

# Building Analytics Success Story

## Benchmark Electronics



In 2014 Benchmark Electronics decided they needed to get better visibility of their energy consumption trends. The energy team's efforts to continuously reduce consumption were hampered by only having monthly bills, so they looked to add an energy information system (EIS) to give more detailed information. Five years on, their EIS has now become an integral part of their operations management.

Benchmark began the endeavor by developing a requirements document and identifying products that could meet their needs. Benchmark evaluated four vendors, scored them based on the required features, and selected the tool that best fit their needs.



### What is an EIS?

An EIS is a combination of software, data acquisition, and communication systems used to store, analyze, and display building energy meter data on an hourly or more frequent basis. EIS is one type of energy management and information system (EMIS).

With small localized energy teams, simplicity and flexibility were key factors. The chosen solution is a fully owned software/hardware product (as opposed to a product with monthly subscription fees) providing real-time consumption data, a set of simple user-friendly web-based reports, and automated alarms. While the EIS analytics and interface are relatively simple, Benchmark's success is due to the energy team's integration of EIS into their daily working practices. The long game is paying off: after installing their EIS in 2015 Benchmark saw 9% electricity savings in 2016, and two years later those savings increased to 15% (based on 2018 billing data).

*EIS cannot save energy alone; it still takes a team to review the data, investigate areas of concern, and implement changes that will reduce energy use and demand.*

*- Steve Beck, Manufacturing Engineering Manager*

### Quick Facts

**Location:** Winona, Minnesota

**Building type:** Office & Manufacturing

**Floor area with EMIS:** 80,000 square feet

**Total buildings with EMIS:** 1 building

**Energy savings:** 15% electric savings

**Energy Information System:** The Energy Detective

### Smart Energy Analytics Campaign: Recognition for Energy Performance in a Single Site

Benchmark Electronics was recognized by Lawrence Berkeley National Laboratory and the U.S. Dept. of Energy in May 2019 for exemplary work to save energy through use of energy management and information systems (EMIS).



Benchmark’s EIS provides color-coded visualization of daily energy consumption over a full month, allowing staff to hone in on the priority areas for action and giving the energy team a head start in diagnosing areas of energy waste

### MBCx Process

Benchmark is utilizing their EIS to support monitoring-based commissioning (MBCx) efforts in the short, medium and long term:

- Notifications of excessive power demand aid in identifying issues in real time
- Both EIS & billing generated data is reviewed at monthly energy team meetings to help diagnose issues and plan efficiency projects
- EIS data supports collaborative efforts with a utility-funded third party contractor who dives deeper into operational issues

With the help of their EIS, Benchmark has made energy efficiency and demand reduction improvements such as improved equipment startup/shutdown sequencing and lighting changes. Examples of EIS-enabled data analysis employed by Benchmark include:

- Tracking long term trends in electricity consumption
- Identifying peak demand periods and helping to understand the largest influences of peak demand
- Validating energy savings from efficiency projects and other operational improvements

- Aiding in identifying & quantifying energy provider rebates for new equipment purchases
- Reviewing “idle” building energy use



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Benchmark’s EIS experiences demonstrate that a simple EIS can be a powerful tool for improving energy efficiency when it is well integrated with an organization’s operational practices. Future plans include studying the effects of HVAC cycling during peak demand periods & adding EIS to additional buildings that would see benefits from its use.

**The Smart Energy Analytics Campaign is a public-private sector partnership program focused on commercially available Energy Management and Information Systems (EMIS) and monitoring-based commissioning practices.** The campaign couples technical assistance with qualitative and quantitative data collection to inform research, development, and field study priorities. Partnering participants are encouraged to share their progress and may receive national recognition for implementations that demonstrate exemplary practices.