



Scope of Activities

- Data Collection & Analysis of Power consuming equipments and identify the ineciency of the equipments with respect to energy consumption.
- Study the present Power consumption, Power factor, Voltage level and Harmonics level & K Factor in the Main Electricity Board.
- Study the Current Consumption Bill for the last six months.
- Calculate line losses & Harmonic Analysis in major current carrying feeders.
- Calculate Specific Energy consumption of the industry.
- Study the AC Unit performance and calculate seasonal capacity in TR if required
- Heat load calculation for the building/room/section
- Evaluate the insulation condition/performance
- Calculate EPI. Identify the wastages & provide solution for conservation.
- Study the lighting loads and calculate ILER if required
- Study the DG set specific fuel consumption
- Compare the Study result with bench mark /Standard etc
- Deliverable will be detailed
- payback for the project, energy
- conservation etc

Energy Audit

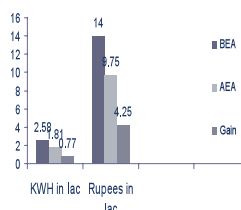
Energy Audit is the key to a systematic approach for decision-making in the area of energy management. It attempts to balance the total energy inputs with its use, and serves to identify all the energy streams in a facility. It quantifies energy usage according to its discrete functions. Industrial energy audit is an eective tool in defining and pursuing comprehensive energy management system. As per the Energy Conservation Act, 2001, Energy Audit is Mandatory for any type of Industry.

Data center

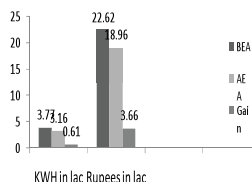
In an era of constrained resources, and increased concern for the environment, your data center's high energy use is uncomfortably in the spotlight. But improving energy efficiency is possible in nearly any data center, often beginning with simple low-cost or no-cost measures.

First, you need to determine how much energy is being consumed in each corner of your data center. You next need to identify where you can make the most effective efficiency improvements, and determine the cost and ROI horizon of those improvements. Finally, by comparing the investment require ments to potential payback, you can put together a convincing business justification .

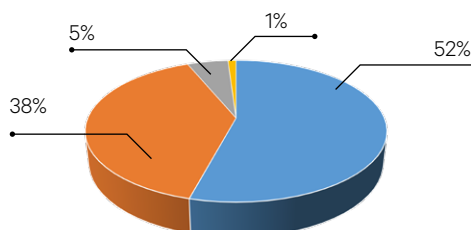
CASE STUDIES



Energy Gain : 0.77 lac KWH/year
 Monetary Benefit : Rs4.25 lac
 ROI < 3 Months



Energy Gain : 0.61 lac Kw
 Monetary Benefit : Rs 3.66 Lac
 ROI : Immediate



Typical Energy Pattern

Server Load : 52%
 Cooling Load : 38%
 UPS Load : 5%
 Lighting : 1%



A First Step in Reducing Power & Utility Costs and Emissions.

Energy Audit, instrumentation & controls, Automation, Operational practices identifies opportunities to improve performance and lower Industrial power cost. Utility operations are among the biggest users of Power & fuel, and greatest generators of emissions. With escalating Power costs and challenging Electricity & Environmental regulations, it is important that the facilities operate at their best. Efficiency must be maximized across the entire operation, waste and low-cost fuels need to be leveraged to the highest degree possible, and the electricity must be managed, all while being responsive to changing demands for steam and other utilities.

Assessment Products

- Preparation of Single line Diagram.
- Short circuit/ Co ordinatio Studies.
- Harmonic Analysis
- Load Flow Analysis
- Transient Analysis
- Grounding Design
- Power Quality Audit
- IR Scanning
- Energy Audit
- DATA Center Assessment
- Cooling Assessment
- Electrical Safety
- Solution

Vertiv is well established in the Industrial Energy area, delivering an extensive range of advanced instrumentation, control, and automation technologies. Building on this knowledge and experience, Vertiv now offers Energy Audit to review existing operations and, based on the findings of the Audit, make recommendations as to how power and utility performance could be improved.

Vertiv energy experts will Audit a client's energy consumption & interview the site operating personnel, review current performance data, and test key operating units to determine where improvements can be made.

Vertiv also reviews current process data and uses it to compare present operation with potential future operation based on what is typically being achieved in the industry. This review takes into account any operating constraints that are inherent to the site.

In some cases, unit testing is conducted with operations personnel to further identify constraints. By comparing the information collected from current power and utility operations to industry benchmarks and best practices.

Vertiv estimates the financial benefit that can potentially be captured from operating the processes in a more highly automated and optimized manner. This benefit is compared against the estimated cost for achieving improved operation through

upgrading the instrumentation and control systems and completing the necessary process mechanical changes. Upon completion of the survey, Vertiv deliver a report summarizing the information gathered, the recommendations, and the budgetary costs for any recommended improvement projects. The report lays out an optimization plan that can be used by the site as a basis to achieve improvements in power and utility operations in the immediate future.

Vertiv's Energy Audit provides a proven route to improving the operating results in your power and utility area.

Note: The delivery accuracy will vary according to the site information.



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