

District Energy Vanguards Network Newsletter

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Editorial

Published just prior to Christmas, and consequently missed by many, was some welcome research from the Committee of Climate Change (CCC) set out in their [progress report on the Fourth Carbon Budget](#). Previously the Committee has not been the greatest advocate of district energy, stating in their 2010 report *"There is a limited assumed role for district heating, reflecting uncertainties around technical and economic aspects of this option, with the possibility of deeper penetration as uncertainties are resolved"*. Responding to questions at the launch of their report on the role for local authorities in May 2012, Chief Executive David Kennedy said that he believed that district heating would lock heat consumers into fossil-fuel fired CHP. Their preferred approach to the heat market has been based on a combination of solid wall insulation and heat pumps. Therefore a little digging into this latest progress report revealed some welcome changes of direction.

Firstly, the report finds that *"solid wall insulation is found to be most cost effective if applied to large electrically-heated homes, and least cost-effective for small homes heated by gas or district heating."* As a consequence the expected savings from solid wall insulation have been almost halved from 4.9 MtCO₂ by 2030 to 2.5 MtCO₂.

Next they acknowledge the recognition in DECC's Heat Strategy that there is *"a greater role for district heating, delivering heat from a range of low-carbon sources including a potentially important contribution from larger-scale heat pumps"*. No longer a lock-in into fossil fuel fired CHP?

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The report goes on to mention the outputs from a CCC-commissioned study by AEA and Element Energy ([see Chapter 3 of the report](#)) that “*identified greater potential for district heating deployment, at 160 TWh/year by 2050, and showed that a mix of district heat and heat pumps would have similar emissions and overall cost to a scenario with very high level of heat pump uptake*”.

They conclude “*In order to keep in play this greater cost-effective potential for long-term deployment, we assume that it is necessary by 2030 to reach a greater level of roll-out than we had previously envisaged. Whilst this would include some gas CHP in the near-term, this is likely to be phased out over time with a rising carbon price*”.

Consequently they have upped their assumptions for the potential role for district energy by 2030 to 6% of the heat market, roughly a tripling of the current level of penetration.

It's encouraging to see the Committee, a key organisation in the energy debate, considering the potential of district heating in greater detail and increasing its role in their future energy scenarios.

Lastly, DECC has launched this month a consultation on the heat metering requirements of the European Energy Efficiency Directive. A series of workshops have been arranged around the both England and Scotland to give interested parties the opportunity to understand and comment on DECC's proposals for responding to the Directive. Details on workshops can be obtained from heatstrategy@decc.gsi.gov.uk Whilst these proposals appear to be pragmatic, heat metering can be a divisive issue with strongly held views on both sides. It is therefore important to respond to allow DECC to get the full flavour of market opinion. **Deadline for responses is 21st February 2014.**

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UK and EU Policy

Open consultations and funding

Jan – [metering and billing of heating and cooling \(DECC\)](#) – this consultation seeks views on the government's approach to the implementation of Articles 9, 10, 11 and 13 of the EU [EU Energy Efficiency Directive](#) as they apply to DH, DC and communal heating and/or hot water. **A further workshop will take place at Newport on 4th Feb and the consultation period will close on 21st Feb.**

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. A briefing event for potential applicants will be held **in Bristol on 30 Jan** and deadline for registration **is at noon on 12 March.**

Jan – [DH and DE specialists required](#) – Resource Efficient Scotland are tendering for membership of a panel of DH and DE Specialists. **Closing date for applications is 2 Feb.**

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

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for cogeneration and efficient DH and DC are not missed. This Scottish Government consultation closes on 16th April.

20 Dec – [IEA invites proposals for its DHC programme](#) – the IEA district heating & cooling programme finishes its tenth ‘annex’ (three year research programme) this year. That means it will have completed 30 years of research - most of which can be seen [here](#). It also means the Call for Proposals for the next Annex (XI) is currently live with a deadline of 21 March 2014.

18 Dec – [EU consults on draft rules for state support in energy and environmental field](#) - the Commission proposes to exempt certain categories of aid from prior scrutiny under the state aid rules by including them in the General Block Exemption Regulation. This would include, for example, public support to promote district heating. Comments can be submitted until 14 Feb 2014.

4 Dec – [DECC have produced an application and guidance pack](#) for local authorities to gain financial assistance from round 2 of the HNDU Funding Stream which is now open and will close on 31 Jan 2014.

Dec – [The Carbon Trust are offering assistance with round 2 applications to HNDU](#) – the second call for applications for funding from the DECC Heat Network Delivery Unit is now open and will close on 31 Jan 2014.

