

# District Energy Vanguards Network Newsletter

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## Editorial

Last month DECC's Heat Network Delivery Unit (HNDU) announced that 26 local authorities in England and Wales will receive grants totalling £1.9m to support development activities such as heat mapping and feasibility studies for proposed heat networks. A further 4 projects will receive guidance and support. The next round of funding to successful local authority applicants will be in March. This is a strong response from the field and is very welcome. North of the border the Scottish Government's plans for a Heat Network Partnership are well advanced and it is anticipated that this will be in place in the near future.

Once these projects are ready to proceed they will need capital funding. Over the past decade heat network projects have benefitted from a series of capital grant programmes including the Community Energy Programme, the Low Carbon Infrastructure Fund, and the Community Energy Saving Programme (CESP) as well as one-off grants in Scotland. Presently, local authorities can look to the Energy Company Obligation (ECO) a Government-mandated obligation on energy supply companies to invest in carbon saving measures. However, ECO was included in the Review of Green Levies announced by DECC on 2<sup>nd</sup> December with a series changes proposed. A consultation on these proposed changes is imminent.

During this hiatus energy companies are hugely uncertain of what the Government will do and have been withdrawing and re-calculating existing offers to district energy projects and then re-issuing lower offers. They say that there are an increased number of measures and longer time frame has stretched the fixed pot of money and consequently

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the carbon values have plummeted. Offers have dropped from £145 per tonne of carbon to £45. This has had a severe impact on heat network developments throughout the country. In one case the project has been abandoned wiping out two years of development activity. This could happen to the 26 local authorities awarded HNDU funding support. Elsewhere schemes are struggling with one Council stepping into replace the lost funding. Whilst saving this particular project it will impact on their willingness to participate in future projects because of the risk of being caught short by such sudden changes in Government policy.

However, a thin silver lining in the very large black cloud that is the 2<sup>nd</sup> December announcement is the proposal that district heating is to be altered to become a primary measure under ECO. This could cause ECO carbon values for DH to rocket up again. However, soundings taken from energy companies suggest this may not happen because the Government has previously always prioritised insulation measures. Consequently there is a need for Vanguards Network members to respond strongly to the consultation when it is issued supporting this change to boost the uptake of district heating under ECO. Furthermore, we shall be seeking to make Government aware of the impact of these changes and would like to hear from anyone experiencing problems with ECO.

Lastly, in order to get a coherent and stable policy framework to support the development of heat networks there is a need for good quality information. Yet it is seemingly impossible to obtain detailed information from OFGEM on what heat networks have been supported under CESP and ECO. Access to information should be included within the forthcoming consultation and its open availability made a priority.

*Michael King, 28<sup>th</sup> February 2014*

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## UK and EU Policy

### Open consultations, funding and workshops

**Mar** – [ECO and Green Deal workshops \(DECC\)](#) – workshops are now scheduled for 12<sup>th</sup>, 17<sup>th</sup>, 25<sup>th</sup> and 31<sup>st</sup> March in Birmingham, London, Newcastle and Bristol respectively.

**11 Mar** – [DH schemes: the cheaper, greener alternative \(Scotland\)](#) – this free workshop is being held at the Bridge of Allan and is organised by the Forestry Commission Scotland's Regional Wood-fuel Forum in association with REHAU Ltd.

**Feb** – [DEFRA consultation on incorporation of EU requirements to promote CHP](#) – the Government is consulting on the incorporation of EU requirements to CHP and related activities into the Environmental Permitting Regulations (EPR). **The consultation is open until 21 March.**

**6 Feb** - [ECO consultation outcome - DECC response](#) – crucially the Government intends to remove the requirement that DH system connections must be made within six-months of the installation of the primary measure.

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**Jan** – [Proposals invited for localised energy systems R&D](#) – the EPSRC & TSB are to invest up to £11m in a programme of collaborative research and development to stimulate innovation in localised energy systems. The deadline for registration **is at noon on 12 March** and the competition application deadline **is 19 March**.

**Jan** – [Transposition of Article 14\(5\)-\(8\) of the Energy Efficiency Directive in Scotland](#) – the directive requires cost benefit analyses in certain situations to ensure viable opportunities for cogeneration and efficient DH and DC are not missed. This Scottish Government **consultation is open until 16 April**.

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## UK News

**20 Feb** - [Interview with director of innovation at Star Refrigeration](#) – the company have recently designed and built a 14MWth DH system in Drammen, Norway, which uses large heat pumps to scavenge heat from seawater.

