

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	Finland			
Name of regulation, directive, certification scheme	National Building Code of Finland, "Energy Management in			
Editor of regulation, directive, certification scheme	Ministry of the Environment			
Year of introduction of current version	2012			
Energy benchmark of current version	efficient buildings			
Integration and consideration in national directive	is current directive	the Ministry of the Environment issued new building regulations to improve energy performance, which entered into force on 1 July 2012. Part D3 of the National Building Code of Finland, "Energy Management in Buildings" (2/11) was issued as a Decree of the Ministry of the Environment in accordance with section 13 of the Land Use and Building Act (132/1999). The regulations apply to new construction, and the main change that they introduce is a shift to a total energy consumption assessment."Decree on Improving the Energy Performance of Buildings Undergoing Renovation or Alteration" was issued in February 2013 and entered in force on 1.6 2013		
2. Field of application	EPBD / RED requirement	EPBD / RED reference	Content in Member States national definition	Explanation, comment, source
2.1 building category	<i>Member States shall ensure that all new buildings are nearly zero- energy buildings by 31 December</i>	EPBD article 9.1a/b	residential/non-residential	Explanation: directive means national regulation in this context. Exceptions in

<ul style="list-style-type: none"> ▪ single-family houses ▪ apartment blocks ▪ offices ▪ educational buildings ▪ hospitals ▪ hotels and restaurants ▪ sports facilities ▪ wholesale and retail trade service buildings ▪ other types of energy-consuming buildings 	<p>2020 respectively after 31 December 2018 (occupied and owned by public authorities). For the purpose of the calculation buildings should be adequately classified into the [...] categories.</p>	<p>EPBD annex I</p>	<p>included in directive included in directive</p>	<p>sport facilities: probably no NZEB requirements for swimming halls and ice stadiums. Probably special requirements for other types of energy-consuming buildings.</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>The regulations apply to new construction and to renovations and alterations. Road map for energy efficient construction statutes indicates measures and policies for new construction and retrofit of buildings.</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>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 building's consumption of delivered energy is energy which is obtained for the building e.g. from the electric power network, the district heating network, the district cooling network and as energy contained in renewable or fossil fuels. Delivered energy consists of the energy</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>	<p>The total energy consumption assessment covers all energy consumption which takes place within the building</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>considered</p> <p>possible to add</p> <p>not defined</p> <p>not defined</p>	<p>Delivered energy consists of the energy consumption of heating, ventilation and refrigeration systems plus consumer appliances and lighting,..</p>
3.4 system boundary generation / renewable energy sources included				
<ul style="list-style-type: none"> ▪ generation on-site ▪ generation near by ▪ generation external 	<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</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>not defined</p>	<p>Renewable energy produced on-site is renewable energy produced from local renewable energy sources by equipment belonging to the property, with the exception of renewable fuels. Renewable energy produced on-site is, for example, energy produced in solar panels and solar collectors, local wind energy and energy taken from a heat source by a heat pump. Renewable fuels on the other hand are treated as a component of</p>

▪ crediting	heating and cooling [...].		not considered	renewable delivered energy.
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	other	not yet decided for NZEB:s.
3.6 monthly accounting limitation			nothing defined	not yet decided for NZEB:s.
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	conditioned area	heated Internal floor area (IFA)
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	delivered / site energy	A building's total energy consumption, i.e. the E-value (kWh/m ²), means the building's computational annual consumption of delivered energy (weighted by a form-of-energy coefficient) calculated by rules given in the regulations ("standard use") per heated net area. The energy coefficients are based on national primary energy factors and are given in Government Decree (9/2013)
4.3 secondary metric			energy need	Possibly in renovations. Also U-values and renewable energy appliance
4.4 symmetric or asymmetric weighting			select and describe right	
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	Static conversation factors are used at the moment in the national energy requirements. It will be studied how the

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 [...] [...] 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	not defined	The aim of the structure of the new building regulations was that they make it possible to set a minimum level for renewable energy and to gradually shift towards nearly zero-energy construction.
5.2 temporal performance				
▪ load match			not defined	Not yet decided, work is on-going for NZEB and RED
▪ grid interaction			not defined	
5.3 energy performance or rating requirements	<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 [...] The energy performance [...] shall [...] include an</i>	EPBD article 2.2	not defined	NZEB is not yet defined. At the moment the regulations set an upper limit for a building's total energy consumption,
▪ energy performance indicator	<i>The energy performance indicator and a numeric indicator of primary energy use [...]</i>	EPBD Annex 1		NZEB is not yet defined. At the moment the regulations set an upper limit for energy need or U-values when building
▪ numeric indicator of primary energy use				NZEB is not yet defined. At the moment for new buildings and for renovations E-indicator is utilised i.e. the E-value

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	Will be defined in NZEB regulations. At the moment this is regulated in "Decree on Energy Management of Buildings (2/11)"
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 in other regulation	This is regulated in "Decree on Indoor climate and ventilation of buildings."
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	This is regulated in "Decree on Energy Management of Buildings (2/11)" and in Government decree on determination of electricity supply and metering (66/2009).

