

District Energy Vanguards – Newsletter 31



[This issue 31 is now available online.](#) It is called *December 2015* as it reports news items and emerging events announced during December 2015. [Click here for back issues.](#)

This issue has three longer articles on: international research on district heating & cooling, improved National Heat Map for England and Danish district heating cost comparisons.

Thoughts for 2016

We enter the New Year with the promise of significant expansion in the market for district energy. To add to that two additional pieces of news:

Firstly, the seed funding from DECC for the [District Energy Procurement Agency \(DEPA\)](#) has finally arrived. Manchester City Council, who agreed to be lead authority for DEPA, is shortly appointing legal advisers to develop options for governance & business structures.

Secondly, DECC will consult early spring on how to allocate £300m capital investment for heat networks announced in the Autumn Spending Review. To inform development of this consultation officials will reach out to stakeholders like our Vanguards Network.

We hope to bring these together in a workshop (or two) end of February / early March on:

- the most appropriate governance structure for DEPA;
- what sort of vehicle should manage the allocation of investment funding and what form it should take – grants, gap funding, loans, demand guarantees etc.

Some of the investment funding will be allocated to Scotland under the Barnett Formula. However, the Scottish Government decides whether this be allocated to support district energy projects and how. The Scottish Government chose not to invest in district energy projects from a similar allocation in 2009 under the Low Carbon Infrastructure Fund.

Scottish members of the Network might wish to raise with their political representatives the need for investment funding and the benefits heat networks will bring communities. With elections for Scottish Parliament in May of this year politicians should be in listening mode.

Elections for the Mayor of London mean the London Plan for spatial development – which has promoted district energy the past ten years will be up for review. It's likely – on the basis of current frontrunners – that they will continue to support the climate policies in it.

Of particular importance will be any consideration of the zero carbon building planning requirement, something current mayor Boris Johnson has recently [stated](#) he will continue to push, even though his colleague George Osborne scrapped the policy in his Summer Budget. Network members in London might engage with their political representatives?

Michael King, Editor

We look forward to meeting many of you at our Heat and the City events this coming year. Meanwhile the editorial team of Syed Ahmed, Dave Hawkey, Michael King, Mike Martin and David Somervell wish you all a happy, safe and successful 2016!!

Request from IEA-DHC Research Programme



Robin Wiltshire outlines resource provided through UK membership of the [District Heating & Cooling \(DHC\) research programme](#) of [International Energy Agency \(IEA\)](#), and alerts us to an opportunity to help shape the future content of the programme.

Established in 1983, this programme brings countries together to research, innovate and grow district heating and cooling. The research programme is enriched by its participant countries – including both emergent district heating markets in UK and North America and mature district heating countries such as Germany and the Scandinavian countries. UK membership is supported by DECC.

Anyone can register at www.iea-dhc.org to access reports, current research projects and sign up for occasional newsletter. Topics address technical, planning and policy issues, with reports on heat distribution, operation, low carbon systems and environmental benefit. Each programme 'Annex' / group of projects is selected through a Call for Proposals and these calls reflect common priority themes that benefit each country.

[Projects completed under the 2011-14 call](#) addressed integration of renewable heat sources and experiences with pilot very low temperature systems.

Research under the current Annex XI (2014-17) projects comprises these four:

1. [Structured for Success: Governance Models for Deploying Thermal Grids](#)

Provides decision makers with key information and case study examples to help align appropriate governance and business models with district energy project goals and objectives. The project is examining best fit between energy market conditions, local circumstances and business models.

2. [Plan4DE: Optimising Urban Form for District Energy](#)

A tool for planners is being devised to consider impacts of land-use plans on feasibility of district energy. This will enable planners to evaluate different scenarios and their environmental, social and economic benefits.

Join their [Planning and District Energy webinar](#) 6-7pm, Monday 1 February.

3. [Transformation Roadmap from High to Low Temperature DH Systems](#)

This will provide a guiding report about temperature levels in district heating systems, which will increase the future competitiveness of district heating. A specific focus is directed towards the transformation to lower supply and return temperatures.

