

## TECHNICAL SPECIFICATIONS

### 1. BIODEGRADABLE WASTE SHREDDER

a. Input Capacity: must be able to shred biodegradable municipal waste (BMW), minimum loading rate of 250 kg./hour;

b. Output: shredded material must not exceed 1 cm in diameter size;

Note: The supplier must provide stainless steel screen with maximum perforations of one (1) centimeter diameter.

Guidelines on screens: 1 cm screen perforation for dry feedstock; and 2.5 cm screen perforation for wet feedstock

c. The body, hopper, output chute must be made of mild steel plate with a minimum of 1.2mm thickness painted with green and black color scheme anti-corrosion paint;

d. Shredding Blades:

- Type: Rotary, Swing, Dual Shaft, OR Shear
- Material: tool steel

e. Mobility: must be equipped with a pair of pneumatic tires;

f. Power:

- Diesel driven engine, minimum 12hp
- Equipped with Sealed Maintenance-Free (2SMF) battery;
- Must have a dual start mechanism (push button and manual crank);

g. Safety: must be equipped with emergency stop button with alarm and light indicator;

### 2. COMPOSTER

a. Input Capacity: must be able to load a minimum of 1,000 kgs. per batch per 24 hours operation; Minimum dimension of the drum: L= 240cm; D= 120cm

b. Output: one (1) batch must be able to produce commercial-grade compost (minimum NPK formula of 5/5/5).

Note: Bidder will submit confirmatory analysis results from Fertilizer and Pesticides Authority (FPA) and/or EMB-ERLSD;

c. To attain a homogenous mixture, the composter should have a minimum of four (4) stainless steel baffles with a minimum thickness 1.5mm, and 6 mixing blades installed along the shafting;

d. Must ensure an equal distribution of enzymes to the compost material, composter must be installed with enzyme injection system pipelines for faster decomposition;

- e. Must be equipped with a uniform and sufficient hot air ventilation;
- f. Must have a blower fan provided with the heater with a temperature regulator and connected through a perforated pipe shafting that will equally distribute hot air to the compost material with temperature ranging from 40 -70 degrees Celsius measured by a temperature gauge installed on the composter drum;

***Components of the Composter:***

Heater - maintaining temperature: 40 -70 degrees Celsius measured by a temperature gauge installed on the composter drum; Output= 2.0kw, 40-120 degrees Celsius;

Steel Baffles - minimum of four (4); Stainless steel; min. thickness 1.5mm;

Mixing Blades - minimum of six (6) installed along shafting; Stainless steel;

Drum - L=2.4m; D=1.2m; volume= 2.71 cubic meters;

Enzyme injection system pipelines - Stainless steel; minimum 1” diameter;

Blower fan - 350w; 220v; 60hz; speed 2800rpm;

Loading / Unloading door - Two (2) units stainless doors minimum opening of 50cm x 50cm each; minimum thickness 1.5mm;

Discharge slide - Stainless steel minimum dimension L=245cm; W=150cm

- g. The correct methodology on the determination of the moisture content of the output compost after the process will be tested during the training that will be conducted by the supplier; The ideal moisture content of compost soil products is not more than 20%;
- h. Loading/ Unloading door, Composting chamber, must be made of stainless steel with a minimum thickness of 1.5mm;
- i. Must be equipped with a discharge slide for proper collection of composted material;
- j. Support stand of the composter must be made of minimum 4x4 inches mild steel (MS) angle bar with a minimum thickness of 6mm;
- k. Power : Composter must use sprocket specifications 80x55, 80x17, 60x17, and 60x28, two units speed reducer 120, powered by 3hp, single-phase motor, 220 volts, 60hz

**3. SOLAR-POWERED 4G NETWORK CAMERA KIT (CCTV)**

Allow subcontracting supplier only for CCTV component if the winning supplier is not capable of supplying the said item.

Issue: Area with no internet and signal.

Solution: USB Flash drive monitoring system will be provided by the supplier as compliance with monitoring. Shall contain video recording.

The solution for areas without GSM Signal is Signal Booster, and areas with No Internet Connection is P2P Subscription (then hardwired to CCTV System using UTP Cable with rj45 connector) offered on remote areas.