**19 Feb** - [ETI appoints Europe Economics to develop modelling framework](#) – the intention is to help local authorities evaluate the economic and social benefit of changes to the local energy system.

**18 Feb** - [Scottish Government fund to support DH projects](#) – the £103m Renewable Energy Investment Fund (REIF) has been created to support marine, DH and community renewable projects. DH projects which have a demonstrable funding gap might be eligible.

**18 Feb** - [Swansea Council awarded DECC funding towards DHN feasibility study](#) –the first network, sourced from a biomass boiler in the LC leisure centre, could link up the Civic Centre with the LC, Swansea Museum and the National Waterfront Museum.

**18 Feb** - [Vacancy: Associate Director - District Heating \(St. Albans\)](#) – the principle responsibility is to lead the design of a number of DH and CHP projects.

**17 Feb** - [UK electricity operators hit by Ofgem rate demands \(FT subscription\)](#) - with 6% returns on capital, DE may become more attractive to the distribution companies.

**14 Feb** - [Ofgem publish ECO Compliance Update](#) –the table includes the number of connections to district heating systems under the Carbon Emissions Reduction and Carbon Saving Community Obligations (CERO and CSCO).

**6 Feb** - [North Somerset rubbish used to heat Swedish homes](#) –residual waste is to be sent to a plant in Avonmouth where it will be shredded, turned into pellets and sent on to a Swedish EfW plant which supplies heat to a DH scheme.

**6 Feb** - [LinkedIn discussion on progress of DH development in the UK](#) –many useful topics are covered in this lively discussion.

**5 Feb** - [Scottish housing providers awarded £3m to fight fuel poverty](#) –projects funded from the [Warm Homes Fund](#) include biomass DH schemes to heat 75 new-build housing association properties in Dunbeg and 543 homes provided by a Cambuslang-based housing co-operative.

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- 31 Jan** - [Hampshire Council awarded £144,000 HNDU funding for DE schemes](#) – the grant funding will support feasibility work for a DH network in Winchester that would serve some of the larger energy consumers including the County Hospital, the University, the Prison and Hampshire County Council.
- 30 Jan** - [£245,000 HNDU funding for DH system \(Cardiff\)](#) – the 12km DH network will be owned by e.on and use heat from Viridor's planned 172,000 tonne per annum EfW plant.
- 30 Jan** - [DECC award £1.941m to support heat network projects](#) –26 local authorities across England and Wales [have received funding](#) via the Government's Heat Networks Delivery Unit (HNDU). The remaining pot of grant funding, worth £7m in total, will be allocated through subsequent funding rounds, running to March 2015.
- 28 Jan** - [lack of access to properties delays DH project \(Edinburgh\)](#) – tenants will not be charged for heat until the DH system is fully commissioned.
- 27 Jan** - [DECC publish Community Energy Strategy](#) – in this document the Government make a clear commitment to promote investment in heat networks (item 256, page 72).
- 27 Jan** - [DECC announces £10m for Urban Community Energy Fund](#) – the fund will run alongside the Rural Community Energy Fund (RCEF) of £15m, announced in June 2013.
- 27 Jan** - [ETI appoints Baringa Partners to develop EnergyPath software tool](#) –EnergyPath will play a key role in the ETI's Smart Systems and Heat Programme. The £1.1m project will also include Element Energy, Hitachi and University College London.
- 25 Jan** - [Tender for the construction of DH infrastructure \(Gateshead\)](#) –the scope of works covers the provision of new DH and private networks between the Energy Centre and the Customer sites/plant areas.
- 21 Jan** - [Renewables specialist awarded £1m contract for DH systems \(Barking\)](#) –the TGE Group has been appointed by Bellway Homes, to design, build and operate a series of DH systems for three residential phases at its Barking Riverside development.

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## Europe

- 25 Feb** –[Ukrainian crisis impacting on district heating schemes](#) – difficulties associated with the ongoing crisis in the Ukraine have had a severe impact on the country's finances, which has filtered down to the country's DE schemes.
- 18 Feb** –[Hamburg Energie transforms Nazi bunker into green energy plant](#) –when running at full capacity the “Energy Bunker”, will provide up to 3,000 homes with DH, and another 1,000 homes with electricity.
- 17 Feb** –[New call for DH demonstration projects in Ukraine](#) – the DemoUkraineDH programme aims to save energy by investing in energy efficiency technologies in the industrial and municipal sectors.

