# INDIGO: New generation of Intelligent Efficient District Cooling Systems

INDIGO is a Horizon 2020 EU-funded project carried out by 6 partners from across Europe that aims to develop a more efficient, intelligent and economical generation of District Cooling (DC) systems by improving the existing system planning, control and management tools.

This will be achieved through two specific objectives:

The first one is to widen the use of DC systems and motivate the competitiveness of European DC market by the development of two open-source tools: 1) a planning tool for DC systems with the aim of supporting their optimal design; and 2) a modelling library with thermo-fluid dynamic models of DC System components which will provide the designers detailed information about their physical behaviour.

The second objective is to reduce primary energy consumption. This will be addressed by a ground breaking DC system management strategy focused mainly on energy efficiency maximization and on energy cost minimization.

The main characteristic of this strategy is a predictive management capability. However, it will also address other challenges, such as the integration of different types of Energy Sources (including Renewables) and suitable coupling between generation, storage and demand. Intelligent and innovative component controllers (Predictive Controllers) will also be developed at all DC system levels. Some of them include embedded self-learning algorithms, allowing components to respond properly to the established set-points. In addition, open source tools and guidelines will be developed within the project in order to provide more confidence and, consequently, more openness when developing and using DC systems.

INDIGO developments will be validated in a real District Heating and Cooling installation with appropriate conditions for testing the new functionalities.

The project, coordinated by the Spanish institution VEOLIA, started in March 2016 and will last three and a half years.

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