Belgium

Ghent University (UGent) and KU Leuven are the leading universities in the Flanders region in Belgium. They joined forces to accelerate research on high temperature heat pumps in Belgium, by closely collaborating for the Annex 58 and research projects.

Ghent University (UGent), is coordinating the Belgian national working group of the Annex 58. Two research groups are involved, namely Thermal Machines (prof. Lecompte) and Applied Thermodynamics and Heat Transfer (prof. De Paepe). These groups focus on systems and machines where thermal energy transfer is the main energy transfer mode. Their aim is to develop more energy efficient systems, by doing experimental and numerical research. This way, they contribute to the EU Green Deal by offering technical solutions and science based expertise.

From KU Leuven, two research groups are contributing to the Annex 58, namely Energy Flexible Heat Pumps and Cooling Systems (prof. Arteconi) and Heat Integration into Smart Energy Systems (prof. Quoilin, also affiliated to ULiège). These groups have expertise in system modelling and control strategies, used both to propose technological developments and to increase system integration. They develop methods and analyse the role of energy flexibility at component and system level.

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Most relevant ongoing or finalized R&D projects of the national team partners:

- **Upheat-INES**, 2021 – 2022, project partners: UGent, KU Leuven
- **Participation in the IEA HPT Annex 55 on the integration of heat pumps and storage packages**, 2019 - 2021, Belgian project partners: KU Leuven
- **CHESTER – Compressed Heat Energy Storage for Energy from Renewable Sources**, 2018 – 2022, project partners: UGent, TECNALIA, DLR, IREN, USTUTT, PlanEnergi, Aiguasol, ECT, UPV, Ulster, PNO, GoiEner