Guidance document for national plans for increasing the number of nearly zero-energy buildings
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Introduction

EPBD reporting requirements on national plans for increasing the number of nearly zero-energy buildings

The EPBD encompasses reporting requirements on national plans for increasing the number of nearly zero-energy buildings for both the European Commission and the Member States.

Reporting requirements for the Member States

Member States shall draw up national plans for increasing the number of nearly zero-energy buildings (EPBD Article 9 paragraph 1). These national plans may include targets differentiated according to the category of building. Furthermore the national plans shall include, in a nutshell, the following elements (EPBD Article 9 paragraph 3):

- The Member State’s detailed application in practice of the definition of nearly zero-energy buildings, i.e. their EPBD based national definition of nearly zero energy buildings.
- Intermediate targets for improving the energy performance of new buildings, by 2015, with a view to all new buildings being nearly zero-energy buildings after 31 December 2020 or new buildings occupied and owned by public authorities being nearly zero-energy buildings after 31 December 2018 respectively.
- Information on the policies and financial or other measures for the promotion of nearly zero-energy buildings with a view to new buildings.
- Information on the policies and financial or other measures for the promotion of nearly zero-energy buildings with a view to buildings undergoing major renovation.

Reporting requirements for the European Commission

According to the Energy Performance of Buildings Directive (EPBD), the Commission shall publish a report on the progress of Member States in increasing the number of nearly zero-energy buildings (EPBD Article 9 paragraph 5). On the basis of that report the Commission shall develop an action plan and, if necessary, propose measures to increase the number of those buildings and encourage best practices as regards the cost-effective transformation of existing buildings into nearly zero-energy buildings.

The Commission’s report builds on the Member States’ reports.

Related articles and paragraphs are specified in Annex 2.

---

1 According to Article 2 of the EPBD, ‘nearly zero-energy building’ means a building that has a very high energy performance, as determined in accordance with Annex I. The remaining energy required should be covered to a very significant extent by energy from renewable sources, including renewable energy produced on-site or nearby.


How to use the reporting template
The European Commission recommends that the Member States use the reporting template. Member States should possibly leave the structure unchanged and fill/answer all requested items. If an answer cannot be given, please explain why.
National plans for increasing the number of nearly zero-energy buildings are due by 31 September 2012.

Evaluation of national plans by the Commission
"The Commission shall evaluate the national plans ... notably the adequacy of the measures envisaged by the Member States... ." (EPBD Article 9, paragraph 4). After having received the national plan the Commission "... may request further specific information regarding the requirements set out in paragraphs 1,2 and 3", which form the basis of the questions in this template. "In that case, the Member State concerned shall submit the requested information or propose amendments within nine months following the request from the Commission. Following its evaluation, the Commission may issue a recommendation."

For the purpose of the evaluation, the Commission has developed an analytical framework, including benchmarks for the technical and economic adequacy of measures.

Based on the results of the evaluation, according to EPBD Article 9 paragraph 5 "the Commission shall by 31 December 2012 and every three years thereafter publish a report on the progress of Member States in increasing the number of nearly zero-energy buildings. On the basis of that report the Commission shall develop an action plan and, if necessary, propose measures to increase the number of those buildings and encourage best practices as regards the cost-effective transformation of existing buildings into nearly zero-energy buildings."
1 Starting point
As an introduction to the national report, each Member State should give an introduction by describing the starting point for the implementation of nearly zero-energy buildings in the country. For this purpose, Member States should address, in particular, the following two topics:

1. Building stock characteristics;
2. Development of national requirements on the energy performance of buildings.

Within the description of the building stock characteristics, the size and age structure of the residential as well as the non-residential building stock should be addressed and the most emerging needs should be highlighted.

Additionally, the chronological development of national requirements on the energy performance of buildings should be illustrated. As an example, Figure 1 shows how such an illustration could look like.

