



CONCERTED ACTION  
ENERGY PERFORMANCE OF BUILDINGS

# EPBD Key Implementation Decisions in Germany

Status in December 2016

## AUTHORS

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## NATIONAL WEBSITES

[www.bbsr-energieeinsparung.de](http://www.bbsr-energieeinsparung.de)

## 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 9 b)   | Non-residential buildings which are owned and used by public authorities  | Described in §2a (1) of the Energy Saving Act   |                                     |
| 1.2 | Definition of public buildings used by the public (according to article 13)                                     | The owner of a building has to display the EPC, if it is used by public authorities and more than 250 m <sup>2</sup> are frequently used by public. | Described in Article 16 (3) of the Energy Saving Ordinance                                |                                     |
| 1.3 | Number of residential buildings   | 18,259,360  | Census (of 2011 - no more recent one available)   | 18,259,360                          |
| 1.4 | Number of non-residential buildings   | 3,000,000 heated non-residential buildings  | Research carried out by Leibniz-Institut für ökologische Raumentwicklung, Dresden in 2013 | 3,000,000                           |
| 1.5 | If possible share of public buildings included in the number given in 1.4                                       | undocumented  |   |                                     |
| 1.6 | If possible share of commercial buildings included in the number given in 1.4                                   | undocumented  |   |                                     |
| 1.7 | Number of buildings constructed per year (estimate)   | 323,071 (2016)<br>268,083 (2015)  | Number of building permits for new buildings is given.<br>(figures taken from destatis)   | average for last 2 years<br>295,577 |
| 1.8 | If possible share of residential buildings constructed per year (estimate, included in the number given in 1.7) | 316,588 (2016)<br>264,346 (2015)  | Number of building permits for new buildings is given.<br>(figures taken from destatis)   | average for last 2 years<br>290,467 |

|      |   |  |   |                                    |
|------|---|--|---|------------------------------------|
| 1.9  | If possible share of non-residential buildings constructed per year (estimate, included in the number given in 1.7) | 6,483 (2016)<br>3,737 (2015)                     | Number of building permits for new buildings is given.<br>(figures taken from destatis) | average for last 2 years<br>5,110  |
| 1.10 | Useful floor area of buildings constructed per year in million square meters (estimate)                             | 31,805 (2016)<br>28,510 (2015) living space only | figures taken from destatis<br>for total constructed floor area no data available       | average for last 3 years<br>28,938 |

## 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                | <p>- A maximum non-renewable primary energy demand which is determined individually for each building using a reference building with similar geometry, orientation and use, but with a certain quality of all energy-relevant systems and components</p> <p>AND</p> <p>- A requirement for the energy performance of the building's thermal envelop which is determined by using the reference building approach</p>   | In addition, a minimum quota of renewable energies used for heating, domestic hot water and cooling; the quota is different for the different technologies | The reference building approach is used |
| 2.2 | Requirements for energy performance of non-residential buildings in current building code            | <p>- A maximum non-renewable primary energy demand which is determined individually for each building using a reference building with similar geometry, orientation and use, but with a certain quality of all energy-relevant systems and components</p> <p>AND</p> <p>- A requirement for the energy performance of the building's thermal envelop which is determined by a certain set of maximum mean U-values for opaque and transparent U-values respecting the design indoor temperature of the building's zones</p> | In addition, a minimum quota of renewable energies used for heating, domestic hot water and cooling; the quota is different for the different technologies | The reference building approach is used |
| 2.3 | Is the performance level of nearly zero energy (NZEB) for new buildings set in national legislation? | Not yet defined.  | Further steps to implement the NZEB level are currently in preparation.  | No                                      |

|      |   |  |   |  |
|------|---|--|---|--|
| 2.4  | Nearly zero energy (NZEB) level for residential buildings (if set)  | No. (see 2.3)  | See 2.3   |  |
| 2.5  | Nearly zero energy (NZEB) level for non- residential buildings (if set)   | No. (see 2.3)  | See 2.3   |  |
| 2.6  | Are nearly zero energy buildings (NZEB) defined using a carbon or environment indicator   | Not yet defined.   | See 2.3   |  |
| 2.7  | Year for nearly zero energy (NZEB) to be implemented for residential buildings  | Due for 2021   | For all residential buildings   | 2021   |
| 2.8  | Year for nearly zero energy (NZEB) to be implemented for non-residential buildings  | Due for 2019/2021  | 2019 - public non-residential buildings<br>2021 - all other non-residential buildings   | 2019/2021  |
| 2.9  | Is renewable energy a part of the overall or an additional requirement  | A minimum quota of renewable energies used for heating, domestic hot water and cooling; the quota is different for the different technologies  | The overall performance requirement (non-renewable primary energy demand) includes the necessary use of renewables. In addition the heating and cooling load of new buildings must be at least partially covered by systems using renewable energy. | It is part of the overall requirement as well as an additional requirement |
| 2.10 | Specific comfort criteria for new buildings, provide specific parameters for instance for airtightness, minimum ventilation rates | Comfort criteria are defined in several legal acts not addressing energy efficiency but health and workplace issues.<br><br>These comfort criteria are respected within the marginal conditions when calculating the energy performance of new / existing buildings. |   | Partly   |

