



## Edito

We are glad to send you the latest updates on the project *CommONEnergy*, which aim is to develop solutions and tools for deep and systemic retrofitting of shopping centres.

We have now reached half of the project life, you can already access a lot of useful resources on the project website, and soon further reports will be published. We will make sure to keep you informed about their release.

Works are continuing in the demo cases in Spain and Norway, and a new case study joined the project: the Modena Canaletto shopping centre from Italy. Meanwhile, retrofitting is still happening in the **Genoa** shopping center and will be followed by the project as a “reference building”.

We wish you a fruitful reading and remain available for any question you may have.

Roberto Lollini, EURAC, *CommONEnergy* project coordinator

## Highlights



### Introducing the new Italian demo-case in Modena

A new demo-case was introduced in the project, the “Canaletto” supermarket in Modena, located in a residential area. Its retrofitting is included in an overall neighbourhood requalification, with the idea to build a shopping mall including shops, a bar, a pharmacy, a restaurant, private offices, while the existing post-office and gymnasium will be kept as they are now. *CommONEnergy* will develop and implement innovative solutions, including ventilative cooling, sanitary water system, a high performing envelope using multifunctional elements, natural and artificial lighting and more. The objectives include reducing the primary energy demand and subsequent greenhouse gas emissions and increasing the share of renewables. The works will be over in April 2016.



### Status of works in Trondheim and Valladolid

The other demo-cases are located in Trondheim in Norway and Valladolid in Spain. In **Valladolid**, more technologies and systems were approved while simulations are ongoing for others, such as lighting and ventilation. The works are confirmed to be over by Christmas 2015, and the newly opened Mercado del Val will include a supermarket, traditional stores and small shops selling fresh products. A restaurant will be opened on the top floor. The second phase of the rehabilitation started. Some pictures from Mercado Del Val’s refurbishment and the state of works are available on El Norte de Castilla’s website.

In **Trondheim**, the preliminary design phase is ongoing, with possible retrofitting solutions in planning. The detailed design and construction should be closed by Summer 2016. The focus in this shopping center is put on natural ventilation, iBEMS, as well as natural and artificial lighting.

## Publications

### Interaction with local energy grid

Shopping centres have a significant potential to shift from consumers to producers and to provide services to the energy grid they are connected to.

A new report analyses the interaction between malls and the local energy grids, identifying key aspects and solutions for each of the project's reference buildings to improve this interaction while taking into account influencing factors (such as climate, the urban context, energy production/distribution, etc.).

The aim is to identify possible energy scenarios and solutions for each of the ten *CommONEnergy* reference buildings to detect improvements in the building-grid interaction, exploiting these potentials to apply them in most shopping centres.

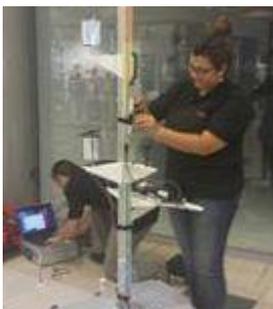
### Main drivers for deep retrofitting of shopping malls

Shopping centres have a high potential for energy savings and offer regular opportunities to improve their technical systems and building envelope. Retrofitting takes place within specific and complex contexts, including technical, social, functional and aesthetic aspects. The main drivers for deep energy retrofits are defined within this report, covering ten areas: user behaviour, legal issues, economic factors, building codes, retrofitting and trends, interaction with the local energy grid, lighting, HVAC measures, plug-loads and refrigeration, architecture and design. Barriers against deep energy retrofitting are identified, alongside recommendations to tackle them.

### The first project reports are still available

The report key findings on shopping malls features in EU-28 and Norway includes a cross-country comparative analysis of ten EU shopping centres. Good practice examples are also presented. Developing optimal solutions to reduce energy use in shopping centres starts with identifying and analysing technical and social inefficiencies: based on survey results, interviews and an extensive literature review, this report identifies both within shopping centres. The last report analyses the aspects which may influence deep retrofitting and design processes, as well as the behavior and expectations of four main stakeholder groups: owners and managers, tenants, customers and the community.

