



Caribbean Community
Climate Change Centre

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GEF-UNEP ENERGY FOR SUSTAINABLE DEVELOPMENT IN CARIBBEAN
BUILDINGS (ESD) PROJECT

TERMS OF REFERENCE

Procurement for the Supply of Energy Efficient Lighting, Ceiling Tiles, Electrical Wiring, Occupancy Sensors, Photocells, and the Supply, Installation, Configuration, Testing, Commissioning and Warranty for Energy Monitoring and Energy Efficient Air Conditioner Units at the Karl Heusner Memorial Hospital (Belize)

Contents

I	BACKGROUND INFORMATION	3
1.1	Beneficiary Country	3
1.2	Contracting Authority.....	3
1.3	Relevant Country Background	3
1.4	Current State of Affairs in the Relevant Sector	4
2	OBJECTIVES, PURPOSE AND EXPECTED RESULT	4
3	Purpose of the Assignment	5
4	Site Location	5
5	Key Deliverables	5
5.1	Project Execution Summary	6
5.2	Schedule of Pricing	6
5.3	Key Project Risks	6
6	SCOPE OF WORK	6
6.1	Schedule of Requirement.....	7
7	Schedule of Technical Specifications	9
8	Inspection and Test	14
9	Responsible Body	14
10	Facilities to be provided by the Contracting Authority and/or other parties	14
11	LOGISTICS AND TIMING	14
11.1	Location.....	15
11.2	Commencement Date & Period of Implementation	15
12	REQUIREMENTS	15
12.1	Personnel	15
12.1.1	Qualifications and Experience.....	15
12.2	Permitting requirements.....	15
12.3	Warranties and Guaranties.....	15
13	FACILITIES TO BE PROVIDED BY THE CONSULTANT	15
14	Schedule of Requirements	16
15	EVALUATION CRITERIA AND SELECTION PROCESS	18
15.1	Proposal Selection Process	19
	Criteria for responsivity	18
15.2	Bid Clarification and Contract Negotiation Meetings.....	19
15.3	Notice of Award	20
15.4	Evaluation Criteria.....	18

Donor	Global Environmental Facility (GEF) (UNEP)
Project Title:	Energy for Sustainable Development in the Caribbean (ESD)
Contract Title:	Procurement for the Supply of Energy Efficient Lighting, Ceiling Tiles, Electrical Wiring, Occupancy Sensors, Photocells, and the Supply, Installation, Configuration, Testing, Commissioning and Warranty for Energy Monitoring and Air Conditioner Units in the Karl Heusner Memorial Hospital (Belize)
Contract #:	Contract #71/2019/GEF-UNEP/Belize/CCCCC
Main Duty Station and Location:	Belize City
Start of Contract:	November 2019
End of Contract (COB):	December 30, 2019
Number of Working Months:	2 months
Type of Contract:	Lump Sum Contract
Deadline for Submission of Bids	before 2:00 p.m. (GMT-6) Friday, 8 November 2019
Walk-through inspection of building	<u>25 October 2019 at 9:30 am at – Karl Heusner Memorial Hospital, Princess Margaret Drive, Belize City</u>

1 BACKGROUND INFORMATION

1.1 Beneficiary Country

Belize

1.2 Contracting Authority

Government of Belize / Caribbean Community Climate Change Centre (“the Centre”)

1.3 Relevant Country Background

The Centre has received funding from Global Environmental Facility (GEF) and intends to apply a part of those funds towards the implementation of the project entitled “Energy for Sustainable Development in the Caribbean (ESD).

The main objective of the ESD Project is the promotion of sustainable energy use in buildings through interventions that constitute energy efficiency applications and renewable energy technologies within the project territories. The ESD Project activities, a mix of policy proposals and pilot demonstrations, are intended to reduce electricity use by 20 per cent from the business as usual (BAU) scenario at the end of the four-year project period.

The mainstreaming of sustainable energy use within the building sector in Belize has the potential to significantly reduce energy use. Some of national benefits expected from this include: (i) the delay or avoidance of new power generation infrastructure to match rising demand; (ii) reduction in electricity consumption by the commercial (including public) and residential building sectors; (iii) mitigation of the fiscal burden that is caused by the importation of expensive fossil fuels, with increased fiscal space and foreign exchange savings expected from

the reduction in imports; (iv) enhanced energy security; and (v) carbon emissions reductions. Consequently, Government of Belize is in the process of introducing renewable energy technologies and energy efficiency measures into the Karl Heusner Memorial hospital.

