Collaborative Recommendations and Adaptive Control for Personalised Energy Saving

Rendicontazione

Informazioni relative al progetto

enCOMPASS

ID dell'accordo di sovvenzione: 723059

Sito web del progetto

DOI
10.3030/723059

Progetto chiuso

Data della firma CE
7 Settembre 2016

Data di avvio
1 Novembre 2016

Data di completamento
30 Novembre 2019

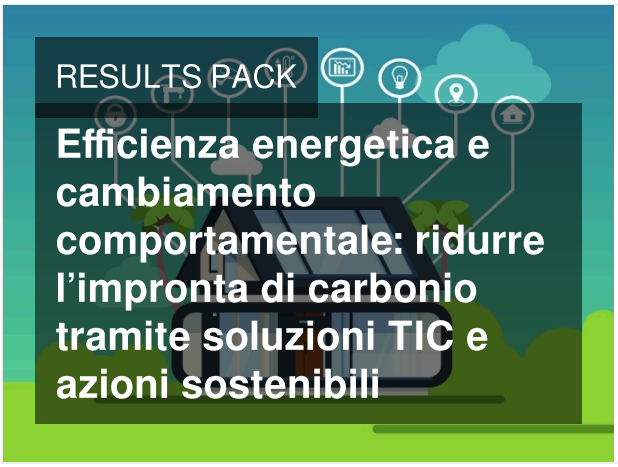
Finanziato da
SOCIETAL CHALLENGES - Secure, clean and efficient energy

Costo totale
€ 3 312 589,29

Contributo UE
€ 2 000 350,00

Coordinato da
POLITECNICO DI MILANO
Italy

Questo progetto è apparso in...



7 Settembre 2020

Periodic Reporting for period 2 - enCOMPASS (Collaborative Recommendations and Adaptive Control for Personalised Energy Saving)

Periodo di rendicontazione: 2018-05-01 al 2019-11-30

Sintesi del contesto e degli obiettivi generali del progetto

enCOMPASS addressed the problem of creating a more sustainable society by acting on the way users consume resources, most notably electricity.
Improving the energy consumption habits of people is a key ingredient of any effective strategy to achieve the European objectives of resource consumption reduction and of a more sustainable society.
The enCOMPASS project realized an open platform combining context-dependent energy usage information from sensors (smart meters and smart home appliances), user generated information, adaptive gamified energy visualisation and intelligent controls and automation, to let users achieve sustainable changes in user energy consumption patterns without compromising comfort levels. The project achieved its goal fulfiling five specific objectives:
1) Stimulate behavioural change for energy saving with a holistic approach integrating innovative digital tools with smart home automation and a full-cycle model of sustained behavioural change. The enCOMPASS project integrated user-friendly visualizations, context- awareness, adaptive gamification, context-aware energy saving recommendations implementing a holistic system for behavioural change.
2) Make energy usage data accessible to consumers in a user-friendly, easy-to-understand way. The enCOMPASS App visualises energy consumption in a way that translates the abstract, numeric consumption data into a semantically understandable format for the users, by applying visual metaphors that are easy to use, easy to understand and fun to explore.
3) Demonstrate that individual comfort levels can be maintained while achieving energy savings. Recommending targeted energy saving actions to users will allow them to save energy while retaining personal comfort levels.
4) Validate the relative effectiveness of different types of behavioural change interventions for different types of users, in different types of settings and in different climatic conditions. Effectiveness has been

assessed in three different types of buildings and settings (residential, schools, public buildings) for different user types (households, school classes, office employees, visitors), in three different cultural and climatic conditions (DE, GR, CH).
5) Make enCOMPASS available to designated third-parties (in privacy-preserving ways) initiating the creation of a business ecosystem for the development and provision of value-added services for smart energy demand management. The enCOMPASS platform and its modules are made available as platform-as-a-service (PaaS) and software-as-a-service (SaaS) with open APIs for developers of new extensions and value added services.