![Figure 1: Example of the development of national requirements on the energy performance of buildings (Germany):](image-url)
2 Application of the definition of nearly zero-energy buildings

According to EPBD Article 9 Paragraph 3(a) the “national plans shall include (...) the Member State’s detailed application in practice of the definition of nearly zero-energy buildings, reflecting their national, regional or local conditions, and including a numerical indicator of primary energy use expressed in kWh/m² per year. Primary energy factors used for the determination of the primary energy use may be based on national or regional yearly average values and may take into account relevant European standards.”

In this section, Member States should indicate how a nearly zero-energy building is defined within their national context and explain underlying assumptions and factors that provide the rationale for the chosen definition.

Specifically, the following EPBD requirements have to be addressed:

- The building needs to have a very high energy performance:
  - The amount of energy required should be nearly zero or very low;
  - The energy required should be covered to a significant extent by energy from renewable sources;
- Inclusion of a numerical indicator of primary energy use expressed in kWh/m² per year;
- Primary energy use may be based on national or regional yearly average values and may take into account relevant European standards.

For reporting the detailed application of the definition of nearly zero-energy buildings in practice, the table presented in Annex 1 is to be used.
For a description of the balance type in Annex 1 section 3.1, please consider Figure 2.
For a description of the system boundaries in Annex 1 section 3.4, please consider Figure 3.

Figure 3 System boundary generation / renewable energy source

For a description of the normalization factors in Annex 1 section 4.1, please consider Figure 4.

Figure 4 Normalization considered in accounting system of nZEB
For a description of the fraction of renewables in Annex 1 section 5.1, please consider Figure 5.
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

EPBD Article 9 Paragraph 3(a) stipulates that "national plans shall include (…) intermediate targets for improving the energy performance of new buildings, by 2015, with a view to preparing the implementation of paragraph 1 of Article 9 ("(a) by 31 December 2020, all new buildings are nearly zero-energy buildings").

Member States should set targets for 2015 aiming to improve the energy performance of new buildings and enabling a smooth transition towards the full practical implementation of the EPBD for new buildings in 2020. The qualitative and quantitative 2015 targets should be explicitly reported in this section. The qualitative and quantitative 2015 targets should be explicitly reported in this section.

The qualitative 2015 targets should be focus on energy related requirements for new residential and non-residential buildings and in this context specifically determine

- Requirements on the fraction of renewable energies:
- Requirements on the useful energy demand:
- Requirements on the primary energy demand:

The quantitative 2015 target should contain the aimed share of nearly zero-energy buildings according to official nearly zero-energy building definition or a comparable standard on all newly constructed buildings. Here, the reference parameter as for example the number of buildings, floor area, volume etc. has to be defined.

If available, also miscellaneous targets of all kinds for residential and commercial nearly zero-energy buildings should be stated in this chapter.

A distinction should be made between residential and non-residential buildings.

A rationale should be given for the definition of the targets and the way in which the set targets relate to and help to ensure that all new buildings are nearly zero-energy buildings (EPBD Article 9 Paragraph 1(a)) by 31 December 2020.

Note: Chapter 3.1.2 of the National energy efficiency action plan "National targets for nearly zero-energy buildings" also asks for this information. Therefore, please check whether this information has already been answered in the NEEAP and, if useful, consider this as an input here.
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

EPBD Article 9 Paragraph 3(a) stipulates that “national plans shall include (...) intermediate targets for improving the energy performance of new buildings, by 2015, with a view to preparing the implementation of paragraph 1 of Article 9 (“(b) after 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings.”)

Member States should set targets for 2015 aiming to improve the energy performance of new public buildings and enabling a smooth transition towards the full practical implementation of the EPBD for new public buildings in 2018. The qualitative and quantitative 2015 targets should be explicitly reported in this section. The qualitative and quantitative 2015 targets should be explicitly reported in this section.

The qualitative 2015 targets should be focus on energy related requirements for new residential and non-residential buildings and in this context specifically determine

- Requirements on the fraction of renewable energies:
- Requirements on the useful energy demand:
- Requirements on the primary energy demand:

The quantitative 2015 target should contain the aimed share of nearly zero-energy buildings according to official nearly zero-energy building definition or a comparable standard on all newly constructed buildings. Here, the reference parameter as for example the number of buildings, floor area, volume etc. has to be defined.

