

# STRATEGIC ENERGY MANAGEMENT FOR INDUSTRY (SEMI) PROGRAM

## Energy Management Information Systems (EMIS) Overview

May 29, 2025



Natural Resources  
Canada



# Land Acknowledgement

In the spirit of reconciliation, we, at ERA, acknowledge the privilege of living, working, and investing on traditional territories, which include Treaty 6, Treaty 7, and Treaty 8 Nations; Otipemisiwak Métis Government of the Métis Nation; Inuit; First Nations; and all others who live and care for these lands.

**We are dedicated to promoting a culture of collaboration and meaningful engagement.**

# Housekeeping

- ✓ Microphones are muted
- ✓ If you called in, select “telephone” and enter audio PIN
- ✓ Type questions into the “Questions” section of the control panel
- ✓ We will try to answer as many questions as possible
- ✓ If you have technical difficulty during the webinar, don’t worry! You will be able to watch the recording that will be posted on our website shortly after the live session.



# Agenda

- SEMI Program Overview
- What is an EMIS?
- Eligibility Criteria & Application Process
- Insights on Implementation
- Q&A





# Speaker Introduction

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Program Director,  
Enerva

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Solutions Consultant,  
Spartan Controls



STRATEGIC ENERGY  
MANAGEMENT  
FOR INDUSTRY

EMISSIONS  
REDUCTION  
ALBERTA



Natural Resources  
Canada

Alberta

# About Emissions Reduction Alberta (ERA)

## MANDATE

Reduce GHG emissions and grow Alberta's economy by accelerating the development and adoption of innovative technology solutions.

## VISION

Alberta has competitive industries that deliver sustainable environmental outcomes, attract investment, and are building a diversified, lower emissions economy.

## STRATEGIC PRIORITIES

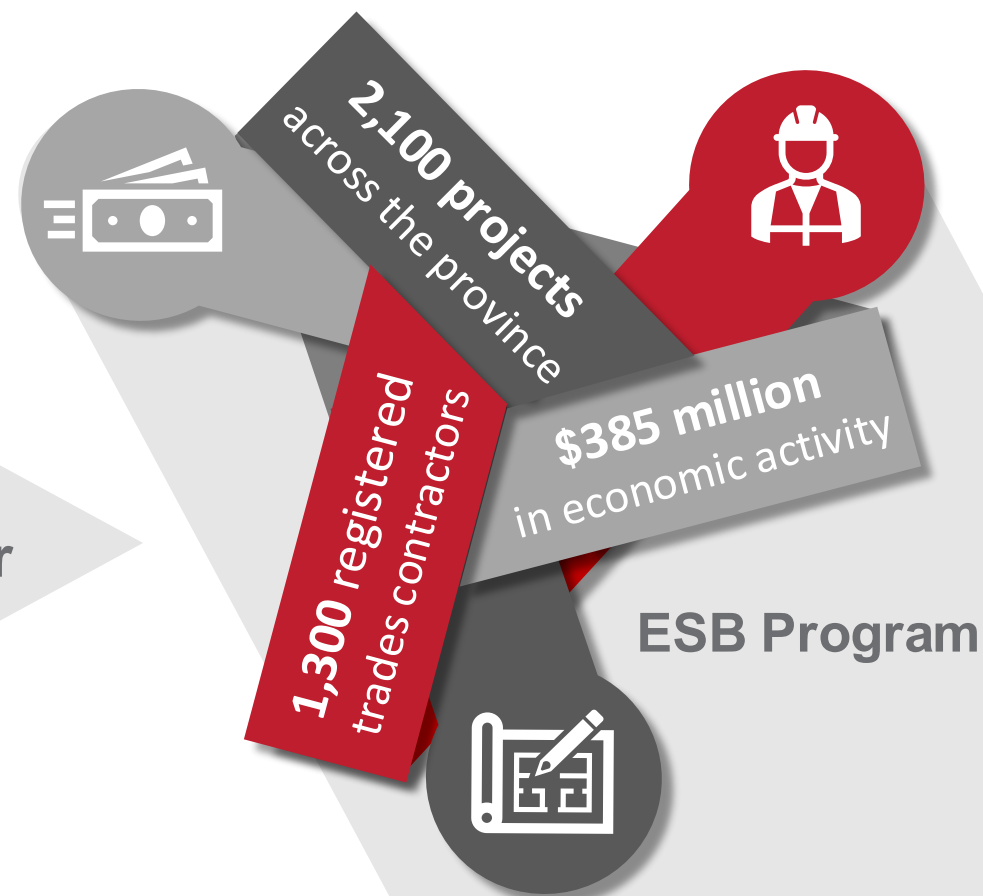




# About Enerva

Enerva is a Canadian-owned company who specialize in comprehensive program design and delivery and is recognized for its trusted services among utilities, government agencies, and program administrators.

Previous collaboration with ERA on the **Energy Savings for Business (ESB)** Program:



# About SPARTAN CONTROLS





# STRATEGIC ENERGY MANAGEMENT FOR INDUSTRY (SEMI)

## *Program Overview*



STRATEGIC ENERGY  
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Alberta

# SEMI Program Overview

## Program Funding



Natural Resources  
Canada

Green Industrial Facilities and  
Manufacturing Program (GIFMP)

&



Technology Innovation and  
Emissions Reduction (TIER) fund



# SEMI

Program ends **March 31, 2027**

## Eligibility Criteria

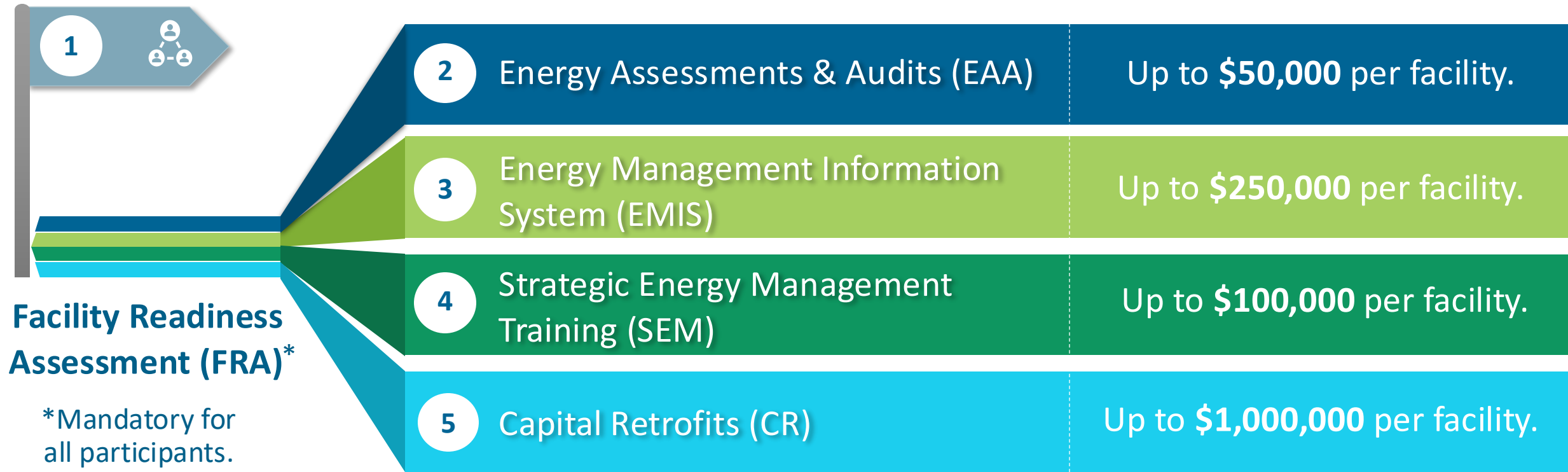
The facility is owned or leased **in Alberta** and has been **in operation for at least one year** with fixed equipment and building(s) used to produce goods

&

Operates in a sector defined by the North American Industry Classification System (NAICS) codes starting with 11, 21, 22, 23, 31, 32, 33, 48, or 56.



