

Data Sheet

Data Center OPTIMIZATION Services

Facility Energy Certification

Gaining valuable insight in maximizing the energy efficiency of your Data Center

Introduction

OPTIMIZATION Services from Fujitsu offer efficient consultation packages for existing infrastructure environments at a fixed price. This has been made possible by systematically analyzing a large number of successfully implemented consultation projects. The solution methods used have been standardized and combined with the experience of the comprehensive product and solution skills provided by the Fujitsu group. The resulting first-class consultation and analysis packages quickly provide customers with specific information and suggested improvements for the infrastructure involved

Customer's requirements

- Understand how energy efficient the data center currently is
- Gain recommendations of effective use of available resources and infrastructure (e.g. power capacity, heat dissipation) and specific targets for improvement
- Meet sustainability and corporate social responsibility targets, and formally showing commitment to these
- Gain practical advice in implementing a continuous improvement process

Fujitsu's solution

Rising energy prices present a real problem for data centers, especially with legacy IT equipment and energy infrastructures. In comparison to IT investments, energy costs are increasingly accounted for by the business. With Fujitsu's "Facility Energy Certification" service, these costs are brought under control whilst assisting you in optimizing the energy efficiency.

From preliminary assessments to full formal certification as "Energy-Efficient Data Center", Fujitsu offers a comprehensive assessment and certification offering in gaining valuable insight into the energy efficiency of the customer data center. In a first "Efficiency Check" inspection, and a further, more comprehensive "Energy Management Assessment" with optional measurement services, Fujitsu assesses existing energy measurement systems, and documentation, reporting findings and opportunities for further optimization and readiness for formal certification. Audit and certification is offered by our partner, TÜV Rheinland, and forms the start of a continuous improvement process.

Customer's benefits

Customers gain information and recommendations:

- From fast "Efficiency Check" inspection to full formal certification "Energy-Efficient Data Center" you choose how far you want to go
- Detailed insight into the current energy efficiency of the data center
- Enable improvement planning from comprehensive feedback on optimization potentials and weak points
- Enable implementation of a continuous improvement process
- Demonstrate commitment to Green IT goals with formal certification from our partner, TÜV Rheinland

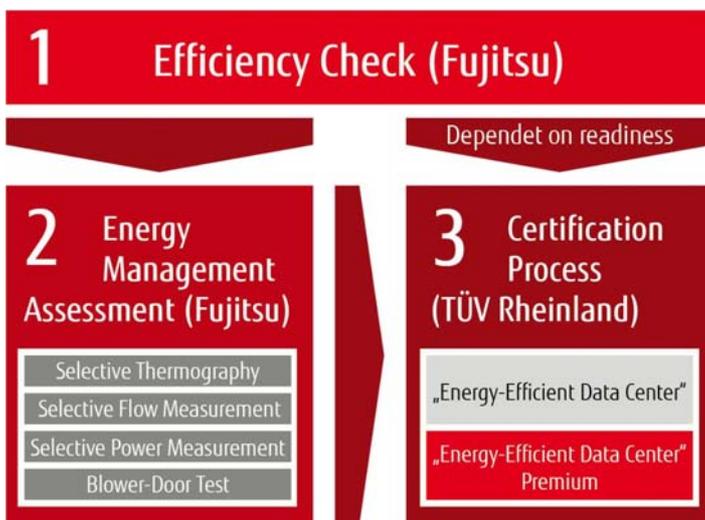


Figure 1: Assessment & Certification Overview

Service Details

Service description

1. Energy Efficiency Check

The Energy Efficiency Check provides you with a first overview of the current state of your data center. This analysis forms an excellent basis for later certification as an "Energy-Efficient Data Center".

The Energy Efficiency Check comprises the following steps:

- Definition of thresholds of the Data Center
- Audit using the TÜV list of criteria
- Data Center inspection
- Inspection of relevant documents
- Short report including list of weak points and estimation of the potential for improvement.

Approx. 2 working days are required for the Energy Efficiency Check in your Data Center. The audit is performed by Fujitsu consultants.

2. Energy Management Assessment

Building on the Energy Efficiency Check results, the Energy Management Assessment comprises extensive energy-related measurements (over approximately 4 weeks) resulting in expert recommendations on the current energy management situation, together with a detailed investigation and reporting of potential improvements measures.

The Energy Management Assessment comprises the following steps:

- Temporary installation of equipment for measuring data center power consumption
- Temporary measure (approx. 4 weeks), the power consumption of the relevant consumer
- Analysis and demonstration of weaknesses by thermography
- Specific measurements of air flow and temperatures of the air-conditioning
- Calculation of Power Usage Effectiveness (PUE), averaged over the measurement period

The determined values are based on the expert opinion regarding the current situation result in the following results:

- Detailed analysis of the energy
- Detailed analysis of the air conditioning and heat dissipation
- Report of the current status and location data of the data center
- An opportunity to supply missing data center data
- Final report on concerning the current situation of the data center on the basis of available data
- Identification, and where possible, quantification of the potential for improvement

To supplement the energy data available in the data center, we offer the following optional measurements within this service:

Thermography and flow measurement

To assess temperature-critical areas, we perform thermographic imaging and selective flow measurements for selected components

Power measurement

To assess the energy fluxes, we perform short-term measurements of the electrical power of the most important loads

Blower-Door test

Airtight measurement of the room envelope is measured. Particularly important if an oxygen-reduced atmosphere is used for the fire protection system

3. Certification Process

3.1 Energy-Efficient Data Center

The certification process is a natural progression from the previous assessment steps above, indicating an already high level of energy efficiency, and is designed to formulate a continuous improvement process over a period of three years.