If available, also miscellaneous targets of all kinds for residential and commercial nearly zero-energy building should be stated in this chapter.

A rationale should be given for the definition of the targets and the way in which the set targets relate to and help to ensure that new buildings occupied and owned by public authorities are nearly zero-energy buildings (EPBD Article 9 Paragraph 1(b)) by 31 December 2018.

Note: Chapter 3.1.2 of the National energy efficiency action plan “National targets for nearly zero energy buildings” also asks for this information. Therefore, please check whether this information has already been answered in the NEEAP and, if useful, consider this as an input here.
5 Policies and measures for the promotion of all new buildings being nearly zero-energy buildings after 31 December 2020

EPBD Article 9 Paragraph 3(c) stipulates that “national plans shall include (...) Information on the policies and financial or other measures (...) for the promotion of nearly zero-energy buildings.” with view to achieving the goal that “by 31 December 2020, all new buildings are nearly zero-energy buildings” (Article 9, Paragraph 1 (a)).

In this section, Member States should report on the measures targeted at all new buildings both private and public. For new buildings, Article 6 of the recast EPBD regulates that “measures should be taken (...) to ensure that new buildings meet the minimum energy performance requirements.” Guidelines for setting energy performance requirements are set out in Article 4 (1) of the EPBD and include, inter alia, that “minimum energy performance requirements for buildings or building units are set with a view to achieving cost-optimal levels.”

The reporting in this section should include “details of national requirements and measures concerning the use of energy from renewable sources in new buildings (…)” (Article 9, Paragraph 3(c) of EPBD) in view of Article 13(4) of Directive 2009/28/EC which requires that “By 31 December 2014, Member States shall, in their building regulations (…) require the use of minimum levels of energy from renewable sources.”

Summarising the above paragraph, the measures should clearly show how they:

- promote that by 31 December 2020, all new buildings are nearly zero-energy buildings;
- increase the share of all kinds of energy from renewable sources (including foreseen minimum requirements in national building codes) in all new buildings;
- increase the energy performance with a view to achieving cost-optimal levels in all new buildings.

For every measure it is recommended to provide all or some of the following information:

- Title of the energy saving measure/programme;
- Timeframe;
- Status and implementation;
- What is the approximate total and/or annual budget for the measure?
- Implementing body;
- Monitoring authority;
- Overlaps;
- Energy savings and underlying assumptions;

To avoid double work, the selection of types of measures has been adjusted to the requirements of the National Energy Efficiency Action Plans (NEEAP) and National Renewable Energy Action Plans (NREAP). When describing the measures, a differentiation between residential and non-residential buildings should be made. For further explanations of the different policies and measures, please see Annex 3. The table in reporting template lists all types of measures that should finally be described in the context of this chapter.

Note: Chapters 3.3.2.1, 3.8 and 3.10 of the NEEAP as well as chapters 4.2.2, 4.2.3, 4.2.4, 4.2.5 and 4.4 of the NREAP also ask for this information. Therefore, please check whether this information has already been answered in the NEEAP and/or NREAP and, if useful, consider this as an input here.
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

EPBD Article 9 Paragraph 3(c) stipulates that “national plans shall include (...) Information on the policies and financial or other measures (...) for the promotion of nearly zero-energy buildings.” In view of the goal that “after 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings” (Article 9, Paragraph 1 (b), recast EPBD) In this section, Member States should report on the measures targeted at all new buildings owned or occupied by public authorities. For new buildings, Article 6 of the recast EPBD regulates that “measures should be taken (...) to ensure that new buildings meet the minimum energy performance requirements.”

Guidelines for setting energy performance requirements are set out in Article 4 (1) of the EPBD and include, inter alia, that “minimum energy performance requirements for buildings or building units are set with a view to achieving cost-optimal levels.” The reporting should include “details of national requirements and measures concerning the use of energy from renewable sources in new buildings (...)” (Article 9, Paragraph 3(c), recast EPBD) in view of Article 13(4) of Directive 2009/28/EC which requires that “By 31 December 2014, Member States shall, in their building regulations (...) require the use of minimum levels of energy from renewable sources.”

