



Commercial Whole Building Performance Committee

Energy Information Systems Part 1: Program
Objectives and Case Studies

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Today's Agenda

- ▶ Introductions
- ▶ Background
 - Committee activities
 - EIS and EMIS
- ▶ Presentations
 - Efficiency program administrator perspective
 - End user case study
- ▶ Discussion
- ▶ Part 2: EIS Guidance Specification (3:30-5pm)

Ground Rules and Introductions

- ▶ All perspectives valid and valued
- ▶ Interactive
- ▶ No such thing as a dumb question
- ▶ Fuel neutral
- ▶ Use of parking lot
- ▶ Follow CEE committee conduct guidelines

Session Objectives – Session 1

- ▶ To identify, refine the common efficiency program objectives enabled by energy information systems (EIS) and energy management and info systems (EMIS)
- ▶ To learn about commercial and institutional EIS and EMIS applications including energy benefits, costs, technology and service options and energy saving results

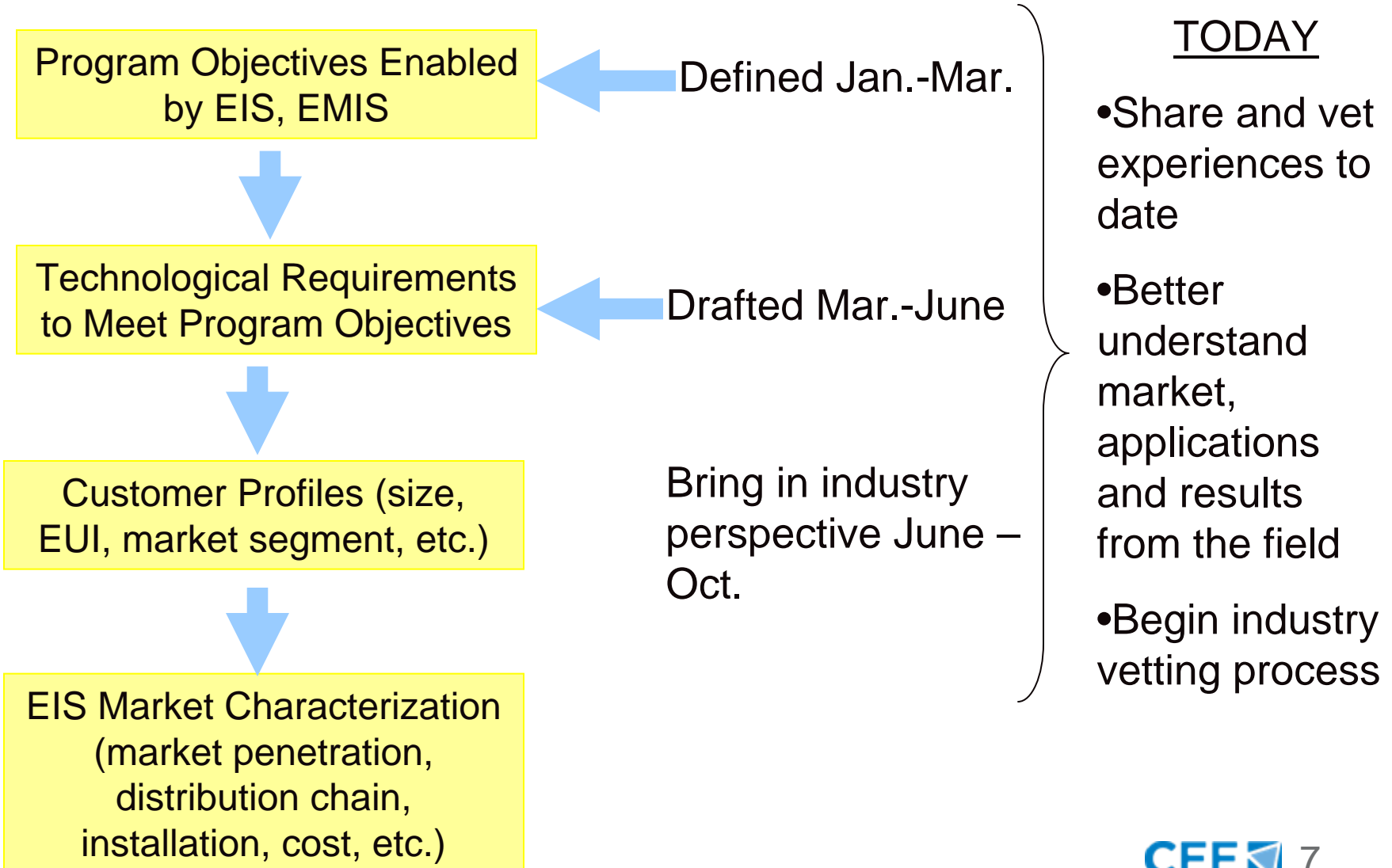
Session Objectives – Session 2

- ▶ To gain an understanding of how EIS and EMIS supports program objectives
- ▶ To advance a EIS (EMIS) Guidance Specification and User's Guide for voluntary integration into efficiency programs