1.4 Current State of Affairs in the Relevant Sector

Belize has an unrealized sustainable energy savings potential worth BZ\$503M in net present value (NPV) over the period 2014 to 2033. Belize uses some energy efficient measures already, but their penetration is far below the potential. The private sector has advanced its use of Renewable Energy Resources, especially its hydroelectric potential, through the construction of a few Hydropower plants (Mollejon, Chalillo, Hydro Maya, and Vaca). These have allowed Belize's electricity generating capacity from Hydro to be in excess of fifty per cent (50%) of generating capacity. Nonetheless, more can be generated by expanding the use of the Renewable Energy technologies already being used, as well as by using new sources including wind, solar PV, anaerobic digestion, landfill gas, and small hydro. In Belize, the cost of electricity is high. The residential rate is 22 cents US per kWh. With most of the country dependent on electric power, the need for each home, business or industry to become more energy efficient is pivotal to reducing the cost of living and maximize economic growth. The rising cost of fuel is directly impacting the business, transportation and public sector.

In 2007, a countrywide study of carbon emissions in Belize showed a general increase in carbon dioxide emissions of 7% from 1994 to 1997 and an increase of 4% from 1997 to 2000. This gives a total increase of 64.53 GT of carbon dioxide emissions or an 11.1% increase over this six-year period. GHG emissions of the buildings sector reduction target of 4% per ton CO₂ is achievable according to the case studies elaborated. Studies conducted under the Ministry of Energy showed that renewables could represent 89 percent of electricity supply, electricity consumption could decrease by 24 percent, and stationary fuel consumption could decrease by 19 percent— combining to lower greenhouse gas emissions by 2.4 million tons over the 2014-2033 period.

2 OBJECTIVES, PURPOSE AND EXPECTED RESULT

The main objective of the project is to contribute towards Belize's efforts to reduce its reliance on imported fuels by reducing the amount of energy consumed by the building sector. This involves the installation of energy efficient equipment and/or technologies within government buildings. Belize has one of the highest rates of electricity in the region. The high cost of energy places a burden on the country's economy.

The Government of Belize owns many buildings - of various sizes - which consume a considerable amount of energy and utilizes resources that can be more beneficial if redirected to other critical areas of national development. This project will address this issue by reducing the consumption of electricity at the Karl Heusner Memorial Hospital and thereby lowering the government's energy cost.

3 PURPOSE OF THE ASSIGNMENT

The purpose of the proposed consultancy is to supply energy efficient lighting, and to supply, install and commission energy monitoring systems at the Karl Heusner Memorial Hospital within a consecutive 3-month period.

4 SITE LOCATION



The proposed site is located at Princess Margaret Dr. Belize City, Belize. The coordinates are: 17°30'27.39"N, 88°11'45.14"W

5 KEY DELIVERABLES

5.1 Project Execution Summary

Bidder shall provide a Project Summary Execution Plan for the full scope of services to be provided, including but not limited to the following:

- a) Structure of the Organization Organizational chart with roles and responsibilities. This chart shall show lines of authority and responsibility. Number of personnel to be utilized on the job shall be indicated in appropriate organizational elements. If significant changes in the organization are expected to occur during the life of the project or phases of construction, these shall be discussed
- b) Organizational capability/resources.
- c) List of projects/contracts (both completed and on-going) which are related or similar in nature to the requirements
- d) Construction workforce
- e) Overall project schedule with key design/engineering, procurement, construction and commissioning milestones with basic construction sequence description.

- f) Quality control and assurance plan
- g) Project management plan
- h) Equipment warranties and certificates.
- i) Details of payback period and savings.

5.2 Schedule of Pricing

The Price Schedule shall list all major cost components associated with the goods and related services, and the detailed breakdown of such costs (labour and materials should be separated). All goods and services described in the Technical Bid must be priced separately on a one-to-one correspondence. Any output and activities described in the Technical Bid but not priced in the Price Schedule, shall be assumed to be included in the prices of the items or activities, as well as in the final total price of the bid Credit Worthiness.

5.3 Key Project Risks

The Bidder shall identify key risks that may impact the Project and propose measures to mitigate said risks. Note: Major delays resulting from identified risks will be treated outside of the three (3) months contract period.

6 SCOPE OF WORK

For the execution of this project, the services of a consultant will be retained for a period of three (3) months. The Bidder will work within the framework of the objectives to be achieved, the activities that are executed as part of the work programme and the deliverables that must be accomplished.

The Bidder shall be responsible for all aspects of the detailed engineering investigations, design, manufacture, permitting, procurement, supply, shipping and importation, delivery, storage, labour, supervision, proper staffing, all costs related and applicable for the general conditions, erection, installation, commissioning and testing of the complete project. The Bidder shall also be responsible for the establishment of appropriate operations and maintenance procedures, quality management system documentation and warranties for the project. All potential bidders are invited to a walkthrough of the facility to verify level of scope of works to be done/ supplied.

