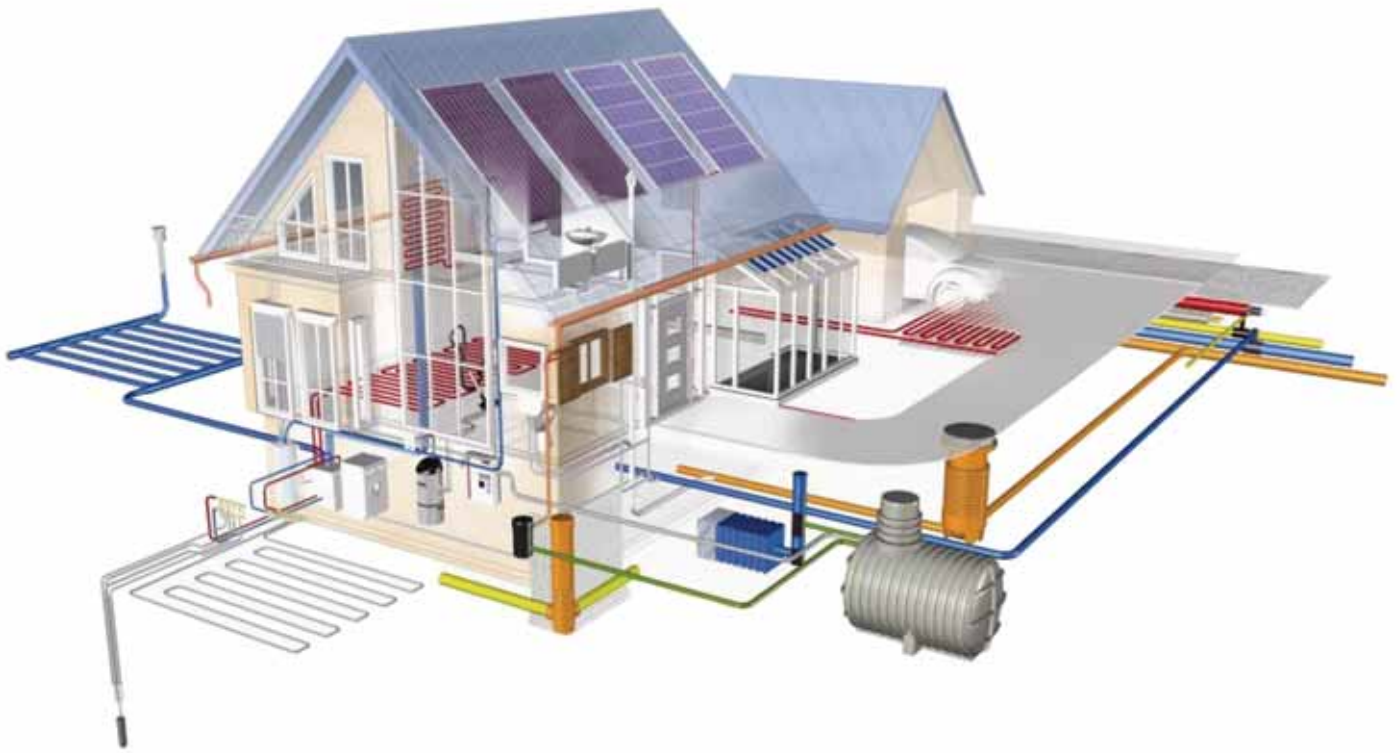




Pipeline & Heating Solutions



**ENERGY EFFICIENCY AND
RENEWABLE PRODUCTS**



ClimateChange

Climate change is the greatest environmental challenge facing the world today. Rising global temperatures will bring changes in weather patterns, rising sea levels and increased frequency and intensity of extreme weather events. The effects will be felt here in the UK and internationally there may be severe problems for people in regions that are particularly vulnerable to change.

There is an increasing realisation among government, industry and the general public that we must begin to face up to our environmental obligations. Government legislation on environmental issues will accelerate the drive to supply and the rising cost of fossil fuels will ensure the renewable energy sources become increasingly popular.

This brochure gives a guide to energy efficient products and emergent renewable technologies and how BSS can source products to meet this increasing demand.

SolarThermalEnergy

Active solar heating systems convert solar radiation into heat which can be used to directly produce hot water. The system usually comprises a roof-mounted solar collector, a pre-heat tank, pump, control unit, connecting pipes, the normal hot water tank and a backup heat source such as a gas or electric immersion heater.

