

CITINES



NAME: Decision of a support tool for cities and industries energy supply planification

ACRONYM: Cities

FUNDING: VIIFP

PROJECT: The overall objective of CitInES is to design and demonstrate a multi-scale multi-energy decision-making tool to optimise the energy efficiency of cities or large industrial complexes by enabling them to define sustainable, reliable and cost-effective long-term energy strategies. Demonstrations will take place in two cities in Italy, Cesena and Bologna, and in one oil refinery in Turkey, Tüpraş. Innovative energy system modelling and optimization algorithms will be designed to allow end-users to optimize their energy strategy through detailed simulations of local energy production, storage, transport, distribution and consumption, including demand side management and coordination functionalities enabled by smart grid technologies. All energy vectors (electricity, gas, heat...), usages (heating, air conditioning, lighting, transportation...) and sectors (residential, industrial, tertiary, urban infrastructure) will be considered to draw a holistic map of the city/industry energy behaviour. Energy strategy analyses will encompass advanced long-term risk analysis. As economic and technical situations are constantly evolving, a relevant energy strategy should be robust to different prospective scenarios. Hence, a diversified energy portfolio will allow city and industry authorities to react more efficiently to fuel price stresses and to decrease their exposition to a given energy solution.

The expected impacts on end-users are threefold : 1) to assess the economic and environmental impacts of urban planning scenarios in terms of energy; 2) to optimise their local energy strategy to cost-effectively reduce CO₂ emissions, including usage of local renewable energies, electric mobility integration, multi-energy coordination, smart grid integration and demand-side management; and 3) to assess financial and environmental long-term risks and propose robust energy schemes to face fuel and CO₂ price uncertainties. The developed software will also be used as a communication tool for end-users to facilitate consultations between actors and to promote local authority decisions towards citizens. CitInES methodology will be demonstrated by optimizing long-term energy strategies for the two partner cities and for the partner oil refinery. The proposed strategies will be assessed and compared to initial end-user strategies to measure energy and CO₂ emission savings.

TOTAL COST: 3.499.704 €

CESENA'S BUDGET: 64.490 €

START DATE: ottobre 2011

END DATE: aprile 2014

DURATION: 30months

COORDINATOR OF PROJECT: Artelys, ART (France), ICT enterprise;

PARTNER:

- Inesc porto - instituto de engenharia de sistemas eComputadores do porto, INESC PORTO (Portugal);

- Association pour la recherche et le developpement des Methodes et processus industriels - armines, ARMINES (France);

- Schneider electric industries sas, SEISAS, Manufacturer (France);
- Istituto austriaco di tecnologia, AIT (Austria);
- Comune's Council, CES (Italy);
- Bologna's Council, BOL (Italy);
- Ervet - emilia romagna valorizzazione economica Territorio spa,
- ERVET Spa (Italy);
- Euroquality sarl, EQY (France);
- Turkiye Petrol Rafinerileri Anonim Sirketi, TUPRAS (Turkey);
- Institut national de recherche en informatique et en Automatique, INRIA (France)

Municipality Sectors involved: Environmental and Land Protection Office
European Project Office- Director Staff