4. [Smart Users in District heating: User Centred Approach](#)

This project is exploring district heating users' domestic energy behaviour, and then conceptually developing the user interface of a home energy management system to encourage people to use their energy system in an efficient way.

IEA-DHC are about to embark on defining the scope of next round to run from 2017-2020.

Please think about missing / new topics. Send ideas to Robin.Wiltshire@bre.co.uk.

Dr Robin Wiltshire is chair of the [Executive Committee](#) overseeing the IEA-DHC work.

Robin is co-author of [A Technical Guide to District Heating \(FB 72\)](#) December 2014. See his [Useful ppt on Low Temperature DH](#).

New Features for National Heat Map for England

The [National Heat Map for England](#) was conceived, designed and built for the [Department of Energy & Climate Change \(DECC\)](#) by the [Centre for Sustainable Energy \(CSE\)](#).

It was and remains a breakthrough in web-based heat demand mapping, being based on address-level heat demand estimates, and offering a rich set of features including multiple synchronised maps, Street View integration, and the ability to share saved views.

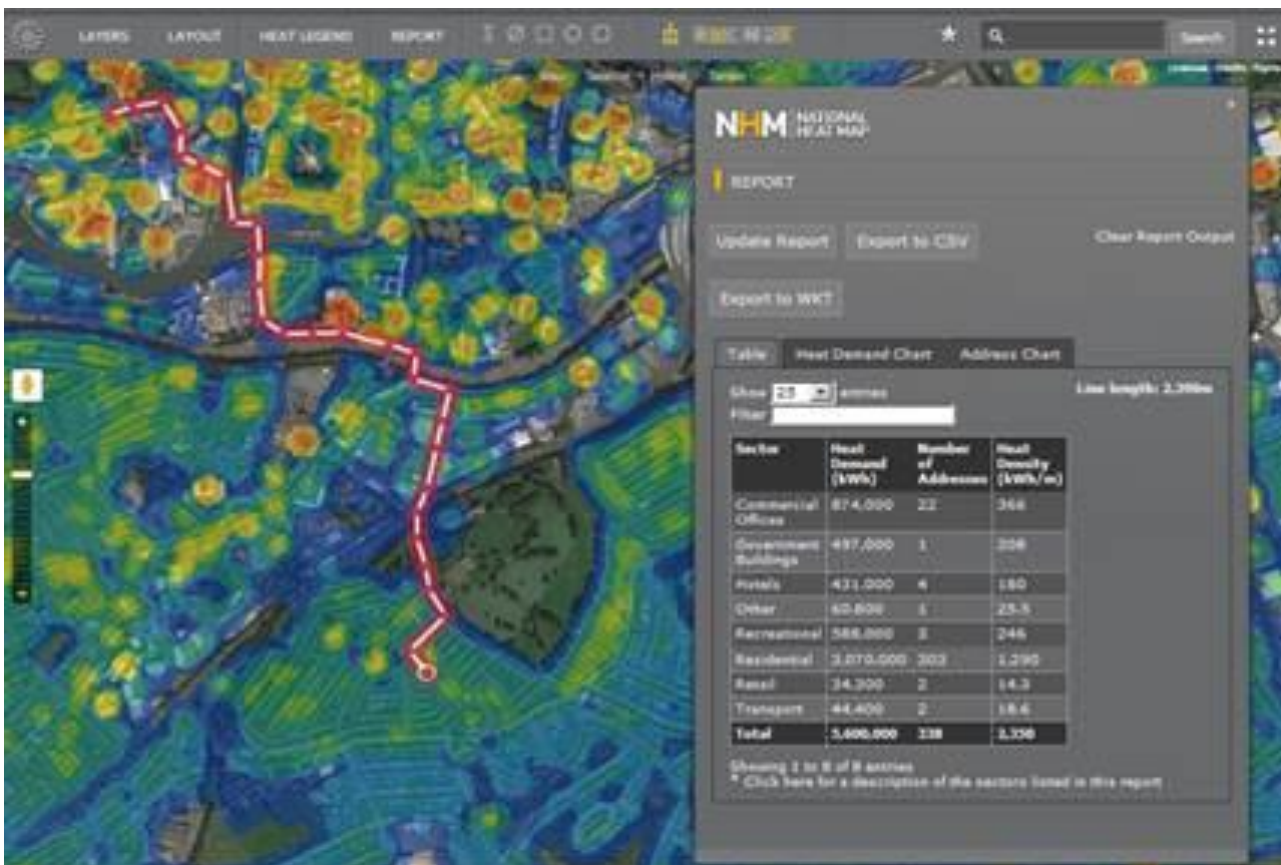
Since its 2012 launch, the English Heat Map has undergone two significant upgrades.