6.1 Schedule of Requirement

LOTS	Items to be Supplied	Quantity	Description/Specifications of Goods	Related Services	Delivery Date	Other Information
LOT I	T8 LED Linear Tubes	36	Supply of 2ft. linear LED to replace existing fluorescent tubes with magnetic ballasts	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
LOT II	T8 LED Linear Tubes	300	Supply of 4ft. linear LED to replace existing fluorescent tubes with magnetic ballasts	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
LOT III	Circular LED Recessed Lights	2700	Supply of round 10" recessed lights	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
LOT IV.	Occupancy Motion Sensors	6	Supply of occupancy motion sensors	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
LOT V.	Roof Mounted Photocells	2	Supply of "dusk-to-dawn" photocells	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
LOT VI.	Lamp Post LED Lights	68	Supply of electric pole mounted 80W LED	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
LOT VII	Solar Street Lights	17	Supply of electric pole mounted 60W LED Solar Street Lights	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
LOT VIII	Goose Neck Exam LED Lamps	20	Supply of Goose neck LED Light with Mobile Stand	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
LOT IX	2.5mm roll of electrical wire	6	Supply of 2.5mm roll of electrical wire	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
Lot X	Ceiling Tile 2ftx2ftx5/8inch	3000	Supply of Ceiling Tile 2ftx2ftx5/8inch	Supply	Sept 2019- Nov 2019	Refer to Technical Specifications below
<p>Lots 1 through X will be installed by KHMHA technicians. The Bidder must retrieve all lightings uninstalled by KHMH technicians and account for Proper Disposal of all incandescent bulbs, as well as CFL and fluorescent tubes as protocolled by Solid Waste Management Authority. Also, ensure that all ballasts from fluorescent fixtures that are electronic or magnetic are removed.</p>						
LOT XI	Energy Monitoring System	2	Supply, installation and commissioning of electric consumption monitor	Supply, Installation, Configuration, Testing,	Sept 2019- Nov 2019	Refer to Technical Specifications below

				Commissioning		
LOT XII	36000 BTU ACs	4	Supply, installation and commissioning of energy efficient, inverter-type, split-unit air conditioners. Kindly note that if the condensers/outdoor units are installed on the roof, they should be placed on an elevated base to help prevent water accumulation on the roof get in contact with the base of the condensers/outdoor units. The bidder must verify that each unit has a suitable thermomagnetic circuit breaker and in the event it is missing, the bidder must provide for each unit. The bidder must remove the old air conditioners and deliver it to Maintenance Engineering Department of KHHM	Installation, Configuration, Testing, Commissioning	Sept 2019- Nov 2019	Refer to Technical Specifications below
	24000 BTU ACs	9	Supply, installation and commissioning of energy efficient, inverter-type, split-unit air conditioners. Kindly note that if the condensers/outdoor units are installed on the roof, they should be placed on a suitable base to help prevent water accumulation on the roof get in contact with the base of the condensers/outdoor units. The bidder must verify that each unit has a suitable thermomagnetic circuit breaker and in the event it is missing, the bidder must provide for each unit. The bidder must remove the old air conditioners and deliver it to the Maintenance Engineering Department of KHHM	Installation, Configuration, Testing, Commissioning	Sept 2019- Nov 2019	Refer to Technical Specifications below
	5 tons ACs	9	Supply, installation and commissioning of energy efficient, 16 seers, Central-Unit air conditioners. Kindly note that if the condensers/outdoor units are installed on the roof, they should be placed on a suitable base to help prevent water accumulation on the roof get in contact with the base of the condensers/outdoor units. The bidder must verify that each unit has a suitable thermomagnetic circuit breaker and in the event it is missing, the bidder must provide for each unit. The bidder must remove the old air conditioners and deliver it to the Maintenance Engineering Department of KHHM	Installation, Configuration, Testing, Commissioning	Sept 2019- Nov 2019	Refer to Technical Specifications below
	3 tons Central Unit ACs	2	Supply, installation and commissioning of energy efficient, 16 seers, Central-Unit air conditioners. Kindly note that if the condensers/outdoor units are installed on the roof, they should be placed on a suitable base to help prevent water accumulation on the roof get in contact	Installation, Configuration, Testing, Commissioning	Sept 2019- Nov 2019	Refer to Technical Specifications below

			with the base of the condensers/outdoor units. The bidder must verify that each unit has a suitable thermomagnetic circuit breaker and in the event it is missing, the bidder must provide for each unit. The bidder must remove the old air conditioners and deliver it to the Maintenance Engineering Department of KMH			
	Refrigerant pipe Insulation	24	Supply, installation and commissioning of pipe insulation for the new exterior air conditioner units	Installation, Configuration, Testing, Commissioning	Sept 2019- Nov 2019	Refer to Technical Specifications below
Bidder must account for the proper sealing of all rooms where air conditioners will be replaced, and the proper disposal of all refrigerants as per Department of Environment protocol.						

