

# District Energy Vanguards Network Newsletter

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## Editorial

### Code for the Future

Earlier in the summer the Greater London Authority released its now [annual report](#) monitoring the implementation of energy policies under the London Plan. This reported that in the previous year 41,097 flats linked to district heating were granted planning permission. This demonstrates how a robust planning policy can drive the market. However, many people in the district energy field have long been concerned that such planning-led projects are not always built to the highest standards as building developers are motivated to deliver heat networks at the lowest capital cost. Typically it is the eventual occupant who will pick up the tab for this short sightedness in higher monthly bills.

Consequently it is very much welcomed that the industry in the form of the Combined Heat & Power Association ([CHPA](#)) together with the Chartered Institute of Building Services Engineers ([CIBSE](#)) has brought forward a [Code of Practice](#) for the designers and operators of heat networks in the UK.

This tracks the technical development of a heat network project from feasibility through design and construction to commissioning and operation, touching on commercial aspects such as project phasing and the importance of the rate of return. It is comprehensive in its

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coverage and sets minimum standards as well as best practice. The large team of people involved in drafting it, led by Paul Woods and Phil Jones, are to be congratulated.

However, it will remain as words on the page unless it gets into the minds of the people involved in the design, construction and operation of heat networks. CHPA and CIBSE hope to do so by introducing the training, accreditation and registration of Heat Network Professionals. This should quickly move to become a firm commitment by CIBSE in particular as the accrediting body.

Local authorities have a role to play in ensuring the adoption of this Code. Firstly, reference to it should be incorporated into planning policies and it should be made a condition of planning consent for new developments linked to district heating. Secondly, it should be incorporated into procurement practices when tendering for feasibility studies and for the design, construction and operation of heat network projects under the control or influence of local authorities.

As this Code of Practice becomes widespread it will also be incorporated into contractual precedent. To date most contracts refer vaguely to 'industry best practice'. Now the lawyers have something solid to reference when drafting contracts. As such it will eventually and inevitably be referenced in disputes about the quality of work. This raises the question as to whether there will be a need for an arbitration body at some point in the future. The CHPA and CIBSE should think ahead.

Lastly, could this be a step along the road to a regulated industry?

The Code of Practice is presently out for consultation which closes on 9<sup>th</sup> October.

*Michael King, Editor, 30<sup>th</sup> September 2014*

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## UK and EU Policy

### Consultations, funding, conferences and workshops

**5 Nov** – [Heat 14 Annual Conference and Awards Dinner \(London\)](#) – the CHPA's annual conference, Heat 14 will be held at [Hotel Russell](#) in Russell Square and will be followed by the awards dinner which will be held at the [Grand Connaught Rooms](#) in Covent Garden.

**23 Oct** – [CHP: Unlocking the Potential of Energy Efficiency? \(Edinburgh\)](#) – this forum and networking event will take place in the evening and will look at the role CHP can play in the delivery of an affordable, low carbon heat sector in Scotland through to 2050.

**6, 10, 21 Oct** – [HNDU workshops for Local Authorities](#) – HNDU are running a series of half-day workshops in London, Cambridge and Leeds, to meet with local authorities, explain what's on offer from the [HNDU](#) and discuss ideas participants may have for heat networks in their local area.

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**2-3 Oct** – [Sustainable Cities - District Energy and Water Management \(London\)](#) – this event aims to bring together leading strategic and technical Danish experts with UK local authorities and stakeholders who wish to learn from the Danish experience to inform the development of a new generation of UK heat networks.

**9 Sep** – [DH: a story in need of a brand new script](#) – in this blogpost, Catherine Hokin, director of ecoConnect, gives the low-down on the ecoConnect Scottish Forum debate [DH: the power behind Scotland's low carbon future](#)

**3 Sep** – [£6m for investment in novel heat networks technologies](#) —DECC will be investing up to £6m in a new competition to support novel heat networks technologies. A briefing and launch [event](#) will be held on 2 Oct in Manchester.

**1 Sep** – [presentations from the Heat Network Partnership Finance seminar](#) —materials presented by the speakers can now be downloaded via the above link.

