



CommONEnergy



POLICY FACTSHEET

Cost-competitive deep renovation of shopping centres, a driver for EU policies

The project *CommONEnergy*¹ has examined the commercial buildings sub-sector of shopping centres, the only sector with a renovation rate of about 4.4% per year. As a consequence, more than 60% of the shopping centre building stock will be upgraded by 2030. This is a unique trigger point to realise sustainable energy-savings solutions along the planned aesthetic renovations.

CommONEnergy identifies a strong role for European policies in the Clean Energy for all Europeans package² to encourage stakeholders in their transition to become key players in a low carbon economy, while supporting the aim of shopping centres to sell comfort and a satisfactory shopping experience. Shopping centres are buildings regularly visited by the public and can thus be used to promote technologies and practices favouring the energy transition, such as efficient lighting technologies, renewable energy and e-vehicles charging stations.

This policy factsheet is based on expertise and research from over 23 organisations and 3 demonstration cases. Policy recommendations are grouped under four themes:



Engaging stakeholders



Promoting energy efficient technology packages



Communicating the benefits of renovation

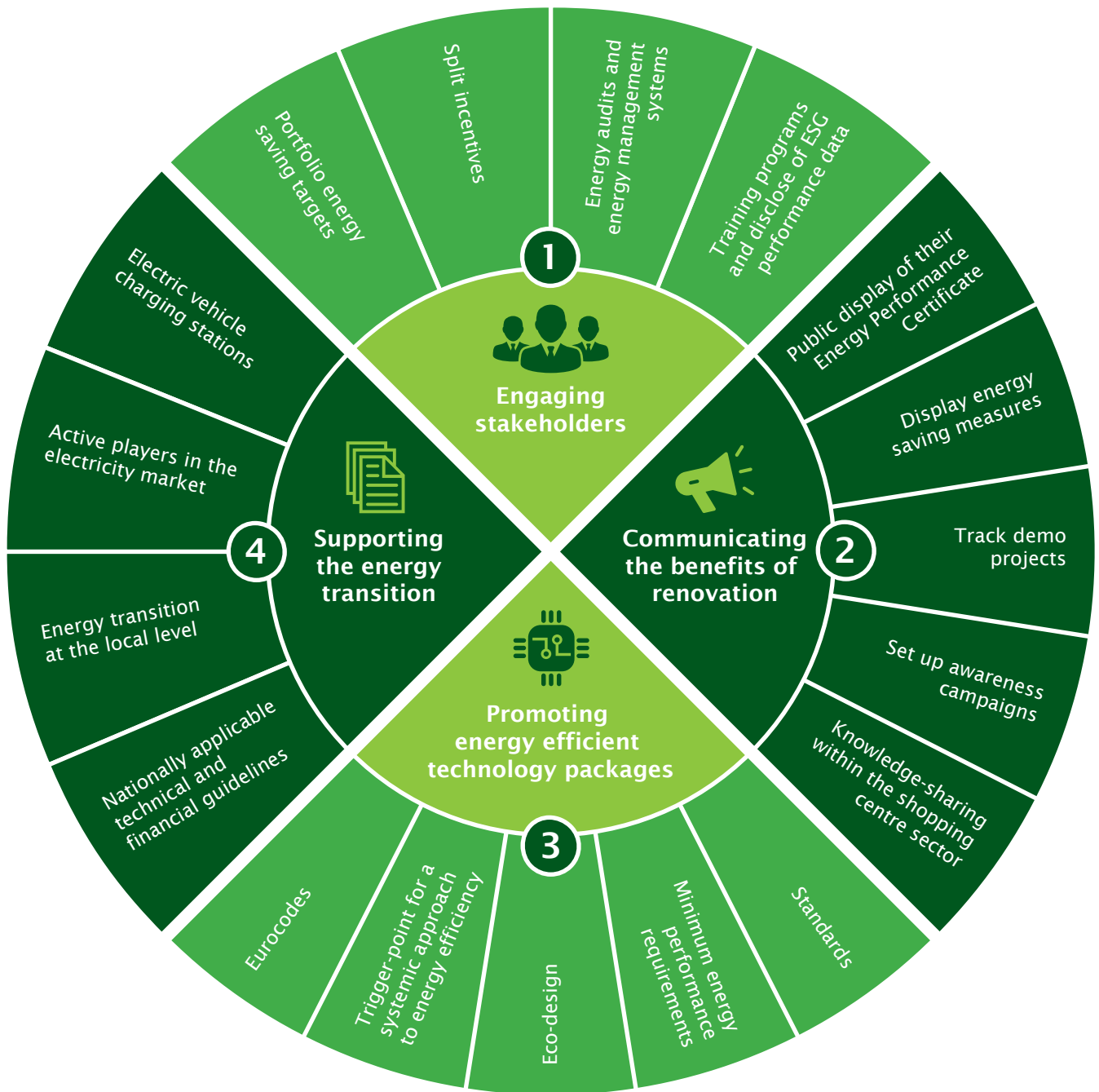


Supporting the energy transition

¹ *CommONEnergy* is an EU-funded project that aims to develop systemic approaches including technology solution-sets, methods and tools to support deep renovations and to assess the environmental and social impact of shopping centres.

