

District Energy Vanguards Network Newsletter

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Editorial

Ghosts of the past, present and future??

The past year has been an eventful one for district energy in the UK with some lows but more highs.

The year had a poor start as the Chancellor's Autumn Statement in November 2013 impacted on the Energy Companies Obligation (ECO). Local authorities were forced to bail out projects in train by making up the unexpected funding shortfall. Other projects were abandoned or curtailed. However, after concerted lobbying district energy now is in a better position with connection to district heating becoming an ECO primary measure, with a 40 year life term for gas-fired CHP and the requirement to insulate tower blocks to be relaxed from April 2015. This is a stronger position for district heating in what is now a reduced ECO capital investment programme and after a year of lost progress.

On a more positive note DECC's Heat Network Delivery Unit has been steadily supporting project development in England & Wales and there are now in excess of [80 local authorities](#) benefitting from this programme with either handholding support or grants for heat mapping, policy development and technical feasibility studies. Although the grant

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support element will – as far as we know at the moment - end in March 2015, it has recently been announced that funding will be provided to keep HNDU in place for a further year to manage their portfolio of projects. This will potentially produce a pipeline of investable district heating projects.

In March the Scottish Government issued its draft [Heat Generation Policy Strategy](#) for consultation. This set out the broad policy framework to match [DECC's Future of Heating](#) issued in 2013. Unlike the DECC document **it included a target of 1.5 TWh of heat to be delivered via heat networks and 40,000 homes to be connected by 2020.** Responses to the consultation, which concluded in June, expressed concern that this lacked ambition in that it would only bring Scotland into line with the UK-wide market share of 2% of heat delivered by heat networks. But this is the first time in the UK that an actual *target* has been set for district energy. Targets have a useful role to play in focusing minds and consequently resources, particularly ones that are not too far in the future. Furthermore they can be ratcheted up, rarely downwards. Possibly it could persuade DECC to solidify its current *ambition* for the sector into a more stretching *target*.

An issue highlighted in the responses to this consultation was the need for regulation. There are three aspects of regulation: technical; social (customers); and financial. Two initiatives under development during the year have sought to address the two former aspects and put in place essential building blocks in building a regulatory framework. These are CHPA/CIBSE's [Heat Networks Code of Practice](#) and the CHPA's [Independent Heat Customer Protection Scheme](#) due to be launched early next year. The two are linked as a result of long running concerns around complaints by unhappy customers on some district heating schemes that arise, in part, due to poor design and installation. Getting the technical issues sorted out is the precursor to addressing the consumer issues. Indeed these concerns have sparked innovation. Some consortia applying to [DECC's Heat Networks Technology Competition](#) launched in October are focusing specifically on addressing poorly designed and installed projects with a view to retro-correcting them.

Importantly, these can also be seen as a part of a longer journey towards a more mature industry. There is a need to standardise consumer arrangements to match those offered by other utilities and to professionalise those working within the industry. Both CHPA and CIBSE have suggested that training and accreditation will be developed on the back of the Heat Networks Code of Practice. Improvements in the design, building and operation of projects will lead to customer satisfaction and increase confidence in the industry's ability to deliver.

Presently institutional investors are increasingly showing an interest in the UK's emerging district energy sector. It is anticipated that DECC will be setting out its thoughts on energy infrastructure investment, including heat networks, in the near future. However, confidence is vital if investors are to be persuaded to part with their money and more mature and professionalised industry will help to deliver it.

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As noted in last month's editorial various think tanks and NGOs have been focusing on district energy, recognising it as the missing piece in the puzzle of the heat market. This heightened awareness is very welcome as the next General Election approaches in May 2015 and the political parties put the final touches to their manifestos and programmes over the next few months. Given that the overarching policy frameworks are now broadly in place, progress has been made towards sorting out the technical and social aspects of regulation, can we expect something in these manifestos to address the financial aspects of regulation that will provide investors with that extra confidence to invest in district energy?

Wishing you all a happy and successful New Year

Michael King, Editor, 28th December 2014

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UK and EU Policy

Consultations, funding, conferences and workshops

25 Feb – [Carbon Trust Public Sector Conference 2015 \(London\)](#) – one of the four dedicated streams at this [CPD accredited](#) event will be understanding the role of the public sector in establishing a successful future for distributed energy and heat networks.

25-26 Feb – [Energy from Waste 2015 \(London\)](#) – solving the challenges of heat network delivery from [EfW](#) plants will be a key theme at the conference.

