurement) from 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.	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 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.
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.	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. 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.
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.	A procedure to involve the NFIs and national stakeholders stronger in the planning of the work plans was included.
Technical Program Aspects of the Centre	
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; 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).	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 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.
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;	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.
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	During the start-up process the centre will already aggressively start with the preparation and submission of project proposals to donor partners and international

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).	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 mobilise significant co-funding from different partners in only a short time. Through project funds the centre can expand its staff base.
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;	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.
Create informative website, inform regularly on updates and establish the newsletter cycle of the Centre; build up a contact database and make use of electronic social media features.	It was included as a priority activity in the start-up phase.
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 organisations 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.

C.5. Timeline of the activities

Activity	Year 0						Year 1												Year 2												Year 3											
	Months																																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Output 1.1 The host country of the Centre is decided and the Secretariat																																								
1.1.1 Selection of the host country of the Secretariat of the Centre																																								
1.1.2 Establishment of a functional office with IT infrastructure																																								
Output 1.2 The Executive Director and the technical and administrative sta																																								
1.2.1 Recruit the CCREEE Executive Director in accordance with the TORs																																								
1.2.2 Recruit the administrative and technical staff in accordance with the organizational																																								
1.2.3 Establish and implement the internal procurement, staff, travel, financial and																																								
1.2.4 Establish an internal quality and appraisal framework for supported renewable																																								
Output 1.3 The institutional governance structure of the Centre is established and executed																																								
1.3.1 Sign and implement an the host agreement of the centre																																								
and develop their capacities																																								
1.3.3 Organize the Executive Board and Technical Committee meetings as required																																								
Output 1.4 A long and short-term planning, implementation and monitoring																																								
1.4.1 Development of the CCREEE Business Plan (incl. strategic environmental assessmen																																								
1.4.2 Development and adoption of annual work plans, status reports and audited financia																																								
1.4.3 Develop and implement a monitoring and evaluation system including indicators mea																																								
Output 1.5 The core activities and functions of CCREEE are implemented a																																								
1.5.1 Organize the official inauguration of the Centre (back to back with the first EB and TC																																								
1.5.2 Secure sufficient funding for the technical program and administration of the centre																																								
1.5.3 Implement effectively through the signing of technical cooperation agreements with																																								
1.5.4 Develop at least 5 RE&EE program/project proposals annually to be submitted for																																								

Activity	Year 0						Year 1												Year 2												Year 3											
	Months																																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Output 2.1 Regional RE&EE targets and policies of CARICOM, SIDS DOCK																																								
2.1.1 Assist member states in the development or reformulation of sustainable energy polici																																								
2.1.2 Develop a regional framework for the development of national RE&EE action plans																																								
2.1.3 Assist member states in the development and implementation of their RE&EE action p																																								
Output 2.2 Regionally agreed renewable energy equipment standards and																																								
2.2.1 Formulate regional standards and certification mechanisms making use of already																																								
2.2.2 Define procedures for certification of labelling and standards																																								

Activity	Year 0						Year 1												Year 2												Year 3											
	Months																																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Output 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																																								
3.1.1 Undertake a regional capacity needs assessment (particularly reflecting the needs																																								
3.1.2 Develop a regional multi-year capacity development framework for key stakeholders																																								
3.1.3 Facilitate the adoption and implementation of the regional capacity development																																								
Output 3.2 Regional certification and accreditation schemes for trainers a																																								
3.2.1 Develop training competency standards, certification and accreditation schemes																																								
3.2.2 Act as coordinative hub for the accreditation and certification of national training																																								
3.2.3 Execution of regional train-the-trainer workshops																																								
Output 3.3 Key stakeholders are trained by the certified trainers on																																								
3.3.1 Train key policy makers in sustainable energy policy planning and incentive																																								
3.3.2 Train utilities and regulators regarding RE integration/grid stability and energy																																								
3.3.3 Provide targeted RE&EE business development training for clean-tech SMEs and																																								
3.3.4 Increase the capacity of stakeholders to mainstream gender, environmental																																								
3.3.5 Increase the capacity of technical private-sector experts and start-ups to develop,																																								
3.3.6 Train experts on the financial structuring, design and planning of RE&EE projects																																								
Output 3.4 Applied science research networks and technology transfer																																								
3.4.1 Conduct a baseline study on the research priority needs of the Caribbean RE&EE																																								
3.4.2 Create a regional incentive model for the establishment of regional research																																								
3.4.3 Promote south-south and north-south technology development partnerships																																								

Activity	Year 0						Year 1												Year 2												Year 3											
	Months																																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Output 4.1 Establish an online RE&EE information management system addressing the needs of investors, local industry and business																																								
4.1.1 Maintain an effective interactive website including extensive document sharing																																								
4.1.2 Compile an inventory of relevant experiences/projects and papers/study																																								
4.1.3 Create a database of RE&EE stakeholders, including governments, training																																								
4.1.4 Develop guidelines on energy data verification, quality and harmonisation in cooperation with the NFIs																																								
4.1.5 Create a database of RE&EE standard investment opportunities for the region to facilitate matching available funds to real projects (particularly in alignment with the activities under outcome 5 and SIDS DOCK indicative project pipeline)																																								
4.1.6 Produce and publish RE&EE resource atlas and facilitate resource mapping in the Caribbean (data to be disseminated through the information system)																																								
4.1.7 Map existing sustainable energy projects including their key information (manufacturer, installer, status of operation, generated energy, etc) and disseminate information through the information system																																								
Output 4.2 Awareness and knowledge base of key stakeholder groups on																																								
4.2.1 Organize at least one major annual conference on different RE&EE aspects																																								
4.2.2 Produce an RE&EE Industry report and regularly update it in cooperation with private sector groups																																								
4.2.3 Design and implement at least one regional RE&EE awareness campaign targeting the residential, commercial or industrial sectors																																								

Activity	Year 0						Year 1												Year 2												Year 3											
	Months																																								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Output 5.1 Investments in RE&EE projects are promoted																																									
5.1.1 Establish a user-friendly investment portal on the SIDS DOCK project pipeline for potential investors and financiers (to be published through the information system)																																									
5.1.2 Organize annual investment and business forums (e.g. trade fare) to present the project pipeline to interested financiers and investors																																									
5.1.3 Raise funding for the execution of the project pipeline and support the development of innovative projects addressing the energy needs of industrial key sectors in the Caribbean																																									
5.1.4 Design and establish regional support schemes to support national institutions/banks to provide co-finance to small to medium scale projects (incl. rural off-grid projects)																																									
Output 5.2 The local sustainable energy industry is strengthened																																									
5.2.1 Undertake a baseline assessment and develop a strategy for the promotion of local sustainable energy industry and jobs																																									
5.2.3 Design and operate a financing facility to support innovative local sustainable energy businesses and start-ups - execute two call for proposals (to be implemented in combination with activity 3.3.3)																																									
5.2.3 Develop and execute a clean-tech program to promote RE&EE business innovations (including prize competition for the most innovative business idea)																																									
5.2.4 Collect lessons learned and develop a manual for sustainable energy start-up companies (to be used in the trainings under output 3.3)																																									

C.6. Risks

The following potential risks to the success of the CCREEE have been identified and risk mitigation strategies have been proposed:

Risk	Mitigation Strategy.
1. Lack of commitment by host country to support the centre.	There will be a competitive process to select the host country. A set of criteria and a format to bid for hosting the Centre Secretariat has been developed (see Annex 3). Several of the suggested criteria are related with the institution's strategy and investment towards sustainable energies.
2. Interference in operations by the host country.	The host country and could attempt to influence the decision making processes of the CCREEE. This will be mitigated through including a clear phrase on the independency and autonomy of the operations of the CCREEE in the agreement between CCREEE and the host country.
3. Limited of CCREEE to monitor project.	Funding from development partners will be linked to specific activities and will entail regular monitoring of the CCREEE.
4. Poor responsiveness by national focal institutions and thematic hubs	The partnership agreement between the CCREEE and the NFIs will be such that the CCREEE will be empowered to terminate the agreement in case of poor responsiveness and performance. In such case, the CCREEE will also be empowered to engage alternative institutions in its projects and programmes. The CCREEE will also carry out regular capacity building programmes for the staff of the NFIs to ensure their continued and meaningful engagement. In addition, each national focal institution will be required to regularly brief the representative of the member state to the CCREEE. Adequate financial operational resources from the CCREEE to NFIs will also help to maintain interest and cooperation.
5. Lack of coherence with other regional programmes	Strong links with CARICOM Institutions and the constant communication with development partners will ensure the coherence of the Centre activities with regional RE&EE programmes.
6. Poor uptake of RE&EE projects by the Caribbean countries.	Risk is considered to be low as these countries have, through various forums, policies and development plans, expressed their commitment to the development of RE&EE in the region. The CCREEE will develop RE&EE activities as an integral part of the energy picture in the region. This way, the evaluation of these options will take into consideration all the benefits in comparison to other energy alternatives.
7. Lack of ownership by the Member States.	Risk is considered moderate. Member States will be closely involved in the activities of the CCREEE and its major decisions through project implemented in each country. Care will be taken so that the CCREEE maintains its regional focus and does not appear to be favouring specific countries. Moreover, the annual work plans will be developed through a consultative decision making process which will also involve the Centre stakeholders, especially the NFIs.
8. Financial sustainability beyond the support by development partners.	The level of support from the Centre partners is anticipated to be in excess of what the Centre requires for its operational costs. Moreover, the host organisation should support a significant part of the operational costs by providing office space, IT services, telephone and other office facilities. Additionally, the Centre business plan will include activities which will generate income
9. Lack of long-term sustainability of the CCREEE	To establish good credibility and integrity, the Centre will develop and adopt code of conduct and ethics governing its operations. In particular, so that no country feels excluded from the activities of the Centre.
10. Poor performance of CCREEE	UNIDO will provide technical key support for institution building and to build up the technical programme of the Centre from the very beginning; The Centre will have to show its added value to the Caribbean and internationally partners quickly. The building up of sound internal procedures in the Centre (e.g. financial, accounting) is key for the credibility and the basis to receive direct funding from donor partners. Moreover, UNIDO will facilitate south-south cooperation with the other regional sustainable energy centres.

D. Institutional Arrangement and Governance Structure of the Centre

D.1 Legal Status of the CCREEE

The **creation of a specialised regional RE&EE promotion agency under the umbrella of the existing institutional and decision-making framework of CARICOM is recommended**. The centre will address RE&EE holistically and in an equal way. The centre will act as a think-tank and hub for sustainable energy and will play a key role in creating economies of scale and a competitive sustainable energy market and business sector. It will address existing barriers and strengthen drivers through regional methodologies and tools. All the centre's activities shall demonstrate high relevance for the local private sector and industry. The centre and its activities are fully in line with the priorities of the 2015-2019 Strategic Plan of CARICOM adopted by the Heads of Government in their Thirty-Fifth Regular Meeting held in Antigua and Barbuda, from 1-4 July 2014. Climate change adaptation and mitigation was identified as one of the priority activities.

The centre demonstrates local ownership and **works according to the local rules under the umbrella of CARICOM's decision-making process and policy framework**. The centre has a technical mandate and operates action- and service-oriented. It works closely with the CARICOM Secretariat's Energy Unit and reports to the Ministerial Council for Trade and Economic Development (COTED). It will provide the Unit with the required technical implementation and execution capacities. To ensure ownership it is **recommended to launch a competitive process for the selection of the host country for the centre**. CARICOM Member Countries (and opt-in countries) would be invited to submit offers in accordance with the proposed format and selection criteria included in the annex of the project document.

The institutional set-up of CCREEE reflects the principles of **maximising the impact, avoiding duplication of efforts, strengthening and up-scaling of already existing local capacities**. CCREEE develops and **executes its activities through a network of Thematic Hubs (THs) and National Focal Institutions (NFIs)** among all CARICOM countries (incl. opt-in countries). The thematic hubs (for policy, investment, capacity development and knowledge management) and the NFIs will be nominated during the start-up phase of the centre. **The centre will be guided by an Executive Board (EB) and a Technical Committee (TC)** which will be established during the start-up phase. The centre will work on the basis of a long-term business plan and annual work plans.

CCREEE **complements and strengthens ongoing national/regional activities** in the areas of policy and capacity development, knowledge management and awareness raising, as well as investment and business promotion. CCREEE will position itself as a regional RE&EE promotion agency rather than an implementer on micro- and grass-root levels. To **maximize the local added value** the execution of specific assignments or services is in many cases delegated to national institutions and/or the private sector. Usually, the Centre performs only up to the level of programme/project development, fund raising, oversight, quality assurance as well as coordination, monitoring and evaluation of project/programme implementation.

The **centre will demonstrate strong local identity, employ local staff and operate in the official languages of CARIFORUM (English, French, Dutch and Spanish).** The centre will also make use of other local languages (e.g. Haitian Creole and other creoles) if it increased the impact of activities (e.g. for training materials for local planners, standards for equipment). It will be strengthened through the secondment of temporary international experts (e.g. UNIDO and others). The small initial staff structure will expand gradually in accordance with the mobilised funding. During the first operational phase the centre will **reach financial sustainability** through core funding from donor partners, local partners, the host country, mobilised project funding and provision of remunerated services.

It is recommended that the Centre work within the legal, administrative and financial framework of CARICOM. The day-to-day management and decision-making authority would be delegated to the Centre's Executive Director (e.g. procurement, authority to sign contracts and recruitment) and the Executive Board. The centre would operate the funding received for projects and programs and prepare the annual financial statements. Although the CCREEE would have considerable autonomy in its operations, it will have reporting procedures that are in line with those of the host institution. If the host does not have consistent reporting mechanisms, the Centre will create them to ensure transparency and accountability to CARICOM and development partners.

The **formal relationship between the CCREEE and the host country will be specified by a formal legal agreement** to be finalised during the preparatory stage of its development. This agreement will detail among other things, the relationships among all parties and contributions and responsibilities of all parties. By establishing the CCREEE as an independently-operating institution under the host organisation, does not necessarily imply that the host institution will be expected to provide a budget allocation for the CCREEE other than that required to provide basic physical support (e.g. electricity, office space, teleconference facilities, IT support). The details of this support will be worked out during the start-up phase. **Three options for the legal status of the Centre are under consideration (also in combined form possible):**

1. A stand-alone SIDS DOCK institution outside the CARICOM framework
2. A CARICOM Institution
3. An Associate Institution of CARICOM

D.2 Location of the Secretariat of the Centre

The location of the Secretariat of the Centre will be defined during the start-up phase. Countries are expected to bid and nominate an institution that will host the Secretariat of CCREEE. Draft selection criteria and submission forms are included in the annex. The criteria were presented in the CCREEE consultative and validation workshop. It is proposed that a commission nominated by UNIDO/SIDS DOCK/CARICOM will be responsible for evaluating and selecting the winning bid.

D.3 Institutional Structure of the CCREEE

The institutional structure of the Centre, as shown in the figure below includes:

- the Secretariat based in one of the CARICOM countries (or opt-in countries)
- the Executive Board (EB)
- the Technical Committee (TC)
- the Thematic Hubs (THs)
- the National Focal Institutions (NFIs) in each CARICOM Member State (incl. opt-in countries)

The Centre is governed by an Executive Board (EB) and a Technical Committee (TC) which will meet at least once a year. If possible, the EB and TC meetings will be held back-to-back and coordinated with the Council for Trade and Economic Development (COTED) meetings.

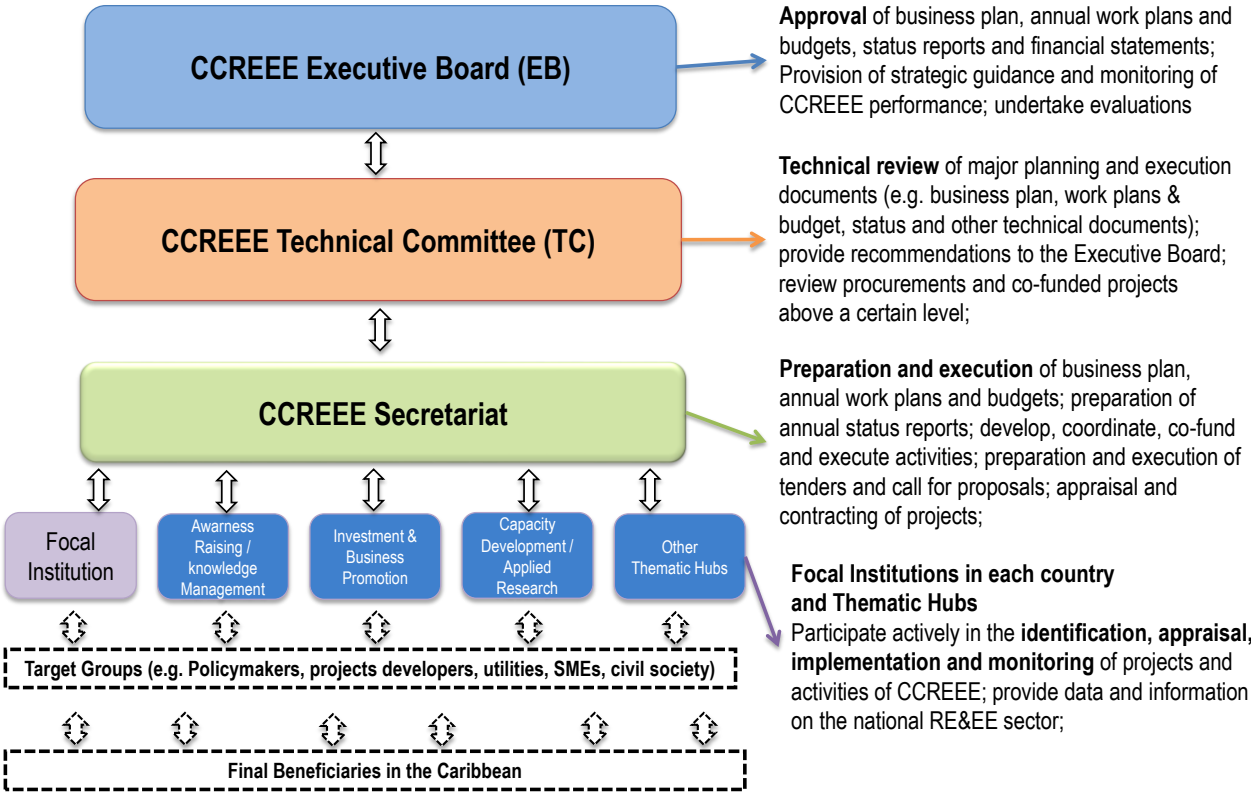


Figure 21: CCREEE Institutional Structure

The composition of the EB and TC are indicated below. UNIDO and ADA will join the bodies as initial core partners. Once the Centre is established, other donor partners will be invited to join depending on their financial contributions to the Centre. Core partners are defined as partners who support the technical and institutional (administrative budget) operations of the centre through considerable long-term contributions.

The EB is the highest decision making body which provides strategic guidance and approves the annual work plans and budgets, progress reports and financial statements of the Centre. **TC meetings shall be open to other non-core donor partners**, particularly if they are interested to co-fund activities of the annual work plans or they would like to align their activities with the centre (e.g. EU, IRENA, GIZ, UNEP, UNDP). It is envisaged that **at least 30% of the members of the EB and TC are female, where possible**.

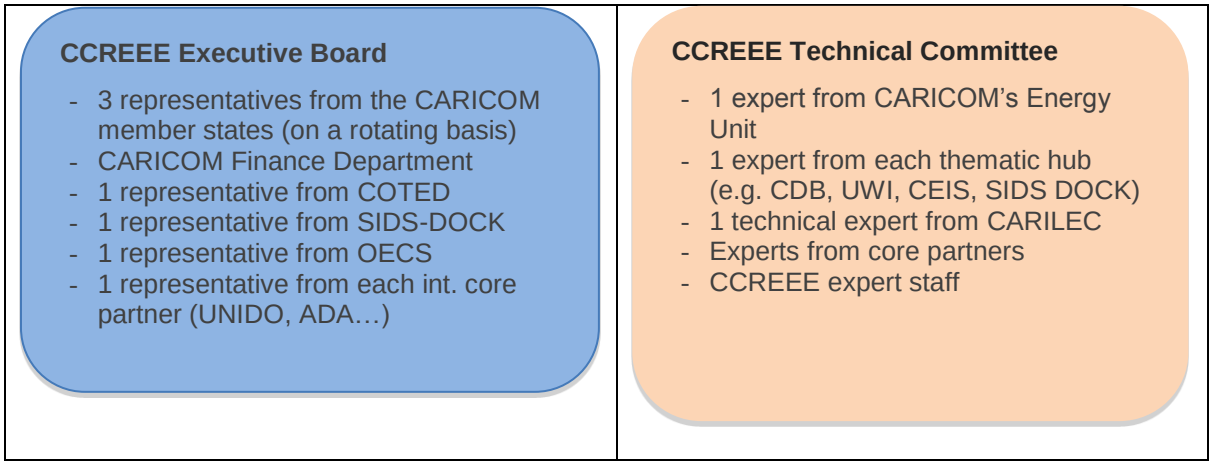


Figure 22: Proposed composition of CCREEE's EB and TC

Private sector and civil society interests shall be reflected in the annual work plans of CCREEE. It will be mandatory for the NFIs to involve the relevant stakeholders in the review process of the annual work plans of CCREEE. Relevant minutes of the meetings with private sector stakeholders shall be shared with the CCREEE Secretariat. This review process will ensure the relevance of the CCREEE interventions for the private sector and local industry.

D.3.1 The Executive Board

Representatives appointed to the CCREEE's EB will serve for a fixed period of term of two (2) years which can be renewed for a maximum of one more additional term. The benefit of the proposed membership of the EB is that it provides avenues for harnessing the strengths of regional and international actors with broad experience in the energy sector. The EB decides in consensus. It can decide to take certain decisions also by e-mail and according to the non-objection principle. A participation of at least 30% women in the EB will be pursued. **The functions of the EB are as follows:**

- decides in consensus and by written procedure if necessary;
- offers strategic guidance to CCREEE secretariat to meet its objectives;
- proposes strategic flag-ship programs;
- approves CCREEE's annual work plan and budgets after review by the TC;
- approves CCREEE's Business Plan upon recommendation of the TC;
- monitors the progress and performance of the Secretariat and the Director;
- approves the annual status reports, audited financial statements and evaluations;
- approves and updates the procurement, staff, contracting and financial rules of CCREEE in line with CARICOM regulations and rules;
- approves CCREEE's organizational chart, staff recruitments and related job descriptions;
- appoint the Executive Director;
- appoints external auditors and approve external audit reports;
- appoints external evaluators and approve evaluations and management responses;

- approves procurements and co-funding for projects exceeding a certain amount;
- reviews the composition and membership of the Board and the TC; and
- contributes to CCREEE's visibility in the Caribbean region and internationally.

D.3.2 The Technical Committee

The technical guidance to the EB is provided by the Technical Committee (TC). The TC has the role of reviewing major technical documents and reports for submission to the EB. If necessary the TC reviews projects to be funded by CCREEE resources and recommends their approval to the EB. A participation of at least 30% women in the TC will be pursued. **The TC functions are as follows:**

- meets back to back with the EB;
- technical advice to the CCREEE Executive Board (EB) and Secretariat;
- reviews the annual work plans, status reports, financial statements and other technical documents submitted to the EB by the Secretariat;
- reviews the CCREEE Business Plan and suggest priority activities;
- reviews the CCREEE progress on the basis of the indicators in the Business Plan and annual work plans;
- suggests improvements in the organizational, administrative, quality and technical appraisal framework of the Centre;
- reviews appraisal results of procurements and co-funded projects exceeding a certain level;
- reviews major CCREEE program documents, policy documents and reports and give comments; and
- assists CCREEE in fund raising activities for its technical program and raise visibility on the Centre on regional and international levels.

