



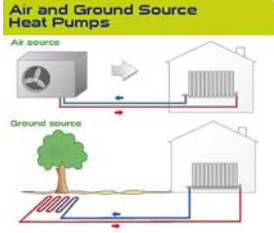




Information on Renewable Energy Systems

Renewable Energy Technology		
Solar (PV) electricity  	Typical system cost	<ul style="list-style-type: none"> £4,000 - £6,000 for domestic size system (1 kWp)
	Inverter	<ul style="list-style-type: none"> £500 - £650 (750W) (included in the above cost) Standard warranty 2 years Design lifetime 10-15 years
	Operation	<ul style="list-style-type: none"> £0
	Maintenance	<ul style="list-style-type: none"> Yearly check to ensure that the panels are relatively clean and that shade from trees has not become a problem. The wiring and components of the system should be checked by a qualified technician.
	Grants	<ul style="list-style-type: none"> Low Carbon Buildings Programme, see below Approx 40-50% grant
	Climate change emissions	<ul style="list-style-type: none"> Around 300kg carbon dioxide avoided per year.
	Payback	<ul style="list-style-type: none"> A 1kWp system generates approx 750kWh per year, this is about 22% of household energy use based on 'average' household demand (3300kWh per year). At an electricity cost of 10p/kWh this represents an annual saving of £75 however this will depend on how efficiently the household uses energy and is likely to increase with rising electricity costs. Selling excess electricity – see below
	Other	<ul style="list-style-type: none"> For optimum generation panels should face south, south-east or south-west with little shading. Planning permission may not be required 8m² approx for domestic size system Warranty: to produce no less than 90% of their initial minimum stated power for a minimum period of 10 years Lifetime: around 25 years
Solar thermal (hot water heating) 	Typical system cost	<ul style="list-style-type: none"> £2,500 - £3,000 professionally installed
	Grants	<ul style="list-style-type: none"> Low Carbon Buildings Programme, £400, see below
	Payback	<ul style="list-style-type: none"> Provides 50– 60% of hot water needs, payback will depend on household hot water use.
	Other	<ul style="list-style-type: none"> Planning permission may not be required A water cylinder is required to store hot water Can link to under floor heating system For optimum generation panels should face south, south-east or south-west with little shading. DIY systems can now be purchased from retail outlets – LCBP grants do not cover DIY installations.
Micro turbines (wind)	Typical system cost	<ul style="list-style-type: none"> There has been considerable development in this field in the last couple of years. Costs can vary between £1,500 - £6,000 per kW installed Performance depends on location and size of wind turbine
	Grants	<ul style="list-style-type: none"> Low Carbon Buildings Programme, see below

	Payback	<ul style="list-style-type: none"> An average house uses 3300 Kilowatt hours of energy in one year. A 1 kilowatt wind generator working at peak output for maybe 30% of the time would provide you with about a third of this. Check with the installer or manufacturer for predicted generation for a particular product. Selling excess electricity – see below
	Other	<ul style="list-style-type: none"> Planning permission will be required.
<p>Ground source heat pumps</p> 	Typical system cost	<ul style="list-style-type: none"> A typical 8kW system costs £6,400-£9,600 plus the price of connection to the distribution system. This can vary with property and location.
	Grants	<ul style="list-style-type: none"> Low Carbon Buildings Programme, see below
	Other	<ul style="list-style-type: none"> Ground source heat pumps (GSHP) are a low carbon technology which operates by transferring heat from the ground into a building to provide space heating and, in some cases, to pre-heat domestic hot water. Although we may not know it heat pumps are very familiar to us - fridges and air conditioners are two examples. For every unit of electricity used to pump the heat, 3-4 units of heat are produced. As well as ground source heat pumps, air source and water source heat pumps are also available. More appropriate for new build as some excavation required.
<p>Air Source Heat Pump</p> 	Typical system cost	<ul style="list-style-type: none"> Around £3,500 for a 6kW system, excluding cost of distribution system ie. radiators.
	Grants	<ul style="list-style-type: none"> Low Carbon Building Programme, see below
	Other	<ul style="list-style-type: none"> ASHPs are a low carbon technology which extract heat from the surrounding air, even at low temperatures, to provide space heating. Up to 4 times the heat energy can be released for each unit of energy required to power the system.
<p>Biomass (wood fuel)</p> 	Typical system cost	<ul style="list-style-type: none"> Capital costs depend on the type and size of system you choose, but installation and commissioning costs tend to be fairly fixed. Stand alone room heaters generally cost £1,500 - £3,000 installed. The cost for boilers varies depending on the fuel choice; a typical 20kW (average size required for a three-bedroom semi-detached house) pellet boiler would cost around £5,000 installed, including the cost of the flue and commissioning. A manual log feed system of the same size would be slightly cheaper. Any boiler must be compliant with the Clean Air Act.

Funding	Low Carbon Building Programme
	<p>The Government's Low Carbon Building Programme (LCBP) fund provides grants for renewable energy projects. This is a 3 year fund which opened in April 2006. Grants are set at different levels for each technology and the fund is open to applications from householders, community groups, public bodies and businesses. Energy efficiency measures must be in place before a LCBP grant can be awarded.</p> <p>Please visit the website www.lowcarbonbuildings.org.uk for more information and to apply on-line. Alternatively please call the helpline number (0800 915 7722) for more information.</p>
	CAFÉ - Community Action for Energy
	<p>This support programme is managed by the Energy Saving Trust and can provide support to community sustainable energy projects. CAFÉ can provide up to 1.5 days of support for projects which can include advice, signposting to other sources of information and locating funding sources.</p> <p>Please visit the website for more information www.est.org.uk/cafe or call the helpline: 08701 261 444.</p>
Planning Permission	<p>For all technologies it is advisable that you contact Kirklees Council Planning on 01484 416 940 to check whether Planning Permission is required. For solar panels and ground and air source heat pumps it is unlikely that it will be required but there may be particular conditions that apply to your area. Small wind turbines do need Planning Permission, it is advisable to contact Planning before submitting an application to discuss your proposal.</p>
Selling electricity	<p>Most systems do not store electricity generated, the excess 'spills' back onto the National Grid. There is the opportunity to sell back this excess. Some energy suppliers will pay you for this energy however it is advisable to discuss the terms and conditions of any scheme with the supplier.</p> <p>Kirklees Council has undertaken research into options for selling electricity generated and obtaining Renewable Obligation Certificates; this information can be made available on request.</p>

For more information contact:

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