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**TOR FOR ENERGY AUDITS IN 12 (TWELVE)  
PUBLIC BUILDINGS IN BANGLADESH**

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**Project number/  
cost centre:  
16.2219.0-007**

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## **0. List of abbreviations**

AIIB	Asian Infrastructure Investment Bank (AIIB)
ASHRAE	American Society of Heating, Refrigerating, and Air-conditioning Engineers
AVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2018
BUET	Bangladesh University of Engineering and Technology
CFC	Chlorofluorocarbon
EEPB	Energy Efficiency in Public Building Project
EE&CMP	Energy Efficiency and Conservation Masterplan
GHG	Greenhouse gas
HC	Hydrocarbon
HCFC	Hydrochlorofluorocarbon
HFC	Hydrofluorocarbon
GoB	Government of Bangladesh
HVAC	Heating, Ventilation, and Air Conditioning
K-CEP	Kigali Cooling Efficiency Program
SREDA	Sustainable Renewable Development Authority
ToRs	Terms of references

## 1. Context

With a record 8.1% GDP growth in the Fiscal year 2018-19, Bangladesh is already the fastest growing economy in the Asia Pacific region. Energy demand is expected to increase further in order to achieve its ambition of becoming a developed economy by 2041. In order to sustainably achieve Bangladesh's development ambition, energy efficiency and conservation will play a pivotal role. The Energy Efficiency and Conservation Master Plan (EE&CMP) outlines Bangladesh's target to achieve a 15% reduction of primary energy consumption per gross domestic product (GDP) by 2021, compared to the 2013 level.

The commercial and public services buildings accounted for 2% of the total final energy consumption in 2015 in Bangladesh. According to the master plan, for commercial buildings, approximately 50% of the total energy consumed is by the use of air conditioning followed by 10-30% for lighting. The replacement with energy-efficient inverter type air conditioning or energy efficient HVAC system and LED lighting system is expected to deliver about 50% electricity savings on average.

The Government of Bangladesh (GoB) established a national nodal institution—Sustainable and Renewable Energy Development Authority (SREDA)—in 2014 for coordinating as well as monitoring the development of the entire spectrum of green and clean energy. SREDA is dedicated for promoting and sustaining Renewable Energy (RE) investments, plans, programs, and measures; and the demand-side Energy Efficiency and Conservation (EE&C) in Bangladesh. On request of SREDA, GIZ has received a grant from the Kigali Cooling Efficiency Program (K-CEP) to implement a pre-feasibility study on energy efficiency in public buildings in Bangladesh.

The aim of the study is to determine the potential of energy savings in public buildings by reducing the need for energy used in air conditioning/refrigeration, lighting and other equipment in public buildings in Dhaka and other regions. The study will help to determine the potential direct and indirect emission and cost reduction measures derived from the energy efficiency improvements, green cooling technology and introduction renewable energy technologies like solar rooftop as proposed in the technical and economic assessment report. The study will outline the list of existing and best available climate-friendly technologies for building envelope, cooling systems, lighting and motors in the selected buildings. The findings of the study will be presented to key government stakeholders to offer the necessary technical and financial support to implement the recommendations. Successful implementation of this project could thus help grow the energy-efficient appliance market in Bangladesh and garner interest from other key stakeholders in implementing energy efficiency projects in residential and commercial buildings as well as the industrial sector.

The Asian Infrastructure Investment Bank (AIIB) is a multilateral development bank investing in sustainable infrastructure and other productive sectors in Asia and beyond. If the findings from this pre-feasibility study are positive, then the project ultimately aims to help secure Bangladesh government and AIIB buy-in for a potential multi-million-dollar loan for efficient, clean cooling and rooftop solar projects across hundreds of public buildings in Bangladesh.

In view of above, **15 public buildings were short-listed** to undertake energy audits as part of the pre-feasibility study. **The Consultant will carry out energy audits in 12 out of 15 shortlisted public buildings as per final list to be provided by GIZ during execution. The energy audit report will demonstrate energy efficiency potential and measures, determine cost-effective energy efficiency and renewable energy measures (e.g. solar rooftop), as well as include overall investment analysis for energy efficiency and conservation measures and renewable energy inclusion. Finally, the report will calculate the funding requirement with the implementation guideline to reach the desired energy efficiency level.** Based on the 12 energy audits prepared by the consultant, GIZ will determine the overall energy and GHG emission saving potential as well as the

investment requirements for all public buildings in the Dhaka region. A list of best available energy efficient technologies shall be consolidated from the findings by GIZ.