# SEMI Program Activities & Incentives





# What is EMIS?

An EMIS is a system of tools and processes that collect, analyze, and report energy data to improve energy performance and reduce costs.



# Benefits

Real-time monitoring  
of energy consumption



Early detection of  
energy waste



Support continuous  
improvement  
initiatives



Drive informed  
decision-making



# Outcomes



Cost savings



Greenhouse gas (GHG)  
reductions



Enhanced reporting  
and accountability



One step closer to ISO  
50001 certified



# Core Components of an EMIS

## Data Acquisition

Smart meters, submeters, sensors  
Real-time data collection

1

## Data Storage & Management

Secure, scalable platforms  
(cloud or on-premise)

2

## Analytics & Visualization

Dashboards, trend analysis,  
benchmarking

3

## Reporting & Alerts

Custom reports, automated  
notifications of abnormal usage

4

## Integration

Interfaces with Building  
Automation Systems (BAS),  
SCADA, and maintenance systems

5





## Traditional Approach

VS

## EMIS Approach

Manual data collection  
(monthly utility bills)

Reactive: problems found after  
high energy bills

Limited or no trend analysis

Hard to benchmark or set  
baselines

Time-consuming manual reports

Disconnected from operational  
controls

Automated, real-time data from  
meters & sensors

Proactive: early detection of  
energy waste

Advanced analytics and  
visualization tools

Easy benchmarking and  
performance tracking

Automated reporting and alerts

Integrated with plant/process  
systems



## Examples of ineligible systems:

Systems that don't provide energy visibility at all organizational levels

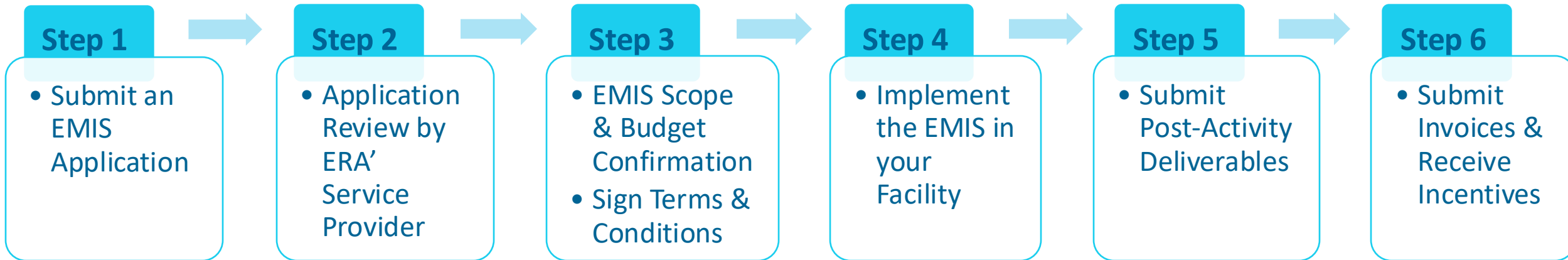
Standalone dashboards with no formal procedures or improvement loops

Generic SCADA or other control systems used purely for control, without energy performance tracking

# Enrollment Process – EMIS Activity

The EMIS registration process is easy and secure. Register on the SEMI online portal at [www.semiprogram.ca](http://www.semiprogram.ca).

**This process flow outlines the main steps after completing your FRA:**



Tips: Your Eligible Contractor can submit the EMIS application on your behalf.



# Insights on implementation



# Industrial Software & Applications

Enterprise Data Storage

Digital Transformation

Alarm Management

Data Visualization

OT Cybersecurity

Operator Metrics

Asset Reliability

Data Analytics

Optimization

Networking

APC



OUR  
MISSION



BLUEMARVEL

**Deliver high-value customer outcomes** leveraging investments in Spartan Technology

Partner with customers on **value-delivery programs**

Work collaboratively with customers looking for **sustainable win-win outcomes**

OUR  
TEAM



7 PhDs

7 Masters

46 P.Eng

37 data management specialists

22 machine reliability specialists

18 advanced process control experts

5 project managers

5 dedicated BD/SME

5 solutions consultants

3 alarm management specialists

12 Industrial Networking & Cybersecurity Specialists

# Outcomes of Energy Management

TURN A LARGE VARIABLE COST INTO A  
**CONTROLLABLE EXPENSE**



## Energy Management

is the process of tracking, benchmarking, and optimizing energy consumption and/or generation to reduce costs and GHG emissions.

### Outcomes:

- Resource optimization
- Minimize energy consumption
- Cost savings
- Ensuring energy longevity



# Drivers for EMIS

An effective EMIS directly reduces the amount of energy consumed. This translates to savings in energy usage, carbon tax, and helps you abide to new GHG regulations.



# Effective Energy Management



**See**

## **Visibility into your Energy Consumption**

Begin by monitoring your energy consumption to gain real time insight



**Decide**

## **Use Data to Drive Actions**

Make informed decisions to increase operating efficiency using EMIS telemetry



**Act**

## **Achieve Site-wide Energy Targets**

Achieve your energy goals, save on energy costs, and reduce your carbon footprint

# Effective Energy Management

Trying to save energy without **information** is like trying to get somewhere in a strange city without any road signs or Google Maps...

