

# **Tender for Supply and Delivery of Biomass Harvesting, Baling and handling Management Machineries.**

生物质收割，打包，运输，管理设备供应与发货招标

**May 2017**

# **PART 1- SUPPLY REQUIREMENTS**

## **设备供应要求**

### **Introduction and back ground information about Prosopis**

#### **牧豆树介绍**

Prosopis is a wild tree/shrub that grows as a weed and it is one of the invasive plant species which is thorny, fast growing, evergreen/semi-evergreen shrub or tree that grows in semi-arid areas all over the world, which produces a large green crown and develops a deep and well-developed lateral root system.

Prosopis grows as a shrub or tree on average 7 meters and occasionally can reach up to 12 -15 meters in height. It usually has thorns with varying thorn size reaching up to 5 cm. Stems are up to 20 centimeters in diameter.

牧豆树是一种野生的树木/灌木，其生长为杂草，它是入侵植物物种之一，是在世界各地的半干旱地区生长的棘手，生长快速，常绿/半常绿灌木或树木，其中产生一个大的绿色冠，并发展了一个深层次和发达的侧根系。

平均长度为灌木或树木 7 米，偶尔可以达到 12-15 米高。它通常具有不同刺的大小达到 5 厘米的刺。茎直径可达 20 厘米。生长周期 18 个月

Some of the unique characteristics of Prosopis 牧豆树独特特征

It Is drought resistance,抗旱，

Withstands adverse growing conditions,经历不利的生长条件，

Adapts to almost all types of soil and widely varying climatic conditions 适用于几乎所有类型的土壤和广泛变化的气候条件

Easily invades new regions over great distances (given the ease with which seeds are transported) 很容易地入侵新的地区（考虑到种子运输的便利性）

Grows well on both arable and pasture lands.在耕地和牧场上都有良好的发展。

Regrows to its original height after being cut above ground.在地面上切割之后，其原始高度。



骆驼吃牧豆果



牧豆林



准备做木炭用的牧豆树木

The following machineries (description, specification and quantity described) have been selected by the owner for biomass harvesting, baling and handling management. 业主拟采用以下设备

## 1 Method -One to be used in non-plain areas (Lot-1)非平原收割方式

### 1.1 Biomass Collection and Storage management 生物质收储

#### 1.1.1 Hydraulic Excavator with two types of ATTACHMENTS (Hydraulic saw and Mesquite bucket) 液压挖掘机带两种附件（液压锯和梅斯特斗）

**Function:**

- To cut Prosopis/Mesquite trees above ground when hydraulic saw is attached and to uproot Prosopis/Mesquite tree if the mesquite bucket is attached.

如果连接液压锯，切割地上的牧豆树，如果带斗则直接连根拔起。

**Specification 规格**

- 5 ton mini excavator 5吨小型挖掘机

**Sample Pictures 参考图片**



Figure 4: Excavator with Mesquite bucket Attachment 斗式挖掘机



**Figure 5: Excavator with Hydraulic Saw attachment 锯式挖掘机**

**Quantity=One (1)**

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### 1.1.2 **Tractor with attached material handler 拖拉机带运料机**

**Function 功能:**

- The tractor shall function both as material loader to the trailer and as a tower/prime mover for the trailer 拖拉机既可用于装载机，也可用作拖车的牵引机

**Specification 规格**

- 92HP 马力

**Sample Pictures 参考图片**



**Figure 6: Tractor with attached Material grabber (handler) for loading the cut tree to its trailer.**

拖拉机带材料抓取器（处理器），用于将切割的树装载到拖车上。



**Figure 7: Tractor towing the trailer full of biomass 拖拉机拖着充满生物质的拖车**

**Quantity 数量= Two (2)**

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### 1.1.3 Trailor 拖车

### **Function 功能**

- To carry felled and dried tree which shall be towed by the tractor to the grinding station  
将被拖拉机牵引的砍到和干燥的树木运送到研磨站

### **Specification 规格**

- Volume 体积=50m<sup>3</sup>
- There should be side wall bars in order to allow carrying more tonnage of felled tree.(1.5-3tons)  
应该有侧壁条，以便承载更多的砍伐树 1.5-3 吨