D.3.3 The CCREEE Secretariat

The Secretariat will be based in one of the CARICOM member states (or opt-in countries), and operates in the official CARIFORUM languages (English, French, Dutch and Spanish). The centre will also make use of other local languages (e.g. Haitian Creole and other creoles) if it increased the impact of activities (e.g. for training materials for local planners, standards for equipment).The host country will be determined during the preparatory phase. It will employ a small multinational team of Caribbean and international full-time staff. The Secretariat implements the activities, prepares, and publishes the annual work plans and status reports and presents the documents for review and approval to the TC and EB. The day-to-day activities of the Centre will be under the direction of the Director of the CCREEE who will be primarily responsible for the implementation of the mandate of the Centre and the work plan as approved by the Executive Board. The Director will also lead the funds mobilization efforts of the Centre. He/she will be accountable to the EB. The general responsibilities of the Secretariat are to:

- develop and update the CCREEE Business Plan;
- develop the annual work plans, status reports and financial reports in cooperation with CARICOM and National Focal Institutions (NFIs) and Thematic Hubs (HBs);
- cooperate with external auditors and evaluators assigned by the EB;
- implement activities approved in the annual work plan in cooperation with CARICOM's Energy Unit and the National Focal Institutions (NFIs) and Thematic Hubs (HBs);
- implement the decisions of the Executive Board (EB)
- monitor the progress of the implementation of the annual work plans;
- organize the meetings of the TC and EB;
- publish periodical reports on the progress and achievements of the Centre in relation to the indicators in the CCREEE Business Plan;
- keep an overview on relevance, effectiveness, efficiency and sustainability of the CCREEE program;
- compile regularly information and data provided by the National Focal Institutions (NFIs) and Thematic Hubs (HBs)

Regarding technical support, the Secretariat's role will be to:

- strengthen the regional network of National Focal Institutions (NFIs) and Thematic Hubs (HBs)
- recruit qualified administrative and technical staff; strengthen the capacities of staff and select international seconded experts;
- coordinate regularly with the core partners of the Centre
- meet back to back with the EB
- develop, appraise, implement and monitor CCREEE projects
- undertake fund raising activities and contributes to proposal preparation
- develop the quality, appraisal and project cycle management framework for activities to be co-funded and implemented
- ensure that projects are in line with national policies and legislation;
- participate actively in the evaluation of tender bids and proposals;
- prepare and execute procurements and call for proposals; and
- sign contracts and monitor projects and assignments;

The Secretariat will also be responsible for CCREEE's communication as follows:

- partnerships with other local and international technical institutions;
- contribute to the SE4ALL south-south cooperation network in collaboration with the other regional centres (in the Pacific and Africa), SIDS DOCK and UNIDO;
- ensure harmonization of CCREEE activities with other donor initiatives and alignment with local initiatives and support systems;
- establish strategic links to loan and equity finance institutions;
- establish policy dialogue with CARICOM, OECS, OLADE and national institutions on regional renewable energy and energy efficiency;
- network with national and regional chambers of commerce;
- engage relevant stakeholders in renewable energy policy dialogue including public institutions, civil society and private sector;
- ensure effective public relations and publication of information; and
- ensure awareness raising on RE&EE in the Caribbean region.

D.3.4 The National Focal Institutions (NFIs)

CCREEE will establish a strong network of National Focal Institutions (NFIs) which interlinks the Secretariat with all CARICOM Member States. The activities of the Centre are executed in cooperation with the NFIs or other entities of the public and private sector. The NFIs will be nominated by the Ministries of Energy of the Member States. The NFIs would be responsible for:

- participating actively in the identification, appraisal, implementation and monitoring of projects and activities of CCREEE;
- providing data and information on the national RE&EE sector;
- coordinating Centre activities in their countries.

D.3.5 Thematic Hubs (THs) and collaboration with other energy sector stakeholders

The Centre's primary activities entail leading, coordinating and implementing efforts to develop markets for renewable energy and energy efficiency technologies and services in the region. Most of the **actual execution of the CCREEE's programmes** and projects would be done through regional and national institutions which have already a wealth of experience in specific energy sub-sector such as the CDB, CEIS, the University of West Indies, the private sector and NGOs that will serve **as executing agencies**. During the start-up phase CCREEE will **nominate regional thematic hubs for policy, knowledge management, investment and capacity development**. In some cases the roles of coordinating, implementing and executing will vary between CCREEE. The centre will sign MOUs with the institutions leading the hubs. These are subject to the approval by the Executive Board, which can also decide to extend the number of hubs (e.g. Geothermal). The working procedures regarding the hubs will be more detailed during the start-up phase. A schematic representation of this collaboration can be seen in the following diagram:

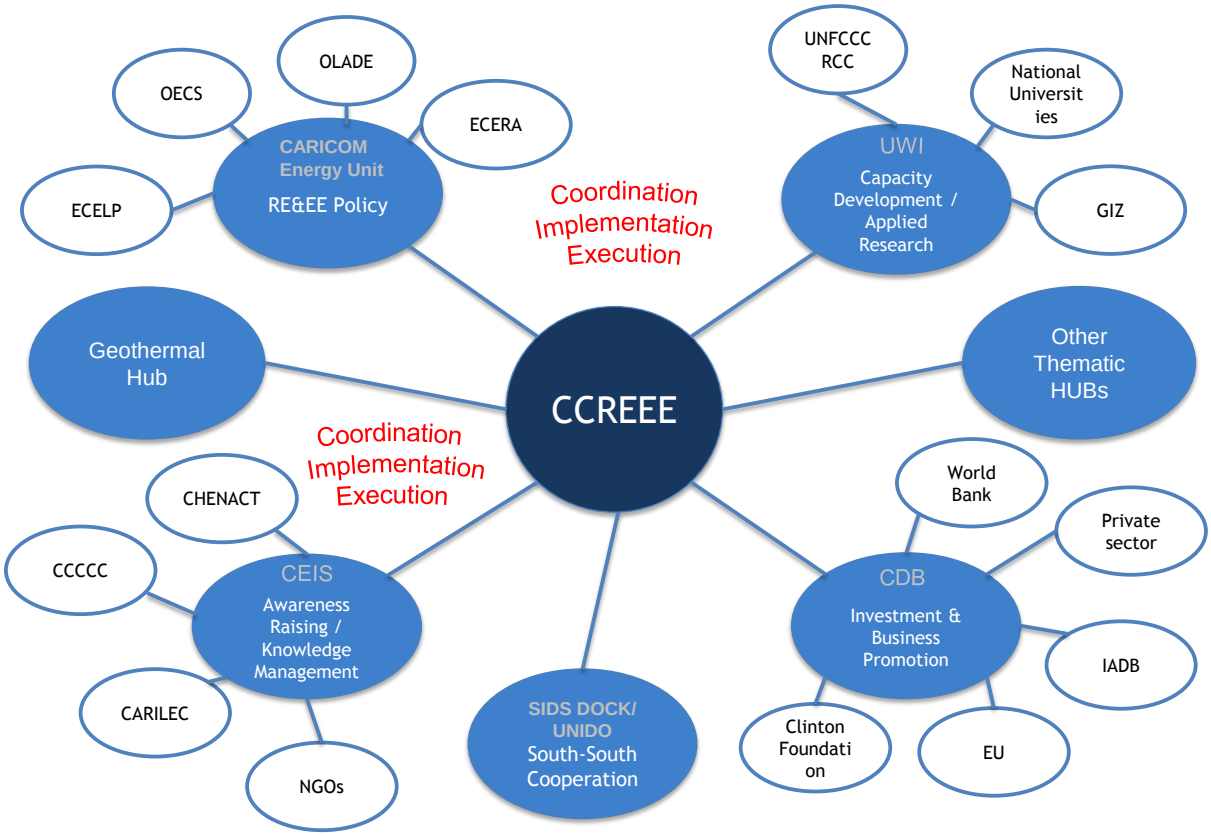


Figure 23: Relationship between the CCREEE as a technical coordinator for energy activities and thematic hubs responsible for implementation of activities

In addition to serving as a coordinating centre, the CCREEE will also be responsible for developing regional programmes and mobilizing funds. In this activity, the Director will be closely supported by all partners such as CARICOM, UNIDO and ADA.

Execution through national institutions, private sector and NGOs will promote greater ownership of projects and programmes of the Centre, increase chances of sustainability, ensure that regional standard are conformed with and also leverage on capacity already available in the region. It will also ensure that the programmes and projects of the Centre are implemented in a cost effective manner.

The envisaged structure of relationship between the Centre and the national focal institutions and other stakeholders in partner states will, to a large extent, depend on the specific activity. As an example, in the case of developing a regional policy framework, national institutions will be responsible for review of national policies while the CCREEE would be responsible for synthesising the national reports to come up with a regional draft policy. Likewise in the case of training programmes, the Centre would subcontract a specific national institution or centre of excellence to develop and conduct the training programme.

The CCREEE, based on its own knowledge, will also carry out an inventory of all national institutions and agencies including universities, research centres, advocacy groups and national professional associations working in its areas of mandate. The choice of which institution or national body will act as a collaborator in the implementation of specific projects will be determined on a case-by-case basis. Given the significant differences across partner states in terms of level of capacity development, needs and resource endowments, the Centre will be mindful of this and will adopt a differentiated approach to each country in the development and implementation of its programmes.

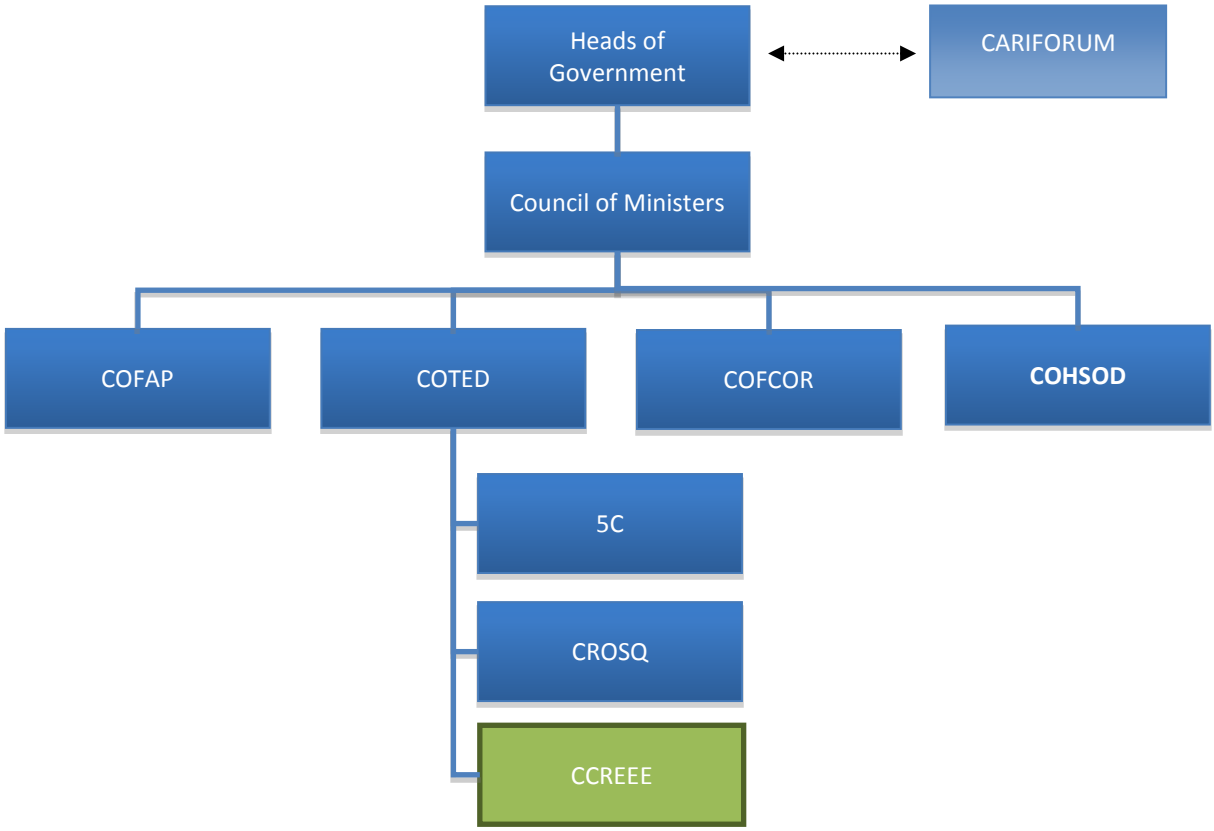
At the global level, the CCREEE will closely cooperate with other centres of excellence from both developed and developing country regions. Other continental and global energy networks that the CCREEE can link with include the Inter-American Development Bank – which is the regional hub for the SE4ALL Initiative, the International Renewable Energy Agency (IRENA), Renewable Energy and Energy Efficiency Partnership (REEEP), REN21, among others. The CCREEE will collaborate with similar international organizations in areas of mutual interest like capacity building, technology transfer

and knowledge management. It is also expected that the Centre will create a South-South cooperation between the Caribbean non-CARICOM members in order to share experiences and develop partnerships.

D.3.6 CCREEE integration into the regional institutional structure

If accepted the centre **will be created in the existing CARICOM/SIDS DOCK framework and work according to local rules and decision-making procedures**. The centre will be also linked to the Forum of the Caribbean Group of African, Caribbean and Pacific (ACP) States (CARIFORUM) which comprises Caribbean ACP States (incl. Dominican Republic and Cuba). The Group also allows observer status for other Caribbean territories (e.g. British and Dutch Overseas Territories and Countries (OCTs). The activities of the Centre are fully integrated in the regional energy structure, rules and proceedings. It would work closely with the CARICOM Secretariat's Energy Unit and reports to the Ministerial Council for Trade and Economic Development (COTED). CCREEE will provide the Energy Unit with the required technical implementation and execution capacities. CCREEE will work closely with SIDS DOCK on the implementation of the indicative RE&EE project pipeline. The establishment of the centre will be aligned with the comprehensive review and reform process of CARICOM and its institutions. The decisions and approved reports of the Executive Board of the Centre will be presented by the Executive Director to the relevant regional bodies. The relationship will be formalised during the start-up phase of the centre. The Centre will assist the CARICOM Secretariat in the implementation of the CARICOM Energy Policy and the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS) on national levels.

Figure 24: Integration of CCREEE in the CARICOM Structure



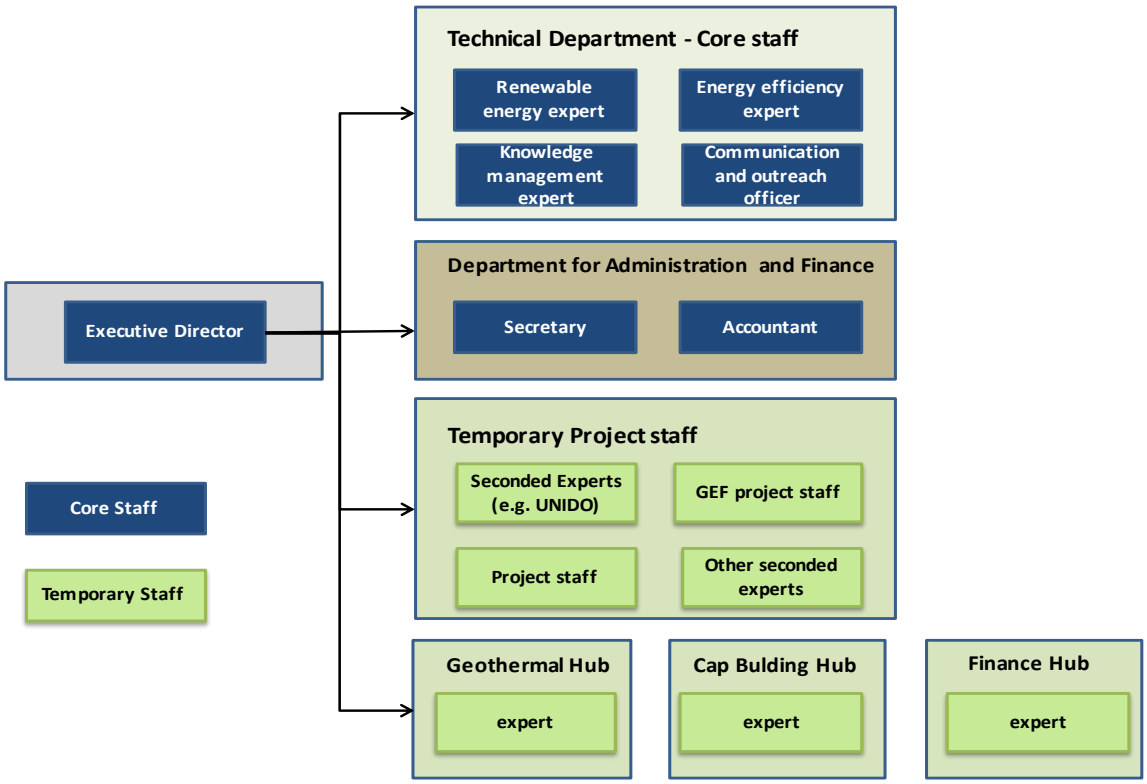
D.3.7 The CCREEE Staff

In the beginning the Centre will **start with a very small staff base and will expand depending on the mobilised funding and developed programs and projects** (**form follows function**). In the future, it is expected that the Centre will employ permanent core staff and temporary project financed staff. All core staff shall have nationality of one of the CARICOM members.

During the start-up phase, the Executive Director, one Renewable Energy Expert, one Energy Efficiency Expert, one accountant and one secretary will be hired. Further staff will be hired during the operational phase and depending on the availability of funding. It is envisaged that at least 30% of the technical and administrative professional core staff is female. The Centre will establish a **special focal point for gender issues**. The focal point will be responsible to mainstream gender throughout the CCREEE structure, as well as throughout the technical program portfolio.

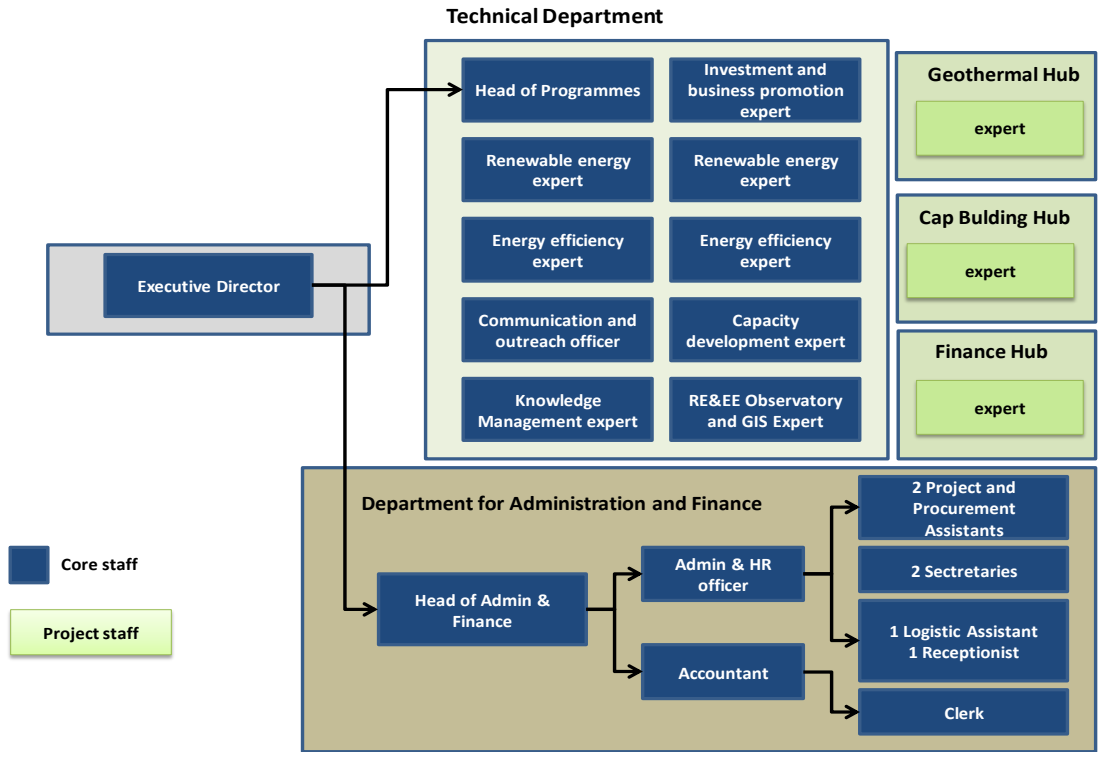
During the start-up phase and first operational phase, UNIDO will support the centre through a seconded technical assistant and/or a knowledge management officer.[15] The expert(s) will assist the Director of the Centre in establishing the internal procedures as well as the technical program of the Centre. Moreover, the expert will assist in building up donor relations. The TORs of the key staff of the Centre are available in the Annex. In addition, UNIDO will provide further part-time technical backstopping from headquarters through the coordinator of the Global Network of Regional Sustainable Energy Centres in the UNIDO/ECC Branch. The expert was based at ECREEE in Cape Verde and acts also as project manager. The expert will travel to the CCREEE Secretariat as required. The expert works also with the other regional centres and coordinates the south-south cooperation program. Other partners are asked to provide seconded experts as part of their technical assistance.

Figure 25: CCREEE organizational chart during the first 3 years of operation (conservative scenario)



[15] either international consultant or L2

Figure 26: CCREEE organizational chart during the first 3 years of operation (optimistic scenario)



Consultants and temporary experts

The CCREEE will engage experts/consultants to assist with specific assignments on a short-term basis. The recruitment of such specialized services will be done in accordance to applicable host organisation or UNIDO procurement rules. For all projects for which funding is secured, requisite staff will have to be hired to work on such projects as part of the overhead costs of the project. Besides project staff, development partners would be welcome to provide technical assistants to work on projects they sponsor. The Director of the Centre will also be responsible for coordinating the activities of project linked staff and technical experts so as to ensure synergy between the core activities of the CCREEE and that of specialised projects and programmes. The core staff of the Centre will also provide assistance as needed by special projects and programmes and at cost to the programmes.

In order to assist in the implementation of specific projects and take advantage of competences created in institutions across the region, the CCREEE may place staff in hubs/institutions dedicated to promote specific technologies or areas of intervention such as geothermal, biomass, capacity development and investment and business promotion. During the preparatory phase, CCREEE and interested institutions could agree on having such cooperation engagements. The staff costs could be shared between CCREEE and the hub/institution that receives the staff. In this case the Centre organisation could assume the following structure:

D.3.8 Partnership/Donors Meeting

A partnership meeting which will bring together all the various partners and donors of the CCREEE shall be convened once in every two or three years. This will be an avenue for all the various partners to interact and also put forward their various suggestions for the realization of the goals and objectives of the Centre.

D.4. Counterpart inputs

The preparatory of the CCREEE and its successful operation hinges on inputs from the CARICOM, SIDS DOCK, CARICOM Member States and the government of the host country. Below are the inputs from the different partners.

D.4.1 CARICOM

CARICOM will provide the Centre with the requisite support to ensure its successful start-up phase and operation. This will include empowering the CCREEE through its recognition as a central institution in the RE&EE market and through active participation in the Executive Board of the Centre. As the custodian of the CCREEE, CARICOM will facilitate the deliberations of relevant matters about the Centre in its meetings and conferences. In addition, CARICOM will finance some of the activities of the CCREEE as presented in the budget.

D.4.2 Member States

CARICOM member states (and opt-in countries) are the key beneficiaries of the activities of the Centre hence they will be central to the continued relevance of its activities. In this connection, countries will support the CCREEE through, nominating focal institutions and supporting activities of these centres and in financial contributions to the Centre, when required. It is foreseen that partner states will be 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 Energy Unit.

D.4.3 Government of the Host Country

The Government of the host country, through the nominated institution, will provide office space and possibly furniture, telephone, fax and Internet connection for the CCREEE. It will take over parts of the running costs without time limit.

D.4.4 SIDS-DOCK

SIDS-DOCK will contribute to the CCREEE through the provision of technical assistance and finance besides assisting in raising the centre's profile internationally.

D.4.5 Austrian Development Agency (ADA)

The Austrian Government, through the Austrian Development Agency, ADA, will contribute to the CCREEE as captured in the budget. ADA will channel the funding through UNIDO. For the start-up phase and the first operational phase, UNIDO will be assigned to provide key technical assistance to establish the Centre and its technical program in cooperation with CARICOM. The funding operated by UNIDO will be implemented in line with the UNIDO procurement rules.

D.4.6 UNIDO

Besides assisting in the conceptualisation and design the CCREEE, UNIDO will continue to provide technical assistance to the Centre to ensure quality delivery. UNIDO will work towards sustainability of the Centre and the ability for the Centre to receive direct funding from other donors. In the optimum case, the UNIDO support is 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). Furthermore, UNIDO will mobilise its own funding for the first operational phase as indicated in the budget. As soon as the procedures and processes of the Centre are sustained UNIDO intends to subcontract specific implementation tasks and funding to the Centre. In addition, UNIDO will use its international networks to assist the Centre to establish partnerships with other international players so that the CCREEE could leverage expertise and technologies.

