TERMS OF REFERENCE

ICLEI - LOCAL GOVERNMENTS FOR SUSTAINABILITY

ICLEI seeks to appoint a service provider to implement solar street lights at Health Care Centres in Kigali, Rwanda.

Timelines for submission below:

- 11 October 2021: Terms of Reference published
- 30 October 2021: Proposal submission closing date
- 4 November 2021: Date of appointment
- **26 November 2021:** Project closure

Send all completed bids and technical queries to Rohit Sen, rohit.sen@iclei.org and, with Jessica Kavonic, jessica.kavonic@iclei.org in copy.

This Terms of Reference is for a portion of work that forms part of the broader project: *Resilient Cities Action Package* (RECAP 21). A project description is provided below for context.

DESCRIPTION OF THE RECAP 21 PROJECT

Around the world, cities are fighting the Covid-19 pandemic against a backdrop of multiple shocks, stresses, and emerging vulnerabilities, while striving to put equity, economy, and climate action at the centre of their recovery approaches. In the midst of the greatest global economic downturn in nearly a century, progress on sustainable development needs to be galvanised. Now is the moment for national and local governments to build back stronger, fairer, and greener than before. The RECAP 21 project aims to design common frameworks and approaches for resilient recovery that can help address the vulnerabilities exposed by this crisis and the ones still to come.

This project specifically aims to:

- increase the capacity of selected cities in Rwanda, Bangladesh and Mauritania for combatting pandemics;
- identify priority urban green recovery action packages cross-sectorally;
- plan for the implementation of small-scale measure;
- develop long-term resilience plans; and
- generate a global knowledge exchange on resilient urban recovery.

INTRODUCTION

The installation of solar street lights at Health Care Centers in Kigali is planned as a practical example of the Resilient Cities Cation Package 2021 (ReCAP21) programme.

The project will support the local community of Kigali by providing efficient and sustainable integrated solar photovoltaic (PV) and LED (light emitting diode) street lights around the Health Care Centers (HCC) in the different sectors. The project idea stems from the successful implementation of solar street lights in Rubavu as well as the retrofit of HCCs in Kigali and Muhanga as part of the EU funded programme, Urban-LEDS II.

BACKGROUND

Projections indicate that 5 billion people (60% of the world's population) will live in cities by 2050 and, according to the International Energy Agency, the overall demand for lighting will be 80% higher by 2030 than in 2005. Street lighting energy consumption is an increasingly significant part of cities energy use and a growing burden on municipal budgets.

Many cities around the world are implementing public lighting programs for two main reasons – **economic growth and increased local resilience**. Solar PV and LED street lighting benefits the environment and local authority budgets alike. Solar PV and LED lights are 40 to 60% more energy efficient than traditional lighting technologies. Simply by using solar PV and LED luminaries, it is possible to provide better quality lighting, lower energy consumption, and

reduce CO^2 emissions. In the United States alone, replacing outdoor lighting with LED lighting can save US$6 billion annually and reduce carbon emissions by the equivalent of taking 8.5 million cars off the roads for a year.

Operations and maintenance costs also tend to be much lower because solar PV luminaires last at least four times longer than traditional bulbs. The cost savings can help ease the financial burden of municipalities that have tight fiscal budgets and are burdened by heavy utility bills. For example, in Quezon City, Philippines, street lighting constituted 65% of the city's electricity costs and 5% of its overall budget. In India, street lighting electricity and maintenance costs can consume 5 to 10% of municipal budgets in large cities and up to 20% in smaller cities.

Cities that invest in solar PV street lighting can then take the savings and invest in other services, such as sanitation, schools, or public health. Solar public lighting will help to **reduce the financial burden** on the City and greenhouse gas emissions related to electricity consumption, and provide greater energy security for public lighting purposes.

Installing grid-powered lighting is costly, but **solar street lights are a perfect alternative** to the traditional solution. They provide the same level of lighting without the additional need for cables. Due to the absence of external wires, these lights do not pose any fire risk due to overheating. With each passing year, the cost of electricity is climbing. Communities and municipalities are seeking innovative ways to keep the cost of electricity low. Using solar powered solar street and LED lights removes the electricity burden on the members of the communities and avoids expenses.

