



**SLOVENSKI STANDARD**  
**SIST EN 50600-4-2:2017/A1:2019**

**01-junij-2019**

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**Informacijska tehnologija - Naprave in infrastruktura podatkovnih centrov - 4-2.  
del: Učinkovitost porabe energije - Dopolnilo A1**

Information technology - Data centre facilities and infrastructures - Part 4-2: Power Usage Effectiveness

Informationstechnik - Einrichtungen und Infrastrukturen von Rechenzentren - Teil 4-2: Kennzahl zur eingesetzten Energie

Technologie de l'information - Installation et infrastructures de centres de traitement de données - Partie 4-2 : Efficacité de l'utilisation de l'énergie

<https://standards.iteh.ai/catalog/standards/sist/f685335-e09f-4eeb-aa0b-390c01833959/sist-en-50600-4-2:2017-a1:2019>

**Ta slovenski standard je istoveten z: EN 50600-4-2:2016/A1:2019**

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**ICS:**

35.110            Omreževanje            Networking

**SIST EN 50600-4-2:2017/A1:2019            en,fr**

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EUROPEAN STANDARD

**EN 50600-4-2:2016/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2019

ICS 35.020; 35.110; 35.160

English Version

**Information technology - Data centre facilities and infrastructures  
- Part 4-2: Power Usage Effectiveness**

Technologie de l'information - Installation et infrastructures  
de centres de traitement de données - Partie 4-2 : Efficacité  
de l'utilisation de l'énergie

Informationstechnik - Einrichtungen und Infrastrukturen von  
Rechenzentren - Teil 4-2: Kennzahl zur eingesetzten  
Energie

This amendment A1 modifies the European Standard EN 50600-4-2:2016; it was approved by CENELEC on 2019-01-29. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

EN 50600-4-2:2016/A1:2019 (E)

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## European foreword

This document (EN 50600-4-2:2016/A1:2019) has been prepared by CLC/TC 215 “Electrotechnical aspects of telecommunication equipment”.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-01-29
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2022-01-29

This document updates subclauses 5.2, 6.2.3 and Annex B.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

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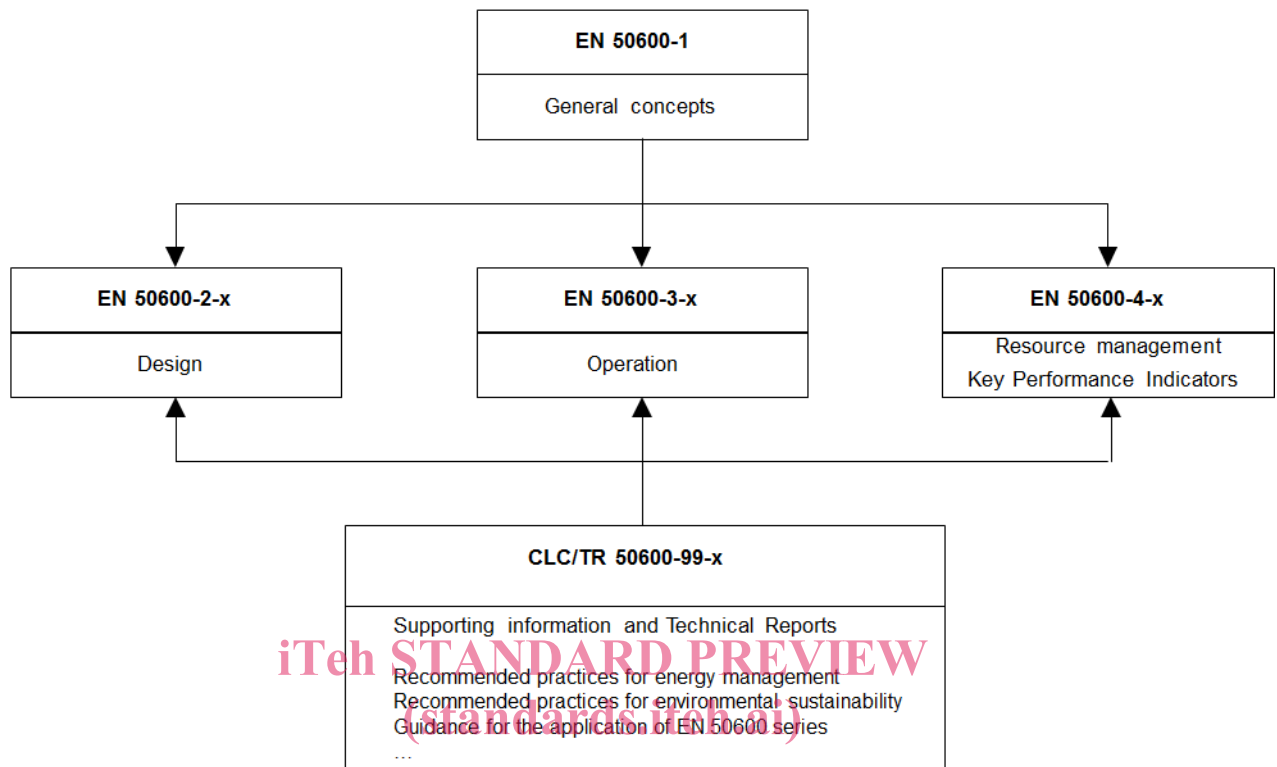
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EN 50600-4-2:2016/A1:2019 (E)