### **General Specifications:**

- Camera: High-quality imaging with 2 MP (1920 × 1080 @30 fps) resolution, water and dust resistant (IP66), clear imaging against strong backlight due to 120 dB true WDR technology;
- Battery: Battery life up to 5 days if fully charged (when the camera works continuously under the 24-hour average power), Battery life more than 800 cycles, IP 67 Protection, Support battery management, battery display, battery high-low temperature protection, charge-discharge protection, low battery sleep protection, and remote wakeup;
- Solar Panel: 40 W photovoltaic panel supported by 20 Ah chargeable lithium battery;
  - o Wireless (4G) Connection: LTE-TDD/LTE-FDD/WCDMA/GSM 4G wireless network transmission, support Micro SIM card;
- Linkage Method: Upload to FTP/NAS/memory card, notify surveillance center, send email, trigger recording, trigger capture
- Trigger recording: memory card, network storage, pre-record and post-record
- Trigger captured pictures uploading: FTP, SFTP, HTTP, NAS, Email
- Trigger notification: HTTP, ISAPI, Email With sim card: post-paid 12 months

### **Network Specifications:**

- API: Open Network Video Interface (PROFILE S, PROFILE G, PROFILE T), ISAPI, SDK, Ehome
- Network Storage: microSD/SDHC/SDXC card (256 GB) local storage, and NAS (NFS, SMB/CIFS), auto network replenishment (ANR) Together with a memory card, memory card encryption, and health detection is supported
- User/Host: Up to 32 users. 3 user levels: administrator, operator, and user
- Security: Password protection, complicated password, HTTPS encryption, 802.1X authentication (EAP-TLS, EAP-LEAP, EAP-MD5), watermark, IP address filter, basic and digest authentication for HTTP/HTTPS, WSSE and digest authentication for Open Network Video Interface, RTP/RTSP OVER HTTPS, Control Timeout Settings, TLS 1.2
- Web Browser: - Plug-in required live view: IE8+ - Plug-in free live view: Chrome 57.0+, Firefox 52.0+, Safari 11+ - Local service: Chrome 41.0+, Firefox 30.0+

### **Wireless (4G) Connection:**

- 4G Standard (LTE-TDD/LTE-FDD/WCDMA/GSM)
- LTE-TDD: Band38/40/41
- LTE-FDD: Band1/3/5/7/8/20/28
- WCDMA: Band1/5/8
- GSM: Band3/5/8

**Interface:**

- RS-485: 1 RS-485 (half-duplex)
- Communication Interface: RJ45 10M/100M self-adaptive Ethernet port
- 4G: micro SIM card
- Onboard Storage: Built-in micro SD slot, up to 256GB
- Online Upgrade: Yes Dual

**Camera/Video:**

- IR Range: Up to 30 m
- Max. Resolution: 1920 × 1080
- Main Stream
  - 50Hz: 25fps (1920 × 1080, 1280 × 960, 1280 × 720)
  - 60Hz: 30fps (1920 × 1080, 1280 × 960, 1280 × 720)
- Sub-Stream
  - 50Hz: 25fps (704 × 576, 640 × 480)
  - 60Hz: 30fps (704 × 480, 640 × 480)
- Third Stream
  - 50Hz: 1fps (1280 × 720, 640 × 480)
  - 60Hz: 1fps (1280 × 720, 640 × 480)
- Video Compression
  - Main stream: H.265+/H.265/H.264+/ H.264
  - Sub-stream: H.265/H.264/MJPEG
  - Third stream: H.265/H.264
- Video Bit Rate: 32 Kbps to 8 Mbps
  - H.264 Type: Baseline Profile/Main Profile/High Profile
  - H.265 Type: Main Profile
  - H.264+: Main Stream supports
  - H.265+: Main Stream supports
- Bit Rate Control: CBR/VBR
- Stream Type: Main stream/Sub-stream/third stream
- Scalable Video Coding (SVC): H.265 and H.264 support
- Region of Interest (ROI) 4 fixed regions for each stream

Note: Only Solar Powered Security Camera System with Wifi, 4G/LTE, and IP Based Capability is accepted and not the Conventional Analog/Digital-based system to resolve the issue on geographically challenging locations and power outages.

Product (CCTV) must be covered by ISO Certification.

Inclusion of 256GB SD CARD with class speed: C10 and UHS speed: U3 as internal storage of the CCTV that can be copied to USB.

Post Paid Plan (12 months).

