International Conference on Smart Energy Systems and 4th Generation District Heating
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The H2020 STORM project

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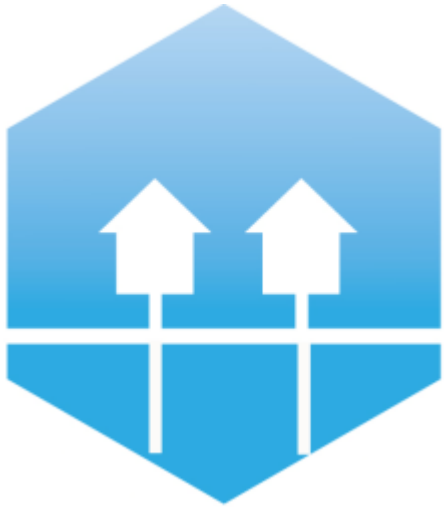

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4DH
4th Generation District Heating
Technologies and Systems

STORM

An innovative DHC networks' controller for enhanced district energy efficiency

STORM
DISTRICT ENERGY CONTROLLER

STORM – general info

– Project title: STORM = ‘Self-organising Thermal Operational Resource Management’. Development & demonstration of a generic DHC network controller based on self-learning optimisation techniques.

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?

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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.

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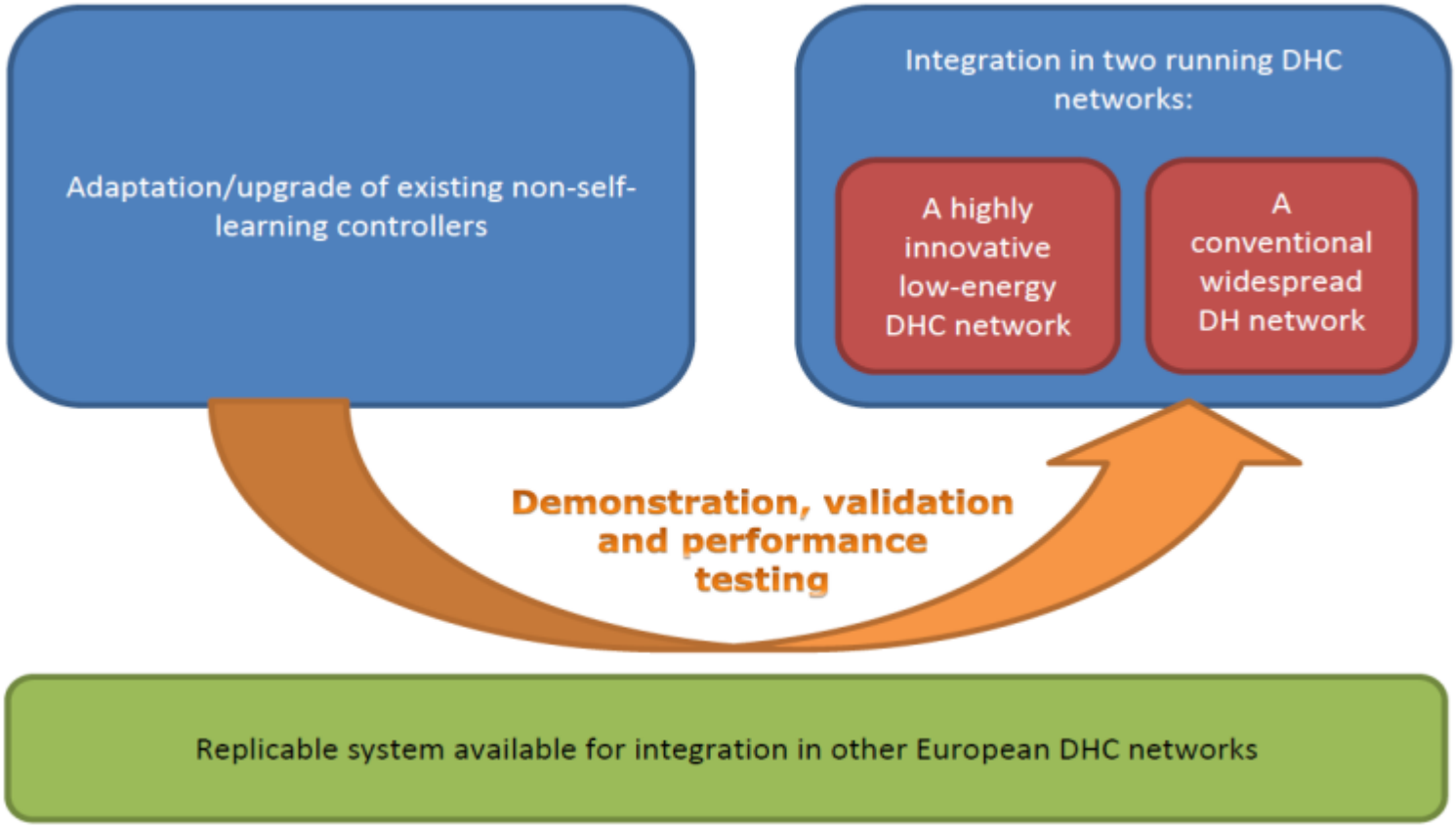
What is our approach?



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What are the challenges and impact?

