

Set up under the umbrella of Euroheat & Power, DHC+ Technology Platform is the European hub for research & innovation in district heating and cooling

Progressing research & innovation for sustainable energy solutions

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Interview with Antonio Aguilo-Rullan, Project Advisor, Executive Agency for Small and Medium-sized Enterprises (EASME)



Picture:
Antonio Aguilo

Mr Aguilo, being a Project Advisor for Intelligent Energy Europe and Horizon 2020 programmes at EASME, you are well known for your job in managing a suite of heating and cooling projects. Can you explain your particular interest in this field?

During my engineering studies back in the late 90s, I developed a strong interest in energy efficiency and especially in renewable energy. This is the reason why, following my studies, I decided to undertake a PhD on the integration of wind energy in buildings. After that, and before joining EASME, I worked in the UK for almost 10 years as a consultant and researcher in the field of energy efficiency and renewables. A significant part of my

work involved the development and drafting of district-wide energy strategies including heating and cooling solutions.

When I joined EASME (formerly EACI) I was offered the chance to take forward the activities concerning the heating and cooling sector. This goes back now over 4 years to a time when the Agency was managing the Intelligent Energy Europe (IEE) programme. The IEE is still providing support to EU-wide collaborative projects aiming at accelerating the market deployment of already matured energy efficient and renewable energy solutions. I was convinced that support to this type of market uptake actions was crucial to the success of these solutions. This is why I am here, maintaining close and constructive dialogue with project coordinators and providing feedback to help them steer their projects.

The European Commission has recently published its first ever Strategy on heating and cooling (COM/2016/51). Which projects, according to you, contributed to this significant piece of work?

Support of the EC funded projects in the area of heating and cooling includes research, demonstration and market uptake type of actions. One of key activities we undertake in the H2020 Energy Unit of EASME is to provide

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Interview with Antonio Aguilo continued

policy feedback to colleagues in the European Commission. In this regard the Agency staff has a valuable set of expertise on all areas of energy efficiency and renewables. Moreover, the projects we manage provide EASME with direct access to an invaluable source of knowledge from first class actors all over Europe and beyond. Our roles are to make that information accessible to Commission policy-makers, to get the information into the right hands at the right time and to facilitate dialogue and collaboration on the different topics of the projects and amongst the participants.

Under the IEE II Programme 2007-2013, over EUR 30 million were provided as grants for heating and cooling dedicated projects. These projects were instrumental in informing the policy decision-making process by providing evidence-based experience for the heating & cooling strategy. One example is the feedback provided by the IEE project STRATEGO that Euroheat & Power is coordinating. Other projects off the top of my head include SDHPlus (solar district heating), RESCUE (district cooling), REGEOCITIES (shallow geothermal), GEODH (deep geothermal) and CODE2 (combined heat and power). A paper summarising these and other projects will be soon available on the EASME website. The interested reader can also consult the IEE project database or contact EASME directly.

The Communication says that research, innovation and demonstration actions funded by Horizon 2020 will also support the EU Strategy on heating and cooling. How do you think it will be reflected in the amount of funds allocated to the heating and cooling projects under the next Horizon 2020 programme?

I am not in a position to say to what extent the EU Strategy on heating and cooling will result in more funds allocated

to this sector. However, as you know the work programme for 2016-2017 has seen an increase in the number of topics specifically dedicated to heating and cooling and new projects are expected to be launched after the summer. The next H2020 Energy Efficiency Call addressing heating and cooling will have a deadline in January 2017. Moreover, it is important to remember the support that Horizon 2020 is providing to key stakeholders and decision-makers including public authorities and consumers, as they are key to achieve the decarbonisation of the energy system. One cannot forget also the support to specific renewable heating and cooling technologies under the Low Carbon Energy section of the Energy challenge of Horizon 2020 as well as to district energy infrastructure projects via the Smart Cities and Communities funding. Current EU-funded projects are already supporting some of the actions emerging from the EU Strategy on heating and cooling. The funding of these and new EU projects will continue and the Strategy will be a key element to prioritise concrete areas of support.

Mr Aguilo, thank you very much for your time and for such a comprehensive overview of your activities. On behalf of the DHC+ members, we would like to thank you once again for your contribution to the DHC+ Brokerage event back in October 2015 and would like to invite you to the next DHC+ Brokerage event on 12 October 2016.

It has always been a pleasure to be part of the Euroheat & Power and DHC+ events and to see an active participation of your members in the EU Calls for Proposals. I gladly accept your invitation and remain available for any other questions you and your members may have! ■

Investing in Education & Training

DHC+ Student Awards 2016 winners announced!