4-5 Dec – [District Energy Vanguards Network workshop presentations](#) – this workshop was held in Exeter with the theme “what works for DE business models in Britain”.

27 Nov – [Local Energy Challenge Fund awards announced \(Scotland\)](#) – of the 17 projects, two focus on using large scale water source heat pumps to drive a DHN and a third is for a DH system that will serve 296 social housing properties along with two planned new schools and a community centre.

UK and devolved administration policy

9 Dec – [CHPA Briefing Note: Metering and Billing of DH and DC](#) – the briefing note provides an overview of the above Government publications which address metering requirements, billing and scheme administration. The note can be read [here](#)

4 Dec – [DECC - enforcement of heat networks legislation in the UK](#) – the [NMO](#) have published [guidance](#) on complying with the heat networks legislation and set up a free email alert [sign up service](#), to provide periodic updates associated with this legislation.

26 Nov – [DECC - metering and billing of heating and cooling](#) – this report quantifies the effects of errors in heat meter installations on heat measurements and to identifies actions that can be taken to reduce the occurrence of these errors.

26 Nov – [the Heat Network \(Metering and Billing\) Regulations 2014](#) – the Regulations have now been put before Parliament.

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UK News

NB articles marked (R) require free registration to view.

29 Dec – [policy makers study the 'Copenhagen model' of heating cities](#) (R) – after years lingering at the bottom of the agenda, the UN in 2014 identified improved heating grids as one of the most effective weapons against climate change.

22 Dec – [tender: design and construction of a hydro to DH scheme \(Highlands\)](#) – to maximise potential electricity generation and mitigate network constraints, the proposal is to install a private wire network alongside the hydro scheme to provide DH for local properties. **Date for submission of proposals is 25 Jan 2015**

17 Dec – [update on local authorities progress in delivering low carbon heat](#) – nearly three years on from the publication of the UK government's first Heat Strategy, Helen Andrews Tipper, Public Sector Energy Programmes Manager, reviews progress in the development of heat networks and what more could be done to get projects over the line.

6 Dec – [study concludes DH proposal commercially unviable \(Orchard Park, Hull\)](#) – the estimated cost of the development would be £26.9m and while the network is technically feasible, the rate of return of 2.7% over 40 years is not considered commercially viable.

5 Dec – [presentation on Birmingham New Street DE scheme](#) – the scheme presently saves over 12,000 tonnes of CO₂ a year and is scheduled to be extended to Temple Street in phases 7 and 8.

5 Dec – [study examines feasibility of capturing waste heat from factories](#) – a £150,000 feasibility study is under way to determine whether excess heat from factories could be piped into homes and public amenities in Workington.

3 Dec – [DH technology enters the mainstream \(H&V News\)](#) – an important aspect of the [draft Code of Practice for Heat Networks](#) is a suggested best practice of keeping flow temperatures below 80°C, which effectively levels the playing field for pre-insulated polymer pipe systems to compete with their once ubiquitous steel counterparts.

2 Dec – [Cornwall to host groundbreaking geothermal energy conference](#) – the agenda for the conference is available [here](#) and included a contribution on heat networks.

28 Nov – [2km borehole project fails to bring hot water to Newcastle businesses](#) – the new heat network will now be gas fired by a £6m energy centre with money due to be secured from the Local Enterprise Partnership, and will also create 343 jobs.

28 Nov – [Manchester wins £100m EIB support](#) – the long-term loan facility from the [EIB](#) will also fund the development of a DH network serving the Manchester Civic Quarter.

26 Nov – [report urges old tower block retrofit with DH](#) – due to poor building fabric that leaks heat, many tower block residents are suffering from increasingly acute fuel poverty and quality of life challenges which can be turned around according to the [report](#).

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25 Nov – [the Future Role of Thermal Energy Storage in the UK Energy System](#) –this report by [UKERC](#) analyses the role of heat storage both at domestic and community scale in the decarbonisation of heat provision in the UK.

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UK Tenders

A list of tenders which include the [CPV code](#) for district heating can be viewed [here](#).

UK Jobs

A list of district heating related jobs can be viewed [here](#).

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Europe

NB articles marked (R) require free registration to view.

18 Dec – [unique DH connection at the quay to provide ship's shore power \(Sweden\)](#) – a consortium of Stena Line, the City of Gothenburg and Göteborg Energi have inaugurated the connection of the local DH network to the Stena Line ferry, Stena Danica.

