The H2020 STORM project
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STORM
An innovative DHC networks’ controller for enhanced district energy efficiency
STORM – general info

What is the aim of the project?

- To develop, demonstrate and deploy an advanced self-learning controller for district heating and cooling (DHC) networks.
- The controller will be demonstrated in 2 sites Mijnwater at Heerlen (The Netherlands) and Växjö (Sweden).
What are the objectives of the project?

1. To develop a generic controller for DHC networks.
2. To demonstrate the controller in 2 DHC networks.
3. To quantify the benefits of the generic control.
4. To development innovative business models.
5. To increase the awareness on smart control.
6. To ensure market-uptake and replication/exploitation.
What is our approach?

- Adaptation/upgrade of existing non-self-learning controllers
- Integration in two running DHC networks:
  - A highly innovative low-energy DHC network
  - A conventional widespread DH network

Demonstration, validation and performance testing

Replicable system available for integration in other European DHC networks

International Conference on Smart Energy Systems and 4th Generation District Heating, Copenhagen, 25-26 August 2015
What are the challenges and impact?

Challenges:
- Efficient, intelligent and cheaper
- Multi energy sources
- Consumer empowerment
- Smart metering and control solutions

Impact:
- Reduce energy consumption
- Wider use of DH
- Interaction with electricity grids
What we will offer to the market?

• Development of a generic DHC network controller:
  • Configurations and generations of DHC networks
  • Generic: application of self-learning control techniques
  • ‘Add-on’ to existing network controllers and SCADA systems
• Present generic applicability by demonstration on two demo-sites:
  • A very common DH network in Rottne, Sweden
  • An advanced DH network in Heerlen, the Netherlands
• Innovative business models to ‘distribute’ the added value.
• Replication plan: how to implement the controller in other countries.
• Educational work programs on DHC networks and control.
• Dissemination on two levels (national/international) with events, conferences, trainings, guided tours, workshops, webinars.
Real life demonstration site - 1

- Mijnwater, Heerlen, The Netherlands
- Low temperature district heating cooling network
- Mine water as a source or storage
- Heat and cold exchange between buildings
- Fully automatic and demand driven
- All wells are bidirectional
- All electric (100% HP)
Real life demonstration site - 2

- Rottne, Växjö, Sweden
- High temperature district heating network
- 10 km network
- 2 bio-fuel boilers (1.5 and 1.2 MW)
- 1 oil boiler (3 MW)
STORM – project info and main facts

- **Title**: Self-organising Thermal Operational Resource Management
- **Funding Program**: Horizon 2020 – Secure, clean and efficient energy
- **Work Program**: Topic: EE13-2014 – Technology for district heating and cooling
- **Starting Date**: 1\textsuperscript{st} of March 2015 (42 months)
- **Budget**: 1,972,125.94 Euro
- **Partners**: 6
- **Website**: storm-dhc.eu
- **Twitter (+ Linkedin)**: @sustainplaces
THANK YOU!

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