



MINISTRY OF INDUSTRY AND TRADE
OF THE CZECH REPUBLIC

NATIONAL PLAN FOR INCREASING THE NUMBER OF NEARLY ZERO-ENERGY BUILDINGS IN THE CZECH REPUBLIC

May, 2014



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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)

All the above is included in the National Building Renovation Strategy pursuant to Art. 4 of Energy Efficiency Directive (EED) that was reported by Czech Republic as a part of the National Energy Efficiency Action Plan in April 2014.



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.

The definition of NZEB is included in the regulation No. 78/2013 Coll. that specifies requirements of the Energy Management Act No. 406/2000 Coll. as subsequently amended when transposing requirements of recasted Energy Performance of Buildings Directive (EPBD2).

“Nearly zero-energy building is a building with very low energy performance whose energy consumption is to very significant extent covered by renewable energy sources”

The definition compares evaluated building with a reference building of the same type, size, geometrics, orientation etc. but with pre-defined construction and technological specifications. Then all a) average U-value of envelope, b) delivered energy (without taking into account on site renewables) and c) non-renewable primary energy are considered.

The cost-optimal level of energy performance for a new building as required from 2013 and NZEB level that will be required later differ in two features:

- a) required average U-value of envelope (having coefficient of 0.7 for NZEB instead of 0.8 for cost-optimal level when comparing to a reference building) and
- b) required non-renewable primary energy (deducting 10 to 25% from reference values depending on type of building for NZEB compared to 8 to 10% for cost-optimal one).

More details are described in the Annex.



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.

There are only two-step requirements embeded in the legislation. Cost-optimal level of requirements for energy performance of buildings that came into force as from 1 April 2013 and gradual requirements for NZEB depending on size and type of building that will be coming to force as from 1 January 2016 to 1 January 2020 (see more details bellow, for public and other buildings).

Concretely, to ensure that all or a majority of new buildings completed by 31 December 2020, the legislation requires any building with energy reference area (roughly equals to total outer floor area):

- of 1500 m² or greater are NZEB when submitting application for construction permit on 1 January 2018 or later,
- of 350 m² or greater are NZEB when submitting application for construction permit on 1 January 2019 or later, and
- even smaller building (less than 350 m²) are NZEB when submitting application for construction permit on 1 January 2020 or later.

All mentioned dates refer to a submission of application for construction permit not to actual completion of the building. This avoids non-predictable environment for investors and minimize lost development and investment costs if requirements would change during the process of issuing construction permit or even during construction of a building. The time schedule for requirements reflects usual length of permission process and construction of a building of certain size.

So there are no targets in terms of certain share of NZEB but there are strict, gradually coming into force, requirement for all new buildings. However, for smoother introduction of NZEB to the market, financial incentives (subsidies) are offered.

At the moment, EU ETS revenues are used to motivate single-family houses investors to build passive energy standard dwellings (passive energy standard is more stricter then NZEB accordingly to national definition). Under discussion there is a motivational support for multi-apartment buildings.

EU Structural and Investment Funds will be used in the new programme period via Operational Programme Environment to build new public buildings and via Operational Programme Enterprise and Innovation for Competitiveness to build new commercial buildings as NZEB.



The support programmes could motivate some existing buildings to be renovated as NZEB and serve as outstanding examples. Generally acceptance criteria are less strict but evaluation criteria motivate owners to reach higher energy performance standards.



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?

For public buildings, similar principles for requirements are set, as for all other buildings.

Concretely, to ensure that all or a majority of new public buildings completed by 31 December 2018, the legislation requires the public buildings with energy reference area (roughly equals to total outer floor area):

- of 1500 m² or greater are NZEB when submitting application for construction permit on 1 January 2016 or later,
- of 350 m² or greater are NZEB when submitting application for construction permit on 1 January 2017 or later, and
- even smaller building (less than 350 m²) are NZEB when submitting application for construction permit on 1 January 2018 or later.

See also notes in section 3.

4.1.1 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.):

The Czech Republic has not set quantitative 2015 targets for all new buildings nevertheless the Energy Management Act states a fixed date and from this date further is not possible to build another building than nZEB building according to energy reference area.

