District Heating In Aberdeen

July 2016

DISTRICT HEATING IN ABERDEEN

IN THIS ISSUE

FAST FACTS

40,000

Additional homes to be connected by 2020

2360 **homes and**

13 **Public buildings already connected to CHP network in Aberdeen**

One Meeting, multiple connections

by Jody Edwards

Regulations, legislation, policies and planning guidance need to be more connected and consistent from both the Government and Local Authorities to ensure the process of developing District Heating projects becomes easier and more streamlined. This was the overarching consensus from our participants at the recently held District Heating in Aberdeen workshop held at the Aberdeen Sports Village in June.

Developers also said that when it came to the perceived strongholds to setting up DH projects in Aberdeen, financing was identified as their number one concern, saying that clear guidance on what funding is specifically available for projects requiring significant capital investment is unclear. Participants welcomed a practical strategy to provide incentives for developers, calling for more recognition to be given to DH systems when an EPC is carried out; and possibly offering financial incentives based on the amount of CO_2 saved by installing a district heating system.

Our table discussions invited participants to consider a parallel strategy by Local Authorities to partner with private developers to develop a robust engagement plan to raise awareness of the benefits of district heating to consumers. If coupled with one consistent message from Government and energy suppliers, this may help consumers in their comparison of the benefits of a DH system to alternative heating methods.

"Engaging consumers on the benefits of installing DH may take some convincing, with emphasis on reassuring those that believe the offer is simply too good to be true, but which should become easier once word of mouth spreads the benefits". This was the key message to participants by Aberdeen City Councillor Jean Morrison, who shared the city's plans to extend DH to socially impoverished communities like Torry as part of it commitment to tackling fuel poverty, creating sustainable employment and promoting renewable technologies

Allan Crooks – Programme Manager, Energy & Low Carbon Heat at Zero Waste Scotland

Aberdeen City Councillor Jean Morrison, keynote speaker at the District Heating in Aberdeen Workshop

Stratego Project Officer Ruth Bush with Chief Executive Officer, Ian Booth - Aberdeen Heat and Power

OUR PRESENTERS

We extend a special thank you to our speakers at the first District Heating in Aberdeen networking event. Our experts covered a wide cross section of the issues and challenges they encountered and overcome as, a providers, developers and consumers of district heating in Aberdeen to provide sound evidence beneficial to the consumer and commercial perspective.

From bottom left to right: Aberdeen City Councillor Jean Morrison, Terri Vogt, Allan Crooks, Danny Costello, Ian Booth, Alison Hope, Guy Milligan and Kasia Nathan

Opportunities for District Heating

Participants were willing to explore ways to promote and benefit from DH schemes, as it could be viable for larger housing developments (low-density).

Developers can play a more significant role in generating more buy-in for the technology by promoting the benefits from using CHP, which include security of supply, adaptability (wood fuel, gas, heat pumps, etc.) and increased energy efficiency of hard-to-heat properties, to the public.

Exploring successful DH projects in Scotland, UK and Europe could bring more knowledge and partnership opportunities, for example with EE, however there is much work to be done that will ensure consistency in

Making policy and incentives to remove counter intuitive barriers, for example Non Domestic Rates.

There may be potential in a move to reduce costs in other areas where a gas network is not required and load lower against electric heating.

Similarly, there is the option for a DH system to be financed by a dedicated ESCO, which can recover the development costs over time. The ESCO carries the risk of heating performance so it is in their interest to design and build effectively.

Danny Costello – Aquatics Manager at Aberdeen Sports Village

What are the challenges?

Administrative and Financial	Technical	Legislative
Disjoined funding – small amount of funding available from various sources, rarely big pots of funding available from the same provider. This leads to fluctuating prices for the consumer, as from project to project the cost may vary considerably depending on the amount of grants/funding secured by the developer. Finance available is not for long enough timescales though move from 10 to 15 year for DHLF but this is still not long enough. Housing associations able to access better rates than is currently being offered for borrowing. Paying back the capital and trying to alleviate fuel poverty an issue. Would CHP manage to deliver prices that could compete with the gas/electricity suppliers? Non-domestic/ business rates for those installing CHP can be 5-10 times higher than for natural gas installations?	Lack of recognition of CHP on EPCs; need to upgrade SAP software to include CHP. Mixed messages from energy suppliers and Government given to customers – customers are being encouraged to install smart meters for energy consumption to make it easier for them to shop around and change suppliers – this would be a challenge to overcome as connection to DH scheme would require long-time commitment from the clients. What about householders' freedom to choose supplier? What if some disconnected their house from system? How would this impact the performance and economy of DH? Would this lead to more expensive prices for other still connected? AHP indicated that they do not dump heat ad that they are aiming to introduce lower carbon tech but that they are restricted due to some of the prohibitive grant conditions such as LECF requiring install within 1 year.	Discussion around how energy efficiency and DH are completed in conjunction as efficiency can allow for lower return temps improving the efficiency of the network. How is this done in Aberdeen, understand that with domestic a lot of efficiency work was completed prior to connection, but is this the same with non-domestic? If not, how will this be addressed in the future? Unstable policies and regulations Problems around how to engage appropriate owners of student accommodation