13 Nov – [ETI seeks proposals for a project to reduce DH network costs](#) – the closing date for submission of proposals is 4 Feb 2014.

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UK News

24 Jan - [Scottish Government consents to biomass CHP plant \(Rosyth\)](#) – the plant will have a capacity of 120MWe and 30MWth with “*the additional benefit of the potential for a heat distribution network*”.

23 Jan - [Council express hope that DH model is replicated across Glasgow](#) – the DH system will heat 700 “eco homes” at the Commonwealth Games Athletes’ Village thus removing the need for individual boilers.

21 Jan - [Plans for £25m eco-friendly power plant scrapped \(Cambridge\)](#) – the city council determined that the installation costs of the DH scheme would be too high. The project could have cut the heat-related carbon emissions of participating organisations by about 8,000 tonnes pa.

17 Jan - [Tender for the construction of the Gateshead DE centre](#) –also included are the installation of nine heating substations and the reconfiguration of existing heating systems for connection to the DH network. Time-limit for receipt of tenders is noon on 21 Feb 2014.

16 Jan - [PV and biomass DH in sheltered housing \(Aberdeenshire\)](#) – Castlehill Housing Association are using biomass DH to reduce energy costs their sheltered housing.

15 Jan - [Council's DH network to be extended to 287 properties \(Aberdeen\)](#) – the Council's Housing and Environment Committee agreed to extend the DH scheme to three blocks of flats, which are currently served by electric heating, and also to over clad and replace the windows of the three blocks.

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9 Jan - [Audit Scotland release report on Caithness Heat and Power](#) –the report addresses how Highland Council handled [the failure of the DH scheme](#). Equipment and assets from the scheme were sold to Ignis in July 2013 and the scheme is now performing well.

7 Jan - [Eurosites to install and operate 100kW CHP system at Clifton hospital](#) –the 15-year agreement with Blackpool Teaching Hospitals NHS Trust will result in emissions reductions of up to 208 tonnes of CO₂ per annum.

24 Dec - [Tender to upgrade University of Glasgow DH system](#) –the upgrade will cover the replacement of the existing steam DH system with a new extended DHN including CHP. The time-limit for receipt of tenders or requests to participate **is noon on 2 Feb 2014.**

24 Dec - [Merseyside waste contract will fuel Teesside EfW plant](#) – residual household waste will be sent via rail to a new 49MWe EfW facility in Teesside which will also be able to provide 190 tonnes of steam an hour to industrial businesses via a DH network. [The GIB are investing £20m in the facility](#) which will convert more than 420k tonnes of residual waste into energy each year and save more than 1.8m tonnes of CO₂ over its lifetime.

19 Dec - [Why biomass installations are ideal for DH schemes](#) – current government incentives and increased emphasis on renewable technology are making biomass DH schemes more popular.

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Europe

24 Jan - [biomass fuelled DH at heart of Europe's 'Greenest City' \(Sweden\)](#) – the city adopted oil-fuelled DH in the 1970s but soon changed-over to biomass sourced from the forestry industry. Today, Växjö 's CO₂ emissions are just 2.7 tonnes per person.

23 Jan - [solid biomass report reflects growth in the EU](#) – the report from EurObserv'ER indicated that Sweden consumed the most heat from solid biomass in DH applications.

16 Jan - [Vattenfall retains DH operation but sells electricity grid interest \(Hamburg\)](#) – as a result of a City-wide referendum to re-municipalise energy networks; Vattenfall will sell its majority share of Hamburg's electricity grid company but continue to operate the local DH network in partnership with the municipality until at least 2019.

15 Jan - [biomass DH key to carbon-neutral Volvo premises \(Sweden\)](#) – e.g. LPG burners used to heat the rust protection treatment ovens to 60^o C have been replaced with DH.

9 Jan - [European Parliament calls for heat strategy](#) – the importance of heating and cooling is recognised in the vote on a 2030 framework for climate and energy policies.

8 Jan - [Austria supported 11 large scale solar DH plants in 2013](#) – the systems have 3,500m² of collector area and were supported via the Austrian Climate and Energy Fund.

7 Jan - [Luhansk DH corporate development programme tender \(Ukraine\)](#) – the EBRD are seeking bids for consultancy services to assist LTKE (the municipally owned DH company) to develop a modernisation programme. The deadline for tenders **is 10 Feb 2014.**

3 Jan - [Government announces reduced heat tariffs for public institutions \(Ukraine\)](#) – the tariffs for heat from 160 Ukrainian DH providers will be reduced by 22-25% for public institutions but tariffs for domestic consumers will remain the same.

