

District Energy Vanguard Network Newsletter

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Editorial

No stress - less sweat with District Heating

Frequently the name of Vladimir Putin is used, fairly or unfairly as a metaphor for the threat to European energy security. Leaving aside the geopolitics, the EU Commission recently undertook a [study](#) to investigate impact of disruption of the flow of Russian natural gas, either via Ukraine or directly, or a complete suspension of supply, on Europe's ability to keep itself warm during the winter. This was modelled on an average six month winter period with a variant adding in a two week cold snap in February. Europe is highly dependent on gas for its space and water heating, particularly in Hungary, Italy and the Netherlands with UK being the highest at 70% of the heat market. Most is used in individual gas boilers (88%) against an EU average of 12% in district heating.

This 'stress test' study found that the countries of Eastern Europe would be most affected with a possible shortfall in supply of 20 – 40% by the end of the winter period. Additionally, Central and some Western European countries would suffer up to 10% shortfalls as gas is sucked in by the more severely affected countries. The UK would be relatively unaffected. But the study does focus purely on capacity issues. Although acknowledged it did not investigate the impact on gas market prices as internationally-traded [LNG](#), potentially

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including newly fracked UK gas, is diverted towards Central and Eastern Europe. Indeed the report recommends a “calm, market-based management of the supply crisis”. This will undoubtedly impact upon the prices paid by UK energy customers.

Short term responses to such a crisis would include supply curtailment - although most countries protect residential customers, including district heating customers, as the last to get cut – as well as strategic stock releases from storage and fuel switching. In respect of the latter the report recognises the role of district heating:

“District heating networks provide technological flexibility, as they can be run on many and multiple supply sources. Networks built on natural gas can be switched to alternative sources, such as biomass, waste heat, cogeneration, solar and geothermal, heat pumps, municipal waste, etc.”

The report suggests that: *“National competent authorities should ensure that all administrative measures are in place that would facilitate large-scale fuel-switching to take place, particularly in district heating systems”*.

Another study published this month in [GeoNature](#) suggests that impact of such a scenario could be increased as the frequency of severe winters is growing due to the retreat of Arctic ice related to global warming.

In the face of these threats the benefits of district heating in improving the energy security and resilience of the UK and buffering against price spikes in the international energy market is apparent. All the more reason to take note of a [WWF report](#) on the heat market this month calling on the Government to: *“Elevate the roll out of low carbon heat networks to a national infrastructure priority”*.

Michael King, Editor, 29th October 2014

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UK and EU Policy

Consultations, funding, conferences and workshops

4-5 Dec – [District Energy Vanguard Network workshop \(Exeter\)](#) –this workshop’s theme will be “what works for DE business models in Britain”. This workshop is for core Vanguard members only. Presentations and summaries will be posted in a subsequent newsletter.

18-19 Nov – [Low Carbon Heat International Showcase \(Edinburgh\)](#) – this event includes an exhibition for companies, [B2B Matchmaking](#), seminars and a drinks reception on the 18th followed by site visits on 19th Nov.

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.

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16 Oct – [HNDU Round 4 funding announced for DH networks](#) – Local Authorities can apply for funding to support several heat network projects and/or project development stages. **Application deadline is 27 Nov.**

3 Oct – [DECC announce £7m funding competition to boost low carbon heating](#) – the Government has launched the competition to develop new heat networks technologies, such as recovering industrial heat or EfW. Guidance on how to enter the competition can be found [here](#) and go to [SBR](#) to register and apply. **Deadline for proposals is 28 Nov.**

3 Oct – [HNDU Round 3 funding announced for DH networks](#) - almost £2.4m will be allocated to 32 local authorities across England and Wales to support the development of heat network projects via HNDU's third funding round.

2 Oct – [European Energy Efficiency Fund \(eeef\) technical assistance used for DH](#) – the Municipality of Ringkøbing-Skjern in Denmark used eeef technical assistance for decentralized DH powered by biomass.

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

27 Oct – [deep geothermal heat \(House of Lord's Question Time\)](#) – geothermal energy for the purposes of heat, including supplying DH networks, is a devolved (to the Scottish Parliament) matter; where utilised for electricity generation, it is a reserved matter.

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

24 Oct – [new superstore to benefit from DH system \(Dunfermline\)](#) – the store will also make use of the local authority's [DH system](#) which converts methane produced from up to 40,000 tonnes of local food and garden waste into renewable energy and heat.