## 1 Modification to the Introduction

Replace Figure 1 with:



SIST EN 50600-4-2:2017/A1:2019  
<https://standards.iteh.ai/catalog/standards/sist/ff685335-e09f-4eeb-aa0b-...>  
**Figure 1 — Schematic relationship between EN 50600 series of standards**

## 2 Modification to 5.2, Total data centre energy consumption

Replace paragraphs 5 to 7 with:

Gaseous or liquid fuels shall be metered in kWh or converted into kWh using the heat of combustion values for the fuel used. Where information on combustion values is not available and no local regulation applies, the following values shall be applied:

- diesel: 9,9 kWh/l;
- gas: 10,5 kWh/m<sup>3</sup>;
- hydrogen: 38,9 kWh/kg;
- bioethanol: 6 kWh/l.

The energy contribution of fluids for cooling shall be measured using heat meters (providing information on flow rate and differential temperature) and multiplied by the relevant conversion factor  $X$  of the system used to provide the fluid used.

For the conversion of thermal energy to its electrical equivalent, the conversion factor  $X$  shall be obtained from the supplier; in case there is no equivalent available, a conversion factor  $X = 0,4$  shall be used.

Technical subsystems, e.g. on-site co-generation of heat and electricity, shall have meters at their output and are considered external to the system.

### 3 Modification to 6.2.3, Category 2 (PUE2) – intermediate resolution

Replace the subclause with:

The IT load is measured at the output of the PDUs within the data centre and is typically read from a meter on the PDU output (with or without transformer, the measurement point is then after the transformer).

### 4 Modification to Annex B, Calculation of PUE using various energy supplies

Replace Annex B with:

#### B.1 Examples of PUE calculation with various energy supplies

Figures B.1 to B.4 show examples of PUE calculation with various energy supplies.