**28 Aug** – [consultation launched to improve heat network design, build and operation](#) – the CHPA and CIBSE are seeking industry [feedback](#) on the new (draft) publication [Heat Networks: Code of Practice for the UK](#) which intends to raise standards right across the DH supply chain. **Deadline for responses is 8 Oct.**

**18 Aug** – [\(draft\) Community Energy Policy Statement for public consultation](#) – the Scottish Government are seeking to broaden the scope of community energy to encompass energy efficiency and demand reduction, low carbon energy supply and distribution, heat systems and energy storage. **Deadline for responses is 10 Nov.**

## UK and devolved administration policy

**17 Sep** – [DH consumer protection \(London Mayor's Question Time\)](#) – in his answer the Mayor refers to the [Independent Heat Customer Protection Scheme](#), the new initiative from the CHPA to protect the interests of householders and micro businesses connected to heat networks.

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## UK News

**18 Sep** – [energy centre to heat 800 homes commissioned \(Bath, Somerset\)](#) –the centre burns wood pellets to provide heat to the DH system and will be operated and maintained by [E.ON Community Energy](#).

**26 Sep** – [Stoke-on-Trent expected to press ahead with geothermal DH project](#) –the council's cabinet will consider whether to develop the business case for the £52m DH scheme – a central plank of its City Deal – next week. Local coverage: [here](#) and [here](#).

**12 Sep** – [new woodchip DH system among first in Dales \(Kilnsey\)](#) –two 60KW boilers fueled by woodchip pellets are providing hot water and heat to the estate's pony trekking and riding centre and to three homes and one business in the village of Conistone.

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**9 Sep** – [Leeds City Council agrees EfW DH plan](#) –the first part of the three-phase project will supply heat from the EfW plant, currently under construction, to a number of council-owned tower blocks where fuel poverty is most prevalent, by late 2017.

**7 Sep** – [Birmingham plans DH network and vehicle charging](#) –under the plan existing CHP systems will be joined into via a DH network, powered by biofuel from food waste and sewage sludge processed through a gasification plant operated by [EBRI](#).

**.4 Sep** – [Scottish Equity Partners \(SEP\) launches infrastructure fund](#) –the fund has been anchored with the acquisition of [SSE Pipelines](#). SEP will use the balance of the fund to invest in clean energy infrastructure projects including heat pumps and DH schemes.

**4 Sep** – [DH pipe leaks leave elderly residents in the cold \(Harlow, Essex\)](#) –the services company, Kier Harlow, have stated that pipe replacement is a priority, is already in Harlow Council's planned programme of works and due to start this month.

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## UK Job Vacancies and Tenders

NB these are a subset of all publically available tenders and DH related job adverts chosen to give an idea of DH related activity.

**19 Sep** –[Associate Director - District Heating, AECOM](#) – applicants must have knowledge and experience in the areas of planning, design, construction, commissioning and operation of DH and CHP systems.

**18 Sep** –[tender for consultancy services for Stoke-on-Trent heat network](#) – the Council are seeking expressions of interest from consultancies able to support specific elements of the outline business case for the DHN scheme. **Deadline for tender receipt is 13 Oct.**

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## Europe

**22 Sep** – [practical experience for modernizing Ukrainian DH norms](#) – the core objective of the [DemoUkrainaDH](#) program is to demonstrate cost effective solutions for upgrading Ukrainian DH systems, solutions that can be scaled up and replicated affordably.

**19 Sep** – [World Bank proceeds with DH efficiency improvement project \(Moldova\)](#) – the \$61.1m refurbishment is aimed at ensuring continued provision and increased efficiency of the DH services in the capital, Chisinau. The complete report can be viewed [here](#).

**18 Sep** – [Skærbæk power station to convert to sustainable fuel \(Denmark\)](#) – the 392MWe and 447MWth natural gas fired plant provides DH to 55,000 households and is expected to be converted to run on cheaper wood chips by 2018.

**17 Sep** – [renewable energy group, Gaelectric, acquires Imperative Energy](#) – Imperative has completed over 70 biomass installations in Ireland and the UK including a DH system for Irish State buildings in central Dublin.