22 Oct – [is it time for councils to buy back control of the energy grid? \(Guardian\)](#) – locally generated energy via council-facilitated energy companies, community co-operatives and heat grids are key elements for retaining energy profits in local economies.

21 Oct – [New Street station keeps Birmingham on track with CO₂ reduction targets](#) – the scheme will see 1.5km of DH pipework installed across the city centre enabling heat produced by a new CHP unit to be exported to the Birmingham DE Scheme.

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17 Oct – [St Andrews University plan for energy centre given green light](#) – the Council’s area planning committee granted full planning consent for the construction of a biomass plant and heat network to carry hot water 6.5km to the university’s St Andrews campus.

16 Oct – [energy recovery facility officially opens in Exeter](#) – the plant will be able to produce enough electricity to power around 5,000 homes and the feasibility of using waste steam for a DH network is also being explored.

15 Oct – [Leeds City Council ponder plans for heat network](#) – according to the report more than 2,000 flats in parts of the city where fuel poverty is most widespread could have their heat supplied during the first phase of the scheme. It added that the plan was cost-effective “as the heat generated is likely to be worth more than the sacrificed electricity”.

14 Oct – [how metering could hold the key to better heat network performance](#) – in this blog piece, Casey Cole of Guru Systems describes how by connecting heat meters to a more modern network, we can obtain invaluable performance data and ensure that we are delivering “lean heat”.

14 Oct – [Coventry Thermal Store case study](#) – when completed the highly insulated metal tank will store 650m³ of hot water at up to 95°C for use as part of the Heatline DH network. The tank will stand 22m high and 7.3m wide, with a red digital counter at the top to record the amount of CO₂ saved by reusing heat from the London Road [EfW](#) plant.

14 Oct – [South Gloucestershire Council awarded grant for developing DH](#) – the majority of the funding will be used to investigate the potential for development of a heat network in the Avonmouth/Sevenside enterprise area which could use heat from a new EfW plant.

10 Oct – [University’s heating disrupted by burst pipe from DH network](#) – a burst pipe in Sheffield’s DH system is affecting buildings at the University and will take weeks to repair.

10 Oct – [DH is the way to go](#) – although DH networks have been around in the UK since the 50s, we should look to Sweden for inspiration, says Councillor Bill Randall, chair of housing at Brighton & Hove Council. (Inside Housing article -requires registration)

9 Oct – [HNDU award council over £50k for DH study \(Eastleigh, Hampshire\)](#) – the award will enable the Council to carry out a DH network feasibility study for the [Ageas Bowl](#) which will consist of an energy centre providing heat and electricity to several commercial sites.

9 Oct – [Croydon Council falling £805m short of ambitious £1.1bn plan](#) – the planned infrastructure projects include a new electricity substation, fibre optic broadband and a DH system to provide low-carbon heat to new developments.

9 Oct – [spotlight on Heat Networks, with John Saunders from DECC](#) – the CHPA talks to John Saunders, Commercial Specialist within the HNDU, about the difference it’s making, and what local authorities can expect when they call on the Unit for help.

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- 8 Oct** – [Peer Award win for London's first EfW DH network](#) – the £7m scheme supplies low carbon, low cost heating and hot water to over 2,600 homes via the SELCHP energy recovery facility in SE London.
- 7 Oct** – [Enfield Council receives HNDU funding DH project](#) – the funding will help drive forward an innovative low carbon DH project for homes across the Lee Valley.
- 6 Oct** – [Oxford City Council receives HNDU funding DH project](#) – the funding will be used to carry out feasibility studies for a heat network in Headington and to expand the existing heat network for University's Science Area to whole of the city centre.
- 5 Oct** – [£40k funding announced for Sussex heating study](#) – the councils of Brighton and Hove and Adur and [Shoreham Harbour Regeneration](#) have won HNDU funding to investigate the provision DH to service properties in Shoreham, Hove and Portslade.
- 3 Oct** – [Shetland Islands Council lodge ambitious plans to expand DH scheme](#) – the concept is to erect a wind turbine which would produce electricity that could be used to expand the DH system and produce hydrogen.
- 2 Oct** – [Bedminster's £23m regeneration plans win approval \(Bristol\)](#) – the development is part of £100m masterplan for the area, which focuses on the shopping centre and could see a total of 800 new homes, a community centre and a new DH system.
- 1 Oct** – [Derwenthorpe residents at left without hot water and heating \(York\)](#) – there have been issues linking the DH system to the newly completed properties as well as problems with the stand-in temporary boilers.

