

Terms of Reference (TOR)

Investment Grade Energy Audit (IGA) for a government building in Rajshahi, Bangladesh under Accelerating climate action through the promotion of Urban Low Emission Development Strategies (Urban-LED S II)

Title of proposed project	Investment Grade Energy Audit (IGA) for a government building in Rajshahi, Bangladesh
Sector	Energy Efficiency
Location of the project	Rajshahi City Corporation (RCC), Bangladesh
Rationale	<p>Building energy consumption is a major contributor to indirect GHG emissions which is ever increasing, in spite of decarbonized power availability, mainly due to increased electricity demand for building energy services like heating/cooling, appliances and plug loads. This increase can be attributed to several factors including extreme weather conditions like prolonged heat waves that raise the demand for energy in cities in Bangladesh. The construction sector in Bangladesh is also growing and there is an enormous potential for cost savings and CO₂ abatement in reducing building energy use which remains untapped due to the widespread use of less-efficient technologies and insufficient investment in sustainable buildings.</p> <p>The key objective of this exercise is to aid the city of Rajshahi in understanding the energy use pattern of its administrative building and to show the potential of energy conservation measures in buildings by performing an Investment Grade Audit (IGA). Further to sustain the energy efficiency practices, the Rajshahi city will be supported by training of its officials/engineers in energy management practices for future replication.</p>
Concrete deliverables expected	<p>1.1 Conduct site visit and on-site audit of Rajshahi City Corporation's administrative head office building.</p> <p>1.2 Facilitate hands-on training to selected officials/engineers during onsite energy audit.</p> <p>1.3 Presenting preliminary findings of the on-site audit to get</p>

	<p>stakeholders' (RCC officials and ICLEI South Asia) inputs/comments on the conservation measures to further analyze for bankability.</p> <p>2.1 Prepare the Investment Grade Energy Audit report to capture audit outcomes.</p> <p>2.2 Document identified energy conservation measures and suitable retrofit technology for the measures justified with an economic feasibility analysis (for bankability) as a part of IGA report.</p>
Time Period	<p>ToR published – 08 January 2020</p> <p>Last date for applying – 23 January 2020</p> <p>Identification and hiring of consultant – 30 January 2020</p> <p>Issue of work order to winning bidder – 3 February 2020</p> <p>Submit draft of IGA report, prepared post on-site audits and focused discussions, for feedback from ICLEI South Asia and other stakeholders – 9 March 2020 (5 weeks from hire of consultant/expert)</p> <p>Submit Final IGA report to ICLEI South Asia team after resolving all comments and recommendations - 23 March 2020 (7 weeks from hire of consultant/expert)</p>
Payment schedule	<p>30% of total work value on signing of work order and completion of project briefing meeting and on-site visits to conduct the physical audit.</p> <p>30% of total work value on submission of preliminary draft report on the audit conducted and should include recommendations for energy conservation measures and the suitable retrofitting technology and strategy.</p> <p>Remaining 40% of total work value upon satisfactory completion of work and submission of final IGA report after incorporating all queries/concerns raised by RCC officials and the ICLEI South Asia team.</p>
Contact	<p>Md. Jubaer Rashid Manager – ICLEI Bangladesh Operations, ICLEI – Local Governments for Sustainability, South Asia (ICLEI South Asia)</p>

	<p>House – 27 (Level – 3), Road – 1, Block – A Basundhara R/A, Dhaka – 1229, Bangladesh Phone: +880 1819 866766 E-mail: jubaer.rashid@iclei.org</p> <p>Mr. Bhaskar Padigala Deputy Manager, ICLEI South Asia <i>C-3, Lower Ground Floor, Green Park Extension, New Delhi - 110016, India.</i> Tel: +91 – 11 – 4974 7200 Fax: +91 - 11 - 4974 7201 Email: bhaskar.padigala@iclei.org Website: http://southasia.iclei.org/</p>
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1. Description of the Project

Rajshahi City Corporation (RCC) and ICLEI South Asia are implementing a project on ‘Accelerating climate action through the promotion of Urban Low Emission Development Strategies (Urban-LEDS II)’ in Rajshahi funded by European Commission with support from the UN Habitat as an implementing partner. This project aims to reduce greenhouse gas emissions and support implementation of climate actions at local level by the promotion of Urban Low Emission Development Strategies (Urban LEDS) in cities/towns of emerging economies (Brazil, Colombia, India, Indonesia and South Africa) and Least Developed Countries (Bangladesh, Lao PDR and Rwanda). This objective is aligned with the implementation of the Paris Agreement under the UNFCCC.