**Under the following terms and conditions, suitable consulting firm/ Consortium of firms is sought from national (from Bangladesh) and regional (from India or Thailand) firms to conduct energy audits of 12 public buildings as discussed above. The firms can submit the bid individually or as joint venture between national and regional firms.**

## **2. Tasks to be performed by the contractor**

The objective of the energy audit is as follows:

- a. To perform energy audits in 12 public buildings (shortlist of 15 buildings at Annex: II), as per approach of the standard ANSI/ASHRAE/ACCA standard 211-2018 (Level-II)
- b. To assess the cost-benefit of the potential energy efficiency measures and energy saving action plan along with possible renewable energy integration option as part of the energy efficiency improvement measure

**The Consultant shall have their own equipment and measuring devices and use them to undertake the energy audit activities of the 12 public buildings.** The Consultant will take adequate measures and will solely be responsible for safety and security of the consultant's staffs. As much possible, the consultant show attempt to illustrate the energy audit with photographs of each of 12 public buildings and existing equipment being used.

The detail approach under the energy audit activities comprise of, but are not limited to:

- a. Visit the premises:
  - (i) Preliminary investigation 12 public buildings and meeting with the facilities management.
  - (ii) Arrange workshop and meeting with the building owners and maintenance team, elaborately share the objective, process, output, and benefit of the energy audit process.
  - (iii) Touring the facilities and identifying all major electrical, mechanical, air conditioning equipment and energy systems.
- b. Current baseline electricity consumption:
  - (i) Collect monthly electricity consumption and cost information for the past 1-3 years.
  - (ii) Analysing the data and graphically presenting the information.
- c. Energy management review
  - (i) Taking stock of all electrical equipment and appliances in the building, and record their energy usage, ratings, hours of usage, specifications, models, and types
  - (ii) Verifying the calculated consumptions with the baseline obtained in (b) (i.e. Current baseline electricity consumption).
  - (iii) Determining occupancy schedules and energy usage patterns and identifying facility or occupancy changes that could affect energy use.
  - (iv) Identifying the high electricity consumption areas, appliances, and equipment within the premise.
- d. Verification of Air Conditioning system performance
  - (i) Calculate the overall cooling load required for the buildings and justify if the current Air Conditioning system is appropriate to maintain a high level of occupant comfort, workers productivity, indoor air quality, and energy efficiency.
  - (ii) Verify if the Air Conditioning system is properly designed, installed, maintained and operated.

- (iii) Identify types (CFC, HCFC, HFC, HC, HFO, Blend, etc) and the total amount of refrigerant charged inside the air conditioning system of individual building, estimates of the leakages based on O&M experiences and access the total amount of direct and indirect GHG emission.
- (iv) Evaluate the financial feasibility to retrofit or replace existing inefficient chiller, compressor, fans, and split/window-type air conditioners with green cooling technology (high energy efficiency and HFC-alternative low GWP (<10) refrigerant based solutions, central VRF cooling systems).

An initial information on HVAC system is presented available at the shortlisted buildings is attached at Annex -2.

#### e. Building envelope audit

The building envelope consists of those elements of a building that enclose conditioned spaces through which thermal energy may be transferred. The buildings envelope audit requires gathering the following data:

- (i) Building characteristics and construction
  - Building orientation
  - Glazing orientation and cooling zones
  - Building floor, wall, and ceiling construction details
- (ii) Window and door characteristics
  - Frame type
  - Window and door area
  - Estimated percentage of gross wall area
  - Single or double glazing, u-value
  - Glazing coatings
  - Operable windows
  - Alignment of operable windows
  - Cracked or broken panes
  - Weather-stripping condition
  - Daylighting
- (iii) Insulation status
  - Type, thickness, and location of the existing insulation
  - Age and condition of the roof
  - Colour of the roof membrane
  - Damaged or wet insulation
  - Insulation voids

Based on the building envelope data prepare an initial technical and economical assessment including reduction of heat loss through the improved building envelope, replacement of existing air conditioning/refrigeration technologies and lighting systems with more efficient and climate-friendly available options.

