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National plan for increasing the number of nearly zero-energy buildings in Estonia

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Date: **15 May 2013**

Project number: **BUIDE13616**

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Table of contents

1 Starting point

Please give a short overview of your national building stock. Describe the most important characteristics and emerging needs. Additionally, illustrate the chronological development of national requirements on the energy performance of buildings (for an example, see guidance document)

According to the 2000 Population and Housing Census there were 617 400 dwellings in Estonia, the current statistics estimated that on 1 January 2007 there were 638 200 dwellings in Estonia, with most of them (96 per cent) in private ownership. Consequently there are more dwellings than households in Estonia. In 2006 the estimated number of households was 573 400, the average household had 2.3 members. In 2000 the respective figure was 575 300, thus the number of households has decreased by two thousand over six years. Every third household lived in Tallinn or in the surrounding Harju County in 2006. 65.7 per cent of dwellings are situated in cities and towns and 34.3 per cent in the country. 10 per cent of all households live in farmhouses, 19.5 per cent in family dwellings and terraced houses and 70.5 per cent in apartment buildings. The relatively large share of apartment buildings in the housing stock resulted from the structure of construction activities in 1950-1990, when most of the residential houses built were apartment buildings. An estimated 70 per cent of dwellings built before World War II were private houses and privately owned rented dwellings. According to the Ministry of Justice data there were 8 204 apartment associations and dwelling associations in Estonia in June 2006. Estonia is unique in the world in that ca 60 per cent of the population are members of apartment associations.

As at the first half of 2007 91.8 per cent of the dwellings were permanently inhabited. The total floor area of inhabited dwellings was 38 760 000 m2 and the average floor area per capita was 28.9 m2. Two-room apartments make up the biggest number of dwellings, i.e. 229 860 apartments or 36 per cent of the total. As regards the supply of housing Estonia ranks among the relatively well stocked European countries. Although according to statistics Estonia has no housing problem, since there are uninhabited and vacant dwellings and one household normally has more than one dwelling, still many dwellings are shared by several households. There are both economic and social reasons for sharing dwellings. According to the 2000 Population and Housing Census 92.6 per cent of households resided separately and 7.4 per cent did not have their own dwelling. Four per cent or 22 629 of the households think that the lack of separate dwelling is a serious problem. In addition to difficulties in entering the housing market high housing costs is another serious problem, considered significant by 30.7 per cent of the households.

The first version of the regulation Minimum requirements for energy performance was adopted in 2007. It defined minimum energy performance indicators for 6 types of buildings (small residential buildings 180 kWh/(m2y), apartment buildings 150 kWh/(m2y), office buildings 220 kWh/(m2y), business buildings 300 kWh/(m2y), healthcare buildings 400 kWh/(m2y), indoor swimming hall 800 kWh/(m2y)). That version of the regulation also set minimum requirements for buildings undergoing major renovations. Two years later, in 2009, the regulation was updated although the energy performance indicators were not updated. A major update was passed in 2012 and is in force since 2013, that third version of the regulation is currently still in force.

2 Application of the definition of nearly zero-energy buildings

Please indicate how a nearly zero-energy building is defined within national context and explain underlying assumptions and factors that provide the rationale for the chosen definition.

For reporting the detailed application in practice of the definition of nearly zero-energy buildings, the table presented in the Annex is to be used.

A near-zero energy building is a building which is characterised by sound engineering solutions, which is built according to the best possible construction practice, which employs energy efficiency and renewable energy technology solutions and whose energy performance indicator is greater than 0 kWh/(m2*y) but does not exceed the limit values established.

3 Intermediate targets for improving the energy performance of new buildings in order to ensure that by 31 December 2020 all new buildings are nearly zero-energy buildings

Please report the 2015 targets ensuring that by 31 December 2020 all new buildings are nearly zero-energy buildings. Also explain how they relate to and help to ensure that all new buildings are nearly zero-energy buildings by 31 December 2020.