The proposed demonstration project contributes to the achievement of the priorities laid out in the **National Strategy for Transformation** (NST-1) 2017-2024, pillar 1: Economic Transformation and pillar 2: Social Transformation.

It is furthermore valuable to highlight that the project supports two of the strategic objectives that are set out in the **Rwanda Green Growth & Climate Resilient Strategy** (GGCRS, 2012), namely:

- To achieve energy security and a low carbon energy supply that supports the development of green industry and services and avoids deforestation.
- To ensure social protection, improved health and disaster risk reduction that reduces vulnerability to climate change impacts.

MOTIVATION

Based on the above, numerous meetings were held to discuss the implementation of a project in the city of Kigali, one that demonstrated the benefits of low emissions development to the community.

President Kagame has placed a big focus on the need for **universal health care** in Rwanda. Around 85% of healthcare needs are addressed at HCCs, where clinical tasks and decisions are managed by non-physician clinicians. These HCCs are scattered across the Province in 35 different sectors (*imirenge*).

The concept of 'solar street lights at HCCs in Kigali' was conceptualized and underlined by the following motivations:

- **Street lighting in Kigali is limited** to the priority areas (airport, administrative and commercial areas) and major roads, with very few street lights in the rural area of Kigali (covering 75% of the area). The provision of street lights will help to provide area lighting around the HCCs.
- Many areas in Kigali **have limited access to grid electricity**, with around 30% of residents in Kigali needing to make use of kerosene for lighting purposes. The provision of solar PV lighting options will enable the installation in areas that typically don't have lighting due to the lack of grid electricity.
- Improved public lighting can significantly **improve and increase safety** and security in communities and thereby reduce the threat of criminal activities affecting these groups. Women and children are especially prone to the effects of crime and violence.

The project would furthermore support **green economic development** through:

- Supporting low emissions product manufacturers and suppliers within Rwanda and stimulating the green economy more broadly.
- Operational savings can be redirected to other service delivery needs in the community.
- Street lighting increases productivity / business hours which contributes to Kigali's economy.

OBJECTIVE

The **objective of the project is to provide solar street lighting around the HCCs in Kigali** that will showcase transformational action, fostering adaptive socioeconomic models and increased social, economic and environmental benefits. It will bring a low emission solution to areas in need and build resilience around potential impacts of climate change or other pandemics.

FOCUS AREA & BENEFIT

In light of the global pandemic, the focus area for this solar street lighting will be in and around HCCs in Kigali. These centers are scattered across the city (typically one per sector), so many will also be in rural areas with limited access to electricity and street lighting. They service the surrounding residents that could be 28-32 thousand people per sector.

HCCs are often used as maternity wards, and therefore are not limited to office hours. In addition, access to lighting in public areas around the HCC provides benefits to the communities that use and surround the HCC, with these areas having limited lighting away from main roads.

While there are various **benefits**, the following should be highlighted:

- LED solar lights will have lower GHG emissions compared to traditional grid tied street lighting options.
- There is an opportunity for upscaling / replicating this project through:
  - Installing solar street lights throughout Kigali, specifically in rural areas that have limited access to electricity.
  - Installing solar street lights across Rwanda at all HCCs, creating a lighthouse within the local community that provides support during a time of need.

Linkage to **Sustainable Development Goals** (SDGs):

- Goal 3 (Good health and well-being) – through increased public lighting in and around the HCCs to provide area lighting
- Goal 7 (Affordable and clean energy) – through LED solar lights
- Goal 11 (Sustainable Cities and Communities) – through provision of public lighting to local communities that use the HCC
- Goal 12 (Responsible consumption and production) - supporting the City with a greener option
- Goal 13 (Climate action) – installation of LED solar lights

SCOPE OF WORKS

The project seeks to appoint an implementing agent ("the installer") who has the skills required to **supply and install solar PV and LED street lights** around Health Care Centers in Kigali. The installer will work together with a local project manager (separate ToR for responsibilities) who will be responsible for technical and quality control.