2 Jan - [100% of Danish DH to be supplied by woody biomass by 2035](#) – the consumption of wood pellets in Denmark continues to rise, replacing the use of coal in CHP plants.

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1 Jan - [EfW generates 20% of Sweden's DH but imports waste from Europe](#) – about 800k tonnes of waste is now imported mainly from Norway where processing costs are higher.

30 Dec – [Fortum sells CHP-DH plant to Adven Oy \(Eura, Finland\)](#) – the plant's production capacity is 14MWe, 10MWth and 31MW of process steam. The plant is fuelled from wood, paper, plastic-based recyclates and industry fuels.

27 Dec – [Cofely finalises acquisition of Polish heat networks](#) – GDF SUEZ, via its Cofely subsidiary, has signed a share purchase agreement with E.ON Sverige AB to acquire its portfolio of heating assets in Poland. This transaction enables the company to enter the Polish DH market.

27 Dec – [Dalkia acquires DH network from RWE AG/Essent \(Netherlands\)](#) – the business is the 3rd largest in The Netherlands, comprising 64 heating networks serving more than 62,800 households and 1,240 commercial customers. The business will be co-owned by Dalkia's partner, the pension services provider PGGM (80%) and Dalkia (20%).

26 Dec – [Belarus progresses \\$90m funding from IBRD for biomass DH upgrade](#) – the project is expected to improve the energy efficiency of DH and increase the use of local wood biomass (replacing natural gas for base-load heat generation) in 13 towns and cities.

20 Dec – [Research centre to provide heat for local DH system \(Sweden\)](#) – a 4.5km pipeline will transport waste heat from the [European Spallation Source](#) to the DH system servicing Lund, Eslöv and Lomma.

18 Dec – [Copenhagen awarded European Green Capital 2014 title](#) – Copenhagen's many 'green' credentials include its DH system which serves 98% of its 270,000 households.

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The Americas

23 Jan – [building begins on city-wide DE network \(Guelph, Ontario\)](#) – the new heating and cooling system in the Sleeman sports and entertainment center in downtown Guelph is an important first step toward building North America's first city-wide DE network.

7 Jan – [District Energy St. Paul win award for DE brochure design \(Minnesota\)](#) – the purpose of the brochure is to communicate its capabilities and benefits of DE to a broad audience ranging from government policy makers to community members.

2 Jan – [wood from threatened ash trees could be used in DH system \(Iowa\)](#) – researchers from the University of Iowa are proposing that wood from the ash trees could be mixed with coal to fuel the Universities CHP-DH system. There are an estimated 60-million ash trees across eastern Iowa under threat from the Emerald Ash Borer beetle.

19 Dec – [DE options considered to supply heat to hospital \(Vancouver\)](#) – the City of New Westminster is considering two options for a DE system to supply renewable-source heat to the Royal Columbian Hospital and a 35-acre commercial and residential development that could reduce GHG emissions by up to 84%.

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China, Asia and Australasia

20 Jan - [Saudi DC market set to surge](#) - the Kingdom's rapidly expanding industrial base and population have increased the demands for water, power and cooling. The DC market

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is moving towards de-centralisation, as an effect of increasing demand from small scale developments requiring 5k to 25k RT of cooling.

19 Jan - [Empower acquires Palm Utilities and Palm DC in \\$500m deal](#) - the sale of Palm District Cooling is the latest asset disposal by Istithmar World, whose parent company, Dubai World, needs to repay \$4.4 billion to creditors in 2015.

19 Jan - [Engineer calls for DC charging regulation](#) - the writer suggests that government intervention is essential to safeguard the rights of consumers and companies alike.

14 Jan - [Daikin announces launch of more efficient DC solution \(Riyadh\)](#) - the new WCT 6000 water-cooled centrifugal chiller is billed as the most efficient and largest commercial capacity DC chiller in the world.

7 Jan - [tender for DH steam to hot water transition project \(Jinan, China\)](#) – the EIB are tendering in relation to upgrading the DH system in Jinan City to use hot water in place of steam. No deadline has been set for tenders.

7 Jan - [Denmark assists China with integration of renewables](#) – the cooperation between CNREC and DEA runs to the end of 2014 and will among others focus on DH and integration of renewable energy.

6 Jan - [Tabreed DC saves a record 1.2 GWh of energy in 2013](#) – the company has 66 DC plants, mainly located in the UAE but also in Saudi Arabia, Qatar, Oman and Bahrain.

5 Jan - [MDD complex to install 29,000 RT DC system \(Doha, Qatar\)](#) – Msheireb Properties' \$5.5bn project Msheireb Downtown Doha (MDD) has opted to install energy efficient DC technology to cool its buildings..