X

It will take you much longer to get there

X

You'll miss all the shortcuts

X

You'll never know how far you've gone

X

You'll never know how far you've got left to go

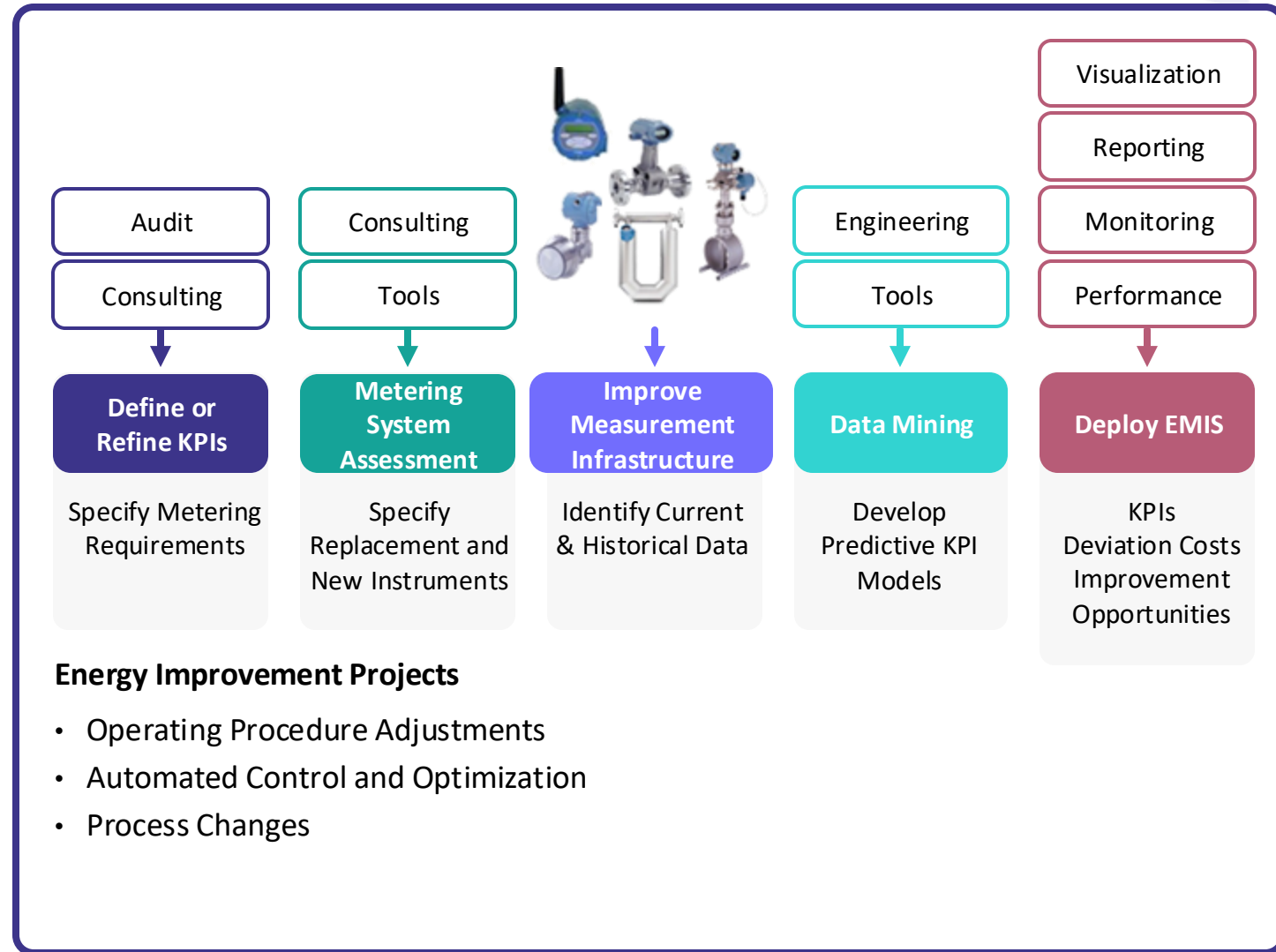
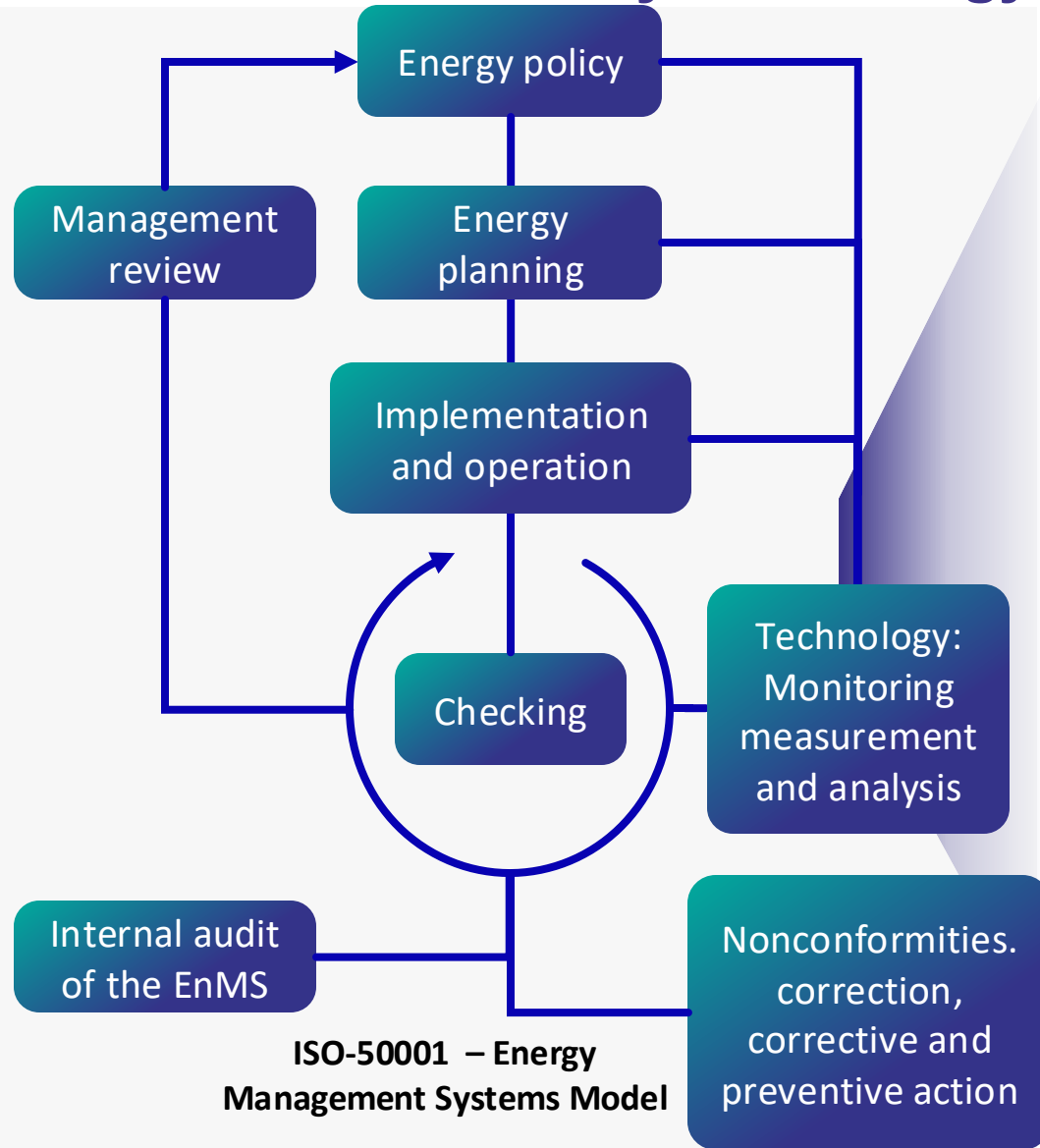
X