#### **4. ACCESSORIES AND CONSUMABLES PER SET**

- a. Must provide inoculants/ enzymes/ additives good for one (1) year operation;

Note: Bidder must provide an adequate supply of inoculants/ enzymes/ additives worth one (1) year based on the utilized quantity during the actual test run.

- b. Must provide personal protective equipment (PPE) per set, which includes but is not limited to the following:

- Three (3) hard hats
- Three (3) industrial gloves
- Three (3) industrial goggles
- Three (3) respiratory gas mask
- Three (3) shovels

- c. Must provide 1 set of spare shredding blades and belt.

#### **5. OTHER REQUIREMENTS TO BE SUBMITTED BY THE BIDDER DURING BID OPENING**

- A. Certification from the manufacturer/distributors that they are in the business of manufacturing/distributing industrial equipment.
- B. For Distributors: Distributorship Certificate from the manufacturer; For Fabricators/Manufacturer: Certificate as Fabricator/ Manufacturer
- C. Certificate of Performance Evaluation from the SLCC client and/or the DENR-EMB Central Office and/or Regional Offices that the products similar to the item to be bid has performed very satisfactorily in service within the past five (5) years. For nonperformance contracts entered with the DENR-EMB, a Certification from the EMB is required that it has been completed and fully delivered from the previous contract.
- D. Bidder must submit confirmatory analysis results from the Fertilizer and Pesticides Authority (FPA) and/or EMB-ERLSD;  
Output: One (1) batch must be able to produce commercial-grade compost (minimum NPK formula of 5/5/5).
- E. Submission of MIRDC Test Results on complete chemical analysis and metal identification test for steel components (tool steel, stainless steel, mild steel) of biodegradable shredder and composter;
- F. Test Report from Agricultural Machineries Testing and Evaluation Center (AMTEC).
- G. Proof of product ISO certification for CCTV.
- H. Guarantee letter from the manufacturer and a local distributor to ensure availability of supplies, parts, and accessories, for at least ten (10) years after the expiration of the warranty period and the supply of concentrated inoculants/ enzymes/ additives.
- I. Authorized Service Center/s: At least one (1) for the region under the jurisdiction of the EMB Regional Office concerned.
- J. Bidders must conduct a site inspection of all delivery sites and submit Affidavit of Site Inspection: 8 Sites

#### **6. OTHER REQUIREMENTS DURING POST QUALIFICATION**

- A. Presentation/Demonstration and test run of one (1) brand new biodegradable waste shredder, one (1) brand new composter, and one (1) brand new Solar Powered 4G

Network Camera Kit within fifteen (15) calendar days upon issuance of Notice of Lowest Calculated Bid to confirm compliance to required capabilities and features;

- B. All incidental and other expenses for the machine testing shall be at the expense of the supplier. The post-qualification shall be conducted in the manufacturer or bidder's facility in the Philippines.
- C. Bidder must provide an adequate supply of inoculants/ enzymes/ additives worth one (1) year based on the utilized volume/ quantity during the actual test run;
- D. Bidder to rectify any deficiencies in the Prototype sample within fifteen (15) calendar days from receipt of Notice to Rectify. Bidder has one chance to rectify;

## **7. REQUIREMENT/S IF AWARDED THE CONTRACT**

Supply, delivery, installation, and testing completion within ninety (90) calendar days after receipt of Notice to Proceed (NTP).

## **8. WARRANTY PERIOD/COVERAGE OF WARRANTY**

- A. All equipment shall have a free ONE (1) year warranty on parts and installation works and THREE (3) years service warranty commencing from the date of Acceptance.
- B. Undertaking to provide a service unit for components that need repair during the warranty period within 48 hours of notification.
- C. Quotation of the Annual Preventive Maintenance Cost after the warranty period expires.
- D. The supplier must provide soft and hard copies of the following manuals upon delivery: (Must be in English)

- Operation Manual (for both wet and dry biodegradable waste)
- Service Manual

## **9. TRAINING**

- A. Undertaking to provide one (1) day product orientation/ training per delivery site for the end-users (maximum of 10 participants).
- B. Conduct of one (1) equipment test run, 3 hours for the shredders, and 24 hours for the composter in the delivery sites.
- C. All feedstocks should be mixed properly using a shovel before the mix of same will be loaded to the composter.

## **10. OTHER REQUIREMENTS TO BE SUBMITTED BY THE BIDDER PRIOR TO ACCEPTANCE**

Successful use of actual equipment passing the minimum capacity and output without technical problems.