7 SCHEDULE OF TECHNICAL SPECIFICATIONS

7.1 Lots I & II (T8 LED linear Lamps)

Documentation

1. A full sheet of product specifications must be completed and submitted (Annex A):
2. Warranty and certificate information must be included.
3. All the technical information should be presented in pdf format, not scanned (main texts in image format is not allowed)
4. Warranty for minimum 30,000 hours of operation with free of charge exchange in case of failure

Minimum Product Performance Characteristics

1. Design Light Consortium (DLC) or equivalent performance:
The lamp must be qualified as linear replacement lamp (not as Retrofit Kit) or equivalent specification. **This includes minimum efficacies for the lamp and for the system.** If qualified to another specification, both evidence of qualification and specification must be provided.
2. Lumen Maintenance: L70 > 30,000 hours operation
3. Nominal Color Temperature: Rated correlated color temperature 6500 K (6225 ± 275 K)
4. Efficacy (L/W): >90
5. CRI: > 80
6. Lighting appliances must run on 120V (110V -130V at 60HZ)
7. Must consume maximum of 18W for 4ft T8 LED tubes
8. Must consume maximum of 10W for 2ft T8 LED tubes
9. Must have a minimum Lumen output of 1800lm for 4ft T8 LED tubes
10. Must have a minimum Lumen output of 1080lm for 2ft T8 LED tubes

Mechanical and Electrical Requirements

1. UL Approval: All components shall be UL approved or equivalent
2. IEC 62776 compliance

LOT III

Circular LED (Recess Lighting)

Documentation

1. A full sheet of product specifications must be completed and submitted-See **Annex A**:
2. Warranty information must be included. Warranty for minimum 30,000 hours of operation with free of charge exchange in case of failure

Product Performance Characteristics (Circular LED)

1. Design Light Consortium (DLC) or equivalent performance:
2. Lumen Maintenance: >L70 with minimum of 30,000 hours operation
3. Nominal Color Temperature: Rated correlated color temperature 6500 K (6225 ± 275 K)
4. Must have a minimum lumen of 1600lm
5. Must operate on 120v (110v to 130v at 60Hz.)
6. Must have a maximum wattage of 18W

Mechanical and Electrical Requirements

1. UL Approval: All components shall be UL approved or equivalent (for example, CSA or CE)

INSPECTION AND TEST

All tubes and circular Recess lighting to be supplied must have test results from an independent accredited laboratory. Testing must be performed in accordance to IEC, IESNA, CIE or equivalent

LOT IV

Motion Sensor

Documentation

1. A full sheet of product specifications must be completed and submitted:
2. Minimum 24 Months warranty with free of charge exchange in case of failure.

Product Performance Characteristics

1. Must be able to detect motion 180 degrees with range of 70 feet
2. Must be able to install on ceiling
3. Must operate on 120v (110v to 130v at 60Hz)
4. Must be able to support a maximum wattage of 800W

Mechanical and Electrical Requirements

1. UL Approval: All components shall be UL approved or equivalent (for example, CSA or CE)

Lot V

Roof Mounted Photo Cell

Documentation

1. A full sheet of product specifications must be completed and submitted:
2. Minimum 24 Months warranty with free of charge exchange in case of failure.

Product Performance Characteristics

1. Must be able to work in series with LOT III equipment
2. Must be able to install on the roof

3. Shall be UL or CSA listed or recognized.
4. Must operate on 120v (110v to 130v at 60Hz)

LOT VI

OUTDOOR Lamp Post LED lights

Documentation

1. A full sheet of product specifications must be completed and submitted-See **Annex A**:
2. Minimum 24 Months warranty with free of charge exchange in case of failure.

Product Performance Characteristics (Circular LED)

1. Lumen 7200 or greater
2. Wattage 80 watts maximum (emphasis on the 7200 lumens)
3. Must be able to be fitted to the existing post in the yard of KMHM
4. Shall be UL or CSA listed or recognized.
5. Must operate on 120v (110v to 130v at 60Hz)
6. Designed to last 50,000 hours minimum
7. Needs to be designed for Outdoor usage, IP65 or higher

Lot VII

LED Solar Street Lights

Documentation

1. A full sheet of product specifications must be completed and submitted-See **Annex A**:
2. Minimum 24 Months warranty with free of charge exchange in case of failure.