1 Jan - [DC systems may use treated water \(Saudi Arabia\)](#) – the CEO of Saudi Electricity Company would like see legislation to permit the use of treated water for DC systems as it is less expensive than desalinated water intended for drinking.

29 Dec - [Committee recommends use of TSE in DC projects \(Qatar\)](#) - using TSE in place of fresh water in DC plants can also result in a significant reduction in the variable costs of cooling plants.

25 Dec - [Kahramaa ties up with Japan institute to prepare energy efficiency road map](#) - Qatar General Electricity and Water Corporation (Kahramaa) has joined up with the Mitsubishi Research Institute (MRI) to prepare an energy efficiency road map for Qatar.

24 Dec - [Mitsubishi to supply GTCC gas turbine for DH system \(Osan City, S.Korea\)](#) - the 435MWe CHP plant will provide steam for a DH system servicing a new residential area.

24 Dec - [DH to be provided for 118 apartment buildings \(Baku, Azerbaijan\)](#) - the company, Azerteplosnabzhenie, is to provide heat to 118 apartment buildings in addition to the 2,760 apartment buildings and 730 public facilities already heated via DH.

18 Dec - [Two Siemens gas turbines to power DE system \(Guangzhou, China\)](#) - the 14MWe SGT-400 gas turbines will supply electricity, industrial steam and cooling to enterprises in the Aotou Industrial Zone. China is planning to build around 1000 DE systems and ten natural gas DE demonstration zones by 2015.

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Conferences and workshops

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.

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](#).

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 – [10th 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.

25 Feb – [IMecE seminar “District Heating 2014” \(London\)](#) – what are the challenges of implementing DH projects and how do we address them in the UK market?

18-21 Feb – [IDEA's 27th Annual Campus Energy Conference \(Atlanta, US\)](#) – “Clean, Efficient & Resilient Energy” – the organisers are calling for technical presentations.

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General interest, technology and research

14 Jan – [Landfill rubbish buried decades ago could be a fuel of the future](#) - evidence given by the energy and climate change minister to the Lords science committee included the [pyroformer/gasifier project](#), which generates energy from organic waste products.

7 Jan - [Points of comparison between the US and European CHP markets](#) - lower gas prices and pro-CHP policies cited as advantageous to US CHP future growth.

Jan - [presentations from CHP/DHC Working Group published](#) - discussions focused on CHP/DHC future trends and overcoming the barriers for further deployment of these technologies across the EU. Links to the presentations are at the bottom of the URL page.

Jan - [Learn about the elements involved in a DE system \(Grundfos Webcast\)](#) - Anders Nielsen, Application Manager at Grundfos explains the elements involved in a DE system and provides viewers with an insight into the benefits of such a system.

Dec - [CIBSE CHP-DH group presentation on DH](#) - the presentation covers eight golden rules to inform project managers when considering and planning a new DE system.

Dec - [Short films about district heating](#) - the films cover various aspects of DH, including different types of fuel and how waste heat from industry can be utilised to heat cities.

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Glossary

- AC – air conditioning
- ACEEE – [American Council for an Energy-Efficient Economy](#)
- AD – anaerobic digestion
- ASHRAE – [ASHRAE](#) (Formerly the American Society of Heating, Refrigerating and Air Conditioning Engineers)
- ASPs – [air source heat pumps](#)
- CCHP – combined cooling, heating and power
- CHP – combined heat and power
- CNREC – [China National Renewable Energy Centre](#)
- CRM – [Customer relationship management](#)
- CSP – [Concentrated Solar Power](#)
- CTF – [Clean Technology Fund](#)
- DCLG – [Department for Communities and Local Government](#)
- DECC – [Department for Energy and Climate Change](#)
- DE – decentralised energy
- DEA – [Danish Energy Agency](#)
- DH – district heating
- DHC – district heating and cooling
- DHN – district heating network
- EBRD – [European Bank for Reconstruction and Development](#)
- ECCC – [\(House of Commons\) Energy and Climate Change Committee](#)
- ECO – [Energy Company Obligation](#)
- EIB – [European Investment Bank](#)
- EPSRC – [Engineering and Physical Sciences Research Council](#)
- ESCo – [Energy Service Company](#)
- EfW – [Energy from waste](#)
- GCC – [Gulf Cooperation Council](#)
- GHG – greenhouse gas
- GSPs – [ground source heat pumps](#)
- GTCC – [gas turbine combined cycle](#)
- H&S – health and safety
- HNDU – [Heat Networks Delivery Unit \(DECC\)](#)

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

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