The first upgrade saw the introduction of linear heat demand modeling tools. These include the ability to both automatically and manually create heat distribution routes between any two points on the map, and to report on heat demand density on that route.

This crucially gives heat densities in units of kWh/metre/year, which is far more relevant to heat network economics than the more typically employed spatial heat densities measured in kWh/sq.metre/year.

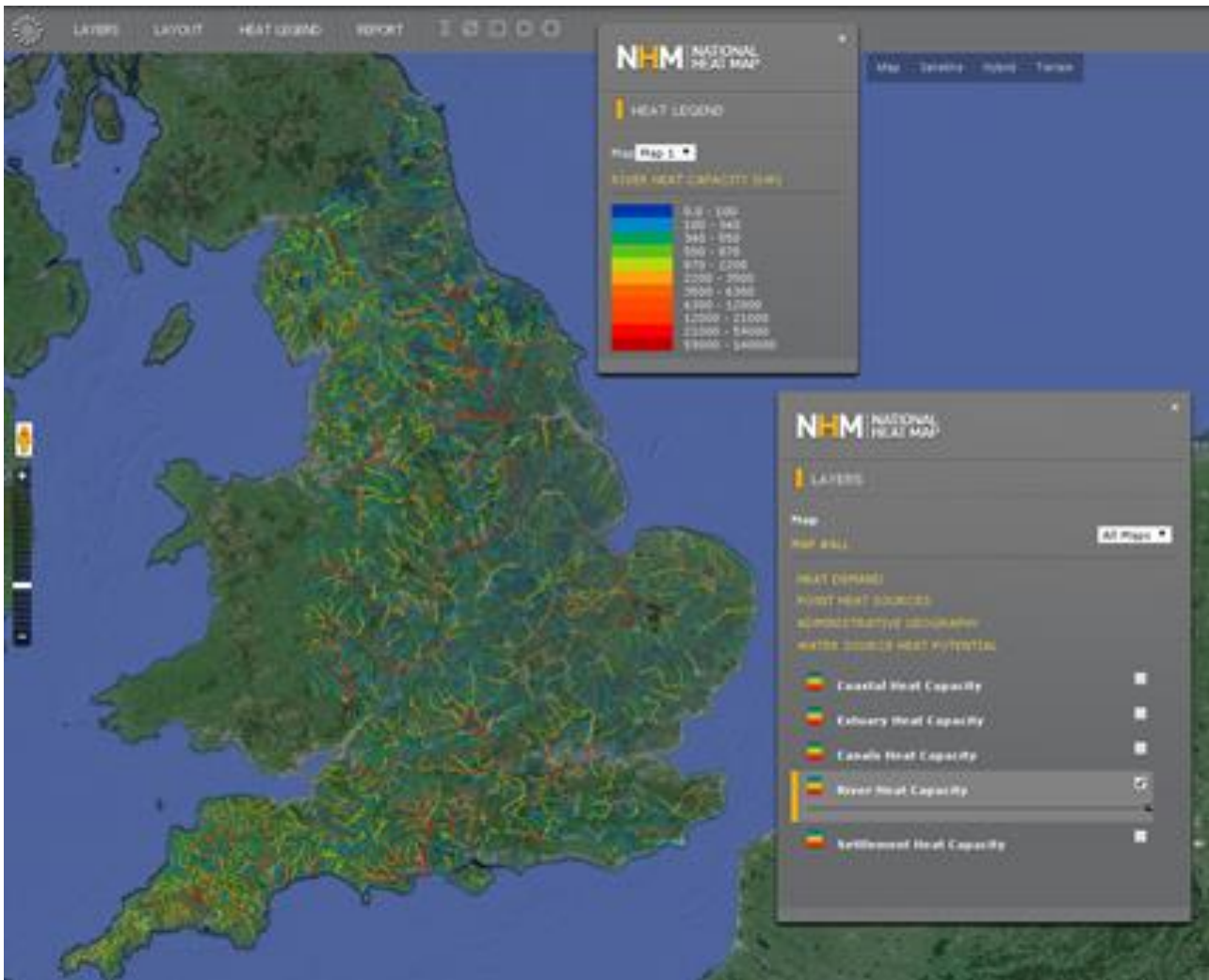
The reporting feature also allows users to download the routes they create for use in other applications (such as Quantum GIS).

