

# Adjusting your EMIS to changing conditions

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Presenter



## Type it in the chat

What has changed in your facility's operations in the last 12 months—and how much of that is reflected in your EMIS?



# Energy Management Information Systems (EMIS)

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

Industrial facilities can receive incentives up to 50% of the eligible costs to implement an EMIS:

1. \$50,000/facility with  $\leq 400,000$  GJ annual baseline consumption (all fuels)
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An EMIS includes measurements, networks, data storage, energy management information, people and management processes.

Projects must be completed while funding is available. To start your application process **please email [SEM@ieso.ca](mailto:SEM@ieso.ca).**

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# Adjusting to changing equipment and conditions

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

# Follow along in the participant workbook!

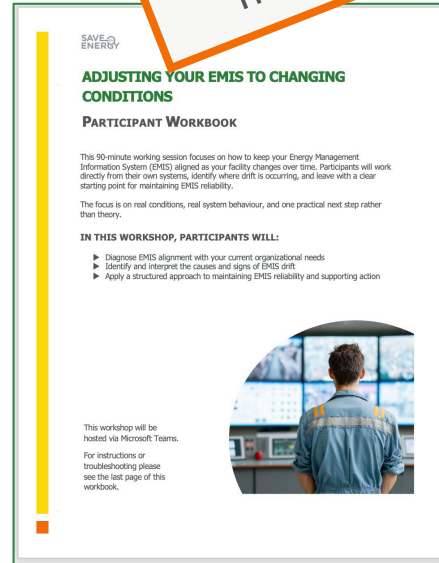


Watch for this icon to help follow along

## Have the workbook open

Find the workbook:

- in the invitation
- in the chat



# What is EMIS drift?

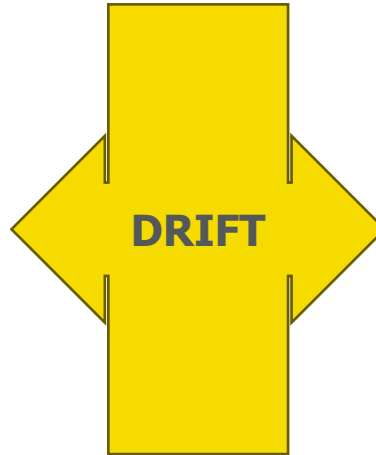
## What your system thinks is happening

Metered equipment

Control bands

Schedules

Calibrated sensors



## What is actually happening

New equipment

Process changes

Changed schedules

Sensor errors or drift

# Why this matters

- Poor decisions from acting on incorrect data
- Missed savings as real issues go undetected
- People stop using the EMIS as trust is eroded
- Operational instability as controls and KPIs are misaligned
- Compliance risk (GHG, ESG, ISO 50001)



## **In your workbook:**

- List what has changed in your facility in the last 12 months.
- What impact might that have on EMIS operation?

If those changes are not reflected in your EMIS, **that gap is drift.**

If your system hasn't been updated,  
it is not telling you what is happening now.

# Where drift comes from change

Physical

Operational

Measurement

Organizational

## Changes to equipment or systems

- Equipment replaced or upgraded
- New systems installed
- Process changes



## Changes to how the facility operates:

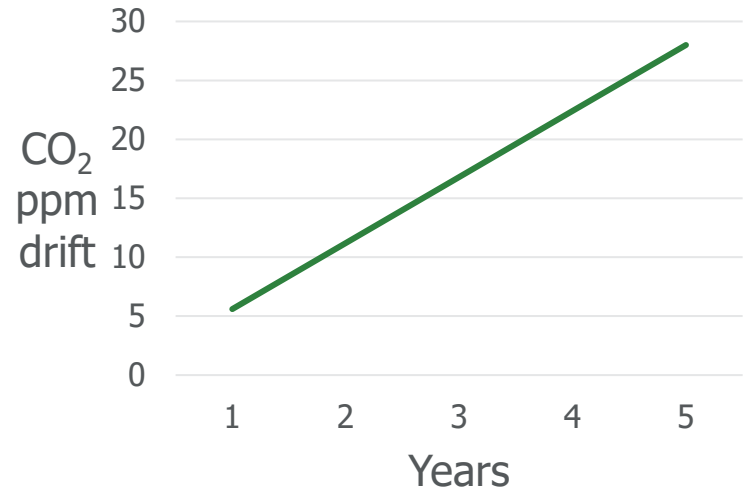
- Shift schedules change
- Production levels change
- Operating strategies evolve



