



**Ministry of Environment and Energy  
Republic of Maldives**

**Development of Data Collection and Management System for Maldives Energy Authority  
Terms of Reference**

**1- BACKGROUND**

Energy sector data collection is a crucial exercise that is being carried out by the Government on a regular basis, not only as a means of assessing the sector performance but also to develop better planning tools to manage and develop the sector in a sustainable manner. Moreover, Maldives has an obligation to report its Green House Gas (GHG) Emissions to the UNFCCC under the Kyoto Protocol which is directly related to energy use. This had resulted in a need to harmonise the energy sector statistical data collection and management process within the government, with the outcome being improved data collection efficiency and improving the quality of statistical reporting.

In order to address the above needs, MEA had developed a web enabled database application where energy sector stakeholders (both private and public) will be able to submit the relevant information online directly. The main types of data collected include (but not limited to) import/export statistics for various types of fuels (for the whole country), electricity production and use (island wise and economic sector wise), transport statistics of islands, energy usage statistics for cooking, large scale industrial activities such as manufacturing, etc.

While the said application had been completed, further improvements to the database structure and long-term operation and maintenance are needed to ensure MEA is able the data collection and analysis process in a sustainable manner.

## **2- OBJECTIVES OF ASSIGNMENT**

The key objective of the assignment is to address existing issues of database and enable full operation of database without errors, with consideration for minor upgrades.

## **3- SCOPE OF WORK**

The assignment will require close coordination with Maldives Energy Authority to successfully complete the assignment.

The scope of this assignment will include the following:

### **T1: Review existing application and provide work plan**

The consultant is required to review all documentation related to the database to understand the structure and its operation. This will include (but not limited to), data structures, user interface, output and reporting formats, security features, and overall performance of the database.

MEA will provide all details of the previous work needed to carry out this task. Furthermore, the consultant is required to identify, in consultation with MEA, the additional modules that need to be added to the database to extend its functionality. Once this is done, the consultant is required to provide details of existing issues with database, the solutions, and next steps. The consultant will then suggest a work plan detailing out how the scheduling of work items, in-line with the scope of works and deliverables defined in this ToR.

The consultant may propose alternative solutions which would need to be agreed with MEA before the commencement of the assignment.

### **T2: Operationalising the database**

Based on the review made under **T1**, the consultant is required to make all necessary amendments to the source code and take the database online on a dedicated webhosting and the successful operation database using data available at MEA, ME, Utilities, etc. and successful demonstration of all features and interfaces of the database. For this purpose, the consultant is expected to assist MEA to assess and update the existing web hosting.

A web-hosting is already acquired by MEA (Hence, the cost should not be borne by the consultant).

Following the successful demonstration, the consultant can add additional modules to the application as determined in **T1**, improve output interface, and other required features to the application. A final demonstration will need to be done once all of these had been incorporated.

### **T3: Conduct training workshops**

Training workshops are expected to be carried out by consultant for all database users including database managers (at MEA) on using and managing the web application/site, as well as stakeholder level users (manly utilities companies who enter the raw data into the database).

#### **T4: Technical support for duration of six months**

After conclusion of T3, the consultant would need to continue to get feedback from users to capture bugs/issues affecting the operation of the database and fixing them on a timely basis. Furthermore, consultant will need to cater for any emergency support and reviews on the database performance on a need basis, as well as backing-up the database on a regular basis, as well as ensuring security of the data.

In particular, the consultant is expected to demonstrate its functioning with 2 complete years of data, which are to be entered through utilities.

The consultant is expected to provide on-the-job training for in-house technical staff for such routine procedures where possible.

The consultant, in general, is required to suggest all necessary details of support needed and provide the same to ensure the database application is fully functional for the contract period and thereafter.

#### **4- KEY DELIVERABLES AND SCHEDULE**

The duration of contract will be 3 months from the commencement of the assignment to provide all key deliverable (up to D5), and another 6 months for the technical support period. The following are the key deliverables and the expected (indicative) submission deadlines. The submission deadlines maybe subject to changes depending on the work plan proposed by the consultant and if acceptable to MEA.

##### **D1: Application and user manual review and proposed changes.**

The key activities specified in T1 would need to be provided in a report format, which would need to include the findings of the overall database review, issues and their solutions, new modules to be incorporated, changes to be made to outputs (especially graphical outputs), and other key tasks needed to upgrade the database.