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- 13 Sep** – [DH price to surge – hikes of 70% possible by 2020 \(Finland\)](#) – the spiralling costs are a result of the tightening of the carbon credit regulations for industrial emissions. To date, the regulations have only played a minor role in energy prices as DH plants have been granted free emission rights.
- 12 Sep** – [Sofia Municipal Council votes for DH Ombudsmen \(Bulgaria\)](#) – the ombudsmen will process complaints from customers of the Sofia DH utility “Toplofikatskia”.
- 12 Sep** – [factsheet on financing geothermal district heating](#) – this GeoDH factsheet, aimed at financiers, explains the technology and the measures needed for effective financing.
- 12 Sep** – [500<sup>th</sup> CFU micro-CHP fuel cell unit installed and commissioned in Europe](#) – the solid oxide fuel cells ([SOFC](#)) convert natural gas into electricity and heat for homes and other buildings.
- 10 Sep** – [geothermal DH centre opened \(Miskolc, Hungary\)](#) – the project is part funded by a [HUF](#) 1bn (€3.2m) grant, has a heat capacity of 30MW and is being constructed by the Hungarian geothermal specialists [PannErgy](#).
- 10 Sep** – [nurseries win award for use of CHP and heat storage \(Ireland\)](#) – the CHP supplies heat to the green houses via the store with the CO<sub>2</sub> fed to the growing crop. The CHP also fulfills the minimal electricity requirements of the nurseries with the greater proportion exported to the grid.
- 9 Sep** – [geothermal heating makes slow progress \(Ireland\)](#) – even though it has been found that Ireland has lot of shallow geothermal drilling potential, the will does not appear to be there to pursue it.
- 5 Sep** – [EIB issues €500m Climate Awareness Bond \(CAB\)](#). – funds raised from the 12 year bond are earmarked for EIB lending projects within the fields of renewable energy and energy efficiency which include district heating and cogeneration.
- 4 Sep** – [heat from supercomputer to support DH network \(Risø campus, Denmark\)](#) – hot water from the [CPU](#)s will be channelled into the campus DH system via heat pumps.
- 3 Sep** – [Dalkia to buy two power plants from E.ON in Hungary](#) – the two gas-fired power plants, located in the cities of Nyiregyhaza and Debrecen, have a generating capacity of 160 MWe and 760 MWth, supplying heat to 50,000 households.
- 2 Sep** – [Sweden's 32 EfW plants crucial to DH networks](#) – the plants enable Sweden to minimise land-fill and provide capacity for the UK, Italy, Norway and Ireland to export surplus waste in the form of [RDF](#).
- 2 Sep** – [subsidies and ban on fracking promote geothermal DH \(France\)](#) – drilling the additional wells will allow extension by a quarter of the operator’s heating network -- the equivalent of 35,000 homes.
- 2 Sep** – [Radius Group and Austrian DH leader KE KELIT form new JV](#) – Radius is the market leader in engineered polymer products in the CIS and the largest producer of polyethylene pipes and fittings in Europe. KE KELIT is a leading manufacturer of pipe systems for water, heating, ceiling cooling, pipe insulation and compressed air.

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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](#).

**20 Sep** – [ADB - supply of equipment for Fuxin Sihe DH project \(China\)](#) – the Asian Development Bank ([ADB](#)) are inviting bids for the supply of heating pipeline, heating exchange stations and SCADA system equipment for the Fuxin Sihe DH project. **Deadline for receipt of proposals: 5 Nov 2014.**

**11 Sep** – [EDBR Procurement Notice: Consultancy Services \(Ukraine\)](#) – the €1.638m grant is aimed at setting up a coherent and consistent regulatory framework for the DH sector. **Expressions of interest closing date: 31 Dec 2014.**

**5 Sep** – [EDBR Procurement Notice: DH modernisation project \(Sofia, Bulgaria\)](#) – the project aims to replace about 30-35 km of old pipe trunk annually with pre-insulated DH pipes and install new CHP and boiler plant at a total cost of €41.9m. **Expressions of interest closing date: 5 Sep 2015.**

**4 Sep** – [EDBR loan for DH modernisation project \(City of Ternopil, Ukraine\)](#) – the project has an estimated cost of €17.5m and is aimed at improving the energy efficiency, reducing gas and electricity consumption and improving the quality of heat and hot water supply services in the City. **Expressions of interest closing date: 4 Sep 2015.**

**3 Sep** – [City of Sabac DH upgrade \(Serbia\)](#) – the EBRD is considering providing a senior loan of up to €7 million to upgrade for the City DH system which currently provides heating services to 7,514 households. The upgrade will see the introduction of local biomass, as partial replacement for natural gas, for heat generation. **Target Board date: 11 Nov.**

**29 Aug** – [City of Poltava DH upgrade \(Ukraine\)](#) – the EBRD is considering providing a €15m loan to finance the installation of heating sub-stations, biofuel boiler, network replacement with pre-insulated pipes, modernisation of boilers and control systems, and the installation of monitoring and dispatching system. **Target Board date: 29 Oct.**

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## The Americas and Africa

**25 Sep** – [utilities company to purchase City's DC assets \(Hamilton, Ontario\)](#) – the sale is expected to result in overall economic and environmental benefits by consolidating the delivery of DE services into a single source supplier.