The city of Rajshahi intends to understanding the energy use pattern of its administrative building in the city and to implement potential energy conservation measures for demonstration of their benefits. A comprehensive Investment Grade Audit (IGA) on a selected government office building is required to achieve the abovementioned objective.

In this regard ICLEI South Asia seeks expert consultancy services (individual or organization) to conduct Investment Grade Energy Audit (IGA) and suggest energy efficiency measures for City Corporation’s administrative office building in Rajshahi, Bangladesh. The details of consultancy are mentioned in the subsequent sections:

2. Scope of Work

2.1 Objective and core tasks

The main objective of this assignment is to audit RCC's main administrative building in Rajshahi with the aim of providing a technical and financial assessment of energy conservation opportunities in the selected building and its projected energy savings. Based on the assessments and consultations with the stakeholders involved, an agreed-upon plan will be developed to measure and verify the potential savings envisaged in the IGA. Ultimately, the IGA should ensure that the agreed-upon energy conservation measures when implemented will enable the buildings to minimize energy consumption and adhere to statute requirements like the Bangladesh National Building Code.

The IGA should cover at minimum the following core tasks:

- Collect general building information on the building layouts, equipment, energy use, costs of utilities, and operation hours.
- Inventory of existing energy consuming systems and equipment through physical walk through inspection and interviews to log information on major energy and resource-using equipment.
- Review all existing documentation on the facility like architectural and engineering plans, maintenance budgets, contracts and reports, operational procedures and constraints faced, water and energy utility bills, characteristics of building management system (if any), management policies on waste, water and energy management etc.
- Establish baseline and/or base year consumption based on at least one year of historical utility billing data and reconcile with end-use consumption estimates.
- Identify the major energy consuming equipment and processes in the building.
- Identify opportunities for energy efficiency measures (short, mid and long term) and assess them for potential savings and payback periods.
- Identify suitable retrofits and technology for these measures and estimate their costs.
- Present preliminary findings to the stakeholders (RCC and ICLEI South Asia) and establish agreement on measures to further analyze for long term investments.
- Develop the Investment Grade Audit Report with potential savings analysis and cost estimates of energy conservation measures.
- Develop a preliminary plan for Measurement and Verification, Commissioning and Operation & Maintenance of the measures implemented based on the IGA.

Note: As part of this assignment the consultant is expected to carry out the energy audit with officials/engineers from RCC to help train them and provide hands-on training in the audit procedures for future replication.

2.2 Expected Outcomes

The consultants are expected to prepare the final Investment Grade Audit report which should at minimum include the following outcomes and specifications:

- Establish the baseline building energy performance by calculating performance indicators like building energy use intensity, building energy demand per person etc. which help in tracking the progress on energy conservation measures.
- Recommendations for building management practices (if any) based on the review of documentation pertaining to maintenance and operational procedures followed for the building.
- Recommendations for investment grade measures (short, mid and long term) for improving energy efficiency of the building. This should cover at minimum the following aspects:
 - Building orientation, envelope design and fenestrations
 - Daylighting and Natural Ventilation
 - Roof and ceiling Insulations
 - Overall Thermal Transfer Value (OTTV) and Roof Thermal Transfer Value (RTTV)
 - Air conditioning system, Ventilation system and Indoor air quality
 - Boilers or hot water systems, water efficiency measures
 - Lighting, Lifts and escalators
 - Small power or plug loads
 - Building automation system including opportunities for installing smart sensors
- Electric supply and distribution system should be reviewed to identify recommendations for improvements in electrical layout, use of smart distribution panels and meters.
- Calculate potential energy savings and GHG abatement based on the energy conservation measures analyzed.

