WPS Energy Efficiency & Sustainability Summit

Tuesday, June 10
7:30 am–11:10 am

Lambeau Field
Green Bay, Wisconsin

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Event Partner

Welcome

Greg Smedema
Manger, Key Accounts
WPS

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Green Bay's Clean Energy Plan & Large Energy Users Roundtable

Jenny Brinker
Project Manager,
GDS Associates

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PRESENTED BY GDS ASSOCIATES, INC.

CITY OF GREEN BAY'S CLEAN ENERGY PLAN

and Large Energy User's Workgroup

jenny.brinker@gdsassociates.com

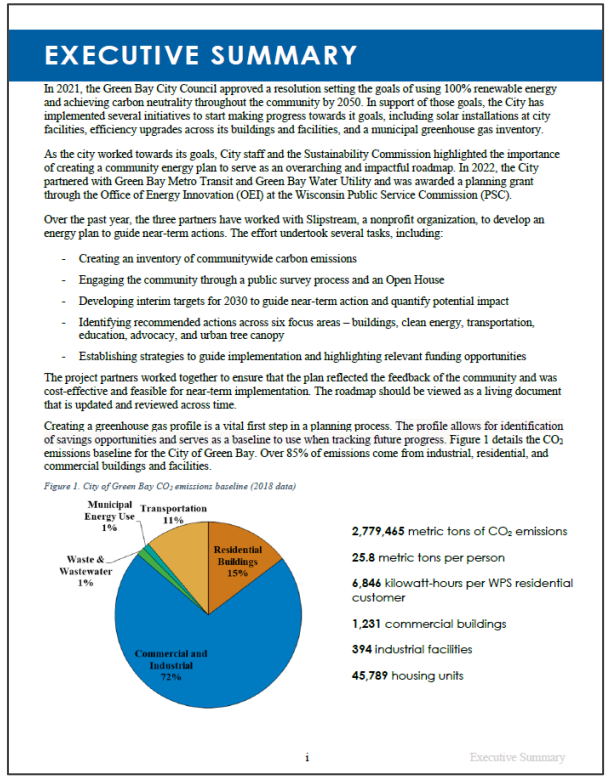
GDS Associates, Inc.
ENGINEERS & CONSULTANTS

CITY OF GREEN BAY SUSTAINABILITY EFFORTS

- **Sustainability Commission – 9 Members, 5 Workgroups**
  - *Clean Energy*
  - *Climate Resilience and Adaptation*
  - *Healthy Habitat for All*
  - *Waste Reduction*
  - *Marketing & Public Outreach*
- **Resiliency & Sustainability Hub – Coming soon to City's website**
  - *Clean Energy Hub: https://www.greenbaywi.gov/1499/Clean-Energy-Hub*
- **Resiliency Coordinator: Melissa M. Schmitz, CEM, LEED GA**
- **Clean Energy Connector: Alex Galt**

CLEAN ENERGY GREEN BAY (CEGB) PLAN

- **2021 City Council Resolution**
- **CEGB Adopted in 2023**
  - *Developed by Slipstream →*
- **Goal of 100% clean energy**
  - *Community-wide*
  - *40% carbon reduction by 2030*
  - *100% carbon reduction by 2050*
- **Six Focus Areas**
  - *Buildings, Clean Energy, Transportation, Education, Advocacy, and Urban Tree Canopy*
- **https://www.greenbaywi.gov/1499/Clean-Energy-Hub**



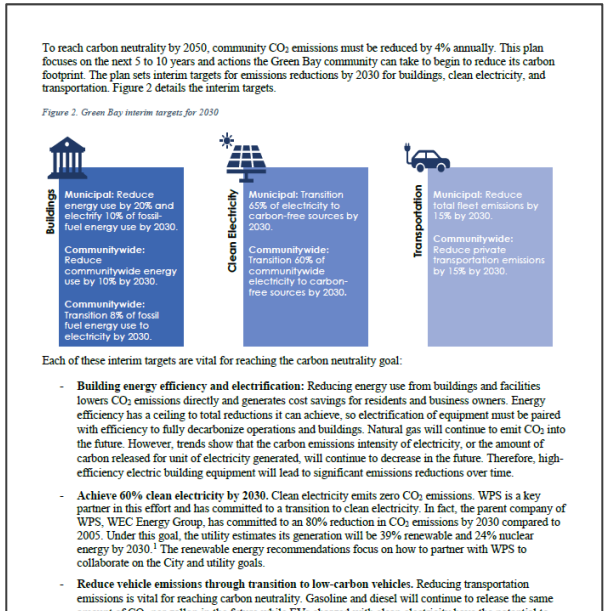

To reach carbon neutrality by 2050, community CO_2 emissions must be reduced by 4% annually. This plan focuses on the next 5 to 10 years and actions the Green Bay community can take to begin to reduce its carbon footprint. The plan sets interim targets for emissions reductions by 2030 for buildings, clean electricity, and transportation. Figure 2 details the interim targets.