What are the qualitative and quantitative 2015 targets for all new buildings?

3.1.1 Qualitative 2015 targets: Interim energy related requirements for new residential and non-residential buildings

Requirements on fraction of renewable energies: We have not set a specific requirement for fraction of renewable energies.

Requirements on useful energy demand: We have not set requirements for useful energy demand.

Requirements on primary energy demand:
1) in small residential buildings, 50 kWh/(m2 y);
2) in apartment buildings, 100 kWh/(m2 y);
3) in office buildings, libraries and research buildings, 100 kWh/(m2 y);
4) in business buildings, 130 kWh/(m2 y);
5) in public buildings, 120 kWh/(m2 y);
6) in commerce buildings and terminals, 130 kWh/(m2 y);
7) in educational buildings, 90 kWh/(m2 y);
8) in pre-school institutions for children, 100 kWh/(m2 y);
9) in healthcare buildings, 270 kWh/(m2 y).
These are the energy performance requirements that are currently in place, we expect to update them in 2016.

3.1.2 Quantitative 2015 targets: Share of nZEB according to official nZEB definition on all newly constructed buildings (define reference parameter e.g. number of buildings, floor area, volume etc.):

Estonia has not yet established quantitative 2015 targets, relating to nZEB. But we have defined targets for 2030, in our energy roadmap ENMAK 2030+, which uses the reference level of 2010 and constructs three building stock improvement scenarios by 2030.

Miscellaneous:

From your point of view, how close is your country at the moment in achieving this target? In case there is no target defined yet, please indicate when it is expected to have such a target.

4 Intermediate targets for improving the energy performance of new buildings in order to ensure that by 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings

Please report here the 2015 targets ensuring that by 31 December 2018 all new public buildings are nearly zero-energy buildings. Also explain how they relate to and help to achieve that by 31 December 2018, all new public buildings are nearly zero-energy buildings

What are the qualitative and quantitative 2015 targets for all new buildings occupied and owned by public authorities?

4.1.1 Qualitative 2015 targets: Interim energy related requirements for new public buildings

Requirements on fraction of renewable energies: We have not set a specific requirement for fraction of renewable energies.

Requirements on useful energy demand: We have not set requirements for useful energy demand.

Requirements on primary energy demand:
Same cost-optimal energy performance indicators apply for new public buildings that are mentioned in point 3.1.1.

4.1.2 Quantitative 2015 targets: Share of public nZEB according to official nZEB definition on all newly constructed public buildings (define reference parameter e.g. number of buildings, floor area, volume etc.):

Miscellaneous:
Our goal is to build 10 nearly zero-energy buildings in the public sector, with the combined floor area of 5000m2.

From your point of view, how close is your country at the moment in achieving this target? In case there is no target defined yet, please indicate when it is expected to have such a target.

5 Policies and measures for the promotion of all new buildings being nearly zero-energy buildings after 31 December 2020

5.1 Residential buildings
5.1.1 Relevant regulations Minimum requirements for energy performance, Methodology for calculating the energy performance of buildings
5.1.2 Relevant economic incentives and financing instruments
5.1.3 Energy performance certificates' use and layout in relation to nZEB standard
5.1.4 Supervision (energy advice and audits)
5.1.5 Information (tools)
5.1.6 Demonstration
5.1.7 Education and training Buildest II and upcoming Buildest III
5.2 Non-residential buildings
5.2.1 Relevant regulations Minimum requirements for energy performance, Methodology for calculating the energy performance of buildings
5.2.2 Relevant economic incentives and financing instruments
5.2.3 Energy performance certificates' use and layout in relation to nZEB standard
5.2.4 Supervision (energy advice and audits)
5.2.5 Information (tools)
5.2.6 Demonstration
5.2.7 Education and training Buildest II and upcoming Buildest III
5.3 From your point of view, how would you evaluate the current measures that are in force? Please also try to describe the existing gap between what is in force and what should be in force in order to ensure that after 31 December 2020, all new buildings are nearly zero-energy buildings. Are there precise measures planned for the future?
We have not set very strict measures and we will see how the market will respond to increasing the minimum energy performance requirements that will happen after every 3 years. We would like to avoid a serious back-lash if it turns out that all nZEB solutions are currently not cost optimal or characterised as sound engineering solutions.