You may just end up lost

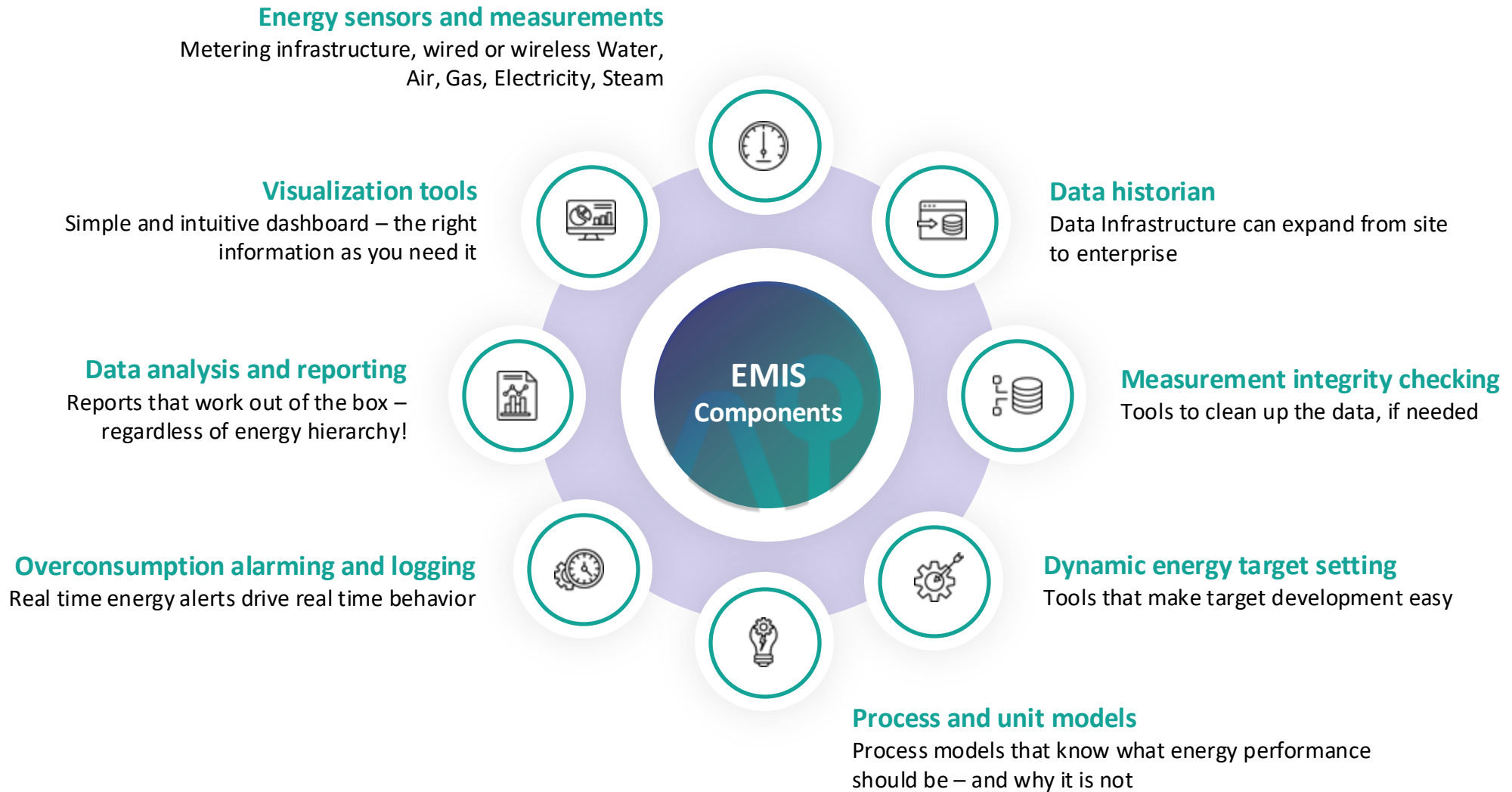




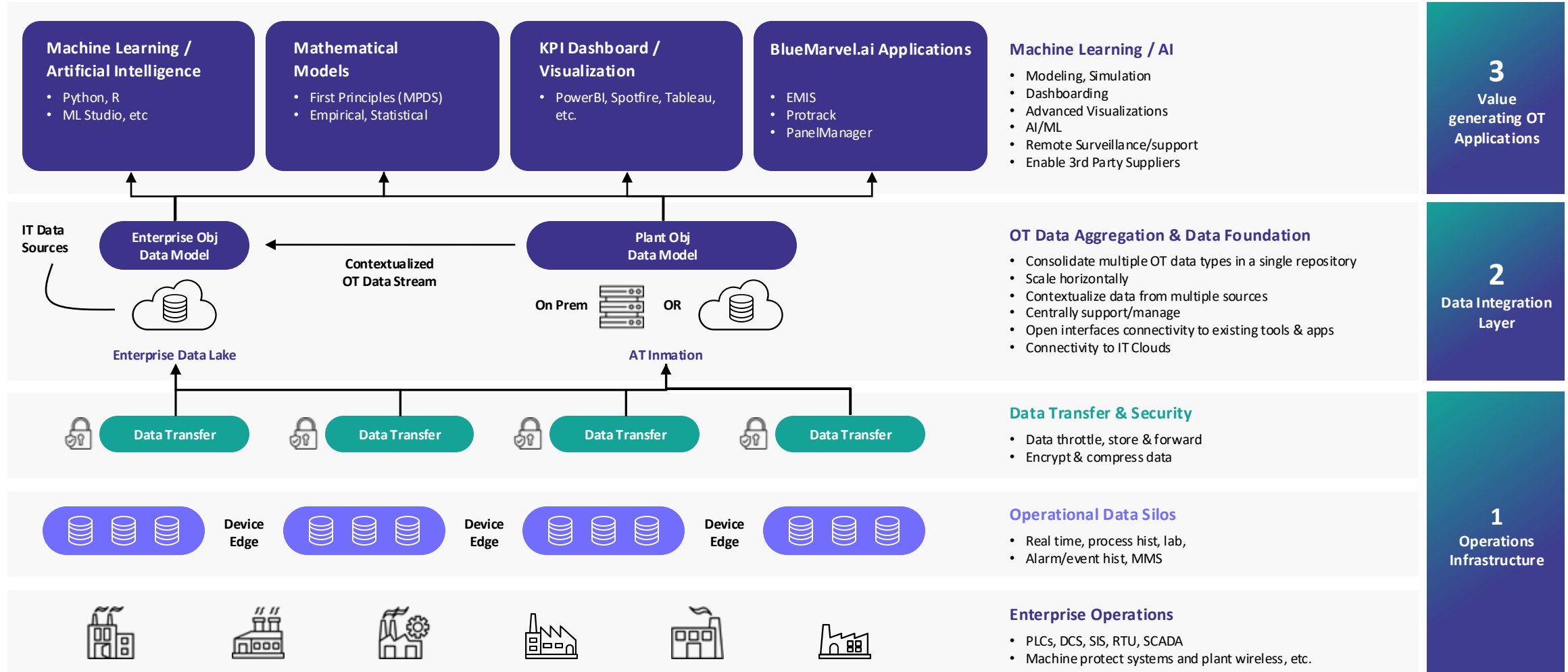
# EnMS Powered by Technology (EMIS)



# Digital Infrastructure for EMIS



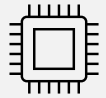
# Digital Infrastructure for Enterprise-wide EMIS