## Going deeper in *CommONEnergy*



### EURAC'S first measurement campaign on indoor environment quality with MEMO 1.0

The Institute of Renewable Energy of EURAC Research launched in August its first indoor environment quality measurement campaign in a shopping center located in the North-East of Italy.

With reference to *CommONEnergy*, the measurement campaign had the aim to assess customers' thermal comfort perception and preference in common areas of shopping centres.

The measurement campaign consists in both physical measurements of indoor and outdoor environmental parameters using MEMO 1.0 (Mobile Environmental Monitoring), a tailor-made cart carrying the required sensors, and interviews to customers in order to collect their thermal sensation and preferences.

**[Posters] To gain a better understanding about the project, the developed solution-sets and applied technologies**



Strategies for exploiting climate potential through ventilative cooling in a renovated historic market: this poster presents key features of the Valladolid case study, the solutions that will be applied, some results and a discussion.

Assessment of environmental impacts of retrofitting solutions in shopping centres: this poster presents the project's objectives and challenges, compares multi-functional retrofitting solution-sets, provides results and details benefits

The last poster gives a more general insight into the project.

**Lean-based simulation game for Construction Management**



In September, a Lean-based simulation game for Construction Management was held in Italy, gathering actors involved in Modena's retrofitting (architects, system designers, engineers, project managers, site directors, shop owners). The aim of the game was to show the benefits of implementing a Lean Construction approach, an increasingly popular management philosophy based on the Toyota Production System and Lean Production. This approach demonstrates how the focus on processes and workflows – as well as on information and material logistics – stabilizes and accelerates work. It also requires continuous and collaborative efforts from all stakeholders for the planning and control of a construction project. In CommONEnergy, the aim is to develop and implement the LCM methodology for shopping mall retrofitting works as well as for the operational phase of the building itself.

**[Event] Summary of the roundtable on shopping mall sustainability held at the Milan EXPO**



More than 50 experts and industry representatives participated to the workshop. The coordinator from EURAC and the partner INRES (co-organizer of the roundtable, held in the Coop Forum) introduced the project and their respective implication. They reminded that the project is a mix of research and demonstration activities. Half of it has now been done and has proven successful: 23 partners, exchanging ideas and experiences, have learnt from each other, developed and improved the solutions that will be implemented in the 3 demo cases in Italy, Spain and Norway. Speakers from the partner organisations presented the solutions they are developing from refrigeration, ventilation, indoor air quality to green façades, in two sessions: “how to reduce energy needs and increase comfort?” and “how to improve energy efficiency and decrease the impact on the environment?” [Read more](#)

## First release of the 'TypeDLT', a new TRNSYS component that enables climate-based daylighting simulation

EURAC announces the first release of the 'TypeDLT, a new TRNSYS component that enables climate-based daylighting simulation. This software uses the Three-Phase Method of Radiance to help analyse the effects of 'Complex Fenestration Systems' from the perspective of visual comfort and daylight availability. Additionally, it gives the opportunity to develop customised control strategies for dynamic shading devices. Its integration in the TRNSYS environment allows for the dynamic simulation of both daylight and thermal performances of buildings and their interaction. Developed within CommONEnergy, the software is open source, allowing anyone to use it and contribute to its development. The code with the documentation and an example file are available. Read more.

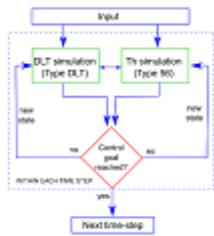


Figure 2.1: Flow chart of the iterative process between daylighting and thermal simulation within each time step.

## Meet the partners to learn more about the project

Meet BPIE at the following events:

- " 30 October - BPIE will be at the NEED4B Low Energy Buildings Symposium, Mons, Belgium
- " 18-20 November - RENEXPO South- East Europe, 8th International Renewable Energy and Energy Efficiency Trade Faire of Romania, in Bucharest
- " 18 November - Workshop: Towards an energy efficient European housing stock, Brussels
- " 19 November - 5th European Grid Conference - "Digital Energy and the Power Grid: Trends and Opportunities" in Brussels
- " 26 November - Innovative retrofitting solutions, Turin, Restructura Expo
- " 24-26 February - World Sustainable Energy Days (WSED) conference 2016, Wels

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