Your ideas have value

What if there was an opportunity to .....

1. Make contacts with leads for the successful CHP projects across the country/ in Europe?
2. Introduce financial incentives for the developers, e.g. based on the amount of carbon emissions saved by installing CHP as opposed to alternative heating systems?
3. Continue to promote benefits of CHP to the customers (domestic and non-domestic) and developers, by creating multi-agency partnerships?
4. Create planning guides and campaign for clearer policies and regulations on local and national levels?
5. Develop programmes that educate and demonstrate city wide projects that encourage confidence about District Heating?
6. Promote DH centrally, to help prepare the market and support early high profile schemes to create awareness and 'mainstream' DH?
7. Gain access to Long term Funding Support (grants and/or loans/ or end use schemes similar to RHI/FiT?
8. Have longer timescales on grant application and installation?
9. Have technical and customer support for developers to deliver a scheme, as well as support tenants in making informed choices?
10. Have Central Government support and guidance to help encourage stakeholders across all sectors, and give confidence to choose DH?
11. Monitor and meter DH and use the time and resources to use the data effectively?

Stratego Project Officer Ruth Bush with Senior Domestic Officer, Kevin Christie and Energy Assistant, Jody Edwards, Aberdeen City Council's Home Energy Team

Your Questions Answered

How can private house-builders be encouraged to take up the benefits of DH?

That's a very good question. One of the reasons for Aberdeen City Council hosting this network event in partnership with the Stratego Project was to raise awareness of DH and Networks in the city, and to open a dialogue with house builders and other stakeholders on the issues and challenges they see in making this a viable business opportunity for them. One of the outcomes from this dialogue is to help provide greater understanding of what is required to help accelerate the transition from gas networks to heat networks. Where a heat network is viable, we want to know what would encourage developers to install a heat network over a gas network, or electric heating.

At the moment, the feedback we have received focuses on the provision of technical, financial and business support, along with a robust awareness campaign of the benefits of District Heat over other heating choice.

Is DH more suited for RSLS who maintain interest in developments?

Where RSL's or indeed developers maintain an interest in a development, there is greater diversity on how the district heating can be developed. However, it should be noted that there may be interest from third parties to develop heat networks within a new development. Where a new development is being built, opportunities may exist for a heat network to be developed within the wider neighborhood. In Aberdeen there may be an opportunity to connect to an existing network for heat supply. Aberdeen City Council and Aberdeen Heat & Power are open to discuss with you the potential for DH in a development within the city.

What is the Scottish Government doing to ensure that there is enough sustainable wood for low-carbon bio-mass development?

Scottish Government formed the Wood Fuel Task Force with a remit of informing Government on these issues. Read more about it here http://scotland.forestry.gov.uk/supporting/strategy-policy-guidance/climate-change-renewable-energy/woodfuel-and-bio-energy/woodfuel-task-force. Scottish Government also supports the uptake of the UK Renewable Heat Incentive (RHI) - to date (April 2015) over £23 million had been paid to Scottish installations under the non-domestic RHI, accounting for 18% of renewable heat capacity generated under the scheme. The RHI eligibility criteria are currently driving the development of sustainable biomass wood fuel supplies.

Is there evidence to overcome some of the issues for housebuilders, for example upfront costs and ongoing maintenance? What if there isn't funding available upfront?

There are companies and organizations who can offer turnkey solutions for district heating, including finance and taking ownership. Support is available from the design stage to building completion, including maintenance and management. They can also manage all aspects of billing.

Are all heat maps publicly available? If so, how can one get access to heat map for Aberdeen?

Heat maps are available on SG website at 50metre resolution. http://heatmap.scotland.gov.uk. There is a lot of information about heat maps available at: www.gov.scot/heatmap. More detailed heat maps are held by individual local authorities, Zero Waste Scotland and SG. See **www.gov.scot/heatmap** for more details.