² http://europa.eu/rapid/press-release_IP-16-4009_en.htm

POLICY RECOMMENDATIONS





Engaging stakeholders

In the shopping centre sector, the stakeholders with the most decision-making power are shopping centre owners and managers, together with the so-called anchor tenants (largest shops within the shopping centre). Even if their decision processes are not always coordinated, they are driven by the same imperative to maximise profit and to enhance customers' experience. Aligning their business model with energy saving incentives would offer multiple benefits to businesses and consumers and would require the effective sharing of energy consumption information.

- Leading asset owners should be offered technical assistance from the European Commission in order to set forth **portfolio energy-saving targets**, to be realised by using instruments such as individual building renovation passports³.
- To overcome **split incentives** between tenants and landlords, Member States can design budget processes, template lease contracts (i.e. green leases⁴) and accounting rules that reflect in a transparent manner the energy intensity and maintenance costs of owners and tenants.
- Member States would need to ensure the compliance of shopping centres with Article 8 of the Energy Efficiency Directive (EED)⁵ on **energy audits and energy management systems**.
- Member States should ensure the availability of **training programs** for facility managers and the proficiency of certifiers of commercial properties under Article 8 of the EED.
- The European Commission should require shopping centres to **disclose data on ESG performance** (Environmental, Social and Governance) to investors and the public on an open access **benchmarking platform**. The platform should ensure quality via solid monitoring, reporting and verification methodologies, and it should track the relation between energy performance and profitability indicators.



US DOE Building Energy Use benchmarking

Benchmarking is the practice of comparing the measured performance of a building or process to its peers, or established norms, with the goal of informing and motivating performance improvement. Building energy use benchmarking serves as a mechanism to measure the energy performance of a single building over time, relative to other similar buildings, or to modelled simulations of a reference building built to a specific standard.

Experience from the United States Department of Energy* has shown that benchmarking enhances competition between market actors, leading to better environmental performance, and increased customer and occupant health and satisfaction.

*<https://energy.gov/eere/slsc/building-energy-use-benchmarking>

³ <http://bpie.eu/publication/renovation-passports/>

⁴ Green leases align the financial and environmental incentives of building owners and tenants so they share data transparently and cooperate to conserve resources and ensure the efficient operation of buildings

⁵ <https://ec.europa.eu/energy/en/topics/energy-efficiency-directive/buildings-under-eed>



Communicate the benefits of renovation

Major stakeholders' lack of awareness of the multiple benefits of energy efficiency and the energy transition is inhibiting significant business and multi-million energy-saving opportunities. CommONEnergy identifies the following legislative triggers that could enhance the dissemination of information and knowledge.

- The European Parliament and Council should, in their negotiations for the Energy Performance of Buildings Directive (EPBD)⁶, extend to shopping centres all the provisions referring to “buildings frequently visited by the public” (pursuant to recital 24, and Articles 12 and 13 of the EPBD 2010/31/EU) and mandate the **public display of their Energy Performance Certificate**, or other equivalent certificate.
- In transposing the directives on Buildings Energy Performance and Energy Efficiency, Member States could promote exemplary shopping centres and mandate that they **display energy-saving**, relevant greenhouse gas emissions mitigation and environmental protection measures in areas of high footfall, as awareness-raising actions.
- The European Commission could create an initiative to **track demonstration projects** that exemplify the benefits and viability of highly-performing shopping centres and promote their findings in the media outlets of relevant industries.
- Member States can **set up awareness campaigns** for property owners, managers, tenants and related professionals to inform them of the benefits of energy savings, and assist them to implement corporate policies for deep energy renovations, in accordance with Articles 20 of the EPBD, and 17 and 19 of the EED.
- The relevant European Commission services (i.e the Executive Agency for Small and Medium-sized Enterprises) should create new, or expand existing European projects to facilitate effective use of EU funding for **knowledge-sharing within the shopping centre sector** via adequate communication tools, such as knowledge-sharing platforms, webinars, representation in commercial fairs, etc.

SOLUTION SETS
(PASSIVE AND ACTIVE SOLUTIONS)

PERFORMANCE ASSESSMENT

TRAINING AND DISSEMINATION

WHY A SRA?

Energy savings as a component of an energy system or replacement (building, energy grids, renewable energy production systems or the surrounding air and HVAC systems).

Solutions for increasing energy efficiency to be required to the building as energy systems need to be optimized (HVAC, refrigeration, lighting, HES plants).

Intelligent Building Energy Management Systems (IBEMS) able to be implemented and to implement advanced control strategies.

POWER PEAKS SHAVING

IBEMS can be used to control peak loads to control demand in 2020 and it is now used for artificial lighting and other systems. The IBEMS can be used to control the shop owner's energy consumption.