Summarising the above paragraph, the measures should clearly show how they:
- promote that after 31 December 2018, all new public buildings are nearly zero-energy buildings;
- increase the share of all kinds of energy from renewable sources in public buildings;
- increase the energy performance with a view to achieving cost-optimal levels in public buildings.

For every measure it is recommended to provide all or some of the following information
- Title of the energy saving measure/programme;
- Timeframe;
- Status and implementation;
- What is the approximate total and/or annual budget for the measure?
- Implementing body;
- Monitoring authority;
- Overlaps;
- Energy savings and underlying assumptions;

To avoid double work, the selection of types of measures has been adjusted to the requirements of the National Energy Efficiency Action Plans (NEEAP) and National Renewable Energy Action Plans (NREAP). For further explanations of the different policies and measures, please see Annex 3. The table in reporting template lists all types of measures that should finally be described in the context of this chapter.

Note: Chapters 3.3.2.1, 3.4.2, 3.8 and 3.10 of the NEEAP as well as chapters 4.2.2, 4.2.3, 4.2.4, 4.2.5 and 4.4 of the NREAP also ask for this information. Therefore, please check whether this information has already been answered in the NEEAP and/or NREAP and, if useful, consider this as an input here.
7 Policies and measures for the promotion of existing buildings undergoing major renovation being transformed to nearly zero-energy buildings

In this section, measures taken to promote the transformation of both private and public existing buildings into nearly zero energy buildings should be reported pursuant to Article 9, Paragraph 2 of the recast EPBD: "Member States shall furthermore, following the leading example of the public sector, develop policies and take measures such as the setting of targets in order to stimulate the transformation of buildings that are refurbished into nearly zero-energy buildings (...)".

With regard to existing buildings, EPBD Article 7 provides that "Member States shall take the necessary measures to ensure that when buildings undergo major renovation, the energy performance of the building or the renovated part thereof is upgraded in order to meet minimum energy performance requirements (…)".

These requirements should be "set for building elements that form part of the building envelope and that have a significant impact on the energy performance of the building envelope when they are replaced or retrofitted, with a view to achieving cost-optimal levels." while "Member States may differentiate between new and existing buildings" (Article 4 (1) of the EPBD. The reported measures should ensure "the promotion of nearly zero-energy buildings (...) concerning the use of energy from renewable sources in (...) existing buildings undergoing major renovation" (Article 9, Paragraph 3(c), recast EPBD) in view of Article 13(4) of Directive 2009/28/EC which requires that "by 31 December 2014, Member States shall, in their building regulations (...) require the use of minimum levels of energy from renewable sources.”

Summarising the above paragraph, the measures should additionally show how they:

- stimulate the transformation of buildings (both public and private) that are refurbished into nearly zero-energy buildings;
- increase the share of all kinds of energy from renewable sources in the existing building stock;
- increase the energy performance of existing buildings with a view to achieving cost-optimal levels;
- ensure that the public sector takes up a leading example in transforming existing buildings into nearly zero-energy buildings.

For every measure it is recommended to provide all or some of the following information:

- Title of the energy saving measure/programme
- Timeframe;
- Status and implementation;
- What is the approximate total and/or annual budget for the measure?
- Implementing body;
- Monitoring authority;
- Overlaps;
- Energy savings and underlying assumptions.

To avoid double work, the selection of types of measures has been adjusted to the requirements of the National Energy Efficiency Action Plans (NEEAP) and National Renewable Energy Action Plans (NREAP). When describing the measures, a differentiation between residential and non-residential buildings should also be made. For further explanations of the different policies and measures, please
see Annex 3. The table in reporting template lists all types of measures that should finally be described in the context of this chapter.

