



CONCERTED ACTION
ENERGY PERFORMANCE OF BUILDINGS

EPBD Key Implementation Decisions in Bulgaria

Status in December 2016

AUTHORS

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NATIONAL WEBSITES

www.seea.government.bg, www.me.government.bg

1. Key Implementation Decisions (KIDs)

no	Key Implementation Decisions - General Background	Description / value / response	Comments	Description
1.1	Definition of public buildings (according to article 9b)	There is no adequate definition of public buildings in Bulgarian legislation corresponding to the wording “buildings occupied and owned by public authorities” referred to in paragraph 1 (b) of Art. 9 of the EPBD. The intermediate annual targets for improving the energy performance of new administrative buildings satisfying the definition of the nearly zero-energy buildings (NZEB) are given in the National Plan for NZEBs 2015-2020, adopted by the Council of Ministers in December 2015. These administrative buildings (offices) include buildings occupied and owned by public authorities (state, regional or local authorities).		
1.2	Definition of public buildings used by the public (according to article 13)	There is no definition of public buildings used by the public in Bulgarian legislation corresponding to the wording referred to in paragraph 1 of Art. 13 of EPBD. There is no need of such a definition because the Energy Efficiency Act stipulates that the owners of buildings with a total floor area over 250 m ² , for which an energy performance certificate has been issued, shall be bound to clearly display the certificate in the building.		
1.3	Number of residential buildings	2,072,961 residential buildings (3,943,989 dwellings) with useful floor space in dwellings of 288,690,003 m ² as of 31.12.2016 Source: National Statistical Institute of Bulgaria		
1.4	Number of non-residential buildings	Not available		
1.5	Share of public buildings included in the number given in 1.4	Not available		
1.6	Share of commercial buildings included in the number given in 1.4	Not available		

1.7	Number of buildings constructed per year	<p>Average number of newly constructed buildings for the period 2014-2016 is 8,989 buildings per annum.</p> <p>Source: National Statistical Institute of Bulgaria</p>		
1.8	Share of residential buildings constructed per year	<p>Average number of newly constructed residential buildings for the period 2014-2016 is 4,356 residential buildings per annum.</p> <p>Source: National Statistical Institute of Bulgaria</p>		
1.9	Share of non-residential buildings constructed per year	<p>Average number of newly constructed non-residential buildings for the period 2014-2016 is 4,633 non-residential buildings per annum.</p> <p>Source: National Statistical Institute of Bulgaria</p>		
1.10	Useful floor area of buildings constructed per year in million square meters	<p>Average gross building area of newly constructed buildings for the period 2014-2016 is $4,863 \times 10^6$ m² per annum, including:</p> <ul style="list-style-type: none"> - $2,265 \times 10^6$ m² of residential buildings; - $2,598 \times 10^6$ m² of non-residential buildings ($0,211 \times 10^6$ m² of offices + $2,387 \times 10^6$ m² of other non-residential buildings). <p>Source: National Statistical Institute of Bulgaria</p>		

