

June 22nd, 2021

**D2GRIDS PROJECT EXTENSION:
STRENGTHENING SYNERGIES BETWEEN ELECTRICAL USES,
HEATING & COOLING TO BETTER DECARBONISE OUR TERRITORIES**



IN SHORT :

The European D2GRIDS project, which aims to develop 5TH GENERATION LOCAL ENERGY GRIDS is being extended in order to strengthen synergies between electrical uses and heating & cooling networks in order to better decarbonise our cities and territories.

The D2Grids consortium is announcing the extension of the **Interreg North-West Europe (NWE) project**, which started in 2019 and was **developed by 12 European partners**. **The project aims to roll-out 5th generation district heating and cooling systems (5GDHC) across North-West Europe, thereby increasing the share of renewable energy and decreasing carbon emissions.**

The D2Grids project aims to develop a **generic technology model for 5th generation district heating and cooling networks**, to create a **solid business plan**, to promote this new generation of smart local energy grids, train professionals for its deployment, and demonstrate the technology through impactful pilot investments in: Paris-Saclay (FR), Bochum (DE), Brunssum (NL), Glasgow (SC) and Nottingham (EN).

The extension of the D2Grids project is a result of **Interreg NWE 2nd call for capitalisation**. Through this call, the project will receive an additional 2.5 million EUR of funding to maximise its impact through new activities and extended cooperation. **This 23.7 million EUR project is supported by INTERREG North-West Europe funds, covering close to 60% of the fundings (14.1 million EUR).**

5th generation district heating and cooling (5GDHC) to better decarbonise our cities

5GDHC is based on the simultaneous distribution of heat and cold between buildings of the same neighbourhood. Its key difference with other generations of heating and cooling networks is its low distribution temperature: which makes it easier to use renewable thermal energy and to recover waste energy sources. These closed loops facilitate energy exchanges between neighbouring buildings, optimising the recovery of waste heat before resorting to additional renewable or recovered energy. Indeed, distributed heat pumps located as close as possible to the buildings can recover the calories emitted by a cold consumer to supply heat to another building, and vice versa.

5th generation closed thermal energy loops are also flexible, as they can store energy or shift uses depending on needs of the consumers. This can be done over short periods of time in small, decentralised storage facilities (a few hours to a few days), or over longer periods of time (between seasons) in large natural or industrial reservoirs (aquifer or old mines) or on the surface.

Strengthening the synergies between DHC and electricity networks in cities

As a result of the 2nd capitalisation call, in addition to the main project work on the heating and cooling dimensions of these closed energy grids, the D2Grids consortium will now also work on better integration of electrical uses and local renewable electricity production capacities, to improve the decarbonisation of 5GDHC networks. GreenFlex will be the leader of this new "Capitalisation Work Package", which is composed of 7 partners from the initial consortium (Mijnwater B.V, Asper Investment Management, Clyde Gateway, Open University, Construction21, VITO and GreenFlex) and 4 new partners (Engie Services Netherlands, Scottish Water Horizons, LLC & Associates Lawyers and the French Social Housing Company Seqens).

The consortium will work on combining best practices in 5GDHC networks with best practices in local renewable electricity generation, distribution, storage and management.

This will allow the creation of more decarbonised multi-carrier local energy communities, delivering high quality service and a competitive business model for local producers and consumers. In utilizing multi-energy dynamics, this will enable us to integrate the lessons learned from the addition of collective self-consumption photovoltaic to 5GDHC projects in the different countries concerned.

The 5 principles of 5GDHC



[Read the article to know more about the 5 principles of 5GDHC!](#)

The consortium will work to demonstrate the technical, legal, economic and organisational relevance of integrating local renewable electricity and heat production with local needs for heating, cooling, and electricity (from buildings, urban structures or even charging stations for electric vehicles) and considering the associated possibilities for better flexibility (reducing peak demand or utilising storage).

Beyond its technical dimension, the project will study the contracting models for sharing locally produced energy as well as the associated economic models (financial models, revenue from energy sales, etc.) in order to disseminate the lessons learned.

Three of the D2Grids pilot sites in Glasgow (UK), Brunssum (Netherlands) and Paris-Saclay (France), will be testing the synergies between electricity networks and heating and cooling grids. One of the challenges will be to turn these into models of best practice, to encourage future project developers to consider integrated 5GDHC networks as a solution for their energy transition needs. This will encourage, in line with the goals of the D2Grids project, an increase in the share of renewable energies and decarbonisation in cities and territories in Northwest Europe.

About D2Grids



The 5th generation district heat and cold grid (5GDHC) was first developed in Heerlen, Netherlands, by Mijnwater Energy Ltd. In contrast to traditional district heating, it is an intelligent thermal network based on a local low-temperature loop. Decentralised energy production, using heat pumps located at the user's premises, allows energy exchange on the network, where flows are demand-driven. This concept allows the recovery of cold and heat emitted by supermarkets, data centers, factories, offices etc.

D2GRIDS stands for "demand-driven grids". It is an Interreg Northwest Europe (NWE) project that runs for more than 4 years (2018-2023). Mijnwater Ltd, based in the Netherlands, is coordinating the project with 15 other main partners and 6 secondary partners. Five pilot sites located in Paris-Saclay (France), Bochum (Germany), Brunssum (Netherlands), Glasgow and Nottingham (UK) will develop 5GDHC networks.

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THE D2GRIDS PARTNERSHIP

16 PROJECT PARTNERS

4 new project partners



12 long term project partners



6 PROJECT SUBPARTNERS



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