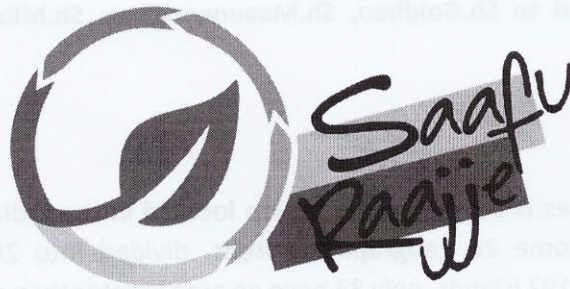




Ministry of Environment and Energy

Male', Republic of Maldives



**SUPPLY AND DELIVERY OF WASTE  
MANAGEMENT EQUIPMENT TO SH.GOIDHOO,  
SH.MAAUNGOODHOO, SH.MILANDHOO,  
SH.KOMANDOO AND H.DH  
NOLHIVARANFARU**

*Funded by*

*the Public Sector Investment Program*

*of the Government of the Republic of Maldives*

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Ministry of Finance and Treasury**





# SUPPLY AND DELIVERY OF WASTE MANAGEMENT EQUIPMENT TO SH.GOIDHOO, SH.MAAUNGOODHOO, SH.MILANDHOO, SH.KOMANDOO AND H.DH NOLHIVARANFARU

## 1. INTRODUCTION

Ministry of Environment and Energy (MEE) on behalf of the Government of Maldives is seeking the assistance of a qualified and competent company/firm for the **Supply and Delivery of Waste Management Equipment to Sh.Goidhoo, Sh.Maaungoodhoo, Sh.Milandhoo, Sh.Komandoo and H.Dh Nolphivanfaru.**

## 2. BACKGROUND

The Republic of Maldives is a small island nation located in the Indian Ocean, southwest of Sri Lanka. It consists of some 26 geographical atolls, divided into 20 atolls for administrative purposes. Of the total 1192 islands, only 33 have an area greater than one square kilometer (km<sup>2</sup>). The total land area is less than 235 km<sup>2</sup>. The population of Maldives is 350,759<sup>1</sup> and is highly concentrated on a few islands. The atolls are ringed by coral reefs that are the seventh largest in the world and among the richest in terms of marine diversity and aesthetic appeal.

An estimated 322,400 tons of solid waste was generated in the country in the year 2013. Current arrangements for solid waste management on inhabited islands are inadequate. Mostly, waste is dumped onto the island foreshore and burned at low combustion temperatures. In addition, approximately 510 tons per year of medical waste are estimated to be produced in the Maldives, whilst uncontrolled disposal of solid wastes threatens the coastal, marine and coral reef ecosystems. The inadequate management of waste thus not only presents a significant environmental challenge, but also results in a blemish on the pristine marine environment expected by tourists. Furthermore, the lack of an integrated and holistic waste management system also hinders the successful realization of government laws and regulations towards waste management.

In this regard, solid waste is the most visible environmental threat to the tourism industry. In a recent survey, solid waste was identified as the most important environmental issue by 24% percent of respondents. The management of solid waste is especially challenging in the Maldives, even more so than other small island states. With a population spread across numerous islands, there is little scope for harnessing economies of scale. Thus, the costs of service delivery are high. With restricted land endowments, the space available for waste disposal is limited, calling for the waste stream to be minimized through such means as recycling and composting. The country's fragile marine ecosystem requires that special attention be given to the choice of technology and system design to mitigate adverse impacts, particularly those that could damage the Maldives' primary asset: its relatively unspoiled marine environment. This combination of risks and challenges are unique to the Maldives and demands specifically tailored solutions to develop a sustainable solid waste management system with stringent criteria applied for site selection, engineering, technology choice and management.



### 3. GOALS AND OBJECTIVES

This project seeks to improve and develop a socially and environmentally sustainable system of solid waste management in the Upper North Region, which reduces the associated environmental and public health risks.

The project is aligned with the National Solid Waste Management Policy to extend services to all inhabited islands, support regional development and encourage private sector participation in waste management service delivery. This project contributes towards maintaining a high level of environmental integrity and sound environmental management in the islands. By improving the manner in which inhabited islands manage their wastes, the project would also support sustainable tourism development objectives.