3. General Building Information

Building Category	Office
Name of the Building	Rajshahi City Corporation Head office
No. of floors	Ground + 10 storey
Built-up Area (sq. ft.)	~1,65,000 in total
Building Age	17 years
Connected Load (kVA)	37
Average Monthly Energy Consumption (kWh)	686
Operating Hours (Sun-Thu) (hrs/day)	8
Operating Hours (Saturday) (hrs/day)	8 (1 Saturday per month)

4. Mode of implementation (stakeholders involved and type of involvement)

The various stakeholders and their roles are described below in brief:

- i. ICLEI South Asia: Coordination with the consultant/ external agency and city government; monitoring of overall activities; offering technical assistance to consultant/ external agency
- ii. Consultant/ External Agency: Carry out all activities listed in ‘Scope of Work’. The consultant/ external agency will be required to facilitate hands-on training to RCC members/officials during the assignment.
- iii. Rajshahi City Corporation: Providing support that might be required during on-site work and data collection.

5. Deliverables and schedule

5.1 Deliverables

1. Site visit to Rajshahi: Project briefing meeting with Rajshahi city officials and ICLEI South Asia team after the contract has been signed to establish agreement on the methodology to be followed and to resolve any queries from both parties. On-site audits for the selected building can be conducted after the project briefing meeting and will be facilitated by ICLEI South Asia team. The inspection and energy audit shall focus on all passive and active systems available on-site for the chosen building. The consultant/agency is expected to carry out the energy audit with members/officials from RCC to help train them and provide hands-on training in the audit procedures for future replication.
2. Present the preliminary findings of the on-site audit conducted to get inputs/comments from RCC and ICLEI South Asia on the conservation measures to further analyze for bankability.
3. Prepare the Investment Grade Energy Audit report to capture audit outcomes for the building under consideration and submit draft with ICLEI South Asia for approval. The final report submitted after resolving all comments must provide a description of the methodology employed, equipment used, calculations, charts, findings from the audit, energy conservation measures identified and suitable retrofit technology for the measures justified with an economic feasibility analysis (for bankability).

5.2 Schedule of Delivery

- Submit draft of IGA report, prepared post on-site audits and focused discussions, for feedback from ICLEI South Asia and other stakeholders – 9 March 2020 (5 weeks from hire of consultant/expert)
- Submit Final IGA report to ICLEI South Asia team after resolving all comments and recommendations - 23 March 2020 (7 weeks from hire of consultant/expert)

6. Additional Information

The consultant/ external agency will report to ICLEI South Asia and will work closely with ICLEI and RCC personnel involved in the assignment. Project relevant communication with the consultant/ external agency will be done through ICLEI South Asia. The consultant/ external agency will participate in a project briefing meeting facilitated by ICLEI South Asia team with the concerned city officials to collect inputs and resolve queries, if any, from either party. ICLEI South Asia team will help facilitate collection of preliminary pre-audit information for the buildings, as per requisite formats, shared by the consultant/ external agency.

The methodology proposed by the consultant/ external agency for the scope of work given in this assignment should have a clear focus on identifying economically viable retrofit measures and technology for energy conservation in the buildings. Since these measures will be implemented by RCC based on their technical and economic viability.

The ICLEI South Asia and RCC will not provide any equipment or technical support in executing the assignment. It is expected that the consultant/ external agency will sufficiently resource himself/herself in carrying out the energy audit (where it shall be included in the Financial Proposal) as per the scope of work specified in this Terms of Reference document.