Product Performance Characteristics (Circular LED)

1. Lumen 5000 or greater
2. Wattage 90 watts maximum (emphasis on the 5000 lumens)
3. Must be able to be fitted to the existing post in the parking lot of KMHM
4. Shall be CE or ROHS, or MSDS listed or recognized.
5. Battery must have a capacity of at least 40000mAh LifePO4
6. Charging time: 6-8 hours
7. Beaming Angles: 120 beaming angle
8. Lighting time: Support 2-3 night lighting
9. Lighting mode: Remote control + PIR motion sensor + Light Sensor
10. Nominal Color Temperature: Rated correlated color temperature 6500 K (6225 ± 275 K)
11. LED lights designed to last 50,000 hours minimum
12. Needs to be designed for Outdoor usage, IP65 or higher
13. Material: Aluminum alloy shell and lighting protection
14. Solar Panel 6V 16W
15. Working temperature: 32°F to 140°F.

Lot VIII

Goose Neck Exam LED Lamps

Documentation

1. A full sheet of product specifications must be completed and submitted-See **Annex A:**
2. Minimum 24 Months warranty with free of charge exchange in case of failure.

Product Performance Characteristics (Circular LED)

1. Description: General Exam light with Mobile Stand
2. Base type: Mobile Base with four or five wheels
3. Mount type: Mobile stand with height between 36"- 44"
4. Goose neck arm: between 12"- 16"flexible gooseneck arm adjusts 360 degrees
5. Total Height of the gooseneck lamp with mobile stand between 48"- 60"
6. Application: Exam Lamp such as primary care facilities, emergency rooms and outpatient facilities
7. Input voltage: 100-240V , 50/60Hz
8. Color temperature: : $\geq 5500\text{K}$
9. Shall be UL listed or recognized.
10. LED lights designed to last 50,000 hours minimum
11. Light intensity at typical working distance: 12" distance 30,000lux and at 20" distance 15,000lux
12. Power Cord: #18 AWG, 3-wire ground cord set, 8'(2.5) long
13. Color: White
14. Control Box: Touchless on/off

Lot IX

Roll of Electrical Wire

General

1. Must be 2.5mm electrical wire
2. One roll of wire should be 325ft or more.
3. One roll of wire should come with 3 cores (including ground)
4. Shall be CE, ROHS or recognized
5. Rated Voltage 450V/750V.
6. Conductor Material: Copper
7. Cable Type: Residential and Light Commercial Wiring
8. All 3 Cores must be PVC insulated
9. The roll of electrical wire should consist Thermoplastic PVC Sheathed cable

Mechanical and Electrical Requirements

3. UL Approval: All components shall be UL approved or equivalent
4. IEC 60227, IEC60754 compliance

Lot X

Ceiling Tile

General

1. Acoustics Ceiling Tile: 2ft X 2ft X 5/8inch

2. Material: Mineral Fiber
3. Shape: Rectangle
4. Surface Finish: Factory applied paint
5. ASTM Classification: Type: III, Form: 2, Pattern: C D
6. Fire Performance: Class A (UL)
7. Sag/Humidity Resistance: Standard
8. Light Reflectance: 82%
9. Sound Absorption (NRC): 0.55
10. Sound Blocking (CAC): 33
11. Insulation Value: R factor-BTU: 1.5 BTU
12. Texture: Medium
13. Weight: 0.69 PF2
14. Pieces/Carton: 16
15. Sq. FT (Sq. FT/Carton): 64

Lot XI Energy Monitors

General

1. Must record power consumption of a 3-phase system and must be able to upload information to a webserver/cloud for remote access
2. Must be able to measure at least 100kVa.
3. Software must generate automatic reports.
4. Warranty must be included.
5. Must be able to provide data in CSV format.
6. Must be expandable
7. Supplier can visit site to ensure that system can be installed.
8. Possess option of Wi-Fi or line connected.
9. This product must be tested and found in compliance to FCC and UL
10. Minimum 24 Months warranty with free of charge exchange in case of failure.

LOT XII (Air Conditioners)

Documentation

1. A full sheet of product specifications must be completed and submitted (Annex A):
2. Warranty and certificate information must be included.
3. Warranty for minimum 1-year operation with free of charge exchange in case of failure
4. All the technical information be presented in PDF format, not scanned (main texts in image format is not allowed)

Minimum Product Performance Characteristics

1. Must meet a minimum SEER rating of 16.
2. Split Unit Air Conditioners must be inverter technology.
3. A full product specification sheet, which includes energy efficiency rating/info. must be submitted.
4. Refrigerant must be R-410a.
5. Indoor unit for split-units sound pressure level must be A-weighting.
6. Sound level as low as 71dBA for Central Unit Air Conditioners
7. Microtube Technology refrigeration system for the Central Unit Air Conditioners
8. Durability: Weather Armor protection package for the Central Unit Air Conditioners such

as:

- a. Solid, durable sheet metal construction
 - b. Dense wire coil guard standard
 - c. Baked-on, complete outer coverage, powder paint
9. Must operate on 220V power supply (220V-240V at 60HZ)

REFRIGERANT PIPE INSULATION

All air conditioners must be insulated with closed-cell foam materials such as cellular glass, closed-cell phenolic, flexible elastomeric, polyisocyanurate, and polystyrene. The thickness of the refrigerant pipe insulation must have a standard size thickness of 1 inch. Insulation for refrigeration applications must conform to ASHRAE standards or equivalent.