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UK 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](#).

- 16 Oct** – [invitation to tender for servicing and maintenance of DH system \(Leeds\)](#) – the system comprises more than 3,000 dwellings and many public and commercial properties.
- 29 Sep** – [invitation to tender for a CHP unit \(Sunderland\)](#) – the unit will provide electricity and heat for a leisure facility that is currently under construction in Washington, Tyne and Wear. The contract will be for a period of 10 years. **Deadline for tender receipt is 10 Nov.**

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Europe

- 23 Oct** – [former environment minister urges help for Poland to ditch coal addiction](#) – the extensive network of DH systems is cited as one of the areas where substantial efficiency gains can be made.

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- 22 Oct** – [Brescia to benefit from steel mill waste heat](#) –the heat recovery system will deliver thermal energy to the Italian city of Brescia and produce electricity for the mill's own use resulting in an estimated 10,000 tonnes/year CO₂ reduction.
- 22 Oct** – [EU warms to the potential efficiencies of DH](#) – the Danish paradigm is attracting international attention, particularly from Britain, although the biggest challenge is to find a financing model for such huge structural changes across the EU.
- 17 Oct** – [dispute between Russia and Ukraine may lead to DH fuel switch](#) – where DH systems and power plants have dual-fuel capability, they would be ordered to switch to burning diesel, fuel oil or coal to save gas.
- 16 Oct** – [new waste-to-energy power plant for Leppävirta \(Finland\)](#) – the new plant is designed to treat 145,000 tons of waste per year and will generate 16 MWe and 38 MWth for the local DH network. Start-up is scheduled for the fourth quarter of 2016.
- 16 Oct** – [Eneco acquires heat and electricity generation from Nuon \(Netherlands\)](#) – as part of the agreement, Eneco will take over the 25 km-long DH network which services 50,000 households and 1200 business customers in Utrecht and Nieuwegein.
- 14 Oct** – [Statistics Norway report indicates 11.3% increase in DH consumption](#) – the report also shows that 43% of the country's DH was supplied from [EfW](#) with the second highest feedstock being wood biomass (20%).
- 13 Oct** – [new biomass power plant to satisfy rising DH demand \(Skövde, Sweden\)](#) – the €30m plant will displace oil fired heating and supply electricity to the national grid. It will be fueled by wood chips and bark and is scheduled to start up in late 2016.
- 10 Oct** – [Czech heating prices should stay the same](#) – the Energy Regulatory Office (ERÚ) has kept the same parameters for setting heat prices by heat producers for 2015. ERÚ allows heating plants to reflect only “economically justifiable costs” in the heat prices. Almost 40% of Czech citizens are served by DH.
- 9 Oct** – [Donetsk DH plant to shut down if gas debt not paid \(Ukraine\)](#) – the plant supplies heat and hot water to schools, businesses and hundreds of thousands of homes, however, if Kiev's government doesn't work out a deal to pay off a \$5.3 billion gas debt to supplier Russia, the plant will shut down.
- 7 Oct** – [HUF 672m \(€2.16m\) biomass-fuelled heating plant completed \(Hungary\)](#) – the 4.5MW plant is expected to generate 60,000 GJ of energy annually, covering 75% of the DH needs of Mohács from January 2015.
- 6 Oct** – [Volvo plant to reduce carbon emissions via DH connection \(Belgium\)](#) – waste heat from a nearby paper mill will be piped at 125^o C to heat Volvo's buildings and paint booths reducing consumption of fossil fuels and saving 15k tonnes/year of CO₂ emissions, a net decrease of more than 40%.
- 3 Oct** – [CHP as part of the energy transition - the way forward](#) – this study from [eurelectric](#) recommends the extension of the [EU ETS](#) within the heating sector to overcome the competitive disadvantage of DH compared to other heating technologies.

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2 Oct – [Renewa delivers 20 MW biomass DH plant \(Uusikaupunki, Finland\)](#) – the plant will assist the DH company, [VS Lämpö Oy](#), in transitioning from fossil fuel dependency to biofuels and also contributes to the growing needs of DH in the municipality.

