

Reporting template of the European Union on the Member States application of national definitions of Nearly Zero Energy Buildings

Items and assessment categories which are mandatory due to the EPBD or RED are explained or referenced by an example in the column "EPBD / RED requirement". The source is given in the column to its left. Additional typical definition categories that are not mandatory EPBD requirements are included to give the possibility to explain what is defined beside and beyond the EPBD and RED. These categories are differentiated by colour (dark grey letters). For each aspect a number of possible choices is given in a combo box. Explanatory texts and figures are shown by a click in the according cells. Comments and explanations should be entered in the cells on the right.

1. General information	
Country	Belgium
Name of regulation, directive, certification scheme	The Brussels Air, Climate and Energy Code (COBRACE)
Editor of regulation, directive, certification scheme	
Year of introduction of current version	2013
Energy benchmark of current version	nearly zero energy buildings

Integration and consideration in national directive

will replace current directive	<p>In the Brussels-Capital Region, the Brussels Air, Climate and Energy Code (COBRACE) that will make the nearly zero energy buildings (NZEB) obligatory by 2021 (by 2019 for public buildings) has been adopted the 2 of May 2013.</p> <p>The definition written in the COBRACE uses the definition given by the Recast of the Energy Performance of Buildings Directive (2010/31/EU) i.e. "nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby".</p> <p>The first part of this definition ("amount of energy required") is defined in Brussels as follows : all new buildings (housing, office or service buildings or schools) must meet the 2015 EPB requirements similar to the Passive House Standard.</p> <p>These 2015 EPB requirements include also a primary energy criteria which takes into account the input of renewable energies and answers the second part of this definition ("energy from renewable sources") even if it</p>
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2. Field of application	EPBD / RED requirement	EPBD / RED reference	Content in Member States national definition	Explanation, comment, source
2.1 building category <ul style="list-style-type: none"> ▪ single-family houses ▪ apartment blocks ▪ offices 	<p><i>Member States shall ensure that all new buildings are nearly zero- energy buildings by 31 December 2020 respresively after 31 December 2018 (occupied and owned by public authorities).</i></p> <p><i>For the purpose of the calculation buildings</i></p>	EPBD article 9.1a/b	<p>residential/non-residential</p> <p>included in directive</p> <p>included in directive</p> <p>included in directive</p>	

<ul style="list-style-type: none"> ▪ educational buildings ▪ hospitals ▪ hotels and restaurants ▪ sports facilities ▪ wholesale and retail trade service buildings ▪ other types of energy-consuming buildings 	<p>For the purpose of the calculation buildings should be adequately classified into the [...] categories.</p>	<p>EPBD annex I</p>	<p>included in directive</p> <p>not defined</p> <p>not defined</p> <p>not defined</p> <p>not defined</p> <p>not defined</p>	
<p>2.2 new/retrofit buildings</p>	<p><i>New, and existing buildings that are subject to major renovation, should meet minimum energy performance requirements adapted to the local climate.</i></p> <p><i>Member States shall furthermore [...] stimulate the transformation of buildings that are refurbished into nearly zero-energy buildings.</i></p>	<p>EPBD preamble recital 15</p> <p>EPBD article 9.2</p>	<p>new and retrofit</p>	<p>Obligation in the EPB requirements. Stimulation by subsidies, call of project Exemplary Buildings, green certificates for green electricity production (include CHP), free technical experts (Facilitators), sensibilisation, trainings...</p>
<p>2.3 private/public buildings</p>	<p><i>Member States shall ensure that by 31 December 2020, all new buildings are nearly zero- energy buildings and after 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings.</i></p>	<p>EPBD article 9.1a/b</p>	<p>private/public</p>	<p>EPB requirements applies to public and private buildings. Same timing as the EPB Directive.</p>
<p>2.4 In case that a additional or separate definiton(s) exists (e.g. for different building types), please add a new sheet by using the button on the right (to use this option Excel macros need to be activated).</p>			<p>click to add new sheet</p>	
<p>3. Energy Balance / Calculation</p>				
<p>3.1 balance type</p>	<p><i>[...] The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources</i></p> <p><i>Energy performance of a building means the calculated or measured amount of energy needed to meet the energy demand [...]</i></p>	<p>EPBD article 2.2</p> <p>EPBD article 2.4</p>	<p>not specified</p>	<p>The calculation method of primary energy already includes the input of renewable energy sources as well as passive cooling techniques. The method of which renewable energy is integrated in the EPB-calculation method depends on technology.</p>

3.2 physical boundary	<p><i>This directive lays down requirements as regards the common general framework for [...] buildings and building units.</i></p> <p><i>[...] building' means a roofed construction having walls, for which energy is used to condition the indoor climate.</i></p>	<p>EPBD article 1.2a</p> <p>EPBD article 2.1</p>	<p>building unit</p>	
3.3 system boundary demand / energy uses included <ul style="list-style-type: none"> ▪ space heating, domestic hot water ▪ ventilation, cooling, air conditioning ▪ auxiliary energy ▪ lighting ▪ plud loads, appliances, IT ▪ central services ▪ electric vehicles ▪ embodied energy 	<p><i>[...] energy performance of a building means the calculated or measured amount of energy needed to meet the energy demand associated with a typical use of the building, which includes, inter alia, energy used for heating, cooling, ventilation, hot water and lighting.</i></p>	<p>EPBD article 2.4</p>	<p>considered</p> <p>considered</p> <p>considered</p> <p>considered</p> <p>not considered</p> <p>not defined</p> <p>not considered</p> <p>not considered</p>	
3.4 system boundary generation / renewable energy sources included <ul style="list-style-type: none"> ▪ generation on-site ▪ generation near by ▪ generation external ▪ crediting 	<p><i>[...] The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby.</i></p> <p><i>[...] energy from renewable sources means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.</i></p> <p><i>[...] minimum levels of energy from renewable sources [...] to be fulfilled, inter alia, through district heating and cooling [...].</i></p>	<p>EPBD article 2.2</p> <p>EPBD article 2.6</p> <p>EPBD article 13.4</p>	<p>considered</p> <p>considered</p> <p>considered</p> <p>not defined</p>	<p>District heating and cooling integrated in the EPB calculation methode.</p>