2. KIDs for New Buildings

no	Key Implementation Decision - New Buildings	Description / value / response	Comments	Description																								
2.1	Requirements for energy performance of residential buildings in current building code	A new residential building meets the requirement for energy efficiency, when the value of its integrated energy efficiency indicator (specific annual expenditure of primary energy" in kWh/m ²) corresponds at least to energy efficiency class "B" (96 kWh/m ² ≤ EP ≤ 190 kWh/m ²)																										
2.2	Requirements for energy performance of non-residential buildings in current building code	<p>A new non-residential building meets the requirement for energy efficiency, when the value of its integrated energy efficiency indicator (specific annual expenditure of primary energy" in kWh/m²) corresponds at least to energy efficiency class "B".</p> <p>Different values of the integrated energy efficiency indicator are set for different categories of non-residential buildings, as given in the table below:</p> <table border="1" data-bbox="636 746 1274 1414"> <thead> <tr> <th data-bbox="636 746 967 858">Category of buildings</th> <th data-bbox="967 746 1122 858">EP_{min} in kWh/m²</th> <th data-bbox="1122 746 1274 858">EP_{max} in kWh/m²</th> </tr> </thead> <tbody> <tr> <td data-bbox="636 858 967 938">Offices</td> <td data-bbox="967 858 1122 938">141</td> <td data-bbox="1122 858 1274 938">280</td> </tr> <tr> <td data-bbox="636 938 967 1018">Educational buildings:</td> <td data-bbox="967 938 1122 1018"></td> <td data-bbox="1122 938 1274 1018"></td> </tr> <tr> <td data-bbox="636 1018 967 1098">Schools</td> <td data-bbox="967 1018 1122 1098">51</td> <td data-bbox="1122 1018 1274 1098">100</td> </tr> <tr> <td data-bbox="636 1098 967 1177">Universities</td> <td data-bbox="967 1098 1122 1177">91</td> <td data-bbox="1122 1098 1274 1177">180</td> </tr> <tr> <td data-bbox="636 1177 967 1257">Kindergartens</td> <td data-bbox="967 1177 1122 1257">66</td> <td data-bbox="1122 1177 1274 1257">130</td> </tr> <tr> <td data-bbox="636 1257 967 1337">Hospitals</td> <td data-bbox="967 1257 1122 1337">141</td> <td data-bbox="1122 1257 1274 1337">280</td> </tr> <tr> <td data-bbox="636 1337 967 1414">Hotels</td> <td data-bbox="967 1337 1122 1414">171</td> <td data-bbox="1122 1337 1274 1414">340</td> </tr> </tbody> </table>	Category of buildings	EP _{min} in kWh/m ²	EP _{max} in kWh/m ²	Offices	141	280	Educational buildings:			Schools	51	100	Universities	91	180	Kindergartens	66	130	Hospitals	141	280	Hotels	171	340		
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		Wholesale and retail trade services buildings	276	550																		
		Sports facilities	176	350																		
		Buildings related to culture & arts	111	220																		
2.3	Is the performance level of nearby zero energy (NZEB) for new buildings set in national legislation?	Yes The definition of NZEB is given in the Energy Efficiency Act of 15 May 2015 (amended as of 30 December 2016).																				
2.4	Nearly zero energy (NZEB) level for residential buildings	The energy consumption of a residential NZEB, defined as primary energy, complies with Class “A” on the scale of energy consumption classes for residential buildings ($48 \text{ kWh/m}^2 \leq EP \leq 95 \text{ kWh/m}^2$) and not less than 55% of the energy consumed (supplied) for heating, cooling, ventilation, domestic hot water and lighting is energy from RES produced on-site or near the building.																				
2.5	Nearly zero energy (NZEB) level for non- residential buildings	The energy consumption of a non-residential NZEB, defined as primary energy, complies with Class “A” on the scale of energy consumption classes for non-residential buildings of the relevant type, as given in the table below:																				
		<table border="1"> <thead> <tr> <th>Category of buildings</th> <th>EP_{min} in kWh/m²</th> <th>EP_{max} in kWh/m²</th> </tr> </thead> <tbody> <tr> <td>Offices</td> <td>70</td> <td>140</td> </tr> <tr> <td>Educational buildings:</td> <td></td> <td></td> </tr> <tr> <td> Schools</td> <td>25</td> <td>50</td> </tr> <tr> <td> Universities</td> <td>45</td> <td>90</td> </tr> </tbody> </table>			Category of buildings	EP _{min} in kWh/m ²	EP _{max} in kWh/m ²	Offices	70	140	Educational buildings:			Schools	25	50	Universities	45	90			
Category of buildings	EP _{min} in kWh/m ²	EP _{max} in kWh/m ²																				
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Buildings related to culture & arts	55	110																				
2.6	Are nearly zero energy buildings (NZEB) defined using a carbon or environment indicator	No																				
2.7	Year for nearly zero energy (NZEB) to be implemented for residential buildings	January 2021																				
2.8	Year for nearly zero energy (NZEB) to be implemented for non-residential buildings	January 2019 for buildings occupied and owned by public authorities and January 2021 for the other non-residential buildings, incl. commercial buildings																				
2.9	Is renewable energy a part of the overall or an additional requirement	Renewable energy (minimum share of 55% of the final energy for heating, ventilation, domestic hot water and lighting) is a part of the overall requirement for a NZEB to be fulfilled on top of the maximum energy performance.																				

