



MINISTRY OF ENVIRONMENT AND ENERGY

MALE' REPUBLIC OF MALDIVES

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Development of Energy and Water Saving Guidelines

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Prepared by:

Project Management Unit

Strengthening Low Carbon Energy
Island Strategies (LCEI) Project



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1. Introduction & Background

The Republic of the Maldives has strongly identified their intention to transition to a low carbon economy. As a result, many interventions have been proposed. On an economy-wide basis, the business as usual scenario for GHG emissions show a growth of 92% to 2.5 Mt CO₂-e by 2020, from the estimate of 1.3 Mt CO₂-e for 2009 (Carbon audit, conducted to IPCC standards in 2009). Electricity generation/consumption accounted for 82% of greenhouse gas emissions in the 2009 estimates. Electricity use and its associated diesel consumption is expected to grow strongly: from 79MW in 2010 to 117 MW in 2020, 48% in 10 years (SARI/Energy study). However, building sector projects focus on social housing and housing needs, not on the energy efficiency of these contributions

Maldives faces a particular series of challenges in the building sector, including high import cost of construction materials, historic depletion of natural resources (past use of coral materials in construction works, which is now prohibited by law) and high population density of its capital city Malé with small population groups dispersed across multiple islands and atolls.

The building sector of the Maldives is generally under-investing in energy efficiency and other low carbon energy building technologies due to diffused responsibility for energy consumption over the lifetime of any given building. For example, there are no nationally coordinated efforts to promote energy efficient building and municipal technologies, such as efficient lighting. A comprehensive set of standards, rating systems, market suasion and innovation incentive tools are needed to break the stagnation in progressive improvements. Key constraints to these processes include fragmentation of stakeholders, lack of awareness, lack of means for key decision makers to participate in the global process to design a common benchmarking system, lack of capacity to adequately analyse the needs for policy intervention at local levels, and inadequate capacity to build capacity to collect local level data required for baselines and policy tools, such as information about availability of materials, products, services and the local level of technological development.

The existing policies and regulations lack provisions to encourage adoption of energy efficient design and the use or integration of efficient appliances, including incentives (or ‘push’) for existing building stocks to retrofit towards energy conservation and energy efficiency. The existing policies do not include energy efficiency guidelines or standards for building material

and design, and building construction. Energy efficiency can be promoted under other names - good lighting, natural ventilation, preventing solar heat gain - to achieve EE outcomes. Although there is some awareness within the building design and construction industry of the basic design and construction methods for energy efficiency in buildings, there is room for substantial improvement through the preparation and implementation of guidelines, standards and possibly codes that focus on energy efficiency measures including energy efficient construction materials for new construction.

More than 35% of Maldivians living on Malé, at 18,000 people/km². Over 90% is covered with tightly packed multi-story buildings, and Malé also has the highest per capita utility electricity consumption in the Maldives. As a result, over 70% of all electrical energy is used on Malé, making it the natural choice for an intervention on electrical energy efficiency. Further, a number of substantial building projects have been scheduled for the medium term, providing a great opportunity to improve building stock and avoid ‘lock in’ of high consumption rates.

The Project “Strengthening Low Carbon Energy Island Strategies Project (LCEI)”, is designed with a goal of market transformation for energy efficient technologies in buildings and the built environment in the Maldives; and 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.

LCEI Project is funded by the Global Environment Facility (GEF) and implemented by the MEE with support from UN Environment. The project aims to reduce greenhouse gas (GHG) emissions through energy efficiency in the building sector.

2. Objective

The objective of the assignment is to develop a locally appropriate energy and water saving guideline and certification scheme which can be adopted by financing institutions in assessing approval for beneficial conditions applicable to energy efficiency financing.

Building professionals often have a hard time obtaining information about the relative efficiency and costs of design alternatives, especially when they are working under a tight schedule therefore this guideline is intended to make that information readily accessible.

The energy and water saving guideline will be used by architects, engineers, lighting designers, contractors, building owners, and others making decisions about the design of buildings and their systems.