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- 13 Feb** – [Valmet to supply heat recovery steam generator for LKAB \(Sweden\)](#) – the main purpose of the generator is to cool down the process gases from Svappavaara's iron ore pelletizing plant. The recovered heat is utilized in the local district heating network.
- 6 Feb** – [Helsinki DC network expanded](#) – the 13 month programme will see Helsingin Energia extend the DC network into the districts of Taka-Töölö and Meilahti.
- 6 Feb** – [DE heats up Winter Olympics in Sochi Olympic Park](#) – hot water for the DE system is produced at the nearby Adlerskaya gas-fired CHP Plant. The water is delivered to the arena buildings at 115°C and returns to the central plant at 70°C.
- 6 Feb** – [EBRD consider financing DH infrastructure upgrade \(Kaliningrad, Russia\)](#) – the upgrade will increase efficiency and reduce operating costs as well as CO<sub>2</sub> emissions. The overall project cost is estimated to be RUB 880m.
- 6 Feb** – [EBRD consider financing privatisation of DH assets \(St Petersburg, Russia\)](#) – the bank is considering providing financing to Energoinvest LLC to build new and acquire existing publically operated DH infrastructure. Estimated project cost is RUB 1bn.
- 4 Feb** – [Hungarian Government reduces price of DH by 3.3%](#) – the Government spokesperson said the cut to public utility fees will reduce the price of gas, electricity and DH to the European average.
- 22 Jan** – [DH in Municipalities – International Seminar in Kaliningrad](#) – 66 participants gathered in Kaliningrad to discuss development of DH and energy efficiency during a seminar arranged within the framework of [four EU, Nordic and Russian projects](#).
- 21 Jan** – [President's office criticizes Vilnius over DH \(Lithuania\)](#) – the Chief Advisor on economy and social policy to the President says that heating users in Vilnius and Kaunas pay significantly more than residents in other districts.

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## The Americas

- 20 Feb** – [steam to hot water DH conversion project forges ahead \(UBC, Canada\)](#) – the largest source of savings will come from the new system's ability to heat the campus while operating at a significantly lower average temperature of 80°C compared to the outgoing steam system, which operates at 190°C, reducing heat distribution losses.
- 20 Feb** – [residents express concern over DH maintenance costs \(Canada\)](#) – the system was installed ahead of the 2010 Olympics and uses captured waste heat from a sewage treatment plant. Lack of experience by the installers and mineral buildup in heat pumps have been cited as causes.
- 19 Feb** – [DH utility plans to convert from fossil fuels to biofuels \(Canada\)](#) – the conversion is an important part of Vancouver's Greenest City Action Plan which aims to reduce GHG emissions by 33% by 2020 - a reduction of 1.1 million tons a year in CO<sub>2</sub>.
- 18 Feb** – [Microgrid Resources Coalition launched at IDEA Campus Energy Conference](#) – three [pre-conference workshops](#) focused on critical issues facing campus utility operators and planners. See also the [Chair's update 1st Quarter 2014](#)

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**6 Feb** – [New factbook: Sustainable Energy in America \(2014 edition\)](#) – among the findings is that distributed generation emerged as a transformative phenomenon with 8% of US power generation derived from CHP.

**6 Feb** - [2014 Campus Video Contest Submissions \(IDEA\)](#) - these five short clips highlight the role of DE in providing sustainable heat and power to diverse US campuses.

**5 Feb** – [Mayors from 10 major US cities commit to boost energy efficiency](#) –the City Energy Project is projected to cut a combined total of 5 to 7 million tons of carbon emissions annually and lower energy bills by nearly \$1 billion annually.

**4 Feb** – [Aruba DC system presses ahead \(Caribbean\)](#) –the system will use seawater and heat pumps to cool hotels as described in this [informative documentary](#).

**3 Feb** – [Geothermal heating & cooling system goes online in West Union \(Iowa\)](#) – more than ten building/business owners previously formed West Union District Energy LLC to install the necessary heat pumps and pipelines in their structures.

**31 Jan** – [Analysing CHP in the United States](#) –this market research report covers the applications and potential of CHP, the CHP industry, usage of CHP, regulatory framework impacting CHP and much more (Requires purchase).

