

The platform for
European research &
innovation in District
Heating, District Cooling
and kindred technologies

Progressing research & innovation for sustainable energy solutions

This Issue

Interview with Kaisa Kontu, representing the winning team of the 1st DHC+ Student Awards

Renewable Heating and Cooling Strategic Research Agenda

1st DHC+ Student Awards have a winner

The DHC+ Projects Page: RESCUE

The DHC+ Summer School 'DHC and the Smart City'

Upcoming Events

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Interview with Kaisa Kontu, representing the winning team of the 1st DHC+ Student Awards

Why did you decide to participate in the DHC+ student contest?

We thought it would be a great opportunity to present our own research to a bigger public and most importantly to the people in district heating and cooling business. Having opinions from the experts working in this field is very valuable for researcher.

Why are you interested in DHC?

In Finland well-functioning heating system is a must so I guess that interest for heating systems comes originally from there. We have a long history with district heating business in Finland and in big cities such as Helsinki, more than 90 % of the heat demand is covered with district heating. District cooling is quite new and increasing business area bringing new opportunities for the thermal market.

How did you choose your topic?

Our paper is a part of a bigger ongoing research project called RICES (Realignment of Industrial and Community Energy Systems) in Energy department of Aalto University where we have co-operation with district heating companies as well as communities. One of the interesting topics of the project is how to utilize the remote data collected from district heating customers and what opportunities this type of data has. The interest for this is coming also from the industrial partners.



*Picture:
Kaisa Kontu*

*Interview:
Aksana
Krasatsenka*

What was the purpose of your paperwork?

A common feature of the earlier forecasting models in scientific publications is that the forecasting data is based on district heating production data from a heat producer to a larger area (city or neighbourhood). We wanted to find out if it is possible to develop more specific forecasting models for district heating consumption based on hourly consumption data from individual customers. The forecasting model was constructed based on linear regression where outdoor temperature predicts heat consumption and the accuracy of the model was improved by adding the weekly rhythm of heat consumption.

What challenges did you have to face while doing your research?

One challenge of the research was to get enough real heat consumption data. Also the data series were more or less incomplete which is due to the fact that remote meter reading systems have been installed quite recently. We are also hoping to get more real life heat consumption data from different types of buildings built in different decades to continue the research. ■

Renewable Heating and Cooling: a new SRA to supply 25% of energy demand by 2020

by Simone Landolina, Landolina@eurec.be

Renewable energy technologies offer a safe, reliable and clean solution to Europe's heating and cooling needs. Cost effective decarbonisation of the heating and cooling market is achievable, however public and private resources must be mobilised around a clear Vision and Strategic Research Agenda. It is against this background that in 2008 the European Commission supported the establishment of the European Technology Platform on Renewable Heating and Cooling (RHC-Platform), providing a common framework for European industry and research stakeholders to define technological research needs and strategic priorities to increase the use of renewable energy sources (RES) for heating and cooling and to consolidate EU technological leadership.

With the publication of the Common Vision for the Renewable Heating & Cooling sector in Europe in 2011, the RHC-Platform proved that the theoretical and technical potential of renewable energy sources could cover a quarter of EU energy consumption by 2020. However, the report also pointed out the outstanding challenge of increasing the efficiency and reducing costs of the energy supply and distribution technology.

To realise the Common Vision, the RHC-Platform has produced the Strategic Research Agenda for Renewable Heating and Cooling (RHC-SRA), a key document addressing the short, medium and longer term R&D needs in the field of renewable heating and cooling technologies and putting together the strategic research priorities identified for Biomass, Geothermal, Solar Thermal and Cross Cutting Technologies.

An entire chapter is dedicated to DHC, which has a key role among cross-cutting technologies allowing the implementation of a holistic approach to various types of energy demand and sustainable heat sources. The SRA sets out the likely directions of technological and organisational changes that will need to be converted into specific research activities over the next years, starting from Horizon 2020, the next EU framework programme for research and innovation (2014-2020). Furthermore, it aims to facilitate the coordination of other research programmes in and between EU Member States.

The RHC-SRA will be launched at the 4th European Conference on Renewable Heating and Cooling (Dublin: 22-23 April). Organised by the RHC-Platform in association with the Irish EU Presidency and co-financed by the Commission, this has become the biggest annual gathering of its kind, providing a unique opportunity for learning, knowledge sharing networking and discussion surrounding RHC technologies.

More info at www.rhc-platform.org/dublin2013

Winners of 1st DHC+ Student Awards determined

DHC+ proudly presents the winners of the 1st DHC+ Student Awards. The awards are part of the platforms efforts to support young researchers and to foster education and training in the area. The participants were asked to deliver a 10-page paper contributing to the understanding of how DHC and kindred technologies can be used to improve the efficiency and sustainability of heating and cooling on a local, national or international level. The DHC+ Secretariat received 7 contributions from universities in Austria, Denmark, Finland, France and Sweden. The submitted papers deal with quite different issues and approach DHC from technical, legal and economic points of view. The DHC+ Education & Training Working Group served as evaluation committee. The members assessed the contributions based on a predetermined scheme taking into account the importance of the contribution, its methodology and inner logic and the clarity of presentation.

All winners will present their work at the EHP Congress in Vienna (27-28 May 2013) and their papers are going to be published in the EuroHeat & Power Magazine. Additionally, the group of students that became first is going to receive a research contribution of EUR 1000.

The first place goes to :

Kaisa Kontu, Tingting Fang, Risto Lahdelma from Aalto University, Finland for their paper 'Forecasting District Heating Consumption Based On Customer Measurements'.