INSPECTION AND TEST

All air conditioners must have test results that conform to ISO/TC 86/SC 6 or equivalent.

8 RESPONSIBLE BODY

The Successful bidder shall report to the Director of the Energy Unit within the Ministry of Public Service, Energy and Public Utilities and all works are subject to ultimate approval by the National Steering Committee (NSC) of the UNEP-GEF Energy for Sustainable Development in Caribbean Buildings (ESD) Project.

The Energy Unit will be intimately involved in the delivery of LOTS I-X from the supplier to the KHMHA. They will witness the handover of goods as well as the exchange of the inefficient lighting to the supplier for subsequent disposal to Solid Waste Management Authority.

9 FACILITIES TO BE PROVIDED BY THE CONTRACTING AUTHORITY AND/OR OTHER PARTIES

The Energy Unit will be the Manager of the project and will be mandated to provide the National Steering Committee (NSC) as well as the National Coordinator (NC) with periodic briefs on the progress of the project. The NC will be responsible for briefing The Centre concerning the status of the project.

10 LOGISTICS AND TIMING

10.1 Location

The Bidder will be located at his/her usual place where he/she conducts business. However, he/she will be required to visit the office of the Energy Unit periodically as stipulated by the

contract.

The Bidder may be required to attend face-to-face meetings with the Energy Unit periodically throughout the project period.

10.2 Commencement Date & Period of Implementation

This exercise shall commence from the date of contract and will operate for a maximum period of three (3) months, consecutive.

A Project Implementation schedule, with specific milestones, must be submitted with the proposal. Requests for extensions must be submitted to the Energy Unit for approval by the NSC.

The services of the Bidder will be retained for the duration of the project.

11 REQUIREMENTS

11.1 Personnel

11.1.1 Qualifications and Experience

- Successful bidder must have on staff at least;
- 1 electrical engineer registered with the Association of Professional Engineers of Belize (APEB)
- 1 registered A/C technician with Association of Refrigeration and Air Conditioning Technicians (ARACT)

11.2 Permitting requirements

- The successful bidder at, its expense, shall seek and file on a timely basis all documents required to obtain applicable permits and approvals including but not limited to;
 - a. Import permits and licenses
 - b. Work permits if applicable.
 - c. Transportation with appropriate trucking companies
 - d. Port fees and duties

11.3 Warranties and Guarantees

The Bidder shall include a plan for comprehensive Project Warranty.

12 FACILITIES TO BE PROVIDED BY THE CONSULTANT

The successful bidder shall provide **ALL** the facilities that are required to discharge his work. (E.g. laptops/desktops, software, tools and equipment, etc.)

13 SCHEDULE OF REQUIREMENTS

Further to the Schedule of Requirements in the preceding Table, Bidders are requested to take note of the following additional requirements, conditions, and related services pertaining to the fulfilment of the requirements.

1	Delivery Term	<input checked="" type="checkbox"/> LOT I-XII– Karl Heusner Memorial Hospital, Belize City
2	Exact Address of Delivery/Installation Location	<input checked="" type="checkbox"/> LOT I-XII – Karl Heusner Memorial Hospital Princess Margaret Drive Belize City
3	Customs, if needed, clearing shall be done by:	<input checked="" type="checkbox"/> Successful Bidder
4	A walk-through inspection	All potential bidders are invited for a walk-through inspection of the facility to verify the scope of works on <u>24 September 2019 at 9:30 am at – Karl Heusner Memorial Hospital, Princess Margaret Drive, Belize City.</u>
5	Inspection upon delivery	Energy Unit/KHMH/Successful Bidder will conduct post-delivery inspection and will then verify operating functions as per the requirements relative to the energy monitoring systems and LED lights (2ft tubes, 4ft tubes, solar street lights, Gooseneck Exam LED lights, LED Lamp pole mounted and recess lightings)
6	Installation Requirements	The successful bidder will be required to install the equipment (Lots XI-XII) and ensure that they are functional. A weekly report depicting installed and removed equipment must be done. Refer to: Schedule of Requirements and Technical specifications
7	Delivery Requirement	The Successful bidder will be required to deliver the equipment (Lots I-XII) that will suit the desired installation. (Discussion with KMHM technical staff is advised)
8	Scope of Training on Operation and Maintenance	<input checked="" type="checkbox"/> The Successful Bidder will supply all manual, software and training materials required for the operation and maintenance of the equipment supplied as per the detail Specifications
9	Commissioning	The Successful Bidder will assist the beneficiary (KMHM) and its representatives in the commissioning of all equipment supplied and installed.
10	Technical Support Requirements	The Successful Bidder will ensure provision of technical support via telephone, electronic mail or any other appropriate means of communication for a period not less than one (1) year after installation and final commissioning

