



Solar electricity systems work by collecting Photons from the sun's rays exciting the neutrons in the semi conducting material (silicon collectors), which creates a DC current. The DC current is then sent to a transformer where it is modulated to create a sign wave 4 volts higher than the incoming AC supply. Due to the slightly higher voltage the produced power is used first to run household appliances.

PV cells don't need direct sunlight to work you can still generate electricity with defused sun light. The strength of a PV cell is measured in kilowatt peak (kWp) - that's the amount of energy the cell generates in full sunlight.



Get paid to produce Electricity and cut your Energy Needs

If you can generate electric you will be paid for what you produce and have to use less electric from the national Grid

The feed-in tariff is government legislation, which guarantees a fixed, payment rate for generating renewable electricity over a period of time. You will be paid for the electric produced it if you use it yourself or if you export it into the National Grid. The District Network Operators are being made by government legislation to buy the renewable electricity; the additional costs will be passed onto customers in the future increasing average energy costs.

Cut your carbon footprint

Solar electricity doesn't release any harmful carbon dioxide or other pollutants. A typical home PV system could save around 1200 kg of carbon dioxide per year - that's around 30 tonnes over its lifetime. A 2.5 Kw system could provide 50% of a household's yearly electricity needs as the average household consumption is estimated at 3800 Kwh per year

Grants

£10 million available for solar PV funding from the 1st July 2009!

You could be eligible for a grant of up to **50% (for community & public buildings)** and up to £2500 (for domestic projects in England).

Find a grant to help with the costs of installing renewable and low carbon technologies visit the DECC -funded [Low Carbon Buildings Programme](#)

Cost, savings and maintenance

Costs for installing a solar electricity system vary a lot - an average system costs between £6,000 and £20,000, depending on its size and type.

- The more electricity the system can generate, the more it costs but the more it will save in the future.
- Panels built into a roof are more expensive than those that sit on top of a roof but will receive a higher feed in tariff.
- Solar tiles will cost more than conventional panels.
- If you have major roof repairs needed, PV tiles can offset the cost of roof tiles

Savings

Can be considerable - around 1.2 tonne of CO₂ a year, and around £250 off your electricity bill just in savings in your usage from the National Grid.

Maintenance

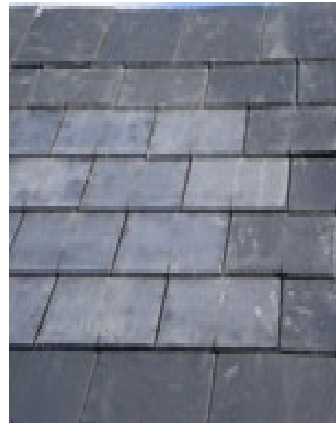
Is generally very small, panels will require a clean to maintain optimum efficiency and checked to make sure they don't start to receive solar shading from growing trees.

Types of solar collector

PV cells come in a variety of shapes and colours including Red, Green, Blue and Black, which can be very useful if the solar collectors are to be used as a building cladding.



Grey / Black solar tiles that look like roof tiles are available which can be fitted if an array needs to blend in seamlessly into the environment.



Solar Panels can also be made to allow a percentage of light though if they are to be used as a window or skylight.