2 Oct – [Ministry suggests scrapping DH VAT exemptions \(Lithuania\)](#) – the Ministry of Finance proposes to scrap the exemptions, saying that a draft state budget for 2015 earmarks sufficient funds to compensate low-income families for increased heating bills. DH is currently taxed at 9%, below the standard rate of 21%.

1 Oct – [Helsinki pioneers huge DC system that uses cold water from nearby lakes](#) – when the system is fully operational next summer, water from a 40,000m³ underground reservoir will be pumped to local buildings in the area to keep them cool. At night, the water will flow back underground, where waste energy will be used to cool it down again.

28 Sep – [national utility provider to be operational by March \(Hungary\)](#) – the new company will start its operations by distributing power, gas, and DH, while later on it will also take care of the water supply, sewage, and garbage collection.

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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](#).

24 Oct – [EBRD arranges €14m financing package to improve DH \(Lutsk, Ukraine\)](#) – the aim of the project is to maximise energy efficiency gains, reduce CO₂ emissions and decrease operating costs.

17 Oct – [EIB supports modernisation of DH systems western Czech Republic](#) – the total approximate project cost is €154m for 2014-2018 covering network expansion, technology upgrades and replacement/renovation of the pipelines.

6 Oct – [supply of heat pipelines for Jiamusi West DH subproject \(China\)](#) – the project is funded by the Asian Development Bank ([ADB](#)). **Deadline date: 10 Nov.**

26 Sep – [Enhanced Partnership - DH Modernisation Framework \(Kazakhstan\)](#) – under the Framework the EBRD is considering financing priority capital investments for the urgent rehabilitation of DH infrastructure for selected cities. **Target Board date: 26 Nov.**

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The Americas and Africa

21 Oct – [abandoned Michigan mineshafts could be new energy option](#) – the [Keweenaw Research Center's](#) new engineering design center is heated and cooled by a DHC system with 18 heat pumps. When the water is cycled through, it is returned to the mineshaft.

21 Oct – [Metro Vancouver investigates heat extraction from treated sewage](#) – the concept is to extract heat from treated wastewater being pumped back into the river system with the added environmental benefit of cooling warm water before it enters the ecosystem.

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17 Oct – [biomass identified as best option for Nelson DE system \(BC, Canada\)](#) – the feasibility study preferred option is to use wood waste from local mills. The project would cost anywhere from \$2.3m to \$6.3 m and take 16 to 30 years to pay for itself.

17 Oct – [new DE Center to provide DC and air conditioning \(New Orleans\)](#) – the center will provides more than 33,000 tons of chilled water to the New Orleans Regional Medical Center (NORMC) and other clients.

17 Oct – [Montpelier fires up \\$6m DH system \(Vermont\)](#) – a total of 20 public and private buildings in downtown Montpelier are getting their heat from a new wood-fired boiler saving 26,500 litres of heating oil each season.

15 Oct – [DHC and heat storage crucial for Minneapolis resilience project](#) – the integrated utility system consists of a closed-loop district grid within an eight-acre hub where anaerobic digestion will transform waste into biogas.

14 Oct – [Ramboll targets DH with new Canadian office](#) – the company is opening an office in the Canadian city of Guelph in order to pursue opportunities in the growing market for district energy in North America.

10 Oct – [heating the city, one neighborhood at a time \(Vancouver\)](#) – the efforts led by the city are part of a wave of aggressive development of district-energy utilities throughout the Canadian province of British Columbia.

9 Oct – [operating costs from advanced DES lower than budget \(BC, Canada\)](#) – officials from the municipality have proposed funnelling some of the money saved into educating residents on the usage of the state-of-the-art [system](#) at the Whistler Athletes' Village.

9 Oct – [Living City - a city shaped by steam \(New York\)](#) – with more than 100 miles of steam piping and nearly 2,000 buildings served, New York's steam system is the largest in the world. This excellent video lasts 6.5mins (once you get past the advert).

9 Oct – [Update: West Union \(pop. 2,500\) geothermal DH system \(Iowa\)](#) – early this year a geothermal system beneath the town square began providing heating and cooling to About a dozen nearby businesses. now are connected to the system with more expected to join.

2 Oct – [Ontario Climate Action: North America's first city-wide DE network](#) – the City of Guelph is the first community in North America to establish a plan for an interconnected thermal grid to serve industrial, commercial and residential buildings across an entire city.

