

# ORPHEUS

OPTIMIZING HYBRID ENERGY GRIDS FOR SMART CITIES



ORPHEUS



# AIMS

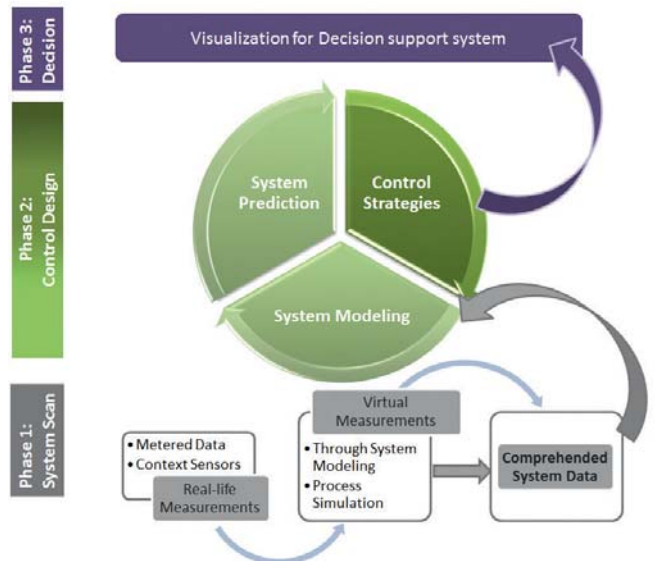
The project has three aims:

- Development of Cooperative Control Strategies for Smart Cities' Hybrid Energy Network Control System Solutions
- Improvement of the interactions between multiple energy grids by enabling simultaneous optimization for individual response requirements, energy efficiencies and energy savings as well as coupled operational, economic and social impacts
- Starting from existing system setups in two cities, enhanced operational scenarios are demonstrated for today's market setup, as well as for future market visions

# CONCEPT

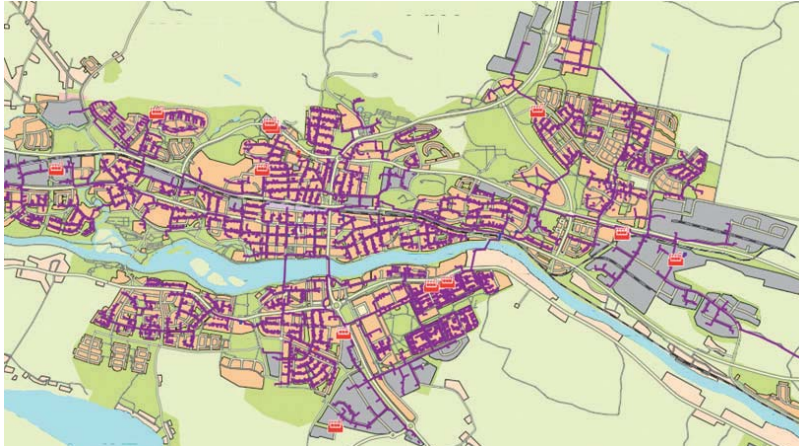
The project has three logical phases:

- System Scan Phase 1 which will mainly study the monitoring and control concepts of existing energy networks and define monitoring and control concepts
- Control Design Phase 2 will validate the defined monitoring and control concepts under an extensive set of system configurations, technical constraints and conditions and various business models
- Decision Phase 3 will allow to draw the conclusions of a control strategies matrix recommended for the investigated scenario evaluations. Visualisation concepts developed in Phase 1 and evaluated in Phase 2 will be used to represent the conclusions for decision taking. Demonstration-site specific aspects will be generalized, and the replication potential for the Eu Energy Grids will be outlined





## TWO DEMO SITES



Skellefteå area in Sweden

District area network (purple),  
CHP and pellets/oil burner  
plants in (red)

Test Area in Ulm, Germany

Overlaid of the roof solar  
potential analysis and the  
position of the PV systems





WIP - Renewable Energies  
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Hochschule Ulm (HS Ulm)  
www.hs-ulm.de



SWU Netze GmbH  
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