Submetering for LEED Credit

Energy and Atmosphere Credit in New and Existing Buildings

By Don Millstein

Recent industry studies show that "green buildings" are rapidly becoming a pervasive corporate trend, and that over 60% of people surveyed already agree that green buildings do in fact lower facility operating costs.

In late 2006, the Building Owners and Managers Association (BOMA) and the U.S. Green Building Council signed a memorandum of intent to jointly "promote energy efficiency and environmentally responsible building operations and maintenance practices." Add to this the EPACT 2005 mandate that all 500,000+ Federal buildings must be metered or submetered by 2012, and it becomes even more obvious that tightening budgets, rising power costs and other operational issues have made energy resource management more important than ever for commercial building owners and operators.

Unfortunately, the level of profiling needed by high-volume energy consumers is simply unobtainable using the standard utility meter found at the main electrical service entrance. That's why more facilities than ever are using submeters as first-level data-gathering tools to literally save thousands of dollars in reduced energy costs.

First introduced in the early 1980s, submeters are metering devices with monitoring capability that are installed on the facility side of the master meter to provide any or all of the following:

- Usage analysis and peak demand identification;
- Time-of-use metering of electricity, gas, water, steam, BTUs and other energy sources;
- Cost allocation for tenant billing;
- Measurement, verification and benchmarking for energy initiatives, including LEED Energy & Atmosphere (EA) and Water Efficiency (WE) credits;
- Load comparisons;
- Threshold alarming and notification;
- Multi-site load aggregation and real-time historical monitoring of energy consumption patterns for negotiating lower energy rates.

HOW SUBMETERS FACILITATE TODAY'S ENERGY INITIATIVES

Submeters can help facilities monitor and control energy costs as participants in conservation programs like The Energy Policy Act of 2005 (EPACT) according to the following guidelines:

- EPACT Section 103—all Federal buildings must be metered by 2012
- EPACT Section 1251— net metering
- EPACT Section 1331—support for $1.80 per sq foot tax deduction for energy-efficient properties

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The U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) rating system offers a total of nine rating certification categories. The left-hand column in this table lists those areas that may be facilitated through use of submetering equipment, including the following Water Efficiency (WE) and Energy & Atmosphere (EA) credit categories:

LEED Certification Category	Credit	Certification Points	Applicable Guideline
Core & Shell	EA Credit 5.1	1	Measurement & Verification – Base Building
Core & Shell	EA Credit 5.2	1	Measurement & Verification – Tenant Submetering
Existing Buildings	WE Credit 1.2	1	Water Performance Measurement: Submetering
Existing Buildings	EA Credit 3.2	1	Building Operations & Maint.
Existing Buildings	EA Credit 3.3	1	Building Operations & Maint.
Existing Buildings	EA Credit 5.1 - 5.3	1-3	Performance Measurement: Enhanced Metering
Existing Buildings	EA Credit 6	1	Documenting Sustainable Building Cost
New Construction	EA Prerequisite 2	-	Minimum Energy Performance
New Construction	EA Credit 5	1	Measurement & Verification
Commercial Interiors	EA Credit 1	1	Optimize Energy Performance
Commercial Interiors	EA Credit 3	1-2	Energy Use, Measurement & Payment Accountability
Schools	EA Credit 5	1	Measurement & Verification
Healthcare	WE Credit 2	1	Potable Water Use Reduction: Measurement & Verification
Healthcare	EA Credit 1	2-10	Optimize Energy Performance
Healthcare	EA Credit 5	1	Measurement & Verification

BOTTOM LINE

The energy profiling needed by today's facilities is unobtainable using standard utility meters found at the main service entrance. Advanced submeters offer the functionality to help users obtain Energy & Atmosphere (EA) and Water Efficiency (WE) credits for LEED certification. As sustainable facility practices continue to gain traction, the need for more sophisticated energy monitoring capability will be met by advanced submetering and automatic meter reading (AMR) solutions that will satisfy the profiling needs of whatever next-generation energy monitoring platforms achieve market acceptance.

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