11	<p>Payment Terms Lot I -X- Supply ONLY</p> <p>-----</p> <p>Lots XI-XII- Supply, Installation and commissioning <i>(max. advanced payment is 20% of total price as per The Centre)</i></p>	<p>1. 100% of the value of all lighting equipment supplied shall be paid upon delivery and acceptance of products and submission of an invoice in the same amount.</p> <p>-----</p> <p>1. 20% of the contract price shall be paid upon presentation of an invoice in the same amount and upon receipt of an advance payment guarantee in the same amount.</p> <p>2. 80% of the contract price shall be paid within 30 days of successful completion of installation, testing, commissioning and training delivery as specified herein and upon submission of an invoice in the same amount (supported by an acceptance certificate issued by the Energy Unit).</p>
12	Conditions for Release of Payment	<input checked="" type="checkbox"/> Inspection upon arrival at destination by Energy Unit and Bidder <input checked="" type="checkbox"/> Installation <input checked="" type="checkbox"/> Air Conditioner Parts (such as motherboard) are readily available in Belize <input checked="" type="checkbox"/> Testing <input checked="" type="checkbox"/> Written Acceptance of Goods based on full compliance with TOR requirements
13	After-sale services required	<input checked="" type="checkbox"/> Warranty on Equipment and Labor for minimum period of 1 year <input checked="" type="checkbox"/> Maintenance and Servicing of installed 24Air Conditioners for 1 year <input checked="" type="checkbox"/> Free Technical Advisory Support for 1 year
14	All documentations, including catalogues, instructions and operating manuals, shall be in this language:	<input checked="" type="checkbox"/> English

EVALUATION CRITERIA AND SELECTION PROCESS

13.1 Proposal Selection Process

Criteria for responsivity

The following documents listed below must be included in the provided in the proposals. If any of these documents or information is missing, the offer shall be rejected.

- Bid Submission Form
- Company Profile
- Project Team
- Project Proposal /Project Summary Execution Plan*
- Financial Proposal

All proposals will be reviewed to determine whether they are responsive or non-responsive to the requirements of this **ToRs**. Proposals that are determined to be non- responsive (if at least one of the above mention is missing) will be rejected. The remaining proposals will be evaluated and rated based on the evaluation criteria prescribed below. The Centre reserves the right to conduct site visits and/or interviews and/or to request that Bidders make presentations and/or demonstrations, as appropriate.

13.2 Evaluation Criteria

Prior to expiration of the period of Bid validity, the Centre shall award the contract to the qualified and eligible Bidder that is found to be responsive to the requirements of the Schedule of Requirements and Technical Specification and has offered the lowest price.

Proposals will be evaluated based on the criteria noted below:

Qualifications and Experience

The purchaser's evaluation of the bid will consider, in addition to the bid price the following factors:

1. The Bidder's Qualification and Experience (30 points)

1. Engineer with a minimum of a Bachelor's Degree in the electrical engineering (or a related field). Engineer must be registered with the Association of Professional Engineers of Belize (APEB) (5 points)
2. A/C technician registered with Association of Refrigeration and Air Conditioning Technicians (ARACT) (5 points)
3. Minimum of 3 years post qualification experience in the field of electrical engineering. (10 points)
4. Demonstrate experience in Project Management is an advantage (5 points)

2. Bidder shall provide a Project Summary Execution Plan for the full scope of services to be provided, including but not limited to the following: (40 points)

- a) Organizational chart with roles and responsibilities. This chart shall show lines of authority and responsibility. Number of personnel to be utilized on the job shall be indicated in appropriate organizational elements. If significant changes in the organization are expected to occur during the life of the project or phases of construction, these shall be discussed. (3 points)
- b) Key personnel (3 points)
- c) Construction workforce, number of crew (2 points)
- d) Overall project schedule with key design/engineering, procurement, construction and commissioning milestones with basic construction sequence description (6 points)
- e) Quality control and assurance plan (6 points)
- f) Project management plan (6 points)
- g) System warranty (6 points)
- h) Details of payback period and savings (5 points).