The appointed installer is expected to deliver the following scope of works, as outlined in the phases below:

PHASE 1: PREPARATION

1) Work with the local project manager and **conduct site visits** to all the proposed sites. This should include a review of land ownership to ensure that the street lights can be included into the asset list for the City of Kigali.
   Note: Interested bidders must contact jessica.kavonic@iclei.org and rohit.sen@iclei.org before 25 October 2021 to be introduced to the local partner so these site visits can be set-up. Site visits to be conducted between 27 - 29 October 2021.

2) Compile **a technical proposal** as per the technical specifications for each selected Health Care Centre. The technical proposal should include the following and shall be signed off by the ICLEI appointed local project manager, City of Kigali and ICLEI:
    a. A list of all the health care centers that will receive lights, with each of their GPS coordinates;
    b. Number of lights at each health care center;
    c. Final Bill of Quantities and cost. The final cost can't be more than 10% different from the approved budget.

Technical specifications

Description	**Estimated quantities required**
Supply, install, test and commissioning of **LED Solar street lights** with the following specifications: a) Power: 60W b) Luminous flux: 6000LM c) Poly crystalline Solar panel: 6V 22W d) Lithium battery: 3.2V; 20000mA e) Charge time: 6-9H f) Lighting time: 2 days g) Solar Panel size (MM): 350*340 h) Installation height: 6M-9MLight i) efficiency: 100LM/W j) IP code: IP 65 Waterproofed & dustproof k) Rated life: ≥50000hours l) Input Voltage: DC 12/24V m) Provision of darkness sensor	70
Supply and fix the galvanized electrical **pole** of 9m of height with all accessories	70
Supply and install **energy meter** for existing public lighting with all accessories in a safe and easily accessible location	1
All **ancillary costs** relating to the installation of the solar street lights, including transport and accommodation of technician	1

PHASE 2: IMPLEMENTATION

1) **Supply, install, test and commission** the solar street lights as per the final approved Bill of Quantities.
2) Engage directly with city officials to arrange for any necessary **permits** and to ensure any security measures required for **safety of personnel and equipment** during implementation are enacted.
3) All equipment installed shall comply with **national performance standards.**
4) Responsible for **civil works** during the installation of the street lights.

5) Produce **final as-built designs** which should be approved by the appointed local project manager of ICLEI in Rwanda, as well as the City of Kigali.
6) Install an **energy meter** for this project that allows for regular collection of energy consumption data to measure the impact.
7) Engage with the appointed local project manager to arrange a **review of the installation** (information below) and to develop a snag list where any outstanding or insufficiently installed items will be identified and corrected by the installer.
8) Undertake the necessary applications to the correct authorities to continue implementation during **COVID-19** imposed lockdown restrictions, where feasible.

PHASE 3: TRAINING

7) Compile a **maintenance manual / plan** (up to 15 pages) for City of Kigali in English and Kinyarwanda that clearly stipulates the daily, monthly and annual requirements for operations and maintenance, with related estimated costs, to ensure that optimal performance of all interventions for a minimum period of the next 10 years. The plan should be provided as a digital Word Document, with two printed versions.
8) **Provide two-day training** sessions in Kigali to ensure all relevant city staff (and other key and relevant stakeholders) know and understand the maintenance and operational requirements for the installed solar street lights. The training should be provided in English; however, it would be advantageous to have someone who speaks Kinyarwanda at the training in the event that translation is required.
9) Training of local technicians must include guidance on continuously **monitoring the electricity meters** installed to measure the electricity savings resulting from solar street lights, and why this has an effect of reducing greenhouse gas emissions.