Using the new network analysis features ([click here for a live version](#))



The second upgrade introduced a new set of heat supply layers, representing the potential for using heat pumps to take heat from rivers, canals and coastal water bodies for use in space heating applications.

Energy available from rivers using heat pumps ([click here for live version](#)):



All the new features are fully explained in the user guide for the National Heat Map, which can be found in sections 13 and 14 at:

http://tools.decc.gov.uk/en/content/cms/heatmap/user_guide/user_guide.aspx.

DECC will be issuing a short survey on the heat map in January, aimed at local authorities working with the Heat Network Delivery Unit (HNDU). The intention being to tease out local authorities' perception of the heat map, the level of use, most helpful features and potential tweaks / modifications to increase its usefulness. DECC will contact these HNDU supported local authorities directly.

CSE and DECC additionally invite feedback from other users such building developers, consultants, and community groups as well as local authorities not currently supported by HNDU. Please do send any comments to:

Sudha Oza sudha.oza@decc.gsi.gov.uk at DECC and
Josh Thumim joshua.thumim@cse.org.uk at CSE.

Josh Thumim is Head of Research & Analysis at the
Centre for Sustainable Energy (CSE) in Bristol.

Best Practice in District Heating Regulations: Lessons Learnt in Denmark

A comprehensive assessment of district heating regulations in Denmark was published in October 2015 to inform Danish policy-makers on what has worked over the last 35 years and how to promote 500million Danish kroner / £49million efficiency gains by 2020.

Unfortunately it is only available in [Danish](#); so in this note Tanja Groth draws out highlights which may apply to changing UK circumstances – including the £300 million district energy funding support pledged for the sector in the Chancellor's Autumn Statement.



The Danish district heating sector, which supplies two thirds of all Danish households with heat, is subject to regulation which requires that heat prices are set at a level where only necessary costs are covered i.e. in effect district heating is a non-profit sector in Denmark.

The headline recommendation from the Danish assessment is that **clearer guidance be provided on exactly what constitutes necessary costs** as there is significant discrepancy from one supplier to another.

Danish district heating providers must report their cost base and proposed heat prices annually to the [Danish Energy Regulatory Authority \(DERA\)](#) – the independent regulatory body responsible for electricity, natural gas and district heating. Improved conformity on what is included is recommended to ensure true comparability between district heat prices.

In the UK the newly established Heat Trust is developing a [Heat Cost Comparator](#) to compare district heating costs with comparable costs for gas central heating for the UK.

Lessons from the Danish experience could well be applied in setting guidelines for what Heat Trust members should include in the cost breakdowns provided on customer billing. This would enable such costs to be fairly compared across UK district heating providers.

The second headline recommendation from the Danish assessment is a **requirement that all district heating suppliers participate in annual efficiency benchmark reporting**.

