

‘Clean energy cashback’ for household electricity generation

People that get a system now can benefit from grants/loans AND get the cashback tariff

The government has announced proposals to pay householders for every unit of renewable electricity they generate from a solar PV array or small scale wind turbine. On top of this, there is an extra payment for electricity that is exported to the national grid. Current grant schemes will be maintained up until the new tariff is available in April 2010, and systems installed now with grant support will still be eligible for it, meaning **now couldn't be a better time to get a microgeneration system for your home**. Here's a calculation showing how the investment stacks up.

Example calculation - 2kW peak solar PV array

Generates: 1700 kWh/year (on a south facing roof)

Of which used on site: 1200 kWh/year

Remainder exported: 500 kWh/year

Carbon saving from displaced grid electricity: 900 kg of CO₂ per year approximately

Clean Energy Cashback at 36.5 p/kWh (from consultation)

Generation payment = $0.365 \times 1700 = \text{£}620.50/\text{year}$

Cost of buying grid electricity at 11.0 p/kWh

Saving from displaced grid electricity = $0.110 \times 1200 = \text{£}132.00/\text{year}$

Export tariff at 5.0 p/kWh (from consultation)

Extra payment for exported electricity = $0.05 \times 500 = \text{£}25.00/\text{year}$

Total income = 620.50 + 132.00 + 25.00 = £777.50/year

Cost of system (indicative): £12,000

Low Carbon Buildings Programme grant (Available until 31 March 2010): £2,500

HEEP zero interest loan: £3,500

Upfront cost = $12,000 - 2,500 - 3,500 = \text{£}6,000$

Simple payback on upfront cost = $6,000.00 / 777.50 = 7.7$ years

Annual rate of return on investment = 13.0%

As the HEEP loan does need to be repaid, this will affect the above calculation. However, as there is no interest, inflation will reduce the loan's cost in real terms as time goes on. Also a PV array should add value to your house when it is sold (the point at which the loan is also repaid) further reducing the true 'cost' of the loan. However for a worst case scenario with no inflation, and no added value to your home on sale:

Cost = $12,000 - 2,500 = \text{£}9,500$

Simple payback on total cost = $9,500.00 / 777.50 = 12.2$ years

Annual rate of return on investment = 8.2%

The financial returns probably lie somewhere between these two extremes.

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For wind turbines, the cashback level put forward in the consultation is 23.0p/kWh. However, while the energy production of a PV array is very predictable and many homes are capable of accommodating them, for a wind turbine it depends strongly on location.

The best returns from a wind turbine will be for on an exposed site (i.e. on a hill in the countryside, clear of obstructions), limiting the number of homes that are suited. That said, the returns on a wind turbine for those with a suitable site may be better than for solar PV, even with the lower per kWh cashback tariff.