



MINISTRY OF ENVIRONMENT AND ENERGY

MALE' REPUBLIC OF MALDIVES

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TERMS OF REFERENCE

Selection of a Public Building for Demonstration of Cost Effective Energy Efficiency Renovation and Energy Management

[1st December 2016]

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Project Management Unit

Strengthening Low Carbon
Energy Island Strategies Project



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Introduction and Background

The Government of Republic of Maldives represented by the *Ministry of Environment and Energy* (MEE) has allocated funds under the project Strengthening Low Carbon Energy Island Strategies (LCEI) and intends to procure services of an individual National consultant to conduct “Selection of a Public Building for Demonstration of Cost Effective Energy Efficiency Renovation and Energy Management”.

The Project “Strengthening Low Carbon Energy Island Strategies Project (LCEI)”, implemented by Ministry of Environment and Energy (MEE) with support from UNEP and funded by the Government of Maldives and the Global Environmental Facility (GEF) aims to reduce greenhouse gas (GHG) emissions through energy efficiency in the building sector. The project will focus on increasing energy efficiency in the building sector by developing appropriate policies, guidelines and standards and through public education and advocacy. The project aims to contribute to: (1) the transformation of markets for energy efficient technologies in buildings and the built environment in the Maldives; and (2) the promotion of energy efficiency investments in buildings. The project will not only target energy efficient technologies, but will also promote emerging low carbon energy technologies for the building sector.

Currently, the building sector is not monitored for its energy efficiency performance. Buildings seen in the Maldives are mostly without energy conservation and efficiency measures. During the project development stage, this has been identified as due to the diffused responsibility for energy consumption over the lifetime of the building. International statistics suggest that 40% of global energy is used in buildings and 60% of the world’s electricity is consumed in buildings and the building sector is the largest contributor to global GHG emissions.

Maldives energy supply and demand survey (2010-2012) indicates that specific electricity consumption is highest in the Greater Male’ region, at 2,730.22 kWh/person/year, 1060.27 kWh/person/year for the other atolls. This reflects both the higher level of urbanization in the Greater Malé region, as well as the significance of domestic energy use

Hence, energy efficiency and conservation measures are necessary at the national level and will largely contribute to reduce fossil fuel usage and will reduce GHG emissions.

Scope of Works

The scope of this activity is to assess the following public buildings and select one building for the demonstration of energy efficiency and energy management measures.

1. Green Building (Ministry of Environment and Energy and Environmental Protection Agency)
2. IGMH new building.
3. National Museum building
4. Maldives Meteorological Service building.

Indicative Tasks

The consultant is encouraged to include additional factors in the final report beyond the descriptions outlined below if they believe it will add to the quality of the final deliverables.

1. Review relevant documents including LCEI project document.
2. Identify Building profile –
 - a. Building type
 - b. Year of construction
 - c. Floor area
 - d. Height of the building,
 - e. System of construction (assembly or classical)
 - f. Number of floors
 - g. Weekly operating hours
 - h. Number of employees,
 - i. Number of users,
 - j. Number of computers
 - k. Percentage of space cooled
 - l. Type of cooling
3. Identify Building envelope characteristics – materials used, insulation types and properties, windows, any features on windows, shading, ventilation, roof and roof insulation properties.
4. Determine baseline energy profile of the building - the types of energies being used in the building, the total energy cost (segregated by the types of energies, energy usage pattern over the past one year period, determine the corresponding CO2 emissions and the Energy Usage Intensity of the building.
5. Appliances – stock taking of appliances used in the buildings and their average electrical power ratings

6. Conduct a walk through audit and observe the various operations, focusing on the major energy consuming appliances and assess operating characteristics, usage, operating and maintenance procedures. Identify the energy efficiency measures taken in the building to reduce energy usage.
7. Recommend possible low cost/no cost energy efficiency interventions
8. Recommend possible capital improvements to make the building more energy efficient
9. Simple cost and benefit analysis of the identified energy efficiency/energy conservation measures.
10. Recommend ways to decrease roof heating by assessing the following methods;
 - Roof top solar installation potential: Should conduct a roof load assessment to verify the structural loading capacity of the building
 - Green roof
 - Roof insulation
11. Compare the buildings assessed with an agreed criteria finalized with the client and provide a proper justification for the selection of the building for the demonstration of energy efficiency and energy management measures – Minimum criteria while comparing the buildings are:
 - Ease of public access (for tours after the implementation of energy efficiency measures)
 - GHG reduction potential
 - Wide range of energy efficiency measures can be taken at the building

Reporting Obligation

Regular status updates of work progress must be provided to the Project Management Unit via meetings and/or email.

