Annex 2

Energy Efficiency Report

to the Basic Award Criteria for

Data Centers

DE-UZ 228

|  |  |
| --- | --- |
| Applicant/licence holder: |  |
| Address: |  |
| Name of DC: |  |
| Date of application: |  |
| The application is being submitted for | a company data center  a colocation data center  an IT department |
| Author: |  |
| Reporting period: | from: to: |
| Date report created: |  |
| This is the report | at the time of application  for the final evaluation |

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1. Introduction

This Energy Efficiency Report is submitted at the time of application for the Blue Angel ecolabel for data centers (DE-UZ 228) (see Paragraph 3.1.2 of the Basic Award Criteria). This template document, which defines the structure of the Energy Efficiency Report, is enclosed with the Basic Award Criteria for DE-UZ 228 as Annex 2.

The Energy Efficiency Report must be examined by an independent auditor to confirm compliance with the requirements. RAL gGmbH, with the support of the German Environment Agency, has approved auditors (see Annex B to the Basic Award Criteria) that are authorised to examine the submitted documentation. The approval of the auditors guarantees that the testing of the report is carried out independently and with a high level of professional qualifications. The applicant must commission the auditor to carry out the audit.

During the term of the Contract on the Use of the Environmental Label, the data center must be operated in an energy efficient manner and energy efficiency criteria must be taken into account when acquiring new building technology.

The “**Energy Efficiency Report at the time of application**“ must be submitted to RAL gGmbH by the applicant together with **the audit report at the time the application is made**. The following aspects must be observed in this process:

* Chapter 2 of the report is used to provide general information about the data center.
* Chapter 3 of the report is used to document compliance with all requirements that are valid at the time of application.

An “**Energy Efficiency Report for final evaluation**“ must be submitted to RAL gGmbH together with the updated annexes at the latest 6 months before the end of the agreed term of contract. You can still use this document for the “Energy Efficiency Report for final evaluation”. Please highlight all changes made after the application so that they can be clearly identified, e.g. by marking them or changing the font colour. Compliance with the criteria during the term of the contract must be verified, all annexes must be updated in accordance with the Basic Award Criteria and the series of measurements must be continued.

If you intend to use the “Energy Efficiency Report for final evaluation” to extend the contract, you must also verify compliance with any new or amended criteria at the time of application and the report must be examined by an external auditor.

Templates for the annexes are published with the Basic Award Criteria and they can be used for the application. However, you can also create your own documentation as long as it contains at least the required information.

If you have any questions about the criteria, creating the Energy Efficiency Report or using the annexes, you can contact one of the auditors named in Annex B or an appropriate consultant. Please note that a consultant who assists you with the creation of the documentation cannot also be used as the auditor.

1. General information on the data center

Address of the data center (if different to the applicant’s address):

Date DC commissioned:

* 1. Capacity of the data center

Size of the white space in m2:

Total IT output (design) in kWel:

Currently used IT performance in kWel:

Availability class according to DIN EN 50600:

* 1. Description of the data center

(Please describe the data center in your own words, e.g.:

* Is the building just a data center or is the data center located in an administrative building or a building with another use?
* Is the data center used solely as a company data center or as a colocation data center or is it used for a mix of different business models? If it is used for different business models, please estimate the proportion of the IT performance that is used for each model.
* Is the data center part of a twin or multi-site group?
* Since commissioning the data center, have you updated parts of the technical equipment?
* Do you have special technical equipment, e.g. a special cooling system or absorption chiller?
* Do you use direct water cooling in the IT components?
* What inlet temperature do you use for the IT components?
* If you have a cooling concept with series of racks, are the racks fully enclosed?
* Which temperature range do you use for free cooling?
* Do you utilise the waste heat from the data center?

Please delete the examples here after creating your text and

for the final evaluation, describe which changes have been made to the data center since the application was submitted)

Alternatively:

The description is enclosed as an annex with the file name:

1. Compliance with the criteria

The numbers used for the criteria correspond to the numbers in the Basic Award Criteria.