The shared second place goes to:

Magnus Aberg from Uppsala Universitet for his paper on 'Matlab based modelisation of possibilities for adaption to changed heat demands' and

Matthias Schafhauser from Technische Universität Wien for his paper 'Test system design and measurements of thermal conductivity for composite pipes'.

For more information please contact: iw@euroheat.org

Efficient renewable energy cooling in urban areas

The REnewable Smart Cooling for Urban Europe (RESCUE) project is one of the projects currently being implemented by the DHC+ Technology Platform. Supported by the Intelligent Energy Europe programme, it aims to address the key challenges for the further development and implementation of District Cooling (DC) using low and zero carbon emitting sources.

It is expected that future cooling energy demand within Europe, especially in urban regions, will significantly rise. If served conventionally (i.e. using on-site electrical chillers) this would result in an equally



DC is a flexible solution which can take many shapes and forms depending on the local circumstances. This mature and energy efficient technology enables local communities to reap the environmental and economic benefits.

DC emits less greenhouse gases compared to conventional on-site cold production. If DC would cover 25% of the cooling market in Europe, CO₂-emissions could be reduced by 42 to 50 million tons each year.

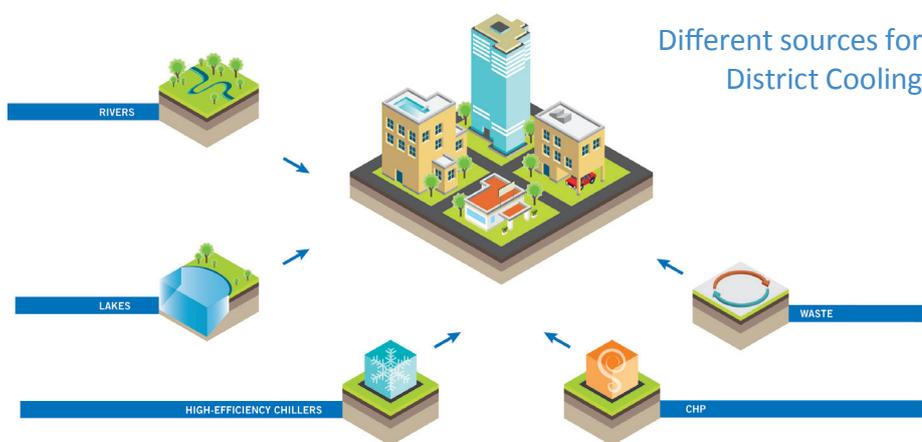
The project will target cities in Europe and help the promotion of DC solutions by:

- providing guidelines and guidance for the implementation of DC
- providing general recommendations related to the legislative, technical and economic framework for DC
- providing a support package to indicate the potential viability of DC, in order to include it in the municipalities Sustainable Energy Action Plan (SEAP) and
- making results widely available, including good practice case studies.

The project started on 1st June 2012 and will last till 30th November 2014. More information about District Cooling and the project's results at www.rescue-project.eu.

For more information, you can also directly contact the DHC+ Secretariat at dhcplus@euroheat.org

or the Project Coordinator, Prof. Dr.-Ing. Clemens Felsmann (Technische Universität Dresden) at ensys@mailbox.tu-dresden.de. ■



significant rise in primary energy consumption, greenhouse gas emissions and peak electricity demand.

DC is a sustainable alternative to conventional electricity or gas-driven air conditioning systems. The main idea is to use local resources that otherwise would be wasted or difficult to use: natural cooling from deep sea, lakes and rivers, conversion of surplus heat from industry and combined heat and power.

Therefore, DC can support the European move towards a green economy and contribute significantly to climate and environmental targets.

The RESCUE project targets the whole EU 27, focusing on Italy, Spain, Denmark, Sweden, Finland, Germany, France, Austria, Poland and Slovenia. It addresses local governments, utility companies, building owners and investors, financial sector.



1st DHC+ Summer School: 'DHC and the Smart City'

Don't miss this unique opportunity to learn more about DHC and its contribution to the Smart City. If you are a student enrolled in a European university, or a young professional you may be eligible for our **1st International DHC+ Summer School**. The initial registration is open until 30 April 2013. Find out more at:
<http://tiny.cc/DHCss13>

Upcoming Events

New address

DHC+ Technology Platform moved

Together with Euroheat & Power the DHC+ Technology Platform moved its offices in late January. Our new address:

DHC+ Technology Platform
c/o Euroheat & Power
Cours St Michel 30E
1040 Brussels



27 - 28 May 2013

36th Euroheat & Power Congress

Smart and competitive: DHC for cities of the future

Join us for two full days of panel debates, presentations, workshops, followed by networking events. Registration is open, maybe you are one of the repdigits and will receive a special gift. Don't miss out and register today!

Have a look at the website to find out more and to register:
www.ehpcongress.org

Next Committee Meetings

The next DHC+ Technology Platform Steering Committee meetings will be held in Brussels on the 18 June 2013, and again within the framework of our annual conference on the 6 November 2013.

For more information or if you are interested in participating or becoming a member contact us at dhcplus@euroheat.org

Join the

2nd International DHC+ Research Conference

The programme is online now and registration is open. Join the debate on research and innovative solutions in our striving sector.

For more information and registration details see <http://tiny.cc/DHCon> or contact us at dhcplus@euroheat.org

REDEVELOP
RECREATE
RETHINK

2nd International Research Conference

5-6 November 2013 - Brussels

DHC+
TECHNOLOGY PLATFORM