#### f. Energy Saving Plan

- (i) Outline a staged approach for the buildings to undertake in order to achieve energy savings and propose alternative modalities and energy sources.
- (ii) Identify short term / long term energy efficiency measures ranging from the least to the most capital intensive options to reduce the operational costs and greenhouse gas emissions of the building operations.
- (iii) Integrate renewable energy components (i.e. solar rooftop etc) into the techno-commercial feasibility study to reduce the dependency on grid electricity
- (iv) Undertake overall cost-benefit analysis of the proposed approaches.

## **Expected outputs:**

12 energy audit reports with assessment of the existing operational performance on energy and management characteristics of each building. The individual report should contain at a minimum the following:

1. Calculation of existing building energy intensity.
2. Inventory of energy consuming equipment including high energy consuming equipment
3. Review of purchased fuels sources
4. Review of utility bills and tariffs imposed
5. Review of operational procedures and constraints
6. Review of maintenance contracts
7. Review of maintenance reports
8. Review of organization chart
9. Review of maintenance budgets
10. List of energy efficiency equipment already in use
11. Details about the lighting (operating schedules, zoning, lux levels, power densities) Use of pumps and motors, generators etc.
12. Calculation of Small power and plug loads
13. Presentation of lifts and escalators (operating schedule, harmonics, motors)
14. Electric supply and distribution (distribution profile, harmonics, power quality, power factor, maximum demand)
15. Review of building orientation and landscape, shading/ glazing level, window design of the building envelope
16. Review of building air conditioning and refrigeration system (fan coils, air handling units, pumps, compressor coefficient of performance, temperature, carbon dioxide levels, relative humidity levels, and air change)
17. Review of no cost, low cost, and medium and high-cost investment-grade measures
18. Potential energy savings including cost-savings and the amount of GHG reduction including from refrigerant change
19. Recommend and justify with a cost-benefit analysis of using renewable energy sources (i.e. roof top solar panel) best fitted with the selected public buildings to reduce dependency solely on the grid line.
20. Include enhanced financial analysis tools such as life cycle cost, Net present value, Internal Rate of Return, payback period to produce detail investment analysis

Based on the finding of the energy efficiency study a stakeholder validation meeting needs to be conducted with the concern primary and secondary stakeholders of the projects. The specific outputs of the validation meeting will be to:

1. Present the findings of the energy audits reports to the concerned stakeholders
  - to validate the energy audit reports
  - to secure stakeholder awareness to implement the proposed energy efficiency measures.
2. Finalize the energy audit reports by incorporating different suggestions from GIZ and SREDA and also from the Stakeholder Validation Workshop.

**Along with Final Energy Audit Reports, the Consultant needs to provide in addition, an Executive Summary (max. 10 pages) illustrating summary of the energy audits with energy efficiency potential and investment requirement, and implementation recommendation for each building.**

Certain milestones, as laid out in the table below, are to be achieved by certain dates during the contract term, and at particular locations:

<b>Milestone</b>	<b>Deadline/place/person responsible</b>
Inception report – outlining in detail the work/activities to be undertaken by the consultant including methodology, implementation plan, and timelines. It should also include an overview of the narrative summarizing the consultant’s understanding of the scope and the intended goals of the energy audit and an outline of the final report	2 weeks after contract signing
Inception Workshop at Dhaka	2 weeks after contract signing
Submission of draft energy audit reports and presentation on 6 buildings.	2 months after contract signing
Submission of draft energy audit reports and presentation on the remaining 6 buildings.	3.5 months after contract signing
Stakeholder Validation workshop at Dhaka	4 months after contract signing
Revised final energy audit report submission – based on feedback on the draft report from the stakeholder validation workshop and feedback from GIZ, AIB, SREDA, Bangladesh University of Engineering and Technology (BUET).	4 months after contract signing
an Executive Summary (max. 10 pages) illustrating summary of the energy audit with energy efficiency potential and investment requirement, and implementation recommendation	4 months after contract signing

Envisaged start of assignment: From 1<sup>st</sup> of July 2020. Due to formal reasons, the initial contract period can only be concluded until end of August. A cost-neutral extension **probably up to December 2020** is foreseen depending upon approval of the commissioning party.

