DISTRICT HEATING

Glasgow CITY COUNCIL

sustainable glasgow

DISTRICT HEATING

District heating systems are fast emerging as a method of creating affordable warmth, reducing carbon emissions and pollution. These systems work by distributing heat generated in a centralised energy centre through a series of pipe networks, to consumers. A Combined Heat and Power (CHP) system works by producing electricity and heat through an engine fueled by either renewable or low carbon sources. The electricity is usually sold back to the grid and the heat is captured and used for heating nearby homes and buildings. Thermal stores are sometimes used to store the hot water and heat when it is not being used. Insulated, underground pipes are then used to transport the hot water to different buildings. Each home has heating controls similar to a thermostat or the timer on a standard boiler where the heating can be controlled to suit those in the home or building. Such systems have back up boilers and turbines to allow for a constant supply of heat and hot water.

District heating can generate savings on heating bills for home owners and businesses. In addition district heating can achieve large scale carbon emissions reductions, and has the flexibility to convert and connect to alternative power sources as they become available. Costs for standard boiler maintenance and servicing are also saved, as the heat comes from a central location that serves many buildings.

District heating schemes can help to generate employment also, as the construction and maintenance of such systems create jobs. District heating systems can also be linked up to further schemes and housing, creating the opportunity of expanding and connecting more buildings. Waste heat, from industrial processes for example, can be added to the system and can in turn save costs through reduced fuel demands. The more buildings that are connected to a district heating system, the better; a diversity in building type and use will even out demand, thus enhancing efficiencies and delivering' before , more cost savings and greater benefit to the environment.

EXAMPLES OF DISTRICT HEATING IN GLASGOW

IBROXHOLM OVAL

Ibroxholm Oval is just South of the river Clyde in Glasgow. Glasgow Housing Association and Scottish Power Energy Networks have developed district heating from a CHP engine for one of the high rise flats on the estate. This block of flats previously had an expensive electric heating system which has now been converted to reduce heating bills for 98 homes.

WYNDFORD ESTATE

The **Wyndford Estate** was established in 2012 in Maryhill in the North West of Glasgow. It was established on a partnership between Cube Housing, Scottish and Southern Energy (SSE) and British Gas. The district heating provides heat and hot water to 1500 homes and runs from a gas fired CHP engine, three gas boilers and a thermal store at the heart of the estate. It helps to create affordable warmth for the residents, and is estimated to save up to 7000 tonnes of carbon dioxide emissions a year.

ATHLETE'S VILLAGE

The **Athletes' Village,** in the East End of Glasgow, was built for the Commonwealth Games in 2014 to provide accommodation for the visiting athletes. It was built to include district heating and energy efficient buildings which are estimated to save up to 40% on heating bills. Homes within the Athlete's Village, will be split, with half being transferred to housing associations and half being sold on the housing market. The district heating scheme contains 700 homes, a 120 bed care home, the Emirates Arena and Sir Chris Hoy Velodrome. The CHP engines within the energy centre generate power that is sold back to the grid. It also has three back up boilers to maintain a constant supply of heat and hot water.

GLASGOW RECYCLING AND RENEWABLE ENERGY CENTRE

The Glasgow Recycling and Renewable Energy Centre (GRREC) is being developed and is set to be completed by March 2016. The GRREC is situated in Polmadie in the South side of Glasgow, on the site of a previous recycling and waste processing depot. This facility is being developed to produce energy through processing waste. The potential to construct a a district heating scheme that will utilise heat generated through the waste treatment is being explored.

STEP UP (Strategies Towards Energy Performance and Urban Planning) is an energy and sustainable city planning project that aims to provide cities with the tools and approaches necessary to enhance and integrate energy into their city planning. The project is working together with local government, research and commercial partners in the European cities of Ghent, Glasgow, Gothenburg and Riga. The project is part of the EU Seventh Framework programme (FP7).

Visit our website for more information on district heating and other projects:

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