##### **D2: Revised detailed work plan**

A detailed work plan would need to be paired with D1 as a submission, and this would need to be followed through the assignment up until its completion. The milestones dates may be revised based on findings for T1 and that which is proposed by consultant and agreed by MEA before finalising and submitting the work plan.

##### **D3: Amended/debugged application**

On following the revision/update of the databased, the revised source code and related user manuals (technical and user side) need to be submitted in a useable form. If determined by assessment, the consultant is also required to submit recommended web hosting package (if the current webhosting needs to be upgraded).

##### **D4: Operationalised database**

Consultant will need to take the database live on a dedicated web-hosting, and demonstrate the full working database for MEA and utilities, and show functionality of each page, without any major errors which compromise the functioning of the application.

##### **D5: Training workshops**

At least 3 training workshops need to be held upon completion and demonstration of the web application. One need to focus on dataset administrators and technical personnel (at MEA), one for utility administrators end users, and a general training for MEA technical staff for operating and maintaining the database. This would need to be done in the context of the user manuals and any other materials that maybe provided by the consultant to effectively complete the task.

##### **D6: Technical support**

Upon completion of key deliverable, the consultant is expected to provide technical support until the end of the contract period, when and as required.

<b>Related Task</b>	<b>Deliverable</b>	<b>Mode of submission</b>	<b>Indicative Submission deadline.</b>	<b>Payment Weight (%)</b>
T1	D1 : Application and user manual review and proposed changes	Report (in Word and PDF format)  Presentation (in ppt format) a broad summary of changes made.	Week 3	10%
T1	D2: Revised detailed work plan	Report (in Excel and PDF format)	Week 3	5%
T2	D3: Amended/debugged application and updated manuals	Revised source code and user manuals	Week 12	20%
T2	D4: Operationalised database	Online fully functional database on a designated web hosting.	Week 12	40%
T3	D5: Training workshops	3 x Workshops	Week 14	20%
T4	D6: Technical support	Report covering the tasks lists, and actual support till the end of contract period	End of contract	5%

Furthermore, the deliverables need to be accepted by MEA in writing to as a confirmation of completion. It is also noted here that MEA reserves the exclusive copyrights of any materials provided to the consultant, as well as any materials produced by the consultant under this assignment.

#### **5- FACILITIES TO BE PROVIDED BY CLIENT**

MEA will provide the complete source code, table structures, user manuals, dedicated web-hosting and any other references related to previous work carried out for the database development. Furthermore, MEA will facilitate/arrange any meetings required with the stakeholders.

## 6- AWARDING CRITERIA

The consultants (individual or team) shall be experienced in similar online database development works, preferably statistical related.

- a. To be eligible for this assignment the consultants (or team) it is mandatory to meet the following criteria.
  - i. Must hold a professional certification in web application development and/or database management or relevant fields/thematic areas required to carry out the works as included in the scope of this study, with 5 years' experience
  - ii. Experience and proven competency in system analysis
  - iii. Proven experience and competency in web enabled database development and good experience in using languages such as ASP.Net/C# PHP/MySQL (or similar), and HTML/CSS/Ajax, etc.
  - iv. Fluent in written and spoken English
- b. Additional points will be given for consultants (or team) that has gained experience in energy sector related works.
- c. The minimum pass mark for the evaluation will be **70** marks. Consultants (or team) scoring less than this value will be disregarded.

## 7- REPORTING

The consultant is expected to work closely with the Maldives Energy Authority and will report directly to the persons designated during the assignment. The consultant will also be required to submit weekly summary of key work done, challenges identified and how they can be addressed.

## 8- SELECTION CRITERIA

The consultants will be selected based on the following criteria.

Criterion	Weightage
Experience in development of databases involving extensive data analysis and verification	40 points
Academic qualifications	10 points
Proposed work plan/schedule	10 points
Proposed financial values	40 points

## **7. APPLICATION SUBMISSION**

Interested parties may submit their proposals on a sealed envelope indicating the following:

- Technical proposal stating the approach to be used for the work specified in the terms of reference, including a proposed work plan for the tasks with indicative/proposed timelines;
- Proposed financial value for the assignment
- Curriculum Vitae (CV) demonstrating the relevant experience related to the project
- Certified copies of academic certificates;

Proposals should be submitted at the following address:

Maldives Energy Authority  
Handhuvaree Hingun, Maafannu,  
Male', 20392  
Republic of Maldives,  
Phone: 3019100  
secretariat@energy.gov.mv