2.10	Specific comfort criteria for new buildings, provide specific parameters for instance for airtightness, minimum ventilation rates	<p>Yes.</p> <p>Minimum energy performance requirements for buildings or building units take account of general indoor climate conditions.</p> <p>There are specific requirements for comfort, such as requirements for airtightness, minimum ventilation rates, humidity resistance, watertightness, that are used for calculating the energy performance of buildings.</p> <p>The reference values for minimum rates of ventilation with the ambient air are, as follows:</p> <table border="1" data-bbox="636 467 1292 791"> <thead> <tr> <th>Type of the room</th> <th>n_{min}, h^{-1}</th> </tr> </thead> <tbody> <tr> <td>Habitable room</td> <td>0.5</td> </tr> <tr> <td>Kitchen or bathroom with a window</td> <td>1.5</td> </tr> <tr> <td>Office room</td> <td>1.0</td> </tr> <tr> <td>Meeting room, classroom</td> <td>2.0</td> </tr> </tbody> </table> <p>The level of airtightness for the whole building is given in the table below:</p> <table border="1" data-bbox="636 855 1292 1179"> <thead> <tr> <th>Level of airtightness of the building</th> <th>Multifamily buildings at n_{50}, h^{-1}</th> <th>Single-family & 2-family building at n_{50}, h^{-1}</th> </tr> </thead> <tbody> <tr> <td>Low</td> <td>< 2</td> <td>< 4</td> </tr> <tr> <td>Medium</td> <td>2 ÷ 5</td> <td>4 ÷ 10</td> </tr> <tr> <td>High</td> <td>> 5</td> <td>> 10</td> </tr> </tbody> </table> <p>Depending on the category of building or building units there are specific requirements for comfort temperatures, as follows:</p> <ul style="list-style-type: none"> • 20°C in offices, conference and lecture halls, restaurants, classrooms, crèches, single-family houses; • 16°C in department stores, museums and galleries; <p>15°C in churches.</p>	Type of the room	n_{min}, h^{-1}	Habitable room	0.5	Kitchen or bathroom with a window	1.5	Office room	1.0	Meeting room, classroom	2.0	Level of airtightness of the building	Multifamily buildings at n_{50}, h^{-1}	Single-family & 2-family building at n_{50}, h^{-1}	Low	< 2	< 4	Medium	2 ÷ 5	4 ÷ 10	High	> 5	> 10		
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3. KIDs for Existing Buildings

no	Key Implementation Decision - Existing Buildings	Description / value / response	Comments	Description
3.1	Is the level of nearly zero energy (NZEB) for existing buildings set in national legislation?	Yes		
3.2	Is the level of nearly zero energy (NZEB) for existing buildings similar to the levels for new buildings?	Yes		
3.3	Definition of nearly zero energy (NZEB) for existing residential buildings	There is no separate definition of NZEB for existing residential buildings. The definition is the same as for the new buildings.		
3.4	Definition of nearly zero energy (NZEB) for existing non-residential buildings	There is no separate definition of NZEB for existing non-residential buildings. The definition is the same as for the new buildings.		
3.5	Overall minimum requirements in case of major-renovation	<p>In case of major-renovation the buildings meet the requirement for energy efficiency when the value of their integrated energy efficiency indicator ("specific annual expenditure of primary energy" in kWh/m²) corresponds, at least, to:</p> <ul style="list-style-type: none"> • energy efficiency class "B", for buildings commissioned after 1 February 2010 (the same requirements as those for new buildings - see item 2.1 and 2.2 above), or to • energy efficiency class "C", for buildings commissioned before 1 February 2010, as given in the table below: 		

		Category of buildings	EP _{min} in kWh/m ²	EP _{max} in kWh/m ²			
		Residential building	191	240			
		Offices	281	340			
		Educational buildings:					
		Schools	101	130			
		Universities	181	220			
		Kindergartens	131	195			
		Hospitals	281	365			
		Hotels	341	390			
		Wholesale and retail trade services buildings	551	600			
		Sports facilities	351	400			
		Buildings related to culture & arts	221	270			
3.6	Minimum requirements for individual building parts in case of renovation	Minimum energy performance requirements are set for the renovated building elements that form part of the building envelope and that have a significant impact on the energy performance of the building envelope. The values of the heat transfer coefficient cannot be higher than the reference values of the heat transfer coefficient, specified in the tables below:					

