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CYCLE DE FORMATION ÉNERGIE - ENVIRONNEMENT

SÉMINAIRE 2019-2020

Heat pumps integration on district heating systems: opportunities and barriers

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Salle 1 (rez-de-chaussée) – Uni Carl Vogt

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L'orateur

Roman Geyer is as a research engineer at the AIT Austrian Institute of Technology in the Competence Unit "Integrated Energy Systems". His areas of responsibility include not only scientific collaboration but also leading tasks and projects at national and international scale with focus on district heating and cooling (DHC).

Roman is mostly experienced in the energy sector with focus on power plants. Additionally, he gained also expertise in the fields' fiber optic infrastructure and metal industry. Roman holds a master's degree in Renewable Urban Energy Systems of the University of Applied Sciences Technikum Wien.

La conférence

Today there is great interest in using energy more efficiently in order to reduce greenhouse gas emissions. With this in mind, a solution to increase the share of renewable energy in district heating systems is to introduce heat pumps. This technology can be a way to connect different energy systems, such as the electrical grid, the gas grid and district heating grid; it can also be the link between the need for cooling and heating and the reuse of excess heat.

District heating, in general, and heat pumps connected to energy grids, in particular, are predicted to play a key role in the energy systems and energy supply for the future. According to the Heat Roadmap Europe 4 project, district heating can cover up to 50% of the heating demand in Europe, and heat pumps can deliver around 25% of the energy to the district heating grid.

Heat pumps can be a key technology in the future district heating grids in different ways. For example, heat pumps:

- o can act as a balancing technology when the electrical production fluctuates,
- make it possible to utilize low temperature energy sources, and waste heat in the district heating grid,
- o can phase out fossil fuels from the energy system,
- o make it possible to use very low or ultra-low temperatures in the district heating grids,
- make it possible to minimize grid losses in the district heating grid.