The value of EMIS when ROIs are difficult to prove

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Presenter








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Type it in the chat

What is the main reason your organization has *not* implemented an energy management information system (EMIS)?

2

Energy management information systems (EMIS)

EMIS incentives are available through Save On Energy's Expanded Energy Management Program.

Industrial facilities can receive incentives covering up to 50% of eligible costs for EMIS implementation:

1. $50,000/facility with ≤400,000 GJ annual baseline consumption (all fuels)
2. $250,000/facility with >400,000 GJ annual baseline consumption (all fuels)

An EMIS includes measurements, networks, data storage, energy management information, people and management processes.

Projects must be completed before **February 2027** while funding is available. To start your application process, **please email** SEM@ieso.ca.

Financial support for industrial facilities participating in the Expanded Energy Management Program is provided by Natural Resources Canada (NRCan) as part of its Green Industrial Facilities and Manufacturing Fund.

The value of EMIS when ROIs are difficult to prove

1. Describe how ROIs are estimated in practice using blended and conservative assumptions.
2. Identify the types of value EMIS create beyond direct savings.
3. Describe how to justify and realize EMIS value in practice to develop a strong business case for your stakeholders.

Follow along in the participant workbook!

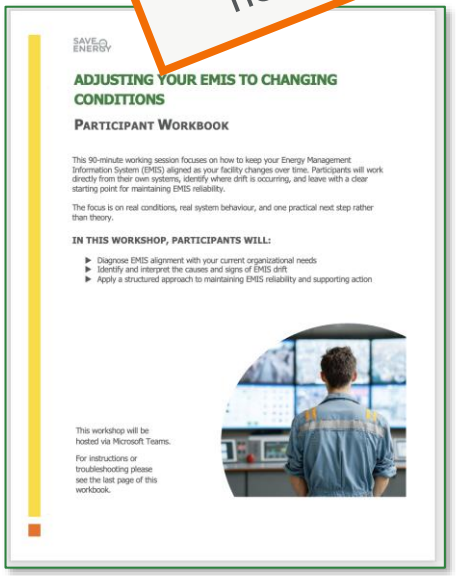
1

Watch for this icon to help follow along

Have the workbook open

Find the workbook:

- In the invitation
- In the chat



SAVE ON ENERGY

ADJUSTING YOUR EMIS TO CHANGING CONDITIONS

PARTICIPANT WORKBOOK

This 90-minute working session focuses on how to keep your Energy Management Information System (EMIS) aligned as your facility changes over time. Participants will work directly from their own systems, identify where drift is occurring, and leave with a clear starting point for maintaining EMIS reliability.

The focus is on real conditions, real system behaviour, and one practical next step rather than theory.

IN THIS WORKSHOP, PARTICIPANTS WILL:

- Diagnose EMIS alignment with your current organizational needs
- Identify and interpret the causes and signs of EMIS drift
- Apply a structured approach to maintaining EMIS reliability and supporting action

This workshop will be hosted via Microsoft Teams.

For instructions or troubleshooting please see the last page of this workbook.

Where the case for EMIS breaks down

- You are expected to justify value before the system is in place.
- Much of the value depends on future actions and decisions.
- Savings are often indirect and difficult to isolate.
- EMIS is often compared to projects with clearer financial returns.

A typical attempt to calculate an EMIS ROI

- EMIS cost: $50,000 +
- Estimated savings: ?
- Payback: Unclear

Let’s check your understanding:

Why won’t a simple payback calculation work for an EMIS ROI?

So how is a ROI estimated?

It is built, not calculated.

- Include multiple sources of value and examples
- Base it on context and scale
- Use conservative assumptions

What goes into the estimate

Operational savings

Non-energy benefits

Future project enablement

10

The case of the Ontario food processing facility

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The case of the Ontario food processing facility (2)

Context

- Industry: Food processing (continuous production, refrigeration-heavy)
- Annual energy spend: ~$1.4M
- Utilities: Electricity + natural gas
- Existing setup:
  - Utility bills tracked monthly
  - Six submeters installed over time (boilers, refrigeration, compressed air, main lines)
  - Data stored in different systems and spreadsheets
  - No centralized platform
  - Operational issues: Overnight baseload, refrigeration sequencing, compressed air runtime, heating, ventilation and air-conditioning (HVAC) scheduling

The case of the Ontario food processing facility (3)

The situation

The energy manager had:

- 5+ years of utility data
- Intermittent submeter data
- Some trend logs from control systems
- Issues only identified retrospectively after costs had already occurred

The case of the Ontario food processing facility (4)

But:

- No submeters
- No consistent way to compare systems
- No automated alerts
- No baseline models
- No way to connect data to operational decisions
- No ability to compare actual performance against expected performance

Most analyses were:

- Manual
- Retrospective
- Triggered only when something "looked off"

The need for EMIS implementation

- Increasing utility costs
- New targets or key performance indicators (KPIs)
- New leadership
- Desire to improve/future-proof
- Taking advantage of incentives

What is your trigger for making your case?