16 Dec – [Cork tenants face freezing Christmas in row over DH with city council](#) – the estate was built in the 1970s and features a DH system with one central boiler to serve all units. Since the initial development, however, the number of units has risen by around 50 homes to more than 200 units, which is thought to have overstretched the system.

10 Dec – [strategies to convince local inhabitants of retro-fitting benefits](#) – the complete solution includes the replacement of individual gas boilers by a small DH system that includes a biomass boiler and the installation of a lift. The transition to such a system requires changing habits as the boiler is no longer individually, but centrally-controlled, which may be perceived negatively by some residents.

10 Dec – [new flue gas scrubber to provide heat for DH system \(Joensuu, Finland\)](#) – the new flue gas scrubber will increase the plant's energy efficiency and DH production capacity and decrease the power plant's emissions.

4 Dec – [European Parliament discuss role of waste-to-energy and DH with experts](#) – in 2012 [waste-to-energy](#) supplied around 10% of the total heat delivered through DH networks in the European Union, representing 50 TWh per year.

4 Dec – [Copenhagen mayor visits Beijing to promote water technology cooperation](#) – during his visit, the mayor will also work to promote Danish DH technology. Exports of Danish DH technology to China are expected to triple in value to €215m by 2020.

1 Dec – [Swedish data center operator gets money for its warm water](#) – so far, three of [Bahnhof](#)'s five data centers have been plugged into the Stockholm DH system.

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28 Nov – [pilot project to start for geothermal heat production \(Finland\)](#) – the plant is estimated to have a production capacity of up to 40MWth which will cover up to 10% of the DH needs in the [Espoo](#) region.

25 Nov – [innovative biomass plant fires up Austrian economic backwater \(R\)](#) – welcome to Urbersdorf's mini-DH plant, where a computer-controlled system meters and bills the 50 households and lights the wood burner as required.

24 Nov – [court rules in favour of DH utility against energy regulator \(Bulgaria\)](#) – according to the court's ruling, [SEWRC](#) wrongfully manipulated the turnover capital and expenses of Toplofikatsia Burgas while raising the quantities of heat it should produce, thus influencing the price at which Toplofikatsia sells electricity to power incumbent [NEK](#).

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European and other tenders

NB these are a subset of all publically available tenders chosen to give an idea of DH related activity – a more complete set can be viewed [here](#).

9 Dec – [rehabilitation of DH network in Rijeka City \(Croatia\)](#) – the [EBRD](#) is providing a loan of up to €10.3m to cover the installation of two gas fired boilers, a CHP plant, the installation of DC services for the City General Hospital, etc. **Closing date: 9 Dec 2015.**

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The Americas and Africa

26 Dec – [\\$40k study to assess thermal energy system \(Spirit Bay, Vancouver Island\)](#) – the proposed system will use a heat pump to transfer low grade heat from sea water and pipe it to homes and buildings of the Spirit Bay development. Building scale heat pumps will extract the energy for domestic heating and recirculate the water.

18 Dec – [EBRD and CTF lend up to \\$24m for DH upgrade \(Kyzylorda, Kazakhstan\)](#) – the financing will help to modernise the DH network and production facilities and also introduce individual building-level heating substations to improve energy efficiency, cut losses and reduce CO₂ emissions.

9 Dec – [Hurst boiler selected for DH project \(Unity, New Hampshire\)](#) – the Hurst system will serve the county's 166-bed nursing home and 168-bed prison complex as well as two smaller onsite buildings.

8 Dec – [proposed district energy system dissected \(Seattle\)](#) – it is estimated that the system will be four times more efficient than a traditional electrical heating system saving 80GWh over the first 25 years according to a project spokesperson.

4 Dec – [unique Reston DC system up for a vote \(Virginia\)](#) – some residents have complained about inadequate cooling and the rising costs of the system which was built in the 1960s and uses water from Lake Anne.

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4 Dec – [Saint Paul RiverCentre and Xcel Energy Center gain certifications \(Minnesota\)](#) – the RiverCentre's rooftop solar thermal array was the first in the US to integrate solar thermal into a DH system.

29 Nov – [geothermal energy demonstration project wins support \(Estevan, Sask\)](#) – the plan is use water at 120°C from a 3,000 metre well to supply for a 5MW power plant connected to a DH system.