## Changes to data inputs and measurement

- Sensors uncalibrated, recalibrated, or replaced
- Data points renamed or removed
- New meters added

## Sensors can drift over time



## Changes to roles, processes, and ownership

- Roles and responsibilities shift
- SOPs not updated
- Outputs not reaching the right people



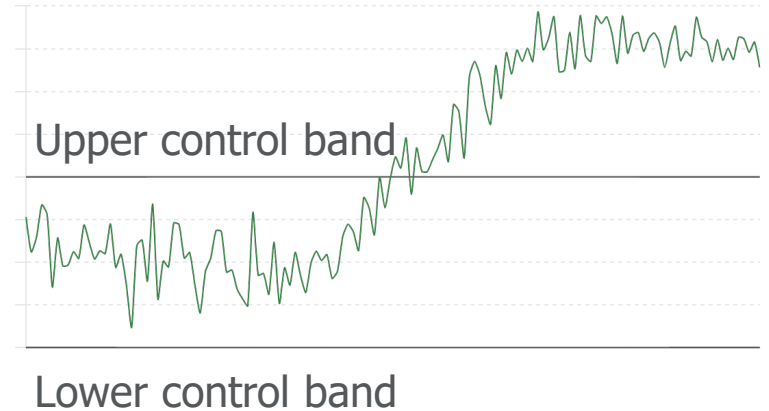
# How would you know it's happening?

Drift shows up in how your system behaves

# Common signs of drift – Changing trends or unaligned baselines

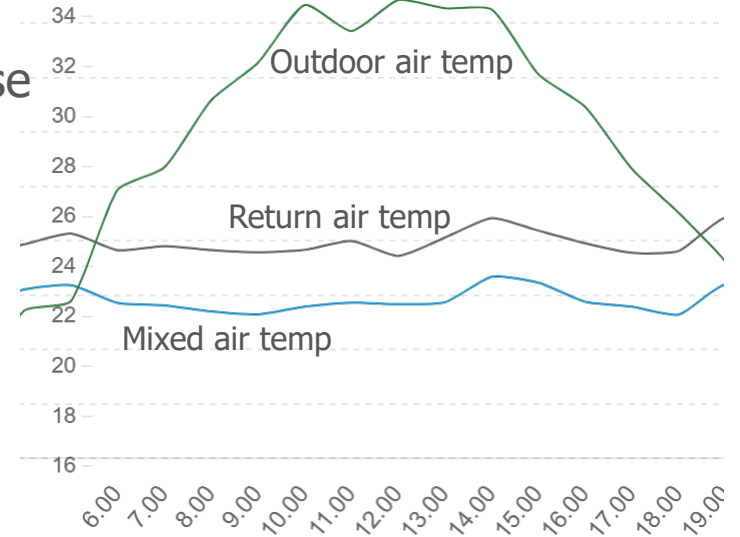


- Baselines or control bands no longer match actual energy use
- Trend lines shift unexpectedly



# Common signs of drift – Meter issues

- Data points missing or change name
- Meter or sensor readings don't make sense
- Stuck or zeroed sensor outputs



# Common signs of drift - Behaviour



- People ignoring alerts
- People no longer acting on report results
- Teams stop reviewing EMIS reports

 Critical	High Peak Demand Exceeded Threshold	Main Building	Today, 10:30 AM	Unresolved
 Critical	Air Handler 1 Heating & Cooling Simulta-	Office Area	Today, 9:45 AM	Unresolved
 Critical	Meter 5 Communication Failure	Panel B	Today, 8:20 AM	Unresolved
 Warning	Boiler Efficiency Dropping Below Setpoint	Boiler Room	Today, 7:50 AM	Unresolved
 Warning	AHU 3 Outside Air Damper Fault	North Wing	Yesterday, 5:15 PM	Unresolved
 Warning	Steam Flow Sensor Out of Range	Mechanical Room	Yesterday, 2:30 PM	Unresolved
 Critical	Cooling Tower Water Level Low	Cooling Tower	Yesterday, 11:00 AM	Unresolved
 Critical	Power Meter Calibration Error	Panel B	Yesterday, 7:00 AM	Unresolved
 Warning	Zone 2 Temperature Sensor Drift	Boiler Room	Yesterday, 5:15 PM	Unresolved
 Warning	Lighting Schedule Override Active	North Wing	Yesterday, 5:50 PM	Unresolved
 Critical	Gas Consumption Spike Detected	Mechanical Room	Yesterday, 2:30 PM	Unresolved
 Critical	VFD 1 Fault Alarm	Messassy ROOMy	Yesterday, 5:10 PM	Unresolved
 Critical	Low Delta T in Chilled Water Loop	Cooling Tower	Yesterday, 7:10 AM	Unresolved
 Info	Exhaust Fan Malfunction	Reang Bilozing	Yesterday, 7:20 PM	Unresolved
 Warning	Humidity Sensor Calibration Issue	Panel B	Yesterday, 2:00 AM	Unresolved