Common leadership questions about EMIS

When EMIS came up, leadership asked:

- What is the savings range?
- Can't we already see this in our data?
- Why do we need another system?
- Who's going to pay for this?
- Who's going to run and maintain this?
- What is the risk if we don't do this?

The energy manager could not provide:

- A clear savings number
- A clear payback
- A direct line from system to savings

What went into the estimate

2

Operational savings

Non-energy benefits

Future project enablement

18

Operational savings

Examples used in the case:

- The EMIS identified elevated overnight electrical demand from refrigeration and compressed air systems operating outside intended schedules.

Identifying operational savings opportunities

People-based approaches:

- Site walkthroughs
- Energy audits
- Employee suggestions
- Comparing operations to best practices

Available data sources:

- Existing programmable logic controller trends
- Interval utility data
- Building automation system/supervisory control and data acquisition trends
- Maintenance logs

Non-energy benefits

Examples used:

- Faster issue detection
- Decision confidence
- Maintenance insight
- Budgeting support
- Measurement and verification support
- Operational accountability

How do I identify and quantify non-energy benefits?

Use operational history and recurring issues as directional evidence, not exact proof

Future project enablement (1)

Examples:

- Directly quantify other energy projects
- Justify gut feelings
- Justify design choices

Future project enablement (2)

Tell us:

Why does demonstrating future project enablement matter to your case?

What would help detect poor performance sooner?

Operational savings

Can you identify energy reduction opportunities in a manner that can be quantified or measured?

Non-energy benefits

Can you identify organizational benefits and priorities in a manner that appeals to stakeholders?

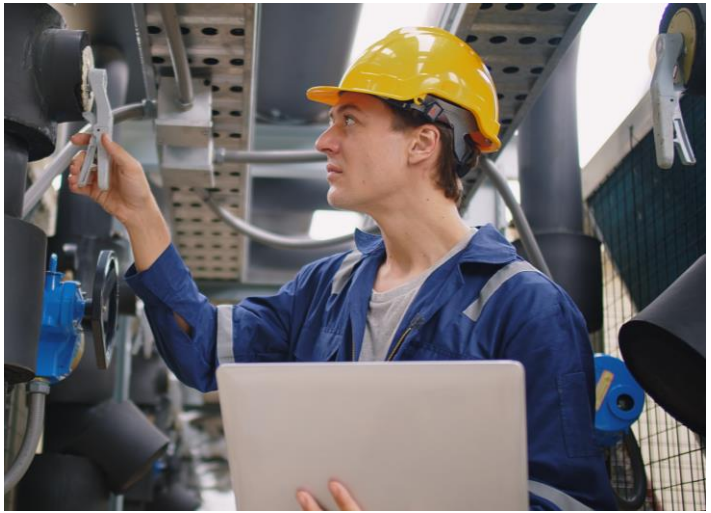
Future project enablement

Does this lead to a better or more confident stakeholder decision about the enablement of broader projects and opportunities?

Where most people get stuck

3

- Identifying what goes into the estimate
- Connecting the data and findings to your coherent case
- Estimating without overclaiming
- EMIS value is distributed across operations, maintenance and projects rather than isolated in one calculation



Start building your case

Think about your facility

3

1. Where could the EMIS lead to operational savings?
2. What issues might the EMIS help you catch earlier?
3. What other/future decisions or projects could the EMIS improve?

Operational savings

Non-energy benefits

Future project enablement

Let’s debrief

- **What felt easy?**
- **What felt difficult?**

You have identified value.
Now you must make that value believable.