The organising committee of the 2016 edition of the DHC+ Student Awards received applications coming from Poland, Denmark, Croatia, Germany, France, Austria, Hungary, Spain and the Netherlands. This year's papers covered a broad spectrum of topics related to district heating and cooling: from large scale heat pumps, solar CHP, hybrid energy networks, thermal energy storage, production and distribution optimisation, installations versus laboratory performance, to the decision support model for competitive district heating.

The Student Awards evaluation committee, composed of eight DHC+ representatives from industry and academia, performed a thorough assessment of the submitted 8-page papers. The committee took into consideration the overall importance of the contribution to the science and technology, the methodology and logic of conclusions, clarity and preciseness of presentation, expected market impact and creativity of approach.

The DHC+ Technology Platform, on behalf of the evaluation committee, is delighted to announce the results:

1st place:

- Dominik Franjo Dominković (Technical University of Denmark / DTU) - Large scale heat pumps as a link between intermittent electrical energy sources and district heating sector

Shared 2nd place:

- Loïc Giraud (Université Grenoble Alpes / Grenoble INP, France) - A global control method of district heating systems based on production and distribution optimisation, and
- Andrei David (Aalborg University, Denmark) - Large heat pumps in European district heating systems

All three winners present their findings in Frankfurt at the En+Eff Congress and Trade Fair. Their articles will also be published in the International EuroHeat & Power Magazine. ■

DHC+ Summer School 2016: ready for the Warsaw experience?



Picture: Krakowski Przedmieście, Warsaw

For the 4th edition, DHC+ member Veolia has joined forces with PGNIG TERMIKA and Warsaw University of Technology, in order to host the DHC+ Summer School in Warsaw. The dates have been set: it will take place from 21 to 27 August 2016. Registration will open in May.

What to expect from this Summer School?

Great knowledge: District heating in Poland has a high market penetration, therefore, district heating companies have a lot to share.

Innovative experience: Due to a huge variety of district heating systems in the country, Poland is a great place to implement solutions for the 4th generation of district heating technologies and Smart District Heating projects.

Focus on renewables: Polish companies will show their actions in reducing the carbon footprint and implementing renewable energy sources despite the country's dependence on fossil fuels.

Networking opportunities: The Summer School programme always comprises numerous networking opportunities with local energy experts and Summer School participants from all over Europe.

For more information visit summerschool.dhcplus.eu ■

Driving Research in Innovation



STORM is a H2020 European project about innovative control of district heating and cooling (DHC) networks and is coordinated by VITO/EnergyVille, a research institute located in Mol (Belgium). The project started in March 2015 and has a duration of 42 months.

Other partners in the project are: Noda Intelligent Systems AB (Sweden), a Scandinavian leader in intelligent control solutions for energy systems; Sigma Orionis (France), an SME specialised in dissemination and exploitation activities; NEBER (the Netherlands), the Centre of Expertise directly connected to the Zuyd University of Applied Science; two demonstration sites, i.e. Mijwater BV (The Netherlands), owner and operator of a DHC network in Heerlen, and VEAB (Växjö Energi AB, Sweden), a high temperature distribution network in Rottne owned by the Växjö municipality.

The next generation of district heating networks needs to be designed to deal with (i) the fluctuating and intermittent character of renewable energy sources, and (ii) the integration of waste energy flows. The STORM project focuses on the development, demonstration and deployment of an advanced controller for district heating and cooling networks based on self-learning algorithms. The developed technology will control both the supply and demand sides of the DHC network. By matching the supply and demand of heat and cold, more

sustainable energy from renewables or residual heat sources can be integrated in the network.

To ensure replicability, the STORM controller will have a generic character. The developed controller will be applicable for a wide range of DHC networks. This is guaranteed by a number of features: the controller will be an add-on to existing controllers and SCADA-systems; open-source communication protocols will be used; self-learning optimisation algorithms will enable to learn the specific behaviour of the different networks; multiple control strategies will be possible; and multiple thermal energy storage concepts will be taken into account.

The STORM controller platform will be implemented in two pilot sites: Mijwater in Heerlen (NL), where the controller will be demonstrated in a highly sophisticated 4th generation network, and in Rottne (Växjö, SE), representing a typical, widespread network setup throughout Europe. In these networks, the resulting energetic, economic and environmental benefits will be assessed.

Through replication, dissemination and education efforts, the project outcomes will be transferred to several stakeholders across the EU, and will thus contribute to a wider deployment of intelligent DHC networks at EU level.