Type of Envelope Structures and Elements	U, W/m ² .K	
	Internal T° θ _i ≥ 15 °C	Internal T° θ _i < 15 °C
External walls in contact with the external air	0.28	0.35
Walls adjacent to unheated spaces, when the difference of average temperatures between heated and unheated spaces ≥ 5° C	0.50	0.63
External walls of heated basement adjacent to the ground	0.6	0.75
Floor slab over an unheated basement	0.50	0.63
Heated floor area directly bordering the ground in a building without basement	0.40	0.50
Floor of a heated basement	0.45	0.56
Floor of a heated space in contact with external air	0.25	0.32
Wall, ceiling or floor in contact with the external air or the ground with built-in area heating	0.40	0.50
Flat roof or sloped roof with heated underroof space designed for habitation	0.25	0.32
Ceiling slab of an unheated flat roof with an air layer with thickness δ > 0.30 m	0.30	0.38
External door, solid, adjacent to the external air	2.2	2.75
External door, solid, adjacent to an unheated space	3.5	4.38

4. KIDs for Energy Performance Certificates, EPCs

no	Key Implementation Decision - Energy Performance Certificates	Description / value / response	Comments	Description
4.1	National database for EPCs	Yes		
4.2	Number of energy performance certificates per year	The total number of EPCs issued in 2013, 2014, 2015 and 2016 amounts respectively to 694, 783, 1,447 and 2,656. <i>Remark: Only the EPCs issued for the whole building are included into the above statistics. (An EPC can be issued for a building unit as well.)</i>		
4.3	Number of EPCs since start of scheme	7,777 EPCs from 2010 through 2016 <i>Remark: Only the EPCs issued for the whole building are included into the above statistics. (An EPC can be issued for a building unit as well.)</i>		
4.4	Number of assessors	286 assessors (companies) for all categories of buildings + 20 assessors (energy efficiency consultants, natural persons) for residential and mixed-use buildings of a low-rise development and country-house buildings		
4.5	Basic education requirements for assessors	The assessors (the energy efficiency consultants) are required: - to have secondary technical education, higher education or an acquired academic degree in field of Technical Sciences completed or recognised in Bulgaria or in another EU member state or in another state which is a party to the European Economic Area (EEA) Agreements or in Switzerland; - to have acquired a length of service in the speciality after completion of the education - of not less than 6 years for holders of secondary technical education, not less than 3 years for holders of an educational qualification degree of Bachelor, and not less than 2 years for persons holding an educational qualification degree of Master or holding a science degree;		
4.6	Additional training demands for assessors	Yes. The assessors (the energy efficiency consultants) are required to hold a certificate of successfully passed exam for raising their qualification in higher education institutions teaching their students in specialities in the field of Technical Sciences, professional profiles of Energy, Electrical Equipment, Electronic Equipment and		

		<p>Automation and Architecture, Construction and Geodesy accredited in Bulgaria or in another EU member state or in a state which is a party to the EEA Agreement or in Switzerland.</p> <p>Energy efficiency consultants attain qualification at two levels:</p> <ul style="list-style-type: none"> - Level 1: competent to perform the activities for all categories of buildings; - Level 2: competent to perform the activities for residential and mixed-use buildings of a low-rise development and country-house buildings; <p>and the course involves 115 and 80 hours of tuition, respectively.</p>		
4.7	Quality assurance system	<p>The verification of energy audits and inspection reports is performed by the SEDA through systematic or random sampling of the audited buildings and the inspection reports. Control over the activity of the energy auditors is exercised by means of:</p> <ul style="list-style-type: none"> • checking the validity of the input data of the building used to issue the EPC, as well as the results stated in the certificate; • checking the input data entered in the EPC and verifying the results, including the recommendations made for energy efficiency improvement; • a full check of data, results and measures prescribed for energy efficiency improvement by an on-site visit in order to verify the validity between the data stated in the EPC and the certified building. <p>An independent random control was carried out on all the EPCs and inspection reports issued in 2015 and 2016.</p> <p>Up to the end of 2016, no fines / penalties had been imposed.</p>		

5. KIDs for Inspection Systems

no	Key Implementation Decision - Inspection Systems	Description / value / response	Comments	Description
5.1	Is there a national database for heating inspections	Yes.		
5.2	Is there a national database for cooling inspections / AC	Yes.		
5.3	Are inspection databases combined with EPC database for registration of EPCs and inspection reports	Yes <i>(Both databases are referenced one to another in order to cross information)</i>		
5.4	Chosen option A or B for heating systems (inspection or other measures)	A		
5.5	Number of heating inspections; reports per year (if option A)	199 in the year 2015 132 in the year 2016 Source: database on the condition of the heating systems maintained by the SEDA		



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