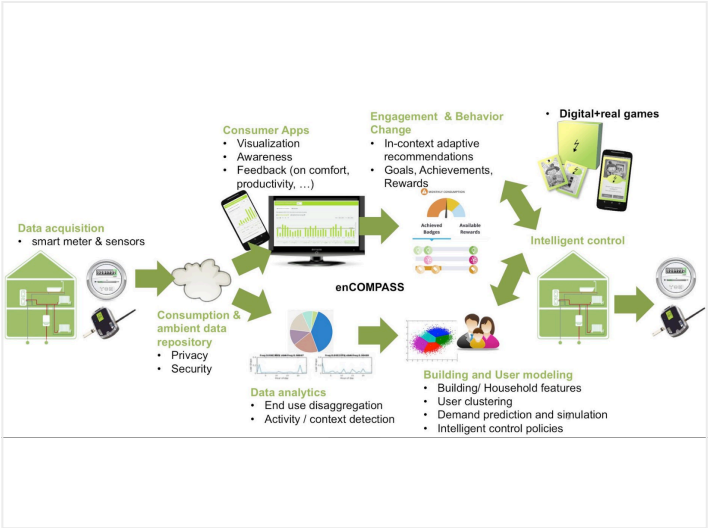
Lavoro eseguito dall'inizio del progetto fino alla fine del periodo coperto dalla relazione e principali risultati finora ottenuti

The enCOMPASS consortium has worked towards three major objectives: 1) consolidating the scientific and methodological background so to clearly pin down the requirements of the behavioral change approach at the basis of the project vision; 2) implementing and setting-up the technical infrastructure and tools needed to turn the project requirements into an effective software platform, by integrating, adapting and extending components and technologies from a variety of partners and developing a user-friendly awareness app for visualizing energy consumption and stimulating energy saving through energy saving tips, context-aware recommendations and gamified incentives; 3) planning and performing the actions in the three pilot countries (Grece, Germany, and Switzerland) to prepare the deployment of the enCOMPASS behavioral change platform and applications to the stakeholders (households, schools and public building dwellers) that will participate in the field experimentation.
The project has involved 2.080 people in the pilots across three building types (301 household units resulting in 570 people, 876 school students, 70 employees, 540 visitors). The impact on energy saving has been achieved with variable degree across the different types of users (the average in the three pilots has been 3.8% for the households) . Ultimately, the project results demonstrate that the enCOMPASS system can successfully stimulate energy saving and one of the key findings is that the more the enCOMPASS app is used, the greater the impact on energy saving and the bigger is the change of the energy consumption behavior.
The developed enCOMPASS platform and its components produced exploitable assets, a majority of which reached a high degree of technological readiness. This outcome enables quick up-take and exploitation by the partners. The exploitation activities performed during the project engaged 78 potential exploitation leads, with 6 of whom concrete licensing arrangements are under way. For one asset, the FUNERGY game, pre-commercial agreements have been established for the distribution in Europe and online.
The intense communication and dissemination activity of the project reached around 960.000 users over three years thus potentially increasing the energy awareness of a large audience of European citizens.

Progressi oltre lo stato dell'arte e potenziale impatto previsto (incluso l'impatto socioeconomico e le implicazioni sociali più

ampie del progetto fino ad ora)

enCOMPASS goes beyond state-of-the art by implementing and validating an integrated socio-technical approach to behavioural change for energy saving that is based on non-intrusive, privacy-respecting, yet effective, methods for promoting awareness and behavioral change in the energy domain. To this end, it integrates innovative user-centered visualisations making energy consumption understandable to different users and stakeholders (residents, employees, pupils, building managers, utilities) with context-aware recommendations for energy saving and adaptive gamified incentives that enable effective and sustained behavioural change. The expected impact is highly relevant for: 1) energy production (utility) companies, which will be supported in transforming their businesses towards a more consumer-centric and service-based approach; 2) the consumers and the society at large, who will benefit from the diffusion of IoT and the smart meter revolution, which will empower consumers with better visualization of energy consumption data, deeper understanding of energy saving behaviors, and ultimately lead to consumption reduction without compromising the comfort at home, at school, and in the workplace.



enCOMPASS diagram

enCOMPASS less energy, smarter living

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Permalink: https://cordis.europa.eu/project/id/723059/reporting/it