## A simple way to check



- KPIs no longer “feel right”
- Sudden step changes without explanation
- Increasing overrides or ignored alarms
- Growing gap between EMIS and utility bills
- Operators bypassing the system

**These determine whether EMIS stays aligned over time.**

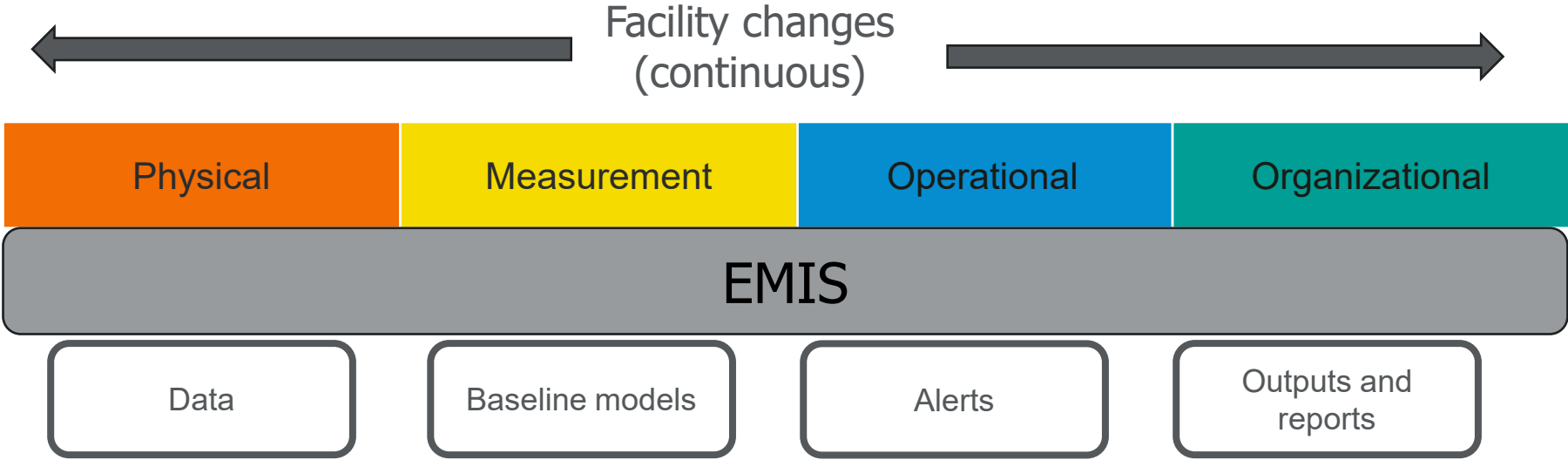
## Let's debrief

- Does the data reflect current reality?
- Are alerts meaningful and actionable?
- Are outputs being used?

# If drift is inevitable, what do you do?

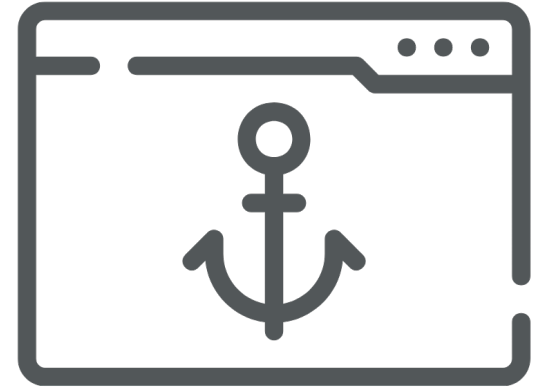
Drift cannot be avoided  
It must be managed

# What an aligned EMIS looks like



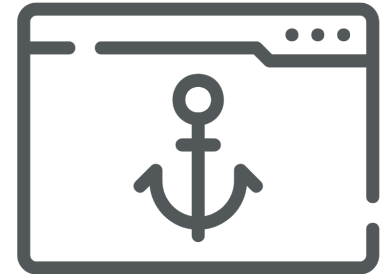
# EMIS drift prevention framework

Part 1: EMIS sustainment foundations



EMIS sustainment foundations

# 1. Define ownership and accountability



# Define Ownership and accountability



A person or people need to have ownership over the EMIS and be accountable for its accuracy and operation. This includes ownership of:

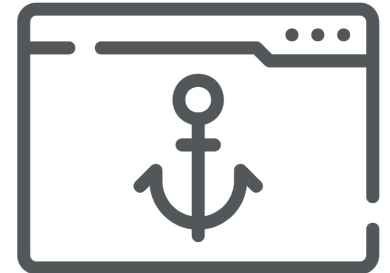
- Data quality
- System operation
- Energy performance

Responsibilities include:

- Updating baselines, KPIs, control bands, alerts, etc.
- Validating meters and maintaining meter inventory
- Reviewing anomalies to determine cause (EMIS issue or operational issue)

EMIS sustainment foundations

## 2. Integrate EMIS with change management systems



# Integrate EMIS with change management systems

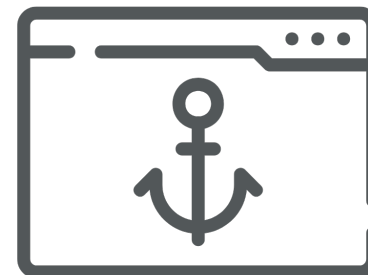


This integration should align with and cover all four types of change identified earlier:



EMIS sustainment foundations

### **3. Establish a metering and sensor management strategy**



# Establish a metering and sensor management strategy



This includes:

- Establishing clear and consistent naming conventions
- Establishing and maintaining a meter registry
- Meter ID
- Class
- Location
- Upstream and downstream meters (for aggregation purposes)
- Accuracy and calibration requirements
- Last validation date
- Known issues

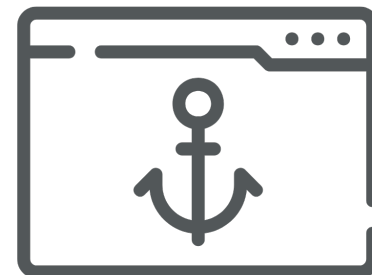
## Establish a metering and sensor management strategy (cont'd.)



- Calibration / validation approach
- Calibration requirements
- Calibration risk assessment
- This includes things like the types of meters, what they're used for (e.g. anything associated with revenue or controlling critical systems is higher risk), and their environment.
- Calibration / validation schedule and approach
- Schedule should be based on the risk assessment, not everything needs to be calibrated every year.
- Approach can include things like validating measurements using a calibrated portable meter or checking that aggregated submeter values align with the aggregated meter.

EMIS sustainment foundations

## 4. Establish processes to identify and address EMIS issues



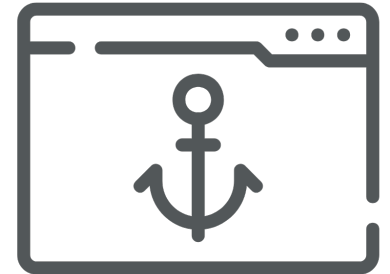
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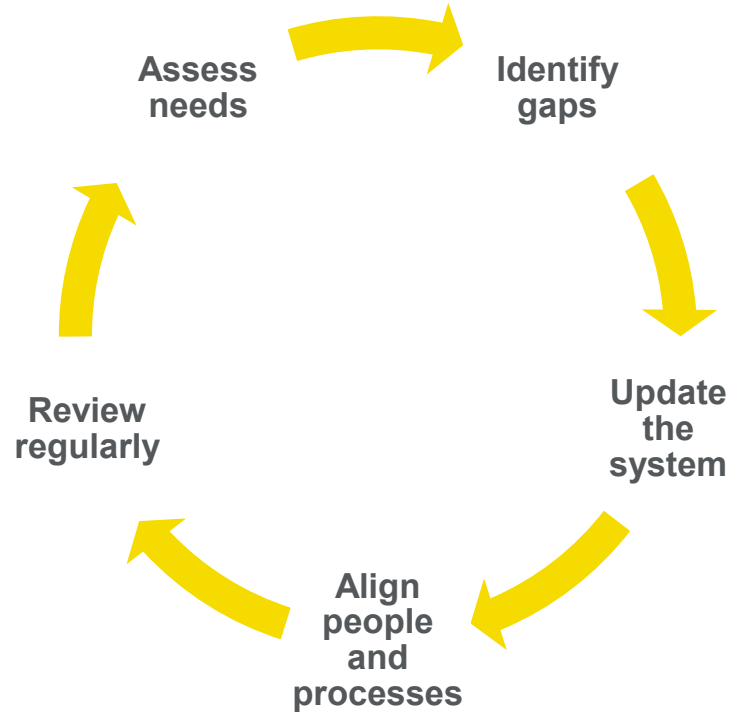
- Schedules for what ongoing checks or actions that need to happen at a weekly, monthly, quarterly, etc. cadence.
- Fault detection and diagnosis
- Periodic recommissioning for high-impact systems
- Making sure symptoms of drift get flagged

