

Energy Performance of Buildings Directive (EPBD): overview

The Energy Performance of Buildings Directive (EPBD) represents a pivotal piece of legislation within the European Union, serving as a linchpin for advancing energy efficiency and sustainability in the built environment. Enacted with the aim of mitigating greenhouse gas emissions and facilitating a shift towards clean energy sources, the EPBD has undergone significant amendments to align with the EU's ambitious climate objectives. This directive underscores the EU's commitment to achieving climate neutrality by 2050, in line with the targets set forth in the Paris Agreement. With its recent revisions, the EPBD sets forth a comprehensive framework that shapes the future of building construction and renovation practices across the EU, emphasizing the integration of renewable energy sources, the promotion of zero-emission buildings, and the enhancement of energy performance standards.

The EPBD encompasses a range of provisions outlined across Articles 1 to 12, each playing a crucial role in advancing the directive's overarching goals. These articles collectively lay the groundwork for promoting energy efficiency, reducing greenhouse gas emissions, and fostering the development of sustainable building practices within the EU.

Scope (article 1)	The directive aims to improve energy efficiency and reduce greenhouse gas emissions in EU buildings, targeting a zero-emission building stock by 2050. It includes measures like setting energy performance standards, promoting renewables, and integrating sustainable mobility infrastructure. Additionally, it emphasizes smart building technologies and nature-based solutions to achieve its goals.
Definitions (Article 2)	Article 2 provides definitions for key terms essential for understanding and implementing the EPBD. These definitions, including terms like zero-emission building and renovation passport, offer clarity and uniformity in interpreting the directive's provisions.
National Building Renovation Plans (Article 3)	The directive mandates EU Member States to create national building renovation plans by 2050, targeting energy-efficient and decarbonized structures. These plans must address residential and non-residential buildings, setting strategies, targets, and timelines for

	<p>improving energy performance and reducing emissions. Member States must submit initial drafts by December 31, 2025, and update them every five years, engaging regional and local authorities and conducting public consultations.</p>
<p>Methodology and Minimum Energy Performance Requirements (Articles 4 & 5)</p>	<p>Member States are required to adopt a methodology for calculating building energy performance based on a common framework. This methodology can be implemented nationally or regionally. Additionally, minimum energy performance requirements must be established for buildings, aiming for cost-optimal levels and considering factors like building elements and indoor environmental quality. These requirements should be reviewed every five years to incorporate advancements and must include exemptions for buildings of special significance or certain categories such as low-energy-demand industrial structures or temporary buildings.</p>
<p>Cost-optimal levels of minimum energy performance requirements (Article 6)</p>	<p>The directive grants the Commission authority to establish a framework for calculating cost-optimal levels of minimum energy performance requirements for buildings through delegated acts. By June 30, 2025, the Commission must revise this framework to align with national energy and climate plans. Member States are mandated to utilize this framework, considering factors like life-cycle global warming potential and energy infrastructure accessibility. If the comparison reveals that existing requirements are significantly less efficient, adjustments must be made within 24 months.</p>
<p>Requirements for New Buildings (Article 7)</p>	<p>The directive sets strict mandates for new buildings, requiring all new constructions to meet zero-emission standards by specified deadlines:</p> <ul style="list-style-type: none"> a. By January 1, 2028, for new buildings owned or used by public authorities. b. By January 1, 2030, for all new buildings. <p>Member States must address various aspects concerning new buildings, including indoor environmental quality, climate change adaptation, fire safety, seismic risks, accessibility for individuals with disabilities, and carbon</p>

	removal associated with carbon storage within or on buildings.
Requirements for Existing Buildings (Article 8)	Member States are obligated to ensure that major renovation projects improve the energy performance of existing buildings to meet minimum requirements. These requirements should apply either to the entire renovated building or to individual elements, depending on feasibility. When significant building envelope elements are retrofitted or replaced, energy performance must meet minimum standards if possible. Member States are encouraged to deploy high-efficiency systems, passive heating and cooling elements, and indoor environmental quality standards during major renovations. Accessibility for individuals with disabilities must also be prioritized.
Minimum Energy Performance Standards (Article 9)	The directive mandates Member States to establish minimum energy performance standards for non-residential buildings, ensuring compliance with specified energy performance thresholds by set deadlines. Additionally, Member States must create a trajectory for progressively renovating residential buildings to achieve zero-emission status by 2050, with specific targets for energy reduction over time. To accomplish this, measures such as minimum standards, financial support, and technical assistance are required, with a focus on addressing energy poverty and ensuring fairness across all sectors. Exemptions are provided for certain categories of buildings, and enforcement mechanisms, including penalties, are outlined to ensure compliance. The Commission will monitor progress and provide recommendations as needed, with a focus on optimizing funding for building renovations.
Solar Energy in Buildings (Article 10)	The directive mandates Member States to optimize solar energy generation in new buildings based on site irradiance, facilitating cost-effective solar technology installation. It requires the deployment of solar installations on new public and non-residential buildings by specific deadlines and promotes their installation on existing buildings undergoing major renovations. Member States must include policies for solar energy deployment in national renovation plans and establish criteria for implementation, considering factors like

	<p>building type and structural integrity. Additionally, Member States are tasked with creating a comprehensive framework to support solar energy integration in buildings, including administrative, technical, and financial measures.</p>
Zero-emission Buildings (Article 11)	<p>The directive outlines guidelines for zero-emission buildings, focusing on eliminating on-site carbon emissions and enabling energy adaptability. Member States must ensure that energy demand in such buildings remains below specified thresholds, set at least 10% lower than those for nearly zero-energy buildings. They can adjust these thresholds for renovated zero-emission buildings, maintaining compliance with cost optimality and emissions thresholds. Additionally, new or renovated zero-emission buildings must source energy primarily from renewables, efficient district heating, or carbon-free sources, with grid energy as a fallback if necessary and meeting national criteria.</p>
Renovation Passport (Article 12)	<p>The directive requires Member States to establish a renovation passport scheme within 24 months, based on a common framework. Participation is voluntary for building owners unless made mandatory. Renovation passports, issued digitally and possibly with energy performance certificates, are prepared by qualified experts. Building owners are encouraged to discuss contents with experts to plan steps towards achieving zero-emission status by 2050. Member States should provide digital tools for passport preparation and integration with national energy databases where possible.</p>
Technical building systems (Article 13)	<p>The directive requires Member States to set system requirements for technical building systems, covering energy performance and installation. It mandates self-regulating devices for indoor climate control and ensures healthy indoor environments. Non-residential zero-emission buildings must have indoor air quality monitoring. It also promotes energy storage, renewable sources, and phasing out fossil-fuel-based heating. Additionally, it mandates building automation in non-</p>

	residential and electronic monitoring in residential buildings.
Infrastructure for Sustainable Mobility (Article 14)	The directive requires sustainable mobility infrastructure in buildings: non-residential buildings with over five parking spaces need recharging points, pre-cabling, and bike parking. By 2027, buildings with over 20 parking spaces must have recharging points. Public buildings need pre-cabling by 2033. Residential buildings with over three parking spaces must have pre-cabling, bike parking, and at least one recharging point. Member States must simplify recharging point installations and align policies with sustainability goals, integrating with urban mobility and planning.

For more information on the EPBD, you can request a longer summary in English.