### **Sample Pictures 参考图片**

- See Fig 4 above (the trailer being towed by the tractor)上面的图 4（拖拉机拖着拖车）

### **Quantity 数量=two (2)**

## **1.2 Biomass grinding management 生物质磨碎管理**

### **1.2.1 Tub Grinder with built-in Fork Feeder 内置叉式给料机的碎料机**

#### **Function 功能**

- To reduce the size of the dried biomass(tree) to around 5  
将干生物量（树）的大小减小到 5 左右

#### **Specification 规格**

- ✓ Type=horizontal Tub grinder with built in Fork feeder 卧式碎料机，内置叉式进料器
- ✓ Continuous Rotating Wide Reach Grable 连续旋转宽度可达
- ✓ Joystick controls mounted in Seat 安装在座椅上的操纵杆控制
- ✓ All controls in cap and main control board 所有控制在驾驶室和主控板
- ✓ Four season cap raises(minimum 1.2m) and rotates for unobstructed view and operator comfort  
四季操作室提高（最小 1.2 米），旋转，视野无遮挡，操作舒适
- ✓ Capacity (minimum) 10 -15ton/hour.加工能力（最小）10 -15ton / hour。

#### **Sample Pictures 参考图片**





Figure 8: Tub Grinder ready for operation 准备运行的桶式碎料机



Figure 9: Tub grinder under operation 工作下的桶式碎料机

Quantity=Two (2)

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### 1.2.2 Tractor with material handling attachment 拖拉机带物料搬运输机

Function: 功能

- To push the tree transported by the tractor-trailer near to the grinder so that the built-in fork feeder of the tub grinder can access it.将拖拉机 - 拖车运输的树木靠近碎料机，以便桶式碎料机内置叉车可以进入。

### Specification 规格

- 92HP 马力

### Sample Pictures 参考图片



Figure 10: Tractor with attached Material grabber (handler) for pushing the tree to the built-in fork feeder of the tub grinder. 拖拉机带材料抓取器（处理器），用于将树推到桶式碎料器的内置叉式进料器。

Quantity 数量=One (1)

## 1.3 Baling Management 打包管理

### 1.3.1 Mobile Baler (Tractor driven) 移动打包机（拖拉机驱动）

#### Function 功能

- To bale (densify) the grinded material to a minimum density of 450kg/m<sup>3</sup> with rectangular bale dimension of 2000mm\*1200mm\*1000mm. 将碎料捆扎（致密化）至最小密度为 450kg / m<sup>3</sup>，矩形包装尺寸为 2000mm \* 1200mm \* 1000mm。

#### Specification 规格

- ✓ Tractor driven (PTO driven) mobile baler with baling capacity of 10ton/h having bale density of > 450kg/m<sup>3</sup>. 拖拉机（PTO 驱动）移动式打包机，捆包量为 10ton / h，捆包密度 > 450kg / m<sup>3</sup>。

### Sample Pictures 参考图片



**Figure 11: Mobile Baler (N.B although this sample picture is round baler, we need this type of mobile baler which could produce rectangular bale)移动打包机 (N.B 虽然这个样图是圆打包机，但我们需要这种类型的可以生产矩形包的移动打包机)**

**Quantity 数量=One (1)**

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### 1.3.2 Tractor for baler drive 打包机牵引机

**Function 功能**

- To provide power to the baler 为打包机提供动力

**Specification 规格**

- ✓ Horse power enough for driving the baler 足够驱动打包机

**Quantity 数量=One (1)**

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### 1.3.3 Wheel LOADER (mini) with bucket 带斗轮式小型装料机

