



Connection Essentials for Designers/Installers

With the increasing popularity of solar photovoltaic (PV) systems, Solomon Power is keen to work closely with the solar PV industry to manage impacts to customers and Solomon Power's network. As an installer or electrical contractor in the solar PV industry, you play an important role in guiding our customers through the purchase, installation and connection process.

Lodging an application to connect a solar PV system

All Inverter Energy Systems (IES) systems **must be approved by Solomon Power before installation**. We ask that you ensure your customers are aware of this requirement.

To begin, you'll need to submit a completed *Application for network Connection of a grid-connected solar array* form to Solomon Power. However, if you're planning to install a solar PV system larger than 5kW in size, you'll need to make your enquiries directly with Solomon Power engineering.

Please ensure you submit the fully filled-in form to Solomon Power. Incorrect forms will not be considered and a new application will be required. Installers submitting applications on behalf of customers must ensure they have the customer's consent or the application will not be considered.

Assessing applications

Solomon Power will conduct a preliminary evaluation of the application based on the size of inverter and the nature of the local network serving the premises. A technical assessment will be required to check for any potential adverse impacts to the network, the customer's premises, or their neighbours' premises.

Solomon Power may require up to five weeks to technically assess applications for systems that require connection to the Honiara network or to an outstation network. Ask Solomon Power for the *Outline of Solar Assessment criteria* document. Find out more from Solomon Power's *Outline of Technical Assessment Criteria* document.

Approving, downsizing or declining applications

Applications may be downsized or declined if:

- The transformer serving the premises is too small to support the volume of electricity that could be generated by the system
- The connection is a relatively long distance away from the transformer, which may cause significant voltage fluctuations
- There are already a number of solar PV system connections that share the same transformer. This may even be the case if there is only one other solar PV system.

If the application is downsized or declined, customers can re-apply for an inverter up to a maximum size we advise, withdraw their application or explore alternative options to:

- Install a small-scale system with an inverter of a lower capacity
- Upgrade the number of phases to the premises to accommodate the desired inverter size
- Pay for an upgrade to the network to accommodate the inverter originally requested.

If no adverse impacts are identified, Solomon Power will approve the solar PV system connection and send the customer two copies of an IES Network Agreement. For details on the terms and conditions of connecting to the Solomon Power network under this agreement, look at the *Solar Network Agreement* form.

Installing and connecting solar PV systems

Once the application has been approved and the customer has returned the IES Agreement, you can proceed to install the customer's solar PV system.

As an installer, you are responsible for ensuring the system and equipment installed at the customer's premises complies with:

- Australian Standard AS/NZS 3000:2007 - SAA Wiring Rules;
- Australian Standard AS/NZS 4777:2005 Grid Connection of Energy Systems;

Note: Voltage ranges in inverters are generally factory-set to AS4777 standards. However, Solomon Power requires a narrower voltage range of 225V to 255V (240V +/-6%). Inverters must be set to this range in order to comply with the terms of the Solomon Power IES Network Agreement.

- Any other applicable Australian Standards, current as at the date of installation; and
- The relevant requirements of the *Solomon Power Electricity Connection and Metering Manual*.

If the customer has been approved to install a three-phase inverter system, then the output power must be distributed evenly across the three phases (unless indicated otherwise). Accordingly, if approved for a two-phase inverter system, the output power must be distributed evenly across two phases (unless indicated otherwise).

After connection, you'll need to Form A to Solomon Power requesting a meter change.

Resolving non-compliance

If Solomon Power receives a Form B for a system we have not approved, we will contact the customer to arrange completion of an application and conduct an assessment of the application before the connection can be approved and an appropriate meter installed.

If the inverter installed is of a different capacity to what has been approved in the application, Solomon Power may not be able to install the required meter. If a different inverter is required, please check with us to ensure the inverter is compliant with the customer's IES Network Agreement.

Non-compliance with Solomon Power's requirements may generate a Form B to the customer to rectify any issues, and the new meter may not be installed. In addition, if

Solomon Power deems the electrical installation to have a major defect, a Form B will be raised and the premises may be disconnected. A Form B may also be raised for minor defects. If we identify any adverse impacts to the network, the system may need to be disconnected until alternative solutions are explored. In some cases, the connection application may be declined.