IT ALLOWS ACHIEVING THE PROJECT TARGETS

UP TO 50% REDUCTION OF RENEWABLE ENERGY CONSUMPTION

UP TO 10-20% REDUCTION OF CO2 EMISSIONS

KEY FIGURES

- 3 case studies (Italy, Spain and Norway) identified
- 2 reference buildings where simulations are operated
- An international comparison, the Sustainable Building Challenge, an international comparison, launched in 2018 and awarded in 2021

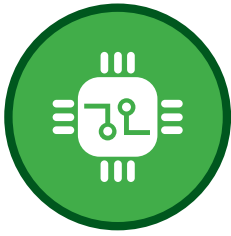
CommONEnergy project communications

The CommONEnergy project has persistently promoted the findings of the renovation of existing shopping centres in three European countries (Italy, Spain, Norway). By communicating the benefits of the energy transition, the EU increases the likelihood that more private actors will see the opportunities of renovating and therefore move towards a decarbonised building stock.

The channels for dissemination included industry gatherings, international exhibitions, sector conferences, onsite shopping centres and more. The message on the multiple benefits of renovation is spread further by word of mouth of multipliers like professional associations, relevant working groups and financing decision-makers. The physical buildings themselves are lighthouses of these benefits.

www.commonenergyproject.eu

⁶ <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>



Promote energy efficient technology packages

To support the energy upgrade of the shopping centres' building stock, it is crucial to upgrade building codes, manufacturing standards and construction practices. Promoting efficient technology is effectively done through legislation and standardization, as well as by mandating interventions at key trigger points of the building's lifetime.

- With the opportunity of the EPBD update, Member States should define nZEB, energy positive and smart building **standards** or **performance levels** for shopping centres.
- The European institutions should introduce **minimum energy performance requirements** for commercial buildings as a priority measure for national renovation strategies under the new Article 2a of the EPBD.
- The European Commission should introduce, through the **Eco-design Directive**, minimum performance requirements for individual technical systems (e.g. refrigeration cabinets, active control systems) and define lighting performance indicators per type of shops, balancing visual comfort and energy savings.
- The European institutions should mandate in the update of the EPBD, under Article 2a, that every intervention of planned preventative maintenance or aesthetic renovation will constitute a **trigger-point**⁷ for a **systemic approach to energy efficiency** (coupling HVAC, refrigeration and lighting systems, including exploitation of renewable sources and continuous commissioning, as well as overall operational strategy) as part of strategic asset management planning.
- The European Commission should take the initiative to consolidate the **Eurocodes** (the standards in construction) for deep energy renovation techniques, technologies and products.



Intelligent Building Energy Management System (iBEMS)

Competing energy demand functions in shopping centres create huge system inefficiencies, such as ensuring customer comfort by overheating the refrigerator area. At the COOP Modena shopping centre (Italy) as well as in the other demonstration buildings of the project, CommonEnergy partners installed an intelligent Building Energy Management System (iBEMS).

The iBEMS consists of a centralised system that communicates with all the sub-systems of a building (i.e. daylight & artificial lights, HVAC, refrigeration, solar thermal, electric vehicles, electrical batteries, etc.). This system helps the shopping centre facility management through continuous remote monitoring of the operation and by identifying systemic malfunctions and possible optimisations.

⁷ <http://bpie.eu/publication/trigger-points-as-a-must-in-national-renovation-strategies/>



Support the energy transition

The European Commission has defined a long-term vision to guide the transformation towards a low carbon and resource efficient society, in which buildings will be a highly-integrated part of the wider energy system.

- National renovation strategies as foreseen under the new EPBD article 2a should include policies and measures for the contribution of the shopping centre sector to the 2050 vision of a decarbonised building stock. **Nationally-applicable technical and financial guidelines** should be developed accordingly.
- Structural and Cohesion funds can empower local authorities to facilitate the **energy transition at the local level** by including industry actors, businesses (i.e. shopping centres) and end-users into an industrial ecosystem approach. In this context, the European Commission can provide technical and regulatory assistance to local authorities aiming to develop incentive and roll-out programs for decarbonisation.
- Shopping centres should be recognised as **active players in the electricity market** and be allowed to expand their business model in energy services by generating, storing and providing electricity to the (micro/mini) grid according to price signals, thus becoming micro energy-hubs.
- Under Article 8a of the EPBD revision, at least one in ten parking spaces in shopping centres should be equipped for electro-mobility. **Electric vehicle charging stations** should be supplied by an increasing share of energy from renewable energy sources.



Battery storage for smart management and renewable energy

At the COOP Grosseto shopping centre in Italy, a photovoltaic system produces energy to power the shopping centre and to charge Electric Vehicles (EVs). The use of EVs is growing and shopping centres with EV charging stations attract more customers thanks to new services, promote sustainability and improve their image.

Surplus solar energy is stored in NiMH batteries, which safeguard against the risk of explosion or fire. Energy storage improves the efficient use of energy with current equalization and frequency regulation, peak shaving, time shifting, and EV charging.



The CommONEnergy project has received funding from the European Union Seventh Framework Programme (FP7/2007-2013) under grant agreement n. 608678

Communication contact: Marine Faber, BPIE
Contact Email: marine.faber@bpie.eu

www.commonenergyproject.eu