The applicant confirms compliance with all of the criteria listed in Paragraph 3.

* 1. Requirements for all applicants
     1. Energy management system

The applicant confirms that they have an energy management system for the data center or the subsection of the data center for which they are responsible. This should be based on DIN EN 50600-3-1, DIN EN ISO 50001[[1]](#footnote-2) or EMAS III[[2]](#footnote-3).

The description of the energy management system is enclosed as Annex 3.1 with the file name:

* + 1. Energy Efficiency Report at the time of application

An Energy Efficiency Report must be submitted at the time of application that provides information on the current technical status of the data center. In addition, the Energy Efficiency Report must document compliance with all of the requirements that are valid at the time of application.

Annex 2 (this document) should be used for creating the Energy Efficiency Report.

Alternatively:

The Energy Efficiency Report is enclosed as Annex 2 with the file name:

* + 1. Energy Efficiency Report for final evaluation

The holder of the environmental label must submit an updated Energy Efficiency Report at the latest 6 months before the end of the agreed term of contract in which compliance with the requirements during the term of the contract is documented.

Annex 2 (this document) should be used for creating the Energy Efficiency Report.

Alternatively:

The Energy Efficiency Report is enclosed as Annex 2 with the file name:

* 1. Requirements for data center operators
     1. Measurement concept for the technical building equipment

Several requirements for this ecolabel, which make a contribution to the efficient use of energy and resources, are based on the monitoring and measurement of multiple parameters. In order to check the calculations for the key performance indicators PUE and CER, a clearly understandable calculation process is required that is based on data from the meters in the measurement concept. The measurement concept must include the following information:

* Block or schematic diagrams for the electrical energy and cooling systems
* Designations for the measurement points or meters in the block or schematic diagrams
* Description of the calculations for PUE, CER, ERF and WUE with reference to the measurement points or meters.

A block schematic diagram is a simplified illustration of the existing technical equipment, the connections between the systems and the associated meters. Planning documents are generally unsuitable for the measurement concept because they contain too many details and the measurement points are often either not included or are difficult to identify. If you want to nevertheless still use planning documents, please ensure that the measurement points are easy to identify (e.g. by marking them) and correctly labelled. Appendix A of the Basic Award Criteria describes the required measurement points.

The latest measurement concept for the electricity distribution is enclosed as Annex 3.2 with the file name:

The latest measurement concept for the cooling distribution is enclosed as Annex 3.3 with the file name:

* + 1. Monitoring energy, air conditioning and water

Monitoring must be carried out by the applicant in which measurements of the electrical output and the energy consumption of the important components of the data center, as well as the cooling and water consumption, are recorded and evaluated continuously throughout the whole year. Regular measurements must be taken at at least those measurement points (MPs) described in the measurement concept.

The following values must be determined as a result of this monitoring on at least a monthly basis:

* Electricity consumption (volume of electricity) of the entire data center (MPESC + MPOSG + MPEPS) [kWhel]
* Electricity consumption (volume of electricity) of the IT (MPIT2) [kWhel][[3]](#footnote-4)
* Electricity consumption (volume of electricity) of the cooling system (MPCS) [kWhel]
* Electricity consumption (volume of electricity) of other consumers (MPOC) [kWhel] (e.g. safety technology, lighting)
* Electrical energy (volume of electricity) from own generation (e.g. PV system) [kWhel]
* Cooling energy generated (MPCE) [kWhth]
* Waste heat utilisation in the entire data center (MPDC) [kWhth]
* Waste heat utilisation (MPWHU) [kWhth]
* Drinking water consumption by cooling systems with evaporative cooling [m³]
* Description of the use of other water sources (e.g. rain water, well water, river water) with approximate volumes [m³]
* Other non-electrical energy consumption and the type of fuel (e.g. consumption of fuel by the emergency power system, use of district heating or district cooling)

**Note**: If some of the measurement points for the data center described above do not apply to the data center (e.g. own generation, drinking water consumption, fuel consumption), each of these values can be set to zero.

The latest monitoring system is presented in Annex 3.4.