Year of nZEB requirements for public building:

For buildings with a total energy reference area greater than

- 1,500 m² since 1th January 2016,
 - more than 350 m² from 1th January 2017,
- less than 350 m² from 1th January 2018.



Miscellaneous:

The Energy Management Act sets the fixed date. The nZEB requirements are expected to be fulfilled according to dates mentioned above.



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 <u>Relevant regulations</u> The Energy Management Act nu. 406/2000 Coll. Decree nu. 78/2013 Coll. on Energy Performance of Building
5.1.2 Relevant economic incentives and financing instruments The Ministry of the Environment administers by the State Environmental Fund of the Czech Republic so called The New Green Savings Programme (EU ETS revenues). This programme is focused on energy savings and renewable energy sources in single family houses (later probably also for multi-apartment buildings). The New Green Savings Programme offers an opportunity to obtain financial means to reach nZEB level of new constructed buildings.
5.1.3 <u>Energy performance certificates' use and layout in relation to nZEB standard</u> Requirements accordingly to provisions of EPBD2 transposed into Energy Management Act (§ 7a). The EPC does not directly indicate the nZEB level. Indicates only energy class A to G.
5.1.4 <u>Supervision (energy advice and audits)</u> The State Energy Inspectorate (SEI) controls calculated and issued EPCs. SEI also controls EPC in accordance with Annex II of 2010/31/EC Directive. The Energy specialists (specialists who are certified to issue the EPC) provide energy advice to the owners of buildings. Can recommend measures that will reduce the energy demand of the building.
5.1.5 <u>Information (tools)</u> Ministry of Industry and Trade sets so called Energy Consulting and Information Centres. These Centres are located in many cities of the Czech Republic and provide information in the field of energy performance of buildings, renewable energy sources, heating, cooling etc. These centres are also possible to reach in person or electronically (link: http://www.iekis.cz/).
5.1.6 <u>Demonstration</u> Passive House Centre organizes for public free of charge educational excursions into the passive houses. The accompanying program offers to hear the experiences of people who live in passive houses, but also offers lectures lead by architects and designers of these houses.
5.1.7 <u>Education and training</u> The EPC can issue only so called Energy Specialist. The qualifications for the Energy Specialist is set in the Energy Management The requirements are <ul style="list-style-type: none">• university degree at technical university and 3 years of technical experience, or a high school degree and 5 years of experience).• and passing an examination authorized by the Ministry of Industry and Trade. Several companies offer preparatory courses for the exam.



Ministry of Industry and Trade also requires actualisation of technical knowledge by passing another exam every three years since obtaining the licence for issuing EPC. The exam is possible to take at four technical universities.



5.2 Non-residential buildings

5.2.1 Relevant regulations

The Energy Management Act nu. 406/2000 Coll.
Decree nu. 78/2013 Coll. on Energy Performance of Building

5.2.2 Relevant economic incentives and financing instruments

EU Structural and Investment Funds will be used in the new programme period via Operational Programme Enterprise and Innovation for Competitiveness to motivate construction of new commercial buildings as NZEB.

5.2.3 Energy performance certificates' use and layout in relation to nZEB standard

Requirements accordingly to provisions of EPBD2 transposed into Energy Management Act (§ 7a).

The EPC does not directly indicate the nZEB level. Indicates only energy class A to G.

5.2.4 Supervision (energy advice and audits)

The State Energy Inspectorate (SEI) controls calculated and issued EPCs. SEI also controls EPC in accordance with Annex II of 2010/31/EC Directive.

The Energy specialists (specialists who are certified to issue the EPC) provide energy advice to the owners of buildings. Can recommend measures that will reduce the energy demand of the building.

5.2.5 Information (tools)

Ministry of Industry and Trade sets so called Energy Consulting and Information Centres. These Centres are located in many cities of the Czech Republic and provide information in the field of energy performance of buildings, renewable energy sources, heating, cooling etc. These centres are also possible to reach in person or electronically (link: <http://www.i-ekis.cz/>).

5.2.6 Demonstration

5.2.7 Education and training

The EPC can issue only so called Energy Specialist. The qualifications for the Energy Specialist is set in the Energy Management The requirements are

- university degree at technical university and 3 years of technical experience, or a high school degree and 5 years of experience).
- and passing an examination authorized by the Ministry of Industry and Trade.