UNIDO will facilitate knowledge and technology under the umbrella of the Global Network of Regional Sustainable Energy Centres (GN-SEC). The powerful global south-south multi-stakeholder partnership is coordinated by the UNIDO Energy and Climate Change Branch in partnership with various regional economic communities and organisations. The regional centres respond to the urgent need for enforced south-south cooperation and regional capacities to promote inclusive and sustainable energy industries and markets in developing and transformation countries in the post-2015 era. The centres enjoy high-level support by the Energy Ministers and respond to the individual needs of the respective national Governments. The network currently comprises of the ECOWAS Centre for Renewable Energy and Energy Efficiency (www.ecreee.org), the East African Centre for Renewable Energy and Energy Efficiency (www.eacreee.org), the Southern African Centre for Renewable Energy and Energy Efficiency (SACREEE) and the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) for Arab States. The GN-SEC provides a common umbrella to promote south-south cooperation between the centres and regions.

UNIDO will facilitate also strategic partnerships between the CCREEE and its network of international centres that 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 and UNIDO Regional Centre for Small Hydro Power in India, UNIDO - Observatory for Renewable Energy in Latin America and the Caribbean among others.

D.5 Gender Mainstreaming

UNIDO recognizes that gender equality and the empowerment of women has a significant positive impact on sustained economic growth and sustainable industrial development, which are drivers of poverty reduction and social integration. The Guide on Gender Mainstreaming in the Energy and Climate Change Branch will be mainstreamed through the CCREEE project cycle. The CCREEE will support institutions, projects and programmes in which both men and women staff will gain through improving their skills and knowledge of RE&EE technologies. All required efforts will be made by the project to enrol as much as possible women in its planned activities, both at management and technical levels, and encourage them to participate in all relevant project and decision-making activities. UNIDO will mainstream its energy gender guidelines throughout project implementation.

E. Indicative budget requirements

In the optimistic development scenario of the centre the **total indicative budget requirement for the running and technical programme costs amount to € 10,328,740**. This estimate covers the 6 months start-up phase and the 36 months first operational phase. This budget would allow the centre to have major impact. It shall be noted that the indicated budget has to be seen as a target of the centre. **In the optimistic development scenario the centre will mobilize the envisaged financial resources during the first operational phase.** However, it shall be noted that the centre is also able to operate under a more conservative development scenario with a smaller budget and technical program. The funding for the conservative scenario is already available from the very beginning (e.g. Austria, SIDS DOCK, and UNIDO).

The running costs of the centre include staff costs, office costs and costs of Executive Board and Technical Committee meetings. The activities to be implemented under the different technical components (e.g. capacity building, investment promotion and knowledge management) are described in the result based management framework in the annex. In response to the identified needs and the request from the different stakeholders the centre will **focus on activities which demonstrate high relevance for leveraging investments in RE&EE infrastructure, services, local businesses and industry**. Therefore, around 28% of the indicative budget is foreseen to be spent in this activity component.

Table 8: Indicative budget for the start-up and first operational phases - optimistic development scenario (in Euros)

Outcome	Start-Up Phase (6 months)	First Operational Phase (€)			Total (€)	% of total
		Year 1	Year 2	Year 3		
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	856,030	867,094	925,263	2,943,546	28%
2: Accelerated development, adoption and execution of regional and national gender sensitive RE&EE polices, targets and incentives through targeted regional interventions	-	445,239	388,558	388,558	1,222,355	12%
3: Strengthened capacities of local key stakeholder groups through the up-scaling and replication of certified training and applied research programs and mechanisms	-	735,126	668,366	668,366	2,071,858	20%

4: The awareness and knowledge base of local key institutions and stakeholder groups on RE&EE are strengthened	-	430,422	389,510	389,510	1,209,442	12%
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	-	978,480	951,530	951,530	2,881,540	28%
Total	**295,159**	**3,445,297**	**3,265,058**	**3,323,227**	**10,328,740**	**100%**

E.1 Envisaged funding sources

During the preparatory phase all involved partners will be approached concerning their possible financial contributions to the core budget and/or technical program of the centre. **The commitments received will allow the centre to start its administrative and technical core activities in accordance with the established results based management framework.** The Austrian Government committed to provide 1.3 million Euro for the establishment and first operational phase of the centre. SIDS DOCK committed an equal amount. The indicated amounts in the table below are envisaged and are still subject to discussion and approval by the respective internal institutional bodies and depend on the availability of resources. The funding under the column "other donor partners" still needs to be mobilised during the first operational phase.

During the first operational phase the CCREEE is projected to reach financial sustainability through core funding from development partners, local partners, the host country, and mobilised project funding and provision of services. During the first operational phase, Governments will not be expected to provide monetary contributions to the CCREEE. The Centre will start with a very small staff base and will expand depending on the mobilised funding and developed programs and projects (form follows function).

Table 9: Funding Commitments to CCREEE

Envisaged funding commitments from different partners funding sources	**Start-Up Phase** (2015)	**Year 1** (2015-2016)	**Year 2** (2016-2017)	**Year 3** (2017-2018)	**Total** (€)
Host country	67,393	140,896	140,896	133,696	482,880
Local sources (e.g. co-funding)	3,200	263,600	271,600	322,000	860,399
ADA (committed)	111,257	585,753	333,149	269,841	1,300,000
UNIDO (cash and in-kind) - (committed)	71,276	217,439	151,405	109,881	550,000
SIDS DOCK (committed)	34,293	374,259	432,259	510,259	1,351,070
Other donors (e.g. GIZ, DFID, EU)	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**

A significant part of the expected co-funding (see expected co-funding of other donors) needs to be mobilized by the Director and the staff of the centre. Based on experiences and lessons learned of other centres, the **budget was kept ambitious rather than limited to actual commitments in the beginning.** Fund mobilization shall be a core activity of the Executive Director and the Centre staff.

The indicative budget shall be kept ambitious rather than limited to actual commitments in the beginning. It should be an important performance criterion for the staff and the Director. **The expansion of the project portfolio shall be a requirement for the expansion of staff and administrative costs.** A fund raising strategy based on the successful model in the ECOWAS region will be implemented from

the very beginning. 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.

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. **The earmarking of the partner contributions on specific budget items will be done on an annual basis through work plans**. These are subject to review and approval by the Technical Committee and Executive Board. The annual work plans shall include matrix of proposed activities and their estimated costs, as well as the indication from which partner contribution costs will be covered.

E.2 Projections beyond the first operational phase

The second operational phase of the CCREEE is expected to cover the period 2019-2022. A new Business Plan will be developed for this period. In this phase, the Director of the CCREEE will work together with Austria, UNIDO, the host country and other partners on ensuring the sustainability of the projects and programmes coordinated by the Centre. Based on the demand of its services and availability of resources, the CCREEE will consider expanding its staff compliment and activities. In the optimum case UNIDO will reduce its engagement concerning institution building.

F. MONITORING, REPORTING AND EVALUATION

F.1 overall monitoring

The Centre will apply an interrelated short-term and long-term planning and monitoring framework:

- The **CCREEE Business Plan**, to be prepared by the Director, will be based on the result based management framework of this project document and will provide a long-term planning framework at least for the period 2015 to 2019. The logical framework defines measurable and attainable indicators for the objectives and project components of the logical framework matrix.
- The **annual work plans,** which are subject to approval by the Board, provide a short-term planning framework which incorporates projects and activities to be executed by the Secretariat in a given year. The work plans include also the annual budget and an activity matrix which specifies from which source the respective activity is funded (e.g. CARICOM, ADA, UNIDO, other donor partners).
- The **annual status reports and audited annual financial statements** monitor the implementation of the work plans and report on the achievements in the different project components in the Business Plan and the logical framework of this project document.

Three types of monitoring would be carried out on a regular basis:

a. **Output monitoring** of the achievement in terms of quantitative targets achieved directly due to CCREEE activities (e.g. number of people, men and women trained per programme). An assessment of the outputs of the Centre will be conducted on an annual basis. This will be done on the basis of the annual status reports. The achievements are measured according to the indicators of this project document (and the CCREEE Business Plan to be prepared).
b. **Impact monitoring** at the level of the target groups (intermediary as well as direct target groups) that will also yield both quantitative and qualitative information about progress in renewable energy and energy efficiency market activities will be coordinated by the CCREEE where possible, but collected by the countries. Such information will include increase in the installed capacity of renewable energies, quantity of energy saved, reduction in the electricity production costs and investments in RE&EE projects.
c. **Process monitoring** aimed at keeping on top of changes in the internal and external environment, so as to learn from them and refine strategies of the different components of the CCREEE's multi-annual programme continually.

The results of these different types of monitoring will be captured in the reporting system and annual reports, and will determine the annual operational planning exercise. The annual reports and annual work plans will be presented to CARICOM and to donors and will serve as an exercise in reviewing progress, problems and solutions. Since the CCREEE is likely to seek funding and other support from different types of organizations and agencies, it should negotiate from the very beginning a general annual reporting format that would satisfy the needs of all the different organizations, so as to keep the burden of reporting to a necessary minimum.

One **external evaluation** will take place near to the finalisation of the first operational phase. Emphasis of the evaluations should be an assessment of the organisational design as well as the suitability of its programmes. Another focus should be the financing aspect of the operational budget of the CCREEE in so far as it is possible to raise core funds for its functioning and which of the different functions have a potential for generating an income in the long term. Following the completion of the M&E plan, tools and methods of data collection, processing, analysing, and interpreting will undergo detailed development. Tools such as questionnaires and structured surveys will be used in collecting data. Baseline data will be established for the performance indicators, which have been defined in the project logical framework and benchmarking will be carried out to see the changes caused by the project at different results levels.

F.2 Benchmarks for monitoring and evaluation processes

In line with the proposed institutional setup of the CCREEE, the Director of the Centre will be responsible for compiling detailed progress reports on an annual basis and present to all parties involved in the management and funding of the CCREEE. The annual reports will be discussed and approved by the Executive Board. The Director of the Centre will also be responsible for producing abridged progress report in between EB meetings (i.e. six months after each main progress report). This report will also be made available to all parties.

G. PRIOR OBLIGATIONS AND PREREQUISITES

CARICOM and the government of the host country will enter into a formal agreement for the hosting of the CCREEE in line with established and applicable CARICOM guidelines.

H. LEGAL CONTEXT

The Centre will act as an independent body but within the legal, administrative and financial framework of CARICOM/SIDS DOCK rules and regulations. CARICOM/SIDS DOCK will delegate the day-to-day management and decision-making authorities to the bodies and the Centre's Executive Director (e.g. procurement, authority to sign contracts and recruitment). The Centre and the host country will sign a headquarters agreement guided by the Community rules (not that by the host country). Concerning UNIDO activities it is expected that each set of activities to be implemented in the target countries will be governed by the provisions of the Standard Basic Cooperation Agreement concluded between the Government of the recipient country concerned and UNIDO or – in the absence of such an agreement – by one of the following: (i) the Standard Basic Assistance Agreement concluded between the recipient country and UNDP, (ii) the Technical Assistance Agreements concluded between the recipient country and the United Nations and specialized agencies, or (iii) the Basic Terms and Conditions Governing UNIDO Projects. In case UNIDO is operating the funding the UNIDO procurement rules apply.

I. LIST OF ANNEXES

Annex 1: Result Based Management Framework for the First Operational Phases of CCREEE
Annex 2: Detailed budget according to budget lines
Annex 3: Job descriptions of selected staff of CCREEE
Annex 4: Draft selection criteria for the host country and TORs for the CCREEE Secretariat
Annex 5: Draft Terms of Reference for the National Focal Institutions (NFIs)
Annex 6: Draft Terms of Reference for the CCREEE Thematic Hubs (THs)
Annex 7: Minutes of the Validation Workshop
Annex 8: Needs assessment survey
Annex 9: Signed MOU between Austria, SS DOCK and UNIDO
Annex 10: Brochure on the Global Network of Regional Sustainable Energy Centres

Annex 1: Result Based Management Framework on the 1st Operational Phase of CCREEE

Development Impact (ultimate outcome)	Indicators	Baseline and targets	Means of verification	Risks and assumptions
Improved 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) by promoting renewable energy and energy efficiency investments, markets and industries in the Caribbean.	- % increase of people with access to modern, reliable and affordable energy services provided by RE technologies (urban and rural population, sex-disaggregated data - baseline 2013) - % 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 - % decrease of fossil fuel import spending in the Caribbean due to the introduction of RE&EE technologies and solutions in USD (baseline 2013) - % decrease of GHG tCO_2 emissions through implemented RE&EE projects - Number of additional jobs created directly or indirectly in the RE&EE sector in the Caribbean - % increase of registered local companies in the RE&EE sector	**Baseline:** High energy costs hamper the socio-economic and industrial development in the Caribbean; high fossil fuel import spending in many islands; low productivity and competitiveness of local key industries due to energy costs (e.g. food processing, manufacturing of niche products, fishery, tourism); low levels of RE&EE investments; lack of local energy companies; **Target(s):** - 15% increase of people with access to modern, reliable and affordable energy services provided by RE technologies (urban and rural population, sex-disaggregated data - baseline 2013) - 15% increase of the RE contribution to the electricity mix of the Caribbean (baseline 2013) - USD 130 million of additional investments in RE&EE projects (at least 25% of it are addressing	- Regional statistics on investments in RE&EE projects in the region - Regional statistics on GHG emissions - Regional statistics and energy balances - National and regional policy and strategy papers - C-SERMS RE&EE Baseline report	- Investments in RE&EE projects continue to be and perceived as feasible and viable options - Regional development of policies and legal frameworks for energy continues and creates a favourable environment for sustainable energies - Stable political situation in countries

		key industries in the Caribbean - baseline 2013) - 15% decrease of fossil fuel import spending in the Caribbean due to the introduction of RE&EE technologies and solutions (baseline 2013) - 15% decrease of GHG tCO_2 emissions through implemented RE&EE projects - At least 100 additionally (directly or indirectly) created local jobs in the RE&EE sector (baseline 2013) - 10% increase of registered local companies in the RE&EE sector (at least 25% of them are in the manufacturing sector)		
	Indicators	**Baseline and targets**	**Means of verification**	**Risks and assumptions**
Intermediate Outcome (mid-term)	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Outcome 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. Number of additional RE&EE experts working with CCREEE on CARICOM sustainable energy issues 2. Number of major RE&EE programs and/or projects are implemented by CCREEE on behalf of CARICOM	**Baseline:** Lack of CARICOM staff capacities in the sustainable energy sector; slow implementation of regional RE&EE policy commitments; weak local regional coordination of the sector and agenda setting; lack of technical	- Signed agreement between UNIDO and the host institution	- Availability of funding from the host institution and development partners to finance the Centre - Adequate finance and staff resources made available in a timely manner - Key staff remains in position or are replaced efficiently

	3. % of the envisaged outcomes and activities in the CCREEE project document are executed 4. Amount of financial resources for CCREEE activities mobilized and funding agreements for the second operational phase signed 5. Rating of the external evaluation concerning the relevance, effectiveness, efficiency and impact of CCREEE	CARICOM capacities to develop and implement regional RE&EE projects; **Target(s):** 1. At least five (5) additional RE&EE experts are working with CCREEE on regional sustainable energy issues 2. At least five (5) major RE&EE programs or projects are implemented by CCREEE on behalf of CARICOM/SIDS DOCK 3. At least 80% of the envisaged outcomes and activities in the CCREEE project document are executed 4. At least ten (10) million Euro for CCREEE activities are mobilized and sufficient funding for the second operational phase is secured 5. High external evaluation scores confirm the relevance, effectiveness, efficiency and impact of CCREEE		
Outcome 2: Accelerated development, adoption and execution of regional and national gender sensitive RE&EE polices, targets and	- % of regional C-CERMS implementation and monitoring framework is executed - Number of countries with adopted national RE&EE action plans and SE4ALL action agendas	**Baseline:** Lack of regional technical capacities to implement the regional RE&EE targets and policies of CARICOM, SIDS DOCK	- C-SERMS implementation framework - National documents	- Continued support of policy makers.

incentives through targeted regional interventions	- Number of countries which adopt regional RE equipment standards and labelling schemes for efficient appliances	and SE4ALL on national levels **Target(s):** - At least 20% of the regional C-SERMS implementation and monitoring framework is implemented - At least 7 countries adopt national RE&EE action plans and SE4ALL action agendas - Regional RE equipment standards and labelling schemes for efficient appliances are adopted by at least 7 countries		
Outcome 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	- Number of trained certified trainers across 15 islands - Number of key stakeholders across 15 islands are trained by certified trainers - % of the trained stakeholders apply the obtained skills in the national energy sector - % of the trained experts apply the obtained skills in the energy sector of the Caribbean - Number of national research institutions involved in regional applied research programs under implementation	**Baseline:** Weak capacities of key institutions and stakeholders in the sustainable energy sector (e.g. public institutions, utilities, banks, companies, consultants educational and research institutions); very weak mainstreaming of gender aspects; **Target(s)**: - At least 80 trainers are certified across 15 islands (at least 30% are female)	- The regional capacity development strategy document and progress reports - The certification/accreditation scheme documents - Attendance registers for training events	- Involved organisations accept and implement the capacity building framework - Involved organisations and countries accept and implement the certification/accreditation scheme

		- At least 1.000 key stakeholders across 15 islands are trained by the certified trainers and/or institutions (being at least 30% female) - At least 50% of the trained stakeholders apply their received skills in the energy sector of the Caribbean (at least 30% of that are female) - At least seven national research institutions are involved in the execution of at least (3) regional applied research programs on RE&EE		
Outcome 4: The awareness and knowledge base of local key institutions and stakeholder groups on RE&EE are strengthened	- Strengthened regional RE&EE information and data management system - Number of national institutions in 15 Caribbean countries provide updated RE&EE data to the system on an annual basis (sex-disaggregated) - Number of experts from the Caribbean region participates in CCREEE RE&EE conferences by end of the first operational phase (at least 30% of the invited panellists are female) - % of the population in 15 countries is reached by regional awareness RE&EE campaigns supported by CCREEE	**Baseline:** Weak existing regional RE&EE information system; lacks of reliability and relevance for the private sector and industry; currently there exists no systematic collection of sex-disaggregated baseline data; awareness of key stakeholders on RE&EE varies considerably across the Caribbean islands; no coherent information on local sustainable energy industry available; **Target(s):**	- Website database and statistics - Reports of audio-visual awareness raising campaigns - Lists of conference participants	- Knowledge management services of the Centre are well received by actors in the Caribbean energy sector

		- Regional RE&EE information and data management system established and operational - At least 15 institutions in 15 Caribbean countries provide updated baseline data to the regional system on an annual basis (incl. sex-disaggregated data) - 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 panellists are female) - At least 30% of the population in 15 countries is reached by regional RE&EE awareness campaigns supported by CCREEE		
Outcome 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	- Volume of investments (in USD) for the execution of the SIDS DOCK project pipeline mobilized - Number of small to medium-scale RE&EE projects co-funded by national institutions (e.g. banks) with the support	**Baseline:** Insufficient levels of RE&EE investments to reach the set SIDS DOCK and CARICOM RE&EE targets by 2033.[16] Lack of	- Documents on support schemes - (Pre-)Feasibility studies - Project documents - Project progress reports - Signed contracts - Minutes of investment forums	- There is a greater interest by the private sector in RE&EE investments in the region.

[16] SIDS DOCK Goals by 2033: increase EE by 25 percent; generate a minimum of 50 percent of electric power from RE sources; 20-30 percent decrease in liquid petroleum transportation fuel use; CARICOM targets as approved in the 41st Special Meeting of COTED: 20 percent renewable power capacity by 2017, 28 percent by 2022, and 47 percent by 2027; a 33 percent reduction in energy intensity by 2027;

	of newly created regional support schemes - Investment volume (in USD) of developed (pre-)feasibility studies/energy audits for innovative RE&EE projects addressing industrial key sectors (e.g. tourism, agriculture, fishery, creative industry);	technical assistance and financing for the SIDS DOCK RE&EE project pipeline of USD 617 million; lack of tailored RE&EE financing instruments for small and medium sized RE projects and EE solutions; lack of RE&EE programs which target key industries in the Caribbean (e.g. food processing, fishery, manufacturing, tourism); **Target(s)**: - USD 130 million of additional investments in RE&EE projects (at least 25% of it are addressing key industries in the Caribbean - baseline 2013) - 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 - (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		
Outcome 1: Enhanced regional institutional capacities through the creation of the efficiently managed and financially sustainable Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 1.1 The host country of the Secretariat of the Centre is selected and the office is physically established	- 1 appointed independent committee to identify centre location - 1 office with appropriate space and equipment to accommodate the staff of the Secretariat - 1 signed host country agreement	**Baseline**: no regional RE&EE centre is in existence in the Caribbean; **Target(s):** - 1 appointed independent committee to identify centre location - 1 office with appropriate space and equipment to accommodate the staff of the Secretariat - 1 signed host country agreement	- Assessment report on possible locations of the Centre - Office agreement	- Selection of the Centre location is carried in a timely manner - Host country provides an appropriate office in time
Activities				
1.1.1 Selection of the host country of the Secretariat of the Centre				
1.1.2 Establishment of a functional office with IT infrastructure				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 1.2 The Executive Director and the technical and administrative staff are recruited and the internal procedures and regulations are implemented	- Executive Director is recruited - Seconded UNIDO expert(s) recruited - At least 4 local technical and administrative staff recruited - Implementation of internal rules (e.g. procurement committee, financial and accounting rules)	**Baseline:** no regional RE&EE centre is in existence in the Caribbean; **Target(s):** - Executive Director is recruited - Seconded UNIDO	- Staff contracts - Internal rules documents	- Regional staff of suitable quality and experience is available. - Salary scales and contracts conditions do not deter regional staff or result in high turnover.

		expert(s) recruited - At least 4 local technical and administrative staff recruited - Implementation of internal rules (e.g. procurement committee, financial and accounting rules)		
Activities				
1.2.1Recruit the CCREEE Executive Director in accordance with the TORs				
1.2.2 Recruit the administrative and technical staff in accordance with the organizational chart and established ToRs				
1.2.3 Establish and implement the internal procurement, staff, travel, financial and accounting rules in accordance with the host organisation guidelines, the organisational chart and TORs				
1.2.4 Establish an internal quality and appraisal framework for supported renewable energy and energy efficiency activities (incl. minimum standards for gender and environmental safeguards)				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 1.3 The institutional governance structure of the Centre is established and executed	- Number of NIFs and Thematic Hubs (TH) nominated - Number of meetings of the Executive Board and Technical Committee organized	**Baseline:** no regional RE&EE centre is in existence in the Caribbean; **Target(s):** - 15 NIFs and 5 Thematic Hubs (TH) nominated - At least 3 meetings of the Executive Board and Technical Committee organized	- Host institution agreement - Minutes of the EB and TC meetings - NFI agreements	- There is interest from national institutions to become a NFI
Activities				
1.3.1 Sign and implement an the host agreement of the centre				
1.3.2 Establish a network of National Focal Institutions (NFIs) and Thematic Hubs (THs) and develop their capacities				

1.3.3 Organize the Executive Board and Technical Committee meetings as required				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 1.4 A long and short-term planning, implementation and monitoring framework of the Centre is established and implemented	- 1 approved Business Plan incl. strategic environment assessment (SEA) - 1 work plan per year - 1 Monitoring and Evaluation Framework tracking the CCREEE progress	**Baseline:** no regional RE&EE centre is in existence in the Caribbean; **Target(s):** - 1 approved Business Plan by the Board - 1 work plan per year - 1 Monitoring and Evaluation Framework tracking the CCREEE progress	- Business Plan and strategic environmental assessment (SEA) - Annual work plans - Monitoring and evaluation framework	- The Board reaches a consensus regarding the business plan and annual work plans
Activities				
1.4.1 Development of the CCREEE Business Plan (incl. strategic environmental assessment)				
1.4.2 Development and adoption of annual work plans, status reports and audited financial statements of the Centre in line with CARICOM/SIDS DOCK's rules				
1.4.3 Develop and implement a monitoring and evaluation system including indicators measuring the CCREEE progress and impact				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 1.5 The core activities and functions of CCREEE are implemented and sustainability of the organization is reached	- Number of established internal procedures and technical programs - Number of NIFs and Thematic Hubs (TH) nominated - Number of meetings of the Executive Board and Technical Committee - % of business plan and annual work plans are implemented at the end of the first operational phase of CCREEE	**Baseline:** no regional RE&EE promotion agency in existence in the Caribbean; **Target(s):** - Number of established internal procedures and technical programs	- Meeting minutes - Project documents - Annual work plans and progress reports of CCREEE	- The Centre has enough resources to develop the projects and to organise the meetings

	- Volume of co-funding for the technical program of the centre raised	- 15 NIFs and 5 Thematic Hubs (TH) nominated - At least 3 meetings of the Executive Board and Technical Committee - 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		
Activities				
1.5.1 Organize the official inauguration of the Centre (back to back with the first EB and TC meetings)				
1.5.2 Secure sufficient funding for the technical program and administration of the centre to ensure financial sustainability of the centre throughout the first and second operational phase (e.g. signing of funding agreements)				
1.5.3 Implement effectively through the signing of technical cooperation agreements with local (e.g. universities, institutions, training centres) and international partners (e.g. UNIDO, Austria, SIDS-DOCK, IADB, EU, IRENA, GIZ)				
1.5.4 Develop at least 5 RE&EE program/project proposals annually to be submitted for financing to local and international partners (volume at least 0.5 million EUR per project)				
Outcome 2: Accelerated development, adoption and execution of regional and national gender sensitive RE&EE polices, targets and incentives through targeted regional interventions				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 2.1 Regional RE&EE targets and policies of CARICOM, SIDS DOCK and SE4ALL are under implementation on national levels	- % of regional C-CERMS implementation and monitoring framework is executed - Number of countries with adopted national RE&EE action plans and SE4ALL action agendas - Number of CCREEE staff and consultants assisting the process	**Baseline:** Lack of regional technical capacities to implement the regional RE&EE targets and policies of CARICOM, SIDS DOCK and SE4ALL on national levels **Target(s):**	- C-SERMS implementation framework - National documents	- Support for the process on national levels

		- 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		
Activities				
2.1.1 Assist member states in the development or reformulation of sustainable energy policies				
2.1.2 Develop a regional framework for the development, implementation and monitoring of national RE&EE action plans				
2.1.3 Assist member states in the development and implementation of their RE&EE action plans in line with C-SERMS, SE4ALL and SIDS DOCK objectives				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 2.2 Regionally agreed renewable energy equipment standards and labelling schemes for efficient appliances are developed and under implementation	**-** Number of countries which adopt regional RE equipment standards and labelling schemes for efficient appliances	**<u>Baseline:</u>** No regional standards for renewable energy equipment and labelling schemes for efficient appliances in place; progress on national level varies from country to country; lack of south-south cooperation; **<u>Target(s):</u>**	- Documents on standards and labelling schemes	- Regional standards are enacted by policy makers.

