

Measuring the electricity you export

Householders who do not have an export meter fitted (which is normal for anyone with a less than 30kWp solar PV or wind system) are deemed to be exporting 50 per cent of the electricity generated back to the grid. Their FIT payment will be based on this amount no matter what their actual export is.

For a wind system, in general only 30 per cent of domestic supply coincides with the wind generation profile. This means that in practice up to 70 per cent of wind power is exported to the grid. Therefore, you may gain more by receiving payment for the exact amount of energy supplied to the grid with the export meter installed.

Bear in mind that it is you who will be liable for the cost of the export meter and installation, so it is worth checking that you are exporting more than 50 per cent of your generation and that the extra money paid for export over 50 per cent is enough to pay back the cost of the meter.

Calculating what you export

If you want to do a rough calculation of how much electricity you export over a year you can carry out a very rough estimate by:

- calculating the amount of electricity you used in the year before your wind or PV system was installed in kWh (import year 0), from previous electricity bills
- calculating the electricity you've imported in the year since your wind or PV system was installed (import year 1), again using electricity bills
- making a note from your generation meter of the amount of electricity your wind or PV system generated in year 1 (total generation), over exactly the same period.

For example, if you imported 4,000kWh in year 0, imported 3,400kWh in year 1 and your total generation in year 1 was 1800kWh then you will be exporting 67 per cent rounded to the nearest decimal point. This has been calculated using the formula:

$$\text{Total\% exported} = (1 - \text{change in import over two periods (kWh)/total generation (kWh)}) \times 100$$
$$67\% = (1 - (4,000 - 3,400)\text{kWh}/1,800\text{kWh}) \times 100$$

In this example, the fact that you're exporting 67 per cent of the electricity generated also implies that 33 per cent is used on site which is the saving you make from import.

This is only a rough estimate, as it assumes your consumption over the two years is identical – it is much less accurate than an export meter.

If you have had your wind or PV system installed for less than a year, you can compare figures over a shorter period. This will be less accurate but not very far out - electricity usage does not fluctuate much over the year unless you use electricity to heat your home.

If you want to know whether you are likely to be exporting electricity at any given moment of time you can look at the graphic display on your inverter. This will show the current amount of electricity being generated by your wind turbine or PV panels which you can then compare to the total consumption of all the appliances in your home that are on. You can

make a rough calculation of this by adding together the rated power of each appliance.

Or you can buy a monitor for £125-150 (based on the Geo Solo PV Energy Monitor and the Sunny Boy Beam). This is particularly useful if your inverter is in an out-of-the-way location such as an attic or garage. Using Bluetooth technology you can also monitor the output of your wind or PV system remotely - although the cost of this might be more than the value of the electricity you save.

This process can also be managed automatically by installing a home energy management system that compares your electricity production and consumption in real time. If there is surplus electricity the management system decides whether the surplus should be stored (as heat or hot water) or exported to the grid. An example of this is the Energy and Micro-generator Manager or EMMA for short.

Getting an export meter fitted

If you are still exporting more than 50 per cent of the electricity you generate, you will be getting paid for less than that. If you wanted to have an export meter fitted the way to do this is to contact your energy supplier and request one. Having an export meter only makes sense financially if you have a relatively large system and you can either get an export meter fitted for free or at low cost. However, many electricity suppliers now have a policy of not installing export meters for installations under 30kW as below this limit it is not compulsory to have one.

To receive payment under the Feed-in Tariff, the installation and maintenance of the export meter must be done by your energy supplier rather than your wind or PV system installer.

As the work done by an export meter will be superseded by smart meters which are due to be installed in every household (at your energy supplier's cost) between 2014 and 2019 you might prefer to wait rather than paying now. Smart meters with export meter functionality may be rolled out by some energy suppliers as early as 2013.

In summary:

- ✔ The advantage of an export meter is that you get paid for every kWh of electricity you generate even if that is over 50 per cent
- ✔ The disadvantage is that you get paid less for export than you pay for electricity you import and you are likely to have to pay for the export meter to be fitted.

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