**31 Jan** – [Energy Infrastructure Update for December released \(US\)](#) –the report from the Federal Energy Regulatory Commission indicates that as of the close of 2103, US is home to 3.83 GW of geothermal steam and 1.13 GW derived from waste heat.

**29 Jan** – [City council plan to use data centre waste heat for DH \(Seattle\)](#) – the city's Office of Sustainability & Environment hopes to create a DE system to deliver hot water and heat to two neighborhoods, powered by two [local data centers'](#) waste heat and other sources.

**29 Jan** – [Village to be heated using biomass DH system \(New York State\)](#) – the project has won a \$300,000 State grant with the purpose of replacing household heating systems with a village-wide boiler possibly burning woody biomass or other non-fossil fuel.

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## China, Asia and Australasia

**18 Feb** - [Empower to syndicate \\$600m loan for Palm Utilities purchase](#) - the deal will give Empower about 70% of the UAEs' DC market and is the latest in a series of acquisitions in which assets are shuffled between companies ultimately owned by Dubai's government or the emirate's ruler.

**17 Feb** - [KDHC's ratings unaffected by weakened 2013 preliminary earnings](#) - Korea District Heating Corporation is the country's largest provider of urban heating services and has a stable credit profile due to steady profit from its core DH sales.

**27 Jan** - [Saudi district cooling market positioned for strong growth](#) - the UAE, which has been the fastest growing market for the Middle East's DC industry, is about to be overtaken by Saudi Arabia, where a variety of real estate projects of varying sizes are being newly developed.

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## Conferences, symposiums and forums

**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.

**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.

**7-9 Sept** – [14th International Symposium on DHC \(Stockholm\)](#) – this event aims to gather the international research community around issues important for DE development.

**8-11 June** – [IDEA's 105th Annual Conference and Trade Show \(Seattle, US\)](#) – “Moving Community Energy Forward” call for technical presentations.

**3-4 June** – [The second solar DH conference \(Hamburg, Germany\)](#) – the 2014 edition of the solar DH conference invites market actors and experts to gather, exchange experience and network at international level, also there is a [call for abstracts](#).

**13 May** – [Decentralised Energy 2014 Forum \(London\)](#) – this forum is aimed at Government, LAs, financiers, technology providers, consultants, corporate business and housing developers considering operating or expanding decentralised energy projects.

**5-6 May** – [2nd DC \(District Cooling\) Stakeholders Summit \(Dubai, UAE\)](#) – the Summit will emphasize energy conservation and increasing the efficiency of power generation via the deployment of cost effective and efficient DC methodologies.

**8-9 April** – [3rd Concentrated Solar Power Conference & Expo \(Cape Town\)](#) – reducing CSP costs & risk through international experience and investor insight.

**11-13 March 2014** – [International Bioenergy Conference 2014](#) – the event will cover the entire bioenergy chain and bring together speakers and delegates from the industrial, academic and policy communities.

**5-7 March 2014** – [10<sup>th</sup> South-East European Exhibition on Energy Efficiency and Renewable Energy](#) – this exhibition and conference will take place in Sofia, Bulgaria. A highlight in the Conference will be the session ‘Rethinking District Heating and Cooling in Europe’, organized by Euroheat & Power.

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## General interest, technology and research

**26 Feb** - [Low-temperature utilization of geothermal resources using DHC systems](#) - this study updates the supply curve for direct-use utilization using undiscovered hydrothermal resources and near-hydrothermal [EGS resources](#) in the US.

**25 Feb** - [Decision support model helps in the planning of DH systems](#) - in his doctoral dissertation, Haichao Wang, studying at Aalto University, has developed a multi-criteria support system that decision-makers can utilise in planning and retrofitting DH systems.

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**13 Feb** - [Solar District Heating Online-Calculator](#) - this public domain online calculator for SDH systems is available as an easy accessible and user-friendly calculation program for a first dimensioning and forecast of performance and economic viability for SDH systems.

**Feb** - [Innovations in District Heating](#) - this report from a Swedish consultancy identifies possible efficiency improvements from the greater deployment of thermal accumulators, heat pumps etc. and was produced as part of the [InnoHeat Project](#), part funded by the EU.

**6 Feb** - [13min video clip explaining elements involved in a DE system](#) - the clip also provides viewers with an insight into the benefits of a DE system.

**2 Feb** - [this profile feature wood biomass heating expert Tim Maker](#) - includes references to Norwich University's new \$6.2 million biomass DH plant.

