

# SUPPLY AND INSTALLATION OF SOLAR POWERED BACK UP AT ICT HUBS AND MUNICIPALITY SERVER ROOM

| ICT CENTRES AT BAHARI, HONGWE, MANDA, MKUNUMBI IN LAMU WEST KIUNGA, FAZA IN LAMU EAST                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |                 |                  |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------|-----------------|------------------|
| Vendor to include cost of supply, installation, testing and commissioning to each above mentioned site |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |                 |                  |
|                                                                                                        | Item Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Qty | Unit | Unit Cost (KES) | Total Cost (KES) |
| <b>BOQ for 5kVA Off-grid Solar System</b>                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |                 |                  |
| A                                                                                                      | Solar Panels 650W Monocrystalline 25y warranty.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 36  | pcs  |                 |                  |
| B                                                                                                      | Solar Panel Mounting Structure (Roof/Ground)(Roof/Ground).Solar mounting structure specifications cover design, materials, wind loads, and more, ensuring stability and performance. Key aspects include the structure's material (typically Galvanized steel or marine aluminum), wind load capacity (e.g., 90 km/hr or higher), tilt angle for optimal energy output, and ground clearance. Specific components like legs, rafters, purlins, and clamps are defined by material and dimensions. For rooftop installations, the structure must be waterproof and securely fastened to withstand wind and ensure stability. | 6   | lot  |                 |                  |
| C                                                                                                      | 5kVA Hybrid Inverter (Pure Sine Wave, 48V) • Nominal Voltage: 48V or 51.2V<br>• Capacity: 100Ah / ~5.12 kWh total energy<br>• Cycle Life: 6,000+ cycles at 80%–90% Depth of Discharge (DoD)<br>• Lifespan: Up to 10 to 15+ years with proper maintenance and standard operating temperatures (-10°C to 50°C)<br>• Scalability: Most models support parallel connection (up to 16–32 units) if you need to expand your capacity later                                                                                                                                                                                        | 6   | pcs  |                 |                  |
| D                                                                                                      | A 5kWh (5kW class) 48V/51.2V 100Ah lithium iron phosphate (LiFePO <sub>4</sub> ) battery • Nominal Voltage: 48V or 51.2V<br>• Capacity: 100Ah / ~5.12 kWh total energy<br>• Cycle Life: 6,000+ cycles at 80%–90% Depth of Discharge (DoD)<br>• Lifespan: Up to 10 to 15+ years with proper maintenance and standard operating temperatures (-10°C to 50°C)<br>• Scalability: Most models support parallel connection (up to 16–32 units) if you need to expand your capacity later                                                                                                                                          | 6   | pcs  |                 |                  |
| E                                                                                                      | Battery Rack                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6   | pcs  |                 |                  |
| F                                                                                                      | AC Distribution Board with Circuit Breakers & Changeover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 6   | set  |                 |                  |
| G                                                                                                      | DC Combiner Box with Fuses & SPD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6   | pcs  |                 |                  |
| H                                                                                                      | Solar Cables (DC + AC) 6mm <sup>2</sup> (Red/Black) – 100m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 6   | roll |                 |                  |
| I                                                                                                      | Conduits, Trunking, Cable Ties, Clips (Electrical Accessories)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6   | lot  |                 |                  |
| J                                                                                                      | Lightning Arrestor + Earth Rod + Earthing Accessories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 6   | set  |                 |                  |
| K                                                                                                      | Labour & Installation Charges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6   | job  |                 |                  |
| L                                                                                                      | Transport & Miscellaneous                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 6   | lot  |                 |                  |
| M                                                                                                      | Allow for pruning of trees around each site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3   | job  |                 |                  |
| N                                                                                                      | Supply and fix 5Kg CO2 fire extinguisher                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 6   | pcs  |                 |                  |
| <b>SUB TOTAL 5KVA SOLAR SYSTEM - 6No Sites</b>                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |      |                 |                  |

