IIB1 Berlin, 09.02.2022

**Proposed structure for the Energy Efficiency Act (EnEfG)**

§ 3

**Definitions**

26. data center: a structure or group of structures for the central housing, central interconnection and central operation of information technology and network telecommunications equipment for the provision of data storage, data processing and data transport services, as well as all facilities and infrastructure for power distribution and environmental control and the necessary level of resilience and security required to provide the desired service availability, with a rated electrical connection capacity of 100 kW or more;

27. co-location: a service provided by a data center operator consisting of the provision of technical infrastructure within which customers can operate their own information technology.

28. power usage effectiveness (PUE): is a measure of the energy efficiency of the data center infrastructure and describes the ratio of the annual energy requirement of the entire data center to the energy requirement of the IT technology. When calculating the PUE, the use of electricity for upgrading the data center's waste heat for external use with the aid of a heat pump is not taken into account.

29. operator of a data center (data center operator): legal entity that either owns the data center or the co-location or has comparable rights of use.

30. information technology (IT) operator: legal entity that either owns the information technology or has comparable rights of use. An IT operator can also be a data center operator or its customer.

**Section 5**

**Energy efficiency for data centers and information technology**

§ 18

**Energy efficiency requirements for data centers**

(1) Data centers that commence operation on or after January 1, 2025 shall comply with a planned energy usage effectiveness (PUE) of less than or equal to 1.3, which must be achieved on a permanent basis no later than 2 years after commissioning.

(2) Data centers with a capacity of 1 MW or more that were commissioned before January 1, 2025 must achieve a power usage effectiveness (PUE) of less than or equal to 1.3 from January 1, 2027.

§ 19

**Management systems in data centers**

(1) Data center operators shall operate an energy or environmental management system or introduce one by 1 January 2025. As part of the energy or environmental management system, continuous measurements of the electrical power and energy requirements of the main components of the data center shall be carried out and measures shall be taken to continuously improve energy efficiency. For data centers with a nominal connected load from 1 MW and for data centers owned or operated by public bodies with a nominal connected load of 100 kW or more, certification and annual external validation or certification of the management system by an auditor in accordance with the requirements described in the Energy Services Act (EDL-G § 8b) is required above 100 kW from 1 January 2025.

(2) Operators of information technology within a data center , even if they are only tenants or customers there, with their own information technology capacity of 50 kW or more , must meet the requirements set out in paragraph 1 sentences 1 and 2 accordingly. From January 1, 2025, operators of information technology with an IT capacity of 500 kW or more will only be obliged to have their management system externally validated or certified by an auditor in accordance with the requirements described in the Energy Services Act (EDL-G § 8b) if their information technology capacity exceeds .....

§ 20

**Energy efficiency register for data centers**

(1) The operators of data centers are obliged to provide their information annually in accordance with Annex 5 by 31 March of each year in the format provided by the Federal Government for an energy efficiency register.

(2) The operators of information technology within a data center with an information technology capacity of 50 kW or more are obliged to provide their information annually in accordance with Annex 6 by 31 March of each year in the format provided by the Federal Government for an energy efficiency register. Data must be reported for the first time for the year 2023.

(3) The Federal Government shall establish an energy efficiency register and make the data pursuant to Annex 5 Nos. 1 and 2 to 32 and Annex 6 No. 1 available to the public via a digital platform.

(4) The Federal Government shall be authorized to lay down, by statutory order and without the consent of the Bundesrat, reporting requirements that go beyond the requirements of paragraphs 1 and 2 in conjunction with Annexes 5 and 6.

§ 21

**Information on heat extraction**

(1) Data center operators shall report the amount of heat, the temperature level in degrees Celsius and the production costs for the provision of unavoidable waste heat generated in the data center on their company website and to the responsible local authority.

(2) When specifying the costs, a distinction should be made between the following temperature levels ....: 80C, 60C, 45C, 25C. The costs at the various availability levels are to be defined for each temperature level. The availability levels are defined as follows: "no availability guarantee", "guaranteed 95% availability over 15 years", "guaranteed 99.999% availability over 15 years".

§ 22

**Information and advice in the customer relationship**

(1) If a data center operator offers services to third parties (customers), the operator is obliged to transparently present to its customer the energy consumption per year directly attributable to the customer as well as the energy consumption of the data center's technical infrastructure attributable to the consumption shares.