6 Policies and measures for the promotion of all new buildings occupied and owned by public authorities being nearly zero-energy buildings after 31 December 2018

6.1 All new buildings occupied and owned by public authorities
6.1.1 Relevant regulations Minimum requirements for energy performance, Methodology for calculating the energy performance of buildings
6.1.2 Relevant economic incentives and financing instruments
6.1.3 Energy performance certificates' use and layout in relation to nZEB standard
6.1.4 Supervision (energy advice and audits)
6.1.5 Information (tools)
6.1.6 Demonstration
6.1.7 Education and training Buildest II and upcoming Buildest III
6.2 From your point of view, how would you evaluate the current measures that are in force? Please also describe the existing gap between what is in force and what should be in force in order to ensure that after 31 December 2018, all new public buildings are nearly zero-energy buildings. Are there precise measures planned for the future?
We have not set very strict measures and we will see how the market will respond to increasing the minimum energy performance requirements that will happen after every 3-5 years. We would like to avoid a serious back-lash if it turns out that all nZEB solutions are currently not cost optimal or characterised as sound engineering solutions.

7 Policies and measures for the promotion of existing buildings undergoing major renovation being transformed to nearly zero-energy buildings

7.1 Residential buildings
7.1.1 Relevant regulations Minimum requirements for energy performance, Methodology for calculating the energy performance of buildings
7.1.2 Relevant economic incentives and financing instruments Grants provided by KredEx for the renovation of small houses and apartment buildings
7.1.3 Energy performance certificates' use and layout in relation to nZEB standard
7.1.4 Supervision (energy advice and audits)
7.1.5 Information (tools)
7.1.6 Demonstration
7.1.7 Education and training Buildest II and upcoming Buildest III
7.2 Non-residential buildings
7.2.1 Relevant regulations Minimum requirements for energy performance, Methodology for calculating the energy performance of buildings
7.2.2 Relevant economic incentives and financing instruments
7.2.3 Energy performance certificates' use and layout in relation to nZEB standard
7.2.4 Supervision (energy advice and audits)
7.2.5 Information (tools)
7.2.6 Demonstration
7.2.7 Education and training Buildest II and upcoming Buildest III
7.3 From your point of view, how would you evaluate the current measures that are in force? Please also try to describe the existing gap between what is in force and what should be in force in order to stimulate the transformation of buildings that are refurbished into nZEB. Are there precise measures planned for the future?

8 Additional Information

Please fill in any additional information on actions taken to increase the number of nearly zero-energy buildings in your country.

In 2015 we plan to develop five standard projects for nZEBs with specific construction guidelines for small residential buildings and apartment buildings that will be published for public use.

9 Possible improvements

Where do you see most room for improvement in order to increase the number of nearly zero-energy buildings in your country? Please also try to give examples for appropriate measures.

We need to have positive examples of nearly zero-energy buildings that are cost optimal and prove that investing in nZEB will be beneficial, over a period of many years.