**Function 功能**

- To feed grinded biomass to the baler machine 将碎料装至打包机

**Specification 功能**

- Bucket volume of 1.5m<sup>3</sup> 斗容量 1.5 立方米

**Sample Pictures 参考图片**



**Figure 12: Wheel loader (Mini) loading biomass to the baler 轮式装载机正将料装至打包机上**

**Quantity 数量= One (1)**

#### **1.4 Loading Management 装运管理**

##### **1.4.1 Loader/Forklift with hydraulic Bale holder/HANDLER (Telescopic handler)带液压夹包/手臂的装载机/叉车（伸缩臂）**

**Function 功能**

- To load baled biomass to transport trucks 将物料装运至卡车上

**Specification 规格**

- Loading capacity 装载量=2 ton
- Maximum Lifting height 最大提高 = 6m

**Sample Pictures 参考图片**



Figure 13: Telescopic Bale Handlers (loaders)伸缩运包机（装载机）

Quantity 数量=One (1)

## 2 Method -2 to be used in plane areas (Lot-2)用于平原地区的方式 2

### Process flow 流程

Method-2 which shall be used in plane areas shall have the following process flow 方式 2 用于平原地区，见以下流程图



砍到/放倒，碎片和手机（袋鼠式）→将碎料装至拖车→用拖车将物料运至集散中心→将碎料装至喂料机准备打包→卡车将物料运至水泥厂等

### 2.1 Biomass harvesting management 生物质收割管理

#### 2.1.1 Kangaro Type Harvesting MACHINE (Felling, Cutting, Chipping, Collecting AND UNLOADING machine)袋鼠式收割机（放倒，砍到，碎料，收集，装料机）

##### Function 功能

- Felling, cutting, chipping, collecting and unloading the prosopis biomass to the tractor trailer.对将牧豆树放倒，切割，破碎，收集和装载至拖拉机拖车。

##### Specification 规格

- Engine Output 发动机输出=475HP 马力
- Average harvesting capacity 平均收割能力 =11 ton/hr 吨/时
- The built in collection bin capacity shall be 25m<sup>3</sup> 附带装斗量 25 立方米

- The single machine should do the jobs(feeling ,cutting, chipping, collecting and unloading to tractor-trailer all together)单机应能一起作（放倒，切割，破碎，收集和卸载至拖车）
- It should be chain mounted/not rubber tire as the biomass has very sharp thorns.由于生物量非常尖锐，所以应该是链式的，而不是橡胶轮胎。

**Sample Pictures 参考图片**



袋鼠式生物收割机

Quantity 数量=One (1)

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## 2.1.2 Tractor 拖拉机

### Function 功能

- The tractor shall be used as a tower/prime mover for the trailer; to transport the chipped biomass to a collection point. 拖拉机用作拖车的动机; 将破碎的生物质运输到收集点。

### Specification 规格

- Horse power 马力=92HP

### Sample Picture 参考图片



箭头所指拖拉机移动拖车

Quantity 数量=One (1)

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## 2.1.3 Trailor 拖车

### Function 功能

- To carry the harvested prosopis juliflora biomass which is unloaded by the kangaroo type harvester. 装载由收割机处理装运的牧豆树物料

### Specification 规格

- Volume 体积=50m<sup>3</sup>



- There should be side wall metal plates in all sides of the trailer that is able to carry the loose partially shredded biomass(or wood chip)在拖车的各个侧面应该有侧壁金属板，能够承载松散切碎的生物质（或木屑）
- The trailer should have some mechanical or hydraulic mechanisms to unload the biomass sideways or in the rear end.拖车应有一些机械或液压机构，以便侧向或在后端卸载生物质。

**Sample Pictures 参考图片**



箭头所指为拖拉机带动的拖车

**Quantity 数量=One (1)**

## 2.2 Biomass Baling Management 生物质打包管理

### 2.2.1 Mobile Baler (Tractor driven)移动打包机（拖拉机驱动）

#### Function 功能

- To bale (densify) the grinded material to a minimum density of 450kg/m<sup>3</sup> with rectangular bale dimension of 2000mm\*1200mm\*1000mm.将碎料捆扎（致密化）至最小密度为 450kg / m<sup>3</sup>，矩形包装尺寸为 2000mm \* 1200mm \* 1000mm。