		- Regional RE equipment standards and labelling schemes for efficient appliances are adopted by at least 7 countries		
Activities				
2.2.1 Formulate regional standards and certification mechanisms making use of already existing efforts in the member states				
2.2.2 Define procedures for certification of labelling and standards				
Outcome 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				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 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	- Regional capacity development strategy - Implementation progress of the regional capacity development strategy in % of total	**Baseline**: No regional capacity development strategy on RE&EE is in place; very weak implementation of **Target(s)**: - Capacity development strategy is validated by key stakeholder groups (incl. women groups) and gender mainstreaming mechanisms are incorporated - At least 30% of the activities of the regional capacity development strategy are implemented by end of the first operational phase of CCREEE.	1. Capacity development strategy document 2. Mid-term review on program implementation	- The capacity development strategy is well accepted
Activities				

3.1.1 Undertake a regional capacity needs assessment (particularly reflecting the needs of local business and industry groups)				
3.1.2 Develop a regional multi-year capacity development framework for key stakeholders in the RE&EE sector (particularly reflecting the needs of local business and industry groups)				
3.1.3 Facilitate the adoption and implementation of the regional capacity development framework and mobilize support from various partners				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 3.2 Regional certification and accreditation schemes for trainers and training institutions are developed, adopted and under implementation	- Number of training competency standards are operational - Number of training standards adopted by the centre - Number of trainers certified across 15 islands - Number of training institutions and universities adopt the competency standards	**Baseline:** No regional competency standards, certification and accreditation schemes for trainers and training institutions are in place; no regional gender mainstreaming standards in place; **Target(s):** - 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 least15 islands (at least 30% are female) - At least 5 training institutions and universities adopt the competency standards	- Competency standards documents - Records and certificates of certified trainers	- Involved organisations show interest to cooperate with the Centre
Activities				
3.2.1 Develop training competency standards, certification and accreditation schemes and models on RE&EE in coordination with local business and industry groups				

3.2.2 Act as coordinative hub for the accreditation and certification of national training centres and trainers				
3.2.3 Execution of regional train-the-trainer workshops				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 3.3 Key stakeholders are trained by the certified trainers on RE&EE aspects of high relevance for the local business and industry sector	- Number of key stakeholders across 15 islands are trained by the certified trainers and/or institutions - Number of the trained experts apply their received skills in the energy sector of the Caribbean	**Baseline:** Weak capacities of key institutions and stakeholders in the energy sector (e.g. public institutions, utilities, banks, companies, consultants educational and research institutions); very weak mainstreaming of gender aspects; **Target(s):** - 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)	- Attendance sheets and questionnaires - Lists of participants - Workshop documents	- The target audience show interest for the training courses
Activities				
3.3.1 Train key policy makers in sustainable energy policy planning and incentive mechanisms, including cross-cutting issues (e.g. waste-to-energy, mainstreaming of environmental assessments and standards in project approval procedures, energy-water-food nexus, gender mainstreaming, decommissioning and recycling procedures for RE&EE technologies)				
3.3.2 Train utilities and regulators regarding RE integration/grid stability and energy efficiency (e.g. demand side management)				
3.3.3 Provide targeted RE&EE business development training for clean-tech SMEs and entrepreneurs (e.g. energy auditors, equipment installers, RE service providers)				

3.3.4 Increase the capacity of stakeholders to mainstream gender and climate resilience into RE&EE policies and projects				
3.3.5 Increase the capacity of technical private-sector experts and start-ups to develop, install and maintain RE&EE projects and systems (including training on climate resilient energy infrastructure).				
3.3.6 Train experts on the financial structuring, design and planning of RE&EE projects (e.g. climate finance, RETScreen, HOMER)				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 3.4 Applied science research networks and technology transfer with high relevance for the local business and industry sector are promoted	- Number of applied research programs receive funding and are under execution - Number of RE&EE technology transfer projects are under implementation	**Baseline:** No major regional applied research programs and technology transfer projects on RE&EE are under implementation; **Target(s):** - 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 innovative technology transfer projects are under implementation (e.g. waste to energy, sustainable transport)	- Research reports - Program documents - Progress reports	- New technologies are well accepted by users
3.4.1 Conduct a baseline study on the research priority needs of the Caribbean RE&EE industry and business sectors				
3.4.2 Develop and coordinate the implementation of regional applied research programs and networks on RE&EE				
3.4.3 Promote south-south and north-south technology transfer programs and projects				

Outcome 4: The awareness and knowledge base of local key institutions and stakeholder groups on RE&EE are strengthened				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 4.1 An effective online RE&EE information management system addressing the needs of investors, private sector and industry is created and operating	- Number of national institutions in 15 Caribbean countries provide updated RE&EE data to the system on an annual basis - Number of documents, files and data-sets are available in the database - Number of registered users visit the data system regularly and download data - % of the responding users confirm their satisfaction with the quality and reliability of the data in annual online surveys	**Baseline:** The current regional RE&EE information system is inadequate and lacks of reliability and relevance for the private sector and industry; CEIS needs to be strengthened; currently there exists no systematic collection of sex-disaggregated baseline data; **Target(s):** - At least 15 institutions in 15 Caribbean countries 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	- web portal and statistics - Data reports - Files and documents	- Developed content for the website is useful for developers and investors in the energy sector

		quality and reliability of the data in annual online surveys		

Activities
4.1.1 Maintain an effective interactive website including extensive document sharing facility (using existing platforms such as CEIS or www.CCREEE.org)
4.1.2 Compile an inventory of relevant experiences/projects and papers/study reports/research reports and documents on best practices, skills, know-how, knowledge, technology suppliers in the Caribbean (disseminated through the information system)
4.1.3 Create a database of RE&EE stakeholders, including governments, training institutes, industry and NGO's (to be disseminated through the information system)
4.1.4 Develop guidelines on energy data verification, quality and harmonisation in cooperation with the NFIs
4.1.5 Create a database of RE&EE standard investment opportunities for the region to facilitate matching available funds to real projects (particularly in alignment with the activities under outcome 5 and SIDS DOCK indicative project pipeline)
4.1.6 Produce and publish and RE&EE resource atlas and facilitate resource mapping in the Caribbean (data to be disseminated through the information system)
4.1.7 Map existing sustainable energy projects including their key information (manufacturer, installer, status of operation, generated energy, etc.) and disseminate information through the information system

Immediate Outcomes (short-term) - Outputs	Indicators	Baseline and Targets	Means of verification	Risks and assumptions
Output 4.2 Awareness and knowledge base of key stakeholder groups on various RE&EE aspects are strengthened	- Number of experts from the Caribbean region participates in CCREEE RE&EE conferences by end of the first operational phase (at least 30% of the invited panellists are female) - Number of CCREEE conferences with focus on the gender-RE&E nexus - % of the population in 15 countries is reached by regional awareness RE&EE campaigns supported by CCREEE	**Baseline:** Awareness of key stakeholders on RE&EE varies considerably across the Caribbean islands; there is lack of awareness on gender-RE&EE issues; **Target(s):** - 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 panellists 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	- Reports and statistics of audio-visual awareness raising campaigns - Lists of conference participants	- The public and private sector continue to show interest for RE&EE themes
Activities	**Indicators**	**Means of verification**		**Risks and assumptions**
4.2.1 Organize at least one major annual conference on different RE&EE aspects				
4.2.2 Produce an RE&EE Industry report and regularly update it in cooperation with private sector groups				
4.2.3 Design and implement at least one regional RE&EE awareness campaign targeting the residential, commercial or industrial sectors				
Outcome 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				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**

Output 5.1 Investments in RE&EE projects are promoted	- Volume of investments (in USD) for the execution of the SIDS DOCK project pipeline mobilized - 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 - Investment volume (in USD) of developed (pre-)feasibility studies/energy audits for innovative RE&EE projects addressing industrial key sectors (e.g. tourism, agriculture, fishery, creative industry); - Number of regional key programs to promote investments in innovative technology areas developed and under implementation (e.g. waste to energy, efficient transport);	**Baseline:** Insufficient levels of RE&EE investments to reach the set SIDS DOCK and CARICOM RE&EE targets by 2033.[17] Lack of technical assistance and financing for the SIDS DOCK RE&EE project pipeline of USD 617 million; lack of tailored RE&EE financing instruments for small and medium sized RE projects and EE solutions; lack of RE&EE programs which target key industries in the Caribbean (e.g. food processing, fishery, manufacturing, tourism); **Target(s)**: - 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	- Documents on support schemes (incl. environmental safeguard standards, gender mainstreaming) - (Pre-)Feasibility studies - Project documents - Project progress reports - Signed contracts - Minutes of investment forums	- The Centre is able to identify a significant number of RE&EE projects - The private sector demonstrates interest in the RE&EE market opportunities

[17] SIDS DOCK Goals by 2033: increase EE by 25 percent; generate a minimum of 50 percent of electric power from RE sources; 20-30 percent decrease in liquid petroleum transportation fuel use; CARICOM targets as approved in the 41st Special Meeting of COTED: 20 percent renewable power capacity by 2017, 28 percent by 2022, and 47 percent by 2027; a 33 percent reduction in energy intensity by 2027;

		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 under implementation (e.g. waste to energy, efficient transport);		
Activities	**Indicators**		**Means of verification**	**Risks and assumptions**
5.1.1 Establish a user-friendly investment portal on the SIDS DOCK project pipeline for potential investors and financiers (to be published through the information system)				
5.1.2 Organize annual investment and business forums (e.g. trade fare) to present the project pipeline to interested financiers and investors				
5.1.3 Raise funding for the execution of the project pipeline and support the development of innovative projects addressing the energy needs of industrial key sectors in the Caribbean				
5.1.4 Design and establish regional support schemes to support national institutions/banks to provide co-finance to small to medium scale projects (incl. rural off-grid projects)				
Immediate Outcomes (short-term) - Outputs	**Indicators**	**Baseline and Targets**	**Means of verification**	**Risks and assumptions**
Output 5.2 The local sustainable energy industry is strengthened	- 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).	**Baseline:** Low local added value of RE&EE investments due to a lack of Caribbean sustainable energy businesses and industry; lack of opportunities for local entrepreneurs due to the absence of tailored support instruments; **Target(s):**	- CARICOM strategy document - Supported business plans of companies - Financial documentation - Project progress reports - Documentation of call for proposals	- Lack of interest and companies due to small markets

	- At least 20 companies in the sustainable energy sector are awarded through the established clean tech innovation program.	- 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.		
Activities	**Indicators**		**Means of verification**	**Risks and assumptions**
5.2.1 Undertake a baseline assessment and develop a strategy for the promotion of local sustainable energy industry and jobs				
5.2.2 Design and operate a financing facility to support innovative local sustainable energy businesses and start-ups - execute two call for proposals (to be implemented in combination with activity 3.3.3)				
5.2.3 Develop and execute a clean-tech program to promote RE&EE business innovations (including prize competition for the most innovative business idea)				
5.2.4 Collect lessons learned and develop a manual for sustainable energy start-up companies (to be used in the trainings under output 3.3)				

Annex 2: Detailed budget according to budget lines

Table 10: Running and technical programme costs of the Centre for 42 months (start-up and first operational phase) in Euros

BL	Item	Host country	Local sources (e.g. co-funding)	ADA	UNIDO	SIDS DOCK	Other donors (e.g. GIZ, DFID, EU)	Total (€)
1100	**International Consultant/staff**	-	282,520	525,573	355,506	883,200	1,236,402	3,283,200
1700	**National Consultants/staff**	162,000	127,410	107,884	2,800	188,490	1,261,254	1,849,838
2100	**Contractual Services**	-	-	103,250	35,250	36,000	1,058,000	1,232,500
1600	**International Travel**	-	8,760	64,040	30,640	-	133,920	237,360
1500	**Local Travel**	-	38,848	57,816	8,944	51,200	286,952	443,760
3500	**Regional Meetings/Workshops**	23,000	280,860	166,760	60,720	162,180	1,579,804	2,273,324
5100	**Miscellaneous expenses**	261,880	122,000	113,120	44,140	30,000	144,060	715,200
4500	**Equipment**	36,000	-	12,000	12,000	-	-	60,000
3000	**Training/Fellowships**	-	-	-	-	-	84,000	84,000
	Subtotal	**482,880**	**860,399**	**1,150,443**	**550,000**	**1,351,070**	**5,784,391**	**10,179,183**
	13% support cost of UNIDO			149,558				
	Total	**482,880**	**860,399**	**1,300,000**	**550,000**	**1,351,070**	**5,784,391**	**10,328,740**

Table 11: Running costs of the Centre for 42 months for Outcome 1 (start-up and first operational phase) in Euros

Item	Unit	Budget	Host country	Local sources (e.g. co-funding)	ADA	UNIDO	SIDS DOCK	Other donors (e.g. GIZ, DFID, EU)
Centre Executive Director	person-month	304,000		60,800			243,200	
Technical Assistant	person-month	228,000			159,600	68,400		
Head of Programmes	person-month	72,000		14,400			36,000	21,600
Investment and business promotion Expert	person-month	140,000		28,000			56,000	56,000
Centre RE Expert	person-month	180,000			63,000		117,000	
Centre EE Expert	person-month	180,000			63,000		117,000	
Capacity Building Expert	person-month	120,000					36,000	84,000
International Communications and outreach officer	person-month	182,400			54,720	127,680		
RE&EE Observatory & GIS Expert	person-month	96,000						96,000
GEN-SEC Advisor and Coordinator	person-month	92,400			27,720	64,680		
Head of Admin & Finance	person-month	72,000		36,000				36,000

Accountant	person-month	126,000		63,000			63,000	
Admin Officer	person-month	136,500			40,950		95,550	
Centre Secretary	person-month	90,000	90,000					
Centre Logistic Assistant	person-month	72,000	72,000					
Other Personnel Costs	person-month	50,400		40,320	10,080			
Train/Fellowship/Study	person-month	84,000						84,000
Premises	month	54,000	54,000					
International travel CCREEE	trip	41,280			20,640	20,640		
Local Travel	trip	51,600			25,800			25,800
Board/TC Meetings	day	56,000			16,800	28,000		11,200
Inauguration Event	event	30,000	6,000		15,000	9,000		
Office equipment	one off	50,000	36,000		12,000	2,000		
Training facilities & Guest House	month	50,400	50,400					
Motor vehicles (2)	one off	50,000	25,000		25,000			
Running costs	month	165,600	132,480		33,120			
External audit	one	30,000			15,000	15,000		
Mid-term and final evaluation	one	60,000			25,000	35,000		

Sub-total personnel		**2,225,700**	**162,000**	**242,520**	**419,070**	**260,760**	**763,750**	**377,600**
Sub-total other **13% Overhead costs**		**638,880** **78,966**	**303,880**	**-**	**188,360** **78,966**	**109,640**	**-**	**37,000**
TOTAL		**2,943,546**	**465,880**	**242,520**	**686,396**	**370,400**	**763,750**	**414,600**

Table 12: Technical programme costs of the Centre for 42 months (preparatory and first operational phase) for Outcomes 2, 3, 4 and 5 in Euros

BL	Item	Host country	Local sources (e.g. co-funding)	ADA	UNIDO	SIDS DOCK	Other donors (e.g. GIZ, DFID, EU)	Total
1100	**International Consultant/staff**	-	40,000	147,453	94,746	215,000	942,802	**1,440,000**
1700	**National Consultants/staff**	-	127,410	66,934	2,800	92,940	1,261,254	**1,551,338**
2100	**Contractual Services**	-	-	103,250	35,250	36,000	1,058,000	**1,232,500**
1600	**International Travel**	-	8,760	43,400	10,000	-	133,920	**196,080**
1500	**Local Travel**	-	38,848	32,016	8,944	51,200	261,152	**392,160**
3500	**Regional Meetings/Workshops**	17,000	280,860	134,960	23,720	162,180	1,568,604	**2,187,324**
5100	**Miscellaneous expenses**	-	122,000	15,000	4,140	30,000	144,060	**315,200**
4500	**Equipment**	-	-	-	-	-	-	**-**
3000	**Training/Fellowships**	-	-	-	-	-	-	**-**
	Subtotal	**17,000**	**617,879**	**543,013**	**179,600**	**587,320**	**5,369,791**	**7,314,603**
	13% support cost of UNIDO			70,592				
	Total	**17,000**	**617,879**	**613,604**	**179,600**	**587,320**	**5,369,791**	**7,385,194**

Table 13: Detailed technical programme costs of the Centre for the start-up and first year of operation for Outcomes 2, 3, 4 and 5 in Euros

		Start-Up Phase						Year 1					
BL	Item	Host country	Local sources (e.g. co-funding)	ADA	UNIDO	SIDS DOCK	Other donors (e.g. GIZ, DFID, EU)	Host country	Local sources (e.g. co-funding)	ADA	UNIDO	SIDS DOCK	Other donors (e.g. GIZ, DFID, EU)
1100	**International Consultant/staff**	-	-	-	-	-	-	-	13,333	62,484	31,582	71,667	314,267
1700	**National Consultants/staff**	-	-	-	-	-	-	-	42,470	32,211	933	30,980	420,418
2100	**Contractual Services**	-	-	-	-	-	-	-	-	103,250	35,250	12,000	352,667
1600	**International Travel**	-	-	-	-	-	-	-	2,920	14,467	3,333	-	44,640
1500	**Local Travel**	-	-	-	-	-	-	-	12,949	10,672	2,981	17,067	87,051
3500	**Regional Meetings/Workshops**	-	-	-	-	-	-	5,667	93,620	44,987	7,907	54,060	522,868
5100	**Miscellaneous expenses**	-	-	-	-	-	-	-	40,667	5,000	1,380	10,000	48,020
4500	**Equipment**	-	-	-	-	-	-	-	-	-	-	-	-
3000	**Training/Fellowships**	-	-	-	-	-	-	-	-	-	-	-	-
	Sub-total	0	0	0	0	0	0	**5,667**	**205,960**	**273,071**	**83,367**	**195,773**	**1,789,930**
	13% support cost to UNIDO	0	0	0	0	0	0	0	0	35,499	0	0	0
	Total	**0**	**0**	**0**	**0**	**0**	**0**	**5,667**	**205,960**	**308,570**	**83,367**	**195,773**	**1,789,930**

Table 14: Detailed technical programme costs of the Centre for the second and third years of operation for Outcomes 2, 3, 4 and 5 in Euros

		Year 2						Year 3					
BL	Item	Host country	Local sources (e.g. co-funding)	ADA	UNIDO	SIDS DOCK	Other donors (e.g. GIZ, DFID, EU)	Host country	Local sources (e.g. co-funding)	ADA	UNIDO	SIDS DOCK	Other donors (e.g. GIZ, DFID, EU)
1100	**International Consultant/staff**	-	13,333	42,484	31,582	71,667	314,267	-	13,333	42,484	31,582	71,667	314,267
1700	**National Consultants/staff**	-	42,470	17,361	933	30,980	420,418	-	42,470	17,361	933	30,980	420,418
2100	**Contractual Services**	-	-	-	-	12,000	352,667	-	-	-	-	12,000	352,667
1600	**International Travel**	-	2,920	14,467	3,333	-	44,640	-	2,920	14,467	3,333	-	44,640
1500	**Local Travel**	-	12,949	10,672	2,981	17,067	87,051	-	12,949	10,672	2,981	17,067	87,051
3500	**Regional Meetings/Workshops**	5,667	93,620	44,987	7,907	54,060	522,868	5,667	93,620	44,987	7,907	54,060	522,868
5100	**Miscellaneous expenses**	-	40,667	5,000	1,380	10,000	48,020	-	40,667	5,000	1,380	10,000	48,020
4500	**Equipment**	-	-	-	-	-	-	-	-	-	-	-	-
3000	**Training/Fellowships**	-	-	-	-	-	-	-	-	-	-	-	-
	Sub-total	**5,667**	**205,960**	**134,971**	**48,117**	**195,773**	**1,789,930**	**5,667**	**205,960**	**134,971**	**48,117**	**195,773**	**1,789,930**
	13% support cost to UNIDO	0	0	17,546	0	0	0	0	0	17,546	0	0	0
	Total	**5,667**	**205,960**	**152,517**	**48,117**	**195,773**	**1,789,930**	**5,667**	**205,960**	**152,517**	**48,117**	**195,773**	**1,789,930**

Annex 3: Job descriptions of selected Staff of CCREEE

Draft Job Description for the Executive Director of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)

(Female candidates from Caribbean islands are encouraged to apply)

Post title:	Executive Director of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)[18]
Duty station:	location in the Caribbean to be confirmed; with international travel as required
Duration:	2 years (with the possibility for extension for another 2 years to be approved by the Executive Board based on the performance)

A. Functions and responsibilities:

Management and Organizational Development:

- Establish the office of the CCREEE Secretariat and its financial and administrative rules and procedures in line with the legal CARICOM/SIDS DOCK requirements and the need for timely and quality delivery of the Centre; sign the headquarters agreement with the host country;
- Establish and implement the institutional cycle of the Centre which includes the network of National Focal Institutions (NFIs) among all participating Caribbean islands, the Thematic Hubs (TH) as well as the Executive Board (EB) and Technical Committee (TC); organize the regular meetings with the NIFs, THs, as well as the TC and EB; take minutes of the meetings and prepare all necessary documents;
- Implement the decisions and recommendations of the CCREEE Executive Board (EB) and Technical Committee (TC);
- Ensure effective organizational development of the Centre and its strategic positioning in the Caribbean and international renewable energy and energy efficiency markets;
- Establish the CCREEE Five-Year Business Plans (incl. organizational chart, budget, logical framework and performance indicators) in coordination with UNIDO, the CARICOM Energy Unit, SIDS DOCK and the NFIs; submit the BP to the TC and EB for approval;
- Develop the annual work plans, progress reports and financial statements (externally audited) in cooperation and coordination with the CARICOM Energy Unit/SIDS DOCK, the National Focal Institutions (NFIs), Thematic Hubs (THs) and other key stakeholders; submit the documents to the TC and EB for approval;
- Support actively the planning and preparation of the annual budgets of the CCREEE work plans. Provide strategic inputs for the annual work plans and ensure budgetary long-term planning to avoid financial short-falls for projects funded by the CCREEE.
- Cooperate with external auditors and evaluators assigned by the EB;
- Ensure efficient implementation of the CCREEE activities and financial resources approved in the annual work plans in cooperation and coordination with the CARICOM Energy Unit, SIDS DOCK and the National Focal Institutions (NFIs) and Thematic Hubs (THs);
- Establish the CCREEE Procurement and Recruitment Committee and appoint the chairman and deputy of the Committee; establish standard processes and templates in cooperation with the chairman and ensure timely implementation of procurements;
- Sign contracts with staff, consultants and/or project implementers in line with the rules and procedures of the Centre and CARICOM/SIDS DOCK and by considering the recommendations of