3. Scope of Assignment

The scope of work involves the following tasks to achieve the objective above;

1. Assessment of local conditions and building systems
2. Development of energy and water saving guideline for retrofits and new buildings
3. Development of energy efficiency compliant certification

4. Indicative Tasks

The following are indicative tasks to achieve the objectives of the consultancy, but are not necessarily limited to these activities:

1. Inception (Stakeholder consultations and inception workshop with stakeholders to agree on the detailed methodology of conducting the assessment. Draft structure/outline of the energy and water saving guideline must be proposed in the inception report)
2. Assessment on local conditions and building systems
 - a. Examine the current building stock in the greater Male' urban area and assess current conditions, materials, etc., and estimate future growth.
 - b. Data collection and information gathering as required to complete the tasks of the consultancy
 - c. Review relevant documents including LCEI project document, Maldives Building Code, Planning Regulations and any other studies of the building sector
 - d. Recommendation on revision of energy efficiency requirements of the existing building code if required
 - e. Survey a statistically relevant random sample of buildings in Male' and Hulhumale' for each target sector [Government buildings, Residential Buildings, Commercial Buildings, Hotels and Guest houses] to establish their baseline energy usage characteristics for each building type and to help prioritise the types of interventions employed by the project

3. Development of energy and water saving guideline for retrofits and new buildings
 - a. The guideline should be developed for the following
 - i. Residential buildings
 - ii. Commercial buildings
 - iii. Government buildings
 - iv. Hotels and guest houses
 - b. The proposed measures in the guidelines should be cost effective and practical improvements under the local conditions for new and existing buildings.
 - c. The guideline should provide examples to achieve the measures proposed in the guideline using currently available technologies in the Maldives.
 - d. The final guideline should be made with appropriate layout and ready for printing with approval from the Ministry.
 - e. Conduct stakeholder consultation workshop (minimum 2) during the development of the guideline
 - f. Conduct a dissemination workshop (1 day) to present the final guideline to stakeholders
 - g. Provide monitoring framework to monitor the extent of usage of the guidelines
4. Development of energy efficiency compliant certification
 - a. Development of certification scheme for buildings and development of process and institutional arrangements for implementing certification systems in the context of Maldives governance arrangements.
 - b. Monitoring method, including indicators for on-going monitoring to ensure certification quality is maintained.
 - c. Conduct stakeholder consultation workshop (minimum 2) during the development of the energy efficiency compliant certification
 - d. Conduct a dissemination workshop (1 day) to present the final energy efficiency compliance documents and certification scheme to stakeholders

5. Deliverables

Deliverable	Delivery Date*
1. Inception report with finalized detailed methodology, work plan, structure/outline of the guideline	1 month
2. Report on local condition and building systems	3 months
3. Energy and water saving guideline for residential buildings 4. Energy and water saving guideline for commercial buildings 5. Energy and water saving guideline for government buildings 6. Energy and water saving guideline for hotels and guest houses	8 months
7. Energy efficiency compliant certification 8. Monitoring plan for energy efficiency compliant certification	10 months
9. Final documents and all raw data gathered for the assessment	11 months
10. Stakeholder dissemination workshops	TBC

* **From the date of contract signing**

6. Duration of the Consultancy

Duration of the assignment is 11 calendar months upon signing the contract.

7. Reporting Requirements

Consultants are expected to work closely with the LCEI Project Management Unit (LCEI-PMU) and Ministry of Housing and Infrastructure (MHI).

The consultants will report directly to LCEI Project Manager.

The consultants shall attend progress meetings once every 3 weeks with the LCEI-PMU. Team members in post(s) under section 8 (Requirements for Experience and Qualification) must participate in the progress meetings. Team members in post(s) under section 8 who are not in Maldives at the time of the meeting shall participate via Skype. Team members in post(s) under section 8 are required to be present in person for the following:

- Inception
- Stakeholder consultations
- Dissemination workshop

For meetings held under this consultancy, the Minutes of Meeting must be provided to the LCEI-PMU within 2 days of the meeting.

8. Requirements for Experience and Qualifications

In executing this TOR, the proponent is expected to meet the following eligibility criteria and should provide CVs and commitment letters of team member(s) meeting the following requirements:

#	Post	Nos
1	Building Energy Efficiency Expert (Team Leader)	1
2	Energy Efficiency Compliance Specialist	1
3	Building sector national expert	1

Details of any other support persons and positions must be included in Standard Forms 3 and 4.

1) Building Energy Efficiency Expert (Team Leader)

- Academic qualification
 - Must have Bachelor's degree in relevant field e.g. Architecture, Energy management, Engineering or related field; Relevant higher qualification will score higher points
 - Professional qualifications related to energy efficiency in buildings.
- Professional experience
 - Minimum five (5) year work experience in the building or energy sector.
 - Specific experience in developing guidelines on building energy efficiency
 - Must have demonstrated experience and abilities to pro-actively lead and coordinate a team, including strong interpersonal skills with ability

to multi-task and maintain effective work relationships with diverse range of institutional partners and undertake complex assignments.