Several companies offer preparatory courses for the exam.

Ministry of Industry and Trade also requires actualisation of technical knowledge by passing another exam every three years since obtaining the licence for issuing EPC. The exam is possible to take at four technical universities.



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?

The Czech Republic does not register any gap between current legislation in force and legislation which should be in force after 31 December 2020. Requirements for building after 31. December are already set.

Measures are stated in the Energy Management Act (see section 4)



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

The Energy Management Act nu. 406/2000 Coll.
Decree nu. 78/2013 Coll. on Energy Performance of Building

6.1.2 Relevant economic incentives and financing instruments

EU Structural and Investment Funds will be used in the new programme period via Operational Programme Environment and to motivate construction of new public buildings as NZEB.

6.1.3 Energy performance certificates' use and layout in relation to nZEB standard

Requirements accordingly to provisions of EPBD2 transposed into Energy Management Act (§ 7a).

The EPC does not directly indicate the nZEB level. Indicates only energy class A to G.

6.1.4 Supervision (energy advice and audits)

The State Energy Inspectorate (SEI) controls calculated and issued EPCs. SEI also controls EPC in accordance with Annex II of 2010/31/EC Directive.

The Energy specialists (specialists who are certified to issue the EPC) provide energy advice to the owners of buildings. Can recommend measures that will reduce the energy demand of the building.

6.1.5 Information (tools)

Ministry of Industry and Trade sets so called Energy Consulting and Information Centres. These Centres are located in many cities of the Czech Republic and provide information in the field of energy performance of buildings, renewable energy sources, heating, cooling etc. These centres are also possible to reach in person or electronically (link: <http://www.iekis.cz/>).

6.1.6 Demonstration

The EPC for public building must be placed next to the entrance door or on the wall of the entering hall connected with the entering door.

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?

The regulation is sufficient and fully follows requirements of EPBD2. The financial programmes are set to motivate for smoother market intake of NZEB.



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

The Energy Management Act nu. 406/2000 Coll.

Decree nu. 78/2013 Coll. on Energy Performance of Building

However the regulation requires reaching cost-optimal levels of energy performance when undergoing both major and non-major renovation (following EPBD2 requirements). Some investors may go beyond requirements though.

7.1.2 Relevant economic incentives and financing instruments

The support programmes could motivate some existing buildings to be renovated as NZEB and serve as outstanding examples. Generally acceptance criteria are less strict but evaluation criteria motivate owners to reach higher energy performance standards (the application is either higher ranked or receives higher support).

7.1.3 Energy performance certificates' use and layout in relation to nZEB standard

Requirements accordingly to provisions of EPBD2 transposed into Energy Management Act (§ 7a).

The EPC does not directly indicate the nZEB level. Indicates only energy class A to G.

7.1.4 Supervision (energy advice and audits)

The State Energy Inspectorate (SEI) controls calculated and issued EPCs. SEI also controls EPC in accordance with Annex II of 2010/31/EC Directive.

The Energy specialists (specialists who are certified to issue the EPC) provide energy advice to the owners of buildings. Can recommend measures that will reduce the energy demand of the building.

7.1.5 Information (tools)

Ministry of Industry and Trade sets so called Energy Consulting and Information Centres.

These Centres are located in many cities of the Czech Republic and provide information in the field of energy performance of buildings, renewable energy sources, heating, cooling etc.

These centres are also possible to reach in person or electronically (link: <http://www.iekis.cz/>).

7.1.6 Demonstration

7.1.7 Education and training

The EPC can issue only so called Energy Specialist. The qualifications for the Energy Specialist is set in the Energy Management. The requirements are:

- university degree at technical university and 3 years of technical experience, or a high school degree and 5 years of experience).
- and passing an examination authorized by the Ministry of Industry and Trade.

Several companies offer preparatory courses for the exam.



Ministry of Industry and Trade also requires actualisation of technical knowledge by passing another exam every three years since obtaining the licence for issuing EPC. The exam is possible to take at four technical universities.



7.2 Non-residential buildings

7.2.1 Relevant regulations

The Energy Management Act nu. 406/2000 Coll.

Decree nu. 78/2013 Coll. on Energy Performance of Building

However the regulation requires reaching cost-optimal levels of energy performance when undergoing both major and non-major renovation (following EPBD2 requirements). Some investors may go beyond requirements though.