[18] according to local rules (e.g. SIDS DOCK, CARICOM)

the CCREEE Procurement and Recruitment Committee; monitor the implementation of the contracts;

- Ensure that the Centre meets and maintains all fiduciary standards (financial, administrative, procurement, internal controls, project cycle management) required to manage international donor funding (e.g. European Commission, GEF, UN). Ensure that CCREEE staff implements and maintains the quality standards.
- Ensure financial accountability and recommend internal control mechanisms to prevent misuse of funds in cooperation with the Head for Administration and Finance. Implement the recommendations of the external auditors and evaluators.
- In cooperation with the Head of Administration and Finance ensure quality of CCREEE contracts, financial progress reports provided by project implementers and ensure timely financial disbursements and payments according to the established payment schedules. Prepare financial project reports for international donors.
- Recruit qualified regional and international administrative and technical staff in accordance with the organizational chart, as well as the staff and recruitment rules approved by the Executive Board; ensure effective human resource processes (e.g. performance appraisal); manage and supervise the staff accordingly and ensure an division of labour; ensure involvement of seconded international experts (e.g. UNIDO, SIDS DOCK);
- Monitor the progress of the technical and financial implementation of the annual work plans; elaborate periodical reports on the progress and achievements of the Centre in relation to its objectives, results and indicators (incl. analytical recommendations for adaptations and revision of activities etc.) in the CCREEE Business Plan;
- Keep an overview on relevance, effectiveness, efficiency and sustainability of the CCREEE program (according to the CCREEE Business Plan); plan and suggest to the Executive Board studies and surveys that are considered necessary in order to achieve the program objectives;
- Compile regularly information and data provided by the National Focal Institutions (NFIs) about the progress of the execution of CCREEE activities and share it with the TC and EB members;

Technical Cooperation and Supervision

- Represent the Centre and raise awareness on renewable energy and energy efficiency opportunities in the Caribbean region as well as on international levels; travel regularly to Caribbean countries and international key events to participate in conferences and workshops;
- Prepare and submit CARICOM/SIDS DOCK policy inputs/statements on renewable energy and energy efficiency to be considered in international energy and climate processes (e.g. Rio+20, COP, SDGs, SE4ALL);
- Supervise the development, appraisal, implementation, and monitoring of CCREEE projects and programs in the areas of capacity and policy development, knowledge management and investment and business promotion; supervise the execution of conferences, workshops and trainings of the Centre;
- Give guidance on the development and implementation of CCREEE flag-ship programs. Take leadership in the development and implementation of C-SERMS and SIDS DOCK targets in cooperation with the CARICOM Energy Unit and SIDS DOCK.
- Ensure that the CCREEE activities are in line with the Business Plan and annual work plans, national policies, strategies and legislation; avoid duplication of activities implemented by other actors or donors and cooperate closely with the CARICOM Energy Unit and SIDS DOCK;
- Supervise the technical staff on project cycle management issues and in renewable energy and energy efficiency aspects;

- Establish and further develop the quality, appraisal and project cycle management framework for activities to be co-funded and/or implemented under the CCREEE program;
- Constantly mobilize funding for activities of the Centre and contribute to preparation of project proposals to be co-funded by local or international development partners; participate in call for proposals;
- Contribute to quality assurance throughout the project cycle of a wide range of different CCREEE activities (e.g. trainings, conferences, policy activities, co-funding of projects);
- Assure quality of approved projects according to donor requirements and ensure that pro-poor, environmental, and gender impacts have been assessed; participate actively in the evaluation of tender bids and project proposals;
- Supervise the preparation and execution of complex technical procurements and call for proposals; supervise staff to effectively monitor consultants or installations;
- Strengthen the regional network of National Focal Institutions (NFIs) and the network of Thematic Hubs (THs) of CCREEE and contribute to the organization of coordination meetings;
- coordinate and cooperate closely with the core partners of the Centre (e.g. SIDS DOCK, UNIDO, ADA, GIZ, others);
- Seek active involvement of the Centre in international decision and negotiating processes to

Communication

- Establish regular consultations with CARILEC, the National Focal Institutions (NFIs), Thematic Hubs (THs) and other key market enablers in the region;
- Build strong technical partnerships between the Centre and other institutions in the region or on international levels; make use of know-how and technology transfer; create south-south partnerships and strong links and exchange to the SIDS regional centers in Africa and Pacific;
- Act as focal point for the implementation of UN Sustainable Energy For All Initiative (SE4ALL) activities in the Caribbean and other international organizations (e.g. IRENA, GEF);
- Establish strategic links to donor partners and to loan and equity finance institutions to raise funding for RE&EE investment projects (such as development banks in donor countries, national or regional development banks);
- Establish a communication network with national and regional chambers of commerce and other RE&EE lobbying agencies in the Caribbean region;
- Engage relevant stakeholders in renewable energy policy dialogue including public institutions, civil society and private sector;
- Ensure effective public relations and publication of information on the CCREEE program to different target groups (communication strategy, forums);
- Ensure awareness raising on renewable energy and energy efficiency in the Caribbean region
- Establish and maintain a comprehensive RE&EE contact network in the Caribbean region (e.g. focal points, private sector) and internationally;

B. Qualifications, Skills and Experience:

- Citizen of a Caribbean island
- At least academic Master degree in engineering, social science (e.g. economics) or in renewable energy technologies; further academic degrees particularly in the area of business management/administration are an added value;
- At least 15 years of work experience in the energy sector in the Caribbean region with a proven track-record of developed, managed and implemented programs and projects;

- Demonstrate good knowledge on the status of renewable energy and energy efficiency markets, policies, stakeholders and trends in the Caribbean region;
- Proven management capabilities in previous senior positions in the public and/or private sector;
- Experience in fund raising and management of donor partners;
- Solid analytical, negotiation, presentation and communication skills;
- Languages: Proficiency in English; Spanish, French or Dutch is an added value;
- Ability to work under pressure and handle politically and culturally sensitive issues.

Job Description "Technical Assistant for the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)

Post title:	Technical Assistant for the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)[19]
Duty station:	location in the Caribbean to be confirmed; with international travel as required
Duration:	2 years (with the possibility for extension)
Starting date:	in the course of 2015

Duties and responsibilities

The expert supports SIDS DOCK and the CARICOM Energy Unit throughout the establishment and first operational phase of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE). The energy expert will assist the Executive Director in all technical and strategic issues of the Centre and will contribute to its recognition in the Caribbean region and on international level. The expert will report to the Executive Director of the Centre in close coordination with the UNIDO project manager, the CARICOM Energy Unit and SIDS DOCK:

- Advise the Executive Director on the organizational development of the Centre and its strategic positioning in the regional and international renewable energy and energy efficiency markets of the Centre;
- Provide technical inputs to the CCREEE Business Plan, annual Work Plans and Status Reports;
- Prepare and execute complex procurements for services and RE&EE consultancies;
- Take leadership in the establishment of the technical program of the center in close cooperation with the Director and the other experts; execute activities/projects of the Centre as agreed in the annual work plans of CCREEE and assigned by the Executive Director;
- Contribute to quality assurance throughout the project cycle of a wide range of different CCREEE activities; further develop the quality, appraisal and project cycle management framework for activities to be co-funded and/or implemented by the Centre;
- Assist the Director permanently in fund raising and contribute to the preparation of project proposals to be co-funded by the European Union or other financiers.
- Assist UNIDO and SIDS DOCK in the preparation and implementation of GEF-6 RE&EE projects for the Caribbean region.
- Contribute to the further development of the CCREEE website and the public relation activities of the Centre (e.g. regular newsletters); take action to strengthen the visibility of the center regionally and internationally;
- Contribute to enlarge and reinforce collaborative partnerships between the Centre and other centers and initiatives with a view to leverage know-how, resources, technologies (e.g. SIDS DOCK, SE4ALL, IRENA, REEEP, UN Energy, GEF, GFSE).

[19] classified as UNIDO International Consultant or L2

- Coordinate closely with the other centers of the Global Network of Regional Sustainable Energy Centers; develop common initiatives in cooperation with the UNIDO network coordinator.
- Participate in key meetings at the CCREEE Secretariat, the Caribbean region or international level on request of the Executive Director;
- Coordinate closely and in strong partnership with the other international experts working for the Centre;
- Seek good relations and facilitate a common CCREEE approach with the supporters of CCREEE (e.g. ADA, European Union, UN); ensure good team work with other CCREEE experts;

Qualifications, Skills and Experience:

- Postgraduate university degree at Masters Level with focus on renewable energy or energy efficiency; additional academic degrees in social-science or international relations are an added value;
- At least 3 years work experience in the area of sustainable energy in technical positions; Proven track record of supervised, managed and coordinated projects and activities;
- Proven knowledge of the sustainable energy sector in the Caribbean region. Work experience in the energy sector in the Caribbean region is an added value.
- Hands-on experience in the establishment of sustainable energy centers is an advantage;
- Good analytical writing, communication skills and experience in the diplomatic field;
- Experience in international development cooperation and the management of development partners are a prerequisite; knowledge and good relations to the main actors of the energy sector are an added value;
- Ability to work under pressure and handle politically and culturally sensitive issues.
- Languages: Proficiency in English; Spanish, French or Dutch is an added value.

Job Description "Sustainable Energy Coordinator and Outreach Officer for the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)

Post title: Sustainable Energy Outreach Officer for the Caribbean Centre for Renewable Energy and Energy (CCREEE)[20]
Duty station: location in the Caribbean to be confirmed; with international travel as required
Duration: 2 years (with the possibility for extension)
Starting date: in the course of 2015

Duties and responsibilities

The expert will assist the Executive Director of CCREEE particularly in field of coordination, project development, knowledge management, awareness raising and effective public relations. The expert will report to the Executive Director of the Centre in close coordination with the UNIDO project manager, the CARICOM Energy Unit and SIDS DOCK. Specifically, the expert will implement the following activities:

- Contribute to the general organizational and strategic development of CCREEE as required;
- Assist the Executive Director of the Centre in the establishment of the internal structures (e.g. governance bodies, internal organization) and processes (e.g. staffing, financial, accounting, procurement) of the Secretariat of the Centre in accordance with CARICOM/SIDS DOCK rules; contribute to the successful completion of the start-up phase of the Centre;
- Assist in the creation and consolidation of the Governance Structure of the Centre and contribute to the organization of the Technical Committee and Executive Board Meetings; create and consolidate the network of National Focal Institutions (NFIs) and Thematic Hubs (THs);
- Assist in the creation of the CCREEE planning, execution and monitoring cycle (e.g. business plan, annual work plans and status reports); Provide technical inputs to the CCREEE Business Plan, annual Work Plans and Status Reports; Coordinate the inputs of NFIs, THs and other important actors in the Caribbean (e.g. CARILEC, CDB, private sector);
- Assist in the recruitment of key administrative and expert staff; contribute to the organizational chart of the Centre (e.g. elaboration and review of TORs for each position);
- Assist in the establishment of the CCREEE Procurement Committee;
- Assist the Executive Director on effective reporting to donor partners on programs and projects;
- Contribute to the strategic positioning of the centre as Caribbean hub and think-tank for sustainable energy issues, as well as SE4ALL focal point on international level. Contribute to the organization of coordination meetings within the Global Network of Sustainable Energy Centres.
- Participate in key meetings related to SE4ALL in the region and at international level on request of the Executive Director and present position papers;
- Assist UNIDO and SIDS DOCK in the preparation and implementation of GEF-6 RE&EE projects for the Caribbean region.
- Ensure the visibility of CCREEE and its major partners as well as acknowledgement of its policy positions and activities in regional and international policy processes and debates (e.g. climate change debate, UN Energy, GEF, World Bank forums);
- Contribute to the coordination with SIDS DOCK, CARICOM and build cooperative partnership (e.g. OECS, CDB, IADB, WB, IRENA, UN agencies, REEEP, EU, UN Energy, GEF, and GFSE).
- Ensure effective communication among the CCREEE Secretariat, the National Focal Institutions (NFIs), Thematic Hubs (THs) and other important partners and stakeholders in the Caribbean region and on international level;
- Assist and empower the local experts to establish effective public relation and knowledge management processes; coordinate media activities with the CARICOM Energy Unit, OECS UNIDO, SIDS DOCK and other partners;
- Organize regional and international key events of CCREEE (e.g. conferences, side events);

[20] classified as UNIDO International Consultant or L2

- Develop, implement and monitor the communication and public relation strategy of CCREEE; transfer the knowledge to local CCREEE experts;
- Monitor the media coverage on CCREEE and relevant RE&EE news and maintain the media and photo archive of CCREEE;
- Contribute to accurate, balanced and objective reporting about CCREEE and its activities by organizing pro-active interviews, press briefings, awareness campaigns and other outreach activities; ensure public relations and information at workshops and conferences organized by CCREEE expert staff;
- Handle incoming day-to-day information requests relating to CCREEE and renewable energy (RE) and energy efficiency (EE) issues; work closely with the CCREEE expert staff, the National Focal Institutions (NFIs) and Thematic Hubs (THs) to obtain clear guidance, check facts and to craft talking points and messages;
- Generate news stories, press releases and media advisories that positively highlight CCREEE activities and at the same time increase knowledge and understanding on RE&EE issues; facilitate the publication of CCREEE interviews and articles in RE&EE expert magazines;
- Establish and maintain an effective communication network with print and audio-visual media in the Caribbean region to boost the knowledge management activities of CCREEE;
- Take full responsibility for updating CCREEE website in cooperation with the IT Officer and the translators;
- Update CCREEE information materials (e.g. video, newsletter, brochures, calendars, annual work plans and status reports); take lead in the elaboration and dissemination of the regular CCREEE newsletters;
- Establish internal guidelines and an internal communication policy to ensure visibility of CCREEE and its programs and projects; establish a collection of templates (e.g. presentations, logos) to ensure the corporate identity of the Centre; ensure visibility of the CCREEE donor partners;
- Prepare speeches and presentations for the Executive Director in cooperation with the CCREEE expert staff;
- Establish guidelines and procedures for the internal knowledge management of the CCREEE Secretariat and organize the internal RE&EE library in cooperation with the IT officer;
- Provide inputs for the annual work plans of CCREEE and ensure the achievement of the long-term objectives and indicators in the knowledge management outcome;
- Promote RE&EE knowledge sharing, capitalization of experiences and communities of practice;
- Develop and execute ECREEE flag-ship programs and project in the areas of RE&EE knowledge management, awareness creation and capacity development and raise funding for these activities; ensure effective project cycle management, quality assurance and take responsibility for complex tender processes;
- Coordinate the development and execution of SE4ALL road maps
- Take lead in the planning and execution of the regional knowledge management strategy and the establishment and maintenance of the RE&EE information system in cooperation with other partners;
- assist the CCREEE expert team by integrating knowledge management components in RE&EE programs and projects;
- Initiate national and regional awareness raising and advocacy campaigns on RE&EE issues and develop and disseminate RE&EE knowledge management products; develop an argumentation on the potentials, benefits and opportunities of RE&EE solutions in relation to conventional energy solutions;

Qualifications, Skills and Experience:

- Advanced University degree in social science or engineering; second university degree is an added value;
- At least 3 years work experience in the area of sustainable energy;
- Proven track record of projects and activities in the field of energy access, energy efficiency and renewable energy;
- Good knowledge on the RE&EE sector in the Caribbean is a prerequisite;

- Good working knowledge of the UNIDO's Global Network of Sustainable Energy Centres
- Previous engagements in SE4ALL activities is desirable;
- Knowledge of energy and gender issues is an added value;
- Experience in international development cooperation and the management and coordination of development partners are a prerequisite;
- Good analytical writing, communication skills and experience in the diplomatic field
- Ability to work under pressure and handle politically and culturally sensitive issues.
- Proficiency in English; French, Spanish or Dutch is an added value;

Annex 4: Draft selection criteria for the host country of the CCREEE Secretariat

A. Selection Process

- The host country of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) will be selected in a competitive selection process.
- The evaluation of the applications will be done by a panel comprising of experts from the CARICOM Secretariat, SIDS DOCK, UNIDO and other partners as decided. The panel will develop an evaluation report with recommendations.

B. The CCREEE Secretariat will have the following responsibilities:

Management, Steering and Reporting

- Develop the CCREEE Business Plan and/or develop it further and submit it to the TC and EB for approval;
- Develop the annual work plans, progress reports and financial reports in cooperation and coordination with the CCREEE Thematic Hubs (THs) and the National Focal Institutions (NFIs) and submit the documents to the TC and EB for approval; cooperate with external auditors and evaluators assigned by the EB;
- Implement of the CCREEE activities approved in the annual work plan in cooperation and coordination with the Thematic Hubs (THs) and the National Focal Institutions (NFIs) in the countries;
- Implement the decisions and recommendations of the Executive Board (EB) and Technical Committee (TC);
- Monitor the progress of the technical and financial implementation of the annual work plans;
- Organize the meetings of the TC and EB; take minutes of the meetings and prepare all necessary documents;
- Publish periodical reports on the progress and achievements of the Centre in relation to its objectives, results and indicators (incl. analytical recommendations for adaptations and revision of activities etc.) in the CCREEE Business Plan;
- Keep an overview on relevance, effectiveness, efficiency and sustainability of the CCREEE program (according to the Business Plan); plan and suggest to the Executive Board studies and surveys that are considered necessary in order to achieve the program objectives;
- Compile regularly information and data provided by the Thematic Hubs (THs) and National Focal Institutions (NFIs) about the progress of the execution of CCREEE activities and share it with the TC and EB members;
- Strengthen the regional network of Thematic Hubs (THs) and National Focal Institutions (NFIs) of CCREEE and contribute to the organization of coordination meetings;
- Recruit qualified administrative and technical staff; strengthen the capacities of staff and select international seconded experts;
- Coordinate regularly with the core partners of the Centre (e.g. UNIDO, ADA, others)

Technical Execution and Supervision

- Develop, appraise implement, and monitor CCREEE projects and programs in the areas of capacity and policy development, knowledge management and investment and business promotion;

- Undertake fund raising activities and contribute to preparation of project proposals to be co-funded by the European Union, the Global Environment Facility (GEF), GIZ or other partners.
- Develop the quality, appraisal and project cycle management framework for activities to be co-funded and/or implemented under the CCREEE program;
- Ensure that CCREEE projects and programs are in line with national policies, strategies and legislation; avoid duplication of activities implemented by other actors or donors;
- Implements projects through existing national and regional organisations
- Contribute to quality assurance throughout the project cycle of a wide range of different CCREEE activities (e.g. trainings, conferences, policy activities, co-funding of projects);
- Assure quality of approved projects according to donor requirements and ensure that pro-poor, environmental, and gender impacts have been assessed; participate actively in the evaluation of tender bids and project proposals;
- Prepare and execute complex procurements and call for proposals; supervise and monitor consultants or installations;
- Review, finalise and execute contracts for project execution;
- Monitor the implementation of projects and other activities financed by CCREEE.

Communication

- Build collaborative partnerships between the Centre, its Thematic Hubs (THs) and other international centres, initiatives with a view to leverage know-how;
- Ensure harmonization of the CCREEE activities with other donor initiatives and alignment with local initiatives and support systems;
- Establish strategic links to loan and equity finance institutions (such as development banks in donor countries, national or regional development banks);
- Establish policy dialogue with national institutions on regional renewable energy and energy efficiency policy aspects;
- Network with national and regional chambers of commerce etc. in order to integrate representatives of the business community into the regional forums.
- Engage relevant stakeholders in renewable energy policy dialogue including public institutions, civil society and private sector;
- Ensure effective public relations and publication of information on the CCREEE program to different target groups (communication strategy, forums);
- Ensure awareness raising on renewable energy and energy efficiency in the Caribbean region

Submission form and criteria for applications regarding the hosting of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE)

The host country of the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) will be selected in a competitive selection process. Interested Governments are invited to ***submit their applications in electronic form by XXX p.m., on XXX 2014, to XX at the following email address: application@ccreee.org. Applicants are asked to use this form to submit their applications****.*

Information that is relevant to prospective bidders is available at: http://www.ccreee.org. It is recommended that potential bidders review this information prior to contacting the tender managers.

Items for Evaluation	Country Response
1. Country is SIDS DOCK Member (10 points)	
(a) SIDS DOCK Member (5) (b) Statute signed and ratified (5); Statute signed and ratification in process (4); Statute signed and ratification before Cabinet (3)	
2. Country's location to international air transportation (10 points)	
(a) Hub in country - Distance to nearest hub (hours): (b) Number of daily flights to major Hubs (#):	
3. Availability of suitable conference facilities and hotels in the host city (5 points)	
List of Conference Facilities & Hotels (#):	
4. Established and recognized links/partnerships with other organizations and institutions with technical professionals (5 points)	
Formal arrangement, e.g., significant Project contracts, MOU/A; Joint projects; Part of a regional project; No linkages	
5. Provide affordable office space, inclusive of utilities, for five (5) full-time staff in 2015; and up to nine (9) full-time staff in 2016 and beyond (5 points)	
CCREEE Secretariat located in, e.g.: Building that has all the infrastructure and which, also houses education and /or scientific research interests, e.g., University/Regional Institution; Public sector institution; Civil Society Organization; Rented space with unrelated entities; Rented Isolated building/sole occupant	
6. Provide communication services, inclusive of telephone, fax, internet and other communication modes (5 points)	
All services reliably available; Phone & Fax and unreliable connectivity; Phone & Fax; Phone; No services	
7. Provide courier, mail and bearer services (5 points)	
All services readily available; Air express and surface mail; Surface mail; Bearer; No services	

8. Provide office furniture and equipment, inclusive of desks, chairs, computers, audio-visual equipment for presentations, photocopy machine, printers, energy-specific software for data capture and analysis, etc. (5 points)	
All furniture and equipment; Computers and printers, photocopy machine and audio-visual equipment only; Office furniture (desk, chairs, etc.) and computers and printers only; Office furniture (desk, chairs, etc.) only; No services	
9. Provide office supplies, inclusive of pens, paper, ink for machines, staples, stapler, notepads, etc. (5 points)	
Provide all office supplies	
10. Build capacity among the broader regional business community in the use of green energy (5 points)	
Country has projects in four areas - energy efficiency; energy conservation; renewable energy; waste-to-energy (# and area):	
11. Help generate funds in the longer term to support CCREEE expansion (5 points)	
Country pledges to assist CCREE to mobilize funds	
12. Help attract green energy investment into the local energy sector (5 points)	
Policies and legislation in place; Policies only; Plans and Pilots; Plans; no polices, legislation, plans, pilots in place	
13. Provide importation concessions for personal items, including motor vehicles, and relevant tax exemptions to staff relocating to Host Country (5 points)	
Tax-free; No concession	
14. A stated commitment to green energy development (5 points)	
Country has stated policy target to be carbon neutral; country has plans to be carbon neutral; country has targets for renewable energy in the energy sector, e.g., 20% of energy to come from renewables; country has targets for energy efficiency and/or renewable energy in electricity generation, e.g., certain percent of electricity is to come from renewable energy or efficiency improvements; no plan	

Annex 5: Draft Terms of Reference for the National Focal Institutions (NFIs)

A. Background

The CCREEE Secretariat undertakes its activities in coordination and cooperation with its established network of National Focal Institutions (NFIs) among all CCREEE Member States. The purpose of this network is to increase the impact and effectiveness of programs, projects and activities developed, coordinated, co-funded and/or implemented under the leadership of the Centre. Moreover, it will avoid duplication of activities and alignment with the individual needs of the CARICOM Member States.