3. Technical Compliance - (15 points).

Technical documentation demonstrating that equipment to be supplied are in accordance with the technical specifications and warranties stipulated in the TOR (15 points).

4. Financial Capability: The Bidder shall furnish documentary evidence that it meets the following financial requirement(s): (15 points)

1. Evidence of working capital or facility in the amount of at least the bid value. (7 points points)
2. Financial Capacity (Minimum annual turnover of BZD 300,000 for the past two (2) years)

Total point to be awarded: 100

13.3 Bid Clarification and Contract Negotiation Meetings

To assist in the examination, evaluation and comparison of bids, the Centre may, at its discretion, ask any Bidder to clarify its Bid.

The Centre's request for clarification and the Bidder's response shall be in writing. Notwithstanding the written communication, no change in the prices or substance of the Bid shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by the Centre in the evaluation of the Bid.

Any unsolicited clarification submitted by a Bidder in respect to its Bid, which is not a response to a request by the Centre, shall not be considered during the review and evaluation of the Bid.

13.4 Notice of Award

Upon conclusion of the evaluation process and any subsequent negotiations, all Bidders will be notified of the outcome. The Centre reserves the right to accept or reject any Bid, to render any or all of the Bids as non-responsive, and to reject all Bids at any time prior to award of contract, without incurring any liability, or obligation to inform the affected Bidder(s) of the grounds for The Centre's action. Furthermore, the Centre is not obligated to award the contract to the lowest price offer.

14 SUBMISSION PROCEEDURE

Bidders submitting via email:

Proposals should be addressed to the **Executive Director, Caribbean Community Climate Change Centre** and be clearly identified as – **“Contract Supply Energy Efficient Lighting, Ceiling Tiles, Electrical Wiring, Occupancy Sensors, Photocells, and the Supply, Installation, Configuration, Testing, Commissioning and Warranty for Energy Monitoring and Air Conditioner Units in the Karl Heusner Memorial Hospital (Belize).**

Proposals should be submitted as two (2) separate PDF files: (1) qualification information and the technical proposal and (2) financial proposal to the following email address: procurement@caribbeanclimate.bz

Bidders submitting via currier or by hand

Proposals should be submitted as two separate files: (1) qualification information and the technical proposal and (2) financial proposal. Bidders shall enclose the original and each copy of the Bid in separate sealed envelopes, duly marking the envelopes as “ORIGINAL” and “COPY.” These envelopes containing the original and the copies shall then be enclosed in one single envelope.

The inner and outer envelopes shall:

- (a) bear the name and address of the Bidder;
- (b) be addressed to the Purchaser in accordance with ITB Sub-Clause 24.1;
- (c) The inner and outer envelopes shall bear the following additional identification marks:

Proposals should be addressed to the **Executive Director, Caribbean Community Climate Change Centre** and be clearly identified as **Supply of Energy Efficient Lighting, Ceiling Tiles, Electrical Wiring, Occupancy Sensors, Photocells, and the Supply, Installation, Configuration, Testing, Commissioning and Warranty for Energy Monitoring and Air Conditioner Units in the Karl Heusner Memorial Hospital (Belize)- Contract #**

71/2019/GEF-UNEP/CCCCC

- (d) bear a warning not to open before the time and date for bid opening, in accordance with ITB Sub-Clause 27.1.
- (e) If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the bid.

For Bidders submitting via courier or by hand the Purchaser's address is:

Caribbean Community Climate Change Centre

Address: *Lawrence Nicholas Building, Ring Road*

Floor/ Room number: *Second Floor*

City: *Belmopan*

Country: *BELIZE*

Telephone: *501-822-1094, 822-1104*

Facsimile number: *501-822-1365*

Attention: *Ms. Allison Williams, Procurement Officer*

Deadline for submission on or before before 2:00 p.m. (GMT-6) Friday, 8 November 2019

Annex A

Lighting Information Request

Types of LEDs	Power (W)	Supplier	Brand	Model	Qty	Price (BZD)	Lumen output (lm)	CRI	Color Temp (K)	Efficiency (lm/w)	Lifetime (hours)	Warranty
Circular LED/ Recessed LED lights												
2ft T8 LED												
Lamp Post LED Lights												
LED Solar lights												
Gooseneck Exam Lamps												

Air Conditioners Information Request

Capacity (BTU/hr)	Supplier	Brand	Model Indoor Unit	Model Outdoor Unit	Quantity	Price (BZD)	Cooling Capacity (BTU/hr)	SEER (BTU/hr)	Refrigerant	Certificates	Warranty
5 tons											
3 tons											
24000											
36000											