**Notice:** Chapters 3.3.2.1, 3.4.2, 3.8 and 3.10 of the NEEAP as well as chapters 4.2.2, 4.2.3, 4.2.4, 4.2.5 and 4.4 of the NREAP also ask for this information. Therefore, please check whether this information has already been answered in the NEEAP and/or NREAP and, if useful, consider this as an input here.
8 Additional Information

This chapter gives the Member State the opportunity to add further information that they find relevant, but which does not fit thematically into the previous tables and sections.
9 Possible improvements

This chapter should act as a kind of overall self-evaluation. Certainly, the Member States themselves know best where there is room for improvements in the entire framework for promoting the construction of nearly zero-energy buildings and what could, respectively, be improved to make better progress.
Annex 1 – National application of the definition of nearly zero energy buildings

1. General Information

<table>
<thead>
<tr>
<th>Country</th>
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<tbody>
<tr>
<td>Name of regulation, directive, certification scheme</td>
<td></td>
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<tr>
<td>Editor of regulation, directive, certification scheme</td>
<td></td>
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<tr>
<td>Year of introduction of current version</td>
<td>Click and choose.</td>
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<td>Benchmark of current version (Select one)</td>
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<tr>
<td>Energy Autonomous building</td>
<td>Efficient buildings</td>
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<tr>
<td>Net zero energy buildings</td>
<td>Plus energy buildings</td>
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<tr>
<td>Nearly zero energy buildings</td>
<td>Zero energy buildings</td>
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<td>Other</td>
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Integration and consideration in national directive

Click and choose.

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.

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td>Residential</td>
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<tr>
<td>Non-residential</td>
<td></td>
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<tr>
<td>Residential and Non-residential</td>
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single family houses

Click and choose.

Please add explanation/comment/source

apartment blocks

Click and choose.

Please add explanation/comment/source

Offices

Click and choose.

Please add explanation/comment/source

educational buildings

Click and choose.

Please add explanation/comment/source

hospitals

Click and choose.

Please add explanation/comment/source

hotels and restaurants

Click and choose.

Please add explanation/comment/source

sports facilities

Click and choose.

Please add explanation/comment/source

wholesale and retail trade service buildings

Click and choose.

Please add explanation/comment/source

other types of energy-consuming buildings

Click and choose.

Please add explanation/comment/source
### 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

### 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

### 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

#### 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 site
- [ ] cluster of buildings
- [ ] quarter or city
- [ ] other
### 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 | Click and choose. | Please add explanation/ comment/ source |
| ventilation, cooling, air conditioning | Click and choose. | Please add explanation/ comment/ source |
| auxiliary energy | Click and choose. | Please add explanation/ comment/ source |
| lighting | Click and choose. | Please add explanation/ comment/ source |
| plug loads, appliances, IT | Click and choose. | Please add explanation/ comment/ source |
| central services | Click and choose. | Please add explanation/ comment/ source |
| electric vehicles | Click and choose. | Please add explanation/ comment/ source |
| embodied energy | Click and choose. | 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?

| 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 | Click and choose. | Please add explanation/ comment/ source |
| generation near by | Click and choose. | Please add explanation/ comment/ source |
| generation external | Click and choose. | Please add explanation/ comment/ source |
| crediting | Click and choose. | Please add explanation/ comment/ source |

### 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 | Please add explanation/ comment/ source |
| Yearly | Please add explanation/ comment/ source |
| Seasonal | Please add explanation/ comment/ source |
| Other | Please add explanation/ comment/ source |

### 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?

| monthy source based end energy crediting | Please add explanation/ comment/ source |
| monthly primary energy crediting | Please add explanation/ comment/ source |
| nothing defined | Please add explanation/ comment/ source |
| other | Please add explanation/ comment/ source |
### 4. Accounting system

#### 4.1 Normalization

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[... 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

#### 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/m² 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

Please add explanation/comment/source
### 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

**Please add explanation/comment/source**

### 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

**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

**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.

<table>
<thead>
<tr>
<th>Load match</th>
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Grid interaction

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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.

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<tr>
<th>Performance or rating</th>
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Energy Performance indicator
Is an energy performance indicator defined? If yes, type the values and the according unit.

Give further explanation

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.