Is there also access to the heat maps for every Local Authority area?

Access will be the same in each Local Authority area.

How does AHP charge for heat?

For domestic customers, AHP currently charge a fixed rate which is payable monthly throughout the year. There are no heat meters installed for individual properties at present. Under the new heat metering and billing regulations, any new build housing must have individual heat meters and it will be necessary for AHP to apply a feasibility test on all other previous installations to ascertain the cost effectiveness of installing heat meters retrospectively. For all non-domestic connections, each customer installation has a heat meter installed and the customer is charged per kWh consumed, at a rate which is reviewed annually.

How does the price of heating compare with gas-powered domestic heating from the usual Big Six energy suppliers?

Within the presentation given by Guy Milligan from Hobesco it was stated that at current prices it is more economic to have a gas supply when compared to fuel from a biomass source. This is likely to change depending on the market price for biomass chips and also the future wholesale and retail gas market prices.

The prices from the big six suppliers vary substantially across the various tariffs being offered. What must also be taken into consideration is the cost of maintenance and replacement of gas boilers over say, a 15 year period. These costs are not commonly taken into account when trying to draw comparisons, but are considerable. From information based on the efficiency of a gas boiler over a 15 year period and annual maintenance of labor and parts the all up cost of gas would be approximately 9.5p/kWh.

At AHP we supply heat at a fixed rate, unmetered, so it is not wholly accurate to get a price per dwelling to compare to gas prices. However AHP have started metering per block connections. We consider the number of flats connected in that block with the income from the supply of heat (taking into consideration the maintenance costs), to calculate an average cost of 7.1p/kWh. This compares very favorably with the cost of supplying gas. To date AHP have supplied heating to replace electric heating systems so the savings are considerably more.

Is there likely to be a more consistent charging for domestic/business rates for DH, as currently some Councils exempt schemes and others charge full business rates in Scotland?

There should be a common and consistent basis across Scotland for charging of business rates. It does not seem fair that some schemes are penalized more than others. The charges for business rates on underground piping should be on a par with the rates that are applied to other utility services.

What type/size of businesses do you want to engage with regarding Powering Aberdeen?

Any size or type of business should be engaged. It must be realized however that where there is an area that businesses can be grouped together this makes connections and supply of heat much more cost effective. It would not be fair to expect one remote business to pay for all of the infrastructure costs in getting a connection there if there are other potential connections to be made on the way. Equally it would not be fair on the supplier to carry all of that risk in making a connection if there is little or no likelihood of making other connections along the way.

Is there any consideration to add heat pumps to DH networks?

Heat pumps and other renewable technologies are certainly options to connect to heat networks. Each case must have a feasibility study carried out to determine the economical, practical and environmental aspects of that option, including capital and operating costs. At present, with the cost of gas being relatively low and CHP being firmly established as a supply mechanism for DH networks, the economic case for large scale heat pumps is marginal. Other renewable CHP technologies are either less efficient, more capital intensive or not proven sufficiently at scale, but over time these technologies will improve and start to replace gas fired options. Heat only options such as biomass are already proven, as is the case with Hobesco, and others.

Are there plans to cease rewarding organizations using bio-mass for burning excess wood and for example, opening windows in order to excessively benefit from RHI?

The RHI tariff is set up to discourage this situation. Any installation doing this will be paying more for additional biomass fuel than they will be receiving in RHI returns.

District Heating In Aberdeen

Aberdeen City Council
Marischal College

Broad Street

AB10 1AB

Aberdeen City Council's, Home Energy Team was created as part of the Council's Home Energy Strategy.

The Home Energy Team can provide information on home energy efficiency projects in Aberdeen, covering all tenure types, including our District Heating projects with Aberdeen Heat & Power.

Your Contacts:

- **Kevin Christie**
  Senior Domestic Energy Officer
  Telephone: 01224 522094
- **Jody Edwards**
  Energy Assistant
  Telephone: 01224 523741
- **Ian Booth**
  Aberdeen Heat & Power
  Telephone: 01224 482620
  Email: info@aberdeenheatandpower.co.uk

ABERDEEN CITY COUNCIL

Home Energy/Energy Management Unit

Aberdeen City Council
Broad Street
AB10 1AB

HomeEnergy@aberdeencity.gov.uk

Stratego

aberdeen sports village

RESOURCE EFFICIENT SCOTLAND

Aberdeen Heat & Power
Delivering Affordable Warmth
www.aberdeenheatandpower.co.uk

ZERO WASTE SCOTLAND

HOBESCO

The Scottish Government