To be Delivered to the Management	
a Glass to Sand Crusher	1
b Plastic Shredder	1
c Metal Can Baler	1
d Vegetation Shredder	1
e Mechanical Rotary Compost Screen	1
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#### 4. DELIVERABLES

#	Type of Equipment	Qty.
<b>1</b>	<b>To be Delivered to Sh.Goidhoo</b>	
a	Glass to Sand Crusher	1
b	Plastic Shredder	1
c	Metal Can Baler	1
d	Vegetation Shredder	1
e	Mechanical Rotary Compost Screen	1
<b>2</b>	<b>To be Delivered to Sh.Maaungoodhoo</b>	
a	Glass to Sand Crusher	1
b	Plastic Shredder	1
c	Metal Can Baler	1
d	Vegetation Shredder	1
e	Mechanical Rotary Compost Screen	1
<b>3</b>	<b>To be Delivered to Sh.Milandhoo</b>	
a	Glass to Sand Crusher	1
b	Plastic Shredder	1
c	Metal Can Baler	1
d	Vegetation Shredder	1
e	Mechanical Rotary Compost Screen	1
<b>4</b>	<b>To be Delivered to Sh.komandoo</b>	
a	Glass to Sand Crusher	1
b	Plastic Shredder	1
c	Metal Can Baler	1
d	Vegetation Shredder	1
e	Mechanical Rotary Compost Screen	1
<b>5</b>	<b>To be Delivered to H.Dh Nalhivaranfaru</b>	
a	Glass to Sand Crusher	1
b	Plastic Shredder	1
c	Metal Can Baler	1
d	Vegetation Shredder	1
e	Mechanical Rotary Compost Screen	1





## 5. REQUIREMENTS - SPECIFICATION OF EQUIPMENT

### 5.1. Glass to Sand Crusher

### 5.2. Plastic Shredder

### 5.3. Metal Baler

### 5.4. Vegetation Shredder / Chipper

### 5.5. Manual Rotary Compost Screen

\*All equipment provided must be brand new items.

\*The brand name, model number and country of origin must be described in the proposal

\*The supplier must carry out full capacity test run with the presence of a personal from Island council for all the supplied and installed equipment.

\*The supplier must provide operations training to the operators of the equipment.

### 5.1. Glass to Sand Crusher

#	Feature	Requirement
<b>General Information</b>		
1	Crushing Time	0.5 to 1.0 tonne/hour
2	Crushing Ratio	Maximum output grain not more than 0.5mm in diameter
3	Motor	2 to 5 HP
4	Standard Electrical Power	3 Phase electrical, 400V AC, 50Hz
<b>Glass Crusher Dimensions and Weight</b>		
5	Feeder Hopper	Measurement of Feeder mouth diagonal measurement not less than 300mm
<b>Other Specifications</b>		
6	Control	Should have an automatic cut off switch
7	Seal	Air tight seal when feeding the machine and when transferring the crushed material to the collection container
<b>Parts and Documents</b>		
8	Operating Manual	Operating manual for safe operations of the machine under normal operations. The operations manual must include trouble shooting and remedy guide table
9	Maintenance Manual	Maintenance manual covering routine service requirements. The maintenance manual must include a labelled diagram
10	Language of Documents	All literature in the English language
11	Free to customer parts	Free to customer spare parts
12	Replacement Parts	Should be readily available in the Republic of Maldives, South Asia or South East Asia
13	Warranty	Each unit supplied to carry a statement of minimum one year warranty.



## 5.2. Plastic Shredder

#	Feature	Requirement
<b>General Information</b>		
1	Motor	3 to 5 HP
2	Standard Electrical Power	3 Phase electrical, 400V AC, 50Hz
4	Type of Plastic	<b>Can shred all types of plastic</b>
5	Input Size	Capable of shredding plastic material of dimension not less than 600mm during continuous feed operations;
	Shredding Ratio	Largest dimension of output material not more than 10mm
6	Shredding Blade Material	Blades should have a lifetime not less than 5 years and be made of corrosion resistant material
7	Output of Plastic Material	30 – 100 kg per hour
<b>Other Specifications</b>		
8	Safety Measures	“hands free” cutting operation for all plastics and dust curtain fitted at the feed hopper and the discharge
	Control	Should have an automatic cut off switch
<b>Parts and Documents</b>		
10	Operating Manual	Operating manual for safe operations of the machine under normal operations. The operations manual must include trouble shooting and remedy guide table
11	Maintenance Manual	Maintenance manual covering routine service requirements. The maintenance manual must include a labelled diagram
12	Language of Documents	All literature in the English language
13	Free to customer parts	Free to customer spare parts
14	Replacement Parts	Should be readily available in the Republic of Maldives, South Asia or South East Asia
15	Warranty	Each unit supplied to carry a statement of minimum one year warranty.



### 5.3. Metal Baler

#	Feature	Requirement
<b>General Information</b>		
1	Motor	3 to 5 HP
2	Standard Electrical Power	3 Phase electrical, 400V AC, 50Hz
4	Type of Metal	<b>Can compact and bale all types of metal</b>
5	Compaction Compartment Size	Inside volume of feeder not less than 2 square meters
	Bale Tying	Bale tying material readily available in the country
	Bale Ejection	Hydraulic
<b>Other Specifications</b>		
8	Safety Measures	Hands free compacting operation for all metals
	Control	Should have an automatic cut off switch
<b>Parts and Documents</b>		
10	Operating Manual	Operating manual for safe operations of the machine under normal operations. The operations manual must include trouble shooting and remedy guide table
11	Maintenance Manual	Maintenance manual covering routine service requirements. The maintenance manual must include a labelled diagram
12	Language of Documents	All literature in the English language
13	Free to customer parts	Free to customer spare parts
14	Replacement Parts	Should be readily available in the Republic of Maldives, South Asia or South East Asia
15	Warranty	Each unit supplied to carry a statement of minimum one year warranty.