How to derisk your case

How experienced teams derisk the case

5

The case of the Ontario food processing facility (1)

Remove what you cannot explain

5

Remove claims you cannot explain

What was removed:

- Any claim of "total facility-wide savings"
- Any assumption that all inefficiencies would be identified and resolved
- Any value tied to "improved visibility" without a clear action

What remained:

Specific, explainable situations:

- Overnight baseload running longer than intended
- Compressed air issue that took time to confirm
- Known variability in refrigeration load versus production

Scale assumptions down

5

Use conservative assumptions

Initial assumption (not used):

- 8–10% potential improvement across systems

What was presented instead:

- 2–3% improvement on total energy spend
- Partial impact only (not full system optimization)
- Industry guidance often uses conservative estimates despite larger theoretical potential

Scale assumptions down

5

Anchor estimates to evidence

Anchors used:

- Actual interval demand patterns
- Historical baseload trends
- Known operational complaints
- Annual energy spend: ~$2.4M
- Known issues:
  - Baseload increase
  - Compressed air inefficiency
- Existing infrastructure:
  - Submeters already installed
  - Historical data available

Show the range, not a single number

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Show the range, not a single number

What was avoided:

- Single ROI %
- Precise payback period

What was presented:

- Improvement range (e.g. 2–3%)
- Value described across:
  - Operational savings
  - Avoided losses
  - Future project enablement

Operational conditions constantly vary, so experienced teams avoid presenting EMIS ROIs as fixed engineering equations

Apply the framework

Refine your estimate

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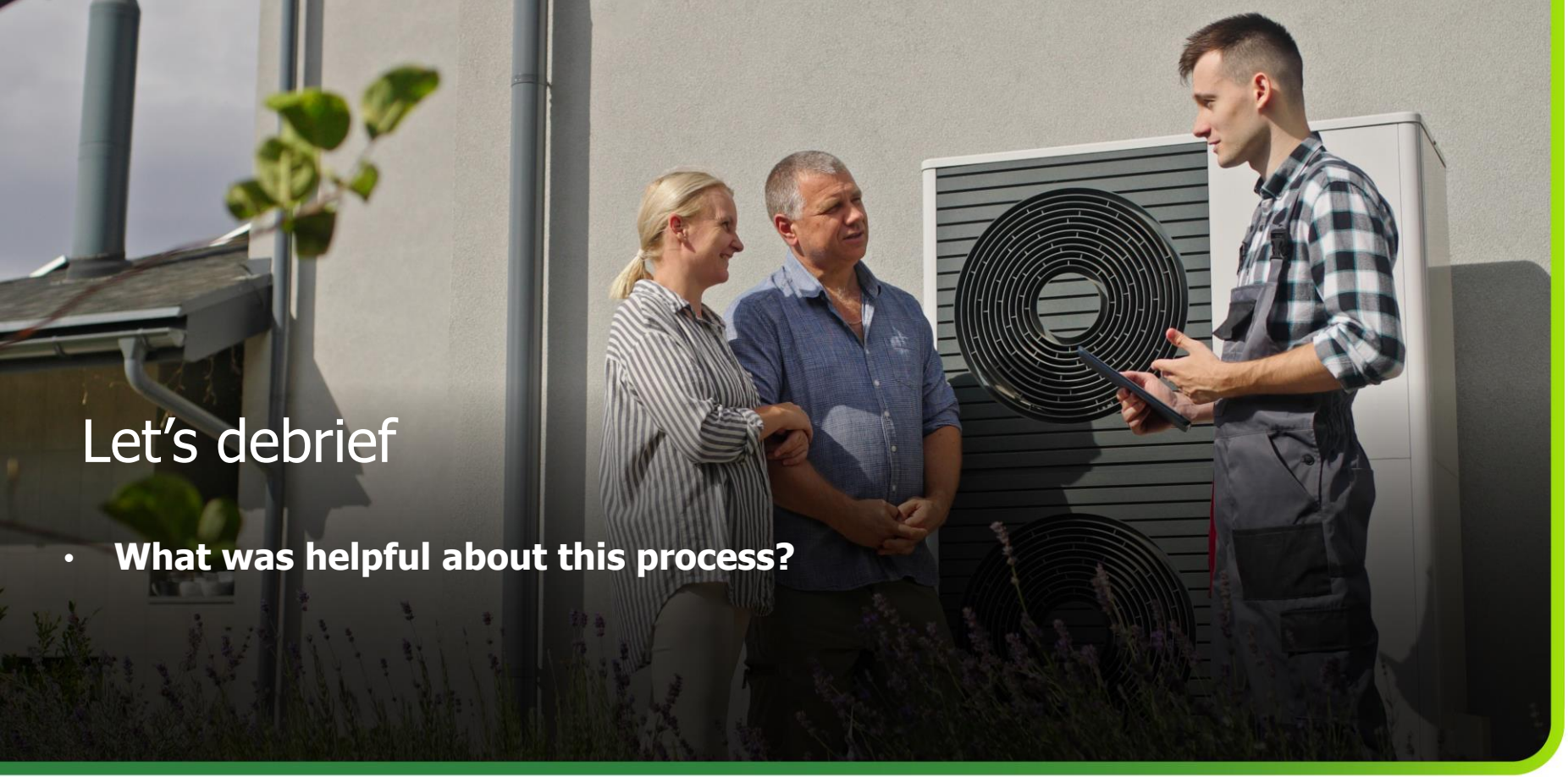
Refine as needed what you have established so far.



