

## 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 Name of regulation, directive, certification scheme Editor of regulation, directive, certification scheme Year of introduction of current version Energy benchmark of current version Integration and consideration in national directive			Bulgaria		
			National Plan for Nearly zero-energy buildings		
			Ministry of Investment Planning		
			2014		
			select		
			will replace current directive		The draft national definition of nearly zero-energy buildings in Bulgaria has been defined in accordance with the underlying principles of the correct formulation of the definition of nearly zero-energy buildings extrapolated at European level. To apply the definition and to account for the parameters properly, a framework of conditions has been set up. This is reported below
2. Field of application		EPBD / RED requirement	EPBD / RED reference	Content in Member States national definition	Explanation, comment, source
2.1 building category		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).  For the purpose of the calculation buildings should be adequately classified into the [...] categories.	EPBD article 9.1a/b	residential/non-residential	To calculate the energy consumption indicators and the energy performance of a building, the following classifications are used: • residential, including individual houses; low, medium and high-rise residential buildings (blocks of flats); mixed;
▪ single-family houses				included in directive	
▪ apartment blocks			included in directive		
▪ offices			included in directive		
▪ educational buildings			included in directive		
▪ hospitals			included in directive		
▪ hotels and restaurants			included in directive		
▪ sports facilities			included in directive		
		EPBD annex I			

<ul style="list-style-type: none"> <li>▪ <b>wholesale and retail trade service buildings</b></li> <li>▪ <b>other types of energy-consuming buildings</b></li> </ul>			included in directive	<ul style="list-style-type: none"> <li>▪ non-residential, including administrative buildings (administrative, office, ceremonial buildings, etc); educational buildings</li> </ul>
			included in directive	
<b>2.2 new/retrofit buildings</b>	<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>	new and retrofit	Building status: New or after major renovation
<b>2.3 private/public buildings</b>	<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>	EPBD article 9.1a/b	private/public	Ownership Private or central/local government-owned. Building types: Residential and public service buildings
<b>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).</b>			click to add new sheet	
<b>3. Energy Balance / Calculation</b>				
<b>3.1 balance type</b>	<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>	select and describe right	
<b>3.2 physical boundary</b>	<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>	building unit	
<b>3.3 system boundary demand / energy uses included</b>				

<ul style="list-style-type: none"><li>▪ <b>space heating, domestic hot water</b></li></ul>	<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>	EPBD article 2.4	considered	A.2. Balance make-up: Energy used for the following purposes is accounted: <ul style="list-style-type: none"><li>• heating</li><li>• hot water</li><li>• ventilation</li><li>• cooling</li><li>• lighting</li><li>• pumps, ventilators</li><li>• appliances</li></ul>
<ul style="list-style-type: none"><li>▪ <b>ventilation, cooling, air conditioning</b></li></ul>			considered	
<ul style="list-style-type: none"><li>▪ <b>auxiliary energy</b></li></ul>			considered	
<ul style="list-style-type: none"><li>▪ <b>lighting</b></li></ul>			considered	
<ul style="list-style-type: none"><li>▪ <b>plud loads, appliances, IT</b></li></ul>			considered	
<ul style="list-style-type: none"><li>▪ <b>central services</b></li></ul>			considered	
<ul style="list-style-type: none"><li>▪ <b>electric vehicles</b></li></ul>			not considered	
<ul style="list-style-type: none"><li>▪ <b>embodied energy</b></li></ul>			not considered	
<b>3.4 system boundary generation / renewable energy sources included</b>				
<ul style="list-style-type: none"><li>▪ <b>generation on-site</b></li></ul>	<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> <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>	EPBD article 2.2	considered	The energy from renewable sources used generated within the building or within a radius of 15 km.
		EPBD article 2.6		
<ul style="list-style-type: none"><li>▪ <b>generation near by</b></li></ul>	<i>[...] minimum levels of energy from renewable sources [...] to be fulfilled, inter alia, through district heating and cooling [...].</i>	EPBD article 13.4	considered	
<ul style="list-style-type: none"><li>▪ <b>generation external</b></li></ul>			considered	
<ul style="list-style-type: none"><li>▪ <b>crediting</b></li></ul>			not considered	

<b>3.5 balance period / calculation step</b>	<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	The energy balance is drawn up on an annual basis through computation. The monthly balance method of BDS EK 180 13790 is used
<b>3.6 monthly accounting limitation</b>			select and describe right	
<b>4. Accounting System</b>				
<b>4.1 normalization</b>	<i>[...] including a numerical indicator of primary energy use expressed in kWh/m<sup>2</sup> per year</i>	EPBD article 9.3a	treated floor area	total annual energy consumption for heating, cooling, ventilation, hot water,
<b>4.2 primary metric</b>	<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/m<sup>2</sup> 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	other	1) Specific energy consumption: This is defined by the conditioned area of the building calculated based on external dimensions in accordance with BDS EK 15217. 2) Primary energy: This is determined for the type of energy supplied using nationally determined coefficients that account for losses incurred during generation, transmission and distribution. These coefficients have a constant value at an annual level. 3) CO <sub>2</sub> emission equivalent: This is determined
<b>4.3 secondary metric</b>			select and describe right	
<b>4.4 symmetric or asymmetric weighting</b>			select and describe right	
<b>4.5 time dependent weighting</b>	<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	Primary energy: This is determined for the type of energy supplied using nationally
<b>5. Further requirements</b>				

5.1 fraction of renewables	<p>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 [...]</p> <p>[...] The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources [...]</p>	<p>RED article 13.4</p> <p>EPBD article 2.2</p>	defined	<p>In the cases explained in ZEVI at least 15 percent of the total amount of heat and cooling energy needed for the building must be produced from renewable sources by implementing:</p> <ol style="list-style-type: none"> <li>1. centralised heating using biomass or geothermal energy;</li> <li>2. individual biomass incineration units with a conversion efficiency of at least 85 percent for residential and commercial buildings, and 70 percent for industrial buildings;</li> <li>3. solar heating installations;</li> <li>4. thermal pumps and surface geothermal systems. Single and multi-occupancy residential buildings with a floor area of up to 500 m2 are required to have at least 50 % of the energy needed for heating, hot water, ventilation and cooling is from renewables. All buildings with a floor space of 500 to 7 000 m2 are required to have at least 30 % of the energy needed for heating, hot water, ventilation and cooling is from renewables. The share of electricity in the building's annual primary energy consumption balance (including electricity for the heating, hot water, ventilation and cooling systems) is no more</li> </ol>
5.2 temporal performance				
▪ load match			select and describe right	
▪ grid interaction			select and describe right	

<b>5.3 energy performance or rating requirements</b>		EPBD article 2.2	defined	The rules for setting up a scale of energy consumption classes and for classifying a particular
	▪ <b>energy performance indicator</b>		yes	The building energy consumption indicators have been classified into three main
	▪ <b>numeric indicator of primary energy use</b>	EPBD Annex 1	Primary energy consumption conforming with class A on the national	nZEB is defined as Primary energy consumption conforming with class A on the national scale. Under the current
<b>5.4 general framework / prescriptive requirements</b>	<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	
<b>5.5 definition of comfort level &amp; IAQ requirements (for winter and summer season, beside other national directives)</b>	<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	Current legislative acts and documents set out the requirements for the maximum permissible variations in microclimate parameters: air temperature; relative humidity; air movement; minimum fresh air supply; light; and noise level.
<b>5.6 monitoring procedure</b>	<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	not defined	