The following steps comprise this process:

- The main measures for energy-efficient operation are met:
- At least 60% of rating points achieved from the criteria catalog
- Continuous monitoring efficiency through stationary-operated measurements
- The data center has created instruments for analysis, monitoring and continuous improvement of energy use
- The data center is committed to improving the energy efficiency and to be annually audited by TUV Rheinland

3.2 Energy-Efficient Data Center PREMIUM

In addition to the certification "Energy-Efficient Data Center," Fujitsu offers a further certification, which recognizes that the process of continuous improvement in energy efficiency is implemented, and formal measurement technologies are utilized.

Service Details

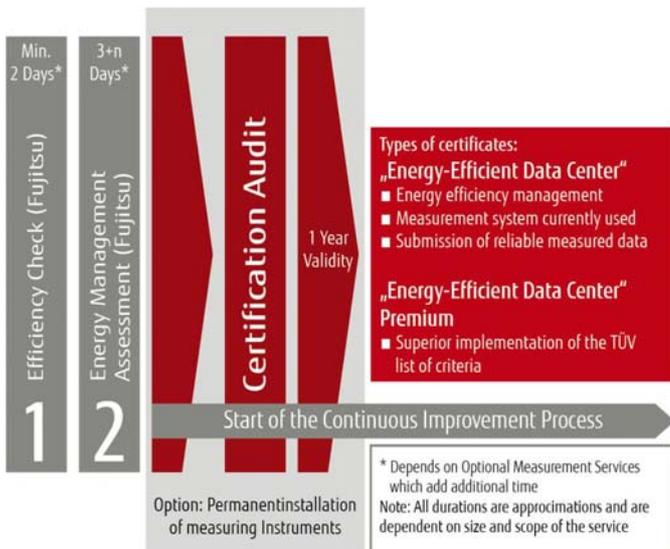


Figure 2: Certification Process



Figure 3: TÜV Certification: Certificate Information

Service conditions

The Customer agrees to the following conditions as pursuant to the delivery of the service defined:

The Customer will provide to Fujitsu:

- Relevant documents for such as information on air conditioning, energy supply and energy consumption within scope for the assessment
- Electrical power measurements require that a trained electronics installer be provided who is familiar with the system, since the load voltage is to be measured without disconnection
- Contact person(s) from the customer organization available to Fujitsu for the duration of the service, with the responsibility and expertise in providing information for the current situation and who has access to relevant areas under assessment
- The electrical power measurements require that a trained electronics installer be provided, who is familiar with the system

Fujitsu will not be held responsible for any data loss. The Customer is responsible for ensuring that all data on measured systems is backed-up prior to service commencement. This Integration Service is provided under the conditions valid for Fujitsu Technology Solutions services.

Unless expressly agreed otherwise the Fujitsu IT Services as set out in this datasheet will be performed based on the Fujitsu **“General Terms on Consulting and Technical Assistance”** or alternatively - where the main emphasis of the services is on the performance of works - based on the Fujitsu **“General Terms for IT Integration Services, IMAC/D Services and other works and services subject to acceptance”**.

Ordering and delivery

This OPTIMIZATION Services is available from your local Fujitsu sales office. When ordering, please quote the information below:

Title	Facility Energy Certification
Order code	CPS:IT-ICN-11022V

More information

Fujitsu OPTIMIZATION Services

In addition to the Facility Energy Certification,, Fujitsu provides a range of OPTIMIZATION services, first-class efficient consultation and analysis packages which quickly provide customers with specific information and suggested improvements for existing infrastructure environments at a fixed price.

Dynamic Infrastructures

With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as a Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

Computing Products

www.fujitsu.com/fts/products

- PRIMERGY: Industry Standard Server
- SPARC Enterprise: UNIX-Server
- BS2000/OSD Mainframes
- PRIMEQUEST: Mission Critical IA Server
- ETERNUS: Storage Solutions
- ESPRIMO, LIFEBOOK: Workplaces

Software

www.fujitsu.com/fts/products/software

- Operating Systems
- Middleware
- Applications
- Partner Software

Services

www.fujitsu.com/fts/services

- Managed Services
- Infrastructure as a Service
- Consulting & Integration Services
- Maintenance & Support Services

More information

To learn more about the Fujitsu Facility Energy Certification, and other related services please contact your Fujitsu sales representative, email us at expert@ts.fujitsu.com, or visit our website at www.fujitsu.com/de/consultingservices

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at: www.fujitsu.com/global/about/environment/



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