EnRiMa

Energy Efficiency and Risk Management in Public Buildings

The project

The aim of the project Energy Efficiency and Risk Management in Public Buildings (EnRiMa) is to develop a decision-support system (DSS) to enable operators to control energy flows in energy-efficient buildings and areas of public use. This process will be achieved via integrated management of conflicting goals such as minimising costs, improving energy efficiency, and meeting emission reduction requirements as well as managing risk.

General objectives

- Develop an interdisciplinary decision support for operators to help them to meet their needs in a more efficient, less costly, and less CO_2-intensive manner
- Enhance the existing methodology for modelling energy flows in buildings with recent advances in efficient management of uncertainty
- Facilitate the operators' on-site generation dispatch, off-site energy purchases from diverse sources, and open positions in energy markets
- Enable long-term planning aimed at increasing energy efficiency, specifically analysis of retrofits and/or expansion of on-site energy sub-systems, in order to meet forthcoming EU targets for CO_2 emissions reduction
- Improve energy efficiency and sub-system integration in line with the EU targets

Operational objectives

- Integrated analysis of energy sub-systems and their interactions
- Improved forecasting of electricity and fuel prices as well as energy loads
- DSS Engine for integrated management of energy-efficient sites
- Customised and user-friendly interface for the DSS Engine linked to a user's existing ICT architectures
- Testing and quantification of the DSS Engine benefits
- Validation of the DSS in different European buildings and public space
- Promoting adaptation of the system for buildings and/or spaces of public use

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Beneficiaries

- Local governments, agencies in charge of housing and public spaces, and the commercial building sector could be potential users of the DSS tool
- Operators of public buildings could use the EnRiMa DSS to find best strategies for adopting and controlling energy resources, such as energy purchases or installation of renewable energy technologies
- Policy-makers could use the EnRiMa DSS to obtain insights about building regulations on how to reduce energy consumption and CO_2 emissions

The consortium

Nine institutions from six European countries are involved in this challenging project:

- Stockholm University, Sweden
- University College London, United Kingdom
- International Institute for Applied Systems Analysis, Austria
- Universidad Rey Juan Carlos, Spain
- Center for Energy and Innovative Technologies, Austria
- Minerva Consulting and Communication, Belgium
- SINTEF Group, Norway
- Tecnalia Research and Innovation, Spain
- Hidrocantábrico Energía, Spain