

Low Carbon Case Study no. 4: St Mary's District Heat Network

Introduction

The St. Mary's District Heat network in Oldham currently provides heat and hot water to around 1,400 homes and Oldham leisure centre. The former coal fired district heat network is now gas-fired and is managed by First Choice Homes Oldham via a contract with Dalkia.

Site history

Pre 1960 St. Mary's ward was a collection of terraced back to back properties with few modern amenities. The Council redeveloped much of the area in the 1960's, and in a joint venture with the National Coal Board, took the decision to install a central coal fired boiler house to supply the new properties with heat and hot water.

The boiler house operation was contracted out to the Coal Board, who in turn set up a company called 'Associated Heat Services'. The original coal fired plant supplied over 2000 dwellings and employed eight full time boiler men and engineers; at its height it was burning about 420 ton of coal per week.

The coal fired system was subject to rising operational costs, together with environmental issues such as air quality and grit and ash removal, and the Council decided to convert to a gas-fired system in 1997.

Current operation

The existing gas-fired plant was designed for in excess of 1700 dwellings and the Oldham leisure centre. It currently has just over 1300 dwellings and the leisure centre connected into the network and heat meters have been introduced.

The plant consists of 3 boilers: a dual fuel, gas and gas-oil fired boiler, and 4 pass boilers which heat the primary air from the flue. The gas-oil boiler was installed as a back-up but it has never been used.

Each boiler is rated at 5.5MW and thermal efficiency is above 83%.

A typical summer load would be about 2.5MW, peaking to 6MW in the winter months, therefore the existing network has significant unused capacity.

In 2010 the site used 28,700MWh of gas over the course of the year.

The plant is controlled by an automated 'boiler management system' and is totally unmanned except for maintenance visits and any faults are relayed to a 24hour call centre.

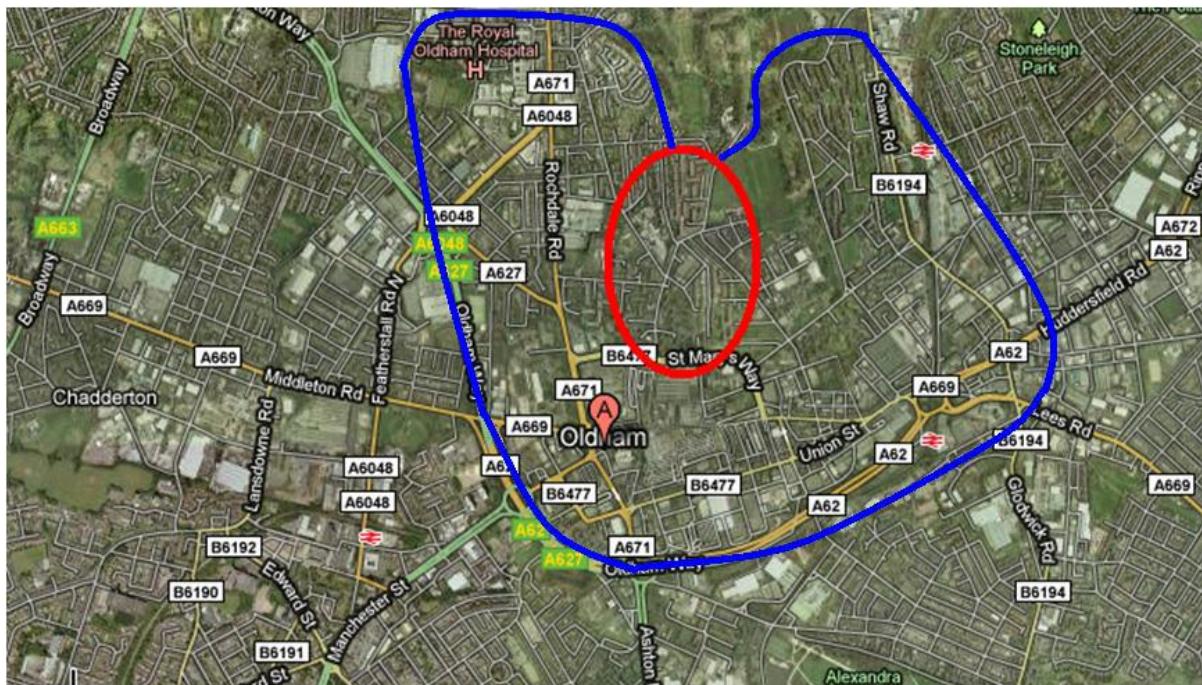
Looking to the future: St Mary's Biomass Project, Oldham – First Choice Homes/Oldham Council

Whilst the existing boiler plant has some useful life remaining, the boiler house needs major refurbishment and it is becoming increasingly expensive to operate as gas prices rise. To address this, the council and partners are currently reviewing options to improve the current district heating plant, review alternative lower carbon fuel options and explore opportunities to expand the network.

Biomass has been identified as a viable alternative however the existing heat network infrastructure will need to be upgraded to accommodate the transition to a low carbon fuel.

To deliver this critical low carbon infrastructure, Oldham Council and First Choice Homes have successfully secured ERDF (European Regional Development Fund) funding and private sector match funding (British Gas), which will be used to construct a new boiler house and install a new biomass fuelled boiler plant. This new infrastructure will provide a basic package to offer a low carbon heat source to existing town centre residents and businesses connecting into the existing district heat network.

Critically this infrastructure upgrade will also provide the demand for locally sourced wood chip fuel, which will be sourced and processed through a social enterprise scheme in partnership with Oldham Council's parks department, and it is expected that the upgrade of the boiler plant will stimulate the further development and extension of the heat network in the Town Centre¹.



Key

Red edge: current heat network boundary

Blue edge: potential catchment area for extended heat network

Further information

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¹ <http://www.nwda.co.uk/news-events/press-releases/201001/%C2%A310-million-for-families.aspx>



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