### 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?                    | Not yet defined<br>Verbal obligation in legal act.  | The definition for new buildings is under consideration and will be introduced in due time.  | No  |
| 3.2 | Is the level of nearly zero energy (NZEB) for existing buildings similar to the levels for new buildings?        | Not yet defined; will probably relate to new building level.  |  | No  |
| 3.3 | Definition of nearly zero energy (NZEB) for existing residential buildings (if different from new buildings)     | see 3.2   |  | No  |
| 3.4 | Definition of nearly zero energy (NZEB) for existing non-residential buildings (if different from new buildings) | see 3.2   |  | No  |
| 3.5 | Overall minimum requirements in case of major-renovation   | Yes, 140% of the performance requirements for a new building (status 2014).<br>Overall requirement as alternative option, only in cases of relevant major renovations | The requirements for the building stock consist of conditional requirements in case of relevant refurbishments, some mandatory update requirements to be met without any triggering measures and requirements in case of extensions. | Two options to meet the requirements are given. Requirements for renovated building elements have to be met or, as alternative option, 140% of the performance requirements for a new building (status 2014) can be chosen. |
| 3.6 | Minimum requirements for individual building parts in case of renovation   | Yes, requirements on building elements and installations have to be met.  | Minimum U-values are set depending on the element and for non-residential buildings the range of indoor temperature  | Examples for $\geq 190C$<br>outer wall: $U_{max} = 0.24 \text{ W}/(\text{m}^2 \times K)$<br>windows: $U_{max} = 1.3 \text{ W}/(\text{m}^2 \times K)$  |

## 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   | The independent control system works without general data storage in a central database. A commissioned and authorised body ("Deutsches Institut für Bautechnik - DIBt") holds a central EPC register without generally collecting the contents of the issued EPC. For the purpose of a later long-time storage in a database, the collected datasets have to be anonymised to secure data privacy for property owners, which is held in high esteem in Germany. | The register collects data from the assessor concerning the name and address of the assessor, the type of EPC issued and the type and location of the building. Each certificate receives an individual registration number and is part of the random quality checks. The contents of the certificate and additional input data are only collected for certificates that are drawn as part of the random samples. | The anonymised data of the EPCs belong to the regions. Only certain information can be drawn from those data sets.   |
| 4.2 | Number of energy performance certificates per year (for instance average of 3 years) | 411,755 (average of 2015 (441,244) and 2016 (382,266))   | 323,181 EPCs were issued from May 2014 (start of registration) to December 2014<br>Data directly from registration scheme   | In 2016: 13% of EPCs were issued for new residential buildings, 61% for existing residential buildings, 8% for new non-residential buildings and 18% for existing non-residential buildings. |
| 4.3 | Number of EPCs since start of scheme   | So far 1,138,872 (status end of 2016) registration numbers were allocated.   | On the 1 <sup>st</sup> of May 2014 the new Energy Saving Ordinance came into force and implemented the registration of EPCs. Prior to that, EPCs were not registered in Germany<br>Data directly from registration scheme.  | 472,200 EPCs based on energy consumption, 666,672 based on energy demand   |
| 4.4 | Number of assessors  | 26,466   | Assessors have to register to be able to draw EPC registration numbers. It is unknown how active each assessor is.  | Not all assessors issue EPCs based on energy consumption and energy demand and inspection reports.   |

|     |  |  |   |   |
|-----|--|--|---|---|
| 4.5 | Basic education requirements for assessors | <p>For new buildings: assessors have to be authorised to sign plans for building permits.</p> <p>For existing buildings in general: architects and engineers with relevant vocational training in combination with proven work experience in the field of energy efficiency.</p> <p>Exclusively for existing residential buildings and with additional vocational training:</p> <ul style="list-style-type: none"> <li>• master craftsmen in building trades,</li> <li>• building and building services technicians and</li> <li>• interior architects.</li> </ul> | The requirements for new buildings are in the responsibility of the regions.                          | Engineer or architectural degree with a cores specialisation in energy efficiency or after the degree two years of work experience in energy efficiency or additional training. |
| 4.5 | Additional training demands for assessors  | See 4.5 (above)  | To be able to sign applications for subsidies, additional continuous vocational training is required. | Certified course  |
| 4.6 | Quality assurance system                   | When an EPC is checked the qualification of the assessor is verified as well.  |   |   |



## 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  | No, Germany runs an alternative system.  | Boilers are in a central register for furnaces (for safety and environmental issues).   |   |
| 5.2 | Is there a national database for cooling inspections / AC   | Central register just macro-data, see 4.1  | Due to data security, a database containing the full reports is prohibited  | no  |
| 5.3 | Are inspection databases combined with EPC database for registration of EPCs and inspection reports | Registration of inspections (macro-data, see 4.1) through a combined register with EPCs.           |   | no  |
| 5.4 | Chosen option A or B for heating systems (inspection or other measures)                             | Other measures “equivalence”   | <p>This choice was made considering the long tradition of system requirements in Germany (thermostatic valves, pipe insulation, time- and weather-driven controls), the compulsory measurement scheme for flue-gas losses and pollutants of boilers, established since 1982 and the mandatory update requirements concerning the replacement of old boilers and the insulation of heat distribution- and hot water pipework.</p> <p>Since these measures were already in place when the EPBD was due for transposition, a further inspection scheme was not considered necessary.</p> | B   |
| 5.5 | Number of heating inspections; reports per year (if option A)                                       | B chosen   |   |   |
| 5.5 | Chosen option A or B for air-condition / cooling system (inspection or other measures)              | Inspection   | A combination of recurrent inspections and compulsory regular maintenance was established in 2007. The provisions in the Energy Saving Ordinance were amended in 2013 to introduce a registration and control system for inspection reports.  | A   |
| 5.6 | Number of air-condition / cooling system inspections; reports per year (if option A)                | In 2014 (starting in May), 2015 and 2016, a total of 7,880 new inspection reports were registered. | Data directly from registration scheme  | 2014: 1,186<br>2015: 2,839<br>2016: 3,794 |



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