The DC Pro Software Tool Suite

Diagnose the energy use at your data center and identify ways to improve its energy efficiency

Discover Your Facility's Energy-Savings Potential with ITP Software Tools

Energy Efficiency Software Tools
http://www.eere.energy.gov/industry/bestpractices/software.html

Save ENERGY Now ®

The DC Pro Software Tool Suite

The DC Pro Software Tool Suite (DC Pro) is an excellent resource for data center owners and operators to diagnose how energy is being used at their facilities and to identify and evaluate their energy-savings opportunities. The tool suite, developed by the U.S. Department of Energy's Industrial Technologies Program (ITP), comprises an energy profiling tool and a set of system assessment tools that can provide diagnostics on specific areas within a data center.

DC Pro outputs energy profiles that give a general idea of where energy is being used, as well as detailed energy assessments on critical data center operations, such as air flow and electrical use. A step-by-step guide and user manual make the process easy, and a detailed analysis can be conducted in less than one day. Overall, DC Pro is a fast and easy way to identify the largest energy-saving opportunities within your data center.

How Does DC Pro Work?

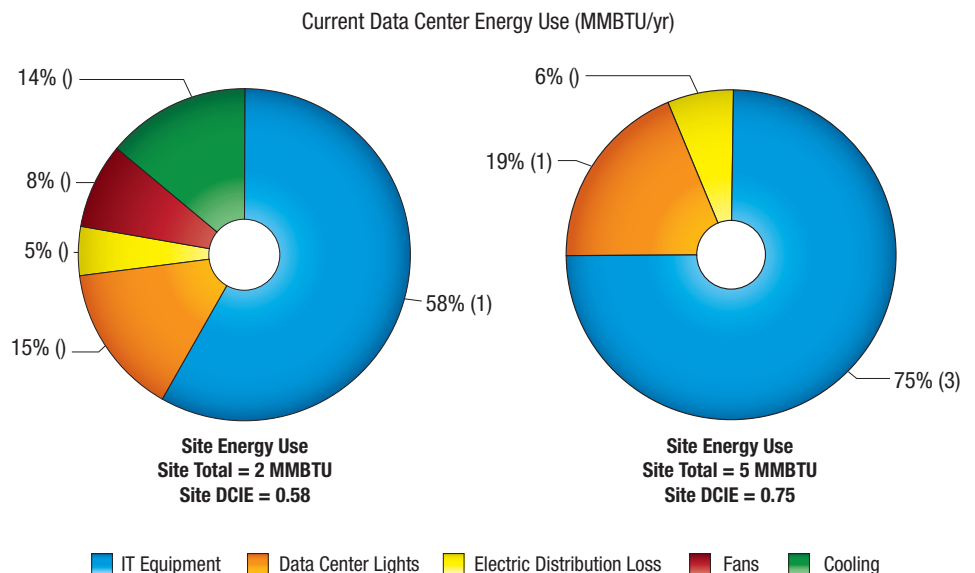The DC Pro Software Tool Suite consists of the following three tools:

- DC Pro Profiling Tool
- System Assessment Tools
  - *Air-Management Tool*
  - *Electrical Systems Tool.*

DC Pro Profiling Tool

The Profiling Tool is a Web-based program that uses basic information about a data center—such as the utility costs and description of the facility—to profile its energy use. The tool generates a customized, printable report that provides an overview of the plant's energy purchases, energy-use breakdowns, and suggested next steps, as well as a comparative analysis with other data centers.

The Air-Management Tool

The Air-Management Tool, an Excel-based application, provides recommendations for energy efficient air management, intended mainly for raised-floor cooling with hot/cold aisles. Based on certain inputs, the Air-Management Tool identifies potential opportunities for reducing supply airflow rate and increasing airflow temperature so that operation conditions do not get compromised. The tool also estimates the potential percentage of energy reduction for fans and chillers.

