



Republic of Maldives

**TERMS OF REFERENCE  
FOR  
CONSULTANCY SERVICES**

**to**

**Design an air quality dispersion model  
for Regional Urban Development  
Centres**

Issued by:

Ministry of Environment  
Green Building, Handhuvaree Hingun, Maafannu, Male'-20392  
Republic of Maldives

## **TERMS OF REFERENCE**

### **BACKGROUND**

One of the key targets of the draft Maldives National Spatial Plan is to establish an Integrated National Transportation Network across the archipelago, and relevant works are well underway. Commute-level transportation links are planned, in order to enable the resident population to collectively benefit from the day-to-day services and job opportunities within the cluster. These population clusters, support small groups of islands to form higher communities and function collectively.

This is anticipated to result in a surge of marine transport and construction across the archipelago. According to the National Action Plan on Air Pollutants (2019), the second largest source of primary fine particulate matter was emitted from the transport sector, with 65% contributed from marine transport. Fine particulate matter is extremely harmful to human health at high levels of short-term exposure, and even from prolonged exposure at low concentrations.

Therefore, in order to reduce the risks of air emissions on human health and the environment, and address the challenges; the Government of Maldives has planned important interventions to manage air quality (AQ), especially in urban areas across the archipelago.

Monitoring is only a single aspect of AQ management; and while the Maldives does not conduct routine monitoring of local air quality, it has been active in shepherding international action for climate change, itself committing to and taking action that has positive impacts for both climate mitigation, adaptation and AQ.

AQ measurements provide information on the nature of the pollution and on the temporal, spatial variation of concentrations and insight into the contributing sources. This information may be used to develop environmental policy and legislation.

However, the design of an air pollution monitoring network should not be undertaken without consideration and resolution of several factors. Extensive planning needs to be done before requirements are firmly established and translated into hardware specifications.

### **OBJECTIVES**

In this regard, the Ministry of Environment is seeking a national and/or international consultant(s) or a firm to conduct an air quality dispersion model for four areas which are part of the Regional Urban Development Centres in the atolls HDh., L., GDh., and S. The study will give information on the expected air pollution levels, high impacted areas and general air pollution background levels, spatial density and number of sampling stations required for each area or selected island.

## **SCOPE AND DELIVERABLES**

In close collaboration with the MoEn and relevant stakeholders as necessary provision of technical support for the tasks listed below

- Collect and interpret data for a dispersion model
- Conduct preliminary meetings with relevant stakeholders and agencies, and conduct site visits as necessary

	<b>Deliverable</b>	<b>Scope</b>	<b>% of payment</b>	<b>Duration</b>
<u>1</u>	<b><u>Report of methodology for modeling/measurements</u></b>	A detailed <b><u>report of methodology for modeling/measurements</u></b> for the following 4 atolls: <ul style="list-style-type: none"> <li>○ HDh., L., GDh., and S</li> </ul>	40%	1 month
<u>2</u>	<b><u>A detailed study</u></b>	A <b><u>detailed study</u></b> using simple measurement instruments or simple dispersion models, for the islands: HDh., L., GDh., and S  which estimates the: <ul style="list-style-type: none"> <li>- magnitude and variation of air pollutant concentrations</li> <li>- availability of supplementary information such as topographical data, population density and spatial distribution, background concentrations, sources, emission estimates, wind speed and direction distribution, dispersion modelling capacity, and others;</li> <li>- accuracy of the estimated concentrations.</li> <li>- spatial density and number of sampling stations required for each island</li> </ul> The estimates will give information on the expected air pollution levels, high impacted areas and general air pollution background levels.  All collected and processed data must be shared with MoEn.	60%	3 months

## **PAYMENT SCHEDULE**

The payment will be released as follows

- a) 40% on timely submission and approval of the methodology report
- b) 60% on timely submission and approval of the detailed study

## CHECK-LIST OF DOCUMENTS TO SUBMIT

- ID card copies (or passport copies if international) of all individuals on the team
- A tentative work plan (which breaks down the activities within the stipulated timeframes given in the table above. Expected commencement date of the consultancy is between 15-30 March 2021 and duration of the consultancy is 5 months from the commencement of the contract)
- Financial proposal with a validity of 90 days (proposed fee must include all travel expenses associated with the assignment and the consultancy fees)
- CVs of all individuals and/or company profile if a firm is applying.
- *\*In case an international bidder is applying:* submit a Letter of Association with the proposal. Contract may only be awarded to the successful applicant if a Joint Venture Agreement is submitted after selection.
- higher degree certificate and transcripts
- Letters of experience
- Any other documents which supports the application

### *\*Joint Venture*

In case a Bidder is not doing business within the Republic of Maldives, the international Bidder is obligated to undertake a joint venture with a registered local business. The contract can only be awarded if the Bidder is represented by a registered local business in the Maldives that is equipped and able to represent the Bidder and engage at a decision-making level.

