

# PV SYSTEM OWNER'S MANUAL

Please read and understand this solar power system user manual. It contains some useful information regarding the operation of individual components of your solar power system.

Please keep this user manual in safe place for future reference.

All service and repair should be undertaken by a registered electrical solar installer.

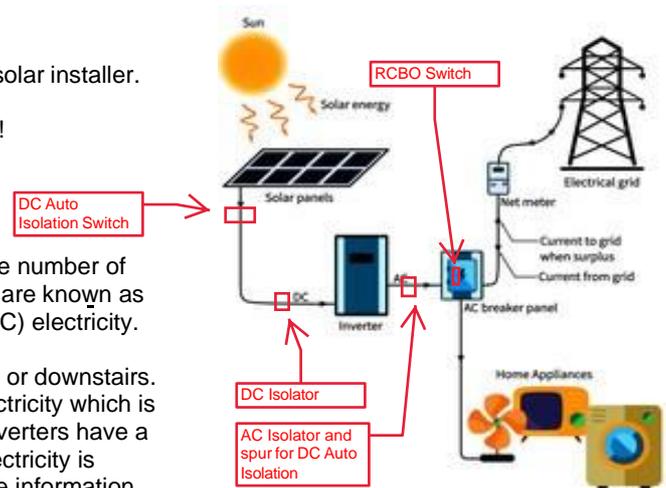
Remember solar equipment will remain live after shutdown procedure!

## How Your System Works

The solar electric panels, or modules, are usually fitted to the roof. The number of modules will depend on the size of your system and, collectively, they are known as the solar array. The solar array converts sunlight into direct current (DC) electricity.

The DC electricity is fed to the inverter which may be either in the attic or downstairs. The inverter converts the DC electricity to alternating current (AC) electricity which is compatible with the electricity supplied to your house from the grid. Inverters have a digital readout so you can monitor information like how much solar electricity is produced, etc. Refer to the separate inverter Owner's Manual for more information.

The standard meter located in your meter box can be replaced with a smart meter. which will measure how much solar electricity is exported from your solar system into the electrical grid as well as the electricity you import from the grid. This would be required if your electricity provider allows payment for export. You can look at how your system is performing on an app also. As backup there will be a meter installed beside your Inverter.



### **During the Night**

At night your solar power system automatically shuts down with no sunlight (the inverter goes into "overnight shutdown mode") and the house is powered only from the mains electricity grid or battery until it is depleted – system dependent.

### **Loss of Mains Grid Supply**

In the event of an electricity grid failure, the inverter will automatically detect this and will shut the system off (shutdown condition). This is an important safety feature and complies with the EN50549 grid standard for Ireland. This prevents possible electrical injuries to the ESB maintenance personnel that may be repairing the mains grid electrical network. If you have a battery in your system then you will have power on a dedicated socket for essential loads such as fridge, Internet, or phone charge. The automatic isolation switch is located within 1.5 meters from your solar array, this is automatic and does not need to be manually switched. It automatically shuts off the DC power coming into the house when there is a power cut or the AC isolator is turned off.

## **Solar Power System Start-up Procedure**

Your system will have the following switches: **AC isolator located near the Inverter, and a DC isolator near the inverter.**

A dedicated RCBO Switch will be labeled in your Consumer Unit (AC breaker panel) also. This will also isolate the AC side of the inverter. This is only for maintenance.

### **SWITCHING SYSTEM ON**

**Switch ON the AC isolator**

**Switch ON the DC isolator**

**If you have a battery:**

**Switch On Battery (switch button on the battery itself)**

After the system is switched ON, the inverter will run through a testing and initializing process. It will then begin correct operation and you will be able to read production etc. on the front screen.

### **SWITCHING SYSTEM OFF**

**Switch OFF the AC isolator**

**WAIT 30 SECONDS**

**Switch OFF the DC isolator**

**If you have a battery:**

**Switch Off Battery (switch button on the battery itself)**

## Operating & Safety instructions

Your solar electricity system is designed for automatic operation with no need for user interaction. There are no moving parts and, apart from normal performance monitoring, there is no need for the owner to intervene in its operation.

In the case of *mains grid supply failure*, the inverter will be automatically and immediately disabled. This is known as *anti-islanding*. Once the power has been restored, the inverter will be automatically re-enabled.

If you notice your system is not operating correctly, please call your system supplier and they will arrange to send a technician to resolve the problem.