Annexure I: Bidders Eligibility Criteria and List of Required Documents

(A) Bidder Eligibility Criteria

➤ Technical requirements

Both independent consultants and firms are welcome to apply. The consultants should ideally have the following expertise and experience:

○ *Preferred Qualifications of Consultant/Team Lead :*

- a) Minimum 8 years of relevant professional experience in energy audit. International experience will be an advantage.
- b) Experience in design of architectural components in energy retrofit procedures.
- c) Experience in design of mechanical installations in energy retrofit procedures.
- d) Experience in design of electrical installations in energy retrofit procedures.
- e) Experience with the ESCO business models (energy analysis and audits, energy management, project design and implementation, maintenance and operation, monitoring and evaluation of savings, property/facility management, energy and/or equipment supply, provision of service) will be an advantage.
- f) Should be proficient in English, written and oral communication in Bengali will be an added advantage.
- g) Prior experience with energy management projects work for Government institutions in Bangladesh and Rajshahi will be an additional advantage.
- h) Knowledgeable in energy policies and energy management procedures of Bangladesh will be an advantage.

➤ Financial requirements

- a) The bidder (if a firm) should possess a valid national registration certificate.
- b) The bidder should be submitted VAT registration (if a firm) and up-to-date TIN certificate.
- c) The bidder (if an individual) should possess a valid NID card or related documents to proof nationality.

➤ Education Requirement

The consultant/ Team lead (if a firm) should have a minimum of Bachelor's/Master's degree in Architecture or Engineering.

(B) Documents to be submitted by participating bidders

➤ **Technical Bid**

The Technical bid should provide the following information/ documents

- a) Consultancy/ company profile (**both independent consultants and firms are encouraged to apply**)
- b) Bidder's experience on assignments of similar nature, the outline should indicate, inter alia, the profiles and names of the staff provided (if in case of a firm), duration of the assignment, contract amount, and firm's involvement.
- c) The bidder must possess written evidence in the form of Letter of intent/Work order/ project completion certificate issued by the client (any city/ state/ national/ international agency) for related consultancy.
- d) On-going consulting assignments can be submitted with detail of progress supported by suitable documents (E.g. copy of invoice or payment received till date or through certificate from the respective client).
- e) Detailed Approach and Methodology for undertaking the current Assignment.
- f) Project Schedule with activity and duration to accomplish the task within the scheduled project duration along with detailed work plan.
- g) Against the list of proposed staff, details of tasks assigned to each staff as per his / her experience shall influence the evaluation
- h) All relevant CVs shall be provided in full detail. If the CV of a proposed staff is found incorrect, the award of the consultancy to the bidder may also be liable to cancellation in light of such an event.
- i) Each page of the CV must be signed in original by the authorized representative together with original or electronic signature of the key team member at the proposal stage. However, at the time of contract signing, original signatures of both authorized representative and the Key Personnel shall be required.
- j) The consultant shall make an assessment of required support personnel both technical and administrative to undertake the assignment. Additional support and administrative staff shall be provided as needed for the timely completion of the Assignment within the total estimated cost. Consultant should provide time estimates of Key Personnel as well as support staff in the staffing schedule. It is stressed that the time period for the assignment indicated in the TOR should be strictly adhered.
- k) Details of the local firm, if hired needs to be provided (along with their credentials of being able to handle similar work)
- l) The Proposals/ bid documents must be duly signed by the authorized representative/ signatory on each page and stamped as detailed below. This shall not contain any alternative items or suggestions, comments or conditions:
 - i. By the partner holding the Power of Attorney in case of a partnership firm / limited liability partnership (A certified copy of the Power of Attorney shall

accompany the proposal)

- ii. By the proprietor in case of a proprietary firm; by a duly authorized person holding the Power of Attorney or by a Board Resolution in case of a Limited Company or a corporation (A certified copy of the Power of Attorney/Board Resolution shall accompany the proposal)
- iii. By the authorized representative of the Member in Charge in case of Joint Venture / consortium (a certified copy of Board Resolution/Power of Attorney indicating the representative shall accompany the Proposal).

