



*Connect to Smarter
Energy Solutions.*

*Massachusetts Energy Efficiency Partnership
Energy Efficiency Best Practices in Automated Energy Management Systems*

**Implementing Facility Energy Management Projects –
Making it Happen –
Challenges, Successes, and Cost
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Energy Management Systems Implementation

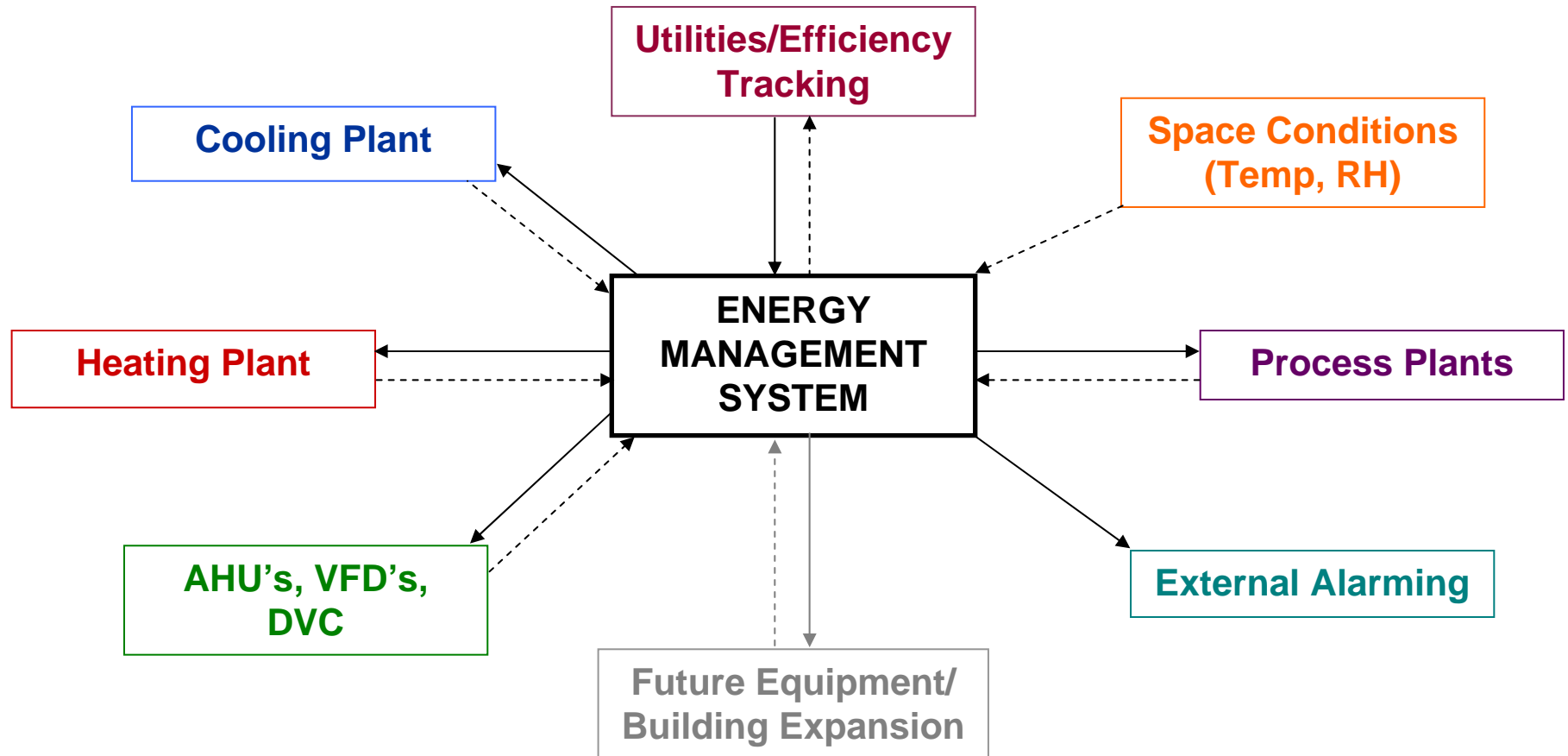
Typical Goals:

- ▶ **Utilities Cost Reduction**
- ▶ **Infrastructure Upgrade or Expansion**
- ▶ **Reduced Maintenance and Better Service Response**
- ▶ **Take Advantage of Financial Incentives**
 - **Low Interest Financing**
 - **Utility Cash Incentives**
- ▶ **“Green” Facility**

Utilities Cost Reduction Through EMS

- ▶ **Direct Savings**
 - **Supervisory Controls**
 - **Occupant-based Scheduling**
 - **Direct Feedback Response**
- ▶ **Indirect Savings**
 - **Utilities/Efficiency Tracking**
 - **Alarming**

Energy Management System Infrastructure



Reduce Maintenance through EMS

- ▶ **Alarming (Pre-Failure)**
- ▶ **Remote Daily “Rounds”**
- ▶ **Efficient & Accurate Diagnostics**
 - Lower incidence of wasted service calls
- ▶ **Improve Staff Responsiveness to End-User**

EMS: Major Cost Components

- ▶ **Design and Development**
- ▶ **Field Devices**
- ▶ **Interface**
- ▶ **Programming and Commissioning**
- ▶ **Documentation**

Challenges in Implementing EMS

- ▶ **Assessing Existing Systems**
- ▶ **Quantifying Existing Systems**
- ▶ **Configuring New Systems**
- ▶ **Quantifying Potential Upsides**

Challenges in Implementing EMS

The Real Big Challenges!

- ▶ **Tracing Existing Controls (usually Pneumatic)**
- ▶ **Limited As-Built Documentation**
- ▶ **What really works?**
- ▶ **Commissioning**
- ▶ **Deficiencies List**

Benefits of EMS for Facilities Managers

- ▶ **Direct Utility Cost Savings**
- ▶ **Feedback Control**
- ▶ **Efficiency Tracking & Optimization**
- ▶ **Ease of Use**
- ▶ **Readily Expanded/Consistency**
- ▶ **Reduced or Avoided Maintenance**

EMS: Success for Owners

- ▶ **Direct Operating Cost Reduction**
- ▶ **Satisfied End-Users (Customers)**
- ▶ **Faster Service Response**
- ▶ **Lower Construction Costs**
- ▶ **More Effective Facilities Team**

EMS: Making it Happen

- ▶ **Performance or Turn-key Contracting**
 - **Comprehensive Audit and Feasibility Study**
 - **Design Phase**
 - **Equipment Purchase and Installation**
 - **Construction Management**
 - **Commissioning**
 - **Long-Term Operations**
- ▶ **Quantity Monetary Savings and Other Benefits**

EMS: Making it Happen (continued)

- ▶ **Identify Project Funding**
 - Direct Capital Outlay
 - Tax-Exempt Lease Purchase
 - Third-party Financing
 - Utility Incentives (Electric, Gas)
- ▶ **Bundle with Larger Utility Savings Projects**
 - Lighting
 - VFD's
 - Water Conservation
 - Central Plant

Thank you!

Questions?

AMERESCO

Integrity - Flexibility - Independence - Innovation