- Do not attempt to service the system yourself – contact installer
- In the event of an “Earth Fault Alarm” your system should be shut down immediately, if it is not shut down automatically. Please contact Installer immediately to have your system inspected.
- All service work must be carried out in strict compliance with all local and national electrical codes and standards.
- Review and follow all safety instructions supplied with all components of the solar electricity system.
- Avoid working on the system in wet or damp conditions.
- Remove all jewelry such as rings, bracelets, etc. prior to servicing the system to reduce the risk of electric shock.
- The solar array will generate electricity during sunlight. They should be covered or disconnected prior to servicing.
- Do not attempt to clean or come in contact with the surface of a solar module with broken glass. This could result in a dangerous electric shock.
- Be aware that power may be present at any point in electrical circuits despite the opening of circuit breakers.
- Circuit breakers can trip automatically if problems occur. If the circuit breaker is switched back to the closed or “on” position and it immediately trips back to the open or “off” position an ongoing problem is indicated.
- Do not substitute materials supplied with the solar electricity system.
- Appropriate precautions must be taken when working on rooftops or at heights in accordance with local and national occupational health and safety regulations.

## Maintenance

Your solar power system requires little maintenance, as there are no moving parts to fail or adjust. For your safety, we do not recommend that you attempt any self-service unless you are suitably qualified.

The solar panels work best when clean. In Ireland, regular rainfall will ensure that panels are kept clean provided there is a slope on the panels. However, if they become soiled by bird fouling or foliage, they can be cleaned with cold water. It is recommended to check that the solar panels have minimal shading from new vegetation or surrounding objects.

We strongly recommend that you do not climb onto the roof, unless you are qualified and trained in occupational health and safety procedures.

Plant and tree growth that can cause shading at different times of the year should be monitored and dealt with. Likewise, leaves and other debris coming to rest on the solar modules should be removed.

Always remember that your system will be generating electricity during daylight hours and care should always be taken to eliminate the risk of electric shock.

**The following maintenance schedule is recommended.**

Weekly	6 Monthly	Yearly
Check to make sure the inverter is working correctly by checking the LCD screen, or by checking online monitoring if you have a WIFI enabled monitoring system. Check the inverter operation (e-today, e-total etc.) to verify that production is consistent with the prevailing weather conditions and system size	<p>Check for vegetation growth that may be shading the panels and cut back if required</p> <p>Visually inspect the panels for any damage</p>	Visually check that the PV array and mountings are firm and show no corrosion or damage, visually inspect the inverter for build-up of dust and clean with a dry cloth if required.



**DANGER:** The inverter operates at very high voltages. There is risk of fatal electrical shock if the inverter is opened during use. The inverter must only be opened by technicians for either maintenance or modifications.



**DANGER:** Do not touch or pull any of the electrical wiring cables around the inverter. Do not remove the front cover of the inverter. Do not switch the system on if there are damaged or exposed electrical cables due to risk of fatal electrical shock!



**DANGER:** Do not touch or come in contact with a solar module if it is found to be broken or has cracked glass, as this could result in a fatal electrical shock.



**WARNING:** We recommend using professional services when working at heights. It is recommended that only qualified personnel who are trained and hold current certification attempt maintenance activities on roofs due to the potential hazards when working at heights.

## **Warranty**

Your solar electric system comes with the following warranties from date of sale:

- Solar electric modules 10 to 25 year with performance of at least 20 to 30 years - check your data sheet.
- Inverter – 5- or 10-year extension - check your data sheet.
- Roof mounting frames –10 years check your data sheet.

### **This warranty does not cover the following conditions:**

- Your existing electrical installation, wiring, and switchboard or fuse box.
- Any malicious damage.
- Any damage caused by vermin, animals or pests.
- Any consequential or other loss suffered by you in connection with the installation of our products or our products failing or breaking.
- Any damage to your property (other than products we sold you) caused by our products failing or breaking.
- Labour for the disconnection and reconnection of the components.
- Consequential damages including but not limited to loss of revenue.
- Duties, import/export fees or costs and other general administrative costs

### **Warranty Exclusions**

These conditions shall cause the system warranty to become void.

- Any work associated with rectification of these conditions may incur a service charge and costs for parts should they be necessary.
- Any service required to electrical wiring. Major variations or faults in electrical energy supply, causing damage to the Inverter or other supplied equipment.
- Accidental breakage is not covered by this warranty, and should be added separately to your general household insurance policy.

**PLEASE CHECK SPECIFIC MANUFACTURERS WARRANTY FOR DETAIL.**

## **IMPORTANT REMINDER**

Please keep this owner's manual in a safe and easily locatable place *together with all other documentation supplied with your system.*

In the case of a service being required, please supply all the documentation to the service technician as the information contained therein will be useful to that technician. Note that the manufacturers' warranties may be voided if the system is serviced or interfered with by an unqualified person.