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<thead>
<tr>
<th>General framework / prescriptive requirements</th>
<th>Please add explanation/ comment/ source</th>
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</table>
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

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Please add explanation/comment/source

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

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Please add explanation/comment/source
Annex 2 – Specifics on legislation related to increasing the number of nearly zero energy buildings and national reporting

Directive 2009/28/EC, Article 13(4) of
Member States shall introduce appropriate measures in their building regulations and codes in order to increase the share of all kinds of energy from renewable sources in the building sector:

- In establishing such measures or in their regional support schemes, Member States may take into account national measures relating to substantial increases in energy efficiency and relating to cogeneration and to passive, low or zero-energy buildings.
- By 31 December 2014, Member States shall, in their building regulations and codes or by other means with equivalent effect, where appropriate, require the use of minimum levels of energy from renewable sources in new buildings and in existing buildings that are subject to major renovation. Member States shall permit those minimum levels to be fulfilled, inter alia, through district heating and cooling produced using a significant proportion of renewable energy sources.

EPBD, Article 4
Setting of minimum energy performance requirements

1. Member States shall take the necessary measures to ensure that minimum energy performance requirements for buildings or building units are set with a view to achieving cost-optimal levels. The energy performance shall be calculated in accordance with the methodology referred to in Article 3. Cost-optimal levels shall be calculated in accordance with the comparative methodology framework referred to in Article 5 once the framework is in place. Member States shall take the necessary measures to ensure that minimum energy performance requirements are set for building elements that form part of the building envelope and that have a significant impact on the energy performance of the building envelope when they are replaced or retrofitted, with a view to achieving cost-optimal levels. When setting requirements, Member States may differentiate between new and existing buildings and between different categories of buildings. These requirements shall take account of general indoor climate conditions, in order to avoid possible negative effects such as inadequate ventilation, as well as local conditions and the designated function and the age of the building. A Member State shall not be required to set minimum energy performance requirements which are not cost-effective over the estimated economic lifecycle. Minimum energy performance requirements shall be reviewed at regular intervals which shall not be longer than five years and, if necessary, shall be updated in order to reflect technical progress in the building sector.

2. Member States may decide not to set or apply the requirements referred to in paragraph 1 to the following categories of buildings:

   (a) Buildings officially protected as part of a designated environment or because of their special architectural or historical merit, in so far as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance;
(b) Buildings used as places of worship and for religious activities;
(c) Temporary buildings with a time of use of two years or less, industrial sites, workshops and non-residential agricultural buildings with low energy demand and non-residential agricultural buildings which are in use by a sector covered by a national sectoral agreement on energy performance;
(d) Residential buildings which are used or intended to be used for either less than four months of the year or, alternatively, for a limited annual time of use and with an expected energy consumption of less than 25% of what would be the result of all-year use;
(e) Stand-alone buildings with a total useful floor area of less than 50 m².

EPBD, Article 6

New buildings

1. Member States shall take the necessary measures to ensure that new buildings meet the minimum energy performance requirements set in accordance with Article 4.

For new buildings, Member States shall ensure that, before construction starts, the technical, environmental and economic feasibility of high-efficiency alternative systems such as those listed below, if available, is considered and taken into account:

(a) decentralised energy supply systems based on energy from renewable sources;
(b) cogeneration;
(c) district or block heating or cooling, particularly where it is based entirely or partially on energy from renewable sources;
(d) heat pumps.

1. Member States shall ensure that the analysis of alternative systems referred to in paragraph 1 is documented and available for verification purposes.

2. That analysis of alternative systems may be carried out for individual buildings or for groups of similar buildings or for common typologies of buildings in the same area. As far as collective heating and cooling systems are concerned, the analysis may be carried out for all buildings connected to the system in the same area.

EPBD, Article 7

Existing buildings

Member States shall take the necessary measures to ensure that when buildings undergo major renovation, the energy performance of the building or the renovated part thereof is upgraded in order to meet minimum energy performance requirements set in accordance with Article 4 in so far as this is technically, functionally and economically feasible.

Those requirements shall be applied to the renovated building or building unit as a whole. Additionally or alternatively, requirements may be applied to the renovated building elements.

Member States shall in addition take the necessary measures to ensure that when a building element that forms part of the building envelope and has a significant impact on the energy performance of the building envelope, is retrofitted or replaced, the energy performance of the building element meets minimum energy performance requirements in so far as this is technically, functionally and economically feasible.