Background – CEE Whole Building Performance Exploration

- ▶ **Goal:** *To develop the binational infrastructure to encourage and enable effective implementation of whole-building commercial energy-efficiency programs*
- ▶ CEE Whole Building Performance Committee represents ~ 60 EE program administrators
- ▶ Committee 2010 Objective:
 - “Energy information and management systems”: Identify common DSM program objectives and energy savings enabled by energy information and management systems and binational specifications or other products that support these objectives.

Committee Process and Milestones



Working Definitions

▶ **Energy Information Systems (EIS)**

- Product that combines software, data acquisition and storage hardware, and communication systems to store, analyze and display building energy information.
- Intended to process energy use information into actionable information, are highly accessible, and contain, at a minimum, whole building level data. May or may not provide subsystem data or control capabilities.

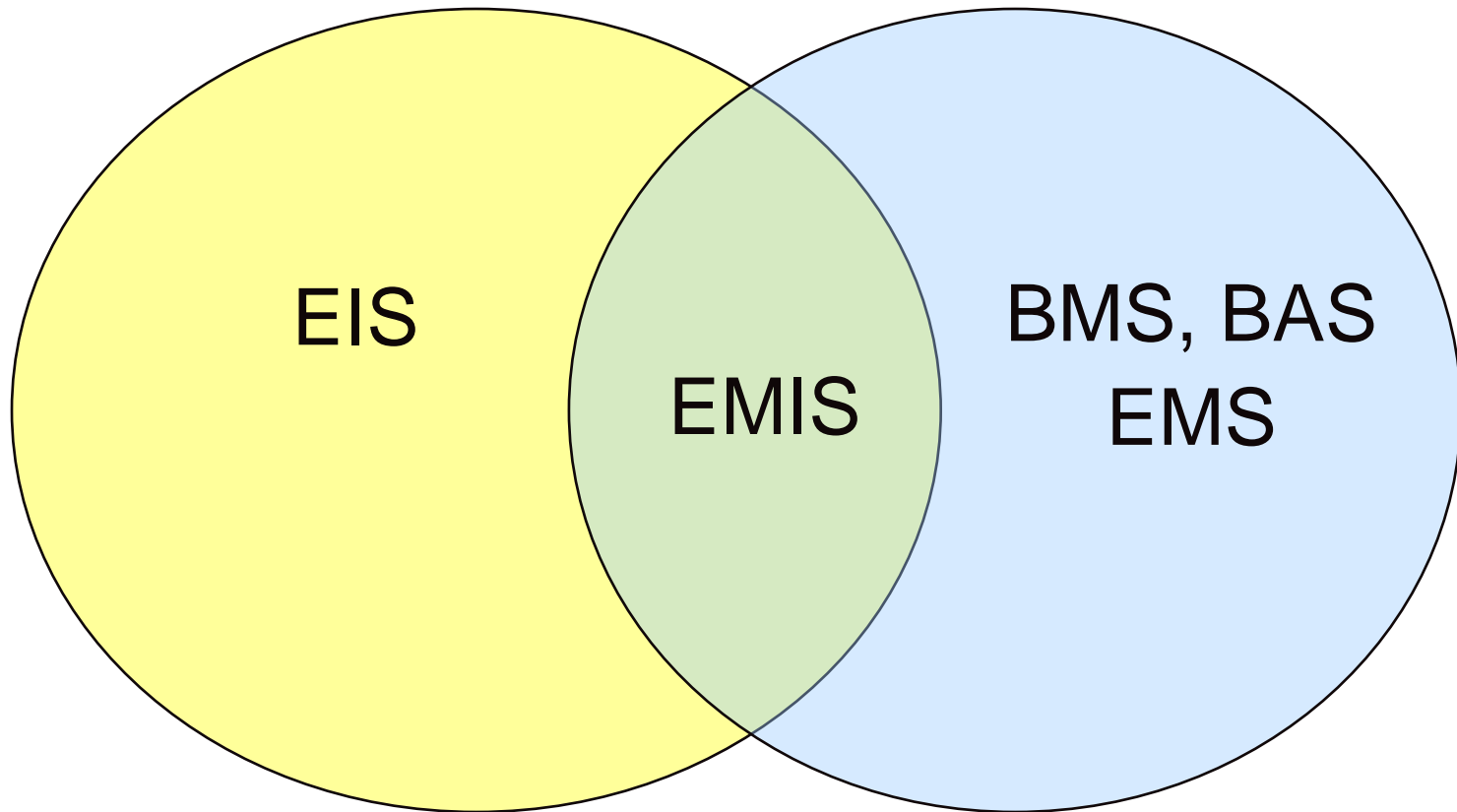
▶ **Building Management or Automation System (BMS or BAS)**