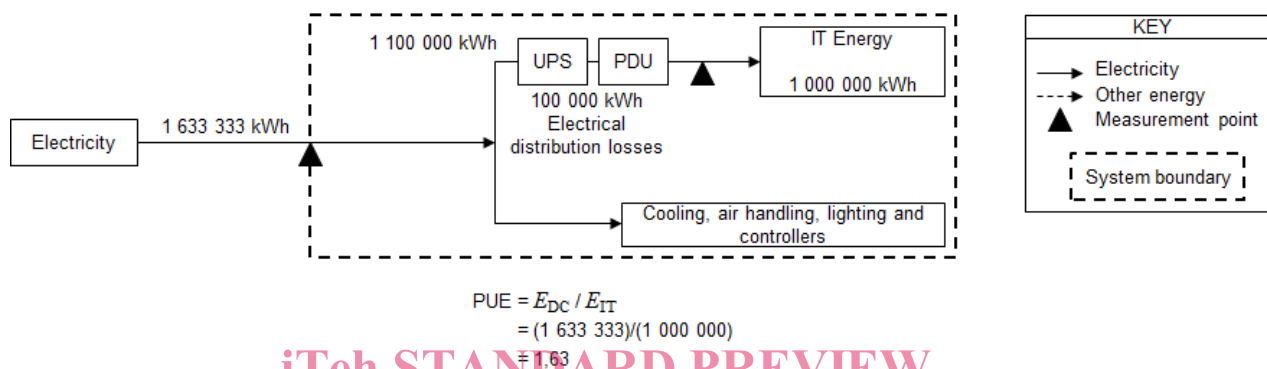


Figure B.1 — Example for a data centre purchasing all electricity

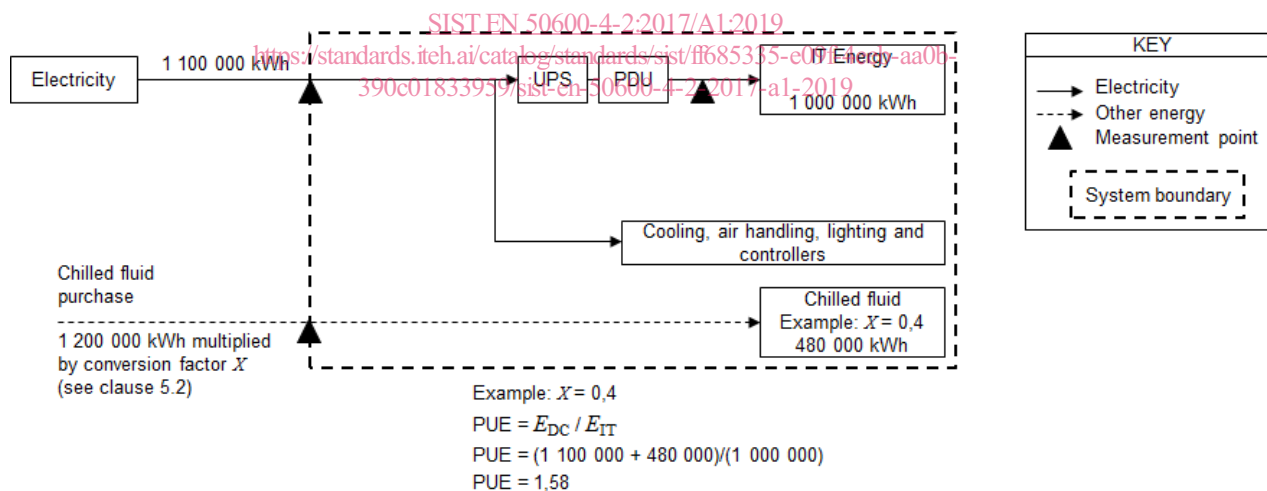


Figure B.2 — Example for a data centre purchasing electricity and chilled water

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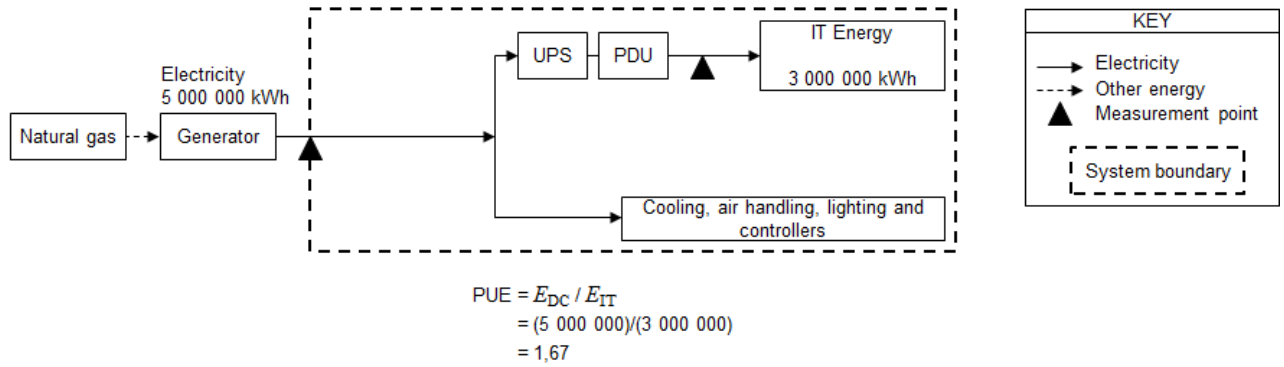