PHASE 4: HANDOVERS

1) **Responsible for the installed system** during the liability period starting from the day of final handover.
2) All systems installed must have a **minimum 5-year warranty** provided on the product and the installation.
3) Lead a provisional *and* **final hand-over meeting** with the appointed implementing agent for ICLEI and officials from the City.
4) Lead a **close-out meeting** with ICLEI, and the City to report on all works done and for ICLEI to discuss replicating similar installations using a financial model.
5) The process of installation cannot be **disruptive to the normal activities** in the area. The appointed service provider will need to work closely with the City officials to ensure a smooth implementation.
6) The installation will be supervised and project-managed by **an independent project manager** to be appointed by ICLEI to manage the risk and contractual obligations of this scope of works. This company must be kept up to date on the installation of the progress on site in the following ways:

a. Short daily updates on progress on site, one photo and a short description, via WhatsApp.
b. Weekly progress reports (photographs and written descriptions of progress on site, listing any problems experienced and anticipated project risks), via email (with ICLEI in CC).
c. Action any comments from the implementing agent on their reviews of documents including the training manual and the as-built schematics.
d. Onsite meeting for the final inspection and sign-off of the installation, with the implementing agent in attendance. The installer will be responsible for arranging this meeting and inviting relevant City staff.

7) The installer will be required to supply the following to ICLEI's **communications** team:
   a. Short video(s) and 5-10 pictures of key sites before installation work begins.
      i. Actual day and night scenes captured showing the site
      ii. Still and candid scenes captured of daily life of healthcare centers
      iii. Scenes captured from at least 3 different angles.
   b. Short video(s) and 5-10 pictures of key sites during installation.
      i. Arrival of equipment on site
      ii. On-site pictures of assembly, mounting, and erectioning
      iii. Still and candid scenes captured of on-going work on-site
      iv. Scenes captured from at least 3 different angles.
   c. Short video(s) and 5-10 pictures of key sites after installation.
      i. Erectioning and commissioning of Solar street lights
      ii. Actual day and night scenes captured showing the operation of installed solar street lights
      iii. Still and candid scenes captured of daily life of healthcare centers, showing the impact of solar street lights
      iv. Scene captured from at least 3 different angles.
   d. Filmed interview of up to 10 minutes (or up to 5 interviews of 2 minutes each) with city staff and/or Kigali citizens present at the provisional and final site handover (questions and designated interviewee will be sent by ICLEI)
   e. The ICLEI communications team will supply further guidelines to the appointed installer.

PHASE 5: MAINTENANCE, LIABILITY AND WARRANTY

1) The appointed installer will be held responsible for the **ongoing maintenance** of the solar and LED public lights and their proper functioning for a period of at least 5 years after installation.
2) The installations provided should have a **warranty** of at least 5 years covering any malfunction of the product.
3) The bidder must demonstrate that the company has sufficient **public liability insurance** to cover any onsite incidents.

4) The bidder must support the City with getting the installations added to the **municipal asset register**.
5) The bidder must **hand-over all hardware** to the City on the completion of this project, along with the maintenance plan.
6) The appointed installer will be required to **indemnify ICLEI** and the City of Kigali against all potential incidents and claims arising from the delivery of this work.
7) Please motivate the bid if submitting any **deviation** from the above.

BUDGET

The budget provided by the installer is to demonstrate clearly the individual and total costs for the supply and installation of all products in the scope of works, travel to and from site, and project management onsite including the initial assessment during the preparation phase. A total, itemized budget (see example below), including all amounts and any tax is to be provided in Euro. **The total budget for this assignment is Euro 99 800.00**.

Format for itemised cost estimate with prices provided in Euro:

COST ESTIMATE, including all other costs such as travel and staff				
S/N	**Item Description**	**Quantity**	**Unit Price, incl tax**	**Total Price (Euro)**
1	LED Solar street lights	70		
2	Street poles	70		
3	Electricity meter	1		
4	All ancillary costs	1		
5	Total staff costs (as detailed below)			
TOTAL PROJECT COST ESTIMATE IN EURO, INCLUDING TAX				

STAFF COST, included into overall cost above				
Description	**Name**	**Hours**	**Rate/Hour (Euro)**	**Total Price (Euro)**
Project Manager	xxx			
Electrical Technician	xxx			

Electrical Technician	xxx			
Engineer (OHS cert)	xxx			
xxx	xxx			
TOTAL STAFF COST ESTIMATE IN EURO				

