



A large amount of the energy we buy today comes from fossil fuel and nuclear power stations. When any fossil fuels are burned, emissions are released into the atmosphere which impact upon our environment. These include carbon and sulphur dioxides which contribute to climate change and acid rain.

With fossil fuels being limited and concerns about nuclear fuel, there has been a growing interest in renewable energy production.

Renewable Energy in Scotland

The original target (set by Scottish Government) was that 50% of the electricity generated in Scotland by 2015 would be from “renewable sources” and that by 2020, 100% of the electricity generated in Scotland should be produced from “renewable sources”.

There remains a real commitment by the Scottish Government to promoting the use of renewable energy, and this can include incentives for domestic consumers.

What’s currently available for domestic consumers?

The Energy Saving Trust has further information on Renewable technology on their website at www.energysavingtrust.org.uk/domestic/content/renewables.

Renewable Energy Technology

Passive Solar:

The use of passive solar design is possibly the simplest form of solar energy. Many buildings today are designed to utilise the energy of the sun as efficiently as possible.

The “location” and “orientation” of the building are key factors in optimising passive solar design and simply by having south facing windows can improve spatial heating, especially during autumn and winter.

Solar Water Heating:

Solar water heating panels are typically roof mounted. They work by absorbing solar radiation (the sun’s energy) to heat water. Solar water heating (SWH) panels are the most commonly used form of solar energy today.

A typical system may provide 50-70% of hot water needs over the year, with hot water being generated even on a cloudy day.

Photovoltaic (Solar Electricity):

Photovoltaic technology is a method of converting daylight / sunlight into electricity. The varieties of applications in which solar electric is used are numerous. Photovoltaic (PV)

cells are used in simple applications e.g. calculators and watches and also for larger applications.

Larger PV systems can be integrated into buildings to generate electricity for export to the National Grid.

Hydropower:

The energy potential of moving water has been harnessed for many years, originally using water wheels, belts & gears to drive machinery. Since the 1950's, large dam projects have been commissioned (mainly in the Highlands of Scotland).

With improvements in the technology available, there are still (small) hydropower potential generation sites available which have been untapped.

Wind Energy:

People have used the power of the wind for many years to produce mechanical power, e.g. for milling grain and pumping water. In recent times, wind turbine technology has enabled us to harness wind to generate electricity. This renewable source of energy has great potential in both onshore and offshore wind farms.

Wind power is one of the cleanest and safest of all the renewable commercial methods of generating electricity. It is however only available when windy conditions prevail.

Biomass Energy:

This is the use of organic matter to provide heat and, in larger systems, power as well. Wastes from forestry and agriculture are common biomass fuel sources in Scotland and can be extremely cost-effective when local wood sources are used.

Wood chip or pellets made from the residues can be used in domestic wood-fuel boilers with the added benefit of being carbon neutral. Producing energy from biomass therefore has both environmental and economic advantages over conventional fuels.

Feed in Tariffs:

With micro renewable energy technology and the generation being available to households, feed in tariffs are available for households to claim back money from the energy produced. Various rates apply (subject to the technology generating the energy).

For information about tariffs see, please visit the Energy Saving Trust website at www.energysavingtrust.org.uk/domestic/content/feed-tariff-scheme

Further information about improving your home using Renewable Energy Sources is available from the Energy Saving Trust website at www.energysavingtrust.org.uk/domestic/scotland/domestic/improving-my-home/home-energy-scotland-renewable-loan

Further advice and information

Should you have any questions regarding renewable energy or would like further information on energy efficiency matters, please contact the Energy Saving Trust (Home Energy Scotland) on

0808 828 2282 or

Visit: www.energysavingtrust.org.uk/scotland/domestic/grants-and-support/home-energy-scotland

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