Energy Information Systems (EIS) Primer

This credit is about implementing an integrated and active energy information system (EIS) in your building that's informed by smart, system-level meters to provide a finer resolution of data. This document describes energy information systems in more detail.

Does your facility already have an EIS?

An EIS is distinct from a building automation system (BAS), although some BAS platforms do include energy management capability. If you're unsure about what system you have or its capabilities, you'll need to coordinate with your vendor to explore some follow-up questions:

- Yes, I have an EIS –
  - If you have an EIS in place, determine how much it already communicates with building-level energy meters and submeters, and how that information is being used to manage energy consumption.
  - If you have a gap in meter coverage or a gap in communication with existing meters (such as utility meters), or if you lack the active energy management capacity needed to meet the credit requirements, talk to your vendor about how to address these issues.
  - LEEDuser's advanced metering primer can help inform your discussion.
- No, I don't have an EIS –
  - If you don't have an EIS in place already, you'll need to assess the feasibility of installing a system to meet the LEED criteria.
  - There are many EIS solutions on the market, and it can be overwhelming to start the process. The resources included in this document can help your team better understand what's out there and whether this credit is feasible for your project.

EIS versus EMIS – what's the difference?

You may have seen the term "energy management information system" (EMIS) in addition to "energy information system" (EIS). These terms are closely related, and the following definitions sourced from a US Department of Energy report are provided to help clarify the differences:

- Energy management and information system (EMIS):
  A broad family of tools and services to manage commercial building energy use. These technologies include, for example, energy information systems, equipment-specific fault detection and diagnostic systems, benchmarking and utility tracking tools, automated system optimization tools, and building automation systems.
- Energy information system (EIS):
  Software, data acquisition hardware, and communication systems used to store, analyze, and display building energy data.

Basic attributes of an EIS system

To get a sense of the basic attributes of an EIS, see the table below from Berkeley Lab. This table provides a snapshot of system intent and capability. The Advanced Energy Information System category (in red below) tracks best with the LEED requirements for this credit. That said, you'll need to assess your current systems and coordinate with preferred vendors to identify the right solution for your building.

Technology attributes	Tools with a Whole-Building Energy Focus			Tools with a System-Level Focus		
	Benchmarking and Monthly Utility Bill Analysis	**Energy Information Systems**	**Advanced Energy Information Systems**	**Building Automation Systems**	**Fault Detection and Diagnostic Systems**	**Automated System Optimization**
Typical data scope	Whole-building	Whole-building May include: submetering	Whole-building May include: submetering and system-level monitoring	Systems, components May include: system submetering	Systems, components, BAS trends May include: whole-building or system-level metering	
Typical data interval	Monthly	Hourly to 15-minute		15-minute or less		
Frequency of use	Monthly, annually	Daily, weekly, monthly			Weekly, monthly	
Primary applications, Principal design intent	Utility bill reconciliation, energy use and cost tracking; peer to peer building comparisons of energy use	Whole-building or portfolio energy tracking, and *data visualization* to identify opportunities to improve building operational efficiency	Whole-building or portfolio energy tracking, and *automated interval data analysis* to identify opportunities to improve building operational efficiency	Control of indoor temperature, light, and humidity setpoints based on building schedule; alarming of out-of-range operations	Automated identification of faults, sometimes with associated causes, usually HVAC focused	Automated modification of control parameters to optimize efficiency, energy use, and/or energy costs

Example EIS providers

The table below includes example vendors for various types of systems. Keep in mind that EIS technology and systems have advanced rapidly in recent years. We recommend reaching out to peers and professional contacts to look for possible EIS providers in the current market. The table is below sourced from Berkeley Lab.

Technology attributes	Tools with a Whole-Building Energy Focus			Tools with a System-Level Focus		
	Benchmarking and Monthly Utility Bill Analysis	**Energy Information Systems**	**Advanced Energy Information Systems**	**Building Automation Systems**	**Fault Detection and Diagnostic Systems**	**Automated System Optimization**
*** Vendor examples**	EPA Portfolio Manager, Metrix, EnergyCAP, Noesis, Energy Print, FirstVIew	Obvius building manager online, Lucid Building Dashboard, Noveda Energy Flow Monitor	NorthWrite Energy WorkSite, Pulse Energy, EnerNOC EfficiencySmart, Energy ICT, EIServer, JCI Panoptix, EFT Energy Manager, Mach Energy Asset Manager, eSight Enterprise	Siemens Apogee, Johnson Metasys, Novar Opus EMS, Tridium Niagara, Automated Logic WebControl	Cimetrics, InfoMetrics, EnerNOC EfficiencySmart, EZENICS, Sky Foundry Sky Spark	Optimum Loop, Optimum VAV, BuildingIQ, Enerliance LOBOS, QCoefficient
*** May also be referred to as**	Utility tracking tools, monthly energy monitoring system, billing reconciliation	Whole-building monitoring system, energy performance tracking system, continuous energy monitoring system, meter visualization tool	Enterprise energy management system, energy analytics tool, continuous energy monitoring and analysis system	Energy management and control system, building management system, energy management system, building control system	System monitoring and analytics, Ongoing or Monitoring-based commissioning systems	Control optimization software, continuous optimization, automated energy optimization systems, energy management systems

* Representative examples, not intended to be a comprehensive inventory of market offerings
** Other names that might be encountered; these are not necessarily recommended names, but are included to capture terms that may be used in less formal cases, or in marketing materials

EIS proposal template

The US Department of Energy has developed an RFP template to assist building operators with procuring an energy information system. According to DOE, the template materials were developed using subject matter expertise combined with best-practice examples from leading-edge organizations that have issued RFPs and specifications for EMIS technologies within their own portfolios.