

Background to 'Practical Support' & 'EEC Consortia for Housing Associations'

The managed housing sector continues to play an important role in the development of sustainable communities at a national level. The Housing Corporation's Innovation & Good Practice Programme (IGP) has led to a number of projects aimed at supporting Housing Associations (HAs) in the delivery of sustainable communities. Amongst this suite of projects were 'Practical Support' & 'EEC (Energy Efficiency Commitment) Consortia for HAs (Housing Associations),' which were managed by ESD. These projects ran from January 2003 until the end of December 2004, and attracted major funding support from the Energy Saving Trust (EST). EEC Consortia for HAs helped to identify potential EEC funding of around £3.3m for HAs, and Practical Support assisted HAs in achieving around £1.7m in other grant offers. This factsheet is one of a series describing the work and associated developments. See www.esd.co.uk for more information.

Photovoltaics

Photovoltaic (PV) systems use cells to convert solar radiation into electricity. PV cells consist of a semi-conducting material, usually silicon. When light shines on the cell it causes electricity to flow due to the nature of semi-conducting materials. The greater the intensity of the light, the greater the amount of electricity produced. The three main types of PV cell are:

- *Monocrystalline* – made from thin slices cut from a single crystal of silicon. Typical efficiency is around 15%
- *Polycrystalline* – made from thin slices cut from a block of silicon crystals. Typical efficiency is at least 13%.
- *Thin film* – made from a thin layer of silicon or other semiconductors. Typical efficiency is around 7%.



Individual PV cells are connected together to form a module, which in turn may be linked together to form an array. A PV array on a building can be connected to the local electricity supply. Any excess electricity can thus be exported to the grid, and extra electricity can be purchased from the grid at times when demand is high.

Photovoltaics produce direct current (DC), which must be converted to alternating current (AC) using an inverter before it can be used in standard household appliances.

Case Study 1: New Progress HA – Spring Gardens



New Progress Housing Association owns and manages almost 4,000 properties in the north west of England. In 2003 they installed photovoltaics as part of an improvement package for 22 1930s semi-detached houses.

Planning issues were minimised as the panels were installed flush against the roof covering. Although there were initially some negative views amongst tenants, most were enthusiastic and enjoyed the good publicity.



Case Study 2 – Westlea HA

Westlea Housing Association has a history of engaging in innovative concepts that deliver social and environmental improvements. The HA has recently finished a 30kWp PV installation on one of its properties on Dicketts Rd in Corsham, Wiltshire. Sixteen flats benefit from the solar electricity, with each receiving around a third of their annual electricity from the photovoltaics. Westlea received a grant of 55% of capital costs from the DTI's Major Demonstration Programme, and costs were further reduced as the installation was carried out as part of a refurbishment plan that included re-roofing. Westlea benefit from the sale of Renewables Obligation Certificates associated with the photovoltaics (see below).



Major Demonstration Programme for Photovoltaics

This four year funding scheme for photovoltaics was launched by the Trade and Industry Secretary, Patricia Hewitt in March 2002. As we enter the final year of the scheme, from March 1st 2005, there will be four types of grant available (full details are on the Energy Saving Trust's website: www.est.org.uk/solar). Housing Associations will be eligible to apply for 50% of the total installation costs for medium to large scale installations (5 – 100 kWp). Installations must be complete within

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Housing Corporation's Sustainable Development Strategy: www.housingcorporlibrary.org.uk

Energy Efficiency Best Practice in Housing: www.est.org.uk/bestpractice

DTI Major Demonstration Programme details: www.est.org.uk/solar

one year of the grant award. After March 2006, the scheme will be replaced by the 'Low Carbon Building' programme, details of which will be announced in the summer of 2005.

Facts and figures

Although the cost of photovoltaics has reduced considerably over the last 20 years, the payback times are generally longer than for other renewable energy technologies and energy efficiency measures. For this reason, projects are generally undertaken with the aid of grant funding. The Spring Gardens project (Case Study 1) provides a good example. This scheme received grant funding from the Department of Trade and Industry's 'Major Demonstration Programme' and from Scottish Power. A breakdown of costs is shown below.

DTI Grant	£98,000
Scottish Power Grant	£20,000
Offset roofing costs	£2,000
New Progress	£62,000
TOTAL CAPITAL COST	£182,000

A 1kW array of panels was installed on each house, which is capable of producing around 850 kWh per year. The associated electricity bill savings of £70 per household per year may make a sizeable contribution to alleviating fuel poverty.

In addition to the above, HAs that install photovoltaics may be able to benefit from the sale of Renewables Obligation Certificates (ROCs) associated with the electricity generated. Suppliers of electricity are obliged to source a growing percentage of their power from renewable sources. Housing Associations and others that produce renewable electricity (e.g. from photovoltaics) will be issued with ROCs, which may then be sold to electricity suppliers. The value of ROCs varies but is generally around £0.03 per kWh generated.



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