# EMIS drift prevention framework

Part 2: EMIS Sustainment Approach  
(what makes this stick over time)



# EMIS Sustainment Approach



# Apply the sustainment approach

Think of a recent change in your facility.

In your workbook:

## 1. Write the change

(equipment, operations, measurement, or organizational)

## 2. Map it to the cycle

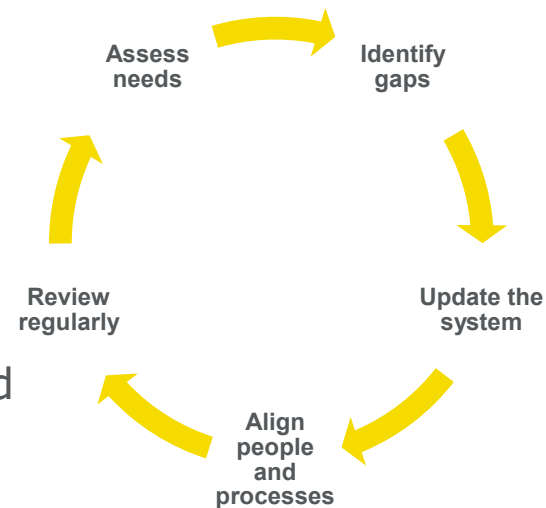
Where did it break, or where would it break?

## 3. Identify the weakest step

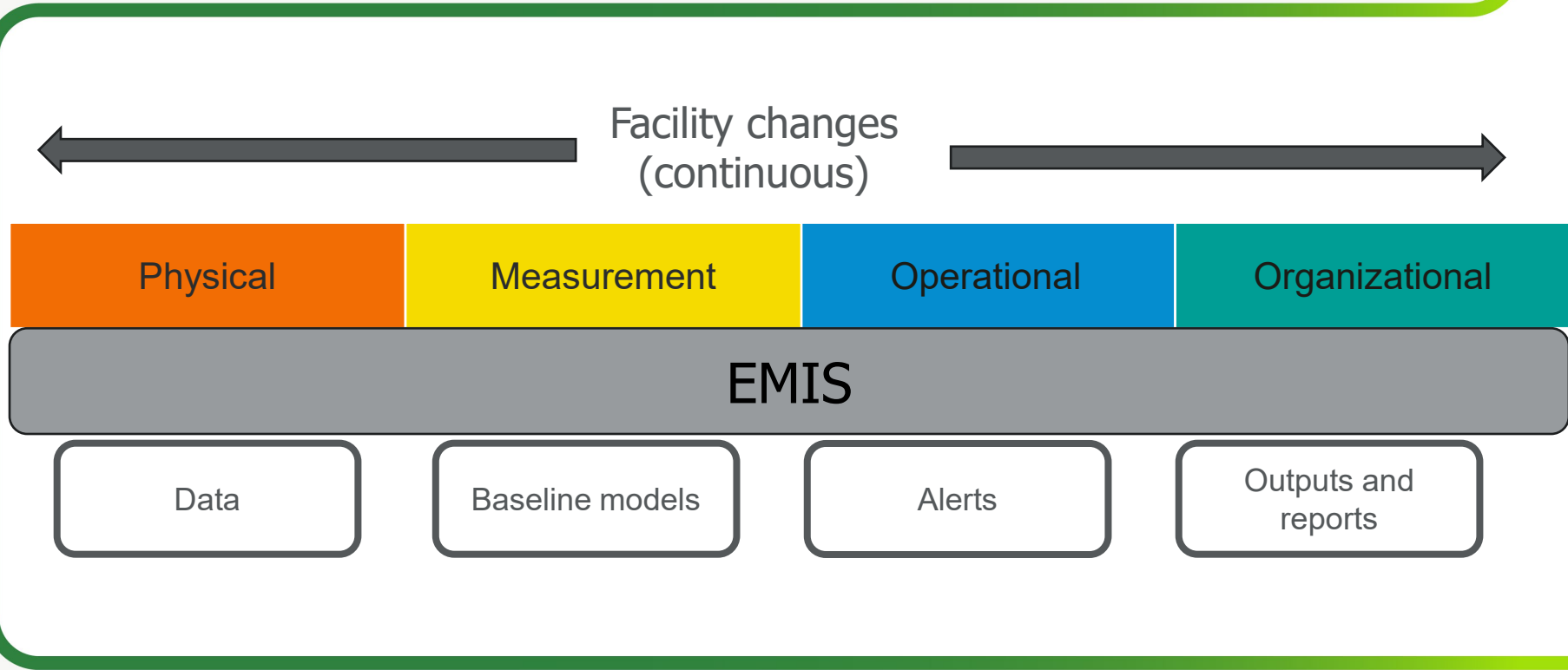
Assess needs | Identify gaps | Update system | Align people and processes | Review regularly