Annex- Definition of nZEB

1. General Information		
Country	ESTONIA	
Name of regulation ,directive, certification scheme	Minimum requirements for energy performance	
Editor of regulation, directive, certification scheme	Ministry of Economic Affairs and Communications	
Year of introduction of current version	2012 In force since 2013, the latest update in 2014	
benchmark of current version (Select one)	○ **Energy Autonomous building** ○ **Net zero energy buildings** ◉ **Nearly zero energy buildings** ○ **Other** ○ **Efficient buildings** ○ **Plus energy buildings** ○ **Zero energy buildigns**	
Integration and consideration in national directive	Please add explanation/ comment/ source considered NZEBs are defined in the regulation Minimum requirements for energy performance.	
2. Field of Application		
2.1 Building category **Select one and describe right is this typology included in the directive? Are special requirements or exceptions defined for this typology?** **If more than one definition exists, you can duplicate this appendix for each of them.**		
Member States shall ensure that all new buildings are nearly zero- energy buildings by 31 December 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. References: EPBD article 9.1a/b, EPBD Annex I.		
Category ○ **Residential** ○ **Non-residential** ◉ **Residential and Non-residential**		We have defined energy performance requirements for 2 types of residential buildings: 1) small residential buildings (residential buildings with one or two apartments, or terraced houses); 2) apartment buildings (residential buildings with three or more apartments, including buildings of social welfare institutions and residence halls, excepting terraced houses). And for 7 types of non-residential buildings: 1) office buildings, libraries and research buildings; 2) business buildings (accommodation buildings, food service buildings, service buildings, excepting office buildings and commercial buildings); 3) public buildings (entertainment buildings, excepting the buildings of a zoological park or botanical gardens; sports buildings, excepting indoor ice rinks and riding halls; museum and library buildings, excepting libraries; excepting terminal buildings); 4) commercial buildings and terminal buildings; 5) educational buildings (excepting pre-school institutions for children); 6) pre-school institutions for children; 7) healthcare buildings (hospitals and other treatment buildings, excepting buildings of care institutions).
single family houses	included in the directive	50 kWh/(m2 a)
apartment blocks	included in the directive	100 kWh/(m2 a)
Offices	included in the directive	100 kWh/(m2 a)
educational buildings	included in the directive	90 kWh/(m2 a)
hospitals	included in the directive	270 kWh/(m2 a)
hotels and restaurants	included in the directive	130 kWh/(m2 a)
sports facilities	included in the directive	120 kWh/(m2 a)
wholesale and retail trade service buildings	included in the directive	130 kWh/(m2 a)

other types of energy-consuming buildings	included in the directive	Kindergartens: 100 kWh/(m2 a)

2.2 New/retrofit buildings

Select one and describe right. If more than one definition exists, you can duplicate this appendix for each of them.

New, and existing buildings that are subject to major renovation, should meet minimum energy performance requirements adapted to the local climate.
Member States shall furthermore [...] stimulate the transformation of buildings that are refurbished into nearly zero-energy buildings. Reference: EPBD preamble recital 15, EPBD article 9.2.

○ **New buildings** ○ **Retrofit** ◉ **New and retrofit**	**The energy performance indicator of a building to be constructed may not exceed the following ceiling values:** 1) in small residential buildings, 160 kWh/(m2 y); 2) in apartment buildings, 150 kWh/(m2 y); 3) in office buildings, libraries and research buildings, 160 kWh/(m2 y); 4) in business buildings, 210 kWh/(m2 y); 5) in public buildings, 200 kWh/(m2 y); 6) in commerce buildings and terminals, 220 kWh/(m2 y); 7) in educational buildings, 160 kWh/(m2 y); 8) in pre-school institutions for children, 190 kWh/(m2 y); 9) in healthcare buildings, 380 kWh/(m2 y). **The energy performance indicator of a building undergoing major renovation may not exceed the following ceiling values:** 1) in small residential buildings, 210 kWh/(m2 y); 2) in apartment buildings, 180 kWh/(m2 y); 3) in office buildings, libraries and research buildings, 210 kWh/(m2 y); 4) in business buildings, 270 kWh/(m2 y); 5) in public buildings, 250 kWh(m2 y); 6) in commerce buildings and terminals, 280 kWh/(m2 y); 7) in educational buildings, 200 kWh/(m2 y); 8) in pre-school institutions for children, 240 kWh/(m2 y); 9) in healthcare buildings, 460 kWh/(m2 y).