- Must demonstrate experience via links to a sample report of similar work previously conducted
- Must have excellent speaking, reading, report writing and presentation skills in English

2) Energy Efficiency Compliance Specialist

- Academic qualification
 - Must have Bachelor's degree in relevant field e.g. Engineering, Energy Management, Energy Auditing, Building Services Engineering or related field
 - Professional qualification related to energy efficiency in buildings.
- Professional experience
 - Minimum five (5) year experience in the energy or building sector;
 - Experience in energy efficiency building code or compliance development
 - Experience in measuring and verification of energy/water usage in buildings
 - Must demonstrate experience via links to a sample report of similar work previously conducted
 - Must have excellent presentation and report writing skills in English.
 - Must have excellent speaking, reading, report writing and presentation skills in English

3) Building sector expert (National)

- Academic qualification
 - Must have undergraduate qualification in a building related field e.g. Civil Engineering, Architecture, or related field
- Professional experience
 - Minimum three (3) years' work experience in Maldives building construction/design sector
 - Must have excellent working knowledge of building design/construction sector of the Maldives – must be described in the CV
 - Must have excellent communication skills in Dhivehi and English.
 - Must have the ability to work well in a team

9. Evaluation and comparison of proposals

9.1 Preliminary Examination

The Client will examine the proposals to determine whether they are complete, the documents have been properly signed and the proposals are generally in order, and all the documents stated in Section 12 (Application) have been included in the proposal.

Prior to the detailed evaluation, the Client will determine the substantial responsiveness of each proposal to the Terms of Reference (TOR).

If a proposal is determined as incomplete or as not substantially responsive, Client has authority to reject the proposal. Criteria for determining completeness and substantial responsiveness is given in Annex 2.

9.2 Evaluation of Proposals

A two-stage procedure is utilized in evaluating the proposals.

The Technical Evaluation will be completed at the First Stage of the evaluation. The proposals which pass the minimum technical score of **80%** of the obtainable score of 1000 points in the technical evaluation will be considered in the Second Stage of the evaluation.

Financial Proposal will be evaluated in the Second Stage. The proposal with the Lowest Financial Quote (Fq) will get the maximum Financial Score (Sf) of 100 points. The Financial Scores (Sf) of the other Financial Proposals will be computed according to the following formula:

$Sf = 100 \times Fq / F$, in which Sf is the financial score, Fq is the Lowest Financial Quote received and F is the price of the proposal under consideration.

Proposals will be ranked according to the combined Technical Score (St) and Financial Score (Sf) using the weights (T = the weight given to the Technical Proposal; P = the Weight given to the Financial Proposal; T+P = 1) and will be computed according to the following formulae.

$S = St \times T\% + Sf \times P\%$, in which S is the combined score,

Where T% = 70% and P% is 30%

MEE reserves the right to undertake a post-qualification exercise aimed at determining to its satisfaction, the validity of the information provided in the proposal. Such post-qualification shall be fully documented and, among those that may be listed in the Annex 2, may include, but need not be limited to, all or any combination of the following:

- a) Verification of accuracy, correctness and authenticity of information provided by the proponent on the legal, technical and financial documents submitted;
- b) Validation of extent of compliance to the TOR requirements and evaluation criteria based on what has so far been found by the evaluation team;
- c) Inquiry and cross-checking with other previous clients on the quality of performance on ongoing or previous contracts completed;

10. Payment

Payments will be made in accordance with the schedule specified below:

REQUIREMENT	ALLOCATION
Submission and acceptance of inception report with finalized detailed methodology, work plan, structure/outline of the guideline	10%
Submission and acceptance of report on local condition and building systems	15%
Submission and acceptance of report on Energy and water saving guideline	15%
Submission and acceptance of report Energy efficiency compliant certification	20%
Submission and acceptance of report Monitoring plan for energy efficiency compliant certification	
Submission and acceptance of the final report and completion of dissemination workshops	40%
Total	100%

11. Additional Information

The LCEI-PMU of MEE has overall responsibility for the management of the contract and contractual reporting obligations.

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 the LCEI-PMU at the end of the contract and will become the sole property of MEE.

Obtaining any necessary visa and documents are the responsibility of the proponent. MEE will only provide a visa facilitation letter if necessary.

For the dissemination workshop: invitations, catering and venue will be financed directly by the project. This cost should NOT be included in the price quotation.