Alternatively:

The monitoring system is enclosed as Annex 3.4 with the file name:

* + 1. Inventory list for the cooling technology and energy provision

The applicant must submit an inventory list containing all of the technical building equipment installed in the data center.

The inventory list must contain at least the following components and their important properties:

* Cooling technology components
* UPS systems
* Electrical switching systems
* Emergency power systems (incl. fuel storage)

The applicant must add any new acquisitions to the inventory list so that the current equipment is always documented.

The latest inventory list of the technical equipment is presented in Annex 3.5.

Alternatively:

The inventory list of the technical equipment is enclosed as Annex 3.5 with the file name:

* + 1. Renewable energies

The data center must cover 100% of its electricity consumption using renewable energies such as hydroelectric power, photovoltaic power, wind power or biomass power.

Exemption: The applicant can deviate from this requirement if the energy used to operate the data center is not directly sourced from an energy supply company (ESC) but via a third party, such as the landlord of a building or a separately operated business unit who has concluded a supply contract with the data center operator. This exemption can only be utilised if the data center accounts for no more than 20 percent of the total energy supplied annually by the EMC to this third party. The following applies to the electrical energy consumed in the data center that is not sourced from renewable energies: Data center operators must purchase certificates to offset the greenhouse gas emissions (CO2 emissions) generated in the production of this non-renewable electricity in order to utilise this exemption during their use of the ecolabel. The recommendations for evaluating the quality of these certificates documented in Appendix B to the Basic Award Criteria must be observed. The offsetting certificates must be submitted together with the Energy Efficiency Report for final evaluation before the end of the term of contract.

Verification of the use of renewable energies is enclosed as Annex 3.6 with the file name:

Alternatively:

The exemption has been utilised, the proportion of the total energy supplied accounted for by the data center is: %

Offsetting certificates are enclosed as Annex 3.6 with the file name:

* + 1. Publicly accessible information

The applicant must publish at least the following information on an annual basis:

* Power Usage Effectiveness (PUE)
* Cooling Efficiency Ratio (CER)
* Energy Reuse Factor (ERF)
* Water Usage Effectivenes (WUE)

The information is published in the following location or at the following Internet address:

* + 1. Requirements for data center service providers

If a data center operator leases out white space or IT hardware in the data center to one or more legal entities (e.g. colocation customers or hosting customers) or otherwise makes them available to external companies (e.g. granting the right of use to white space or IT hardware as part of a cooperation agreement), the applicant must also comply with the following requirements in 3.2.6.1, 3.2.6.2 and 3.2.6.3. In order to differentiate between the different parties involved, the data center operator is referred to in these Paragraphs as the “data center service provider” and contractually bound IT operators as “IT customers”.

* + - 1. Obligation to provide information to IT operators

The data center service provider undertakes to regularly, although at least monthly, provide its IT customers – from a contractually agreed peak electrical load for IT of 5 kilowatts per IT customer – with information about the amount of electricity consumed and the peak electrical load of the information technology used by the respective IT customer.

* Electricity consumption for IT [kWhel]
* Peak electrical load for IT [kWel]

Example information is enclosed as Annex 3.7 with the file name:

* + - 1. Financial incentives for saving energy

The pricing model used by the data center service provider to bill the IT customers must be designed so that the customer or contractual partner has an incentive to use the most energy efficient information technology, consume less energy and operate the most energy efficient equipment.

The data center service provider must offer IT customers – from a contractually agreed peak electrical load for IT of 5 kilowatts – a pricing model that includes the following criteria:

* The charges billed for the service must contain a pricing component that is dependent on the amount of electricity consumed.
* The price per energy unit in this consumption-based pricing model must not be lower than the purchase price for the supplied electricity (electricity price).
* The data center service provider may not agree with the customer either a minimum purchase quantity or a fixed amount of electrical energy [kWhel] provided free of charge.

**Exemption**: This requirement does not apply if the data center service provider does not issue any invoices to the customer for these services. This could be the case, for example, if the service is provided in the form of administrative assistance without the payment of a financial consideration or as part of a research partnership.