#### Specification 规格

- ✓ Tractor driven (PTO driven) mobile baler with baling capacity of 10ton/h having bale density of > 450kg/m<sup>3</sup>.拖拉机（PTO 驱动）移动式打包机，捆包量为 10ton / h，捆包密度 > 450kg / m<sup>3</sup>。

#### Sample Pictures 参考图片



移动打包机（N.B 虽然这个样图是圆打包机，但我们需要这种类型的可以生产矩形包的移动打包机）

Quantity 数量=One (1)

### 2.2.2 Tractor for baler drive 打包机牵引机

#### Function 功能

- To provide power to the baler 为打包机提供动力

#### Specification 规格

- ✓ Horse power enough for driving the baler 驱动打包机足够马力

Quantity=One (1)

### 2.2.3 Wheel Loader with bucket 带斗轮式装料机

#### Function 功能

- To feed grinded biomass to the baler machine 将破碎物料装运至打包机上

#### Specification 规格

- Bucket volume of 1.5m<sup>3</sup> 斗量

#### Sample Pictures 参考图片



轮式装载机正将料装至打包机上

Quantity 数量=One (1)

## 2.3 Loading Management 装运管理

### 2.3.1 Loader/Forklift with hydraulic Bale holder 带液压夹包的装载机/叉车

#### Function 功能

- To load baled biomass to transport trucks 将打包料装至卡车上

#### Specification 规格

- Loading capacity 装载能力 =2 ton
- Maximum Lifting height 最大提高= 6m

Sample Pictures 参考图片



伸缩打包臂（装载机）

Quantity 数量=One (1)

### 3 List of Goods and Related Services 产品和服务清单

The bidder need to provide list of goods and related services according to the following format.根据以下格式竞标方需提供产品服务清单

**Procurement Reference Number:**

Item Number 序号	Description of Goods or Related_Service 产品服务描述	Quantity 数量	Unit of Measure 单位
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

*The commodity specific conditions are attached and will form an integral part of any resulting contract.产品特性需附上并构成合同组成部分。*

### 4 Delivery and Completion Schedule 交货与完工计划

The delivery or completion period shall commence from the date of contract award and shall be filled as per the following format. 交付期自合同授予日开始并按以下格式填写

Item Number 序号	Description of Goods or Related_Service 产品服务描述	Delivery Completion period (days/wks/mths) 交期 (天/周/月)	Delivery Point/Site 交货点/场
1			
2			
3			
4			
5			
6			
7			

8			
9			
10			

- The bidder is required to supply and deliver the machineries specified in the TOR with in five (5) months' time. Delivery time shall be considered as one of the criteria for bid evaluation. 竞标者要求在5月内交货，交货时间将是评标标准之一

## 5 Technical Specifications and Compliance Sheet 技术说明与符合表格

Procurement Reference Number:

*Column b states the minimum technical specification of the item(s) required by the Procuring Entity.*

*The Bidder is to complete column c with the technical specification of the item(s) offered and to state whether the offered items "comply" or do "not comply" giving details of the areas of non-compliance.*

*列 b 列出采购实体要求的项目的最低技术规格。*

*投标人将按照提供的项目的技术规格填写栏目 c，并说明所提供的项目是否符合“不符合”的要求，详细说明不遵守情况。*

Item No.	Technical Specification of items required including applicable standards 所需产品的技术规格，包括适用的标准	Compliance of specification offered 规范符合情况
<i>a</i>	<i>b</i>	<i>c</i>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

The detailed technical evaluation will examine the technical specification of the items offered in column c and determine or verify whether this meets the minimum specification required in column b. Bidders must complete column c or the bid will be rejected. Bidders are required to include technical literature to support the details provided in column c.

详细的技术评估将检查列 c 中提供项目的技术规范，并确定或验证其是否满足第 b 列中要求的最低规格。投标人必须填写栏目 c 否则投标将被拒绝。投标人必须包括技术文件以支持 c 栏中提供的细节。

## 6 SUPPLY OF SPARE PARTS, WEAR PARTS 配件，磨损件供应

The bidder shall supply recommended spare and wear parts, spare accessories, and expendable, for all the machinery and electrical equipment including auxiliaries required for commissioning and at least for two years of uninterrupted normal operation of the complete set of machineries. Besides spare parts and wear parts provided by the original equipment manufacturers shall also be supplied.

