

## TECHNICAL SPECIFICATIONS AND OTHER ALLIED REQUIREMENTS

Sl No.	Description of items	Quantity
File No.	PUR/427/EMTRG/RK/E/2023-24	
1	<b>SUPPLY OF FULLY INTEGRATED (All in One) SOLAR DIMMABLE LED STREET LIGHTS WITH MOTION SENSOR</b>  <b>(DETAILED SPECIFICATIONS AS PER ANNEXURE – I)</b>	<b>10 Nos.</b>

### 1. DELIVERY:

The delivery is to be completed within 02-03 weeks from the date of issue of purchase order.

### 2. PAYMENT TERMS:

100% payment shall be paid within 30 days after delivery of Fully Integrated (all in one) Solar Dimmable LED Street Lights with Motion Sensor and acceptance of the material upon submission of claim supported by the acceptance certificate issued by the purchaser.

### 3. BID SECURING DECLARATION FORM:

Bid Securing Declaration is to be submitted by the Bidder as per the format prescribed in the tender document.

### 4. WARRANTY:

02-years warranty for the overall system at site (Replacement/ Rectification of defective item) and Battery Warranty: 05-years to be provided by the supplier from the date of acceptance of ordered goods.

### 5. MANUFACTURER AUTHORIZATION FORM:

Manufacturer Authorisation Form to be provided by the supplier.

### 6. PLACE OF DELIVERY:

RANIPADA, BADAPALASPAL, HARICHANDANPUR, KEONJHAR- 758028, ORISSA

### 7. MAKE IN INDIA CERTIFICATE FOR LOCAL CONTENT (if value above 5.00 lakh)

Certificate for local content to be provided by the supplier in form 14 (Format attached along with Tender Document). Percentage of value addition & Name and address of the factory where the value addition was made should be mentioned clearly in the Form 14.

**TECHNICAL SPECIFICATIONS**

**Supply of Fully Integrated (All in One) Solar Dimmable LED Street Lights with Motion Sensor**

**Quantity: 10 nos**

**1. GENERAL REQUIREMENT**

Fully integrated (All-in-one) Solar Dimmable LED Street Lights consisting of high efficacy LED of 15W, High Efficiency Mono Crystalline Solar PV Module of minimum 40Wp, Lithium Ferro Phosphate battery of minimum 18 Ah capacity with in-built BMS technology, MPPT Solar Charge Controller, PIR Motion Sensor to automatically control the dimming and brightness of light, Aluminium Extruded body with IP65/66 protection of all the components etc are required. **LED luminary and solar panel in separate units are not accepted.** The LED street lights are required to operate at outdoor environment for automatic dusk to dawn operation with minimum of 2 days of autonomy. The system should be maintenance free and all the components should be integrated inside one unit, which should be easy to install on the existing pole at a height of 5-6 meter. The system is required to be supplied at **Keonjhar demo site Orissa, India.**

**2. TECHNICAL SPECIFICATIONS/PARAMETERS**

Sl. No.	Item	Minimum Technical Requirements
1.	LED Light	<ul style="list-style-type: none"><li>High efficiency white Light Emitting Diode (W-LED) of 15 Watt (LED + Driver)</li><li>The LED efficacy should be &gt;125 lumen per watt and the lumens output (luminous flux) of luminaries should be &gt;2000 lumen.</li><li>LED lifetime should be guaranteed 50000 hours or higher</li><li>High power LED of minimum 1 (one) watt each capacity capable to withstand maximum 1 Amp driving current having optical lens angle greater than 120 degree shall be used.</li><li>LED color temperature in the range 5500K-6000 K</li><li>LED chips should be from reputed manufacturers OSRAM / PHILIPS / SEOUL SEMICONDUCTOR/NICHIA/LUMILEDS/CREE/BRIDGELUX/TOYODA GOSEI</li><li>Matching DC-DC LED driver with efficiency &gt;90% (as per IEC 62384)</li><li>LED Chip should be compliance to IES: LM-80</li><li>The luminarie should be designed, manufactured and tested as per LM-79-08 or latest standard by the MNRE/NABL accredited lab</li></ul>
2.	PV Module	<ul style="list-style-type: none"><li>Monocrystalline Solar Photovoltaic module of reputed brand of minimum rating of 40 Wp under standard test conditions</li><li>Cell efficiency should be higher than 17%</li><li>PV module must be warranted for output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.</li><li>The offered module shall be in accordance with the requirements of MNRE.</li><li>PV modules must qualify IEC 61730 Part 1 and Part 2 (test certificates should be provided)</li></ul>
3.	Charge controller /Electronics	<ul style="list-style-type: none"><li>MPPT charge controller</li><li>High efficiency (&gt;95%) to charge the battery faster</li><li>Battery charging time: 6-8 hours or less during normal sunny day</li><li>MPPT should have four stage charging facilities i.e Bulk, Absorption,</li></ul>