21 Nov – [investment company backs sea water DC system \(Honolulu\)](#) – is estimated that the new system will reduce electricity usage by 77,000 MWh - enough to power more than 10,000 homes - and hence oil consumption by 178,000 barrels per year.

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China, Asia and Australasia

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15 Dec – [ultra-large heating system planned \(China\)](#) - the plans is to establish an ultra-large DH system serving Beijing, Tianjin and Hebei Province using waste heat from coal-fired power plants and steel plants in the suburban areas of Beijing.

10 Dec – [Moody's assigns first-time A2 issuer rating to Beijing Energy](#) - the favourable rating reflects the [BEIH's](#) uniquely strategic importance to Beijing Municipality. The company is the largest power producer in the municipality and is also the operator of the largest centralized DH network in China, serving the downtown area of Beijing.

10 Dec – [IDEA urge Arab universities to adopt DC systems](#) - the President and CEO of [IDEA](#), says Arab universities should consider DC systems instead of conventional chilling systems to achieve economies of scale and lessen the impact on key resources such as water and electricity.

2 Dec – [Qatar 2022 stadium design meets tough cooling targets \(Doha\)](#) - the active cooling system used by the stadium will take in chilled water from the existing DC network at [Education City \(R\)](#).

25 Nov – [Climate Control Awards 2014](#) - among the winners are the Innovation Park Muscat (IPM) project which received the '[Sustainable Project of the Year](#)' award for its innovative DC system and the DC company, Qatar Cool, which gained the '[District Cooling Provider of the Year](#)' and the 'Marketing Initiative' awards.

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Conferences, symposiums and forums

17-18 Jun 2015 – [3rd International Solar DH Conference \(Toulouse, France\)](#) – this event will focus on sharing international experiences on the realization and operation of solar DH projects, so that newcomers in the field can benefit from international expertise.

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27-28 Apr 2015 – [4th Global District Energy Climate Awards \(Tallinn, Estonia\)](#) – this event will be held in conjunction with the [37th Euroheat & Power Congress](#) and is now open. The Awards and associated event is run by [Euroheat and Power](#) and is the occasion where outstanding innovative projects are awarded.

26-27 Mar 2015 – [4th Informed Cities Forum \(Rotterdam\)](#) – this year's theme will be "Which way to the future? Strategies, tools and inspiration for transforming cities". The forum is organised as a co-production of the [ARTS](#) and MUSIC project consortia.

19-20 Mar 2015 – [Future District Heating Conference \(Stockholm\)](#) – the conference will cover areas like developments in the heat pump market, how do you respond to increased competition by smarter pricing and profitable business model and many more.

14-15 Dec – [DC Conference focuses on more efficient operations \(UAE\)](#) - major cooling projects and thermal energy storage for more efficient operations at large-size DC plants formed the agenda for the recently concluded 6th International DC conference in Dubai.

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General interest, technology and research

NB articles marked (P) may need to be purchased.

31 Dec – [Helsinki pushes emission reduction targets at climate talks in Peru](#) – the city has concluded that getting within reach of the goal of carbon neutrality by 2050 would require using low-emission fuels for DH production as well as new solutions for mass transit.

17 Dec – [making DH renewable \(Germany\)](#) – three research teams have investigated how the proportion of renewable energies can be increased in DH networks. Custom strategies were developed in this respect for the model regions Jena and Ulm.

17 Dec – [H&V News](#) – in this [issue](#), industry experts discuss how DH schemes are set to take the world by storm, as the technology finally enters the mainstream in the UK.

5 Dec – [German government backs innovative CHP/PV energy management project](#) – a joint project is being conducted in Germany to research the possibilities of intelligent coupling of solar PV systems with CHP plants and heat pump systems.

2 Dec – [new inspection methodology for water distribution grids](#) – a long, torpedo-like and propeller-driven robot is guided through the water and DH pipe systems. It is equipped with 64 transducers which transmit and receive ultrasound signals enabling data on the thickness of, and levels of corrosion in, the pipes to be collected and analysed.

Dec – [biomass fast pyrolysis \(BFP\) and feedstock steam drying with a CHP plant \(P\)](#) – this paper shows the influence of BFP integration on a CHP plant's main parameters and its effect on the energetic and environmental performance of the connected DH network.

Dec – [Danfoss heating newsletter](#) – interested persons can sign up to receive this newsletter on a regular basis.

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