## Technical Advantage

### BlueMarvel EMIS

### Traditional EMIS



Data  
Integration

**Natively via Aspentech information  
& other enterprise DBs**

**Multiple point  
connectivity solutions**



Accessibility

**Anywhere, anytime, on  
any device**

**At site or remote access**



Cybersecurity

**Single Sign-on**

**N/A**



Deployment

**Containerized**

**Installation/configuration  
of various software**



Upgrades

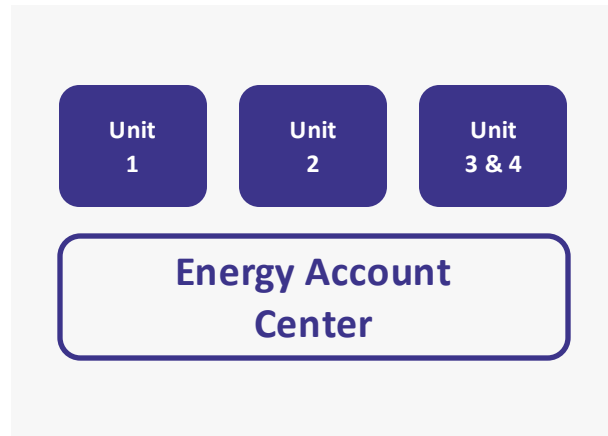
**Over-the-air, anytime**

**Scheduled**



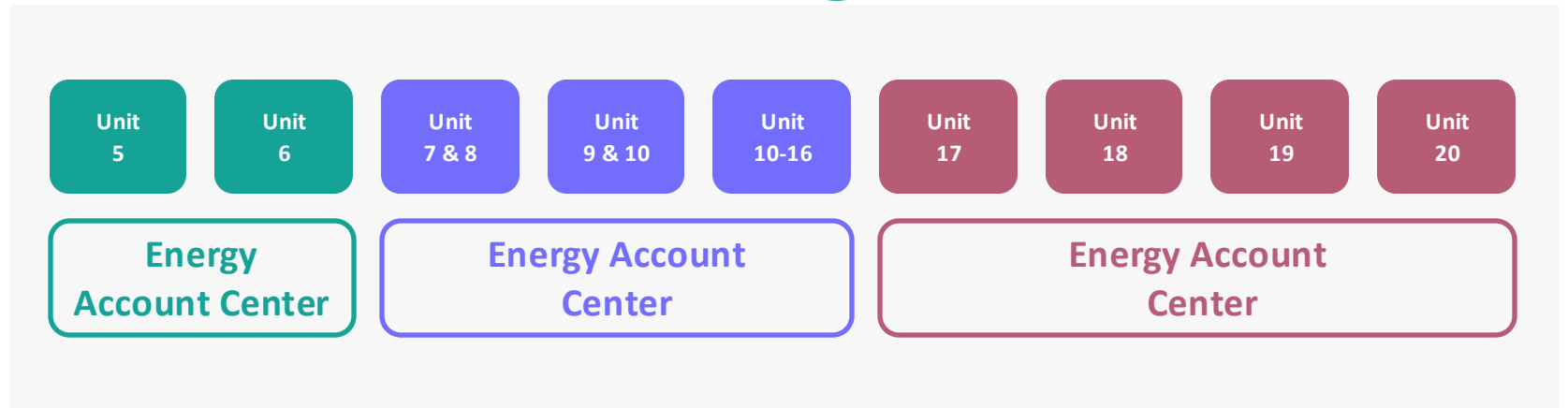
# Digital Journey

## Think Big Start Small



### Start with

- Process area with best data infrastructure
- Document success



### Expand gradually to other areas

- As the data infrastructure gets better
- Repeat success

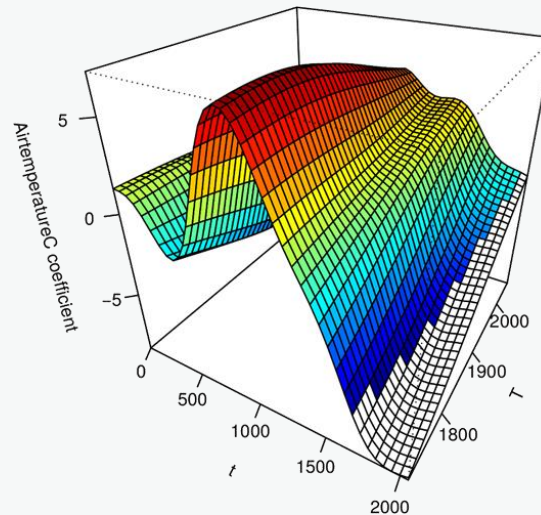
# Evolving Approach

## ENERGY DRIVERS

Production  
Ambient Temperature  
Quality Setpoint  
Feed Composition  
...