Member States shall determine these minimum energy performance requirements in accordance with Article 4.
Member States shall encourage, in relation to buildings undergoing major renovation, the consideration and taking into account of high-efficiency alternative systems, as referred to in Article 6(1), in so far as this is technically, functionally and economically feasible.

**EPBD, Article 9 paragraph 1**
Member States shall ensure that:

- (e) by 31 December 2020, all new buildings are nearly zero-energy buildings and;
- (f) that after 31 December 2018, new buildings occupied and owned by public authorities are nearly zero-energy buildings.

**EPBD, Article 9 paragraph 2**
Member States shall furthermore, following the leading example of the public sector, develop policies and take measures such as the setting of targets in order to stimulate the transformation of buildings that are refurbished into nearly zero-energy buildings, and inform the Commission thereof in their national plans referred to in paragraph 1.

**EPBD Annex I: Common general framework for the calculation of energy performance of buildings (referred to in Article 3)**

1. The energy performance of a building shall be determined on the basis of the calculated or actual annual energy that is consumed in order to meet the different needs associated with its typical use and shall reflect the heating energy needs and cooling energy needs (energy needed to avoid overheating) to maintain the envisaged temperature conditions of the building, and domestic hot water needs.

2. 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. The methodology for calculating the energy performance of buildings should take into account European standards and shall be consistent with relevant Union legislation, including Directive 2009/28/EC.

3. The methodology shall be laid down taking into consideration at least the following aspects:

   - (a) the following actual thermal characteristics of the building including its internal partitions: (i) thermal capacity; (ii) insulation; (iii) passive heating; (iv) cooling elements; and (v) thermal bridges;
   - (b) heating installation and hot water supply, including their insulation characteristics;
   - (c) air-conditioning installations;
   - (d) natural and mechanical ventilation which may include air-tightness;
   - (e) built-in lighting installation (mainly in the non-residential sector);
   - (f) the design, positioning and orientation of the building, including outdoor climate;
(g) passive solar systems and solar protection;
(h) indoor climatic conditions, including the designed indoor climate;
(i) internal loads.

4. The positive influence of the following aspects shall, where relevant in the calculation, be taken into account:
(a) local solar exposure conditions, active solar systems and other heating and electricity systems based on energy from renewable sources;
(b) electricity produced by cogeneration;
(c) district or block heating and cooling systems;
(d) natural lighting.

**EPBD, Recital 15**
As the application of alternative energy supply systems is not generally explored to its full potential, alternative energy supply systems should be considered for new buildings, regardless of their size, pursuant to the principle of first ensuring that energy needs for heating and cooling are reduced to cost-optimal levels.

**EPBD, recital 25**
Priority should be given to strategies which enhance the thermal performance of buildings during the summer period. To that end, there should be focus on measures which avoid overheating, such as shading and sufficient thermal capacity in the building construction, and further development and application of passive cooling techniques, primarily those that improve indoor climatic conditions and the micro-climate around buildings.
Annex 3 – Definition of policies and measures

_Economic incentives and financing instruments:_
This contains schemes of economic support e.g. for the generation of heat or electricity from renewable sources, direct financial stimuli and appropriate tax policies. Such instruments give financial support for investment e.g. through capital grants, low interest loans, tax exemptions or reductions, tax refunds, tender schemes, tradable green certificates, feed-in tariffs, feed-in premiums, voluntary schemes etc.

_Supervision (energy advice and audits):_
Member States should indicate which responsible authority will monitor, review the effects of specific policies, give advices and assure quality implementation of the programmes.

_Information (tools):_
Current and future information and awareness raising campaigns and programmes, as well as planned revisions, and expected results should be described. Please indicate how this information is made available and who is responsible for the adequacy and the publishing of this information.

_Education and training:_
This contains instruments, such as motivational mechanisms, training and education of citizens, installers, project developers, decision makers etc. Please list existing trainings regarding certification and licensing procedures of very efficient technologies or renewable energy installations and explain how guidance for planners and architects is provided to help them to properly consider the optimal combination of renewable energy sources, high efficiency technologies and district heating and cooling when planning, designing, building and renovating buildings.