The main objectives of the project include: (i) development of an intelligent controller; (ii) demonstration of the developed controller in two existing DHC networks; (iii) quantification of the energetic, economic and environmental benefits; (iv) exploitation and market opportunities of the developed technology; (v) development of business models required for the large-scale roll-out of the controller at reduced costs and (vi) raising awareness on the need to control DHC networks in a smart way. The collaboration with other DHC network projects is also foreseen.



The H2020 STORM project is funded by the European Union's H2020 Programme under grant agreement n° 649743.

More information:
<http://storm-dhc.eu/>
<https://twitter.com/sustainplaces>

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The new Heat Roadmap Europe project: decarbonising the heating & cooling sector and increasing investments

The new Heat Roadmap Europe proposal has been recently approved under the EU's Horizon 2020 Programme. The project will map the heating and cooling demand and potential sources of surplus and renewable supply in 14 largest EU countries accounting for over 85-90% of the heating and cooling demand in Europe, thus increasing the potential to influence the entire heating sector in the EU. The project builds upon the legacy of the studies, carried out in STRATEGO, which focused on 5 countries.

The 3-year project, coordinated by Aalborg University, Denmark, started in March 2016. The DHC+ Technology Platform is a proud partner in the communication activities.

The goal of the project is indeed to improve energy policies at local, national and EU level, to specify how up to 3,000,000 GWh/year of fossil fuels can be saved in Europe and to illustrate how the €3 trillion of investments required to implement these savings will reduce the net cost of heating and cooling in Europe. By replacing imported fuel with local infrastructure such as district heating, Europe can create more jobs, while also reducing energy costs.

“This project will have a huge impact” says Alessandro Provaggi, Head of the DHC+ Technology Platform. *“Policy-makers and investors will have a great tool to decarbonise the heating & cooling sector and invest in new markets”.*

Update on the SET-Plan process

With the publication of the new SET-Plan Communication on 15 September 2015, the European Commission started a new chapter of the SET-Plan process. Subsequently to the successful work on a way towards an Integrated Roadmap in 2014, the Juncker Commission had developed the EU Energy Union concept to integrate all existing and future policies in the field of energy in a single overarching framework. Therefore, it was decided to review the broad set of actions included in the roadmap to define priorities supporting the Energy Union targets. The SET-Plan actors identified 10 key actions and started a new work stream with the aim to define research & innovation targets in these 10 fields. Since late 2015 the European Commission has published issue papers on several key actions, discussed them with stakeholders and drafted commitments to foster private cross-sectoral cooperation to achieve them. DHC+ has been invited to contribute to several papers and takes on its responsibility as voice of research and innovation of the DHC sector. ■

The project will also improve the capabilities of the Pan-European Thermal Atlas (Peta) developed under STRATEGO. Thanks to the high-resolution atlas covering thermal demands and resources in 14 of the EU28 Member States, it will be possible to estimate investment cost levels for installing district heating and cooling pipelines at local scales and to identify key regions suitable for district heating and cooling. The enhanced version of the atlas is meant to be a very easy tool to use. Users will be able to undertake analysis on their own and make informed and autonomous decisions.

Based on the number of people that have already accessed the previous Heat Roadmap studies, the knowledge developed in this project is likely to build the capacity and skills of at least 350 people directly and approximately 50,000 people indirectly over the duration of the project. ■



Become a member!

Set up under the umbrella of Euroheat & Power, the DHC+ Technology Platform is today a strong group of stakeholders from academia, research, business and industry. Join us and be part of the transition to an efficient, smart and sustainable energy future!

Contact us at dhcplus@euroheat.org for more information

Stay connected on social media!

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Share your ideas and news with us!

UPCOMING EVENTS

DHC+ Steering Committee Meeting

Next DHC+ Steering Committee meeting will be held on 11 October 2016 in Brussels and will be followed by Euroheat & Power Autumn Conference, DHC+ Brokerage Event and STRATEGO Final Conference. Get ready for two intense and exciting days of events on 11 and 12 October in the Sofitel Hotel, Brussels.

Registration, info and full programme available at www.euroheat.org/16EHPautumn



EUROHEAT & POWER | 2016 AUTUMN CONFERENCE
11-12 OCTOBER, BRUSSELS

featuring:

DHC+ BROKERAGE & EVENT 2016
TECHNOLOGY PLATFORM



Stratego FINAL CONFERENCE
ENHANCED HEATING & COOLING PLANS

15th International Symposium on DHC in Korea



The 15th International Symposium on

DHC2016

September 4-7, 2016
The-K Hotel Seoul, Korea
www.dhc2016.kr

4th International Solar District Heating Conference in Denmark

4th International
Solar District Heating
Conference

21-22 September 2016, Billund, Denmark

www.solar-district-heating.eu

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