KEY REQUIREMENTS FOR BIDDING

SUBMISSION REQUIREMENTS

1) Proposals for the bid can be submitted by **individuals or a consortium**.
2) ICLEI will **consider the following aspects when appointing** the installer: the project proposal, technical proposal and financial proposal as outlined below.
3) The installer must be able to supply accurate and comprehensive **financial records of project-related expenses** (including, but not limited to disbursements, travel and subsistence costs). These expenses and proof of expenses (including delivery notes) must be included with the invoices and the Financial Report that is submitted to ICLEI.
4) The installer will only be **reimbursed for services and materials**. No upfront payments will be permitted. Any deviation to this must be agreed to in writing between ICLEI and the installer and accompanied by a motivation.
5) The installer **may not subcontract other parties** to assist them once the contract commences unless agreed to in writing by ICLEI.

SUBMISSIONS DOCUMENTS

The following documents need to be provided for consideration of appointment:

1) A **project proposal** including the following:
    a. Brief outline for project implementation.
    b. Letter of company incorporation to confirm that company has an active office in Rwanda.
    c. Evidence of previous experience to execute similar contracts (at least 2 "good completion certificates with their signed contracts")
    d. Demonstrated ability to deliver and install goods on time and of a high quality.
    e. List of personnel who will work on the project, provided their years of experience and skills, and any relevant certificates of qualification and registration, as well as their CVs. This list of personnel should include the following:
        i. A project manager with a degree in Electrical or electromechanical Engineering with at least 2 years of experience in similar works in electrical maintenance or A1 degree with 5 years of experience; He should be registered in the relevant professional bodies.

ii. Two Electrical Technicians (A2) who will undertake the installation with at least 5 years in installation and maintenance of solar photovoltaic systems.
iii. One staff with at least a degree (Ao) in Engineering with an Occupational Health and Safety Certificate

f. A site manager needs to be identified to ensure high-quality installation of the solar power system and to maintain regular communication with the Project Implementing Agent and the city officials.

2) A **technical proposal**, which includes:
   a. Specification Sheet and warranties for the proposed solar street lights to be installed, including the manufacturer and country of origin.
   b. Work plan indicating timeframes and milestones and description of how all interventions will be installed.
   c. Demonstrated previous experience in similar projects in a table including the name of the project, a description of the project, the start and end date of the contract, the value of the project (Euro) and a reference with contact details

3) A **financial proposal**, for all project goods, works, and services, with a clear indication of the total cost (including any taxes) in Euro (Refer to Budget section for guidance).
   i. An itemised budget identifying the costs and quantities of goods, works and services (included daily or hourly rate per member of the consortium).
   ii. Payment schedule in two phases, where payment is made on approval of phase completion.

The supplier will only be reimbursed for services and materials. No upfront payments will be permitted. Any deviation to this must be agreed to in writing between ICLEI and the supplier and accompanied by a motivation. The supplier may not subcontract other parties to assist them once the contract commences unless agreed to in writing by ICLEI.

SUBMISSION PROCESS AND TIMELINE

1) All submissions to be provided to Rohit Sen, rohit.sen@iclei.org with Jessica.kavonic@iclei.org in copy and before 30 October 2021
2) At all times, please use the subject line: ***Supplier: ReCAP21 Solar Street Lights Kigali.***
3) Appointment of a supplier is subject to the ICLEI contractual terms and conditions as captured in the Service Level Agreement.
4) Bids will be scored according to the following breakdown:

    - 20 points: Competitive Price
    - 40 Points: Compliance with technical requirements and methodology
    - 20 points: Demonstrated experience and expertise
    - 20 points: Skills and/or team composition

5) ICLEI reserves the right to NOT appoint a supplier.

ADDITIONAL INFORMATION

ICLEI - Local Governments for Sustainability is the leading global network of over 2,500 cities, towns, and regions committed to building a sustainable future. Through our collective efforts, we impact more than 25 percent of the global urban population. For more information on ICLEI Africa's work, please see http://africa.iclei.org/