The applicant confirms compliance and submits the contractual conditions in the pricing model and the lack of a minimum purchase quantity as well as the electricity price (purchase and sales price) to the auditor.

Alternatively:

The exemption has been utilised, the applicant has presented the justification to the auditor.

* + - 1. Advisory services for improving energy efficienc

The data center service provider must inform their IT customers about the possibilities for saving energy and support them in the implementation of these measures. This advice can cover, for example, the selection of energy efficient information technology, consolidating IT output, reducing peak loads, making optimal use of existing resources or introducing energy monitoring systems. The data center service provider must provide their customers or contractual partners with corresponding information (e.g. information brochures, workshops, video tutorials, etc.).

The following advisory services have been made available:

Information materials are enclosed as Annex 3.8 with the file name:

* + 1. Power Usage Effectiveness (PUE) – efficiency of the infrastructure

Power Usage Effectiveness (PUE) is a measure of the energy efficiency of the data center's infrastructure.

The PUE value must be determined in accordance with the DIN EN 50600-4-2 standard for PUE category 2 (PUE2, intermediate resolution) or using an equivalent method.

Energy used for the decoupling of waste heat (e.g. for the operation of a heat pump to increase the temperature level and pumps to operate heating networks) should not be included in the calculation of the PUE. Corresponding meters must be installed for this purpose.

At the time of application, the end of the measurement period for determining the PUE must not be more than three months ago.

Depending on the date on which the data center was commissioned, the Power Usage Effectiveness (PUE) of the data center must not exceed the following values as an annual average even during the term of use of the ecolabel:

Table 1: Minimum requirement for Power Usage Effectiveness

|  |  |
| --- | --- |
| Date the data center was commissioned | PUE |
| 01/01/2024 or later | PUE ≤ 1.25 |
| Between 01/01/2019 and 31/12/2023 | PUE ≤ 1.30 |
| Between 01/01/2015 and 31/12/2018 | PUE ≤ 1.50 |
| 31/12/2014 or earlier | PUE ≤ 1.60 |

The PUE of the data center in the period

from to was: (state the PUE value)

The PUE of the data center in the 1st year after submitting the application

from to was: (state the PUE value)

The PUE of the data center in the 2nd year after submitting the application

from to was: (state the PUE value)

The PUE of the data center in the last year before the final evaluation

from to was: (state the PUE value)

(add additional lines for each additional year where relevant)

The calculation for the PUE is presented in Annex 3.9.

Alternatively:

The calculation for the PUE is enclosed as Annex 3.9 with the file name:

**Exemption 1:** After they have been commissioned, newly built colocation data centers are often not yet working at full capacity. Therefore, the alternative minimum requirements for the PUE value stated in Table 2 are valid for the first two years after the commissioning of the data center. These exemptions are valid in each case for the reporting period for the Energy Efficiency Report. These exemptions can only be utilised at the time of application or during the period of use of the environmental label if the start of the reporting period for the Energy Efficiency Report is no longer than 2 years ago.

Table 2: PUE exemption for newly commissioned data colocation data centers

|  |  |
| --- | --- |
| Commissioning of the colocation data centers | PUE |
| Less than 1 year ago (commissioning date < 1 year) | PUE ≤ 1.50 |
| Less than 2 years ago (1 year ≤ commissioning date < 2 years) | PUE ≤ 1.40 |

Exemption 1 has been utilised, the PUE value of the data center in the period

from to was: (state the PUE value)

The calculation for the PUE is presented in Annex 3.9.

Alternatively

The calculation for the PUE is enclosed as Annex 3.9 with the file name:

**Exemption 2:** Data centers that were commissioned less than 15 months ago at the time of the application are exempt from the requirement that the PUE value must be calculated over a measurement period of twelve months. At the time of application, these new data new centers must calculate the expected PUE value 12 months after it has been commissioned based on the planning data according to DIN EN 50600 from a qualified specialist planner, in which the calculation of the PUE value reflects the expected status of the data center 12 months after it has been commissioned. The measurement results must verify compliance with the minimum requirements in Table 2 at the latest 15 months after the commissioning date.

