

Certificate

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

Stadt Zürich
Organisation und Informatik
Albisriederstrasse 201
8022 Zürich, Switzerland

to confirm that its security area

OIZ Rechenzentrum Hagenholz

fulfils all requirements of the criteria catalogue

TSE.STANDARD V2.1
Energy Efficiency - Maturity Degree 4

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

The appendix is part of the certificate with the ID 6930.24 and consists of 5 pages.

Essen, 2024-02-27

Dr. Christoph Sutter, Head of Certification Body



Certificate validity:
2024-02-27 – 2025-02-28



Certification scheme

The certification body of TÜV Informationstechnik GmbH performs its certifications based on the following certification scheme:

- German document: “Zertifizierungsprogramm (nicht akkreditierter Bereich) der Zertifizierungsstelle der TÜV Informationstechnik GmbH”, version 1.1 as of 2020-03-01, TÜV Informationstechnik GmbH

Evaluation report

- German document: „Evaluierungsbericht – Trusted Site Energy Efficiency, OIZ Rechenzentrum Hagenholz”, version 1.0 as of 2024-02-21, TÜV Informationstechnik GmbH

Evaluation requirements

- “TSE.STANDARD Criteria Catalog, TSE.STANDARD V2.1” as of 2022-10-01, TÜV Informationstechnik GmbH

The Evaluation Requirements are summarized at the end. Requirements not belonging to the confirmed Maturity Degree are printed in grey.

Evaluation target

The evaluation target is the security area “OIZ Rechenzentrum Hagenholz” of Stadt Zürich Organisation und Informatik. It is detailed in the evaluation report.

Evaluation result

The evaluation result is “Energy Efficiency - Maturity Degree 4”.

Summary of the evaluation requirements

Evaluation requirements for Trusted Site Energy Efficiency (TSE), TSE.STANDARD V2.1:

Maturity Degree 1 – Energy Efficiency READY

The following requirements have to be fulfilled for the Maturity Degree 1:

Energy Management System (MGM)

- MGM01.1 Energy Management System Handbook based ISO 50001
- MGM02.1 Determination of the energy sources and evaluation of energy use
- MGM03.1 Determination of the areas with significant energy use
- MGM04.1 Determination of variables with significant influence on energy use
- MGM05.1 Determination of opportunities for improving energy performance
- MGM06.1 Determination of an energy baseline
- MGM07.1 Definition of Energy Goals and Energy Performance Indicators (EnPIs)
- MGM08.1 Creation of a document template for introduction, documentation, responsibilities and updating of action plans Communication of the energy management system
- MGM09.1 Designation of the EnMS team
- MGM10.1 Creation of a document template for scope, time intervals, how auditors are appointed, schedule of internal auditing and audit reports
- MGM11.1 Creation of a document template for the Management Review

Information and Communications Technology (ICT)

- ICT01.1 Development of a Documentation of ICT Inventory including energy efficiency information
- ICT02.1 Creation of a document template for energy-efficient procurement of ICT components
- ICT03.1 Drafting a concept for energy efficiency monitoring of ICT

Infrastructure (INF)

- INF01.1 Existence of schematics for supply of utilities/services to the data centre (energy supply, cooling supply) for energy-efficient operation
- INF02.1 Documentation of an concept for an asset management of the DC infrastructure
- INF03.1 Description of the monitoring concept and measuring systems used (type, accuracy, installation sites)
- INF04.1 Definition of EnPIs at least for PUE and CER

- INF05.1 Selection of Best Practices from Annex A of the TSE.STANDARD criteria catalogue with at least an efficiency value of 500

Maturity Degree 2 – Energy Efficiency IMPLEMENTED

The following requirements have to be fulfilled for the Maturity Degree 2:

Energy Management System (MGM)

- MGM06.2 Validation of the energy baseline
- MGM07.2 Planning the resources to achieve the energy goals
- MGM08.2 Introduction, documentation and updating of action plans
- MGM09.2 Documentation of responsibilities for interfaces of ICT and facility management
- MGM10.2 First execution of internal audits
- MGM11.2 Initial execution of management reviews
- MGM12.2 Fulfilment of TSE Maturity Degree 1

Information and Communications Technology (ICT)

- ICT01.2 Completed documentation of ICT-Inventory including energy efficiency information
- ICT02.2 Implementation of energy-efficient procurement of ICT components
- ICT03.2 Initial measurements from the energy efficiency monitoring for ICT

Infrastructure (INF)

- INF01.2 Regular updates of the documentation of the infrastructure
- INF02.2 Implementation of an asset management of the DC infrastructure
- INF03.2 Installation of an energy efficiency monitoring for the DC infrastructure
- INF05.2 Implementation of Best Practices from Annex A of the TSE.STANDARD criteria catalogue with at least an efficiency value of 500

Maturity Degree 3 – Energy Efficiency IMPROVED

The following requirements have to be fulfilled for the Maturity Degree 3:

Energy Management System (MGM)

- MGM06.3 Demonstration of an increase in energy efficiency
- MGM07.3 Review of the energy goals
- MGM08.3 Review of the measures from action plans
- MGM09.3 Process for coordination the interfaces of ICT and facility management
- MGM 10.3 Regular Execution of internal TSE Audits
- MGM11.3 Regular execution of management reviews
- MGM12.3 Fulfilment of TSE Maturity Degree 2

Information and Communications Technology (ICT)

- ICT01.3 Investigation of consolidation of ICT equipment
- ICT02.3 Implement guidelines for energy-efficient product design as part of the procurement of ICT components
- ICT03.3 Progress report for energy efficiency monitoring for ICT

Infrastructure (INF)

- INF01.3 Regular updates of the documentation of the infrastructure.
- INF02.3 Implementation of an asset management includes energy efficiency of the DC infrastructure
- INF03.3 Progress report for energy efficiency monitoring of the DC infrastructure
- INF05.3 Implementation of Best Practices from Annex A of the TSE.STANDARD criteria catalogue leading to an increase of 50 efficiency points compared to Maturity Degree 2.

Maturity Degree 4 –Energy Efficiency EXCELLENCE

The following requirements have to be fulfilled for Maturity Degree 4:

Energy Management System (MGM)

- MGM06.4 Demonstration of an increase in energy efficiency
- MGM07.4 Review of the energy goals
- MGM08.4 Action plans contain integrated measures for the areas of ICT and facility management
- MGM09.4 Integrated Planning of ICT and Facility Management
- MGM10.4 Regular Execution of internal TSE Audits
- MGM11.4 Regular execution of management reviews
- MGM12.4 Fulfilment of TSE Maturity Degree 3
- MGM13.4 EnMS Reports for Stakeholders

Information and Communications Technology (ICT)

- ICT01.4 Investigation of the consolidation of services
- ICT02.4 Considering of energy-efficient with reference to ICT performance as part of the procurement
- ICT03.4 Determination of energy performance indicators for ICT devices
- ICT05.4 Determination of the Life Cycle Costs for the ICT

Infrastructure (INF)

- INF01.4 Regular updates of the documentation for the energy-efficient infrastructure
- INF02.4 DC Infrastructure Management considering resource and energy efficiency
- INF03.4 Allocation of the energy sources to the intended use and the systems
- INF05.4 Regular review of best practices
- INF06.4 Determination of life cycle costs for the DC infrastructure