B. Selection Process and Eligibility Criteria

After its creation, the CCREEE Secretariat will request the Ministry in charge of Energy in each Member State to nominate one permanent CCREEE National Focal Institution (NFI) which will coordinate all CCREEE activities in the respective country. The NFI should meet the following eligibility requirements:

- In the optimum case the NFI should be either the Ministry itself or a technical agency close to the Ministry (e.g. energy commission).
- The institution shall have a clear mandate for renewable energy and energy efficiency (RE&EE) and related expertise, reputation and capacities.
- The institution shall have the ability to influence and contribute effectively to the improvement of RE&EE frameworks in the country (e.g. policy, capacity building, and investment promotion).
- The institution shall have the adequate IT and internet facilities to implement its duties
- In each of the institutions two experts, the focal points, will be appointed. The two experts (chief and alternate) shall have adequate knowledge and experience in matters of RE&EE and have his current engagement directly related to this field. The selected person shall have a well-established position in the institution.

C. Responsibilities for the CCREEE-NFIs

The NFI represents the country on all CCREEE activities. It will:

I. advise the Minister on matters relating to CCREEE and renewable energy and energy efficiency developments and trends in the region;

II. oversee the coordination of CCREEE activities in the respective country.

III. participate in the annual NFI coordination meetings of the Centre and suggest activities for its annual work plans; participate in other technical meetings and workshops of CCREEE;

IV. create awareness on CCREEE and its activities in the respective country; engage relevant stakeholders in renewable energy and energy efficiency policy dialogue including public institutions, civil society and private sector; develop and maintain a contact network of RE&EE key stakeholders, in order to make publicity and to promote the achievements in the field of renewable energy and energy efficiency;

V. take responsibility to collect national data and news on RE&EE for CCREEE and contribute to the strengthening of the CCREEE RE&EE knowledge base (e.g. provide national studies, news, contact lists, etc.).

VI. support CCREEE to organize capacity building, awareness raising workshops and trainings in the respective country and participate in CCREEE train-the-trainers and advocacy activities;

VII. participate in the procurement of consultancy services if required, the identification of project sites and other national activities that are to be executed by the CCREEE secretariat; supervise and monitor the works of consultants appointed by CCREEE to ensure that the assignment is conducted effectively and efficiently;

VIII. monitor, appraise and evaluate projects and programs, as may be agreed between CCREEE and the focal institution; the focal institution ensures adequate appraisal and quality assurance of projects and programs; ensure that CCREEE projects and programs are in line with national policies, strategies and legislation; avoid duplication of activities implemented by other actors or donors;

IX. make suggestions for the further development of the CCREEE structure, strategy and annual work plan; Contribute to the further development of the CCREEE quality assurance and project appraisal policy;

D. RESPONSIBILITIES OF THE CCREEE Secretariat

The CCREEE-SECRETARIAT shall endeavour to:

I. ensure regular dialogue with the national focal institutions and ensure efficient coordination of the activities implemented by the NFIs ; provide information on recent developments in RE&EE;

II. provide an adequate monitoring and reporting framework and practical guidelines for the national focal institutions (e.g. appraisal criteria for projects, templates, forms, financial accountability rules and guidelines);

III. invite the focal institutions to participate in CCREEE activities, events and capacity building programs;

IV. provide equipment and other facilities to enhance the work of the focal institutions;

V. cover travel costs and per diem for NFI experts to attend CCREEE events; and

VI. provide support for further development of skills and qualifications of the focal institutions.

Annex 6: Draft Terms of Reference for the CCREEE Thematic Hubs (THs)

A. Background

The CCREEE Secretariat undertakes its activities in coordination and cooperation with hubs composed by institutions already active in the Caribbean sustainable energy sector. The purpose of these structures is to increase the impact and effectiveness of programs, projects and activities developed, coordinated, co-funded and/or implemented under the leadership of the Centre. Moreover, it will avoid duplication of activities and alignment with the individual needs of the CARICOM Member States.

B. Selection Process and Eligibility Criteria

After its creation, the CCREEE Secretariat will launch a request for institutions whiling to become thematic hubs and coordinate and implement activities in the Caribbean related with financing, capacity building, knowledge management and specific RE&EE. The thematic hubs should meet the following eligibility requirements:

- The institution shall have a clear mandate for renewable energy and energy efficiency (RE&EE) and related expertise, reputation and capacities.
- The institution shall have the ability to influence and contribute effectively to the promotion of RE&EE in the region (e.g. financing, capacity building, knowledge management).
- The institution shall have the adequate IT and internet facilities to implement its duties
- In each of the institutions two experts, the focal points, will be appointed. The two experts (chief and alternate) shall have adequate knowledge and experience in matters of RE&EE and have his current engagement directly related to this field. The selected person shall have a well-established position in the institution.

C. Responsibilities for the CCREEE-thematic hubs

The thematic hubs represent the CCREEE in specific areas and sectors. It will:

X. coordinate on matters relating to CCREEE and renewable energy and energy efficiency developments and trends in the region;

XI. oversee the coordination of CCREEE activities in the specific areas and sectors;

XII. participate in the annual coordination meetings of the Centre and suggest activities for its annual work plans; participate in other technical meetings and workshops of CCREEE;

XIII. create awareness on CCREEE and its activities; engage relevant stakeholders in renewable energy and energy efficiency including public institutions, civil society and private sector; develop and maintain a contact network of RE&EE key stakeholders, in order to make publicity and to promote the achievements in the field of renewable energy and energy efficiency;

XIV. participate in the procurement of consultancy services if required, the identification of project sites and other national activities that are to be executed by the CCREEE secretariat; supervise and monitor the works of consultants appointed by CCREEE to ensure that the assignment is conducted effectively and efficiently;

XV. monitor, appraise and evaluate projects and programs, as may be agreed between CCREEE and the focal institution; the focal institution ensures adequate appraisal and quality assurance of projects and programs; ensure that CCREEE projects and programs are in line with national policies, strategies and legislation; avoid duplication of activities implemented by other actors or donors;

XVI. make suggestions for the further development of the CCREEE structure, strategy and annual work plan; Contribute to the further development of the CCREEE quality assurance and project appraisal policy;

D. RESPONSIBILITIES OF THE CCREEE Secretariat

The CCREEE-SECRETARIAT shall endeavour to:

I. ensure regular dialogue with the thematic hubs and ensure efficient coordination of the activities implemented by these institutions; provide information on recent developments in RE&EE;

II. provide an adequate monitoring and reporting framework and practical guidelines for the thematic hubs (e.g. appraisal criteria for projects, templates, forms, financial accountability rules and guidelines);

III. provide equipment and other facilities to enhance the work of the institutions;

IV. cover travel costs and per diem for institution experts to attend CCREEE events; and

V. provide support for further development of skills and qualifications of the thematic hubs.

Annex 7: Minutes of the Validation Workshop

FINAL DRAFT REPORT ON THE

SIDS DOCK-UNIDO CONFIRMATION AND VALIDATION WORKSHOP ON THE CARIBBEAN CENTRE FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY:

A CENTRE OF EXCELLENCE TO PROMOTE INCLUSIVE AND SUSTAINABLE ENERGY INDUSTRIES AND SE4ALL IN THE CARIBBEAN

21–22 July 2014

State House Conference Centre

Roseau, Commonwealth of Dominica

Organized with support of:

Austrian Development Cooperation

1. Summary

The confirmation and validation workshop on the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) took place from 21 to 22 July 2014 in Roseau, Dominica, and was attended by seventy Caribbean key energy stakeholders. The event was co-organized by SIDS DOCK - the Small Island Developing States Sustainable Energy and Climate Resilience Initiative, the United Nations Industrial Development Organization (UNIDO) and the Government of the Commonwealth of Dominica with financial support of the Austrian Development Cooperation (ADC).

The workshop followed-up on the official request of SIDS DOCK to UNIDO in August 2013, to assist the small island developing states in the Caribbean, Pacific, Indian Ocean and Africa, in the creation of a SIDS network of regional sustainable energy centres. On 17th March 2014 the *Government of Austria*, UNIDO and SIDS DOCK signed a Memorandum of Understanding (MOU) on support for the establishment of a special network of centres for the SIDS. The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), operating in Cape Verde, was nominated by the SIDS DOCK Steering Committee to coordinate the sustainable energy activities for African SIDS.

With technical key support of SIDS DOCK and UNIDO a consultative preparatory process for the Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) and the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) was launched. The process in the Caribbean and Pacific included the development of needs assessments and project documents on the technical and institutional design of the centres. The Second Meeting of Pacific Ministers of Energy and Transport, held from 2 to 4 April 2014, in Nadi, Fiji, endorsed the project document and the creation of PCREEE. In the Caribbean the consultative preparatory process was executed in close coordination with the existing regional organizations (e.g. CCCCC, CARICOM, CDB, OECS).

The held confirmation and validation workshop on the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) aimed at the following results:

1. Agreement on the need, demand and added value of CCREEE;
2. Agreement on the institutional set-up and integration in existing regional/national structures;
3. Agreement on the main pillars of the technical programme;
4. Validation of the needs assessment and draft project document on the design of the centre;
5. Agreement on the selection process and criteria for the host country/organization;
6. Recommendations for transmittal to the forthcoming CARICOM Council for Trade and Economic Development (COTED) Meeting.

On the first day, the UNIDO-SIDS DOCK team presented the results of the CCREEE needs assessment and potential technical and institutional design options for the regional centre. On the second day, further feedback for the finalization of the technical and institutional design was collected. The participants were split into working groups representing Governments, regional institutions, international partners and the private sector. The suggested changes will be incorporated in the final project document. It was agreed to submit the revised project document for consideration by the Ministerial Council for Trade and Economic Development (COTED) of CARICOM in their next meeting. It was agreed that the representative of the countries who participated in the workshop will obtain national endorsement on the establishment of CCREEE and the project document before the Third

international Conference on Small Island Developing states, which will be held from 1 to 4 September 2014, in Apia, Samoa.

2. Overview of Workshop Proceedings

The meeting considered the following;

I. the need and added value for the CCREEE
II. the scope of mandate and objectives of the Centre
III. the proposed institutional set-up of the Centre and its integration in the CARICOM institutional framework
IV. the level of authority and competencies of the Centre and its bodies
V. the proposed governance structure and composition of the bodies (Executive Board, Technical Committee and Secretariat), their functions and how these bodies will work in the implementation of the activities of the centre
VI. the activities of the Centre's National Focal Institutions (NFIs) and Thematic Hubs (THs)
VII. the indicative organizational chart of the Centre
VIII. the selection criteria and selection process of the host institution/country
IX. the main intervention areas of the centre (e.g. policy implementation assistance, capacity development assistance, applied research promotion, knowledge management and awareness raising, investment and business promotion)
X. RE & EE priority activities of the Centre
XI. The indicative budget of the Centre, funding strategy to be adopted and possible contributions from donors and the CICTs.

3. Day 1 – Presentations, Summary Discussion& Feedback

The welcome statements were delivered by the two co-chairs of the meeting: Dr. Pradeep Monga, Director of the Energy and Climate Change Branch, United Nations Industrial Development Organization (UNIDO) and His Excellency Mr. Vince Henderson, Chairman of SIDS DOCK, Ambassador Plenipotentiary and Permanent Representative of the Commonwealth of Dominica to the UN.

The opening remarks were given by Hon. Mr. Rayburn Blackmoore, Minister of Public Works, Energy and Ports, Commonwealth of Dominica, and Mr. David Muckenhuber, Programme Manager of the Austrian Development Agency (ADA).The keynote address was delivered by Hon. Roosevelt Skerrit, Prime Minister and Minister of Finance, Commonwealth of Dominica.

Mr. Al Binger, Senior Energy Advisor of the Caribbean Community Climate Change Centre (CCCCC) and SIDS DOCK Coordinator, and Mr. Martin Lugmayr, UNIDO Sustainable Energy Expert, introduced the participants to the objectives of the workshop and gave an update on the CCREEE preparatory process and the Global Network of Regional Sustainable Energy Centres. It was explained that CCREEE has the opportunity of being part of a global south-south network of regional sustainable energy centres.

The participants were introduced to the results of the needs assessment and potential technical and institutional design options for the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE). Mr. Jose Mestre and Ms. Felicia Whyte of the contracted consultancy company AETS, presented the results the stakeholder consultations in the context of the needs assessment.

Presentations: Five presentations were delivered on July 21:

a. Workshop objectives and update on the Global Network of Regional Sustainable Energy Centres
b. CCREEE Needs Assessment and stakeholder consultations
c. Achievements and model of the Economic Community Of West African States - ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)
d. Technical mandate and programme options for CCREEE
e. Institutional options for CCREEE

The following points summarize the discussions and feedback received on the first day:

- Workshop participants were largely supportive of the Centre's establishment, provided that the Centre's mandate and scope are appropriate and relevant.
- The international, regional and national added value of the Centre was confirmed. Together with the other regional centres in Africa, the Pacific and other parts of the world, CCREEE will play an important role in the post-2015 era. The Global Network of Regional Sustainable Energy Centres provides a framework of south-south activities between the centres.
- The participants highlighted that the Centre should avoid duplication of efforts: It shall respect the mandate of existing regional institutions and function in a role that coordinates, consolidates and facilitates the energy initiatives and scaling-up of successes within the region. Emphasis should be given to defining/determining how the Centre will play such a role. The avoidance of duplication should be reflected in the institutional set-up of the centre (e.g. representation in the board, thematic hubs, and national focal institutions).
- Better technical coordination of regional activities in the implementation of sustainable energy should be a core mandate of the centre. In cooperation with SIDS DOCK, CARICOM Energy Unit, CDB and members it should set the regional priority agenda for the region.
- The Centre should be established as a technical implementation arm of SIDS DOCK, and the CARICOM Energy Unit. It should assist on-going regional efforts, strengthen and support initiatives, such as C-SERMS. It could contribute to the implementation and monitoring of the progress of the C-SERMS and work in close partnership with the CARICOM Energy Unit to achieve same. The Centre is expected to be integral in the dissemination of best practices; development of streamlined processes; information and knowledge management, with facilitation of public and private sector access to the relevant knowledge.
- The Centre should carve a niche for itself. One such way is through close partnership with SIDS DOCK in facilitating the flow of investment into SIDS, which would help to transform economies. It should assist in the implementation of the SIDS DOCK project pipeline. It should also act as a hub for the implementation of SE4ALL at the regional level and supporting national level initiatives.
- The Centre should be financially sustainable so as not to be a burden on member states, which are already having challenges paying membership fees related to other CARICOM organizations. This will be achieved through donor funding, raised project funding, local resources (cash/in-kind) and "fee for service". The "commercialization" of services of the centre shall not lead to the creation of new financial barriers for local businesses and industry. The ratio of "fee for service" should be determined by the Executive Board of the Centre.
- The RE/EE focus shall extend beyond the power generation and end use subsectors to other energy sub-sector, such as transport, biofuel production and trade, waste-

to-energy, buildings energy use and agriculture. Cross-cutting issues shall be identified and addressed. Through the Global Network of Centres, UNIDO could assist in developing south-south projects in a number of common areas such as small scale distributed generation issues and sustainable island transport, which could be financed through GEF, EU and other donors. Approximately seventy percent of the fuels imported by the region are for non-electrical generation uses.

- Political ownership is integral to the Centre's success. It was also expressed that a champion of the Centre is critical as part of the process for approval by CARICOM states, which are currently trying to rationalize CARICOM institutions.
- The proposed centre is timely, as CARICOM is currently reviewing its institutional set-up; the energy unit of CARICOM needs urgent strengthening; and CDB is defining its sustainable energy program. The C-SERMS framework is established but currently there are no established mechanisms to facilitate the implementation and monitoring of The Centre could provide the necessary technical capacity and modality to support the CARICOM Energy Unit in the implementation of the C-SERMS and other regional energy initiatives.
- Lessons should be learned from other energy centres, such as ECREEE, SACREEE, EACREEE, and PCREEE. However, while the establishment of CCREEE should be informed by what worked elsewhere, it should take into account the current energy situation within the Caribbean and adapt to the needs of the region. The workshop provided the opportunity to define some of these needs.
- The Secretariat of the Centre could have a Secretariat, but could have several specialist problem-solving locations; a thematic hub structure is proposed.
- The Centre should be strategic, focused, technical and action-oriented. It should address RE&EE holistically. For early visibility the Centre needs to identify and implement one (or a few) impactful, on-the-ground actions that it will complete in the short-term. These activities should be identified from the SIDS DOCK Caribbean project pipeline and other relevant project pipelines. This will help to garner support for/increase confidence in the Centre. The Centre shall respond effectively to the needs of the member countries, in particular, and the region, in general. In this context it is proposed that the Centre works through designated National Coordinators located in Focal Institutions and Regional Partners. These representatives should be involved in the development of the annual work plans.
- While the framework project document of the Centre is broad to promote flexibility, but some key specific actions will need to be identified in order for stakeholders to be able to gain the buy-in of government officials.
- The specific activities of the centre will be defined in annual work plans which are developed in cooperation with the National Coordinators from the Focal Institutions (NFIs) and Thematic Hubs (HBs).
- The Centre should have a business model approach. It should have a clear mandate and be autonomous, even while operating within the context of CARICOM. The needed delegated powers were included in the project document (e.g. procurement, recruitment, signing of contracts and funding agreements). The CCCCC and ECREEE models will be taken into account in the finalization of the institutional set-up.
- The Centre should seek to determine how to engage private sector and industry. The establishment and operation of CCREEE should pattern private sector models that focus on efficient and lean operations. There should be greater focus on the involvement of the private sector (both users and suppliers of energy) and industry. And, a significant part of the budget should be assigned to the investment and business promotion outcome area. It was proposed to invite at least one representative of the sustainable energy industry to the bodies of CCREEE (e.g. RE association).

- The composition of the Board should balance between representation of various interests on the one hand and effectiveness and cost-effectiveness on the other hand. It was suggested that the size of the Board of the Centre should be limited. Core donors will be invited to the Board only if they contribute to the technical programme budget and the administrative budget of the Centre. It was proposed to limit the participation of three (3) core donors on the Board. If more donors come in, they could nominate other donors as representatives in the meetings. Private sector involvement was thought to be critical as it is the private sector that will play an integral part in developing and sustaining a green economy within the Caribbean. The role of public-private partnerships should also be considered.
- Further information is needed on how the Centre will promote innovation within the region. In this context the activities of the Caribbean Climate Innovation Centre (CCIC) will be further studies.
- The inclusion/support of the electric utilities is critical. CARILEC should be considered for participation on the Executive Board of CCREEE. The detailed description of the functions of the Board can be found in the project document.
- It is important that CCREEE is able to assess the impacts of the direct and indirect benefits that it will provide.
- CCREEE is important as it provides increased opportunities for human capacity within the Caribbean being used to address/solve Caribbean energy problems.
- Several country representatives expressed interest in hosting the Centre, including Dominica, Barbados, Bahamas, and Saint Vincent and the Grenadines.
- A deadline will be set to facilitate receipt of comments on the project document. This will allow participants to gain and submit feedback on their respective ministries/institutions.

4. Day 2 – Presentations, Summary Discussion & Feedback

Presentations on Day 2 were:

- Achievements of the Energy and Environment Partnership for Central America (EEP), Ms. María Eugenia Salaverría, SICA
- Addressing the Implementation Gap for RE and EE in the Caribbean, the Role of CDB, Mr. Joseph Williams, Caribbean Development Bank (CDB). This presentation also provided information on the CARICOM Energy Policy and the C-SERMS Initiative.

The following are the main feedback points arising from the discussions on July 22:

- CREDP is currently working with CDB to determine how bankable projects could be created from the list of initiatives that CREDP had identified. Since CREDP is closing, the Centre could lend support to this.
- There should be strong collaboration between the Centre and CDB. Local banks may not have the technical capacity to undertake certain actions such as reviewing and evaluating RE/EE proposals. The Centre/CDB could assist with this.
- CDB should look at mechanisms to on-lend funds at more attractive rates. They should also look at minimizing bureaucracy and simplifying loan application procedures as these have proven to be a deterrent in the past.
- The participants took note of the interest of the Central American Integration System (SICA) to establish a similar regional centre for Central America.

Discussion on the scope, technical program and institutional set-up of the centre
Participants were divided into four groups: governmental bodies (Groups 1 and 2) regional organizations (Group 3), private sector and development partners (Group 4).They discussed the: (i) needs and gaps to be addressed by the centre; (ii) technical program of the Centre; and (iii) Institutional set-up of the centre. The list of group members and feedback from these groups is summarized in Annex 3. The team leaders of each working group presented their results in the afternoon. Finally the participants of the meeting reviewed the draft criteria of the selection of the host country of the Secretariat of CCREEE.

5. Outcomes of the Meeting

The active participation of all involved partners led to the achievement of the meeting objectives. The participants of the CCREEE Confirmation and Validation Meeting:

i. Took note of the laudable progress achieved by SIDS DOCK and UNIDO/ECC to establish the Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE) under the umbrella of CARICOM.
ii. Expressed support and commitment of participating CARICOM Member States and all attending stakeholders to the proposed establishment process of CCREEE.
iii. Recommended the report of the Confirmation and Validation Workshop along with the revised project document for establishment of CCREEE be submitted by the Government of the Commonwealth of Dominica to the CARICOM Ministerial Council for consideration and approval at their next forthcoming meeting.
iv. Agreed that the representative of the countries who participated in the workshop will obtain national endorsement on the establishment of CCREEE and the project document before the Third international Conference on Small Island Developing states, which will be held from 1 to 4 September 2014, in Apia, Samoa.
v. The countries and other donor partners are asked to provide further comments for the finalization of the project document and the selection criteria for the host country of the Secretariat of CCREEE. The hub structure and relationships to other institutions will be further studied the following months.
vi. Took note of the commitment of the Austrian Development Agency (ADA) to support the first operational phase of the Centre with at least one million Euros.
vii. Took note of and welcomed the valuable technical support of UNIDO and its role to assist in the establishment of the first operational phase of the Centre.
viii. Expressed its willingness to take part of the Global Network of Regional Sustainable Energy Centres which comprises of various centres in Africa and the Pacific.
ix. Encouraged SIDS DOCK and UNIDO to announce the SIDS Network of Regional Sustainable Energy Centres as innovative south-south partnerships at the Third

International Conference on Small Island Developing States, scheduled to take place from 1 to 4 September 2014, in Apia, Samoa.

x. Suggested to launch a competitive selection process for the host country of the Secretariat of CCREEE taking into consideration the established selection criteria in the annex of the project document.

xi. Expressed the urgency to promote renewable energy and energy efficiency to address the challenges of energy security, energy poverty and climate change mitigation and resilience simultaneously.

xii. Highlighted the added value of a regional approach to empower local private sector and industry to take advantage of increasing sustainable energy opportunities and investments.

xiii. Highlighted the role of CCREEE as regional hub for SE4ALL and SIDS DOCK activities.

xiv. Highlighted the importance of further donor partnerships and fund raising activities of the Centre.

xv. Took note of the potential interest of the Central American Integration System (SICA) to establish a similar regional centre with support of UNIDO.

xvi. Encouraged UNIDO and SIDS DOCK to further mobilize funding for the Centre through the Global Environment Facility (GEF), the European Union (EU) and other international partners

xvii. Agreed that member states would not be required to make mandatory financial contributions to the Centre.

6. Workshop Closing

Dr. Pradeep Monga, Director of the Energy and Climate Change Branch, United Nations Industrial Development Organization (UNIDO) and His Excellency Mr. Vince Henderson, Chairman of SIDS DOCK, Ambassador Plenipotentiary and Permanent Representative of the Commonwealth of Dominica to the UN, closed the meeting by expressing their appreciation to participants, partners, staff and workshop organizers

7. Summary of detailed group discussion

1. **What is the particular added value of the proposed regional RE&EE centre?**

   - Net benefit of having key experts in one location as opposed to having experts at different locations
   - Improved monitoring and evaluation of projects/initiatives and bundling of projects

2. **Which practical services and benefits you would expect from CCREEE and how synergies could be created to your ongoing projects/programs in RE&EE? Please identify at least 5 services and benefits.**

   - Assist CARICOM Energy Unit with implementation and monitoring of C-SERMS.
   - Identification of sources of finance and provision of technical support in accessing financing, evaluating proposals, preparing proposals and project documents. Act as entry-point for non-traditional donors.
   - Provision of evidence-based information to support the work of policymakers. For example, the Centre could examine policy/regulatory instruments (e.g. Net metering/net-billing) and how they apply in our context.
   - The Centre should advise governments through the CARICOM Energy Unit on energy standards and labelling for appliances and equipment based on available

information and best practices. Need to ensure integrity of equipment etc. coming into the islands. Centre can work through national Bureau of Standards. The Centre should provide advisory services to member states.