投标人应为所有机电设备，包括调试所需的辅机，至少两年不间断正常运行的整套机械提供推荐的备件，配件，消耗品。还应提供原设备制造商提供的备件和磨损件。

All spare and wear parts shall be packaged for indefinite storage in the climate at port and at the site. Each part must be marked with description, quantity and purpose on the outside of the packaging. A spare and wear parts list indicating the quantity and the model and serial no. of the machinery and equipment to which they belong shall be prepared according to the format in Section 2 bidding forms.

所有备件和磨损件应进行合理包装以便在港口和现场的气候中无限储存。每个部件必须在包装外面标有说明，数量和用途。备用和磨损零件清单，表明其所属机械设备数量和型号以及序列号的，应按照第二节投标表格的格式编制。

## 7 Drawings 图纸

Procurement Reference Number:

List of related Drawings 图纸列表		
Drawing number 图号	Drawing name 图纸名称	Purpose 目的

## 8 Units of measurement 测量单位

- All units of measurement shall be in the metric system. 所有单位应采用公制

## 9 Standards 标准

In general the supplier need to supply and deliver the machineries in accordance to internationally recognized codes and standards. 总体上供应商应按国际标准供货

The Bidder must clearly indicate the codes and standards used. All references to standards, codes and practices shall be taken to mean the latest edition at the date of the proposal. 供应商应清楚标明使用的标准和准则，且标准应是最新版本。

## 10 Tools and Instruments 工具与仪表

- ✓ All tools and instruments required for the normal and effective maintenance and repairs for each machineries shall be supplied by the bidder.  
每台机器进行正常有效的维护和维修所需的所有工具和仪器由投标人提供。
- ✓ Where possible, the tools shall be in lockable metal tool boxes with two keys.  
在可能的情况下，工具应在带有两个钥匙的可锁金属工具箱中。
- ✓ All tools and instrument shall be new. 所有工具和仪器都应该是新的。
- ✓ The tools in their boxes and instruments, all in good order, shall be handed over to the owner at the time of issue of the taking over certificate. 工具箱中的工具和仪表，一切完好，应在签发移交证书时交给业主。

## 11 PAINTING AND PRESERVATION 喷漆和保护

It is the bidder's responsibility for the supply of painting material and application of paint. The painting work shall be accomplished in accordance with the international standards. 投标人负责油漆的供应和应用。喷漆工作应按照国际标准完成。

The bidder shall undertake application of the different coats of paint and shall take into account the following; 投标人应承担不同涂料的涂装，并应考虑以下情况；

- Pre-assembling operations 组装前操作
- Duration and Condition of transport 运输周期和条件
- Storage before delivery on the site 现场发货前存储
- Risk of scratching on the field 现场刮伤风险

As a general rule, a protective primer coat shall be applied before shipment as required. All exposed machine parts such as shafts, journals etc, shall be suitably protected by anti-rust coatings. The quality of paints will be selected according to the site conditions.

作为一般规则，必须在运输前应用防护底漆。所有裸露的机器部件如轴，轴颈等都应用防锈漆适当保护。油漆的质量将根据现场条件选择。



## 12 Lubricants and Oils 润滑油和油脂

All lubricants and oils required for trail run shall be listed and provided by the bidder and shall also provide equivalent lubricating oil grades available in xxx.运行所需的所有润滑油和油应由投标人列出并提供，并提供在 xxx 可获得的等效润滑油等级。

## 13 Vendor's List 供应商名单

Vendors for all machinery: Bidder shall select reputable or renowned machinery suppliers for the project. Bidder shall provide the list of vendors (manufacturers) based on the following format.

所有机器供应商：投标人应为项目选择知名机构或知名机械供应商。投标人应根据以下格式提供供应商（制造商）清单。

S.No 序号	Machinery Description 机器描述	Vendor's Name 供应商名字	Vendor's Address 供应商地址	Remark 备注