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China, Asia and Australasia

20 Oct – [SNC-Lavalin awarded DC contract \(Dubai\)](#) – the Canadian company have been awarded a \$37m contract by Tabreed to provide design, procurement, construction and commissioning services for a DC plant with an initial capacity of 25,000 RT and an ultimate capacity of 35,000 RT.

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15 Oct – [Owners of gutted homes fume over cooling fees \(Dubai\)](#) – although the building was declared unsafe by authorities two years ago, the owners continue to be invoiced with utility charges by Palm Utilities.

10 Oct – [Brisbane's DC plan gets the go-ahead](#) – with an agreement for the design and planning phase, the City is set to have Australia's first [central business district](#) DC system.

3 Oct – [DC at centre of Falcon Island development \(United Arab Emirates\)](#) – innovative hybrid cooling systems will utilise solar and conventional energy to provide cooling from a DC facility to homes on Falcon Island - also a first for the [GCC](#) region.

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Conferences, symposiums and forums

27–29 Sep 2016 – [Nordic District Heating Fair \(Jonkoping, Sweden\)](#) – Elmia and the Swedish DH Association are now taking an even broader approach to energy issues and forming a trio with the Water and Wastewater Fair and Elmia Waste & Recycling.

27 Apr 2015 – [4th Global District Energy Climate Awards \(Tallinn, Estonia\)](#) – this event is now open. The Awards and associated event is run by Euroheat and Power and is the occasion where outstanding innovative projects are awarded.

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

23-24 Nov – [DC and Trigeneration Summit 2014 \(Riyadh, Saudi Arabia\)](#) - the 1st Edition of the Summit is an initiative from [Nispana](#) to discuss and understand how Tri-Generation & DC projects tackle the power supply demand in Saudi Arabia.

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.

22-23 Sep – [European Conference on Geothermal DH \(Brussels\)](#) – this site contains links to the presentations given at the Conference.

6-10 Sep – [14th International Symposium on DHC \(Stockholm\)](#) – this site aims contains links to the presentations given at the Conference and chosen by the Scientific Committee.

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General interest, technology and research

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

29 Oct – [Annex X reports from the IEA-DHC research programme now available](#) - Final reports, addressing such topics as low temperature systems and integrating renewables, are available [here](#) (requires registration but access is free). UK membership of the IEA-DHC programme is supported by DECC.

23 Oct – [a review of the pricing mechanisms for DH systems \(P\)](#) – this study reviews existing models regarding heat pricing, analyses different pricing mechanisms and offers insights into developing an advanced pricing mechanism for DH systems.

22 Oct – [WWF's latest energy report 'Warm homes, not warm words'](#) – this new report from the WWF calls for heat networks to be a national infrastructure priority.

16 Oct – [can data centers turn into heaters?](#) – this article by Peter Judge of Datacentre Dynamics discusses the pitfalls of recycling waste heat from data centers.

14 Oct – [prospects for nuclear DH based on power units up to 100MW \(P\)](#) – this study makes a preliminary evaluation of the adoptability of nuclear DH based on units with a capacity to 100 MW for supplying energy to cities in the Russian unified power system.

14 Oct – [solar thermal integration into a district heated small house](#) – this study was presented at the 14th International Symposium on DHC which took place in Stockholm from 7 to 9 September.

7 Oct – [evacuated tube collector for large scale solar heating plants wins award](#) – a new Viessman evacuated-tube collector for large scale solar heating plants received the innovation award at the German OTTI Symposium on solar thermal energy.

2 Oct – [heat losses in collective heat distribution systems](#) – this study presents an improved method for [EPBD](#) calculations.

2 Oct – [geothermal DH brochure and factsheet](#) – the GeoDH factsheet is aimed at financiers and covers the technology, market, regulation, financing and potential.

5 Oct – [the Farming Forum discusses DH systems - which boiler/fuel?](#) – the contributor is seeking advice on a DHS, about 10 units in total, mainly houses with a possible office. Also might add an existing workshop, grain store and option of continuous flow dryer.

2 Sep – [District Cooling market - global trends & forecasts to 2019](#) – according to the report, upcoming opportunities for DC players are the emerging economies in the Asia-Pacific region due to faster growth rates of nations such as China and India.

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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