

Prior to applying for the Low Carbon Buildings Grant, you must undertake energy efficiency measures to ensure that you are minimising your energy requirements. Specifically,

- Insulate loft to 270mm
- Install cavity wall insulation
- Fit low energy light bulbs
- Install basic controls for your heating system.

Details on micro-generation certification on products and technology for the assurance of consumers can be found at:

<http://www.greenbooklive.com/page.jsp?id=4>

For more details on solar photovoltaic power, please visit:

www.tvenergy.org or 01635 817420

<http://www.energysavingtrust.org.uk/usingbuildings/funding/solarpv/>

www.pv-uk.org.uk

<http://www.dti.gov.uk/energy/sources/renewables/index.html>

www.est.org/solar

www.saveenergy.co.uk/renewables

To obtain a copy of this leaflet on tape or in large print please telephone (01296) 585112



Photograph Courtesy of TV Energy

For information re conservation issue regarding Photovoltaic energy in traditional Buildings:

<http://www.helm.org.uk/upload/pdf/49357-SolarElectric.pdf>



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Renewable Energy: Installing Solar Photovoltaics (PV) – A Guide for Householders

Introduction to Solar PV

Solar PV panels or cells generate electricity from sunlight. A number of cells are connected into a circuit to allow sunlight to excite particles across one or more (typically) silicon sheets to create an electrical charge across the connected sheet(s), and hence generate a direct current (DC) output. Usually an inverter then converts the DC to the alternating current (AC) required within the home. Sometimes the DC is used to charge batteries for small, off-grid devices.

The average UK home could generate 50% - 60% of its power needs if installed with sufficient PV panels.

Requirements

The technology can operate with daylight only and does not require direct sunlight. However, greater light intensity levels lead to greater power produced. Panels can be mounted directly onto an existing roof or fitted as structurally integrated PV panels or roof tiles. This latter method reduces the cost of a new or retiled roof. Due south orientation is best (not north), ideally at a pitch (30-40 degrees) to collect optimal sunlight and allow rainwater to wash the surface. Special tilted mountings can be used on flat roofs.

Typically, 8m² is required for 1 kWp of energy production. A 1 kWp system would be expected to cost from £6,000 at current prices and would provide around 16% of household electricity needs.

Typical household consumption in Aylesbury Vale is about 5,200 kWh per year.

PV units may be connected directly into the home by a qualified installer. The energy is then used on site, and/or sold to the local grid when not needed.

Each kWp of PV can produce enough energy to save approximately 450 kg of carbon dioxide emissions per year, adding up to about 13 tonnes over a typical system's lifetime. The average UK total family of 4's footprint including holidays abroad, travel, heating and lighting for a year is about 25 tonnes CO₂.

Planning:

From 6 April 2008, domestic PV technologies will not require planning permission, unless prominent within a Conservation Area or AONB, or on a Listed Building. Contact AVDC Planning on 01296 585431 or TV Energy on 01635 817420 for more details or visit:

http://www.energysavingtrust.org.uk/generate_your_own_energy/planning_permission_for_renewable_energy_technologies

AVDC's Historic Buildings Officers can be contacted on 01296 585383 or 01296 585888 for advice regarding the installation of renewable energy systems in Listed Buildings and Conservation Areas.

Considerations:

PV produces no greenhouse gas (including CO₂) emissions, or air pollutants during use or operation. Because there are no moving parts means that there are minimal maintenance costs. When placed at the correct angle, cells are self cleaning. PV cells have a life expectancy of about 30 years.

Transparent cells can also be used on conservatories and coloured cells are PV available for differing effects.

Cells need to be mounted on a roof or wall within 90 degrees of south with no overshadowing from structures/trees. Panels can also be placed on structures on the ground.

Even if not facing due south, cells facing between south-east and south-west at a slope of between 10 and 60 degrees will perform at around 95% of optimum.

If placed on a roof, the structure must be sufficiently strong to take the weight of panels. Solar tiles or integrated panels are well worth considering if roof is to be replaced.

Payback:

Payback time could be as soon as 15 years at current prices and will be greatly reduced from April 2009 when Renewable Obligation Certificates (ROCs) for this technology will be doubled. Displacing retail electricity currently saves around 10p-14p per kWh and ROCs today offer another 4.5p-5p per kWh; Revenue of up to 18p per kWh is currently possible if selling excess to a power supplier.

Household Grants:

A maximum of £2,000 per kW of installed capacity is available, subject to an overall maximum of £2,500 or 50% of the relevant eligible costs, whichever is the lower. Householder grants are available until June 2010 on a first come first served basis from: http://www.lowcarbonbuildings.org.uk/how_householders/