12. Application

Proponent should submit their proposals containing the following (Standard forms provided in Annex 1):

- Completed proposal submission form ([FORM-1](#))
- Completed financial breakdown form ([FORM-2](#)).
- Brief description of the proponent and an outline of recent similar consultancy services provided along with references.
- A description of the approach, methodology and work plan for performing the assignment covering the following subjects: technical approach and methodology, work plan, and organization and staffing schedule. Guidance on the content of this section is provided in [FORM-3](#). The list of the proposed professional staff team, the positions they would be assigned, and their tasks ([FORM-4](#)). A summary of the work plan must be presented in the format in Work Schedule ([FORM -6](#)) showing in the form of a bar chart the timing proposed for each activity.
- Demonstrations of required experiences listed in this TOR along with detailed CVs of the experts signed by the expert themselves and **letter of commitment from each member to undertake the project** ([FORM -5](#)).
- Required experiences and other experiences relevant to this TOR must be specified separately or highlighted in their respective CVs.
- Copy of Company/Institution Registration
- Copy of GST Registration (if applicable)

13. Queries

For any queries please email to procurement@environment.gov.mv and CC to low.carbon@environment.gov.mv before 2359hrs on 11th February 2018. Answers will be provided to all the queries received before the deadline and will be made available via the Ministry website (www.environment.gov.mv) and Ministry Facebook page (<https://web.facebook.com/environment.gov.mv/>) on 14th February 2018.

14. Submission

Proposals must be delivered in sealed envelopes titled “***Do not Open Before 27th February 2018 at 1100hrs - Development of Energy and Water Saving Guidelines***” and the **submitting party’s name and address** to the address below on or before **27th February 2018 at 1100** hours local time. Electronic submission is not permitted. Late proposals will be rejected. Proposals will be opened in the presence of the proponents’ representatives who choose to be present at the address below at the time of proposal opening.

Procurement Section
Ministry of Environment and Energy
Green Building, Handhuvaree Hingun, Maafannu
Male’, 20392, Republic of Maldives
procurement@environment.gov.mv

ANNEX 1: STANDARD FORMS

1. STANDARD FORMS

FORM -1: PROPOSAL SUBMISSION FORM

[Location, Date]

To: [Name and address of Client]

Dear Sirs:

We, the undersigned, offer to provide the “**Development of Energy and Water Saving Guidelines**” in accordance with your Terms of Reference dated [Insert Date] and our Proposal. We are hereby submitting our Proposal; our financial offer is for the sum of [**Insert amount(s) in words and figures (Should quote the amount in Maldivian Rufiyaa)**] which is inclusive of the all applicable taxes.

We 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 our disqualification.

Proposal validity is for a period of [**Insert number of days, 60 days minimum**] days. If negotiations are held during the period of validity of the Proposal, we undertake to negotiate on the basis of the methodology and proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from Contract negotiations.

We undertake, if our Proposal is accepted, to initiate the services and fulfil the requirements of the terms of reference.

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

We remain,

Yours sincerely,

Authorized Signature [In full and initials]: _____

Name and Title of Signatory: _____

Name of Company: _____

Address: _____

FORM-2: FINANCIAL BREAKDOWN

	Description	MVR
	Total :	
	GST :	
	Total with GST:	

Indicate the total cost with detail cost to be paid in Maldivian Rufiyaa.

Note: The total contract price should be quoted inclusive of Goods and Services Tax (GST) as per the GST Legislation and Circulars where applicable.

*For the dissemination workshop: invitations, catering and venue will be financed directly by the project. This cost should NOT be included in the price quotation.

FORM-3: DESCRIPTION OF APPROACH, METHODOLOGY AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

Technical approach, methodology and work plan are key components of the Technical Proposal. You are suggested to present your Technical Proposal divided into the following three chapters:

- a) Technical Approach and Methodology,*
- b) Work Plan, and*
- c) Organization and Staffing,*

a) Technical Approach and Methodology. In this chapter you should explain your understanding of the objectives of the assignment, approach to the services, methodology for carrying out the activities and obtaining the expected output, and the degree of detail of such output. You should highlight the problems being addressed and their importance, and explain the technical approach you would adopt to address them (including details of any instruments, software, technical formulae, information files and file formats where applicable). You should also explain the methodologies you propose to adopt and highlight the compatibility of those methodologies with the proposed approach.

b) Work Plan. In this chapter you should propose the main activities of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing understanding of the TOR and ability to translate them into a feasible working plan.

c) Organization and Staffing. In this chapter you should propose the structure and composition of your team. You should list the main disciplines of the assignment, the proposed professional staff responsibility.