Challenges

Impact

Efficient, intelligent and cheaper

Reduce energy consumption

Multi energy sources

Wider use of DH

Consumer empowerment

Smart metering and control solutions

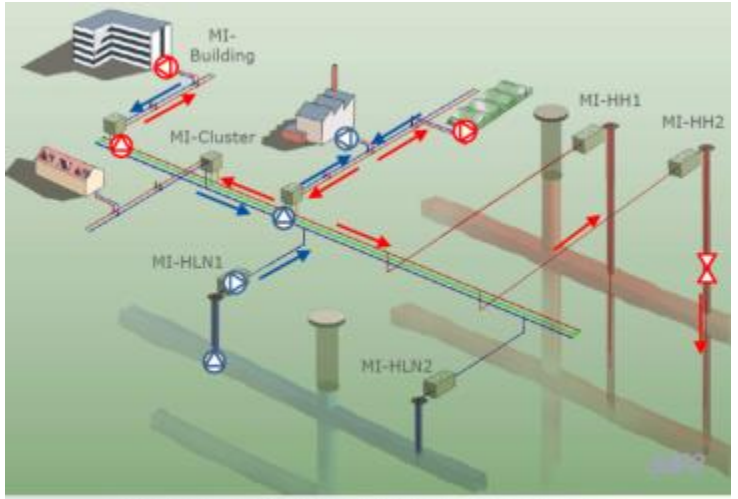
Interaction with elctricity grids

What we will offer to the market ?

- Development of a generic DHC network controller:
  - Configurations and generations of DHC networks
  - Generic: application of self-learing 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)



Artist impression Minewater 2.0 with typical process situation

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:** 1st 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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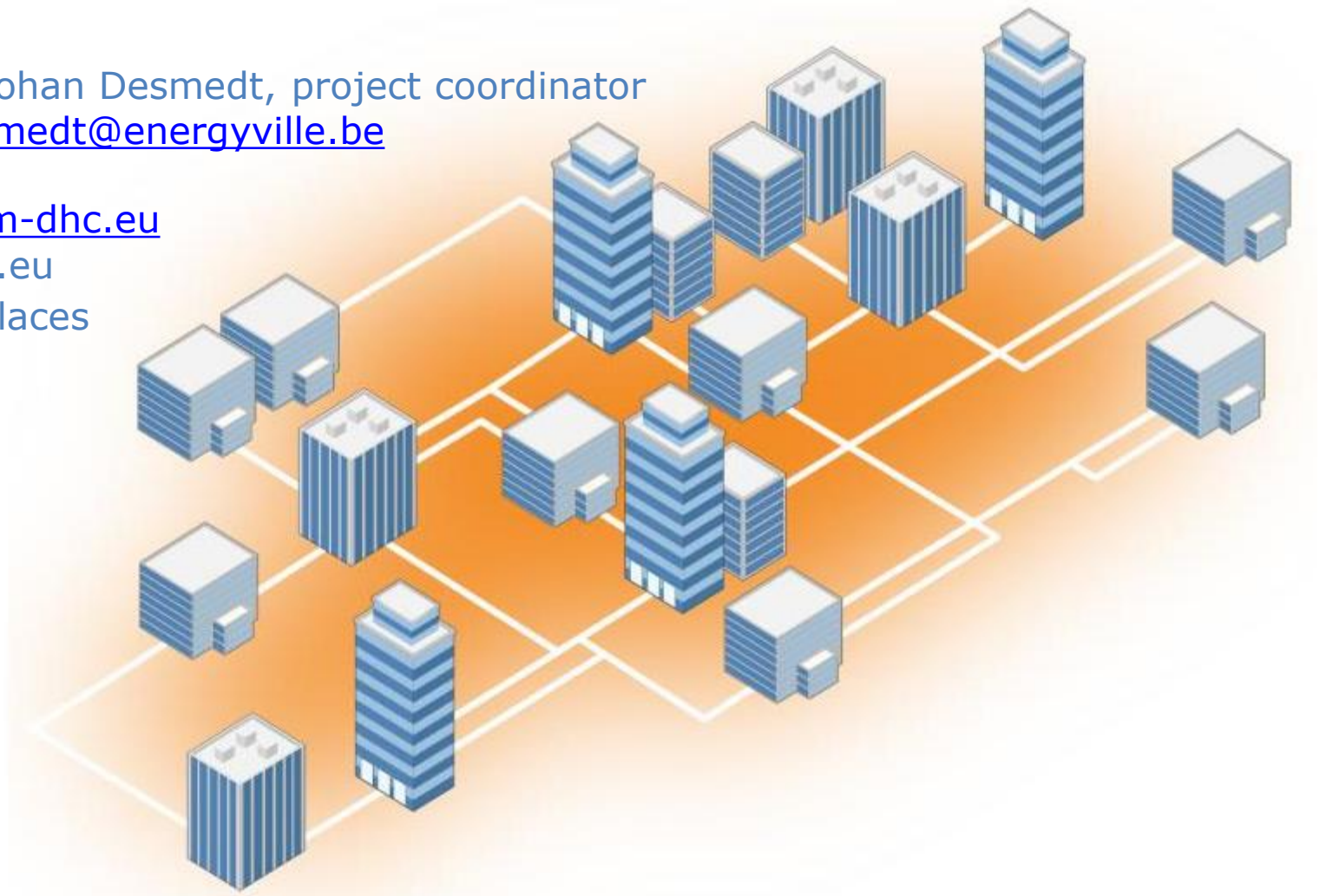

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