### 3. Concept

In the bid, the bidder is required to show how the objectives defined in Chapter 2 are to be achieved, if applicable under consideration of further specific method-related requirements (technical-methodological concept). In addition, the bidder must describe the project management system for service provision.

#### Technical-methodological concept

**Strategy:** The bidder is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 2). Following this, the bidder presents and justifies the strategy with which it intends to provide the services for which it is responsible (see Chapter 2).

The bidder is required to present the actors relevant for the services for which it is responsible and describe the **cooperation** with them.

The bidder is required to describe the key **processes** for the services for which it is responsible and create a schedule that describes how the services according to Chapter 2 are to be provided. In particular, the bidder is required to describe the necessary work steps and, if applicable, take account of the milestones and contributions of other actors in accordance with Chapter 2.

The bidder is required to describe its contribution to knowledge management for the partner and GIZ and promote scaling-up effects (learning and innovation)

## Other specific requirements

The working languages for the purposes of this assessment are Bangla and English, thus expertise in both languages should be reflected in the team. **While the final audit reports will be formulated in English - the spoken language during the energy audit activities and the target audience at the stakeholder workshop is largely Bangla.**

**In case of joint venture between national and regional firms/consultant, it should be clearly mentioned the name and details of the lead implementation firm and need to provide the joint venture agreement with the bidding documents.**

**The bidder has to propose an alternate project management concept in the bid, in case international expert (s) is unable to come to Bangladesh due to COVID-19 restrictions imposed either by respective governments or by GIZ or COVID-19 related restrictions continues in Bangladesh during contract period.**

## Project management of the contractor

- The contractor should show a clear understanding of the assignment based on the ToR, and other related documents.
- Participate in an inception meeting with GIZ and SREDA
- Organize two workshops (inception workshop and stakeholder validation workshop) at Dhaka. Only the workshop venue will be provided by GIZ.
- The proposal should contain a detailed timeline showing the number of days required for different stages of the work and the time involvement of different experts.
- All queries/requests to GIZ during implementation shall be made in written format. The contact information will be provided during finalisation of Contract.
- The contractor is responsible for selecting, preparing, training and steering the experts (international and national, short and long term) assigned to perform the advisory tasks.
- The contractor makes available equipment and supplies (consumables) and assumes the associated operating and administrative costs.
- The contractor manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ as per contract. The contractor reports regularly to GIZ in accordance with the AVB of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH from 2018.

In derogation from GIZ AVB, the contractor makes contributions to reports to GIZ's commissioning party instead of submitting its own reports.

**In addition to the reports required by GIZ in accordance with AVB, the contractor submits the following reports as deliverables:**

- Inception report (including presentations at the inception workshop) and work plan
- Data collection and report on Energy Audit in selected buildings as per Chapter 2 using following templates mentioned in ASHREA 211-2018 (Level II) Guideline ([https://xp20.ashrae.org/PCBEA/PCBEA\\_Supplemental\\_Files.html](https://xp20.ashrae.org/PCBEA/PCBEA_Supplemental_Files.html))
- Draft energy audit reports along with completed below format available at the ASHRAE standards
  - ASHRAE EEM Summary Tables
  - ASHRAE Formulas and Unit Conversions
  - ASHRAE PCBEA Sample Forms
  - ASHRAE PEA Template
  - ASHRAE Sample End-Use Breakdown
  - ASHRAE 211-2018 Level 2 Report Outline



- Final Energy Audit Report with all above annexes and an executive Summary (max 10 pages) with further recommendation
- Stakeholder Validation Workshop Report including presentation of the workshop

The bidder is required to draw up a **personnel assignment plan** with explanatory notes that lists all the experts proposed in the bid; the plan includes information on assignment dates (duration and expert days) and locations of the individual members of the team complete with the allocation of work steps as set out in the schedule.