➤ **Financial Bid:**

The Financial bid should provide the following information/ documents:

- a) A financial proposal clearly stating manpower/expert time, travel, equipment, survey and laboratory costs as may be required, adequately addressing the manpower stated available for the assignment, as given in the technical proposal. A breakup of the budget items indicated above is required.
- b) The Financial bid shall be inclusive of all the costs including taxes associated with the assignment. It is clarified that, for the purposes of evaluation, the financial bid should be prepared in BDT.
- c) The total amount indicated in the financial bid shall be without any condition attached or subject to any assumption, and shall be final and binding. In case any assumption or condition is indicated in the financial bid, it shall be considered non-responsive and liable to be rejected.
- d) In case of any discrepancy between the amount quoted in figures and words, the amount quoted in words will be considered for evaluation purposes.
- e) A copy of valid TIN, VAT and registration certificates of the firm.

Please note:

- a) *The bidder shall acquaint with the work and working conditions at site and locality. No claim shall be entertained on this issue after the bid has been submitted.*
- b) *All or any accessories/consumables/items required for satisfactory commissioning of the study/work shall be deemed to be included in the contract and shall be provided by the bidder without extra charges*

Failure to comply with or provide the above listed items in the Technical Proposal may result in disqualification. The bidder shall produce, original documents for cross verification as and when requested by ICLEI South Asia. Each page of all the documents mentioned above as well as technical and price bid documents shall be duly signed by bidder.

(C) Bid Submission

- The Terms of Reference (ToR) shall be downloaded free of cost from the ICLEI South Asia website
- The bid document shall be submitted by bidders through email to the three email IDs mentioned below on or before 23.01.2020:
 - o jubaer.rashid@iclei.org
 - o soumya.chaturvedula@iclei.org
 - o bhaskar.padigala@iclei.org
- The bidder shall also submit 2 sets of hard copies of the bid documents to the address as mentioned below:

Md. Jubaer Rashid

Manager – ICLEI Bangladesh Operations, ICLEI South Asia

House – 27 (Level – 3), Road – 1, Block – A

Basundhara R/A, Dhaka – 1229, Bangladesh

Phone: +880 1819 866766

E-mail: jubaer.rashid@iclei.org

Website: <http://southasia.iclei.org/>

The hard copy of bid document shall reach to the above mentioned address not later than 3 days from the last date of submission of bid document, provided the bid has been submitted through email before the due date of submission

- The Bid shall be submitted in two parts, viz.
 - Envelop I: Technical Bid;
 - Envelop II: Financial Bid; and
 - both the Envelops I & II to be placed and sealed inside Envelope III
- Envelop I: sealed and shall be super scribed as:

Part A: Technical bid for

“Investment Grade Energy Audit (IGA) for a government building in Rajshahi, Bangladesh under Accelerating climate action through the promotion of Urban Low Emission Development Strategies (Urban-LEDs II)”

- Envelop II: sealed and shall be super scribed as:

Part B: Financial bid for

“Investment Grade Energy Audit (IGA) for a government building in Rajshahi, Bangladesh under Accelerating climate action through the promotion of Urban Low Emission Development Strategies (Urban-LEDs II)”

- Envelop III: sealed and shall be super scribed as:
 - **“Investment Grade Energy Audit (IGA) for a government building in Rajshahi, Bangladesh under Accelerating climate action through the promotion of Urban Low Emission Development Strategies (Urban-LEDS II)”**
- The bid shall be valid for a period of 60 days from the date of submission of bid document
- A bidder shall submit the bid documents that satisfies each and every condition laid down in this notice, failing which, the bid will be liable to be rejected by ICLEI South Asia
- In case the bidder wishes to sub-contract part of his deliverables, the final responsibility of delivery and performance solely lies with the bidder

Annexure II: Contract Terms

1 Specific conditions of contract

1.1 Contractor to study conditions:

- The bidder shall be deemed to have carefully examined the work and site conditions'. In this regard, he/she will be given necessary information to the best of knowledge of ICLEI South Asia but without any guarantee to it.
- If he/she shall have any doubt as to the meaning of any portions of these general contract terms, or the scope of the work, or any other matter concerning the contract, he/she shall in good time, before submitting his tender, set forth the particulars thereof and submit them to the point of contact, as given in this TOR, by email in order that such doubts may be clarified authoritatively before tendering. Once a tender is submitted, the matter will be decided according to the tender conditions in the absence of such authentic pre clarification.