7.2.2 Relevant economic incentives and financing instruments

The support programmes could motivate some existing buildings to be renovated as NZEB and serve as outstanding examples. Generally acceptance criteria are less strict but evaluation criteria motivate owners to reach higher energy performance standards (the application is either higher ranked or receives higher support).

7.2.3 Energy performance certificates' use and layout in relation to nZEB standard

Requirements accordingly to provisions of EPBD2 transposed into Energy Management Act (§ 7a).

The EPC does not directly indicate the nZEB level. Indicates only energy class A to G.

7.2.4 Supervision (energy advice and audits)

The State Energy Inspectorate (SEI) controls calculated and issued EPCs. SEI also controls EPC in accordance with Annex II of 2010/31/EC Directive.

The Energy specialists (specialists who are certified to issue the EPC) provide energy advice to the owners of buildings. Can recommend measures that will reduce the energy demand of the building.

7.2.5 Information (tools)

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These centres are also possible to reach in person or electronically (link: <http://www.iekis.cz/>).

7.2.6 Demonstration

7.2.7 Education and training

The EPC can issue only so called Energy Specialist. The qualifications for the Energy Specialist is set in the Energy Management The requirements are

- university degree at technical university and 3 years of technical experience, or a high school degree and 5 years of experience).
- and passing an examination authorized by the Ministry of Industry and Trade.

Several companies offer preparatory courses for the exam.

Ministry of Industry and Trade also requires actualisation of technical knowledge by passing another exam every three years since obtaining the licence for issuing EPC. The exam is possible to take at four technical universities.



8 Additional Information

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

Especially promotion of economic (both macro and micro) benefits for NZEB will be focused on in cooperation with trade associations in a fields of construction (Association of Building Entrepreneurs) and energy efficiency (Chance for Buildings).



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.

Especially promotion of economic (both macro and micro) benefits for NZEB will be focused on in cooperation with trade associations in a fields of construction (Association of Building Entrepreneurs) and energy efficiency (Chance for Buildings).

Also, a support programme for new passive and/or NZEB multi-apartment buildings need to be specified.



Annex- Definition of nZEB

1. General Information	
Country	The Czech Republic
Name of regulation ,directive, certification scheme	The Management Energy Act no. 406/2000 Coll.
Editor of regulation, directive, certification scheme	Ministry of Industry and Trade
Year of introduction of current version	2012
benchmark of current version (Select one)	<input type="radio"/> Energy Autonomous building <input type="radio"/> Efficient buildings <input type="radio"/> Net zero energy buildings <input type="radio"/> Plus energy buildings <input checked="" type="radio"/> Nearly zero energy buildings <input type="radio"/> Zero energy buildigns <input type="radio"/> Other
Integration and consideration in national directive	Please add explanation/ comment/ source is current directive
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.	
<i>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.</i>	
Category <input type="radio"/> Residential <input type="radio"/> Non-residential <input checked="" type="radio"/> Residential and Non-residential	Current legislation does not distinguish between types of buildings. Take only into account total energy reference area of the building. Each building consists of various tones of different type.



		Nevertheless in the EPC itself is filled in the type of building.
single family houses	possible	Please add explanation/ comment/ source
apartment blocks	possible	Please add explanation/ comment/ source
Offices	possible	Please add explanation/ comment/ source
educational buildings	possible	Please add explanation/ comment/ source
hospitals	possible	Please add explanation/ comment/ source
hotels and restaurants	possible	Please add explanation/ comment/ source
sports facilities	possible	Please add explanation/ comment/ source
wholesale and retail trade service buildings	possible	Please add explanation/ comment/ source
other types of energy-consuming buildings	possible	Please add explanation/ comment/ source
<p>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.</p> <p><i>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.</i></p>		
<input checked="" type="radio"/> New buildings <input type="radio"/> Retrofit <input type="radio"/> New and retrofit	<p>For buildings under major renovation legislation requires reaching cost-optimum level of building or for changed elements of the building envelope and changed technical systems of the building.</p>	
<p>2.3 Private/public buildings Select one and describe right. If more than one definition exists, you can</p>		