The bidder is required to describe its backstopping concept. The following services are part of the standard backstopping package, which (like ancillary personnel costs) must be factored into the fee schedules of the staff listed in the bid in accordance with section 5.4 of the AVB:

- Service-delivery control
- Managing adaptations to changing conditions
- Ensuring the flow of information between GIZ and field staff
- Contractor’s responsibility for seconded personnel
- Process-oriented technical-conceptual steering of the consultancy inputs
- Securing the administrative conclusion of the project
- Ensuring compliance with reporting requirements
- Providing specialist support for the on-site team by staff at company headquarters
- Sharing the lessons learned by the contractor and leveraging the value of lessons learned on-site
- Equipment and other measuring device

#### 4. Personnel concept

The firm will propose a team leader and a team of international and/or local experts following the required qualification mentioned in the terms of reference. The team composition for the assignment should at least include the following:

SN#	Team Members	International	National	Estimated involvement for each energy audit per building	Estimated Number of Days involvement
1	Energy Auditor- Mechanical or Electrical Maximum-1 Person (Team Leader)	X		1-days/building for preparation and desk review; 3-days/building for physical inspection and energy audit; 6-days for Report writing 2-days for workshop	Maximum 56 days
2	Energy Auditor- Electrical or Mechanical (Expert-1) Maximum-1 Person		X	1-days/building for preparation, and desk review; 3-days/building site physical inspection and energy audit; 3-days for report writing 2-days for workshop	Maximum 53 days

SN#	Team Members	International	National	Estimated involvement for each energy audit per building	Estimated Number of Days involvement
3	Short Term Expert Pool –1: maximum 2 including maximum 1 regional expert <b>(Optional)</b>	X	X		Maximum 8 days per Expert
4	Short Term Expert Pool-2: Instrumentation Technician Maximum 1 Person <b>(Optional)</b>		X	3-days at each building site	Maximum 36 days

**Short-term expert pool 1 and 2 will not be a part of technical assessment grid but will be the part of financial evaluation.**

The bidder is required to provide a complete list of personnel who are suited to conduct the study including a team leader. For the positions mentioned above, the requirements are described below:

#### **Team Leader**

##### Tasks of Team Leader

- Overall responsibility for the advisory packages of the contractor (quality and deadlines);
  - Coordinating and ensuring communication with GIZ, partners, and other involved stakeholders in the project;
  - Personnel management, identifying the need for short-term assignments within the available budget, as well as planning and steering assignments and supporting local and international short-term experts;
  - Regular reporting in accordance with deadlines;
  - Finalize activity plan of the assignment and lead the team in carrying out the proposed assignment;
  - Provide complete project implementation framework based on energy audit;
  - Participate in energy audit;
  - Verify the data collection from primary and secondary sources during the energy audit process;
  - Finalize energy audit report with specific recommendations on energy efficiency/saving options and detail investment analysis at standard format accepted by GIZ
  - Participate stakeholder consultation meetings and knowledge dissemination workshops.
  - Provide inputs, as part of the team, in baseline energy consumption analysis, benchmarking, etc.;
  -
- If Team Leader has Mechanical Engineering background:**
- Inputs especially on mechanical components (lift, pump, HVAC equipment, motor, fan or other mechanical equipment) to prepare a report based on energy audit;
  - Recommend best available energy-efficient technologies with estimated investment level to reduce the energy consumption of the mechanical equipment;

**If Team Leader has Electrical Engineering background:**

- Participate in electrical equipment energy audit;
- Verify the data collection from primary and secondary sources during the energy audit process;
- Participate inputs especially on electrical components to prepare a report based on energy audit;
- Collect data about the electrical equipment installed at the buildings including electrical generator, transformer, buss bar, transmission system and identify the potential of energy saving among this equipment;
- Provides inputs, as part of the team, in baseline energy consumption analysis, benchmarking, etc.;
- Identify energy efficiency options on the electrical perspective of the industry;
- Recommend best available energy-efficient technologies with estimated investment level to reduce the energy consumption of the electric equipment;
- Provide technical inputs in the report on energy efficiency measures related to electrical components;
- Recommend the suitable Solar PV panel and associated equipment to check the feasibility of using rooftop solar system at the public buildings;

