

POLICY PAPER

TOWARDS GREEN COMMERCIAL BUILDINGS IN EUROPE



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Introduction

The Commission will soon come forward with its proposals to revise the Energy Efficiency Directive (EED) and the European Buildings Performance Directive (EPBD). This package is crucial to set a level of at least 40% energy efficiency for 2030. In order to meet this target and to capture the multiple benefits of energy efficiency, priority should be given to energy saving obligations and thermal renovation of the existing building stock, including residential buildings where split incentives are sometimes difficult to overcome. We also need to move faster on the implementation of near-zero energy buildings (nZEB) to decarbonise the whole building stock by 2050.

In parallel, we believe that much **more attention should be paid to large-scale non-residential buildings (commercial buildings and office spaces)**. The most important costs of a non-residential building are operational costs over its life cycle. In addition to the attention paid to design, construction and renovation, it is through effective operation and maintenance that costs and resource consumption can be reduced.

Commercial buildings and office spaces can be a **promising platform for innovation** of materials and of business models for the “new energy world” based on PV panels, smart grids and active customer participation. They can allow new actors to enter the market, notably in terms of smart management. This element is reinforced by the fact that data protection issues are way less sensitive than in residential buildings where data collection can be perceived as more intrusive. Moreover, commercial buildings play a key role in educating building occupants on the use of energy and resource efficient technologies, knowledge they can translate in a residential setting.

Commercial buildings and office spaces are by nature “European” as most of them share common characteristics: ownership by large real estate investors (e.g. pension funds); same technology providers; importance of labels and certifications (e.g. BREEAM, LEED, etc.). Replication of methods is easier and can lead to cost-effective energy savings throughout Europe. Hence commercial buildings are at the heart of the **race to green technology leadership**.

1. A good business case for commercial buildings and office spaces

In terms of volumes per unit, energy consumption is larger in commercial buildings and office spaces than in the residential sector. Measures such as building automation, replacement of lighting, optimisation of IT and data centres have faster return of investment than thermal renovation (insulation of walls, roofs and windows retrofitting) undertaken in the housing sector, generally between three and five years.

The combination of a faster return of invest and larger volumes of consumption creates significant opportunities for new business models to succeed: aggregators for demand-side management, large-scale batteries and other storage options, third-party financing. Both demand-side management and storage can offer ancillary services to the electricity grid, increase the amount of self-produced electricity and overall increase the penetration of renewable sources into the grid. Alongside TSOs and DSOs, commercial buildings owners could also benefit from this initiative and see the value of their property increased, in connection with the evolution of a greener and greener financial market.

Finally, if the EU is able to move first and fast in the field of commercial buildings and office spaces in an innovative way, our concepts, companies and technologies can gain new market shares overseas as commercial buildings are much more standardized in their operation than residential buildings. Export opportunities should be easier to grab. Hence this initiative should have a strong innovation dimension.

2. Better interaction with renewables (heat, photovoltaic solar and e-mobility)

Photovoltaic panels are easier to integrate into non-residential buildings with larger roof areas and a load curve that matches much better the production times of solar electricity. Indeed the presence of people in those buildings (employees, customers) coincides with the peak production time of photovoltaic. On the contrary, most inhabitants who are working would not be at home when the sun shines most. Non-residential buildings are also a good platform to further develop building integrated photovoltaic (BIPV).

Public transport as well as shared and carpooling offers can be organised at collective level around these buildings and allow removing some barriers to electro-mobility. Owners of electric cars having a parking space at their place of living can easily add a loading socket for their vehicle. But what would they do in case they need to load their car at the office or in the supermarket? Electric vehicles loading areas should be made available in all non-residential buildings for this purpose. In addition, professional motive tools such as forklift trucks and logistic equipment can also be electrified and loaded with electricity generated by rooftop PV panels. During loading time, they can be connected to the grid and, if aggregated, deliver grid services leading to CO2 emissions cuts and energy savings.

In addition, commercial buildings and office spaces can make the best use of renewable heating and cooling, based inter alia on solar thermal, geothermal and ground-source heat pumps. They can provide the anchor loads for district heating networks having larger-scale renewable heat options (biomass-fuelled CHP, heat pump, seasonal storage). New ideas linked to the circular economy (green public procurement, recycling and urban farming) can also be integrated.

Recommendations

Non-residential buildings are the ideal place where the digital revolution meets the energy and e-mobility revolution, opening up the door to the roll-out of smart buildings. A broad alliance should be launched to reap the full potential of those buildings, gathering technology providers (Schneider Electric,

Johnson Control, ABB, Siemens, etc.), facility managers, buildings certifiers (BREEAM, LEED) and large real estate investors.

This new initiative should be accompanied by the following improvements to the regulatory framework:

- ***In the revision of the EED/EPBD:***

- Article 8 of the EPBD should foresee the obligation for all non-residential buildings whose energy consumption is higher than 100 MWh/year to be equipped with building automation and control systems in order to reduce net energy consumption by at least 50% between 2015 and 2030.
- Article 8 of the EPBD should make it mandatory for new non-residential buildings and non-residential buildings undergoing major renovation to install loading areas for electric vehicles.
- EPBD should foresee that non-residential buildings managers should publish relevant aggregated and anonymized data on a transparent platform such as data hubs, allowing potential third party investors to propose offers to the owners/occupiers of the building.
- Article 8 of the EED should broaden energy audit obligations from the currently narrow scope to a larger range of companies, including small and medium-size companies as long as their consumption exceeds a certain threshold rather than being limited to large companies.

- ***Enabling/accompanying actions:***

- In EURICS, the Commission should establish an EU-wide platform for commercial buildings to share best practices and of a network of "*near zero energy and positive energy commercial buildings*".
- The Commission should mandate CEN/CENELEC to work with technology providers to ensure interoperability of technical devices used in smart buildings.
- The Commission should create a highly visible EU-wide comparable label/certification for net energy consumption of non-residential buildings (with different degrees of performance - plus energy, zero energy, 80% reduction, prize for best of class for its category of buildings etc.).
- The Commission should set-up measures to favour institutional investments into the greening of commercial buildings and office spaces, such as the creation of a market giving a real value to energy savings. It should also further assess the impact of greening commercial buildings and office spaces on their real estate market value.
- The Commission should acknowledge the role of effective facility management in achieving a good energy performance of non-residential buildings. The Commission should ensure training and certification for facility managers in installation and operation of high performance building technologies through a European skills programme.

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