2.3 Private/public buildings

Select one and describe right. If more than one definition exists, you can duplicate this appendix for each of them.

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. Reference: EPBD article 9.1a/b

○ **Private** ○ **Public** ◉ **Public and private**	After every 5 years the minimum requirements for energy performance shall be renewed, taking into account the technical progress that has occurred in the past years.

3. Energy Balance and calculation

3.1 Balance Type

Describe how renewable energy is calculated / included in the energy balance (e.g. renewable heat from solar thermal collectors reduces energy use for heat and DHW; renewable electricity reduces/compensates delivered electricity).

[...] 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
Energy performance of a building means the calculated or measured amount of energy needed to meet the energy demand [...]. Reference: EPBD article 2.2, EPBD article 2.4

○ **energy demand vs energy generation** ◉ **energy import vs energy export** ○ **virtual balance between demand and generation** ○ **not specified** ○ **other**	Energy use is calculated on the basis of energy need, taking into account system losses and energy conversion losses. At the end-point of a building technical system (usually the connection point to the corresponding energy network), the energy use of the utility system equals the sum of delivered energy and local renewable energy.

3.2 Physical boundary

Select the widest possible boundary and describe right if/which further subdivisions are possible

This directive lays down requirements as regards the common general framework for [...] buildings and building units. […] building' means a roofed construction having walls, for which energy is used to condition the indoor climate. Reference: EPBD article 1.2, EPBD article 2.1

○ **single building** ○ **building unit** ○ **building unit** ◉ **building site** ○ **cluster of buildings** ○ **quarter or city** ○ **other**	For the purposes of calculating the energy balance, in addition to the envelope of the building and its utility systems, the local energy generation systems (such as solar collectors and panels, wind turbines, combined heat and power producers) which are located within the building or within the building site and which service the building are regarded as parts of the building. Utility systems (such as district heating) which are connected to an energy network, up to the connection point to the energy network, are regarded as part of the building.

3.3 System boundary demand / energy uses included

Define if this load sector is included in the energy balance calculation (other requirements like maximum consumption values can be described below under item 5, further requirements).

[...] 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. Reference: EPBD article 2.4

space heating, domestic hot water	considered	Please add explanation/ comment/ source
ventilation, cooling, air conditioning	considered	Please add explanation/ comment/ source
auxiliary energy	considered	Please add explanation/ comment/ source
lighting	considered	Please add explanation/ comment/ source
plug loads, appliances, IT	considered	Please add explanation/ comment/ source
central services	considered	Please add explanation/ comment/ source
electric vehicles	not defined	The energy use of electric cars is included, if the charge the batteries from the electrical home grid. But it is not defined as an individual part of the energy demand. If a special charging station is used it may not be included in the boundary of the house.
embodied energy	not defined	Please add explanation/ comment/ source

3.4 System boundary generation / renewable energy sources included

Select and explain right (e.g. only in building's physical footprint, on-site, on-site incl. import of off-site renewables like pellets, wood chips, rape oil etc.). How is CHP (based on non-renewable energy carriers like natural gas or oil) included?

[...] 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. [...] 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. [...] minimum levels of energy from renewable sources [...] to be fulfilled, inter alia, through district heating and cooling [...]. Reference: EPBD article 2.2,EPBD article 2.6, EPBD article 13.4

generation on-site	not defined	The answer is same for all the sub-sections in point 3.4. We do not take into account the proximity of the power source, but rather the type. We have introduced weighing factors for different energy carriers: 1) fuels based on renewable energy sources (wood and wood-based fuels and other biofuels, excepting peat and peat briquettes)—0.75 2) district heating—0.9 3) liquid fuel (heating oils and liquefied gas)—1.0 4) natural gas—1.0 5) solid fossil fuels (coal, etc.)—1.0 6) peat and peat briquette—1.0 7) electricity—2.0 Those factors take into account the consumption of primary energy required for the generation of delivered energy and the environmental impact involved.

generation near by	not defined	Same as the previous answer.
generation external	not defined	Same as the previous answer.
crediting	not defined	Same as the previous answer.