#### Qualifications of Team Leader

- Education/training (2.1.1): 4 years bachelor degree in mechanical or electrical engineering
- Language (2.1.2): English
- General professional experience (2.1.3): shall have 10 years of professional experience in energy efficiency
- Specific professional experience (2.1.4): shall have 4 years of professional experience in energy auditing in buildings and industries
- Leadership/management experience (2.1.5) : 4 years of management/leadership experience as a project team leader or manager in a company
- Regional experience (2.1.6) : 2 years of regional experience in similar field
- Development Cooperation (DC) experience (2.1.7): None
- Other (2.1.8): Shall have recognized certificate as energy auditor.

#### Soft skills of team members

In addition to their specialist qualifications, the following qualifications are required of team members:

- Team management skills
- Initiative
- Communication skills
- Sociocultural competence
- Efficient, partner- and client-focused working methods
- Interdisciplinary thinking

**Team Leader should be international expert and should have mandatory qualification and experience as mentioned under 2.1.1, 2.1.4 and 2.1.8, otherwise bid will be rejected.**

#### **Expert -1: Energy Auditor-Electrical or Mechanical**

**Expert -1 shall have Electrical Engineering background if Team Leader proposed has Mechanical Engineering background. Or Expert -1 shall have Mechanical Engineering background if Team Leader proposed has Electrical Engineering background. Otherwise Bid will be rejected.**

**Expert-1 should be national expert.**

**If Expert has Mechanical Engineering background:**

- Participate in mechanical equipment energy audit;
- Verify the data collection from primary and secondary sources during the energy audit process;
- Inputs especially on mechanical components to prepare a report based on energy audit;
- Collect data about the mechanical equipment installed at the buildings and identify the potential of energy saving among this equipment;
- Provides inputs, as part of the team, in baseline energy consumption analysis, benchmarking, etc.;
- Inputs especially on mechanical components (lift, pump, HVAC equipment, motor, fan or other mechanical equipment) to prepare a report based on energy audit;
- Recommend best available energy-efficient technologies with estimated investment level to reduce the energy consumption of the mechanical equipment;

**If Expert has Electrical Engineering background:**

- Participate in electrical equipment energy audit;
- Verify the data collection from primary and secondary sources during the energy audit process;
- Participate inputs especially on electrical components to prepare a report based on energy audit;
- Collect data about the electrical equipment installed at the buildings including electrical generator, transformer, bass bar, transmission system and identify the potential of energy saving among this equipment;
- Provides inputs, as part of the team, in baseline energy consumption analysis, benchmarking, etc.;
- Identify energy efficiency options on the electrical perspective of the industry;
- Recommend best available energy-efficient technologies with estimated investment level to reduce the energy consumption of the electric equipment;
- Provide technical inputs in the report on energy efficiency measures related to electrical components;
- Recommend the suitable Solar PV panel and associated equipment to check the feasibility of using rooftop solar system at the public buildings;
- Participate in the stakeholder consultation meetings and knowledge dissemination workshops.

**Qualifications of Energy Auditor-Electrical**

- Education/training (2.2.1): 4 year Bachelor in Electrical or Mechanical Engineering
- Language (2.2.2): English and Bangla
- General professional experience (2.2.3): Shall have 8 years of professional experience in energy efficiency
- Specific professional experience (2.2.4): Shall have at least 4 years of experience in energy auditing in buildings and industries.
- Leadership/management experience (2.2.5): None
- Regional experience (2.2.6): None
- Development Cooperation (DC) experience (2.2.7): None
- Other (2.2.8): Shall have recognized certification as Energy Auditor.

**Short-term expert pool-1:**

maximum 2 (Maximum 1 regional expert, but regional expert is not mandatory)

Short-term expert pool (Building Envelope Specialist, HVAC and Refrigeration Expert, Renewable Energy Specialist, Financial Analyst etc.)

Short Term Expert Pool is optional.

Qualification and experience of Short Term Expert Pool -1 should be adequate and commensurate with the assigned tasks, but will not be part of assessment grid.

