

The certification body of TÜV Informationstechnik GmbH hereby awards this certificate to the company

Stadt Zürich
Albisriederstrasse 201
8022 Zürich, Switzerland

to confirm that its

OIZ Rechenzentrum Hagenholz

fulfils all requirements for very high protection of the criteria catalogue

Trusted Site eEfficiency TSe², V1.0
Level 4

of TÜV Informationstechnik GmbH. The requirements are summarized in the appendix to the certificate.

The appendix is part of the certificate and consists of 4 pages.

The certificate is valid only in conjunction with the evaluation report.



Certificate ID: 6909.18

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Certificate valid until
2019-12-31

Essen, 2018-12-12

Dr. Christoph Sutter
Head of Certification Body

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Certificate

Certification Scheme

The certification body of TÜV Informationstechnik GmbH performs its certification on the basis of the following certification scheme”:

- German document: “Zertifizierungsprogramm (nicht akkreditierter Bereich) der Zertifizierungsstelle der TÜV Informationstechnik GmbH”, Version 1.0 as of 2015-08-24, TÜV Informationstechnik GmbH

Evaluation Report

- German document: “Prüfbericht – Trusted Site Energy Efficiency (TSe²), OIZ Rechenzentren Albis und Hagenholz”, version 1.0 as of 2018-11-29, TÜV Informationstechnik GmbH

Evaluation requirements

- “Trusted Site eEfficiency – TSe² Kriterienkatalog”, Version 1.0 as of 2015-11-16, TÜV Informationstechnik GmbH

The Evaluation Requirements are listed at the end in summary form.

Evaluation target

The target of the evaluation is the “OIZ Rechenzentrum Hagenholz” of the Stadt Zürich. This is detailed in the evaluation report.

Evaluation result

The result is “Level 4”.

Summary of evaluation requirements

Evaluation requirements for Trusted Site eEfficiency (TSe²),
Version 1.0:

Level 1 - Establishment of an energy management system

The following requirements for an energy management system (EnMS) based on ISO 50001 are implemented:

- Energy review
 - Determination of the energy sources and evaluation of energy consumption
 - Determination of the areas with significant energy use
 - Determination of variables affecting significant energy uses
 - Determination of opportunities for improving energy performance
- Determination of an energy baseline
- Definition of Energy Performance Indicators (EnPIs)
- Establishment of energy objectives
- Creation of a document template for introduction, documentation and updating of action plans
- Establishment/definition of responsibilities
- Communication of the energy management system
- Documentation of the energy management system
- Establishment of the scope of the EnMS
- Monitoring and measurement
- Creation of a document template for internal auditing
- Creation of a document template for the Management Review

Additionally, the following requirements are also fulfilled:

- Description of the measuring systems used (type, accuracy, installation sites)
- Basic determination of the Power Usage Effectiveness (PUE) value with $PUE < 2$
- Calculation of the server virtualisation rate
- Comparison with the best available technology (BAT) or with sector-specific characteristic numbers
- Existence of an organigram with identification of the EnMS team
- Existence of a document list with all relevant documents
- Existence of schematics for supply of utilities/services to the data centre (energy supply, cooling supply)

Level 2 - Active energy management system and implementation of Best Practices

The TSe² Level 1 requirements are fulfilled and the following requirements are implemented by the EnMS based on DIN EN ISO 50001:

- Documentation of changes in energy performance
- Introduction, documentation and updating of action plans
- Performance of internal audits
- Performance of management reviews

Additionally, the following requirements are also fulfilled:

- Existence of a monitoring system in accordance with EN 50600-2-2, Granularity Level 2, up to secondary distribution equipment for determination of energy consumptions
- Implementation of at least 50% of the Best Practices (following “The European Code of Conduct for Energy Efficiency in Data Centres”), in order to save primary energy

Level 3 - Monitoring and evaluation

The TSe² Level 2 requirements are fulfilled. Additionally, the following requirements are implemented:

- Measurement of the energy consumptions for at least 12 months
- Evaluation of the measuring results and determination of the Energy Usage Effectiveness (EUE) value
- Review of the technical components of the supply systems with regard to energy-efficient operating conditions
- Use of the EnMS under operating conditions

Level 4 - Increase in energy efficiency

The TSe² Level 3 requirements are fulfilled. Additionally, the following requirements are implemented:

- Evidence of increase in energy efficiency compared with the last TSe² Certification based on the Energy Performance Indicators (EnPI)