Exemption 2 has been utilised, the calculated PUE value (dPUE) for the data center

is: (state the dPUE value)

The calculation is enclosed as Annex 3.9 with the file name:

* + 1. Cooling Efficiency Ratio (CER)

The energy efficiency of the cooling system must be determined using the performance indicator *Cooling Efficiency Ratio* (CER) in accordance with the DIN EN 50600-4-7 standard. The Cooling Efficiency Ratio (CER) describes the ratio of the cooling load Qth,DC,a [MWhth/a] in the data center that is handled by the cooling system (CS) within one year (12 months) to the total electrical energy input into the entire cooling system ECS,a [MWhel/a].

Depending on the commissioning date, the following values must be observed:

Table 3: Minimum requirement for the Cooling Efficiency Ratio (CER)

|  |  |
| --- | --- |
| Date the cooling system was commissioned | CER |
| 01/01/2024 or later | CER > 9 |
| Between 01/01/2019 and 31/12/2023 | CER > 8 |
| Between 01/01/2015 and 31/12/2018 | CER > 7 |
| 31/12/2014 or earlier | CER > 5 |

The CER of the data center in the period

from to was: (state the CER value)

(add additional lines for each year for the final evaluation)

The calculation for the CER is presented in Annex 3.9.

Alternatively:

The calculation for the CER is enclosed as Annex 3.9 with the file name:

**Exemption 1**: After they have been commissioned, newly built data centers are often not yet working at full capacity. Therefore, the alternative minimum requirements for the energy efficiency of the cooling system (CER) stated in Table 4 are valid for the first two years after the commissioning of the data center. These exemptions are valid in each case for the reporting period for the Energy Efficiency Report. These exemptions can only be utilised at the time of application or during the period of use of the environmental label if the start of the reporting period for the Energy Efficiency Report is no longer than 2 years ago.

Table 4: CER exemption for newly commissioned data centers

|  |  |
| --- | --- |
| Commissioning of the colocation data centers | CER |
| Less than 1 year ago (commissioning date < 1 year) | CER > 5 |
| Less than 2 years ago (1 year ≤ commissioning date < 2 years) | CER > 6.5 |

Exemption 1 has been utilised, the CER value of the data center in the period

from to was: (state the PUE value)

The calculation for the CER is presented in Annex 3.9.

Alternatively:

The calculation for the CER is enclosed as Annex 3.9 with the file name:

**Exemption 2:** Data centers that were commissioned less than 15 months ago at the time of the application are exempt from the requirement that the CER value must be calculated over a measurement period of twelve months. These new data centers must calculate the expected CER value 12 months after they have been commissioned for the application as follows:

Either using planning data produced by a qualified specialist planner in accordance with DIN EN 50600, in which the calculation of the CER value reflects the expected status of the data center 12 months after it has been commissioned.

Or on the basis of a load test, where the expected status of the data center after 12 months is simulated using load banks and this information is used to calculate the annual cooling load for the cooling system and the total electrical energy input into the entire cooling system.

The measurement results must verify compliance with the minimum requirements in Table 4 at the latest 15 months after the commissioning date.

The exemption has been utilised, the calculated CER value (dCER) for the data center is: (state the dCER value)

The calculation is enclosed as Annex 3.9 with the file name:

* + 1. Refrigerant

In those cooling systems, heat pumps and dehumidifiers that were placed into operation after the 1 January 2013, only halogen-free refrigerants may be used. An exemption applies to systems with a maximum cooling performance of less than 10 kW.

Refrigerant used: (state the refrigerant)

Alternatively:

No mechanical cooling is used in the data center.

* + 1. Use of waste heat

The waste heat from data centers can make an important contribution to switching over the heating supply system from fossil fuels to highly efficient heat pump systems.

Data centers placed into operation after 1 January 2023 must comply with the following criteria:

Part of the waste heat from the data center must be utilised by the data center operator in their own buildings or facilities or by external heat consumers (ERF > 0).