FORM-4: TEAM COMPOSITION AND TASK ASSIGNMENT

Name of Staff	Position Assigned	Task Assigned

FORM-5: Letter of Commitment

[Date]

[Company Name]
[Road Name]
Male'
Maldives

Re: **Development of Energy and Water Saving Guidelines** , Ref no:

Dear Sir/Madam,

I am writing to confirm my availability to provide services as _____ to the **Development of Energy and Water Saving Guidelines** for the Ministry of Environment and Energy between March 2018 and January 2019.

I undertake, if this proposal is accepted, to complete and deliver the whole of the services assigned to me in the scope of services.

I undertake, if this proposal is accepted upon receipt of the Ministry of Environment and Energy's notice, to commence performance of the services with due expedition and without delay.

Yours sincerely,

Name: _____

Passport /ID card No: _____

Date: _____

Signatory: _____

FORM-6: WORK SCHEDULE

[illegible]

ANNEX 2: EVALUATION OF PROPOSALS

Criteria for Preliminary Examination of Proposals	<u>Document pre check</u> 1. Proposal is received on or before the date and time specified 2. Proposal is properly sealed / un-tampered 3. Proposal bears the (i) name of the submitting entity and (ii) title of the Contract outside the envelope 4. Completed Form-1: Proposal Submission is included in the proposal 5. Completed Form-2: Financial Breakdown is included in the proposal 6. Completed Form-3: Description Of Approach, Methodology And Work Plan For Performing The Assignment is included in the proposal 7. Completed Form-4: Team Composition And Task Assignment is included in the proposal 8. Completed Form-5: Work Schedule is included in the proposal 9. Completed Form-6: Letter of commitment for all the experts as described in section 8 of the TOR is included in the proposal 10. Signed CVs of the key staff is included in the proposal 11. Minimum 60 days proposal validity provided 12. All the standard forms are included (i.e. no standard contents deleted, no reservations added) 13. Proponent's Profile (not more than 15 pages) 14. Latest Certificate of Registration of institution/company 15. GST registration (where applicable) <u>Technical pre check</u> 1. Is the proponent's understanding of the objective of the assignment explained? 2. Is the proponent's understanding of the objective consistent with the objective of the assignment? 3. Is the proponent's approach and methodology explained in detail? 4. Does the approach and methodology address the full scope of requirements of the assignment? 5. Are the problems being addressed through this assignment, identified and their importance explained? 6. Is there an explanation of the technical approach that the proponent will undertake to address the problems 7. Does the work plan include the main activities and their content of the assignment? 8. Does the work plan show phasing, interrelations and milestones of the activities, and delivery dates of reports? 9. Are the work plan and proposed approach and methodology consistent with each other? 10. Is the structure and composition of the team explained? 11. Does the proposed team members' qualification and experience meet the minimum requirements?
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	12. Are the main activities and tasks assigned to members of required qualification/experience? 13. Are the tasks assignment and the proposed methodology consistent with each other? 14. Proposal is strictly for the full scope of requirements (i.e. partial offer is not allowed) 15. There are no exceptional conditions stated that are unacceptable to MEE
Criteria for Essential Eligibility/Qualification of key personnel	Refer to Section 8 of this TOR
Note: 1. If proponents do not meet any of the above listed criteria, their proposal may not be considered for further evaluation. 2. Proponents meeting above listed criteria are required to submit evidences (details / documents) in support – otherwise proposal may be disqualified.	

Summary of Technical Proposal Evaluation Forms		Score Weight	Points Obtainable
1.	Proposed Methodology, Approach and Work Plan	50%	600
2.	Personnel	50%	400
	Total		1000

Technical Proposal Evaluation Form 1		Points Obtainable
Proposed Methodology, Approach and Work Plan		
2.1	To what degree does the proponent understand the task mentioned in this TOR?	100
2.2	Did the proposal address in sufficient detail the important aspects of tasks listed?	120
2.3	Are the different components of this TOR planned to be implemented in a cohesive manner?	100
2.4	Is the conceptual framework adopted appropriate for the task?	90
2.5	Is the scope of task well defined and does it correspond to the TOR?	90
2.6	Is the responsibilities of the key personnel addressed clearly in line with the methodology described	100
	Total	600

Technical Proposal Evaluation Form 2			Points Obtainable
Personnel			
3.1	Building Energy Efficiency Expert (Team Leader)		150
	- Academic qualification	50	
	- Professional Experience	100	
3.2	Energy Efficiency Compliance Specialist		150
	- Academic qualification	50	
	- Professional Experience	100	
3.3	Building sector national expert		100
	- Academic qualification	40	
	- Professional Experience	60	
	Total		400