



Get the most from your solar PV system

# Introducing the Apollo GEM-D

Produces *free hot water* from your Solar PV System.

If you own a solar PV system its is probable that 50% or more of the electricity generated will be exported, that is given away, to the electricity grid.

The Apollo GEM is an innovative solar energy management product that will use all the surplus power generated by your PV system to produce hot water. Every unit of power used to heat the hot water in this way reduces imported energy by the same amount resulting in a significant saving in imported energy costs.

The Apollo GEM-D is a direct-wire version of the popular wireless GEM system designed for installations where a dedicated immersion circuit already exists between the consumer unit and immersion heater and the extra cost of a wireless system is not required.

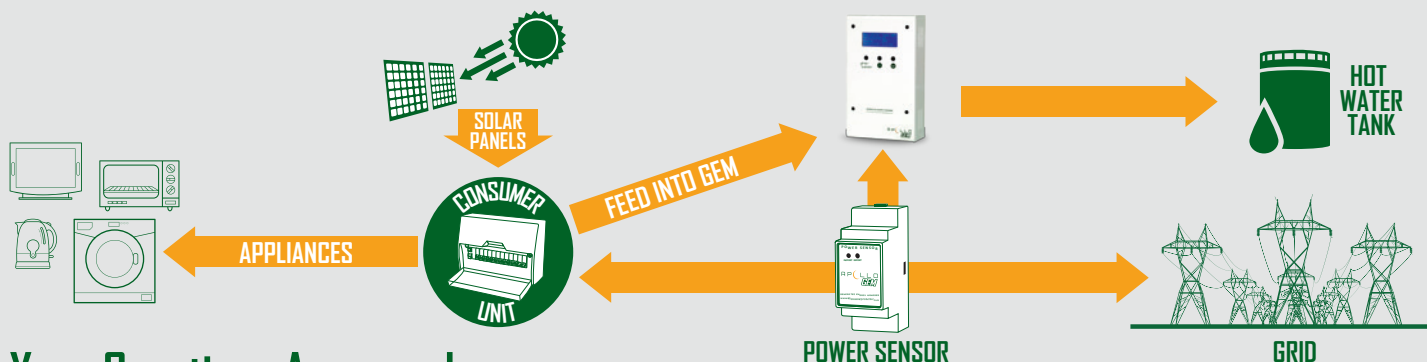
GEM will work with any solar PV system and uses a standard immersion heater to produce free hot water. The advanced GEM controller ensures maximum usage of PV power that would have been exported. The system is simple to install and will not affect your feed-in tariff payments. GEM works with wind generation systems too!

The Apollo GEM-D features the same build quality and functionality as the wireless GEM including:

- Accurate power measurements
- Precise intelligent power control
- Highly reliable dual redundant solid state power electronics
- Bright 4-line display
- Water Temperature Sensor Option
- 5 Year Warranty



The GEM system works by accurately monitoring the power being imported or exported and always diverts sufficient power into the hot water system in order to keep the exported power to as near zero as possible whilst at the same time ensuring that no additional power is ever imported to supply the hot water store. Priority is always given to the energy demands of the household appliances and only surplus energy that would have otherwise been exported is stored in the hot water system.



## Your Questions Answered

### Is GEM easy to install?

Yes! GEM can be installed by PV installers, electricians or a competent DIYer. GEM does not need to be installed by an MCS certified installer and will not affect the MCS certification of your micro-generation system. Only one clip-on type import/export sensor is used.

### What energy savings can I expect?

This will depend on the size of your PV system and the amount of hot water you use. For a 4 person family with a 4KW PV system you can expect savings of around £200 per year.

### Will I still get my export tariff payments?

Yes. Currently FITs export payments are paid for 50% of all units generated regardless of how many units are actually exported. This means you can use all your generated energy and still receive all the export payments!

### Do I need a hot water tank?

Yes, you do need a hot water system which uses a hot water storage tank. GEM stores the excess energy generated as hot water.

### Do I need an immersion heater?

Yes, GEM will control your existing immersion heater.

### Do I need a dedicated circuit from my consumer unit?

Yes, GEM-D requires a dedicated immersion circuit from the consumer unit. If this is not possible the wireless GEM product can be used instead.

### If no excess energy is generated do I still get hot water?

Yes, GEM works in conjunction with your normal hot water system whether gas, oil, immersion etc. on days when excess power is not available from the PV system your water is heated in the normal way.

### Can I see how much energy I have saved?

Yes, GEM records and displays how much energy has been saved and which would have otherwise been exported.

### Can I still use my Economy 7 water heating?

Yes, GEM has a built-in immersion timer which allows 3 different on/off periods to be programmed for each 24 hours so you can still take full advantage of your off-peak or Economy 7 supply.

### Does GEM have a second output?

Yes, GEM has two independent variable power outputs so that a second water tank can be heated or power can be diverted to a second heater, e.g. a storage heater if the first water tank becomes fully heated. GEM can even be programmed to equally share any available surplus PV power between the two outputs.

### Can GEM display the hot water temperature?

Yes, an optional temperature sensor can be fitted to GEM to display and control the hot water temperature.

### What is the GEM warranty?

All GEM systems are supplied with a 5 year RTB warranty.

## Specifications

Microgeneration System Size	0.5-4KWp
Operating Voltage	216-253 VAC

### Control Unit

Immersion or Heater Power	100W - 3500W
Optimising Power Range	50W - 3500W
Optimising Power Adjustment Period	Every 2 seconds
Variable Power Outputs	2 Outputs, both fully variable up to 3500W
Timer Functions	7-day or 5/2 day, 3 on/off settings per day
Boost Function	1 to 4 Hours
Hot Water Temperature Display & Control	Yes, with optional temperature sensor fitted
Display	4 line x 20 characters back lit LCD
Mounting	Wall mount, bottom or rear cable entry
Dimensions	198h x 132w x 68d

### Power Sensor Unit

Current Sensor Rating	80A
Mounting	Non-invasive clip-on, 16mm max cable diameter

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