Technical data

HP Packaged Consulting Services

HP Energy Efficiency Analysis Service

Service overview

With energy costs rising, public interest in greenhouse gas emissions management increasing, and high-power-density equipment proliferating, improving the energy efficiency of your IT facilities has never been more important. HP Energy Efficiency Analysis Service can help you manage the efficiency of your organization's facilities by calculating baseline energy-efficiency and greenhouse gas emission metrics; identifying the mechanical, electrical, and operational issues at your facilities that affect their energy efficiency; and providing recommendations for actions you can take to potentially improve the energy efficiency of your organization's facilities.

HP Energy Efficiency Analysis Service follows a four-phase process for capturing, analyzing, and reporting data:

- **Planning and preparation.** This phase starts with an assessment planning conference call to discuss the project objectives, review your current data center environment and its mechanical and electrical infrastructure and related documentation, determine site-specific areas for assessment, and identify members of your staff who will participate in the assessment. Based on the results of the workshop conference call, HP will create an assessment plan that specifies the equipment that will require electrical measurement, along with the measurement devices required; detail your organization's data-gathering and related responsibilities; and schedule the onsite data-gathering activities.
- **Onsite interviews and data gathering.** The HP assessment team will visit your organization's site and work in conjunction with your facilities and/or operations staff to gather power, cooling, and site operational data.
- **Analysis and report writing.** Our HP assessment team will analyze the information that is collected and provide a written report of key findings highlighting energy-efficiency metrics, qualitative findings, and recommendations for energy-efficiency improvements, together with conceptual solutions for implementing those recommendations.
- **Presentation.** HP will arrange a conference call to share the findings and recommendations with your organization. At the completion of the engagement, HP will provide your organization with a copy of the documented report.

Service benefits

The Energy Efficiency Analysis Service will:

- Provide tangible metrics of your data center facility's energy efficiency
- Provide power efficiency benchmarking data of your facility in comparison with other facilities
- Determine the carbon footprint of your facility
- Identify mechanical and electrical sources of inefficiency
- Identify operational and maintenance practices that may affect energy efficiency
- Determine the air-mixing levels (recirculation and bypass) in your data center
- Help your organization understand the mechanical and electrical best practices that can increase energy efficiency
- Outline mechanical and electrical energy conservation measures that may improve your organization's efficiency, including an associated high-level cost-benefit analysis

Service feature highlights

- Service planning
- Assessment preparation
- Assessment plan
- Data collection
- Presentation of findings

Specifications
Table 1. Service features

Feature	Delivery specifications
Service planning	An HP service specialist will plan all the necessary activities, including the identification of any prerequisites, and schedule the delivery of the service at a time mutually agreed upon by HP and the Customer, which shall be during local HP standard business hours excluding HP holidays, unless otherwise agreed to by HP. Any service provided outside of HP standard business hours may be subject to additional charges.
Assessment preparation	HP and the Customer will conduct an assessment planning conference call to prepare for the assessment. During the conference call, HP and the Customer will: • Review and discuss the project objectives and methodologies • Determine project team member roles and responsibilities, and the anticipated time requirements for the Customer's staff • Review the plan, schedule, and requirements for data collection • Discuss the documentation that the Customer will provide to HP prior to conducting the assessment, including: – Data center facility floor plans indicating the layout of technology, power distribution, and cooling equipment – Electrical system drawings – Mechanical system drawings – Utility bill history (for the prior 12 months) – Available electrical equipment schedules and any manufacturer data that is relevant to the Customer's equipment
Assessment plan	Based on the results of the preparatory conference call and an analysis of the drawings and specifications provided by the Customer, HP will create an assessment plan for the mechanical, electrical, and physical infrastructure systems that will be analyzed. The plan will: • Identify equipment requiring electrical usage or other site-specific measurements • Specify the Customer's responsibilities associated with the installation of measurement or data-gathering devices • Outline the expected time requirements from the Customer's staff • Detail the schedule for onsite data-gathering activities and define the level of support that HP will require from the Customer's staff HP will email the plan to the Customer for review.