**22 Sep** – [update to DH system part of \\$40M project \(UMass Dartmouth, US\)](#) – the contract includes the replacement of an oil-fired burner with a 1.6MW natural gas CHP system and the replacement of 30- to 45-year old steam pipes which have started to leak.

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**19 Sep** – [community aims to develop biomass DH project \(Cook County, Minnesota\)](#) – the drivers for the project are an abundance of forest residues and reliance on fuel oil and propane for heating which can be unpredictably expensive. The removal of forest residues also helps to mitigate the potential for fire damage.

**18 Sep** – [plans for first rural biomass DH system move forward \(Colebrook, NH\)](#) – the system will provide low-cost, local heating to downtown businesses, hospitals, schools, low-income housing and community facilities, industrial parks and some residences.

**17 Sep** – [Amazon plan to recycle Westin data center heat in Seattle offices](#) – an application to the City Council has been made to build a DHN to carry warm water from the data centers to the Amazon campus with cool water to be returned to the centers.

**16 Sep** – [Veolia continues to expand DE operations \(S. Orange County, California\)](#) – the company was selected to operate and maintain the 1.5MWe natural gas-fired cogeneration plant which supplies 2,000 RT of chilled and hot water to the majority of buildings at the Saddleback College campus.

**15 Sep** – [Metro Vancouver committee endorse sewage heating plan](#) – a range of energy sources will be exploited, including waste heat recovery from sewage and biomass, enabled by the fuel flexibility of 11 DE systems, 9 of which are already under construction.

**2 Sep** – [\\$1.1m funding to expand university biomass DH system \(BC, Canada\)](#) – the government investment will allow [UNBC](#) to begin the connection of its student residences, Enhanced Forestry Lab and daycare facility to a new DE system.

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## China, Asia and Australasia

**26 Sep** – [District Cooling Services Bill published \(Hong Kong\)](#) - the Bill is required due to the construction of a DC system to support the sustainable Kai Tak development.

**23 Sep** – [prospects for decentralised energy and the smart city concept \(India\)](#) - some of India's historical sites demonstrate how centuries-old buildings were cooled with the DC technology of the day - gravity-fed water circulating behind the room walls.

**17 Sep** – [Cofely and Thies team up for Brisbane's green cooling system](#) – the centralised DC system is expected to save up to 24,000 tonnes of greenhouse gases per year by reducing electricity consumption of buildings by up to 30%.

**16 Sep** – [an inside look at the world's largest DC plant: Pearl of Qatar](#) – the plant has a nominal 130,000 RT output and serves the cooling needs for all buildings on the island.

**14 Sep** – [Empower secures \\$127.8m Islamic loan](#) – the loan, from [Dubai Islamic Bank](#), will be used to fund Empower's multi-plant DC network in Dubai's Business Bay area.

**13 Sep** – [TNB wins best District Cooling Operator/Asset Owner award](#) – the utility [company](#) won the award at the third Annual Asia Pacific District Cooling [Conference](#) held in Kuala Lumpur at the end of August.

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**9 Sep** – [EBRD provides \\$30m loan for capital's first DHC plant \(Amman, Jordan\)](#) – the new facility will cut energy consumption by 41% and reduce annual CO<sub>2</sub> emissions by 13,700 tonnes per annum.

**9 Sep** – [Qatar Cool announces DC operational in 50<sup>th</sup> tower \(West Bay, Doha\)](#) – to satisfy demand the company is preparing to open its third DC plant in the area with a capacity of nearly 40k [TR](#), a large proportion of which has already been sold.

**9 Sep** – [Drake & Scull wins DC plant deal \(Lusail City, Qatar\)](#) – the company will design and build the 14,250 [TR](#) plant that will supply chilled water to the early completed buildings in the City by July 2015.

**3 Sep** – [Empower board marks one million refrigeration tonnes growth](#) – the chief executive Ahmad bin Shafar has received special recognition from the company's board of directors for overseeing its emergence as the world's largest provider of DC services.

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## Conferences, symposiums and forums

**14-15 Dec** – [IDEA announce 6<sup>th</sup> International DC Conference \(Dubai\)](#) - participants will explore how district cooling enables greener buildings, critical water savings and a smarter electricity grid.

**18-19 Nov** – [Low Carbon Heat International Showcase \(Edinburgh\)](#) – this event consists of seminars with a wide range of speakers, matchmaking opportunities and will showcase the latest low carbon heat technologies.

**10-11 Nov** – [6th Annual Middle East DC Summit \(Doha, Qatar\)](#) – this event will see the participation of a broad range of global and regional government authorities, decision makers and stakeholders with an interest in district cooling projects in the region.