Data centers with a connected electrical rating of 100 kW or higher must be suitably equipped for the utilisation of the waste heat outside of the data center. Connections must be installed for this purpose.

If the data center operator is not able to utilise all of the waste heat in their own buildings or facilities or has not already agreed supply contracts for the total volume of waste heat, data centers with a connected electrical rating of 100 kW or higher must publish information on the temperature level and the amount of heat that they can supply. The data center operator must give potential heat consumers the opportunity to conclude a supply contract on request.

The key performance indicator for the proportion of reused energy (Energy Reuse Factor – ERF, according to the DIN EN 50600-4-6 standard) must be published at least once a year.

The data center was placed into operation before 1 January 2023

Alternatively:

The description of the waste heat utilisation and the calculation for the ERF is enclosed as Annex 3.10 with the file name:

* + 1. Electrical switching systems

Elektrische Schaltanlagen, die im Verantwortungsbereich des RZ-Betreibers betrieben werden, die nach dem 1.1.2023 installiert wurden, dürfen nicht das stark treibhauswirksame Gas Schwefelhexafluorid (SF6) als Isoliermedium enthalten.

The applicant confirms compliance with the requirement

* + 1. Efficient use of floor space

In order to help reduce soil sealing, the data center should make the most efficient use of space possible. In the Energy Efficiency Report, the applicant shall state the following key performance indicators as information about their efficient use of floor space:

Total IT output per square metre of gross floor area [kWel/m²GFA]  
  
 kWel/m²GFA (state value)

Total IT output per square metre of constructed area [kWel/m²CA]  
  
 kWel/m²CA (state value)

Total IT output per square metre of white space [kWel/ m²white space]  
  
 kWel/m²white space (state value)

**Exemption**: If the data center operator only uses part of the building for the data center and its administration, e.g. as a tenant of a commercial building that is used by several parties or a department of a larger company or an authority, the efficient use of the floor space can be stated using the following key performance indicators:

Total IT output per square metre of floor area used [kWel/m²FAU]  
  
 kWel/m²FAU (state value)

Total IT output per square metre of white space [kWel/ m²white space]  
  
 kWel/m²white space (state value)

The “floor area used (FAU)” is defined here as the floor area used for the operation and administration of the data center, which is stated, for example, in the lease agreed by the data center operator or in a comparable user agreement.

* + 1. New acquisitions during the term of the contract

If components of the technical building equipment are changed, replaced or newly acquired, the applicant must ensure in advance that they still comply with all of the Basic Award Criteria for this ecolabel. This applies in particular to the following Basic Award Criteria:

* PUE ≤ 1.3 (≤1.5 or ≤1.6) (see Paragraph 3.2.7)
* CER > 8 (see Paragraph 3.2.8)
* SF6-free switching systems (see Paragraph 3.2.11)
* Halogen-free refrigerants (see Paragraph 3.2.9)
* Newly acquired components and their important properties must be documented in the IT inventory list (see Paragraph 3.2. 3).

The applicant confirms compliance with the requirements at the time of application.

The applicant confirms for the final evaluation that the requirements were complied with during the term of the contract.

* 1. Requirements for IT operators
     1. IT inventory list

The applicant must submit an inventory list containing all of the IT components installed in the data center.

The IT inventory list must contain at least the following IT components and their important properties:

* Servers,
* Storage systems,
* Network equipment.

The applicant must add any new acquisitions to the inventory list so that the current equipment is always documented.

The IT inventory list is presented in Annex 4.1.

Alternatively:

The IT inventory list is enclosed as Annex 4.1 with the file name:

* + 1. Monitoring the IT load

In order to ensure the efficient operation of the information technology, the applicant must have implemented a process to monitor the IT utilisation. The data center must have a monitoring system for the IT load that collects the following datasets:

For all servers: Average CPU utilisation per server, as an average figure for a period of one month

For all storage systems: Average storage space utilised per storage system, as an average figure for a period of one month

All datasets must be updated during the term of the Contract on the Use of the Environmental Label and submitted to the auditor as verification in the Energy Efficiency Report for final evaluation if the applicant wishes to reapply for the ecolabel.