Static Targets

## PROCESS



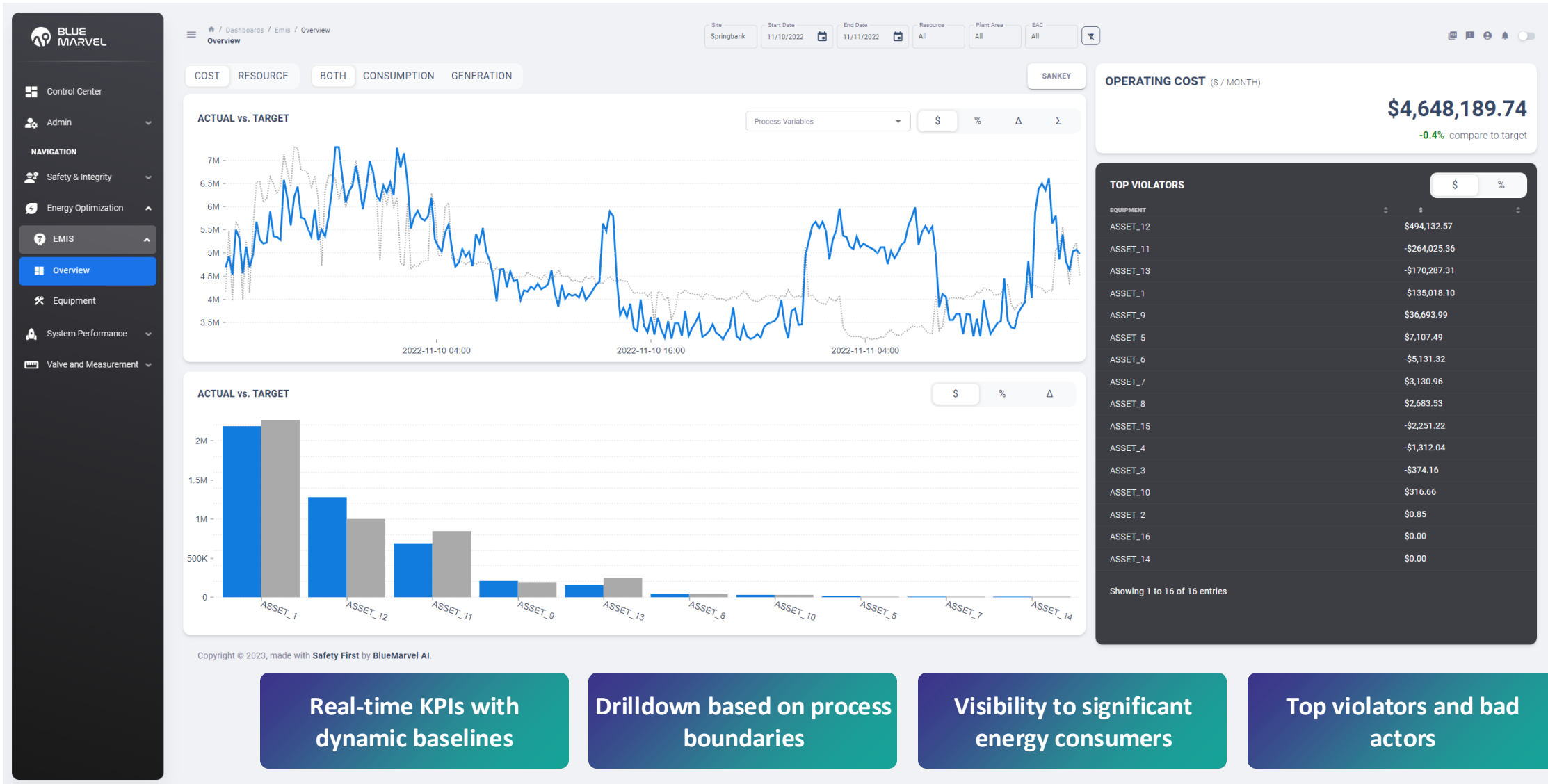
Historical Benchmarks

## DYNAMIC ENERGY TARGETS

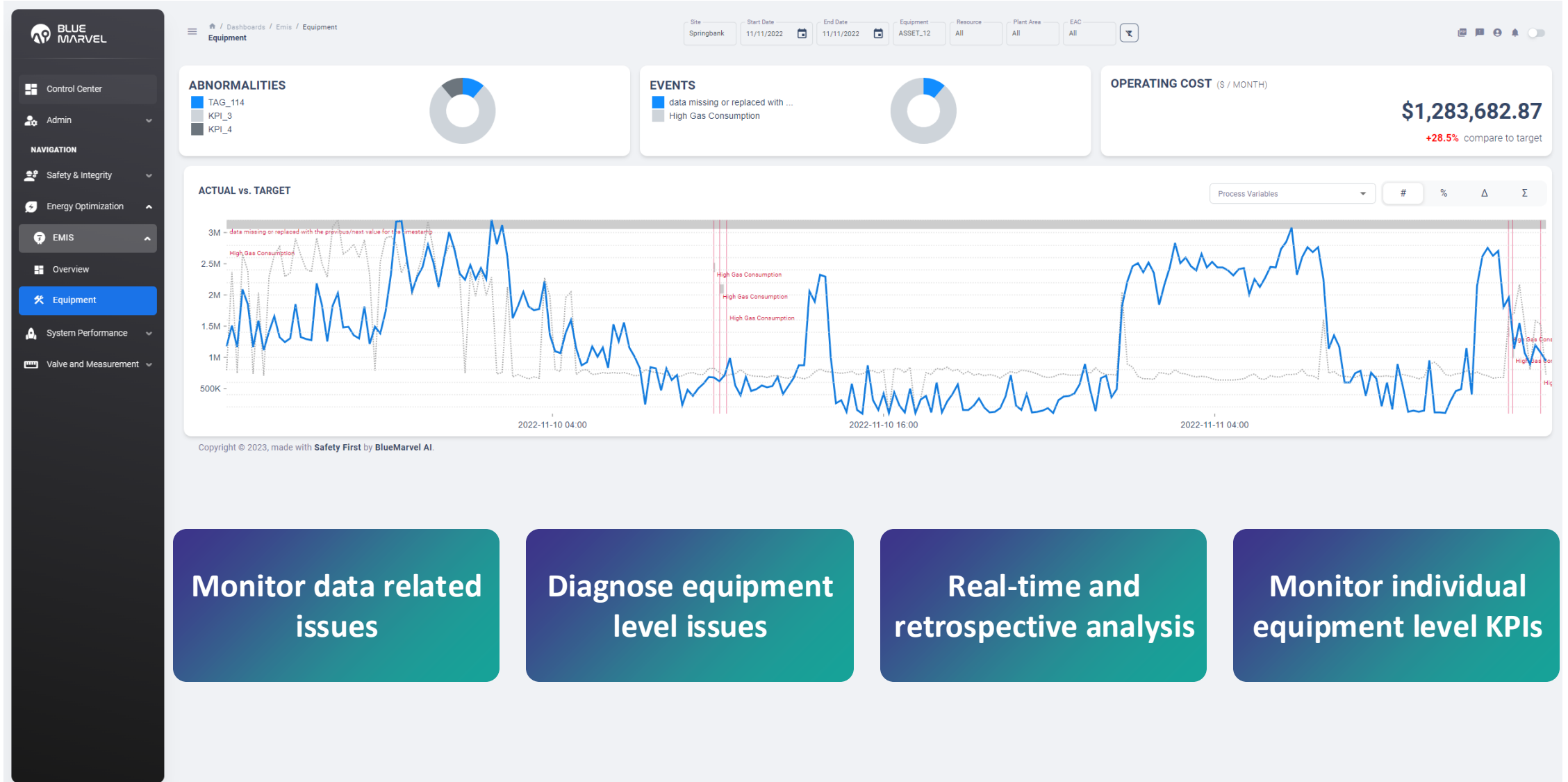
Steam  
Water  
Fuel  
Electricity  
Reagents