### **Short-term expert pool -2:**

(Maximum 1 person)

Short-term expert pool (Instrumentation Technician)

- Use and install different types of equipment to measure the energy performance of the buildings during the energy audit.
- Collect and consolidate the data of energy flow, temperature, humidity, and CO<sub>2</sub> level by using a data logger.
- Collect the current and power consumption data of different electrical equipment by using electrical measuring devices (i.e. Ammeter and Voltmeter, power factor meter).
- Measuring the air conditioning/ HVAC system performance by using Air Velocity measurement interment, thermocouple, psychrometers, etc.
- Measuring and analysis of any other data as required for the assignment

Short Term Expert Pool is optional.

Qualification and experience of Short Term Expert Pool -2 should be adequate and commensurate with the assigned tasks, but will not be part of assessment grid.

However the bidder must provide a clear overview of all proposed short-term experts and their individual qualifications.

## **5. Costing requirements**

### **[A] Assignment of personnel**

Team leader:

Assignment in Bangladesh - maximum for 56 expert days

Energy Auditor-Electrical/Mechanical:

Assignment in Bangladesh maximum for 53 expert days

Short-term expert pool-1:

Assignment in Bangladesh maximum for 8 expert days/expert

Short-term expert pool-2:

Assignment in Bangladesh maximum for assignment for 36 expert days.

The currency of the financial offer could be Euro or USD. Evaluation of the financial assessment will follow the exchange rate mentioned at the following links at the particular day.

<https://ec.europa.eu/budget/graphs/inforeuro.html>

## **[B] Travel**

The bidder is required to calculate the travel by the specified experts and the experts it has proposed based on the places of performance stipulated in TOR and list the expenses separately by daily allowance, accommodation expenses, flight costs and other travel expenses.

In case of international team leader, up to 2 round trip international flights and for other international/regional expert, 1 round trip international flight are expected.

The energy audit sites will be located at Dhaka (possibly total 8 sites), Chittagong (possibly total 2 sites), Rajshahi (possibly 1 site), Kushtia (possibly 1 site).

Up to 3 domestic round trips are expected per expert.

Daily travel expenses can be assumed as 50 Euro per day for rental of cars subject to actual invoice. The total number of travel days shall not exceed maximum field working days of Team Leader.

## **[C] Workshops**

The contractor implements the following workshops:

- Inception workshop in presence of Power Division, GIZ, SREDA, concern ministries, BUET and representative from 12 public building. Estimated participant will be 25-30 persons
- Validation Workshop with Power division, GIZ, SREDA, BUET, representative from the buildings, other stakeholders. Estimated participant will be 60-80 persons

GIZ will provide suitable conference hall for the two workshops. The bidder needs to submit the cost (catering, possibly local travel costs for building owners, equipment in venue) of the inception and the validation workshop without including cost of venue.

## **[D] Communication and Reporting**

The Contractor shall assume maximum 4000 euro as lump-sum for communication and report preparation / submission

Along with soft copies, the bidder will provide 6 sets of published report as per deliverables.

## **[E] Flexible remuneration item**

Flexible remuneration of the contract will be up to Euro 2,000

## **5. Inputs of GIZ or other actors**

GIZ and/or other actors are expected to make the following available:

- Complete list, location and contact person of the 12 public buildings
- Conference hall for the inception and the validation workshop.
- Initial information of 12 selected public buildings as available to GIZ

## **6. Requirements on the format of the bid**

The structure of the bid must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) is to be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). It must be legible (font size 11 or larger) and clearly formulated. The bid is drawn up in English

The complete bid shall not exceed 30 pages (excluding CVs and annexes).

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs shall not exceed 4 pages. The CVs must clearly show the position and job the proposed person held in the reference project and for how long. The CVs are to be submitted in English.

If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment.

Please calculate your price bid based exactly on the aforementioned costing requirements. In the contract the contractor has no claim to fully exhaust the days/travel/workshops/ budgets. The number of days/travel/workshops and the budget amount shall be agreed in the contract as 'up to' amounts. The specifications for pricing are defined in the price schedule. In case of the option (cost neutral extension) becoming effective, there will be a contract amendment based on the rates offered for the first assignment already.

## **7. Annexes**

Annex-I: Fact Sheet of EEPB Project

Annex-II: Short List of the Public Buildings