Let’s debrief

- **What was helpful about this process?**

Best practices

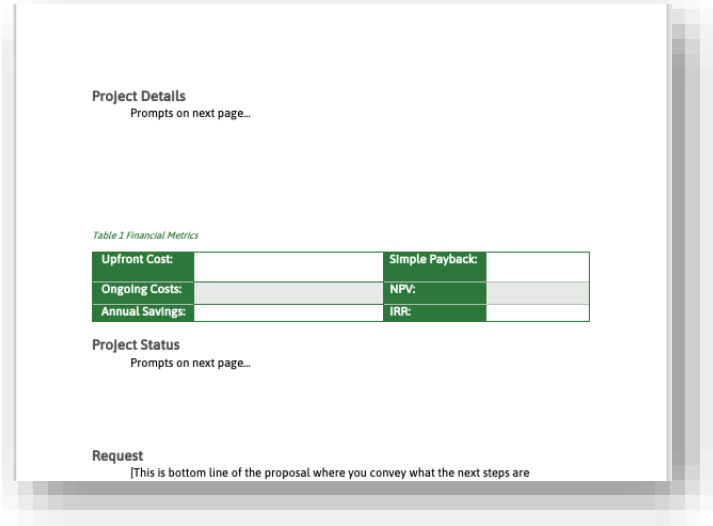
- ✓ Do not rely on a single number
- ✓ Combine multiple sources of value
- ✓ Use conservative assumptions
- ✓ It is better to be roughly right than precisely wrong

Present your case

How to best present your case

10-slide PPT

One-page proposal



Project Details

Prompts on next page...

Table 1 Financial Metrics

Upfront Cost:		Simple Payback:	
Ongoing Costs:		NPV:	
Annual Savings:		IRR:	

Project Status

Prompts on next page...

Request

[This is bottom line of the proposal where you convey what the next steps are

Your presentation should answer these questions

- What is the savings range?
- Can’t we already see this in our data?
- Why do we need another system?
- Who’s going to pay for this?
- Do we have the capacity/resources to make use of this system?
- Who’s going to run and maintain this?
- What is the risk if we don’t do this?

Q&A with Craig Holden

Join the energy management community!

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- Monthly bulletin: Sign up to receive monthly training updates on all Save on Energy training and support for new tools and resources
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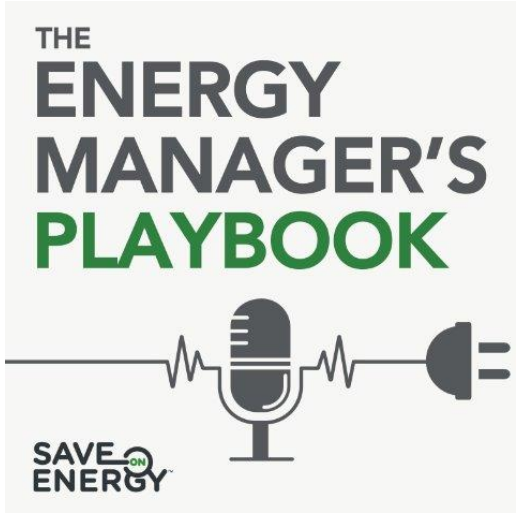
A Podcast by Save on Energy: The Energy Manager's Playbook



Tune in on your preferred platform:
saveonenergy.ca/training-and-support/podcast

Presented by IESO's Save on Energy training and support team:

- Real-world stories from Ontario's energy management community
- Industrial, institutional, commercial and municipal sectors
- Challenges, successes and practical insights
- Bite-sized, high-impact episodes

Save on Energy's Capability Building Program

- Save on Energy's Capability Building program helps increase awareness of energy-efficiency opportunities, enhance knowledge and develop skills in organizations and communities across Ontario so they can undertake energy-efficiency actions and participate in Save on Energy programs.
- The program includes tools such as workshops, webinars, training courses, coaching, peer learning and information resources, including guides and videos.

Learn more at
https://saveonenergy.ca/Training-and-Support
Register at
www.saveonenergytraining.ca

Thank you

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