3.5 balance period / calculation step	<i>[...] The methodology for calculating energy performance should be based not only on the season in which heating is required, but should cover the annual energy performance of a building [...] [...] requirements should be set with a view to [...] the cost-optimal balance between the investments involved and the energy costs saved throughout the lifecycle of the building [...]</i>	EPBD preamble recital 9 EPBD preamble recital 10	yearly	yearly evaluation based on a monthly calculation
3.6 monthly accounting limitation			nothing defined	
4. Accounting System				
4.1 normalization	<i>[...] including a numerical indicator of primary energy use expressed in kWh/m² per year</i>	EPBD article 9.3a	net floor area	This indicator is also a EPB requirement expressed in kWh/m ² per
4.2 primary metric	<i>The energy performance of a building shall be expressed in a transparent manner and shall include an energy performance indicator and a numeric indicator of primary energy use, based on primary energy factors per energy carrier, which may be based on national or regional annual weighted averages or a specific value for on- site production. [...] including a numerical indicator of primary energy use expressed in kWh/m² per year. [...] primary energy' means energy from renewable and non- renewable sources which has not undergone any conversion or transformation process</i>	EPBD Annex 1 EPBD 9.3a EPBD article 2.5	primary / source energy (renewable part included)	Actual EPB 2015 requirements. Residential : a primary energy consumption for heating, domestic hot water and electrical auxiliaries below 45 kWh per m ² per year Non-residential : a primary energy consumption for heating, cooling, lighting and electrical auxiliaries below (95-2.5*C) kWh per m ² per year, with C defined as the compactness, that is, the ratio between the volume enclosed and the loss area (maximum C is 4);
4.3 secondary metric			energy need	Residential and non residential : a net heating need below 15 kWh per m ² per
4.4 symmetric or asymmetric weighting			symmetrical weighting	
4.5 time dependent weighting	<i>Primary energy factors [...] may be based on national or regional yearly average values and may take into account [...] European standards</i>	EPBD 9.3a	static conversion factors	Conversion factors: Electricity : 2.5 Fossil fuel : 1
5. Further requirements				

5.1 fraction of renewables	<i>Member States shall introduce [...] appropriate measures [...] to increase the share of all kinds of energy from renewable sources in the building sector [...]. By 31 December 2014, Member States shall [...] require the use of minimum levels of energy from renewable sources in new buildings and in existing buildings [...]</i> <i>[...] The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources [...]</i>	RED article 13.4 EPBD article 2.2	defined	To meet the primary energy criteria in 2015 (see 4.2), the use of renewables for heating, cooling, hot water or electricity is often necessary
5.2 temporal performance <ul style="list-style-type: none"> ▪ load match 			not defined	
<ul style="list-style-type: none"> ▪ grid interaction 			not defined	
5.3 energy performance or rating requirements <ul style="list-style-type: none"> ▪ energy performance indicator ▪ numeric indicator of primary energy use 	<i>nearly zero-energy building means a building that has a very high energy performance [...]. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources [...]</i> <i>The energy performance [...] shall [...] include an energy performance indicator and a numeric indicator of primary energy use [...]</i>	EPBD article 2.2 EPBD Annex 1	defined yes yes	Residential and non residential : a net heating need below 15 kWh per m ² per year: Actual EPB 2015 requirements. Residential : a primary energy consumption for heating, domestic hot
5.4 general framework / prescriptive requirements	<i>The methodology shall [...] take into consideration: thermal characteristics (thermal capacity, insulation, passive heating, cooling elements, and thermal bridges), heating installation and hot water supply, air-conditioning installations, natural and mechanical ventilation, built-in lighting, the design, positioning and orientation of the building, outdoor climate, passive solar systems and solar protection, [...], internal loads</i>	EPBD Annex 1	defined	

5.5 definition of comfort level & IAQ requirements (for winter and summer season, beside other national directives)	<i>This Directive [...] takes into account [...] indoor climate requirements [...] The methodology shall [...] take into consideration: [...] indoor climatic conditions [...] That includes [...] indoor air-quality, adequate natural light [...].</i>	EPBD article 1.1 EPBD Annex 1 EPBD preamble recital 9	defined	An overheating temperature that can only exceed 25°C for 5% of the time throughout the year. Minimum ventilation rates. Minimum lighting rates.
5.6 monitoring procedure	<i>[...] energy performance of a building means the calculated or measured amount of energy needed [...] Member States shall encourage the introduction of intelligent metering systems [...] and the installation of automation, control and monitoring systems [...]</i>	EPBD article 2.4 EPBD article 8.2	defined	Local PLaN for Energy Manamgmt (PLAGE), energy certificate for buildings , mandatory energy audits during renewal of environmental permits for large buildings. The Brussels-Capital Region has had an energy balance since 1990. The energy