Figure B.3 — Example for a data centre purchasing natural gas

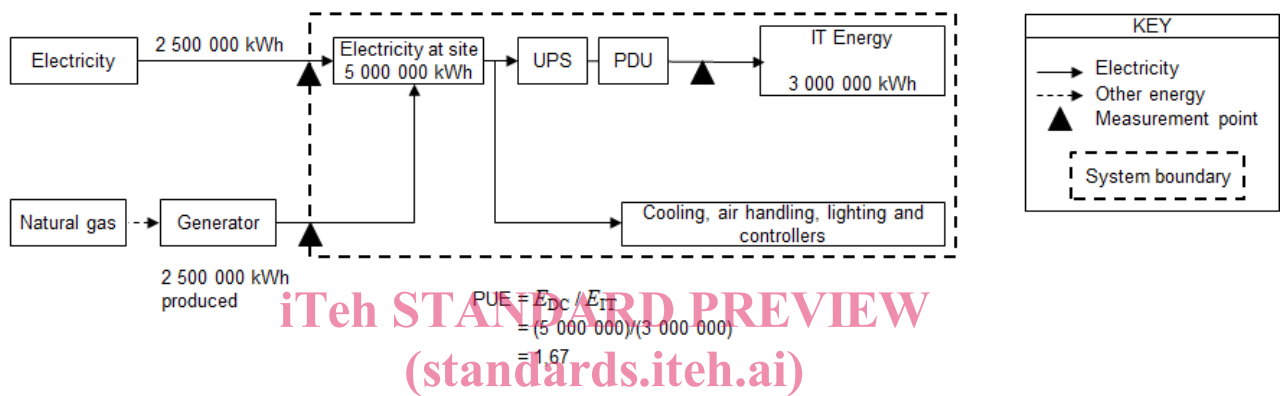


Figure B.4 — Example for a data centre purchasing electricity and natural gas

**B.2 Example of PUE calculation with cogeneration using electricity and natural gas**

Figure B.5 shows an example of PUE calculation with cogeneration using electricity and natural gas.

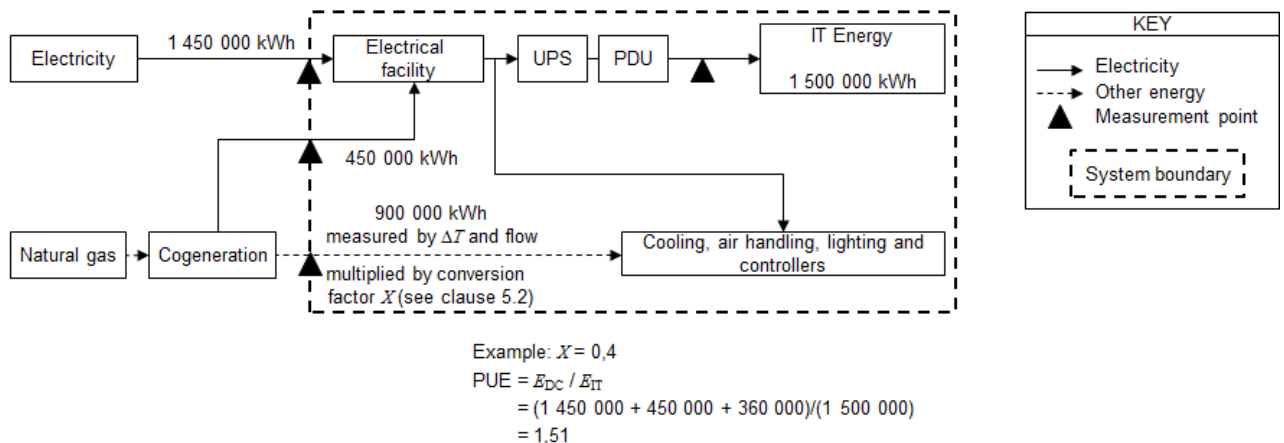


Figure B.5 — PUE calculation with cogeneration using electricity and natural gas