## QUALIFICATIONS AND EXPERIENCE

	Criteria and scale		Weightage (points)	Max points	Documents evaluated
1.Relevant academic qualification	1	Minimum Bachelor's degree or an equivalent qualification in a scope-relevant field	25	30	based on relevancy of copies of the higher degree certificate and transcript
		Master's degree or an equivalent qualification in a scope-relevant field	30		
2.Relevant experience	2.1	Demonstrated professional or practical experience in atmospheric dispersion modelling, air quality monitoring etc.	25 (5 pts for each)	25	based on letters of experience and/or details of course modules in the transcript, or research paper etc.
		No demonstrated professional or educational practical exposure	0		

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	2.2	Knowledge of atmospheric dispersion models	25 (full pts if condition is met)	25	based on letters of reference/experience and/or details of course modules in the transcript, or research paper etc.
		No demonstrated knowledge of atmospheric dispersion models	0		
	2.3	Any relevant experience working with developing countries or Small Island Developing States	10 pts for each experience)	20	based on letters of experience
Total		<i>(Minimum technical score required to pass: 65/100)</i>		100	

Applicants achieving the highest combined weighted technical and financial score shall be selected

$S_f = 100 \times F_m/F$ , in which

$S_f$  denotes the financial score of the proposal under consideration;

$F_m$  is the price of the lowest price proposal;

$F$  denotes the price of the proposal under consideration.

Proposals will be ranked according to their combined technical ( $S_t$ ) and financial ( $S_f$ ) scores using the weights

$T\%$  = the weight given to the Technical Proposal (60%)

$P\%$  = the weight given to the Financial Proposal; (40%)

$S = S_t \times T\% + S_f \times P\%$ ,

Where  $S$  denotes the total combined weighted technical and financial scores

**SCHEDULE FOR THE ASSIGNMENT**

Duration of the assignment is 4 months from the commencement of the works.

**Duty Station:**

Home-based with site visits as necessary

Appendix 1A - Consultant's Information Form

*[The Consultant shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]*

Date: *[insert date (as day, month and year) of Proposal Submission]*

Procurement Reference No.: *[insert reference number]*

Page \_\_\_\_\_ of \_\_\_\_\_ pages

1. Bidder's Legal Name	<i>{insert Bidder's legal name}</i>
2. In case of JV, legal name of each party:	<i>{insert legal name of each party in JV}</i>
3. Bidder's actual or intended Country of Registration:	<i>{insert actual or intended Country of Registration}</i>
4. Bidder's Year of Registration:	<i>{insert Bidder's year of registration}</i>
5. Bidder's Legal Address in Country of Registration:	<i>{insert Bidder's legal address in country of registration}</i>
<b>6. Bidder's Authorized Representative Information</b>	
Name:	<i>{insert Authorized Representative's name}</i>
Address:	<i>{insert Authorized Representative's Address}</i>
Telephone/Fax numbers:	<i>{insert Authorized Representative's telephone/fax numbers}</i>
Email Address:	<i>{insert Authorized Representative's email address}</i>
<p>7. Attached are copies of original documents of: <i>{check the box(es) of the attached original documents}</i></p> <ul style="list-style-type: none"> <li>- Articles of Incorporation or Registration of firm named in 1, above.</li> <li>- In the case of Bids submitted by an existing or intended JV, an undertaking signed by all parties (i) stating that all parties shall be jointly and severally liable, if so required, and (ii) nominating a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the JV during the Bidding process and; in the event the JV is awarded: the Contract, during contract execution.</li> <li>- In case of government owned entity from the Republic of Maldives, documents establishing legal and financial autonomy and compliance with commercial law.</li> </ul>	

1B - Joint Venture Partner Information Form

*[The Bidder shall fill in this Form in accordance with the instructions indicated below].*

Date: *[insert date (as day, month and year) of Bid Submission]*

Procurement Reference No.: *[insert reference]*

Page \_\_\_ of \_\_\_ pages

1.	<i>{insert Bidder's legal name}</i>
2.	<i>{insert JV's Party legal name}</i>
3.	<i>{insert JV's Party country of registration}</i>
4.	<i>{insert JV's Party year of registration}</i>
5.	<i>{insert JV's Party legal address in country of registration}</i>
6.	JV's Party
<b>Authorized Representative Information</b>	
Name:	<i>{insert name of JV's Party authorized representative}</i>
Address:	<i>{insert address of JV's Party authorized representative}</i>
Telephone/Fax numbers:	<i>{insert telephone/fax numbers of JV's Party authorized representative}</i>
Email Address:	<i>{insert email address of JV's Party authorized representative}</i>
7. Attached are copies of original documents of: <i>{check the box(es) of the attached original documents}</i>	
<ul style="list-style-type: none"> <li>- Articles of Incorporation or Registration of firm named in 2, above.</li> <li>- In case of government owned entity from the Republic of Maldives, documents establishing legal and financial autonomy and compliance with commercial law.</li> </ul>	