## 4. Define one action

What is one thing you could put in place to strengthen that step?



# Maintaining EMIS reliability



# A simple way to capture what gets updated in the EMIS

10



What changed?



When did it change?



What was updated?



Who updated it?

# Make it explicit

If it is not documented, it will drift again.



What is one change in your facility that your EMIS is not currently reflecting?

What needs to be updated to bring it back into alignment?

# What does this look like in practice?

# Starting point - 1

## What we had

## Starting point - 2

What we had

**What had drifted (what was no longer aligned)**

## Starting point - 3

What we had

What had drifted (what was no longer aligned)

**What needed to change (actions taken)**

## Starting point - 4

What we had

What had drifted (what was no longer aligned)

What needed to change (actions taken)

**What this enabled (decisions, projects, outcomes)**

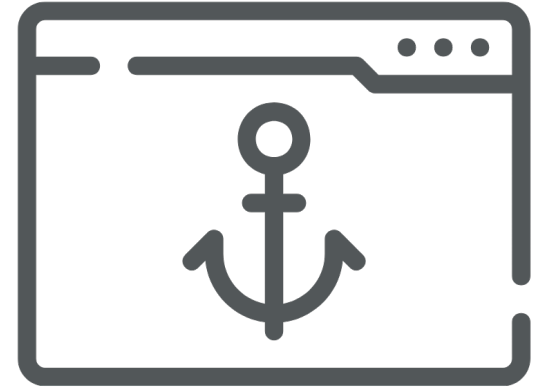
# What would need to be true in your organization?



Based on what you've heard, what would need to be true in your organization to do something similar?

Capture **one condition** in your workbook.

**Everything you  
captured in your  
workbook today is  
your starting point.**



# Join the energy management community!

- **Peer learning** opportunities
- Access to the **Energy Manager Learning Platform**
  - Online courses
  - Resources
  - Discussion forum
- **Free expert support** on improving energy management practices and energy efficiency projects

**Registration is free!**



For more information:  
[trainingandsupport@ieso.ca](mailto:trainingandsupport@ieso.ca)

## Stay connected with tools and resources

- Virtual one-on-one coaching: [post-webinar support intake form](#) for tailored support for organizations to manage energy resources effectively
- Monthly bulletin: [sign up](#) to receive monthly training updates on all Save on Energy training and support for new tools and resources
- [Live training calendar](#): visit this page to easily register for upcoming events and workshops
- [Training and support webpage](#): visit this page to access all training and support materials

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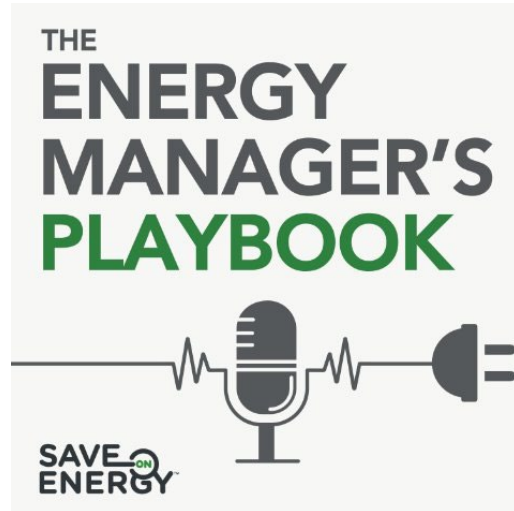
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# A Podcast by Save on Energy: The Energy Manager's Playbook



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



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