The monitoring of the IT load is presented in Annex 4.2.

Alternatively:

The monitoring of the IT load is enclosed as Annex 4.2 with the file name:

* + 1. Minimum utilisation of the servers

The servers used in the data center must have an average CPU utilisation of at least 20 percent over a period of 12 months:

* ITEUSV ≥ 20%

Instructions on how to calculate the average values can be found in Appendix D to this document.

**Note 1:** In the event of the low utilisation of the data center, this key performance indicator can be complied with by reducing N. This can be achieved by consolidating the load on certain servers and switching other servers off or into a power-saving sleep mode.

**Note 2:** To simplify the collection of data for heterogeneous IT systems, it is sufficient when calculating the average ITEUSV value if the ITEUSV value for 90 percent of all physical servers is measured and averaged. The number of measured servers and their share of the total number of servers must be documented in the Energy Efficiency Report.

**Exemption 1**:Data centers that were commissioned less than 15 months ago at the time of the application are exempt from the requirement that the ITEUSV value must be calculated over a measurement period of twelve months. These new data centers can also measure the ITEUSV from the date on which the data center was commissioned. However, the measurement period must cover at least one full month.

**Exemption 2**:It is not necessary to calculate the IT Equipment Utilization for Servers (ITEUSV) for those servers that are not covered by the ISO/IEC 30134-5 standard, e.g. because the predominant share of the electrical load on the servers is not generated by CPUs but rather by GPUs (Graphics Processing Units).

The utilisation of the servers is (state value)

The minimum utilisation of the servers is enclosed as Annex 4.3 with the file name:

Exemption 1 has been utilised, the utilisation of the servers is (state value)

The minimum utilisation of the servers is presented in Annex 4.3.

Alternatively:

The minimum utilisation of the servers is enclosed as Annex 4.3 with the file name:

Exemption 2 has been utilised, the ISO/IEC 30134-5 standard is not applicable for the following reason:

* + 1. Reuse-Management

In order to satisfy the guidelines for the avoidance of waste (see German Circular Economy Act (Kreislaufwirtschaftsgesetz) § 6 waste hierarchy), the ecolabel aims to promote the reuse of information technology (servers and storage devices) after the end of their service life in the data center. Information technology that leaves the data center may not be scrapped or destroyed. The applicant must present a secure process for the deletion of data and a contractual agreement with a refurbishing company (maintenance and refurbishment). The servers may be donated free of charge to charitable organisations or also sold for a fee to professional refurbishing companies (e.g. the manufacturer).

Exemption: Data media that contain confidential information (“classified documents”) according to the General Administrative Provision for the Material Protection of Classified Information (accessible at: GMBl. 2018 no. 44–47, p. 826) or other sensitive data for which there is no secure and non-destructive deletion process available that meets the requirements of the Federal Office for Information Security (BSI) are exempt from this requirement.

A process for the secure deletion of the data is available.

The contract with the refurbishing company is enclosed as Annex 4.4 with the file name:

The exemption has been utilised, there is no secure and non-destructive deletion process available for the following reason:

1. Overview of the annexes to the contract

Overview of the annexes which must be enclosed with the application documentation  
(also see Annex A):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Annex | Paragraph no. | Responsible person | Name of annex | Enclosed? |
| 1 | 1 | All | Declaration of compliance with the criteria |  |
| 3.1 | 3.1.1 | All | Description of the energy management system |  |
| 2 | 3.1.2 | All | Energy Efficiency Report at the time of application |  |
| 2 | 3.1.3 | All | Energy Efficiency Report for final evaluation |  |
| 3.2 | 3.2.1 | Data center operator | Measurement concept for the electricity distribution |  |
| 3.3 | 3.2.1 | Data center operator | Measurement concept for the cooling distribution |  |
| 3.4 | 3.2.2 | Data center operator | Monitoring of energy, air conditioning, water |  |
| 3.5 | 3.2.3 | Data center operator | Inventory list of the technical equipment |  |
| 3.6 | 3.2.4 | Data center operator | Verification of renewable energies |  |
| 3.7 | 3.2.6.1 | Data center operator | Customer information |  |
| 3.8 | 3.2.6.3 | Data center operator | Advisory services for improving energy efficiency |  |
| 3.9 | 3.2.7, 3.2.8 | Data center operator | Calculation of the key performance indicators |  |
| 3.10 | 3.2.10 | Data center operator | Use of waste heat |  |
| 4.1 | 3.3.1 | IT operator | IT inventory list |  |
| 4.2 | 3.3.2 | IT operator | Monitoring the IT load |  |
| 4.3 | 3.3.3 | IT operator | Datasets of average monthly values for the minimum utilisation of servers |  |
| 4.4 | 3.3.4 | IT operator | Documentation of the process for the secure deletion of data and the agreement with the refurbishing company |  |
| 5 | 1 | All | Audit report |  |

Please use the following naming convention for the file names:

*Annex # – Name of annex*

Example for the Energy Efficiency Report at the time of application:

*Annex 2 – Energy Efficiency Report at the time of application*

The application documents include templates for the following annexes for use by the applicants.

**Annex 2** Declaration of compliance with all criteria and the Energy Efficiency Report at the time of application (this document), Paragraph 3.1.2

**Annex 3.4** Monitoring energy, air conditioning and water, Paragraph 3.2.2

**Annex 3.5** Inventory list of the technical equipment, Paragraph 3.2.3

**Annex 3.9**  Calculation of the PUE and CER, Paragraphs 3.2.7 and 3.2.8

**Annex 4.1**  IT inventory list, Paragraph 3.3.1

**Annex 4.2**  Monitoring of the IT load, Paragraph 3.3.2

1. Abkürungsverzeichnis

**COP**: Coefficient of Performance: A performance value for mechanical [cooling systems](about:blank) and for mechanical [heat pumps](about:blank). It is the ratio between the heating or cooling provided and the electrical energy consumed.

**CPU:** A Central Processing Unit (CPU) is the central component of a computer.

**EER:** The energy efficiency ratio is a dimensionless key figure that describes the energy efficiency of a system. In the case of mechanical cooling systems, it is the ratio between the generated thermal energy (cold) to the electrical energy used over a defined period of time. If the EER is recorded over a time period of one year then it corresponds to the annual energy efficiency ratio (EER) of the cooling system.

**IT:** Information technology (IT) is an umbrella term for the hardware used for data processing.

**CS:** A cooling system is the sum of the technical facilities for cooling a building or individual rooms e.g. a data center.

**CWC:** A cold water chiller (CWC) is a chiller that cools a fluid heat transfer medium.

**PDU:** A Power Distribution Unit (PDU) is the distribution unit within a server room that distributes the low voltage electricity to the individual IT components.

**DC:** A data center is a spatially confined technical facility that serves to securely, permanently and centrally process large amounts of data over a long period of time.

**Recirculation**

**cooler:** A cooling device that circulates the air to be cooled in a circuit, i.e. no outside air is supplied, and this is cooled using heat transfer to the desired temperature level.

**UPS:** An Uninterruptible Power Supply (UPS) is an apparatus within the energy supply system for the data center that increases the reliability of the energy supply. The UPS bridges short-term interruptions to the electricity supply grid using batteries and ensures that the servers and storage systems can be properly shut down in the event of a prolonged power failure.

Aside from the abbreviations defined above, the definitions in the Basic Award Criteria apply (Paragraph 1.3).

1. DIN EN ISO 50001: Energy management systems - Requirements with guidance for use [↑](#footnote-ref-2)
2. Regulation (EC) No. 121/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS): OJ EC No. L 342, P. 1, 22/12/2009 [↑](#footnote-ref-3)
3. Sum of all electricity consumption billed to customers and the electricity consumption for the operation of the information technology operated by the colocation supplier (e.g. IT for monitoring, GLT, etc.) [↑](#footnote-ref-4)