#### 5.4. Vegetation Shredder/Chipper

#	Feature	Requirement
<b>General Specifications</b>		
1	Details	Supplied new. Petrol/diesel driven mobile multi vegetation shredder/chipper (leaf and wood etc.) similar to that offered by Hansa (C21), Ducar 15HP, Echo bearcats (SC5720b) etc. Similar products offered by other manufacturers will be considered without prejudice.
2	Engine	15 -20 HP 4 stroke air cooled petrol engine (Briggs and Stratton/ Kolher/Honda etc or similar) with Manual- or Electric-Start. Diesel equivalent maybe offered.
	Control	Should have an automatic cut off switch
4	Chipping Capacity	100-130mm chipping capacity (approx.)
5	Chipping Method	Blade or disc with hammer operating action
7	Body	heavy duty welded structural steel
9	Mount	Self-mounted or trailer mounted with inflatable tyres
10	Paint and Finish	Painted with primers and powder / epoxy finish to all exposed surfaces
<b>Parts and Documents</b>		
12	Operating Manual	Operating manual for safe operations of the machine under normal operations. The operations manual must include trouble shooting and remedy guide table
13	Maintenance Manual	Maintenance manual covering routine service requirements. The maintenance manual must include a labelled diagram
14	Language of Documents	All literature in the English language
15	Free to customer parts	Free to customer spare parts
16	Replacement Parts	Should be readily available in the Republic of Maldives, South Asia or South East Asia
17	Warranty	Each unit supplied to carry a statement of minimum one year warranty.





### 5.5. Manual Rotary Compost Screen

#	Feature	Requirement
1	Power	Manual
2	Drum Diameter	1000 to 1500 mm
3	Screen Size	10x10mm with 7x7mm supplied sieve insert
4	Rotation	Manual rotation
5	Collection of Material	Allows easy collection of material in a removable tray
6	Body	heavy duty welded structural steel
7	Mount	Self-mounted
8	Paint and Finish	Painted with primers and powder / epoxy finish to all exposed surfaces
10	Operating Manual	Operating manual for safe operations of the machine under normal operations. The operations manual must include trouble shooting and remedy guide table
11	Maintenance Manual	Maintenance manual covering routine service requirements. The maintenance manual must include a labelled diagram
12	Language of Documents	All literature in the English language
13	Free to customer parts	Free to customer spare parts
14	Replacement Parts	Should be readily available in the Republic of Maldives, South Asia or South East Asia
15	Warranty	Each unit supplied to carry a statement of minimum one year warranty.



**IMPORTANT NOTE: If a range is given for the requirement, any value proposed equal to the limits of the range or within that range for any feature will be acceptable**

**Proposal must include;**

- ✓ Operations manual in English of the equipment mentioned in the ToR
- ✓ Technical Specification of the **each** equipment shall be clearly mentioned
- ✓ Manufacturer certificates or warrants of the equipment to be supplied
- ✓ Documents on supplier's financial performance
- ✓ Work plan detailing the schedule of the project to be carried out by the supplier
- ✓ Employment structure (or) a chart to carry out the task of this project detailing how the project be carried out at stages
- ✓ warranty certificates of the equipment as specified in the specification

**Other terms & requirements;**

- Delivery site: A location identified by Secretariat of Island Council
- Installation: Supplier must install the equipment and perform full capacity test run after the installation.
- Supplier shall bear all cost associated in the supply and delivery of the equipment to the final destination as required by the ministry
- Spare part for the supplied equipment shall readily be available from the location mentioned in the ToR
- The Goods supplied under this Contract shall conform to the technical specifications and standards mentioned in the ToR
- The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, free from defects and that they incorporate all recent improvements in design and materials
- The warranty shall remain valid for the period given in the proposal, after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated
- Service: after sales service for free of charge during the warranty period.
- 5% retention of the total contract value will be held for 3 months to measure the quality of the products delivered
- Advance payment: Not applicable
- Upon the Supplier's fulfillment of all the obligations stipulated in the ToR and making a request for payment to the client in writing, accompanied by invoices describing, as appropriate, the Goods delivered payments shall be made by the client after being verified through written letter from each Secretariat of Island Council which equipment is subjected to be delivered.

**Assistance from the Ministry to the Supplier**

- ✓ Custom duty will be exempted

