

Nomination Summary

Nominee: E-Mon, LLC
Langhorne, PA
www.emon.com

Company Background

E-Mon manufactured and marketed the industry's first solid-state electronic kWh submeter in the early 1980s. Today the company is the leading supplier of electric submeters, interval data recorders and automatic meter reading software. Almost half a million E-Mon D-Mon submeters are installed worldwide for tenant billing, cost allocation, demand-side management and load profiling in skyscrapers, shopping centers, airports, factories, office buildings, apartment complexes, industrial, governmental and educational facilities.

How Submeters Benefited One Using Facility

Electric submeters, a highly accurate and scalable way to more accurately gauge actual power consumption, offer an extremely cost-effective way to fairly and accurately determine energy use with a level of granularity unmatched by the master utility meter at the main electrical service entrance. Used for tracking energy demand (kW) and consumption (kWh) of specific users or items of equipment all the way down to a single circuit, there is no better demonstration of the energy-saving value and benefit of submeters than the New Hampshire valve foundry [1] that shared energy costs with a sister division it was co-located with.

One division was experiencing unusually high energy costs compared to other corporate facilities that manufactured the same products with similar equipment. As a result, the corporate office made preliminary plans to shut down the division and move the manufacturing operation to an area of the country with lower electrical tariffs. In an attempt to solve the problem without having to relocate the business, managers installed E-Mon submeters to isolate the energy usage of the two divisions and to measure usage of specific equipment and processes.

Managers found that the division paying for 60 percent of the electricity bill was actually using less than 41 percent of the complex's total energy. The submeters also showed that a heat-treating process used once a week was causing a 175kW spike in energy usage. The division worked with the corporate accounting department to re-allocate its percentage of the energy bill and move its heat-treating process to a day when overall demand was lower. Thanks to E-Mon submeters, the division saved \$2,100 (kW) and \$25,000 (kWh) per month just by eliminating this spike in electricity, with the result that energy allocation was reduced by over \$324,000 per year and closure plans were cancelled.

How Submeters Facilitate Sustainability and Today's Energy Initiatives

Submeters can directly help facilities obtain LEED certification points in the "Energy & Atmosphere" (EA) category in terms of: (1) new building construction and major renovation, (2) commercial interiors, (3) existing buildings, (4) core & shell and (5) schools. Specific points-generating certification categories addressed by submeters include EA Credits 1, 3, 3.3, 5, 5.1 through 5.3 and 6. EPACT 2005, another major energy initiative, is directly benefited by submeter use in the following mandated sections:

- EPACT Section 103—all Federal buildings must be metered by 2012;
- EPACT Section 1251—net metering;
- EPACT Section 1331—support for \$1.80 per square foot tax deduction for submetered properties.

Today's electric submeters are an easily installed, versatile and scalable solution to obtain the degree of energy intelligence necessary for the optimum operation of today's "smart" facilities. Low-cost interfaces are now available that bring gas, water, BTU, steam and other utility meters into the BAS for a complete facility energy management "snapshot." Communication to the building automation system—via the facility's existing LAN, Modbus, IP, wireless or other infrastructure—is augmented by net metering capability, power quality monitoring and other advanced functions that can dramatically reduce operating costs through energy savings, while optimizing ease of use and operational efficiency.

[1] Information Source: Dave Bovankovich, VP of Engineering, E-Mon (dbovankovich@emon.com). The foundry is Webster Valve in Franklin, NH. Note: specific name and location of this foundry are embargoed from publication.