Dynamic Targets

# EMIS Features and Functions

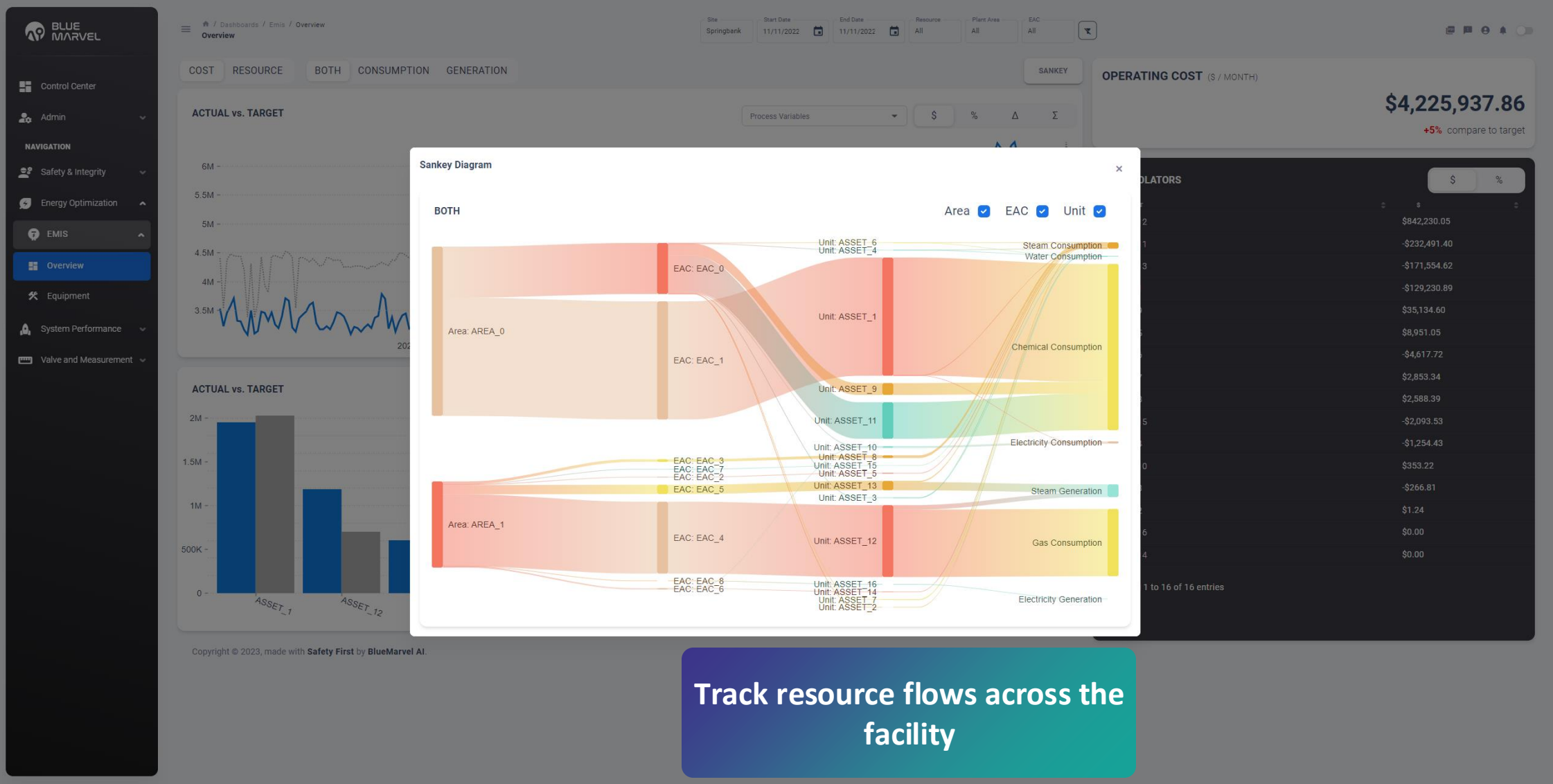


# EMIS Features and Functions

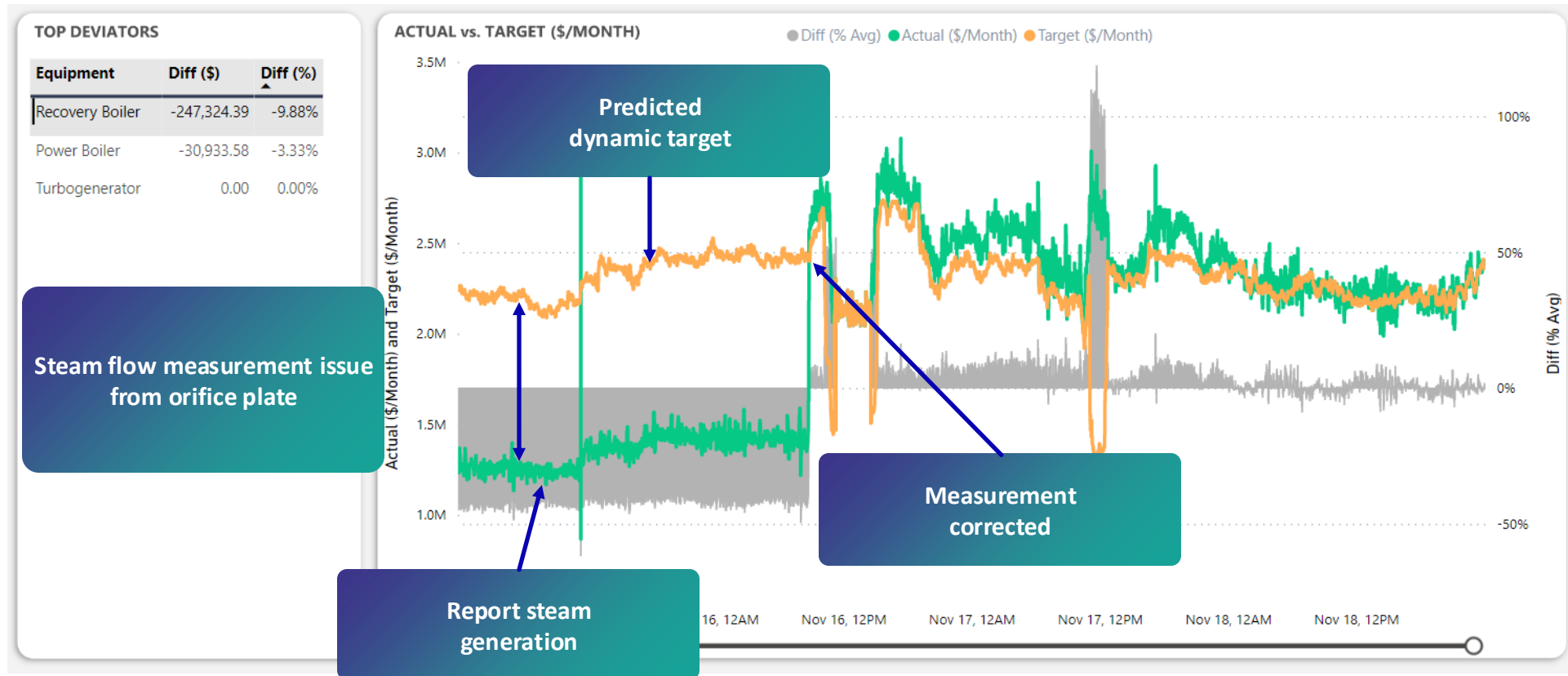




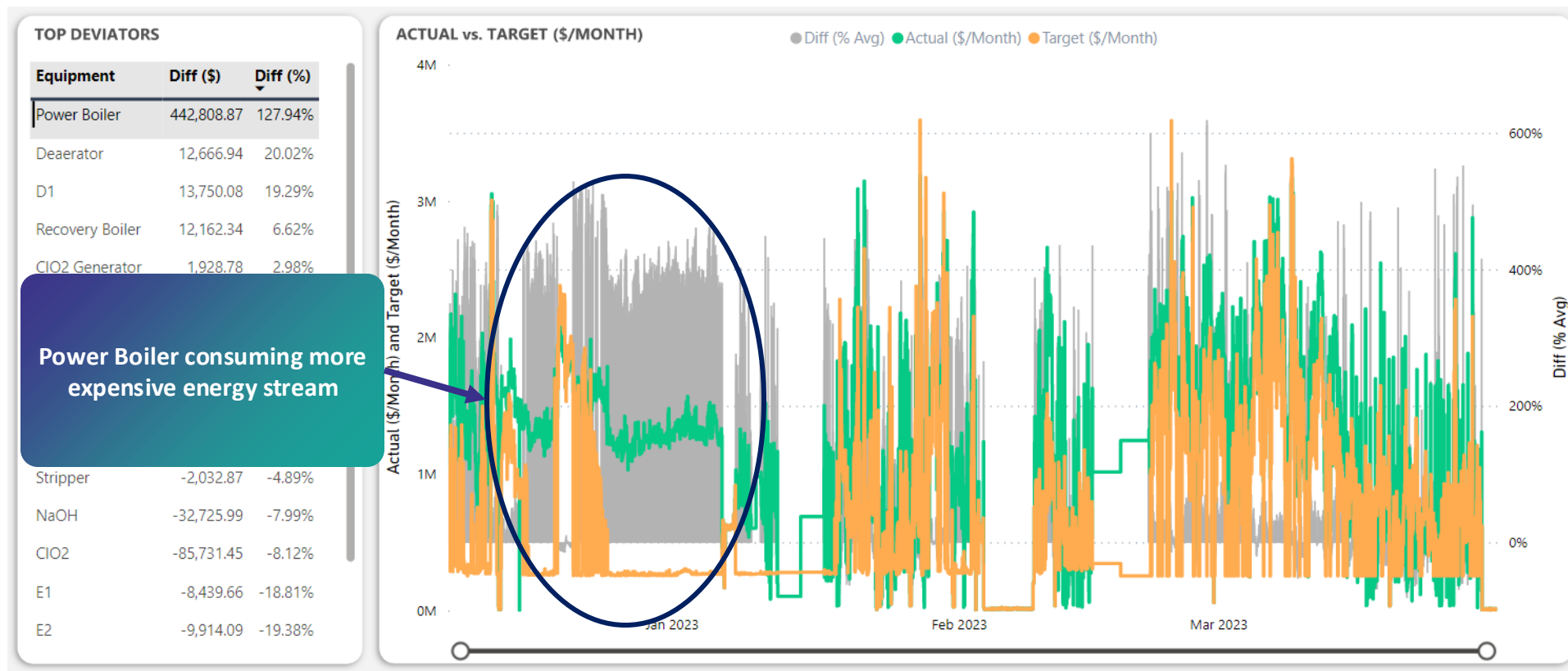
# EMIS Features and Functions



# Catching Real-time Operational Issues



# Retrospective Analysis



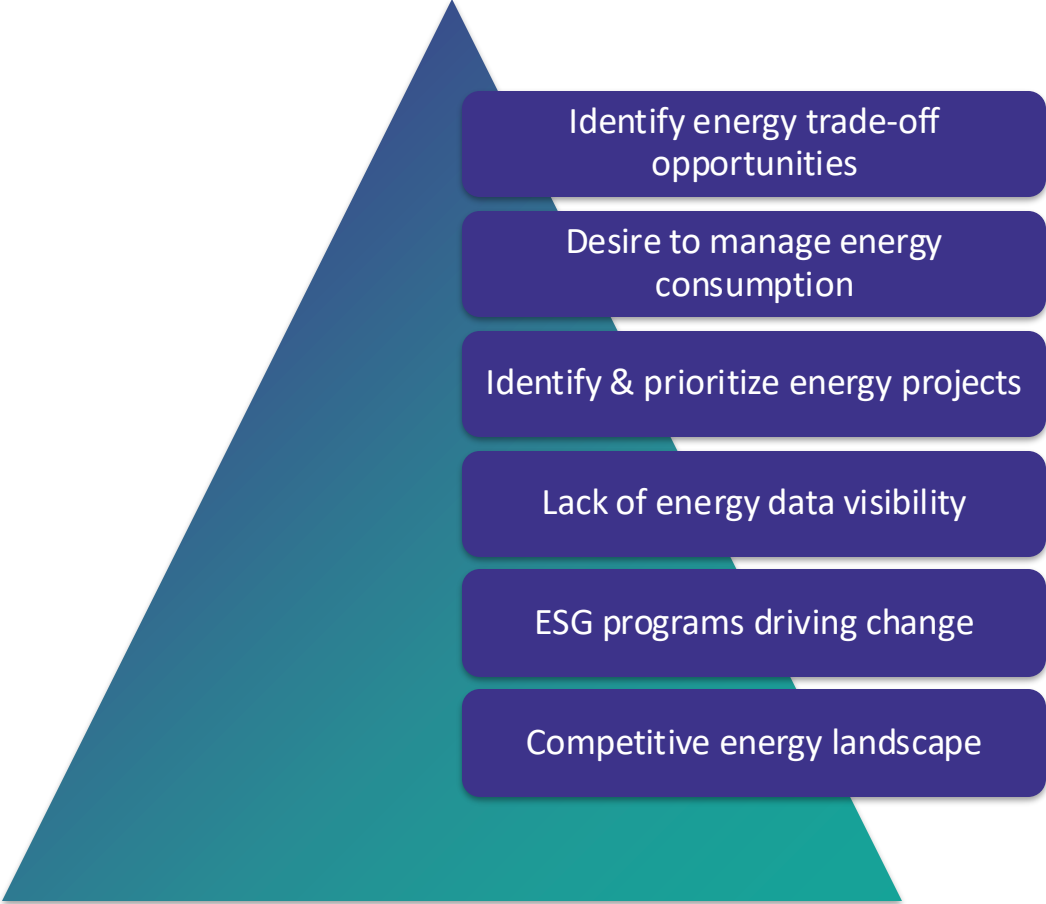
# Typical Issues Caught by EMIS



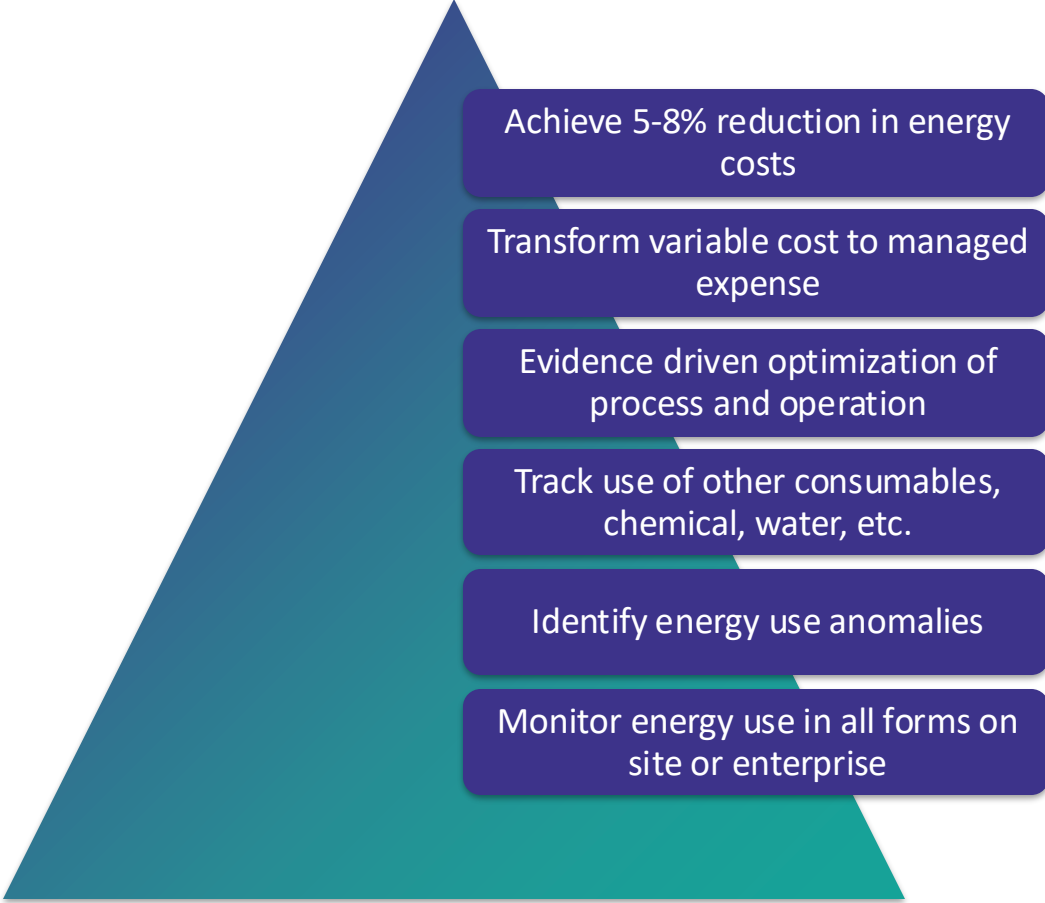


# EMIS Summary

## Challenges

- 
- Identify energy trade-off opportunities
  - Desire to manage energy consumption
  - Identify & prioritize energy projects
  - Lack of energy data visibility
  - ESG programs driving change
  - Competitive energy landscape

## Solution

- 
- Achieve 5-8% reduction in energy costs
  - Transform variable cost to managed expense
  - Evidence driven optimization of process and operation
  - Track use of other consumables, chemical, water, etc.
  - Identify energy use anomalies
  - Monitor energy use in all forms on site or enterprise