3.5 Balance period / calculation step

What is the defined period of time over which the balance is calculated? Is the calculation period divided into calculation steps (e.g. one hour, one month or one heating and/or cooling season)?

[…] 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 […]. Reference: EPBD preamble recital 9
[…] 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 [...]Reference: EPBD preamble recital 10.

○ **Life cycle balance** ◉ **Yearly** ○ **Seasonal** ○ **Other**	Energy consumption is represented by the energy performance indicator [kWh/(m2 y)] – aggregate weighted specific consumption of delivered energy consumed in the course of standard use of the building, less the weighted specific consumption of energy fed into energy networks.

3.6 Monthly accounting limitation

Is a monthly accounting limit defined? Is it based on end energy (e.g. monthly electricity generation compensates monthly electricity loads) or on primary energy (any monthly generation compensates any loads)? Are surpluses transferred to an annual balance?

○ **monthly source based end energy crediting** ○ **monthly primary energy crediting** ◉ **nothing defined** ○ **other**	Please add explanation/ comment/ source

4. Accounting system

4.1 Normalization

[…] including a numerical indicator of primary energy use expressed in kWh/m² per year. Reference: EPBD article 9.3a

○ **person** ○ **gross floor area** ○ **net floor area** ○ **gross volume** ○ **net volume** ○ **usable floor area** ○ **treated floor area** ○ **conditioned area** ◉ **other**	The annual energy consumption is normalized based on heated area of the building.

4.2 Primary metric

Indicate which metric is used for the energy performance calculation / energy balance and give input on (the source of) the conversion factors on the right. Possible sources are e.g. EN 15603 or national and regional codes.

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. Reference: EPBD Annex 1.

[...] including a numerical indicator of primary energy use expressed in kWh/m 2 per year. Reference: EPBD 9.3a
[…] primary energy' means energy from renewable and non- renewable sources which has not undergone any conversion or transformation process. Reference : EPBD article 2.5

○ energy need ● energy use ○ delivered/site energy ○ primary / source energy (renewable part included) ○ primary / source energy (renewable part not included) ○ (equivalent) carbon emissions ○ exergy ○ energy costs ○ environmental credits ○ points (labeling system) ○ other	The primary metric is specific use - the annual energy use in kilowatt-hours per square metre of heated area of a building [kWh/(m^2 y)].

4.3 Secondary metric

○ energy use ○ energy need ○ delivered/site energy ○ primary / source energy (renewable part included) ○ primary / source energy (renewable part not included) ○ (equivalent) carbon emissions ○ exergy ○ energy costs ○ environmental credits ○ points (labeling system) ○ other	Please add explanation/ comment/ source

4.4 Symmetric or asymmetric weighting

● symmetrical weighting ○ asymmetrical weighting	Our weighting factors are based on use of primary energy required for the generation of delivered energy and the environmental impact involved and they are symmetric for delivered and exported energy.

4.5 Time dependent weighting

Static: no time dependent weighting (annual constant weighting/factors)
Quasi-static: seasonal/monthly average weighting factors