duplicate this appendix for each of them.	
<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. Reference: EPBD article 9.1a/b</i>	
<input type="radio"/> Private <input type="radio"/> Public <input checked="" type="radio"/> Public and private	Explained in sections above
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).	
<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>	
<i>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</i>	
<input type="radio"/> energy demand vs energy generation <input type="radio"/> energy import vs energy export <input type="radio"/> virtual balance between demand and generation <input type="radio"/> not specified <input checked="" type="radio"/> other	Renewable energy is calculated through a low non-renewable primary energy factor. Use of local renewable energy source doesn't reduce amount of delivered energy but reduces only non-renewable primary energy use.
3.2 Physical boundary	
Select the widest possible boundary and describe right if/which further subdivisions are possible	
<i>This directive lays down requirements as regards the common general framework for [...] buildings and building units.</i>	
<i>[...] 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</i>	
<input checked="" type="radio"/> single building <input type="radio"/> building unit <input type="radio"/> building unit <input type="radio"/> building site	Please add explanation/ comment/ source <ul style="list-style-type: none"> • Building • Building Unit/part of building • Zone



<input type="radio"/> cluster of buildings <input type="radio"/> quarter or city <input type="radio"/> 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).		
<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. Reference: EPBD article 2.4</i>		
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	not considered	Please add explanation/ comment/ source
central services	not considered	Please add explanation/ comment/ source
electric vehicles	not considered	Please add explanation/ comment/ source
embodied energy	not considered	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?		
<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. [...] 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</i>		
generation on-site	considered	Please add explanation/



		comment/ source
generation near by	considered	Please add explanation/ comment/ source
generation external	considered	Please add explanation/ comment/ source
crediting	not considered	Please add explanation/ comment/ source
<p>3.5 Balance period / calculation step</p> <p>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)?</p> <p><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 [...]. 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.</i></p>		
<input type="radio"/> Life cycle balance <input type="radio"/> Yearly <input type="radio"/> Seasonal <input checked="" type="radio"/> Other	At least month period or shorter	
<p>3.6 Monthly accounting limitation</p> <p>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?</p>		
<input type="radio"/> monthly source based end energy crediting <input checked="" type="radio"/> monthly primary energy crediting <input type="radio"/> nothing defined <input type="radio"/> other	The renewable energy production calculation is monthly limited on primary energy and cannot be transfer to another month balance.	
<p>4. Accounting system</p> <p>4.1 Normalization</p> <p><i>[...] including a numerical indicator of primary energy use expressed in kWh/m² per year. Reference: EPBD article 9.3a</i></p>		
<input type="radio"/> person	So called energy reference area roughly equals to total outer floor area.	



<ul style="list-style-type: none"><input checked="" type="radio"/> gross floor area<input type="radio"/> net floor area<input type="radio"/> gross volume<input type="radio"/> net volume<input type="radio"/> usable floor area<input type="radio"/> treated floor area<input type="radio"/> conditioned area<input type="radio"/> 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.	
<p><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. Reference: EPBD Annex 1.</i></p> <p><i>[...] including a numerical indicator of primary energy use expressed in kWh/m² per year. Reference: EPBD 9.3a</i></p> <p><i>[...] primary energy' means energy from renewable and non- renewable sources which has not undergone any conversion or transformation process. Reference : EPBD article 2.5</i></p>	
<ul style="list-style-type: none"><input type="radio"/> energy need<input type="radio"/> energy use<input checked="" type="radio"/> delivered/site energy<input type="radio"/> primary / source energy (renewable part included)<input type="radio"/> primary / source energy (renewable part not included)<input type="radio"/> (equivalent) carbon emissions<input type="radio"/> exergy<input type="radio"/> energy costs<input type="radio"/> environmental credits<input type="radio"/> points (labeling system)<input type="radio"/> other	<p>Delivered energy is the main feature for expressing energy performance of building but non-renewable primary energy use is displayed as well.</p>
4.3 Secondary metric	