Specifications
Table 1. Service features (continued)

Data collection	Prior to beginning data collection, HP and the Customer will review the assessment plan and the Customer-provided documentation to verify that the plan and project milestones are complete. HP and the Customer will conduct equipment measurement and data collection at the Customer's facility. HP will furnish the data-gathering devices and provide direction and recommendations to the Customer regarding the placement of data-gathering devices. The Customer will be responsible for the installation and removal of the data-gathering devices. Measurements will be conducted to: • Determine the power consumption of cooling and air distribution systems identified in the assessment plan; examples include: – Air-handling equipment – Chillers – Condensing units – Dry coolers – Cooling towers – Pumps • Determine the input and output power of the critical power distribution equipment identified in the assessment plan; examples include: – Main switchboard – Distribution equipment – Uninterruptible power supplies (UPSs) – Remote distribution panels (RDPs) – Automatic transfer switches (ATSs) • Obtain any pertinent mechanical and electrical systems data • Determine the input and output air temperature measurements from the racks, servers, and cooling units; examples include: – Server intake air temperature – Server exhaust air temperature – Cooling unit supply air temperature – Cooling unit return air temperature In addition, HP will: • Interview the Customer's designated facilities and operations personnel to gain an understanding of the Customer's operational processes and anecdotal operating history • Gather any additional relevant data not obtained during the assessment planning process, such as the Customer's infrastructure equipment operating history and site operations, maintenance, and emergency procedures
Presentation of findings	HP will provide the Customer with a report detailing the findings of its analysis, and will conduct a conference call lasting up to four hours in duration to present and review these findings with the Customer. The report will consist of the following, as appropriate: • An energy-efficiency metric for the facility based on quantitative measurements • A measure of the total energy delivered to the facility vs. energy used by IT equipment • Qualitative findings based on interviews, site observations, and a review of the Customer's operational practices • Recommendations for energy-efficiency improvements • Recommendations to improve air management in the data center • Potential solutions for implementing the recommendations

Service limitations

This service is limited to the identification of data center environmental issues and does not include any remedial activity. Any corrective measures to implement the recommendations identified by this service are the responsibility of the Customer.

Any services not clearly specified in this document or in an associated Statement of Work are excluded from this service.

Customer responsibilities

The Customer will:

- Contact an HP service specialist within 90 days of date of purchase to schedule the delivery of the service
- Assign a designated person from the Customer's staff who, on behalf of the Customer, will grant all approvals, provide information, and otherwise be available to assist HP in facilitating the delivery of this service
- Provide a suitable work area for delivery of the service, including access to an outside telephone line, power, and any network connections required

- Allow HP full and unrestricted access to all locations where the service is to be performed
- Complete and return any custom questionnaires or checklists within five days of receipt, if applicable
- Prior to the assessment planning workshop, provide to HP all pertinent site, electrical, and mechanical drawings; utility bills; and any other site-specific infrastructure data requested by HP
- Assist HP in identifying manufacturers and model numbers of facilities equipment that will be analyzed as part of this service, as applicable
- Be responsible for the installation and placement of data-gathering devices
- Ensure that properly trained personnel and proper safety equipment are available to support the placement of data-gathering devices
- Take reasonable precautions and implement all safety-related procedures reasonably requested by HP
- Adhere to licensing terms and conditions regarding the use of any HP service tools used to facilitate the delivery of this service, if applicable

Service eligibility

The HP Energy Efficiency Analysis Service is available for all data centers, IT rooms, server rooms, and server closets with raised or non-raised floor environments.

General provisions/Other exclusions

- HP reserves the right to charge, on a time and materials basis, for any additional work over and above the service package pricing that may result from work required to address service prerequisites or other requirements that are not met by the Customer.
- HP reserves the right to re-price this service if the Customer does not schedule and provide for subsequent delivery within 90 days of purchase.
- HP's ability to deliver this service is dependent upon the Customer's full and timely cooperation with HP, as well as the accuracy and completeness of any information and data the Customer provides to HP.
- This document describes services which may be considered professional engineering services. If licensed engineering services are described herein or in a future change order, they are offered and will only be provided by professional, licensed engineers and shall be governed by the Pass-Through Terms for Design. In the United States, these services are offered by EYP Mission Critical Facilities, Inc., ("EYP MCF") which is a wholly owned subsidiary of HP.

Ordering information

Availability of service features and service levels may vary according to local resources and may be restricted to eligible products and geographic locations. To obtain further information or to order HP Energy Efficiency Analysis Service, contact a local HP sales representative and reference the following product number:

- H1Y26A1#002 for HP Energy Efficiency Analysis Service (PL EA - 4U)
- H1Y25A1#002 for HP Energy Efficiency Analysis Service (PL EA - 1X)

Depending on the point of purchase and the requested service-level option, other product numbers may apply. Please consult a local HP representative or HP reseller regarding which product number will best meet your specific needs.

For more information

For more information on HP Packaged Consulting Services, contact any of our worldwide sales offices or resellers or visit our website at **hp.com/services/consulting**.

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