Dynamic: weighting factors based on shorter time periods /hourly basis (according to energy offer and demand in the grid)	
Primary energy factors […] may be based on national or regional yearly average values and may take into account […] European standards. Reference: EPBD 9.3a	
◉ **static conversion factors** ○ **quasi static conversion factors** ○ **dynamic conversion factors**	Please add explanation/ comment/ source
5. Further requirements	
5.1 Fraction of renewables Select and describe right if guidelines are given for any fraction of renewable energy and indicate how/at which level a certain fraction is calculated (e.g. solar thermal heat might be a fraction of energy use, electricity from PV a fraction of delivered energy.)	
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 [...] Reference: RED article 13.4 *[...] The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources [...]Reference : EPBD article 2.2*	
○ **defined** ◉ **not defined** ○ **defined in other regulation**	Please add explanation/ comment/ source
5.2 Temporal performance Describe if any requirements are given for a temporal match between on-site energy load and on-site energy generation (load match) and which calculation procedures are applied.	
Load match ○ **defined** ◉ **not defined**	Please add explanation/ comment/ source
Grid interaction ○ **defined** ◉ **not defined**	Please add explanation/ comment/ source
5.3 Energy performance or rating requirements Are limitations given for a standard energy rating, an energy indicator or maximum demands for heating, cooling, embodied energy, demand of appliances, etc.? If yes, type the values and give explanations on the right	
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 energy performance indicator and a numeric indicator of primary energy use [....]. Reference : EPBD article 2.2, EPBD Annex 1.*	
Performance or rating ◉ **defined** ○ **not defined**	Please add explanation/ comment/ source

○ **defined in other regulation**	
Energy Performance indicator Is an energy performance indicator defined? If yes, type the values and the according unit.	The energy performance indicator of a near-zero energy building may not exceed the following limit values: 1) in small residential buildings, 50 kWh/(m^2 y); 2) in apartment buildings, 100 kWh/(m^2 y); 3) in office buildings, libraries and research buildings, 100 kWh/(m^2 y); 4) in business buildings, 130 kWh/(m^2 y); 5) in public buildings, 120 kWh/(m^2 y); 6) in commerce buildings and terminals, 130 kWh/(m^2 y); 7) in educational buildings, 90 kWh/(m^2 y); 8) in pre-school institutions for children, 100 kWh/(m^2 y); 9) in healthcare buildings, 270 kWh/(m^2 y).
Numeric indicator of primary energy use Is a numeric indicator of primary energy use defined? If yes, type the values and the according unit.	Give further explanation
5.4 General framework / prescriptive requirements Describe which guidelines are given for: Thermal characteristics (insulation, thermal bridges, thermal capacity, passive heating, internal loads, solar protection) Efficiency of installations (hot water supply, air-conditioning, lighting fan power)	
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. Reference: EPBD Annex 1	
○ **defined** ● **not defined** ○ **defined in other regulation**	We have defined requirements for the envelope of the building (thermal transmittance values for the walls, roofs, windows and doors) but they are rather for minimum energy performance requirements, not for nZEB buildings specifically.
5.5 Definition of comfort level & IAQ requirements (for winter and summer season, beside other national directives) Describe which guidelines are given for indoor climatic conditions, minimum or maximum indoor temperature, minimum lighting levels/ daylight availability, minimum ventilation rates/ natural ventilation, indoor air quality, max. CO2 levels, etc.	
This Directive [...] takes into account [...] indoor climate requirements [...] Reference: EPBD article 1.1 *The methodology shall [...] take into consideration: [...] indoor climatic conditions [...]Reference: EPBD Annex 1* *That includes […] indoor air-quality, adequate natural light […].Reference:* *EPBD preamble recital 9*	
● **defined** ○ **not defined** ○ **defined in other regulation**	We have defined requirements for ventilation rates [l/(s m2)] and for summertime indoor temperature.
5.6 Monitoring procedure Describe if and how a monitoring mandatory is formulated; calculated or measured values are used; an evaluation of the indoor environmental quality is considered; which calculation step is used.	
[…] energy performance of a building means the calculated or measured amount of energy needed […] Reference: EPBD article 2.4 *Member States shall encourage the introduction of intelligent metering systems […] and the installation of automation,*	

control and monitoring systems […]. Reference: EPBD article 8.2	
◉ **defined** ○ **not defined**	Where parts of new buildings with indoor climate control, or parts of existing buildings with indoor climate control which undergo major renovation are intended to be used separately and may have different owners or may, in accordance with the law, be leased for a fee, the heating system that services such parts must be designed to include devices which must be actually installed and which make it possible to determine the energy consumption of those parts of the building for the purposes of heating.

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