**REQUEST FOR PROPOSAL  
SPECIFICATION OF SPECIFIED GOODS**

**Procurement No:** **16-G029-23**

## Specification

### Background

The Ministry of Environment, Lands and Agricultural Development is building a new Material Recovery Facility (MRF) at Betio, South Tarawa. The MRF includes a 300m² steel kitset building of 20m long and 15m wide. The roof is a gable roof with a ridge of 20m. The building will be orientated with the ridgeline running roughly North-South. The building will contain baling presses for recyclable materials, and a workshop for equipment maintenance. A grid-tie PV system on the roof will support the power system for the building but also the local area in a heavily loaded part of the Betio Town electricity network, as the presses only cycle for about 10% of the time during a typical workday. The local electricity network is a 50HZ system, single phase at nominal 240V and the three-phase supply is a nominal 400V.

A 40 kWp PV system is required to be mounted on the roof of the new MRF building. The system will be grid-tied to the local network, through approximately 70m of underground cable to the nearest transformer. The bidder should supply and install all the necessary equipment for a 40kWp grid-tie PV system, plus an underground cable to the transformer.

The PV supply must be arranged such that the PV output is balanced across the three-phase system connection.

Preference will be given for micro-inverter type systems as the environment in Kiribati is very harsh, and micro-inverter systems can be expected to have high rates of reliability than a single central inverter.

The bid should include installation of the solar equipment, plus all electrical switches, fusing, enclosures, conduit, clips and other sundry items required to install the PV system to meet an Australian standard of installation.

### Requirements

Specification of a 40kWp Solar PV system, grid tied

40kWp of Photovoltaic panels, minimum size of module 400Wp;

Inverter(s) compatible with handling the full output of the PV system supplied;

Preference will be given to a Micro inverter-based grid-tie system, one micro-inverter to each PV module; this is to produce a more resilient system in a very challenging electrical environment;

All and any inverters are required to produce power compatible with a three phase 415v/50Hz electrical power supply, the system balanced such that each phase has a similar amount of PV;

The system should be equipped with an internet-based monitoring system;

Supplied with 70 metres of 35mm underground three phase power supply cable to connect to the nearest grid transformer;

Suitable sized fuses and holders at each end of the underground supply cable;

Inverters supplied must have a Declaration of Conformity for Australian Grid-tie PV Standards

Roof mount racking system including all fasteners to fit the 40kWp of PV to a steel roof of a steel framed building; fasteners used must be stainless steel.

Cabling must comply with relevant AS/NZS wiring standards and rules from the roof PV modules to a sub - switchboard at 1.5 m above ground level, including the fixings and conduits and rate of fixing per metre of cable;

All exterior (outside the building) conduit must be to UV resistant as specified under AS/NZS standards for us on roof PV;

A interior Sub-board should be supplied by this contract, to IP65 protection, where the PV system ties to the main Utility power supply and the sub-board and components must be fully complete and compliant with current Australian and New Zealand Standards for Grid-tie PV and current wiring rules and signage;

All signage must be supplied to comply with current AS/NZS Grid Tie PV Standards;

The PV array must be earthed via a suitable cable to the ground;

The PV supply must be arranged such that the PV output is balanced across the three-phase system connection.

Full Original Manufacturer documentation will be required of all components supplied, and an Installation Commissioning Report will be required including an 'As Built' electrical schematic.

All supporting documentation must be in English.

Failure to install wiring and electrical components to Australian / New Zealand wiring standards will hold up progress payments until rectified.

In addition, the following extras will need be supplied:

5 extra micro-inverters (if a micro inverter system is offered);

10 extra end clamps for the roof mounting system

10 extra mid-clamps for the roof mounting system

10 extra feet for roof mounting system

6 extra rails for roof mounting system

20 extra roof screws for roof mounting system

### Installation services

The entire system supplied will need to be installed in the building, including fixing the mounting system and solar panels to the roof, and connection through a main switchboard for the building. The installation of the 35mm three phase electrical cable supplied to the nearest transformer will be done by a contractor engaged by the Kiribati Solid Waste Management Project as this will require earth moving equipment.

The system must be commissioned and operating before any final payment is made. A commissioning report must be included that includes all the key specifications of the main components used in the system, and contact details for companies in the Pacific Region who can supply technical support where required, e.g. especially for any inverters used.

### Delivery Time

Six months to complete the contract: four months from signing of contract to deliver the equipment to the Port of Betio, Tarawa, Kiribati, and two months after arrival to install and commission the PV system.

## Description of the Goods

*Here, list all items to be Tendered*

*(This part may be replaced by a proprietary Supplier description)*

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| Pos. | Description | Number | Delivery Time (to be verified or Tendered) | Price (to be Tendered) |
| 1 | **Grid Tied Photovoltaic system of 40kWp**  **Including inverters and all mounting system and ancillary electrical items to meet specification**  **(Micro-inverter system preferred)** | 1 |  |  |
| 2 | Install above system in its entirety on Betio Materials Recovery Facility building | 1 |  |  |
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## Tenderer’s References

### Relevant similar deliveries carried out in the last five years

Please, provide information on each delivery for which your firm/entity, either individually as a corporate entity or as one of the major companies within an association, was legally contracted.

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| Goods delivered | Buyer | Contact details | Value |
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