Current Data Center Energy Use (MMBTU/yr)

14% ()
8% ()
5% ()
15% ()
58% (1)

Site Energy Use
Site Total = 2 MMBTU
Site DCIE = 0.58

6% ()
19% (1)
75% (3)

Site Energy Use
Site Total = 5 MMBTU
Site DCIE = 0.75

■ IT Equipment ■ Data Center Lights ■ Electric Distribution Loss ■ Fans ■ Cooling

Sample DC Pro Profiler Output for a Data Center

The Electrical Systems Tool

The Electrical Systems Tool is designed to assess the potential savings from energy efficiency improvements in the electrical power chain of a data center, such as transformers, generators, uninterruptible power supply (UPS), and power distribution unit devices. This tool estimates savings based on typical practice; actual savings will vary based on site-specific conditions.

Taking information related to electrical system components and their energy use, the Electrical Systems Tool generates an actions summary table that provides recommended electrical and lighting changes, as well as their estimated energy and cost savings. Additional outputs, such as peer comparison charts, allow users to see how their data centers rank among other data centers, as measured by the Lawrence Berkeley National Laboratory. A UPS efficiency chart provides a comparison of UPS by type and percentage of load.
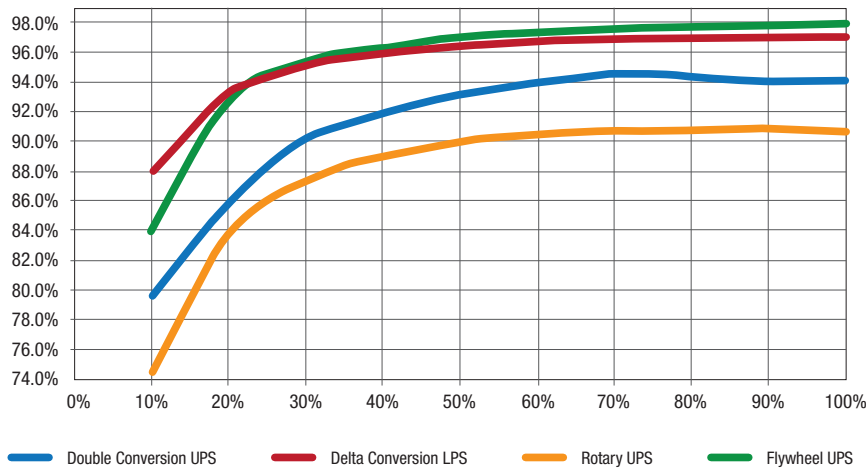
Sample UPS Load Factor Chart from the Electrical Systems Tool

Legend: Double Conversion UPS · Delta Conversion LPS · Rotary UPS · Flywheel UPS

What's the Next Step?

In addition to offering the DC Pro Software Tool Suite, ITP will help you assess energy use at your data centers by providing

- Special training sessions to help you identify energy-savings opportunities and increase efficiency at your data center (*http://www1.eere.energy.gov/industry/datacenters/training.html*)
- Listings of ITP-certified Data Center Energy Practitioners (*http://www1.eere.energy.gov/industry/datacenters/dc_cep.html*)
- Step-by-step guidance on how you can use DC Pro to perform your own energy assessments (*http://www1.eere.energy.gov/industry/datacenters/software.html*).

ITP provides several additional resources to support the performance of energy assessments at your data center, such as

- The Data Center Energy Practitioner Program, a training and certfication program (*http://www1.eere.energy.gov/industry/datacenters/dc_cep.html*)
- Case studies and assessment summaries that reveal how others are saving energy in their data centers (*http://www1.eere.energy.gov/industry/datacenters/case_studies.html*).

How to Access DC Pro

DC Pro can be **downloaded for free** at *http://www1.eere.energy.gov/industry/datacenters/software.html*.

To learn more about the DC Pro Software Tool Suite, visit *http://www1.eere.energy.gov/industry/bestpractices/software_dc_pro.html*.

More ITP Resources

In addition to the DC Pro Software Tool Suite, ITP provides a variety of free software tools to help you identify energy-savings opportunities across your facility. These tools specifically target

- *Motors*
- *Compressed air systems*
- *Fan systems*
- *Process heating systems*
- *Pumping systems*
- *Chilled water systems*
- *Industrial facilities/buildings*
- *Steam systems.*

To access these tools, visit ***http://www.eere.energy.gov/industry/bestpractices/software.html***.

To learn about training opportunities on topics related to these systems, visit ***http://www.eere.energy.gov/industry/bestpractices/training.html***.

*For more information on ITP, visit **http://www.eere.energy.gov/industry/***.