# Frequently Asked Questions

- 1) How long will an FRA take to complete and what is the approximate cost?
- 2) As contractors, can we access the SEMI participant list? Can ERA put us in touch with the SEMI participants who need a contractor?



# Questions?

**Please type your questions into the “Questions” pane of the control panel, on the right-hand side of your screen.**



# Ready to begin your SEMI journey?

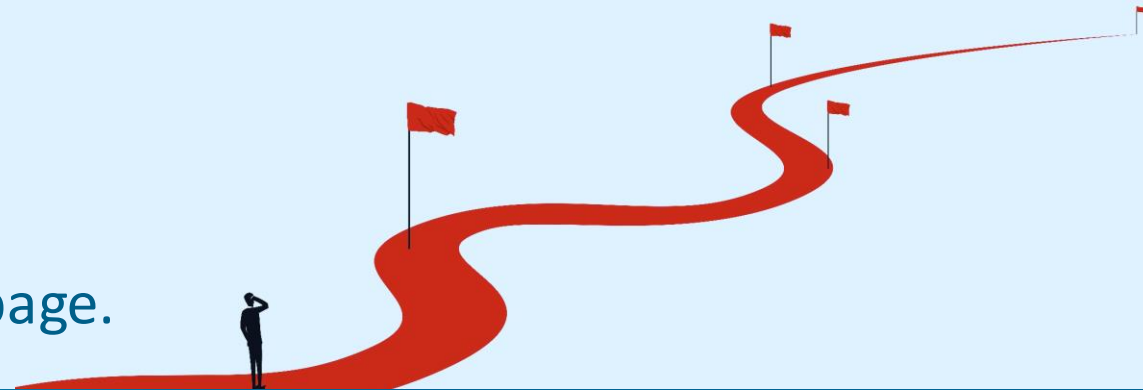
Register on the SEMI Portal [semiprogram.ca](https://semiprogram.ca) today.



## Unanswered questions?

- Review the guidelines and supporting materials online at [www.eralberta.ca/semi](https://www.eralberta.ca/semi)
- Email remaining questions to [semi@eralberta.ca](mailto:semi@eralberta.ca)

This webinar will be posted on the ERA YouTube page.





# THANK YOU

Visit [eralberta.ca/semi](https://eralberta.ca/semi) for more information



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