This will help DERA identify best practice in the sector and support cost-effective interventions where district heating suppliers have the most room for improvement. The annual benchmarking report is to be accompanied by tools that will allow individual district heating operators to identify and address areas of improvement on their systems.

This benchmarking report and associated tools is key to securing efficiency gains of 500m Danish kroner by 2020. It may be worth UK developing a similar model to accelerate and secure efficiency gains while the sector develops, rather than losing out on potential improvements by waiting until the market has matured, as is the case for Denmark.

Dr Tanja Groth is the Decentralised Energy Manager at the Carbon Trust.

Tanja presented on [Best practice from Denmark in price setting for heat tariffs](#) to the Leicester Vanguards Meeting in July 2015. Contact: Tanja.Groth@carbontrust.com

UK guidance, conferences and training / workshops

[Heat and the City](#), with support from [Heat Network Partnership for Scotland](#), offer training in CIBSE/ADE Heat Networks Code of Practice at [Edinburgh Centre for Carbon Innovation](#) – [both 1- & 2-day training late Feb / early March 2016](#).

[International 2016 Low Carbon Heat and Water Conference & Showcase](#) – 23 Feb 2016: low carbon heat & cooling and water & wastewater sectors. Free. Glasgow.

[Heat Networks Code of Practice Certification](#): CIBSE is offering two-day courses with the opportunity to take an exam leading to entry on the [Heat Networks Consultant register](#). They're intensive / require a high level of knowledge / two years' experience - so check on: [Competencies](#) / [Self-assessment questions](#) / [List of required reading and preparation](#).

2016 Dates offered: **NEW** [Glasgow 9-10 Feb](#) / [Manchester 1-2 Mar](#) / [London 9-10 Mar](#) / [London 18-19 May](#) / [Leeds 8-9 June](#) / [London 6-7 July](#) £600 Member / £672 non-Member.

Useful [presentations from recent CHPQA seminars](#) update you on scheme complexities.

UK general news

The innovative heat storage options planned for the [Bunhill DH system in Islington](#) features in new DECC [Towards a Smart Energy System](#) paper published December 2015.

For those of you designing residential heat networks: see salutary comments posted since April 2015 publication of [Getting a fair deal for District Heating users](#) report from [Which?](#)

[Protection for UK District Heating customers is "Proportionate"](#) says Energy Secretary Amber Rudd despite sector not being regulated by Ofgem. [Heat Trust](#) or (Danish) [DERA](#)?

Casey Cole managing director of smart prepayment / energy efficiency firm Guru Systems has been appointed the first [chair of the Heat Trust steering committee](#).

Global developments [via [IDEA](#) & [Cogeneration & On-Site Power Production](#) etc]

[UNEP District Energy in Cities](#) programme convened a wide-ranging discussion at COP21, Paris 5 Dec summarising some global [District Energy and Buildings Efficiency](#) initiatives.

[ICLEI](#), [IDEA](#), [Euroheat&Power](#) + [Empower](#) highlighted [three DE Champion cities](#) at COP21 3 Dec: Saint Paul (USA), Malmö (Sweden) and Gothenburg (Sweden).

[Sustainable Energy For All \(SE4All\)](#) and [International Renewable Energy Agency \(IRENA\)](#), hosted an [Energy Focus Day](#) 5 Dec which included [Global Geothermal Alliance](#) launch.

[District Cooling Presentation](#) by Dr Mahgoub focusing especially on urban areas of Qatar.

[Link to the glossary of terms and acronyms](#)

This newsletter is prepared in Edinburgh with support of correspondents who alert me of useful content. All contributions welcomed – email to David.Somervell@ed.ac.uk.

This is a legacy service of the Heat and the City project led by the team at the University of Edinburgh which continues to bring together leading practitioners promoting District Energy in the UK. www.heatandthecity.org.uk/

[Heat and the City](#) has been supported by the [Research Councils UK Energy Programme](#).