<ul style="list-style-type: none"> <input type="radio"/> energy use <input type="radio"/> energy need <input type="radio"/> delivered/site energy <input checked="" type="radio"/> primary / source energy (renewable part included) <input type="radio"/> primary / source energy (renewable part not included) <input type="radio"/> (equivalent) carbon emissions <input type="radio"/> exergy <input type="radio"/> energy costs <input type="radio"/> environmental credits <input type="radio"/> points (labeling system) <input type="radio"/> other 	<p>Please add explanation/ comment/ source</p>
<p>4.4 Symmetric or asymmetric weighting</p>	
<ul style="list-style-type: none"> <input checked="" type="radio"/> symmetrical weighting <input type="radio"/> asymmetrical weighting 	<p>Unfortunately what is meant by Symmetric or asymmetric weighting is unclear to us.</p>
<p>4.5 Time dependent weighting</p> <p>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)</p> <p><i>Primary energy factors [...] may be based on national or regional yearly average values and may take into account [...] European standards. Reference: EPBD 9.3a</i></p>	
<ul style="list-style-type: none"> <input type="radio"/> static conversion factors <input checked="" type="radio"/> quasi static conversion factors <input type="radio"/> dynamic conversion factors 	<p>Please add explanation/ comment/ source</p>
<p>5. Further requirements</p>	
<p>5.1 Fraction of renewables</p> <p>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.)</p>	



<p><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 [...] Reference: RED article 13.4</i></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 [...]Reference : EPBD article 2.2</i></p>	
<p><input checked="" type="radio"/> defined</p> <p><input type="radio"/> not defined</p> <p><input type="radio"/> defined in other regulation</p>	<p>Defined by reduction of non-renewable primary energy requirement compared to reference building</p>
<p>5.2 Temporal performance</p> <p>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.</p>	
<p><u>Load match</u></p> <p><input type="radio"/> defined</p> <p><input checked="" type="radio"/> not defined</p>	<p>Please add explanation/ comment/ source</p>
<p><u>Grid interaction</u></p> <p><input type="radio"/> defined</p> <p><input checked="" type="radio"/> not defined</p>	<p>Please add explanation/ comment/ source</p>
<p>5.3 Energy performance or rating requirements</p> <p>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</p>	
<p><i>nearly zero-energy building means a building that has a very high energy performance [...]. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources [...]</i></p> <p><i>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.</i></p>	



<p><u>Performance or rating</u></p> <p><input checked="" type="radio"/> defined</p> <p><input type="radio"/> not defined</p> <p><input type="radio"/> defined in other regulation</p>	<p>Certain coefficients compared to reference building</p>
<p><u>Energy Performance indicator</u></p> <p>Is an energy performance indicator defined? If yes, type the values and the according unit.</p>	<p>Yes, indicators are defined in decree 78/2013 Coll.</p> <p>a) Non-renewable primary energy per year b) Total delivered energy per year c) Average U-value</p>
<p><u>Numeric indicator of primary energy use</u></p> <p>Is a numeric indicator of primary energy use defined? If yes, type the values and the according unit.</p>	<p>Certain coefficients compared to reference building</p>
<p>5.4 General framework / prescriptive requirements</p> <p>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)</p>	
<p><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. Reference: EPBD Annex 1</i></p>	
<p><input type="radio"/> defined</p> <p><input type="radio"/> not defined</p>	<p>See the Annex I (table I - parameters and values of the reference building) of the decree 78/2013 Coll. which is attached.</p>



<input checked="" type="radio"/> defined in other regulation	
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. <i>This Directive [...] takes into account [...] indoor climate requirements [...]</i> <i>Reference: EPBD article 1.1</i> <i>The methodology shall [...] take into consideration: [...] indoor climatic conditions [...]</i> <i>Reference: EPBD Annex 1</i> <i>That includes [...] indoor air-quality, adequate natural light [...].</i> <i>Reference: EPBD preamble recital 9</i>	
<input checked="" type="radio"/> defined <input type="radio"/> not defined <input type="radio"/> defined in other regulation	Defined in different zones in the technical normalization standard information TNI 73 0331
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. <i>[...] energy performance of a building means the calculated or measured amount of energy needed [...]</i> <i>Reference: EPBD article 2.4</i> <i>Member States shall encourage the introduction of intelligent metering systems [...] and the installation of automation, control and monitoring systems [...].</i> <i>Reference: EPBD article 8.2</i>	
<input type="radio"/> defined <input checked="" type="radio"/> not defined	Established by the Energy Management Act 406/2000 Coll. only calculated energy is considered. Unlike EPC energy audits consider measured energy used.