These systems can be retrofitted. Hot water cylinders store the hot water and controllers monitor the temperatures in the collector and storage vessel. Payback periods become shorter as fuel prices continue to escalate.

Photovoltaic(PV)

The sun's energy can be converted directly into electricity using photovoltaic cells. The great attraction of PV technology is that it delivers electricity at the point of use. For example, panels can be integrated into buildings to supply the buildings themselves.

Generally these are integrated into roofs so retrofit is difficult, PV can prove cost effective where grid connection is expensive or not feasible. Excess electricity can be sold back to the electricity providers.

AirHeatExchange(HeatPumps)

Air heat pumps consist of a silent running fan which draws in the outside air. A compressor, heat exchanger and condenser provide hot water by converting the heat from the air. These can be connected to existing heating systems to provide both heat and hot water via radiators or underfloor heating systems.



Rainwater Harvesting

A wide variety of systems are available. Typically roof collection via a drainpipe into a storage tank (often underground). Debris is filtered before the water reaches the storage tank and the water is then used for non-potable applications such as toilets, outside taps, etc. Control units monitor water levels in the storage tank and switch to main supply if the level drops too low. The low cost of domestic water in the UK means a relatively long payback period in domestic applications but industrial, commercial and agricultural organisations benefit from much shorter payback periods.



Biomass Fuels

Biomass is derived from plant material and animal wastes and can be used to generate electricity and/or heat. The most straightforward way to recover energy from dry biomass fuels is by combustion to provide heating or hot water. These systems can range from simple log fires and stoves to sophisticated wood or straw-fuelled boiler systems, usually with automatic fuel handling and control systems.

Combined heat and power (CHP) is becoming an increasingly attractive option for biomass plant, offering a reliable, low-cost heat source for industrial and commercial uses, together with electricity that can be sold back to the local grid. Biomass fuels are also being increasingly used with advanced conversion technologies such as gasification which is a thermochemical process in which biomass is heated with little or no oxygen to produce a low-energy gas. This gas can then be used to fuel a gas turbine or combustion engine to generate electricity.

Geothermal Heating (Heat Pumps)

A geothermal system, which typically consists of an indoor unit and a buried horizontal or vertical bore earth loop, capitalises on the constant temperatures of the ground 4 to 6 feet below the surface to provide 'free' energy. In winter, fluid circulating through the system's earth loop absorbs stored heat and carries it indoors.

The indoor unit compresses the heat to a higher temperature and distributes it throughout the building. In summer, the system reverses, pulling the heat from the building, carrying it through the earth loop and depositing it in the cooler earth.

Underfloor Heating

Underfloor heating is invisible and maintenance free, with no space-consuming radiators. It requires only low temperature hot water and is ideal for use with modern condensing boilers. Comfort levels are high and running costs are low. Underfloor systems are rapidly becoming specified over traditional radiator based ones and often form part of a renewable energy scheme for a building project.





Boilers

Boilers have changed considerably over recent years with efficiencies increasing. These boilers are either high efficiency (HE) or condensing type and help reduce fuel consumption providing substantial savings.

Controls

Thermostatic radiator valves offer individual control of heaters. Time clocks or heating programmers fitted to boilers can provide automatic control for heating or hot water. Weather compensators balance external and internal temperatures to gain maximum efficiencies.

Insulation

Ensuring that pipe work is sufficiently insulated will make sure that the cost of producing heat will not be wasted during distribution to heaters and hot water cylinders.

Costs&Funding

The Low Carbon Buildings Programme from the DTI provides grants for microgeneration technologies to householders, community organisations, schools, public sector, private businesses and not-for-profit organisations.

See www.lowcarbonbuildings.org.uk for further details.

ECA - Enhanced Capital Allowance – businesses can claim back capital expenditure in the first year incurred on new energy-saving plant or machinery bought for business purposes. Examples include CHP, boilers, motors, variable speed drives and pipe work installations.

See www.hmrc.gov.uk/capital_allowances for further details.

BSS's portfolio of manufacturer partners ensures we are well placed to be able to offer these emergent technologies as they become increasingly available.

Government legislation will increase demand and we are ready to offer an extensive range of renewable energy products from the leading suppliers in the market.



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The paper used in this document is from a sustainable source

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