**30 Jan** - [Virtual CHP plants could be an answer to increasing network demand](#) - research undertaken by ENER-G concludes that small clusters of CHP systems could decarbonise electricity supplies, while reducing demand on the electricity network.

**27 Jan** - [IDEA Annual Innovation Award Competition for 2014](#) - the program is intended to showcase examples of technology, engineering and operational innovation within the DE industry.

**22 Jan** - [EU launches initiative to increase renewable energy use in data centres](#) - the team will quantify the benefits of various energy concepts including heat re-use and interaction with DHC systems.

**22 Jan** - [How to approach District Cooling guidelines](#) - this publication is from AREA, a trade association, which represents European refrigeration, air conditioning and heat pump contractors.

**21 Jan** - [DH system feasibility depends on many factors](#) - this is the latest in the "Ask the Energy Experts" series.

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## Glossary

AC	– air conditioning
ACEEE	– <a href="#">American Council for an Energy-Efficient Economy</a>
AD	– anaerobic digestion
AREA	– <a href="#">Air Conditioning and Refrigeration European Association</a>
ASHRAE	– <a href="#">ASHRAE</a> (formerly the American Society of Heating, Refrigerating and Air Conditioning Engineers)
ASPs	– <a href="#">air source heat pumps</a>
CCHP	– combined cooling, heating and power
CHP	– combined heat and power
CNREC	– <a href="#">China National Renewable Energy Centre</a>

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CRM	– <a href="#">Customer relationship management</a>
CSP	– <a href="#">Concentrated Solar Power</a>
CTF	– <a href="#">Clean Technology Fund</a>
DCLG	– <a href="#">Department for Communities and Local Government</a>
DECC	– <a href="#">Department for Energy and Climate Change</a>
DE	– decentralised energy
DEA	– <a href="#">Danish Energy Agency</a>
DH	– district heating
DHC	– district heating and cooling
DHN	– district heating network
EBRD	– <a href="#">European Bank for Reconstruction and Development</a>
ECCC	– <a href="#">(House of Commons) Energy and Climate Change Committee</a>
ECO	– <a href="#">Energy Company Obligation</a>

The three obligations under ECO are:

CERO - Carbon Emissions Reduction Obligation

CSCO - Carbon Saving Community Obligation

HHCRO - Home Heating Cost Reduction Obligation

EIB	– <a href="#">European Investment Bank</a>
EPSRC	– <a href="#">Engineering and Physical Sciences Research Council</a>
ESCo	– <a href="#">Energy Service Company</a>
EGS	– <a href="#">Enhanced Geothermal System</a>
EfW	– <a href="#">Energy from waste</a>
FT	– <a href="#">Financial Times</a>
GCC	– <a href="#">Gulf Cooperation Council</a>
GHG	– greenhouse gas
GSPs	– <a href="#">ground source heat pumps</a>
GTCC	– <a href="#">gas turbine combined cycle</a>
H&S	– health and safety
HNDU	– <a href="#">Heat Networks Delivery Unit (DECC)</a>
I&C	– information and control
IBRD	– <a href="#">International Bank for Reconstruction and Development</a>

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IDEA	– <a href="#">International District Energy Association (US)</a>
IEA	– <a href="#">International Energy Association</a>
ITT	– Invitation to Tender (European equivalent to RFP)
JV	– Joint Venture
KDHC	– <a href="#">Korea District Heating Corporation</a>
LLC	– <a href="#">Limited Liability Company</a>
LPG	– liquefied petroleum gas
LEEF	– <a href="#">London Energy Efficiency Fund</a>
Ofgem	– <a href="#">Office of Gas and Electricity Markets</a>
ORC	– <a href="#">Organic Rankine cycle</a>
OTEC	– <a href="#">Ocean Thermal Energy Conversion</a>
PIP	– Preliminary Investment Proposal
PV	– Photovoltaic
QUEST	– <a href="#">Quality Urban Energy Systems of Tomorrow</a>
RFP	– Request for Participation (N. American equivalent to ITT)
RHI	– <a href="#">Renewable Heat Incentive</a>
RT	– <a href="#">Refrigeration Tonnes</a>
SDC	– Seawater District Cooling
SUDS	– <a href="#">Sustainable urban drainage systems</a>
T&Cs	– Terms and conditions
TSB	– <a href="#">Technology Strategy Board</a>
TSE	– Treated Sewage Effluent

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