Deliverables

1. Report: “Selection of a Public Building for Demonstration of Cost Effective Energy Efficiency Renovation and Energy Management”
 - Final report format:
 - The final report must contain appropriate tables of data and graphical presentations of meaningful information gathered from the analysis of data
 - Pictures of places surveyed must be presented in the report to support explanations and recommendations.
2. All data collected for this assignment organized in excel sheets
3. All other evidence, such as pictures, collected during the assignment appropriately organized and labelled.

Duration of the Consultancy

Duration of the assignment is 45 calendar days upon signing the contract.

Requirements for Experience and Qualification

The following are a minimum requirement for the works specified in this terms of reference.

- Minimum Bachelor’s degree in an energy or building services related field such as building services engineering, civil engineering, electrical engineering, , Relevant higher qualifications will score higher marks
- Minimum 3 years work experience in energy sector. Experiences related to energy auditing and the tasks indicated in this assignment must be indicated clearly in the CV.
- Experienced in data analysis – must be specified in the CV
- Must have experience in working with different stakeholders
- Must have excellent presentation and report writing skills.
- Must have excellent written and oral communication skills in both Dhivehi and English

Selection criteria

The following criteria's will be applied during the evaluation of the proposals and attention should be paid while preparing the proposals.

Points

(A) Energy Expert	[100]
Relevant education and qualifications	[50%]
Experience in similar assignments	[50%]
Total A	[]

(B) Work plan	[100]
Work plan of the Assignment	[100]
Total B	[]

$$\text{Technical Score (St)} = A/100*[W1] + B/100*[W2]$$

Weights Distribution

W1	Consultant's qualification and Experience	[80]
W2	Work plan	[20]

The formula for determining the financial scores is the following:

$S_f = 100 * F_m / F$, in which S_f is the financial score, F_m is the lowest price and F the price of the proposal under consideration.

The weights given to the Technical and Financial score are:

$$T = [0.5] * St, \text{ and}$$

$$P = [0.5] * Sf$$

Payment

Payment will be in accordance with the schedule specified below:

REQUIREMENT	ALLOCATION
Submission of Draft Report	30%
Submission of Final report	70%

Additional Information

The Project Management Unit of Strengthening Low Carbon Energy Island Strategies (LCEI) of MEE has overall responsibility for the management of the contract and contractual reporting obligations. The consultant is, however, expected to work closely with the Maldives Energy Authority, Energy Department, Climate Change Department and Ozone Unit of MEE during the course of the assignment.

Documents and data provided by the government for the purpose of this assessment which is not of public nature shall be considered confidential and should not be disclosed to any other party.

All outputs and materials produced as part of this TOR shall be handed over to Project Management Unit (PMU) of Strengthening Low Carbon Energy Island Strategies at the end of the contract and will become the Ministry of Environment and Energy's sole property.

The PMU will facilitate meetings with relevant stakeholders.

Application

The consultant should submit their proposal containing the following (Standard forms provided in Annex 1):

- Completed proposal submission form (**FORM-1**)
- CV of the consultant signed by the consultant him/herself with brief description of any similar consultancy services provided
- The work plan should be consistent with the Work Schedule (**FORM -2**) which will show in the form of a bar chart the timing proposed for each activity.

Submission

Proposals must be delivered in sealed envelopes titled “**Selection of a Public Building for Demonstration of Cost Effective Energy Efficiency Renovation and Energy Management**” to the address below on or before 12th December 2016 at 1100 hours local time. Electronic bidding will not be permitted. Late bids will be rejected. Bids will be opened in the presence of the bidders’ representatives, at the address below on 12th December 2016 at 1100 hours.

Procurement Section

Ministry of Environment and Energy

procurement@environment.gov.mv

Green Building, Handhuvaree Hingun, Maafannu

Male’, 20392, Republic of Maldives

ANNEX 1: STANDARD FORMS

1. STANDARD FORMS

FORM -1: PROPOSAL SUBMISSION FORM

[Location, Date]

To: [Name and address of Client]

Dear Sirs:

I, the undersigned, offer to provide the service for **“Selection of a Public Building for Demonstration of Cost Effective Energy Efficiency Renovation and Energy Management”** in accordance with your Request for Proposal dated [Insert Date] and our Proposal. I am hereby submitting my Proposal; my financial offer is for the sum of **[Insert amount(s) in words and figures (Amount should be quoted in Maldivian Currency)]** which is inclusive of the local taxes.

I hereby declare that all the information and statements made in this Proposal are true and accept that any misinterpretation contained in it may lead to my disqualification.

I undertake, if my Proposal is accepted, to initiate the services and fulfill the requirements of the terms of reference.

I understand you are not bound to accept any Proposal you receive.

Yours sincerely,

Authorized Signature [In full and initials]: _____

Name and Title of Signatory: _____

Address: _____