		<p>Float and Equalization</p> <ul style="list-style-type: none"> <li>Necessary protection against Short Circuit, reverse polarity for battery and solar panel, over charge and deep discharge protection for battery, over voltage and over current protection from solar PV, Input Surge Voltage etc.</li> <li>Indication for solar charging (GREEN LED), battery low (RED LED).</li> <li>System must have automatic dusk-dawn circuit for switching on/off the LED light without manual intervention</li> </ul>
4.	Battery	<ul style="list-style-type: none"> <li>Lithium Ferro Phosphate (LiFePO<sub>4</sub>) batteries of capacity 12.8V, 18 Ah (min) @ C/10, maximum depth of discharge 90%</li> <li>The battery cycle life should be 2000 cycles at 90% discharge</li> <li>Should have inbuilt battery management system (appropriate over charging, over heating deep discharge protection), with control electronics.</li> <li>The batteries shall be designed to operate from -10 degree C to +55 degree C</li> <li>The batteries should have longer shelf life for storage.</li> <li>The batteries should conform to the latest BIS /International Standards (Test certificates should be provided)</li> </ul>
5.	Autonomy	<ul style="list-style-type: none"> <li>2 days or Minimum 20 operating hours</li> </ul>
6.	Average duty cycle	<ul style="list-style-type: none"> <li>Dusk to dawn (auto dimming to 33% or less after 4 hours of operation)</li> </ul>
7.	PIR Motion sensor	<ul style="list-style-type: none"> <li>LED should glow in full bright mode in first 4 hours</li> <li>After 4 hours, light will dim to minimum 33% power and motion sensor should be activated</li> <li>High quality PIR motion sensor for automatic dimming and brightness of light within the range of 10 m after 4 hours of operation</li> </ul>
8.	LED body and housing	<ul style="list-style-type: none"> <li>Aluminium Extruded housing/body</li> <li>Anodized/powder coated</li> <li>Complete sealing from dust and rain</li> <li>The design should be IP 65/IP 66 compliant for outdoor protection of all the components</li> </ul>
9.	System warranty	<ul style="list-style-type: none"> <li>02 years for the overall system at site (replacement/rectification of defective items)</li> <li>Battery warranty : 05 years</li> </ul>
10.	Supply and installation	<ul style="list-style-type: none"> <li>The LED systems are required to be supplied and delivered at project site in Keonjhar (RANIPADA, BADAPALASPAL, HARICHANDANPUR, KEONJHAR, Orissa)</li> <li>The LED street lights shall be installed on existing poles of 5-6 meter height.</li> <li>Supplying poles and installation is not in the scope of supplier/bidder.</li> </ul>

### **Other requirements:**

- The bidder must submit (along with bid) the full technical details, datasheet/technical brochure, make, model no, country of origin etc of the offered item.
- The bidder should enclose compliance sheet mentioning complied/non-complied against each technical specification.
- The bidder must enclose the necessary approval/certification such as MNRE/NABL/BIS, LM80, LM79 certificates, IEC 61730 Part 1 and Part 2, warranty and other test certificates along with the bid.
- The bidder, other than OEM, must submit authorization certificates from the manufacturer.

Failing to submit the above documents, the bids shall be summarily rejected.