 (2) The operators of a co-location data center shall ensure that

1. when offering a co-location service, the contracts and pricing offer their customers an incentive to save energy and use information technology in an energy-efficient manner by showing their customers the share of energy costs in the total costs separately, and

2. the co-location customers are supported in recording and reducing the energy consumption of the information technology installed by them. To this end, customers must be provided with suitable monitoring information.

3. the co-location customers receive the registration number of the data center in the register of data centers.

**Annex 5 (to § 20 paragraph 1)**

**Information from data center operators**

1. general information on the data center for publication

a) Name of the data center,

b) Size class according to information technology connected load (<100kW, <500 kW; < 1MW, < 5MW; <10MW, <50 MW; <100 MW; >= 100 MW),

c) Postal code in which the data center is located,

d) Total size of the land used for the data center,

e) Total size of the building area (gross floor area),

f) Area of the room for the installation of information technology (whitespace),

g) Operator type according to point 2.6 of the Joint Research Center (JRC) 2021 Guide to Good Practice for the EU Code of Conduct on Energy Efficiency of Data Centers, version 12.1.0,

h) the availability class according to EN 50600;

2. information on the operation of the data center in the last full calendar year for publication

a) Total electricity consumption, electricity generation broken down by renewable and fossil energy sources, electricity purchased and electricity fed back into the grid,

b) Share of renewable energies according to the Renewable Energy Sources Act in total electricity consumption,

c) Share of nuclear energy in total electricity consumption in accordance with Section 42 of the Energy Industry Act

d) Amount and temperature of waste heat released to air, water or soil,

e) Annual amount of waste heat supplied by the data center to heat consumers (kWh/a) and its average flow temperature (degrees Celsius);

f) Greenhouse gas potential of the emergency power generation of the data center and the refrigerants

g) Power usage effectiveness (PUE) of the entire data center

h) Proportion of reused energy (ERF according to DIN EN 50600-4-6),

i) Efficiency of the cooling system (efficiency of the cooling capacity (CER) according to DIN EN 50600-4-7)

j) Water use efficiency index (WUE according to EN 50600-3-1);

3. general information on the data center for the calculation of derivable parameters and for inspection by authorities and in anonymous form for research purposes

a) Exact address where the data center is located (street, house number, postal code),

b) Name of the owner of the data center,

c) Name of the tenant of the data center with an IT capacity of 50 kW or more,

d) Names of the operators of the data center's energy systems,

e) Nominal connected load of the information technology and the (non-redundant) nominal connected load of the data center,

f) Installed electrical output of the emergency power generators in kW,

g) Installed electrical storage capacity of the uninterruptible power supply (UPS) system in kWh,

h) Type of building use of the immediate surroundings according to §§ 2 to 14 BauNVO,

i) Information on the refrigerants and refrigerant charge quantities used;

4. information on the operation of the data center in the last full calendar year for the calculation of derivable parameters and for inspection by authorities

a) Total consumption of combustibles and fuels,

b) Type and quantity of refrigerants disposed of and refilled in the reporting year,

c) Amount of energy reused (REF according to EN 50600-4-6), d) Total water consumption and water quality,

e) Annual electricity generation from fossil and renewable energies at the data center location f) Annual energy consumption of the information and communication technology systems in KWh (measured according to PUE category 2 in EN 50600-4-2),

g) total annual amount of heat dissipated from the data center in KWh ( measured according to PUE category 2 in EN 50600-4-2 ),

h) Annual energy consumption of the cooling systems in KWh;

**Annex 6 (to § 20 paragraph 2)**

**Information from operators of information technology within a data center**

1. information technology details for publication

a) Name of the information technology operator,

b) Postal code in whose area the data center is located and the registration number of the data center in which the IT is operated, as provided by the CO location operator,

c) Annual electricity consumption of information technology,

d) Change in installed IT capacity and electricity consumption compared to the previous year;

e) Change in the average utilization of the central processing unit (CPU) as a percentage based on intervals of 6 hours,

2. information on information technology for the calculation of derivable parameters and for inspection by authorities and in anonymized form for research purposes

a) Exact address where the data center is located (street, house number, postal code),

b) the name and address of the landlord of the data center space used,

c) Date of commissioning of the information technology . Extensions or dismantling must be reported annually ,

d) Connected load of the installed information technology;

e) Number of racks operated and indication of the information technology space used,

f)

f) Alternatively: Provision of a load profile of the average utilization of the central processing units (CPU) across all servers and averaged over 52 weeks on the basis of 1-hour intervals or less.