



MINISTRY OF ENVIRONMENT

MALE' REPUBLIC OF MALDIVES

Announcement Reference No: (IUL)438-CCD/438/2019/60

**Procurement of national consultancy services to support collection of
marine current data**

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1. Introduction

The Ministry has received assistance from Italian Ministry of Environment, Land and Sea towards implementing its climate actions and intends to apply part of the proceeds to conduct assessments on marine energy potential in the country. The assessment will facilitate to perform a detailed assessment of the energy potential residing in the marine currents in the Maldives archipelago. It will also support to evaluate technological solutions to exploit it.

The study will be conducted by Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA). To this end, Ministry of Environment is seeking a national consultancy firm to support international consultants to execute the works related to data collection and logistics.

2. Objective

The main objective of this consultancy is provision of technical and logistical support to collect marine current data from selected sites in Male' (Kaafu) Atoll.

3. Scope of Assignment

The consultants are expected to perform the following works;

1. Provision of logistical and technical support for deployment, retrieval and maintenance (e.g. change batteries) of instruments for measuring the currents in 4 selected sites in Kaafu Atoll (short-term ADCP deployments) and in 1 site representative of the seasonal cycle in the area (long-term ADCP deployment). The use of these instruments will also provide validation of the numerical simulations.
2. Support international consultants on provision of data from selected sites of the marine circulation in the Maldivian archipelago and in sites to be selected in Kaafu Atoll.
3. Support international consultants on provision of data from selected sites to develop high resolution models to individuate potential sites for energy extraction.

4. Deliverables

Deliverable
1. Assembling, deployment, retrieval and maintenance of the two ADCPs (long-term and short-term) at selected sites as detailed in the Deployment Schedule (see Paragraph 4 below).
2. Detailed methodology for data collection in consultation with Mo Environment and ENEA
3. Raw data sheets and processed data reports

5. Deployments schedule

Prior to the ADCPs deployments (see below), the consultants are expected to perform an initial test, aimed at verifying all the phases of deployment and recovery of the ADCPs stations. The test will be performed by deploying from the boat an ADCP system in a site close to the harbour of departure (e.g. between Malé and Hulhulé), by acquiring 4-hours of measurements and, finally, by recovering the station by means of the acoustic releaser. Acquired data will then be verified for quality and consistency.

Two ADCPs will be deployed at a maximum water depth of 60 m:

- a “long-term ADCP”, able to record the seasonal current cycle (1-year deployment) at Thulusdhoo. The instrument will be deployed at month 4 of the contract and retrieved after 12 months. No intermediate actions are needed unless of emergencies.
- a “short-term ADCP”, used to explore 4 different sites in total, to cover the south-eastern and south-western sites of Kaafu Atoll and allow predictions based on different monsoon regimes. The instrument will be deployed at the beginning of the project and retrieved after 4 months to be moved to a different site. This action will be repeated to allow the exploration of 4 different sites and will be followed by the final retrieval. To summarise, within the duration of the contract the short-term ADCP will be subjected to 4 deployments and 4 retrievals in 4 different places located in the south-eastern and south-western (between Malé and Hulhulé, and north of Hulhulé) regions of Kaafu Atoll.

All activities will be scheduled as reported in the following table:

Months from contract signing	Days of use of the boat	Aim	Possible deployment site
0	1	Mounting and testing the ADCP systems (deployment, data acquisition, recovery) ENEA technical experts in visit	Between Malé and Hulhulé
0	1	Short-term ADCP deployment at site #1 ENEA technical experts in visit	The exact site will be decided on the basis of the monsoon season
4	1	Long-term ADCP deployment ENEA technical experts in visit	Thulusdhoo
4	1	Short-term ADCP retrieving, download data, replace battery and link of the sound releaser, system moving to site #2 ENEA technical experts in visit	The exact site will be decided on the basis of the monsoon season
8	1	Short-term ADCP retrieving, download data, replace battery and link of the sound releaser, system moving to site #3 ENEA technical experts in visit	The exact site will be decided on the basis of the monsoon season
12	1	Short-term ADCP retrieving, download data, replace battery in the ADCP, replace battery and link of the sound releaser, system moving to site #4	The exact site will be decided on the basis of the monsoon season
16	2	Long-term ADCP recovery Short-term ADCP recovery ENEA technical experts in visit	-
Total no of days of use of the boat	8		

6. Ship requirements

For the deployment and retrieve of the systems at the target sites a boat is required. The boat employed needs to be equipped with:

- a winch able to lift at least 200 Kg of weight,
- a GPS and an Echo Sounder to identify the correct site for deployment,
- a dry and clean place where to open the instrument cases for battery change and data download from ADCPs.

7. Workshop requirements

The preparation of tripods requires the use of a mechanical workshop to make:

- some drill holes to adapt the 27 kg lead ballasts to the feet of the tripods,
- to prepare a steel bracket to connect the pop-up buoy to a leg of the tripod and making it stay in the upright position,
- to adapt the 4.5 kg lead ballast to the bottom side of the ADCPs.

8. Transportation requirements

The availability of a pick-up or a van is required for moving the tripods between the workshop, the ship and the working room.

9. Duration of the Consultancy

Total time to undertake the assignment shall be a period of 20 calendar months after signing of the contract agreement.