- Product that combines software, data acquisition, and controls hardware to monitor and control building systems.
- BMS or BAS functionality may be applied to whole building data in such a way that the software serves as an EIS as well.

▶ **Energy Management Information System (EMIS)**

- Product that combines software; data acquisition, controls, and storage hardware; and communications systems to monitor and control building systems based on energy use information.
- EMIS combine the monitoring and control capabilities of BMS with the storage, analysis, and display of energy information capabilities of EIS.

Working Definitions



Whole Building Program Approaches EIS May Support, Impact

- ▶ C&I performance based program approaches
- ▶ O&M and Cx of Existing Buildings program models (e.g., RCx)
- ▶ Behavior based programs
- ▶ Remote building audit programs
- ▶ Automated demand response programs
- ▶ Approaches involving new or difficult to calculate measures (e.g., energy impacts cut across multiple systems)

EIS Related Program Objectives

Enabling systems for program administrators to support, streamline, make more cost effective or accelerate these processes:

- ▼ **Identification** of energy savings opportunities (operational, behavioral and capital)
- ▼ **Screening and prioritization** of energy savings opportunities
- ▼ **Measurement and verification** of energy savings based on a “real time” or an ongoing basis
- ▼ **Demonstrate persistence** of energy savings (in particular for “behavioral” measures)

Presentations

- ▶ Ron Gillooly, National Grid
- ▶ Peter Cooper, Massachusetts Institute of Technology
- ▶ Topics (Program and End User)
 - Objectives with EIS, EMIS
 - Scope
 - Considerations
 - Challenges
 - Results and lessons learned

Discussion

▼ Objectives

- What are the program objectives, desired outcomes for supporting EIS?

▼ Energy Savings Potential

- What is the expected energy savings range resulting from EIS?
- What are the categories of savings opportunities?
- What factors do the savings depend on?

▼ Application and Customer Considerations

- Are there indicators or proxies (customer, building infrastructure, etc.) that can help screen or inform “slam dunk” better savings opportunities?

▼ Economics

- What are the major categories of EIS system cost? What is the cost range in the market and what variables dictate the costs?

▼ Program Considerations

- What are common program considerations?
- In order to justify program expenditures for an enabling system like EIS what data, information or needs do you have?