2 General conditions of contract

- 2.1 The contractor/ consultant shall address all aspects of the proposed outputs and deliverables mentioned in this TOR
- 2.2 The comments and suggestions provided by the bidder on the TOR are not binding and shall not affect the financial proposal
- 2.3 It should be noted that the project is being implemented by ICLEI South Asia and hence instructions to bidders will be given by ICLEI South Asia. ICLEI South Asia will be overall in-charge for all the works that would be executed under the present scope of work
- 2.4 The bidder shall also obtain necessary permission, from concerned government departments related to the work/data collection if deemed necessary, in coordination with ICLEI South Asia.

3 Tender Evaluation & Bid Assessment

- 3.1 The bids received will be scrutinized and evaluated by ICLEI South Asia. The decision shall be informed to the winning bidder.

4 Award of contract:

- 4.1 Detailed Work Order will be issued to winning bidder within 1 day of announcing the winning bidder
- 4.2 The winning bidder is to forward the signed and sealed work order to ICLEI at the earliest or not more than 7 (seven) days of issue of work order

4.3 In case the winning bidder fails to indicate his intent to undertake the said work within the stipulated time of 7 (seven) days and observe the formalities as above, the Letter of Intent will be cancelled and the next bidder will be finalised by ICLEI South Asia.

5 Compensation for delay

5.1 Time is the essence of the contract and as such all works shall be completed within the time stipulated in the contract/ work order

5.2 If the bidder, without reasonable cause or valid reasons, commits default in commencing the work within the aforesaid time limit, ICLEI South Asia shall without prejudice to any other right or remedy, be at liberty, by giving 15 days' notice in writing to the contractor to commence the work, to forfeit the balance payment depending on the status of work, and to cancel the Work Order.

6 Extension of date of completion

On occurrences of any events causing delay as stated hereunder, the bidder shall intimate immediately in writing to ICLEI South Asia-

6.1 Force Majeure:

- Natural phenomena, including but not limited to abnormally bad weather, unprecedented flood and draught, earthquakes & epidemics.
- Political upheaval, strikes, lockouts, acts of any Government (domestic/foreign) including but not limited to war, properties, and quarantine embargoes.

Please note that this clause will only account if event occurs during data collection/ site visit/ city visit period.

7 Materials/Appliance at site

7.1 ICLEI South Asia does not undertake any responsibility for supply of any materials/ equipment/ Appliance/ tool for site analysis to the bidder

7.2 All materials/ equipment/ tools brought to site by the bidder shall be the responsibility of the bidder. ICLEI South Asia shall extend help as and when approached by the bidder to keep any materials/ equipment/ Appliance/ tool, however not liable for any loss, theft or damage due to fire or other cause, the responsibility for which shall lie entirely on the bidder.

8 Final Inspection of Work

8.1 ICLEI South Asia team shall make final inspection of all work included in the contract/work order, or any portion thereof, or any completed structure forming part of the work of the

contract, as soon as practicable after notification by the bidder that the work is completed and ready for acceptance.

- 8.2 At the time of such inspection ICLEI South Asia shall inform the bidder in writing as to the particular concerns to be remedied before final acceptance can be made

9 Ownership of Materials and Confidentiality

- 9.1 All material will acknowledge the Urban –LEDS II project, by featuring its logo, together with the logos of project partners (Rajshahi City Corporation, UN-Habitat, ICLEI, European Commission). The logo of the Urban LEDS Initiative is to be included at the beginning and at the end of the documents.
- 9.2 The Consultant understands that as part of the Consultancy, they might be asked to create, modify or contribute to the creation of architectural designs, documentation and other copyrightable works. The Consultant agrees that any and all designs, drawings, assignment outputs, including design formats, forms, text, photographs and videos, computer programs, work-up files, documentation and other copyrightable materials that have been prepared as part of this contract shall be "works made for hire" and that ICLEI South Asia and Rajshahi City Corporation shall own all the copyright rights in such works.