- Assist CDB to establish innovative financing instruments for small- to medium-scale renewable energy and energy efficiency investments in cooperation with national banks.
- Developing Feasibility studies, pilot projects and provision of financing for them.
- Serving as think tank on sustainable energy
- Support national stakeholders in developing projects and programmes and mobilize funding.
- Validation of minimum performance standards in the energy market.
- Promoting Research and Development in priority and emerging technologies. Emerging technologies include those relating to sustainable transport, marine energy production, etc.
- Identification of energy goals and opportunities for the private sector.
- Improved information, data and knowledge management services. The Centre could facilitate this through adopting and strengthening a thematic hub such as CEIS.
- Strengthen local businesses and industry to take advantage of growing sustainable energy investments (e.g. support for start-ups, business competitions, innovation prize). The Centre shall outsource most of the activities to the private sector to stimulate the market.
- Provision of advisory and support roles to national governments, through the CARICOM Energy Unit, for key areas, such as energy policy renewal and energy planning support.
- Provision of energy planning and scenario assessments, project development, prefeasibility and feasibility studies
- Capacity building, monitoring, awareness raising and inventory of regional landscape.
- Strengthening the negotiating power of the Caribbean in international sustainable energy discussions and negotiations.

3. Which needs and gaps should CCREEE address in the electricity sector? What is currently not sufficiently covered by other national/regional programs and initiatives (please identify at least 5 key gaps for RE and 5 key gaps for EE)?

- Gaps include issues pertaining to grid integration (this encompasses RE integration, distributed generation, intermittency issues, control of power flows, stability, safety, regional/sub-regional interconnection), capacity enhancement, communication and collaboration, synergies on RE issues, technology absorption and implementation of smart energy grids.
- The Centre should play an active role in supporting countries in integrated resource planning for the electric utilities and assist with the energy planning development (least cost expansion planning or other more appropriate methods).
- The Centre should assist with the establishment of best practice, and an independent and transparent regulatory framework within the region, as requested
- The Centre should focus on promoting EE and demonstrating quick successes. The CCCCC project on EE in buildings could be expanded with support and in

partnership with the Centre. These initiatives could be supported by non-traditional donors, such as the Swedish Government.

- The Centre - through CARILEC, universities and other relevant partners – should engage in research and development for electricity and RE integration issues which are common to island states). This knowledge should form the basis of university programmes which will be taught to potential electrical engineers and other relevant technical fields. Through the Centre, funding could be mobilized to support such R&D initiatives. Members should consider making a high priority area for the Centre.
- The Centre should also facilitate partnerships for climate change-based research into the electricity sector, focusing on how climate change impacts the sector and how to increase the sector's resilience including the use of ICT and smart technologies
- Standards and labelling, validation and certification of issues, testing and baseline studies
- Benchmarking of performance of utilities across region – regulators struggling with this process. Need mechanisms for assisting utility to benchmark utility performance from supply to demand side.
- Providing support (financial and technical) for the conducting of Training activities to build national capacity in areas, such as those relating to RE installations, and increasing energy efficiency.

4. **Which needs and gaps should CCREEE address with regard to decentralized and off-grid RE systems (e.g. mini-grids, stand-alone systems, solar lighting services)? What is currently not sufficiently covered by other national/regional programs and initiatives (please identify at least 5 key gaps)?**

- Capacity building, awareness, permitting, legislation, safety and financing incentives, sustainable transport.
- Execution of feasibility studies, sustainable transport, emission standards, clean technologies.
- Knowledge sharing and information transfer relating to standalone systems. Information is not being diffused. Need priority aspect of these scenarios.
- Need special focus and programmes for Haiti.

5. **Which needs and gaps should CCREEE address in non-electricity areas such as sustainable transport, waste to energy, sustainable cooking and solar thermal heating? What is currently not sufficiently covered by other national/regional programs and initiatives (please identify at least 5 key gaps)?**

- Transportation, waste to energy, sustainable cooking, SE for agriculture and clean industries
- Focus on solar thermal and cooling and the large energy production technologies that do not necessarily have to go through the grid.

6. **Which needs and gaps should CCREEE address in EE areas such as standards for buildings and appliances, efficient lighting, technical and commercial grid losses, demand and supply side management, industrial efficiency? What is currently not**

sufficiently covered by other national/regional programs and initiatives (please identify at least 5 key gaps)?

- RE/EE Legislation and regulation; building codes (special focus on regional architects and contractors), permitting, standards and labelling (for appliances etc.), testing, certification
- Mainstreaming of social and cultural issues as it relates to standards planning. Centre should look at social partners that can help with these initiatives.
- Engage CROSQ and assist them to provide these services.

7. **Which needs and gaps should CCREEE address with regard to the empowerment of the local private sector and industry to take advantage of sustainable energy investment and job opportunities? What is currently not sufficiently covered by other national/regional programs and initiatives (please identify at least 5 key gaps)?**

   The participants noted that these needs and gaps also apply to government.

- Issues include need for financing support, incentives and disincentives, policy and legal framework, awareness raising, capacity and financing mechanisms
- Issues related to soft financing, provision of services at request of private sector, facilitating development of project ideas, market analysis and creation of green energy jobs. If the Centre is to become established in the region, job creation and involvement of the private sector will be key areas.
- There is a need for an ESCO framework that can help to generate working ESCO models in the region.
- The Centre should also assist government with green/SE procurement processes as government is a significant market and consumer for RE/EE services. Government needs to play a more central role in market.
- The Centre could facilitate private sector involvement by disseminating information on available funds, etc. This should help to spur private sector. It was mentioned that the CDB can help to develop and implement ESCO models. There is an area for services for SMEs and small business development. The strategy needs to be developed and defined. CDB was asked to look at this as a priority area going forward. In addition, CDB has a department looking at macroeconomic research. Several obstacles to get companies established. One entry point is to remove these barriers to starting businesses.
- The Centre should identify critical agents/intermediaries that can help with business plans, cash flow planning, etc., but this should not be the primary function of Centre. There have been recent efforts to have MSMEs become more efficient. There have also been gaps identified between energy audits and implementation.
- There are small business associations through which the Centre can channel support. This could also be done through national development corporations and development banks.

8. **Which activities the centre should not focus on? What is already sufficiently covered by other regional/national institutions, programs and/or projects in general?**

- The centre should not do research and development (existing entities should continue their work, Centre could support by providing resources and identifying partners) -

but facilitate programmes in cooperation with existing research organizations; bank-related functions; execution of on-the-ground projects; policy formulation and regulation (except where studies etc. would be conducted and passed on to relevant institutions); training and capacity building (should be done through existing institutions and Centre should leverage resources and provide partners). It was felt that several of the Centre's activities would fall under policy implementation and control.

Technical Program of the Centre

1. **If policy implementation assistance to the CARICOM Energy Unit is one of the focus areas of the Centre, please suggest at least 5 priority activities for RE and five priority activities for EE. Refer to the identified gaps in the previous session.**

- Assistance for implementation of national policies, upgrading incentives, developing financial mechanisms, assessments roadmaps, baseline studies, coordination of stakeholders, standards, building codes, harmonization, integrated solutions with environmental and social safeguards
- Development of proposals, assistance for countries with implementation mechanisms, interconnection studies and programmes in relation to regional grids, sustainable land-based transportation (needs to be discussed more fully), green buildings, biomass and geothermal initiatives.
- The Centre could provide backstopping support for energy modelling and planning (through various institutions). Energy planning needs to be a priority, as it will guide future development. There is a need to define how much the grid can take and the point at which RE swings from benefit to burden.
- Need to look at associated impacts of RE, such as revenue shortfalls for electric utilities, technical issues, etc.
- Centre could assist with implementation of C-SERMS, monitoring and implementation of targets; resource assessments to unlock investments and raise awareness of potential opportunities, capacity building; the model of the EU and ECOWAS could be applied in adapted form.

2. **If capacity development and applied research is one of the focus areas of the Centre, please suggest at least 5 priority activities for RE and five priority activities for EE. Refer to the identified gaps in the previous session.**

- Geothermal/ reverse geothermal. Biomass, biogas (specifically for agriculture, transport). For EE industry: energy efficient lighting and cooling systems, energy storage systems such as batteries, solar cooling, energy management in buildings;
- Biofuel research – 2nd to 4th generation should be added, but needs to be properly developed.
- Innovative financial models for supporting investments are needed on national levels (e.g. micro-credits, net metering).
- The Centre could perhaps provide support and facilitation services for applied research.

3. **If the promotion of local sustainable energy businesses and industry is one of the focus areas of the Centre, please suggest at least 5 priority activities. Refer to the identified gaps in the previous session.**

- Incubation facility, promoting ESCOS, application of ISO 50001, development of incentive structures and job creation, government procurement policy
- Technology transfer and modification, developing of bankable projects, market research, testing of alternative fuels, development of business plans and industry standards
- Regulations for the operation of ESCOs, public procurement related to green energy, performance standards for various items such as buildings, vehicles, appliances (even before adoption of building codes etc.) – these can help to prepare market prior to legislation being passed.
- Development of innovative ways for private and public sector collaborations and this can be done through networks.

4. **If knowledge management and awareness raising is one of the focus areas of the Centre, please suggest at least 5 priority activities for RE and five priority activities for EE. Refer to the identified gaps in the previous session.**

- Demonstration projects, tours, workshops, media programmes, political activities and involvement through outreach to schools through competitions, awareness sessions for stakeholders (government, utilities etc.) and artistes.
- CEIS should be the knowledge management arm of Centre. The Centre should be a clearinghouse of technologies, particularly new technologies. Centre could assist with awareness efforts of CEU (e.g., Energy week), assist countries with PR programmes.
- Relationship management, energy information management. The process could be shaped in the context of the Centre (CEIS could be thematic hub), visibility focus on regular basis, e.g., publications on RE/EE landscape in Caribbean. The Centre should publish and disseminate as much as possible and avoid shelving reports. The Centre should do monitoring and evaluation of knowledge management and awareness raising initiatives and programmes.
- Structured policy dialogue in the region. The Centre could assist with energy forums.

5. **Please propose at least 5 priority activities for off-grid energy services (stand-alone systems, sustainable transport, waste to energy, mini-grids, efficient cooking stoves). Refer to the identified gaps in the previous session.**

- Mini grids, small systems, fuel cells, sustainable transport, sustainable cooking.
- Spatial planning and land use, transport demand management, role of ICT in the energy sector, how ICT can be used to get efficiency in transport demand management, need for demonstrations related to smart or mini grid system.
- RE in Agriculture. Need to explore widening of PV to provide energy for irrigation. Agriculture is on decline, RE could assist in reviving sector. In Barbados, several farms are seeking to use PV installations in the rearing of chickens.

6. **How gender issues could be at best mainstreamed in the technical program of the centre? Give some concrete suggestions.**

- The Centre should focus on issues pertaining to all disproportionally represented groups. Such issues can be mainstreamed through training and education, curriculum development, addressing issues for all under-represented groups such as the youth, unemployed, seniors, etc.

- Gender equity has to be part of the guiding principles of Centre. Can engage specialist to advise how gender can be mainstreamed into RE/EE developments. Need to ensure greater numbers of women trained in RE/EE as part of an advocacy and public awareness campaign

Institutional set-up of the Centre

1. **What is the most efficient institutional set-up for the Centre in your view? Please provide also suggestions for the composition of the Board.**

- The Centre should be a standalone, independent, corporate and legal body reporting to CARICOM. Membership should include Caribbean countries. Representatives on the Board should include stakeholders from the energy sector within the Caribbean, it should not be exclusive to countries, but should include stakeholders based on energy use and services across region. To ensure efficiency, it should have delegated powers to do procurements, sign funding contracts and execute recruitments.
- The Centre should be independent and report to COTED, similar to the CCCCC. The private sector should be represented on the Board of Directors (BoD) [a mechanism should be developed to facilitate this]. The technical committee was felt to be unnecessary, was thought to increase bureaucracy of the Centre and a general inefficient use of resources, etc. It was felt that having technical members as a part of the Board would help to minimize bureaucracy and inefficiency.
- The Centre should have clear rules for third party countries entry (e.g., Dominican Republic, etc.). The Centre should use a thematic hub approach, as well as Secretariat-hosted financing processes.
- The Centre should establish a strong bridge to CCCCC, SIDS DOCK, the CARICOM Energy Unit, CARILEC, OECS, and Energy Unit of CDB. Representatives from academia and NGOs should also be on the Centre's BoD. In addition, the Centre needs to have mechanisms for contacting (and maintaining contact with) technical focal points within countries.

Table: List of Working Group Members

Group 1 – Government	**Group 2 - Government**	**Group 3 – Regional & International Organisations**	**Group 4 – Private Sector and Development Partners**
Catherine Abraham – Dominica	Jehu Wiltshire – Barbados	Devon Gardner – GIZ	Marie Karlberg – Swedish Energy Agency
Karlene Richards – Dominica	Judith Ephraim – St. Lucia	Bentley Browne – OECS Secretariat	Carl Duncan – Energy Consultant, Dominica
Lloyd Pascal – Dominica	Ivanira Da Costa James - Dominica	Joseph Williams - CDB	Mentor Poveda – Olade, Ecuador
Michael Savarin – Dominica	Brian Challenger – Antigua and Barbuda	Maxine Nestor – ECERA OECS Secretariat	JannikVaa – EU Delegation, Barbados
Ambrose Tillett – Belize	Gail Nelson – Jamaica	Nigel Edwards – UNFCCC RCC	Cletus Springer, OAS, Washington, DC
Philip Weech – Bahamas	Randy Maurice – Trinidad and Tobago	Hyacinth Elayo - ECREEE	Marie-Jose Edwards, Eclipse Inc., Dominica

Angela Gonzalez – Dominican Republic	Jason Timothy – Dominica	Andrew Thorington - CARILEC	Thomas Scheutzlich, CREDP/GIZ
Lisa Valmond – Dominica	Patrick Pique – Suriname		
Eisenhower Douglas – Dominica	Michael Fadelle – Dominica		
Ellsworth Dacon – St. Vincent and the Grenadines	Joelle Harris - Dominica		
Christopher Joseph - Grenada			
Albert Corbette – Dominica			
William Hinds - Barbados			

SIDS DOCK-UNIDO VALIDATION WORKSHOP ON THE CARIBBEAN CENTRE FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY (CCREEE)

A CENTRE OF EXCELLENCE TO PROMOTE INCLUSIVE AND SUSTAINABLE ENERGY INDUSTRIES AND SE4ALL IN THE CARIBBEAN

21-22 JULY 2014

STATE HOUSE CONFERENCE CENTRE
ROSEAU, COMMONWEALTH OF DOMINICA

LIST OF PARTICIPANTS

HOST COUNTRY:

1. Hon. Roosevelt Skeritt, Prime Minister and Minister of Foreign Affairs, and Finance, Commonwealth of Dominica
2. Hon. Rayburn Blackmoore, Minister of Public Works, Energy and Ports, Commonwealth of Dominica
3. H.E. Mr. Vince Henderson, Ambassador Extraordinary and Plenipotentiary, Permanent Representative of the Commonwealth of Dominica to the United Nations & Chair, SIDS DOCK Steering Committee
4. Mr. Lucien Blackmoore, Permanent Secretary, Ministry of Public Works, Energy and Ports, Commonwealth of Dominica
5. Mr. Edward Lambert, Principal Advisor to the Prime Minister, Office of the Prime Minister, Commonwealth of Dominica
6. Mr. Daryl V. Titre, Government Press Attaché, Office of the Prime Minister, Commonwealth of Dominica
7. Mr. Michael Fadelle, Coordinator, Renewable Energy Programme & SIDS DOCK National Coordinator, Ministry of Public Works, Energy and Ports, Commonwealth of Dominica

WORKSHOP SPONSOR:

8. Mr. David Muckenhuber, Programme Manager Central America and the Caribbean, **Austrian Development Agency**

ORGANISERS:

9. Dr. Pradeep Monga, Director of the Energy and Climate Change Branch, **United Nations Industrial Development Organization (UNIDO)**
10. Mr. Martin Lugmayr, Sustainable Energy Expert, Coordinator of the Global Network of Regional Sustainable Energy Centers, **UNIDO**
11. Dr. Al Binger, Energy Science Advisor, **Caribbean Community Climate Change Centre (CCCCC) & SIDS DOCK** Coordinator
12. Ms. Christine F. Neves Duncan, Consultant, **CCCCC & SIDS DOCK** Meetings Coordinator

COUNTRY DELEGATIONS:

13. Ambassador Brian Challenger, Ministry of Foreign Affairs and International Trade, **Antigua and Barbuda**
14. Mr. Philip Weech, Director & Chair & SIDS DOCK National Coordinator, The BEST Commission, Ministry of the Environment and Housing, **Commonwealth of the Bahamas**
15. Mr. Jehu Wiltshire, Deputy Permanent Secretary and SIDS DOCK National Coordinator, Division of Energy and Telecommunications, Prime Minister's Office, **Barbados**
16. Mr. William Hinds, Chief Energy Conservation Officer, Division of Energy and Telecommunications, Prime Minister's Office, **Barbados**
17. Mr. Ambrose Tillett, Energy Director, Ministry of Energy, Science, Technology and Public Utilities, **Belize**
18. Ms. Angela Gonzalez, National Energy Commission of the **Dominican Republic**
19. Mr. Christopher Joseph, Energy Officer, Ministry of Finance and Energy, **Grenada**
20. Ms. Gail Nelson, Science & Technology Development Planner & SIDS DOCK National Coordinator, **Jamaica**
21. Ms. Judith Ephraim, Senior Science & Technology Officer, Ministry of Public Service, Sustainable Development. Energy, Science and Technology, **Saint Lucia**
22. Mr. Ellsworth Dacon, Director, Office of Energy, Office of the Prime Minister & SIDS DOCK National Coordinator, **Saint Vincent and the Grenadines**
23. Mr. Patrick Pique, National Coordinator, Ministry of Natural Resources, **Republic of Suriname**
24. Mr. Randy Maurice, Senior Planning Officer, Ministry of Energy and Energy Affairs (MEEA), **Republic of Trinidad and Tobago**

REGIONAL & INTERNATIONAL ORGANISATIONS:

25. Mr. Bentley Browne, Director, Social and Sustainable Development Division, **Organisation of Eastern Caribbean States (OECS) Secretariat**, Saint Lucia
26. Ms. Maxine Nestor, Project Manager, Eastern Caribbean Energy Regulatory Authority (ECERA), **OECS Secretariat**, Saint Lucia
27. Mr. Nigel Edwards, Technical Officer, **UNFCCC – Regional Collaboration Centre**, St. George's University, Grenada
28. Mr. Hyacinth Elayo, RE Policy Expert, **ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)**, Republic of Cabo Verde
29. Dr. Devon Gardner, Consultant, **Gesellschaft fur Internationale Zusammenarbeit (GIZ) GmbH,** Trinidad and Tobago
30. Mr. Joseph Williams, Energy Consultant, Office of VP Operations/REEEU, **Caribbean Development Bank (CDB)**, Barbados
31. Mr. Andrew Thorington, Project Manager, **Caribbean Electric Utility Services Corporation**
32. Ms. Maria Salaverria, **Alianza en Energía y Ambiente con Centroamérica (AEA)**, El Salvador
33. Ms. Marie Karlberg, **Swedish Energy Agency**, Sweden
34. Mr. Mentor Poveda, Consultant, Sustainable Energy Development and Energy Efficiency, **Latin American Energy Organization (OLADE)**, Ecuador

35. Mr. Thomas Scheutzlich, **Caribbean Renewable Energy Development Programme (CREDP)/ GIZ**, Saint Lucia
36. Mr. Alex Arter, **CREDP - CDB**
37. Mr. Cletus Springer, Director of the Department of Sustainable Development, Organization of American States (OAS), Washington, D.C., USA
38. Mr. JannikVaa, Head of Infrastructure Section, **Delegation of the European Union to Barbados, the Eastern Caribbean and OECS,** Barbados
39. Mr. Jan Hartke, Clinton Climate Initiative – Clean Energy Program; The SIDS DOCK Strategic Partner

NATIONAL PARTNERS:

40. Ms. Catherine Abraham, Dominica State College
41. Ms. Karlene Richards, Dominica State College
42. Mr. Benoit Bardouille, Chief Executive Officer, Dominica Air and Seaport Authority (DASPA)
43. Mr. Albert Corbette, Dominica Bureau of Standards
44. Mr. Collin Cover, Dominica Electric Services
45. Dr. Eisenhower Douglas, Trade Economist, Commissioner, Independent Regulatory Commission (IRC)
46. Mr. Carl Douglas, Energy Consultant, Dominica
47. Ms. Marie Jose Edwards, Eclipse Inc.
48. Mr. Collin Guiste, PCU - Ministry of Environment, Dominica
49. Ms. Joelle Harris, Solicitor General
50. Ms. Ivanira Da Costa James, Dominica Water and Sewerage Company Limited (DOWASCO)
51. Mr. Lloyd Pascal, Director of Environmental Coordinating Unit
52. Ms. Carteen Roberts, Office of NAD/EDF Dominica
53. Ms. Lisa Valmond, Office of NAD/EDF Dominica
54. Mr. Michael Savarin, Invest Dominica Authority
55. Mr. HezronSeraphin, Dominica
56. Mr. Dermot Southeell, National Bank of Dominica
57. Mr. Jason Timothy, Dominica

CONSULTANTS:

58. Mr. Jose Mestre, Consultant, AETS, France
59. Ms. Felicia Whyte, Consultant, AETS, France

NATIONAL MEDIA:

60. Mr. Mervin Paul, Senior Information Officer, Government Information Service (GIS)
61. Ms. Tarnia Green Reid, GIS
62. Ms. Kadisha Baptiste, Dominica News Online
63. Mr. ChendiLaville, Reporter

SIDS DOCK-UNIDO Validation Workshop on the Establishment of the
Caribbean Centre for Renewable Energy and Energy Efficiency (CCREEE):
A SE4ALL Centre of Excellence

21-22 JULY 2014

STATE HOUSE CONFERENCE CENTRE, ROSEAU, COMMONWEALTH OF DOMINICA

Further information: workshop@ccreee.org, www.ccreee.org

Day One: 21 July 2014		
08:30		Registration
Time	**No.**	*Introductory session*
9:00	1	**Welcome:** H.E. Mr. Vince Henderson, Ambassador Extraordinary and Plenipotentiary, Permanent Representative of the Commonwealth of Dominica to the United Nations, and Chair, SIDS DOCK Steering Committee, co-chair of meeting Dr. Pradeep Monga, Director of the Energy and Climate Change Branch, United Nations Industrial Development Organization (UNIDO)
9:10		**Remarks:** Hon. Mr. Rayburn Blackmoore, Minister of Public Works, Energy and Ports, Commonwealth of Dominica Representative of CARICOM (tbc) Mr. David Muckenhuber, Programme Manager, Central America and the Caribbean, Austrian Development Agency (ADA)
9:50		**Keynote Addresses:** Hon. Roosevelt Skerrit, Prime Minister and Minister of Finance, Commonwealth of Dominica
10:10		Roll Call & Introductions
10:30		**Group Photo and Coffee break**
Time	**No.**	**Session I: Added value of CCREEE, Facilitator: Pradeep Monga, UNIDO**
11:00	2	Adoption of the agenda – explanation of proceedings and logistics, Dr. Al Binger, Energy Science Advisor to the Caribbean Community Climate Change Centre (CCCCC)
11:10		Workshop objectives and update on the Global Network of Regional Sustainable Energy Centres, Mr. Martin Lugmayr, Sustainable Energy Expert, UNIDO– PP slides (2), Mr. Martin Lugmayr, Sustainable Energy Expert, UNIDO– PP slides (1)
11:30	3	Presentation on the CCREEE Needs Assessment and stakeholder consultations, Mr. Jose Mestre and Mr. Gary Jackson, AETS (consultant)- PP slides (3)

11:50		Discussion
12:30		**Lunch**
Time	**No.**	**Session II: Technical mandate and design options for CCREEE, Facilitator:** *Robert K. Dixon, GEF*
13:30	4	Achievements and model of the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), Mr.*Hyacinth Elayo*, Energy Policy Expert, - PP slides (4)
13:45	5	Presentation on the technical mandate and programme options for CCREEE, Jose Mestre, AETS (consultant) and Martin Lugmayr, UNIDO- PP slides (5) • Scope of mandate • Result areas and technical program of the centre • Potential priority activities for the first operational phase
14:05		Discussion
15:00		**Coffee break**
Time	**No.**	**Session III: Institutional Design Options for CCREEE, Facilitator: Al Binger, CCCCC**
15:20	6	Presentation on institutional options for CCREEE, Martin Lugmayr, UNIDO and Jose Mestre, AETS (consultant) - PP slides (6) • Institutional set-up and legal status of the Centre • Alignment with existing regional framework • Role and competencies of the governance bodies • Indicative budget
15:40		Discussion
16:30		**Organisation of Working Groups & Nomination of Group Leaders, Facilitators: Dr. Al Binger, Martin Lugmayr, UNIDO** • Needs, added value and scope of mandate of the centre • Technical priority activities of the centre • Institutional aspects and sustainability strategy for the centre
16:45		**Closing Remarks, Pradeep Monga, UNIDO and Vince Henderson (SIDS DOCK)** *(participants are asked to read the draft project document for the next day)*

Day Two: 22 July 2014		
Time	**No.**	*Introductory Session*
9:00		**Welcome remarks and summary of first day,** Al Binger, CCCCC
9:10	7	**Achievements of the Energy and Environment Partnership for Central America (EEP)**, Ms. María Eugenia Salaverría, SICA - PP slides (7)
	8	*Addressing the Implementation Gap for RE and EE in the Caribbean, the Role of CDB, Mr. Joseph Williams, Caribbean Development Bank (CDB)*
Time	**No.**	**Working Group Discussion I: Needs, added value and scope of mandate of the centre**
9:30	9	Moderated by facilitators nominated by the groups, PP slides with key questions (9)

10:50		**Coffee break**
Time	**No.**	**Working Group Discussion II: Technical priority activities of the centre**
11:10	10	Moderated by facilitators nominated by the groups, PP slides with key questions (10)
Time	**No.**	**Working Group Discussion II: Institutional aspects and sustainability strategy for the centre**
12:30	11	Moderated by the facilitators nominated by the groups,PP slides with key questions (11)
13:30		**Lunch break**
Time	**No.**	**Session IV: Recommendations of the Working Groups,**
14:30	12	Presentation and discussion of the results of each working group to all participants by nominated team facilitators
16:00	13	Presentation and discussion of options for the selection procedure and draft qualification criteria for the host organization/country, Martin Lugmayr, UNIDO – PPT (12)
14:30		**Coffee break**
Time	**No.**	**Session V: Closing Session and the Way Forward, Facilitators: Pradeep Monga, UNIDO and Vince Henderson, SIDS DOCK**
14:50	14	Tour de table: Expectations of international partners from the centre and their potential financial and in-kind contributions to the centre
	15	Presentation of the workshop minutes including made suggestions and changes in the project document, AETS – word document on screen (12)
		Finalisation and adoption of minutes by the participants and any other business
17:00		**End of Meeting and Photo with Organizers**

Organized with support of:

Austrian Development Cooperation

Annex 8: Needs assessment questionnaire

The United Nations Industrial Development Organization (UNIDO) in cooperation with SIDS DOCK (represented by the Caribbean Community Climate Change Centre) and the Austrian Development Agency (ADA) are assisting the Caribbean Countries and Territories (CCTs) in the establishment of the **Caribbean Centre for Renewable Energy and Energy Efficiency** (CCREEE). The technical and institutional design will be determined during a consultative preparatory process which includes the development of a needs assessment and a project document on the centre.