# SUPPLY AND INSTALLATION OF SOLAR POWERED BACK UP AT ICT HUBS AND MUNICIPALITY SERVER ROOM

|                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |             |                        |                         |
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|                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |             |                        |                         |
| <b>ICT CENTRES AT MKOMANI AND MUNICIPALITY SERVER ROOM</b>                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |             |                        |                         |
| Vendor to include cost of supply, installation, testing and commissioning to each above mentioned site |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |             |                        |                         |
|                                                                                                        | <b>BOQ for 10kVA Off-grid Solar System</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |             |                        |                         |
|                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |             |                        |                         |
|                                                                                                        | <b>Item Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Qty</b> | <b>Unit</b> | <b>Unit Cost (KES)</b> | <b>Total Cost (KES)</b> |
| A                                                                                                      | Solar Panels 650W Monocrystalline 25y warranty.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 32         | pcs         |                        |                         |
| B                                                                                                      | Solar Panel Mounting Structure (Roof/Ground)(Roof/Ground).Solar mounting structure specifications cover design, materials, wind loads, and more, ensuring stability and performance. Key aspects include the structure's material (typically Galvanized steel or marine aluminum), wind load capacity (e.g., 90 km/hr or higher), tilt angle for optimal energy output, and ground clearance. Specific components like legs, rafters, purlins, and clamps are defined by material and dimensions. For rooftop installations, the structure must be waterproof and securely fastened to withstand wind and ensure stability. | 2          | lot         |                        |                         |
| C                                                                                                      | 10kVA Hybrid Inverter (Pure Sine Wave, 48V) • Nominal Voltage: 48V or 51.2V<br>• Capacity: 100Ah / ~5.12 kWh total energy<br>• Cycle Life: 6,000+ cycles at 80%–90% Depth of Discharge (DoD)<br>• Lifespan: Up to 10 to 15+ years with proper maintenance and standard operating temperatures (-10°C to 50°C)<br>• Scalability: Most models support parallel connection (up to 16–32 units) if you need to expand your capacity later                                                                                                                                                                                       | 2          | pcs         |                        |                         |
| D                                                                                                      | A 10kWh (10kW class) 48V/51.2V 100Ah lithium iron phosphate (LiFePO <sub>4</sub> ) battery • Nominal Voltage: 48V or 51.2V<br>• Capacity: 100Ah / ~5.12 kWh total energy<br>• Cycle Life: 6,000+ cycles at 80%–90% Depth of Discharge (DoD)<br>• Lifespan: Up to 10 to 15+ years with proper maintenance and standard operating temperatures (-10°C to 50°C)<br>• Scalability: Most models support parallel connection (up to 16–32 units) if you need to expand your capacity later                                                                                                                                        | 2          | pcs         |                        |                         |
| E                                                                                                      | Battery Rack                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2          | pcs         |                        |                         |
| F                                                                                                      | AC Distribution Board with Circuit Breakers & Changeover                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2          | set         |                        |                         |
| G                                                                                                      | DC Combiner Box with Fuses & SPD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2          | pcs         |                        |                         |
| H                                                                                                      | Solar Cables (DC + AC) 6mm <sup>2</sup> (Red/Black) – 100m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2          | roll        |                        |                         |
| I                                                                                                      | Conduits, Trunking, Cable Ties, Clips (Electrical Accessories)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2          | lot         |                        |                         |
| J                                                                                                      | Lightning Arrestor + Earth Rod + Earthing Accessories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2          | set         |                        |                         |
| K                                                                                                      | Labour & Installation Charges                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2          | job         |                        |                         |
| L                                                                                                      | Transport & Miscellaneous                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2          | lot         |                        |                         |
| M                                                                                                      | Allow for pruning of trees around each site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1          | job         |                        |                         |
| N                                                                                                      | Supply and fix 5Kg CO2 fire extinguisher                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2          | pcs         |                        |                         |
|                                                                                                        | <b>SUB TOTAL 10KVA SOLAR SYSTEM - 2No Sites</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |            |             |                        |                         |

**SUPPLY AND INSTALLATION OF SOLAR POWERED BACK UP AT ICT HUBS AND MUNICIPALITY SERVER ROOM**

|                 |                                           |  |  |  |                         |
|-----------------|-------------------------------------------|--|--|--|-------------------------|
|                 |                                           |  |  |  |                         |
| COLLECTION PAGE |                                           |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 |                                           |  |  |  | <b>Total Cost (KES)</b> |
|                 |                                           |  |  |  |                         |
|                 | 5KVA SOLAR SYSTEM - 6No Sites             |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 | 10KVA SOLAR SYSTEM - 2No Sites            |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 | Sub-total                                 |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 | Add 3.0% Supervision facilitation costs   |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 | Add 16% VAT                               |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 | Add 0.03% PPRA Levy                       |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 | <b>Total Carried to Form of Quotation</b> |  |  |  |                         |
|                 |                                           |  |  |  |                         |
|                 |                                           |  |  |  |                         |