

## 1. Purpose of this Document

This document sets out the expectations of the City of Wanneroo in relation to the installation of Photovoltaic (PV) arrays at City owned or managed buildings. The purpose is to:

1. Ensure consistency in the quality of the materials and workmanship provisions.
2. Provide an understanding of the project requirements and associated costs that may be incurred in addition to the array system.
3. Minimise delays in the delivery of the projects

## 2. Documentation available

Upon request, the following documents are typically available:

1. Fall Arrest Roof Safety Plan
2. Building Plan

Subject to the age of the facility and the availability of records, the following documents may be available:

1. Electrical layout plans
2. Roof construction plans and details

## 3. Pre-contract approvals

To avoid project delays, it is recommended that the following documents be submitted to the City of Wanneroo for approval PRIOR to entering into any binding contract with a supplier:

1. Roof plan showing the layout of the panels in relation to the Fall arrest safety anchors and access points, clearly indicating any proposed alterations to the locations of the anchor points.
2. Building plan showing the proposed location of the inverter units and batteries (if any)
3. System specifications, including:
  - a. the manufacturer name,
  - b. number and power generation of panels and inverters,
  - c. the storage capacity of batteries (if any),
  - d. the weight of the array system (including the weight of the panel support frame).
4. A certified structural engineer's report confirming:
  - a. The roof structure has been visually inspected, internally and externally.
  - b. The structural integrity of the roof structure has been assessed based on the actual panel weight/sizing of the array system, including the weight of the panel support frame .ie use of a generic loading of 0.15kPa is not acceptable.
  - c. The roof structure can either support the proposed additional loading without requiring remedial structural works or that the roof structure requires strengthening.
  - d. The details and costs of roof structure strengthening works if required.
  - e. That, especially in coastal areas where wind gusts are higher, the system and panel fixings have been assessed to withstand the impacts of wind loading.
5. Electrical report outlining the intended alterations to the existing electrical equipment (switchboard etc) required to accommodate the PV system.
6. Statement from the supplier indicating system capability and/or limitations of the system to enable future expansion with additional panels and batteries.

#### **4. Additional Functionality**

The City can provide the opportunity for the PV system to be connected to an energy monitoring dashboard. This would enable the facility user to view real-time data on the solar generation from the PV system, the real-time power usage at the facility and to receive alerts if the system stops generating solar power due to a fault in the panels or inverter. To achieve this additional functionality, equipment including specified meters, data converter and sim-card connectivity will need to be installed at the time of the PV installation and be included in the project costs.

Further details can be provided on request.

#### **5. Minimum requirements**

Every installation must be carried out by an accredited Clean Energy Council (CEC) installer in accordance with the CEC's Installation Guidelines which are updated regularly to reflect current industry best practice.

Every installation is required to meet the following Australian Standards:

- AS 4509 Stand-alone power systems
- AS 4086 Secondary batteries for SPS
- AS/NZS 3000 Electrical wiring rules
- AS 1768 Lightning protection
- AS/NZS 1170.2 Wind loads
- AS/NZS 5033 Installation of photovoltaic (PV) arrays
- AS 4777, Grid connection of energy systems via inverters.

The Clean Energy Council has compiled a list of approved products - including solar PV modules (panels) and grid-connect inverters - that meet these standards.

#### **6. Small-scale technology Certificates (STCs)**

Before designing or installing a small-scale system, the purchaser should make themselves aware of the requirements which will determine if the system is eligible for small-scale technology certificates (STCs) after it is installed. Refer to the Clean Energy Council website for further information. The installer should manage the administration of the STCs and reflect any discounts in the cost of the system.

#### **7. Post installation requirements**

Prior to finalisation of the project, the installer is to provide a copy of the following documentation to the City:

1. As-constructed plans accurately showing locations of all newly installed or amended equipment including panels, inverters, switchboards, batteries, fall arrest equipment.
2. Operational and maintenance documentation for the installed system
3. Electrical Certificate of completion
4. Warranty documentation