

# SEMANCO

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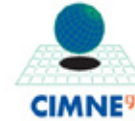
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**University of Teesside**  
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# SEMANCO

## SEMANTIC TOOLS FOR CARBON REDUCTION



[www.semanco-project.eu](http://www.semanco-project.eu)



The project consortium is composed of nine institutions including five university-based research groups, two community-based organizations, one software developer and one consultancy company.

SEMANCO is a research project co-financed by the FP7 "ICT systems for Energy Efficiency" program of the European Union. The project activities started in September 2011 and will last three years.

## BACKGROUND

SEMANCO will help reduce CO<sub>2</sub> emissions by integrating the information we have about the energy we use in our neighbourhoods, cities and regions.

SEMANCO will inform decisions about the energy performance and cost effectiveness of different design and planning alternatives by:

- **Structuring** energy related data held in distributed sources and diverse formats
- **Classifying** buildings for energy analysis
- **Visualising** urban energy consumption
- **Assessing** different methods of reducing CO<sub>2</sub> emissions
- **Predicting** future energy demand
- **Providing** appropriate energy indicators for local authorities

Significant reductions in energy consumption and CO<sub>2</sub> emissions using ICT will be demonstrated through three case studies in:

- **Manresa** (Barcelona) Spain
- **The North Harbour** (Copenhagen) Denmark
- **Riverside Dene** (Newcastle) United Kingdom

Carbon reduction is a problem which demands that we think holistically. In that we need to think of buildings as part of a neighbourhood and neighbourhoods as parts of cities and cities as parts of regions and so on. The decision support systems to be developed and applied in each case study seek to do this by integrating three scales of analysis: regional, municipal, and neighbourhood.

## RESEARCH SCOPE



## RESEARCH VALUE

SEMANCO's purpose is to provide architects, engineers, building managers, local administrators, citizens and policy makers with tools to help them make informed decisions about how to reduce CO<sub>2</sub> emissions in cities. The approach adopted focuses on semantic data modelling which supplies meaning to data.

The technological approach of SEMANCO is based on the integration of energy related open data. The semantically modelled data will be structured according to standards. It will be used by a set of tools for visualizing, simulating and analysing the relationships between the factors determining CO<sub>2</sub> production. The software and data modelling methods developed will allow planners, developers and policy makers to weigh up all the variables that contribute to the carbon footprint.

The results derived from the application of the methods and tools in the case studies are expected to contribute:

- to foster the use of standards in energy data modelling
- to formulate verifiable methods to measure energy performance
- to promote the participation of multiple stakeholders in carbon reduction planning
- to provide inputs for future EU policy development

If you would like to keep in touch with the SEMANCO project, please fill in your details and post, or write an email to Dr. Leandro Madraza, Project coordinator [madraza@salleur1.edu](mailto:madraza@salleur1.edu)

For more info please visit our website [www.semanco-project.eu](http://www.semanco-project.eu)