This questionnaire has been developed by UNIDO, SIDS DOCK and ADA with the intention of learning directly from Caribbean energy market stakeholders about their experiences and priorities for the sector. In particular, the questionnaire will assist in the identification of the following key aspects:

- Understand the expectations of the different stakeholders regarding the function and services of the centre
- Define the added value and scope of the mandate for the centre and assess its priority areas for assistance
- Understand the status of sustainable energy development in the Caribbean and avoid duplication with ongoing activities
- Identify the remaining barriers for RE & EE in the Caribbean and define methodologies to address these through regional assistance
- Identify options for an effective, efficient, sustainable and institutional set-up for the centre

Your participation in this survey is greatly appreciated. Any comments and suggestions you provide will be invaluable to the design and successful operation of a centre that addresses the energy challenges facing the Caribbean region. The needs assessment and project document which will be based on the results of the survey (without identifying the authors of specific responses) will be discussed in a validation workshop to be held in July 2014.

Your details

Name:	
Organisation:	Country:
Telephone/Skype username:	
E-Mail:	
Interest in Sustainable Energy:	
Date:	

Abbreviations
CDM: Clean Development Mechanism
ESCO: Energy Service Company
RE: Renewable Energy
EE: Energy Efficiency

A. Added Value of the centre

Do you think a specialized regional centre to promote renewable energy and energy efficiency is needed and would add value in the context of the existing regional and national Caribbean energy framework?

☐Yes
☐No
☐Depending on the scope of the mandate

Please justify your opinion focusing on how the regional Centre could add value in the regional context:

B. Technical Design of the Centre

What scope should the mandate of the regional centre cover? (please tick as many boxes as you wish)

☐ Assist in the regional coordination of sustainable energy activities
☐ Assist in the development and implementation of policy, legal and incentive frameworks to promote RE&EE investments and markets
☐ Promote investments in RE&EE infrastructure, services & businesses
☐ Development of capacities of local key stakeholders on various RE&EE aspects and issues
☐ Applied research on request of the industry and business sector (e.g. local production of components or spare parts, adaptation of technology solutions to the local needs, testing of fuel qualities)
☐ Knowledge management, dissemination of targeted research and investment data, as well as strategic studies on the further development of the local RE&EE energy market
☐ Other suggestions:

Please prioritise the following areas of intervention in accordance with the needs in your country.

	Indicate up to 10 priorities, ranking them 1 to 10 in order of priority (1 being the highest priority)	Please describe the specific needs of your country in the areas of intervention	For those areas indicated, please suggest a partner* for the Centre to collaborate in your country
Development and execution of policy, legal and regulatory framework for RE&EE			
Capacity development of key stakeholders on RE/EE			
Applied RE/EE research			
Awareness raising and information dissemination			
Promotion of local companies in the sustainable energy sector (e.g. consulting, manufacturing, installation, maintenance)			
Creation of financial mechanisms and incentive schemes for the promotion of RE/EE (e.g. feed in tariff, micro-credits, revolving funds)			
Development and execution of EE/RE standards, labelling and certification of equipment and skills (e.g. building codes, appliances, equipment, cooking stoves, transport)			
Reduction of market distortion barriers (e.g. reduction of subsidies on fossil fuels)			
Development of a market / industry for RE			

Development of a market / industry for EE			
Development and implementation of RE/EE projects			
Promotion of RE/EE for access to modern, affordable and reliable energy services in rural and peri-urban areas			
Facilitate south-south and north-south knowledge and technology transfer			

* Government institution, university, research centre, NGO, development partner, etc.

Please prioritise the sectors for RE/EE interventions

	Please rate from 1 to 5, where 1 represents the most relevant sector	Please describe the specific needs of your country in the sector	For those areas indicated, please suggest a partner* for the Centre to collaborate in your country
Residential sector			
Industrial sector			
Commercial Sector			
Agricultural sector			
Transport sector			
Household and cooking energy sector			

In which areas the centre should not work as it is already covered on national level or by other regional institutions, program or projects? Please name which institutions are covering those areas.

How do you see the Centre assisting with your current and future RE and EE efforts? (Please comment on the potential synergies or the added value of CCREEE to your organization/country effort to promote sustainable energy)

Which measures/actions could bring faster results and increase confidence in the Centre in the short-term?
(For example: providing capacity building courses in country to support existing renewable energy projects. This would show competency by the centre and allow the centre to access funding to implement a higher number of activities in the medium term)

C. Institutional Design of the Centre

In your opinion how should the Centre be set-up?

☐ As an independent organisation hosted by a Caribbean country
☐ As an independent organisation hosted by an existing organisation having a regional outreach
☐ Other set-up:

Please suggest countries and/or organisations to host such a regional centre? (Please consider the advantage of sharing already built competences and the potential for regional outreach)

1st Preference:
2nd Preference:
3rd Preference:
☐ Do not have an opinion

How can be ensured that the regional Centre responds to the needs of the countries?

In your view which stakeholders should be represented in the governing bodies of the centre?

Please send the completed questionnaire together with any relevant documents to survey@ccreee.org

Questionnaires to be sent by email to stakeholders should end here.
The following questions should be used to lead the stakeholder interviews.

Country Situation

In your opinion what are the most reliable sources of information regarding the RE & EE potential in your country?
(Please also include household energy and energy for cooking)

Focus Area	Study title and date	Website	Contact Person or Author

(Please add rows if necessary)

In the table below, please list any relevant private sector actors in energy matters in your country.
(NGOs, ESCOs, business associations, equipment manufacturers, financial institutions, etc.)

Organization/ Institution/companies	Address	Contact Person	E-mail	Telephone/Skype	Describe their role

(Please add rows if necessary)

Which educational institutions/organizations are offering specialized trainings or educational programs in the RE/EE sector in your country?

Organization/ Institution	Address	Contact Person	E-mail	Telephone/Skype	Describe focus of program/trainings (e.g. financing, installation)

(Please add rows if necessary)

Which regional or international organisations/donors are financing sustainable energy projects in your country? Please answer using the table below.

Organization/ Institution	Address	Contact Person	E-mail	Telephone/Skype	Describe their role

(Please add rows if necessary)

What type of activities would you like to see development partners support/implement?

Thinking back on your country experience with RE&EE promotional activities…

…which have been the most successful promotional activities?	…which have been the main challenges impeding RE&EE development?

(e.g. law & regulations, subsidies, capacity building, access to finance)

Can you think of an area where your country has been quite successful, in a way that would lend itself to sharing experiences with other Caribbean countries? If yes, please describe and explain.

Are there any success stories arising from RE&EE activities / implementation in other island state (Caribbean or otherwise) that you would like to learn from? If yes, please provide details.

Promotion of RE&EE

Which of the capacity building activities below have been implemented in your country to assist with the deployment of RE & EE technologies and services?

Activities	Please provide details of actions and implementing institutions
Scholarships for BSc and Master programs at universities	
Hands on training for developers and/or installers	
Capacity building on CDM and carbon finance	
Capacity building for the business sector relating to RE or EE	
Capacity building for the utility or rural electrification agencies	

(Please add rows if necessary)

Which of the fiscal incentives below are currently in place for energy users to support sustainable energy technologies in your country?

	(yes/no)	Please provide details of any laws, regulations and/or strategies
Capital subsidy, grant or rebate for EE or RE installations	(yes/no)	
tax credits for Investments in RE/EE	(yes/no)	
Reductions or tax exemptions for taxes on sales for EE or RE equipment	(yes/no)	
Reductions or exemptions for import duties on EE or RE components	(yes/no)	
Production tax credits (e.g. for biofuel production)	(yes/no)	

Or (Please add rows if necessary)

Which of the policy and regulatory support mechanisms below are currently in place to promote sustainable energy projects in your country?

	(yes/no)	Please provide details of policies, laws, regulations, strategies and/or action plans
National targets for RE/EE	(yes/no)	
RE and EE targets for rural areas (including efficient cooking stoves)	(yes/no)	

National RE Investment Action Plan with priority projects	(yes/no)	
Power Purchase Agreements and enabling environment for IPPs	(yes/no)	
Electric utility RE or EE quota obligation	(yes/no)	
EE standards for electric equipment (e.g. Energy Star or ISO energy management standard, light bulbs, cooling, improved cook stoves)	(yes/no)	
Energy certification for buildings	(yes/no)	
Demand side management and/or pre-payment models by the electricity provider	(yes/no)	

(Please add rows if necessary)

Which of the public financing incentives below are currently in place for sustainable energy technologies in your country?

(Not including donor grants or grants from international organisations)

	(yes/no)	Please provide details of any laws, regulations and/or strategies
Incentives for start-up companies (e.g. grants)	(yes/no)	
Feed-in tariff/premium payment	(yes/no)	
Subsidies by utilities for the purchase or import of EE or RE equipment	(yes/no)	
Net metering and other energy production payments	(yes/no)	
Competitive public bidding	(yes/no)	
Public investment, loans or grants	(yes/no)	
Rural electrification schemes (e.g. concessions for solar mini-grids)	(yes/no)	
Finance payment Guarantees	(yes/no)	
Subsidies for production of biofuels	(yes/no)	

Please list any major ongoing or planned RE & EE programs, projects or activities in your country.

(A significant volume of potential projects can, in theory, attract investors as it ensures the continuity of their activities in the country)

Name of program/project	Focus/Description	Implementing partners and financiers	Contact	Description of possible synergies or added value to CREEE activities

(Please add rows if necessary)

Which applied research activities should such a regional sustainable energy centre promote in cooperation with national institutions?

Is there a pipeline of bankable projects or potential priority investment/demonstration projects in your country yet to be funded? Could you please provide details and contacts?

Name of program/project	Focus/Description	Implementing partners (if any)	Contact

Do you have any comments or suggestions on any issues that you feel were not covered by the interview?

Annex 9: Signed MOU between Austria, SIDS DOCK and UNIDO

EUROPE INTEGRATION FOREIGN AFFAIRS
FEDERAL MINISTRY
REPUBLIC OF AUSTRIA

UNIDO

SIDSDOCK
SMALL ISLAND DEVELOPING STATES
ISLAND ENERGY FOR

Memorandum of Understanding

between

The Federal Ministry for Europe, Integration and Foreign Affairs of the Republic of Austria

AND

The Small Island Developing States Sustainable Energy Initiative - SIDS DOCK

AND

The United Nations Industrial Development Organization

ON

The Establishment of Regional Sustainable Energy Promotion Centres for Small Island Developing States (SIDS)

PREAMBLE

THE FEDERAL MINISTRY FOR EUROPE, INTEGRATION AND FOREIGN AFFAIRS OF THE REPUBLIC OF AUSTRIA, THE SMALL ISLAND DEVELOPING STATES SUSTAINABLE ENERGY INITIATIVE OF THE ALLIANCE OF SMALL ISLAND STATES, AND THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION, (hereinafter referred to as the "Partners"),

CONSCIOUS of the urgent need to address energy security, energy access for productive uses and climate change mitigation and adaptation in Small Island Developing States simultaneously and in an integrated way;

RECALLING the outcome document entitled "The future we want" of the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, from 20 to 22 June 2012, in which the Conference recognized the importance of coordinated, balanced and integrated actions to address the development challenges faced by Small Island Developing States;

MINDFUL of the United Nations General Assembly resolution A/RES/67/207 dated 5 March 2013, entitled "Follow-up to and implementation of the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States";

WELCOMING the third International Conference on Small Island Developing States, to be held from 1 to 4 September 2014 in Apia, Samoa, and the opportunities created by the declaration of 2014 as "International Year of Small Island Developing States";

RECOLLECTING the official request made by the Small Island Developing States Sustainable Energy Initiative (SIDS DOCK) of the Alliance of Small Island States (AOSIS) to UNIDO and the Government of Austria, on 18 August 2013, to support the establishment and first operational phase of the Pacific Center for Renewable Energy and Energy Efficiency (PCREEE), the Caribbean Center for Renewable Energy and Energy Efficiency (CCREEE), the Indian Ocean Centre for Renewable Energy and Energy Efficiency (IOCREEE), and the coordination unit for the African islands at the ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE);

HEREBY declare that they have reached the following understandings:

ARTICLE 1
OBJECTIVES OF THE COOPERATION

The objective of this Memorandum of Understanding (hereinafter "MOU") is to set up a framework for cooperation between the Partners regarding the establishment of the Pacific Center for Renewable Energy and Energy Efficiency (PCREEE), the Caribbean Center for Renewable Energy and Energy Efficiency (CCREEE), the Indian Ocean Centre for Renewable Energy and Energy Efficiency (IOCREEE), as well as a coordination unit for the African SIDS at the ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE).

ARTICLE 2
AREAS OF COOPERATION

1. The Partners will work together in good faith, through joint and concerted cooperation in accordance with the provisions of this MOU. They will:

    a. cooperate closely in planning and establishing the regional sustainable energy centers in the Caribbean, Pacific and the Indian Ocean, as well as the coordination unit for African SIDS at ECREEE;

b. work towards the establishment of sustainable, effective and efficient institutions mandated to creating an enabling environment for sustainable energy investments in infrastructure, services and businesses;
c. assist the centers in building up their tailor-made technical programme and a pipeline of high-impact projects and programmes for the energy sector that, in addition to providing energy services, helps to strengthen resilience to the effects of climate change;
d. advocate activities, initiatives and plans and for the sustainable development of Small Islands States;
e. support the centers in mobilizing funding for their activities and in building strong partnerships with local and international institutions;
f. work to close the existing gap between sustainable energy policy commitments/targets and the lack of investment and business activities on the ground;
g. facilitate partnerships with the private sector aimed at the effective transfer of knowledge, technology and investments.

2. The SIDS centers will cooperate closely with the centers of the Economic Community of West African States (ECOWAS), the Southern African Development Community (SADC) and the East Africa Community (EAC).

3. The MOU does not confer any rights of exclusivity on any Partner. In addition, each Partner may collaborate on similar activities with any other partners.

ARTICLE 3
FINANCIAL ARRANGEMENTS

1. The implementation of activities envisaged under this MOU will depend on the availability of the necessary financial resources and will be made in accordance with the regulations, rules, instructions, directives and procedures in force for each of the respective Partners.

2. Funding arrangements and agreements of the Partners will be based on detailed project documents. The documents will be developed by UNIDO for each of the centers in close coordination with SIDS DOCK, regional organizations and the national Governments. The project documents will include, inter alia, the institutional design of the centers, as well as their objectives, scope of activities and required financial resources.

3. In alignment with the agreed final project documents, the Partners will provide the following financial contributions to the centers:

a. Austria, through the Austrian Development Agency (ADA), has committed funds in the amount of one million Euros for the establishment and first operational phase of the Caribbean Center for Renewable Energy and Energy Efficiency (CCREEE), once the final project document has been finalized and validated. The funds will be executed by UNIDO in accordance with Article 4 below.

b. Austria, through the Austrian Development Agency (ADA), will support the establishment of the coordination unit for African SIDS under the umbrella of an ongoing UNIDO capacity building project for the ECOWAS Center for Renewable Energy and Energy Efficiency (ECREEE).

c. Austria, through the Federal Ministry for Europe, Integration and Foreign Affairs, will support the preparatory works for the PCREEE through the ongoing UNIDO project "Strategic programme for scaling up renewable energy markets in the Pacific Island region". Once the project document of the centre is finalized and validated Austria will

look into the possibility to top-up its current contribution for the first operational phase of the Centre.

d. The Partners will closely cooperate in the mobilization of donor support for the Indian Ocean Centre for Renewable Energy and Energy Efficiency (IOCREEE).

e. SIDS DOCK will co-fund the establishment and first operational phase of the centers and the coordination unit as specified in the final project documents on the centers. The commitment is subject to all requisite internal approvals and clearances, and the availability of financial resources.

f. Likewise, any co-funding on the part of UNIDO for the establishment and first operational phase of the centres will be detailed in the agreed project document and is subject to all requisite internal approvals and clearances, and the availability of financial resources.

ARTICLE 4
IMPLEMENTATION OF THE MOU

Subject to the provisions of Article 3, above, the implementation of the MOU will be based on the following administrative and institutional arrangements:

a. The UNIDO will be responsible for the implementation of the Austrian contribution and will provide key technical assistance for institution building and the establishment of the technical program of the centers. The contribution will be subject to the conclusion of one or more trust fund agreements, based on the agreed project documents. In this context, UNIDO will closely cooperate with SIDS DOCK, regional organizations and the small island countries. UNIDO will share lessons learned from other regional centers.

b. The Governance Structure of the Centers will consist of a Secretariat, an Executive Board and a Technical Committee. The Centers will implement their activities through a network of SIDS national focal institutions (NFIs) among all participating island countries. The final design will be determined during the preparatory process in close coordination between the Partners, regional organizations, the small island countries and other key market enablers in the sustainable energy sector. The centers will work through a network of national focal institutions among all concerned countries. It is proposed that the centers are chaired by the SIDS DOCK Regional Coordinator or other designee. The terms of reference and working procedures of the Committee and Board will be specified in the final project documents to be agreed between the Partners. Austria, UNIDO, SIDS DOCK and other donors will be represented in the Technical Committee and Executive Board of the Centers. A special coordination group comprised of SIDS DOCK and the main donor partners will harmonize their positions before the meetings and will agree on other strategic issues. The Centers will work on the basis of a long-term business plan, annual work plans and status reports, derived from inputs of the national focal institutions (NFIs), donor partners, the SIDS DOCK 25-50-25 goals and other regional policies. The documents are prepared by the Secretariats of the Centers and are subject to review by the Technical Committee and approval by the Executive Board of the Centers.

ARTICLE 5
INFORMATION

The Partners will promptly inform each other of any event or situation which might affect the mplementation of the activities and which may necessitate a modification or alteration of the scope of mplementation or other aspects of this MOU. UNIDO and SIDS DOCK will, while undertaking activities

sponsored by the Government of Austria, make appropriate reference to the fact that the Austrian Development Cooperation (ADC) has provided financial resources.

ARTICLE 6
MONITORING AND EVALUATION

ADA and the Federal Ministry for Europe, Integration and Foreign Affairs will monitor the implementation of the Austrian contribution to the centers. The detailed reporting, monitoring and evaluation procedures will be described in the final project documents of the centers. It is expected that the Secretariats of the regional centers will prepare annual status reports, which will be subject to review by the Technical Committee and approval by the Executive Board of the Centre.

ARTICLE 7
SETTLEMENT OF DISPUTES

In the event of a dispute, controversy or claim arising out of or relating to this MOU (a "dispute"), the Partners will use their best efforts to settle promptly such dispute through direct negotiation. Any dispute that is not settled within sixty (60) days from the date either Partner has notified the other Partners of the nature of the dispute and of the measures that should be taken to rectify it will be resolved through consultation. Each Partner will give full and sympathetic consideration to any proposal advanced by the other to settle amicably any matter for which no provision has been made or any controversy as to the interpretation or application of this MOU.

ARTICLE 8
CANCELLATION

Each Partner has the right to chancel the MOU by giving six months' notice in writing to the other Partners at any time. If the MOU is cancelled by any Partner, steps will be taken to ensure that the cancellation does not affect any prior obligation, project or activity already in progress.

ARTICLE 9
ENTIRE UNDERSTANDING AND CHANGES

1. The MOU constitutes the entire understanding of the Partners with respect to its subject matter and supersedes all oral communications and prior written documents.
2. The MOU may be changed by the Partners in written form.

ARTICLE 10
ENTRY INTO EFFECT

1. The MOU takes effect from the date of signature by all the Partners and, if signed on different dates, on the date of last signature.
2. The MOU will remain effective, unless cancelled in accordance with Article 8 hereof.

IN WITNESS WHEREOF the undersigned representatives of the Federal Ministry for Europe, Integration and Foreign Affairs of the Republic of Austria, SIDS DOCK and the United Nations Industrial Development Organization (UNIDO) have on behalf of the Partners signed the present Memorandum of Understanding in English, in triplicate, in Vienna on 17 March 2014.

FOR THE FEDERAL MINISTRY FOR EUROPE, INTEGRATION AND FOREIGN AFFAIRS OF THE REPUBLIC OF AUSTRIA:

.....

H.E. Ambassador Mr. Michael Linhart
Secretary-General for Foreign Affairs

FOR THE SMALL ISLAND DEVELOPING STATES SUSTAINABLE ENERGY INITIATIVE – SIDS DOCK:

.....

H.E. Ambassador Mr. Vince Henderson
Chairman of the SIDS DOCK Steering Committee

FOR THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO):

.....

Mr. LI Yong
Director General

CCREEE Preparatory Contacts

Caribbean Community Climate Change Centre (CCCCC)
Mr. Al Binger, Energy Science Advisor

United Nations Industrial Development Organization (UNIDO)
Energy and Climate Change Branch,
Mr. Martin Lugmayr, Sustainable Energy Expert

E-Mail Contact: info@ccreee.org

with funding from
Austrian Development Cooperation