**5 Nov** – [Energy4PowerLive \(London\)](#) – this event will be held at the Queen Elizabeth Conference Centre and will offer four conferences on one day, with both indoor and outdoor exhibition opportunities.

**28-30 Oct** – [Resilient Community Microgrids: O&M for efficient DE+CHP \(Toronto\)](#) – this event will serve as a forum for Canadian DE dialogue with practical training and unparalleled access to proven-in-practice insights.

**14-17 Oct** – [WADE Annual Meeting & DistribuGen Conference \(New York\)](#) – this [WADE](#) event brings business and energy leaders together with industry experts, project developers, policy specialists and end-users to examine and discuss new policy, technologies and decentralized energy market opportunities.

**8-9 Oct** – [Nextgen 2014: bioenergy and renewable energy event \(Warwickshire\)](#) – this [event](#) will give prospective and existing DH practitioners insights into the opportunities and challenges around financing, installing and maintaining renewable technology systems.

**2 Oct** – [Sustainable and affordable heating & cooling: the case of European cities](#) – this [event](#) is organised by the European Heat Pump Association ([EHPA](#)).

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**30 Sep – 2 Oct** – [Nordic District Heating Fair \(Jonkoping, Sweden\)](#) – the fair will include seminars and study tours as well as suppliers covering the areas of DHC, CHP, fuels, fuel handling, combustion technology, power production, logistics, control systems etc.

**22-23 Sep** – [European Conference on Geothermal DH \(Brussels\)](#) – the event will cover the potential for geothermal DH in Europe as well as financing, business models, and regulation. The second session will cover technological developments with a focus on the [Horizon 2020 programme](#).

**6-10 Sep** – [14th International Symposium on DHC \(Stockholm\)](#) – this event aims to gather the international research community around issues important for DE development.

**8 Aug** – [notes from the CHPA-ARUP DH conference workshop sessions](#) – the short report ([here](#)) is a summary of the four afternoon workshop sessions.

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## General interest, technology and research

**30 Sep** – [Technical Guide to District Heating by Robin Wiltshire](#) – this 46 page guide is aimed at persons involved in the technical rather than financial aspects of DH networks whether developing new or refurbishing existing schemes.

**26 Sep** – [Ban Ki Moon cites DE as a key efficiency measure at Climate Summit](#) – more than 100 world leaders attended the Summit at the UN to prepare for next year's [COP21](#) conference and to catalyze significant action to cut emissions and reduce risk.

**23 Sep** – [Danfoss and UNEP to co-chair District Energy in Cities Initiative](#) – the Initiative will support efforts by national and municipal governments to develop, retrofit or scale up DE systems, with backing from international and financial partners and the private sector.

**22 Sep** – [United Nations summary report: District Energy in Cities](#) – this summary is the first of a series of guidance documents and tools within the DE in Cities Initiative in support of the Sustainable Energy for All ([SE4All](#)) EE Accelerator Platform.

**18 Sep** – [Fortum Suomenoja improves DHN stability and reduces heat losses](#) – this case study addresses the problem of fluctuating supply water temperatures and their subsequent negative effect on network durability at Finland's second largest DH system.

**17 Sep** – [DH system effects of improved energy efficiency in Swedish buildings](#) – this thesis investigates the system effects from Swedish DH production caused by DH demand changes due to energy conservation in buildings.

**10 Sep** – [economic feasibility & environmental effects of two types of biomass DH plant](#) – the purpose of this study is to examine two biomass DH plants operating in Tuscany, with a specific focus on the ex-post evaluation of their economic and financial feasibility and of their environmental benefits.

**9 Sep** – [implementation of Solution 2: feeding of DH grids with stored energy](#) – this company use Liquid organic hydrogen carriers ([LOHC](#)) as a means to store energy in transportable tanks.

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**6 Sep** – [the Heating Museum](#) – this most interesting resource included a [section](#) on DH.

**2 Sep** – [DC Market by Application - Global Trends & Forecasts to 2019](#) – this new report suggests that the DC market will reach \$29bn in value by 2019 with a [CAGR](#) of 11.4%.

**1 Sep** – [dynamic modeling of thermal conditions for hot-water DH networks](#) – this study describes a dynamic modeling method for DH networks which is validated against an operational city system in China.

**29 Aug** – [how thermal storage with DH can reduce consumer bills](#) – in this article, Jonathan Graham, describes how thermal stores in Danish DH schemes are used to avoid 'constraint payments' when there is too much electricity being produced by wind farms.

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