

## **PART 1 - GENERAL**

### **1.1 SHOP DRAWINGS AND PRODUCT DATA**

- .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Provide manufacturer's written installation instructions and special handling criteria, installation sequence, cleaning procedures and relamping schedule.

### **1.2 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – Common Product Requirements.
- .2 Deliver materials to site in original factory packaging, labelled with manufacturer's name, address.
- .3 Divert unused metal materials from landfill to metal recycling facility.

### **1.3 ACCEPTABLE PRODUCTS**

- .1 A 'Standard of Acceptance' product is noted herein. Fixtures from other manufacturers may be acceptable provided:
  - .1 Appearances and lighting performance are similar.
  - .2 Quality is equal or better.
  - .3 Lamp criteria remain the same.
  - .4 The fixture is provided with modifications and accessories to provide a complete product in keeping with the intent of the project.
  - .5 Approval in writing is obtained from the Departmental Representative to the supplier/manufacturer 5 days prior to tender closing date.

### **1.4 MEASUREMENT FOR PAYMENT**

- .1 Solar Lights: The supply and installation of materials and equipment required for the installation of three solar lights as noted on the drawings and described herein shall be measured as a fixed price item as indicated in the unit price table.

## **PART 2 – PRODUCTS**

### **2.1 SOLAR LIGHTS**

- .1 Lamps to consist of night friendly, downward pointing light fixtures powered by an attached solar energy collection assembly. Each lamp to be provided with the following features:
  - Pole mounted on an aluminium pole with lamp assembly located at a 6 meter height above ground;
  - Pole top diameter: 70 mm;
  - Material: high quality aluminium alloy, die cast aluminium
  - Life expectancy:  $\geq 50,000$  hrs
  - Working temperature:  $-20^{\circ}$  to  $60^{\circ}$  C
  - Discharge time: 24 hours
  - Lighting Last: 30 s
  - Sensor area:  $< 10$  meters
  - Light distribution: Batwing
  - Light control voltage: 1 V
  - CRI:  $\geq 75$  Ra
  - Colour temperature: 3000 – 6500 K
  - LED quantity: 60 pcs
  - Lithium battery: 340 WH
  - Solar panel: 80 W/18V
  - Lamp power: 40 W
  - Wireless application-Integrated solar panel, LED, lithium battery, micro-controller and other accessories into one system
  - Micro-computer controlled-combining motion sensor system, light control system and time control system.
  - Installation to require no power and no cables.
  - Solar panel angle to be adjustable in vertical and horizontal direction to ensure maximum efficiency of solar energy conversion.
  - Light efficiency to reach 160 lm/w.
  - All components to be of modular design and in standardized production.
  - Capable of working continuously for 2-3 rainy days.
  - TVS lightning protection.
  - Solar panel to have 18% conversion efficiency with tempered glass cover and minimum 20 years life expectancy.

### **2.2 STANDARD OF ACCEPTANCE**

- .1 Standard of acceptance to be ‘Solar Nighthawk Light’ as supplied by SW Energy.

## **PART 3- EXECUTION**

### **3.1 INSTALLATION**

- .1 Locate and install solar lights as indicated. Install lamps in all fixtures.
- .2 Supply, install and secure aluminium lamp posts as required to support and attach solar lights. Attach lamp posts securely to cribwork or other sight features to resist all wind and weather conditions to be expected in area.
- .3 Align lamps to have uniform and consistent light dispersal between units, pointing downward in direction selected by Departmental Representative.

### **3.2 FIELD QUALITY CONTROL**

- .1 Perform all manufacturer recommended commissioning tests to confirm system is operating properly. Have Owner Representative present to confirm results.
- .2 Provide half day training to local maintenance staff in the proper operation, maintenance, cleaning and repair of the system.