10. Reporting Requirements

The assignment shall be supervised through the Project Director to be appointed by Director General of climate change department with technical staffs of the same department and other departments such as Energy whose duties will be amongst others, provide and advise: on technical inputs into the work of the consultant, quality checks on compliance with consultancy terms of reference (ToR) and make recommendations

- The technical staffs lead by Project Director will provide guidance and all related approvals of deliverables of the consultancy.
- The consultant shall be responsible for their own office and technical equipment (except current meters) unless agreed otherwise.

11. Requirements for Experience and Qualifications

The consultancy firms need to propose the following team members to perform the assignment. The bids will be evaluated based on the expertise and experiences as stated below.

I. Team leader

The proposed team leader must have relevant qualification, experience and highly motivated and capable of working independently. Ability to work with a wide variety of people from government agencies, private sector, and research institutions.

In addition, the lead consultant must possess:

- A university degree in relevant field with extensive experience in marine resource assessments or in similar assignments
- Demonstrated experience and hands on training on measuring ocean currents by utilizing advanced technologies;
- Proven experience and record in environmental data management would be an asset
- Professional certificate on diving is a must.
- Strong communication skills
- Strong interpersonal and facilitation skills
- Good written and spoken Dhivehi and English.
- Proven ability to work well under pressure and meet strict deadlines.

II. Environmental Data analyst

Environmental data analyst is expected to facilitate data collection and analysis. The analyst is required to meet the following criteria and skills

- Bachelor's degree or Diploma in related field
- Ability to understand data management using excellent computer skills to create spreadsheets and databases
- Ability to be detail oriented and organized with expert problem solving skills
- Ability to work efficiently independently or on a team
- Possess knowledge of GIS (Geographic Information System) and other statistical software
- Collect significant amount of data pertaining to environmental topics; both quantitative data and qualitative data are often required
- Write reports and articles, including graphs, maps and drawings
- Apply testing and statistical analysis to the environmental data to produce results
- Make predictions and recommendations based on information collected
- Be willing to work in the field.
- Good communication skills

III. Diver

An experienced and qualified diver with minimum Dive Master Certification need to be proposed under the assignment. The diver is expected to perform all duties associated with deployment and retrieving of the equipment (current meter and related facilities). He/She is also expected to work with international experts.

12. Evaluation of proposals

The following criteria will be used for evaluating the proposals.

Criteria	Weightage (%)
Educational qualification of team leader	10
Experience of team leader	10
Experience of key experts (<i>Based on valid reference letters and</i>	20

<i>CV) (2% per year)</i>	
Firms previous experience in similar assignments <i>(to be assessed based on completed and ongoing assignments)</i> 5% per project above MVR 50,000.	40
Quality of the methodology proposed for the assignment	10
Proposed facilities to perform the works. <i>(details on the marine vessels and other facilities available for the work)</i>	10

The minimum technical score (St) required to pass is 70.

After the technical evaluation is completed, only the submissions which score 70 or above of the total marks available for the technical criteria will be eligible to have their financial proposals opened.

The lowest evaluated Financial Proposal (Fm) is given the maximum financial score (Sf) of 100. The formula for determining the financial scores (Sf) of all other Proposals is calculated as follows:

$S_f = 100 \times F_m / F$, in which “Sf” is the financial score, “Fm” is the lowest evaluated Financial Proposal, and “F” the price of the Proposal under consideration.

Proposals are then ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = 80; F = 20) $T + F = 100$ as follows: $S = St \times T\% + Sf \times F\%$.

13. Payment

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

REQUIREMENT	ALLOCATION
Submission of detailed methodology of work and work plan	10%
Deployment of current meters	20%
Submission of data sets and sheets after each monitoring (8 monitoring visits are expected)	20%
<u>Short-term stations, 4 stations</u> Submission data sheets after each monitoring trip (8 monitoring trips X 4 locations)	20 %
<u>Long-term stations, 2 stations (Thulusdhoo and Western side of the Atoll)</u> Submission data sheets after each monitoring trip (12 trips X 2 locations)	20%
Total	100%

14. Additional Information

The Climate Change Department 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.

The exact GPS positions of the deployment sites are expected to be finalized at a later stage.

The Ministry will provide Aquatic Doppler Current Profilers (ADCPs) required for the assignment.

The following documents will provide background information about the assignment and related tasks.

“DoW OPERATE” ENEA

“D.3.1.1-Report on the characteristics of ADCPs and bottom mount systems to be purchased and deployed” ENEA

15. Application

Interested consultants shall submit their proposals containing the following

- CV of the team leader and team members as per the ToR
- Proposed methodology
- Valid reference letters from the clients for the relevant assignments carried out in the past.
- Attested copies of educational qualifications
- Copies of national identity cards of team members
- Total cost of the assignment with cost breakdowns for all assignments as indicated in the deliverables
- An updated profile of the company including similar assignments completed in past with completion certificates from clients (related assignments only), and relevant facilities available to carry-out the task.

16. Queries

For any queries please email to procurement@environment.gov.mv and CC to climate@environment.gov.mv before 14:00hrs of Maldives standard time on 1st April 2019. Answer will be provided to all the queries received before the deadline and will be made available via the Ministry website (www.environment.gov.mv) on 2nd April 2019.

17. Submission

Proposals must be delivered in sealed envelopes titled **“Do not Open Before 04th April 2019 at 1100hrs - Procurement of national consultancy services to support collection of marine current data”** and the submitting party’s name and address to the address below on or before **04 April 2019 at 1100**. 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.

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