Figure 2. Green Bay interim targets for 2030

Buildings — **Municipal:** Reduce energy use by 20% and electrify 10% of fossil-fuel energy use by 2030. **Communitywide:** Reduce communitywide energy use by 10% by 2030. **Communitywide:** Transition 8% of fossil fuel energy use to electricity by 2030.

Clean Electricity — **Municipal:** Transition 65% of electricity to carbon-free sources by 2030. **Communitywide:** Transition 60% of communitywide electricity to carbon-free sources by 2030.

Transportation — **Municipal:** Reduce total fleet emissions by 15% by 2030. **Communitywide:** Reduce private transportation emissions by 15% by 2030.

Each of these interim targets are vital for reaching the carbon neutrality goal:

- **Building energy efficiency and electrification:** Reducing energy use from buildings and facilities lowers CO_2 emissions directly and generates cost savings for residents and business owners. Energy efficiency has a ceiling to total reductions it can achieve, so electrification of equipment must be paired with efficiency to fully decarbonize operations and buildings. Natural gas will continue to emit CO_2 into the future. However, trends show that the carbon emissions intensity of electricity, or the amount of carbon released for unit of electricity generated, will continue to decrease in the future. Therefore, high-efficiency electric building equipment will lead to significant emissions reductions over time.
- **Achieve 60% clean electricity by 2030.** Clean electricity emits zero CO_2 emissions. WPS is a key partner in this effort and has committed to a transition to clean electricity. In fact, the parent company of WPS, WEC Energy Group, has committed to an 80% reduction in CO_2 emissions by 2030 compared to 2005. Under this goal, the utility estimates its generation will be 39% renewable and 24% nuclear energy by 2030.[1] The renewable energy recommendations focus on how to partner with WPS to collaborate on the City and utility goals.
- **Reduce vehicle emissions through transition to low-carbon vehicles.** Reducing transportation emissions is vital for reaching carbon neutrality. Gasoline and diesel will continue to release the same


three principles: cost-effective and affordable, proven and feasible, and benefits flow to the community. Figure 3 provides an overview of all recommendations across the focus areas.

Figure 3. Clean Energy Green Bay recommended actions

City and Commercial/Industrial Buildings
Prioritize energy efficiency upgrades in municipal facilities to showcase commitment to energy reductions.
Introduce heat pump installations in city buildings and document lessons learned and savings.
Develop guidelines for operations of municipal buildings and for purchasing decisions.
Create high-performance building standards for new municipal buildings and promote use by private businesses.
Explore ways to encourage sustainable construction through existing City funding programs, such as tax-increment financing.
Develop an energy benchmarking program for commercial buildings.
Explore policies to reduce residents' energy bills through energy efficiency.

Transportation
Pilot low-carbon vehicles in municipal fleet to inform gradual transition to EVs.
Enact total cost of ownership and fleet right-sizing vehicle purchasing policies.
Engage the private sector to develop public EV charging.
Support holistic transportation solutions.

Clean Electricity
Install solar PV on City-owned buildings and facilities to reach 6% renewable.
Work with WPS to identify off-site renewable energy solutions for municipal operations.
Create open dialogue with WPS on clean energy transition goals.

Resident and Business Education
Hire an energy education employee.
Develop an education hub with energy resources.
Conduct outreach and marketing to inform residents and businesses.
Create an initiative to highlight energy actions by local businesses and residents.
Partner with local organizations to grow the clean energy workforce.

Advocacy
Continue to advocate with other local governments for improved state policies.

2018 CARBON EMISSIONS BASELINE

2,779,465 metric tons of CO_2 emissions

25.8 metric tons per person

6,846 kilowatt-hours per WPS residential customer

1,231 commercial buildings

394 industrial facilities

45,789 housing units

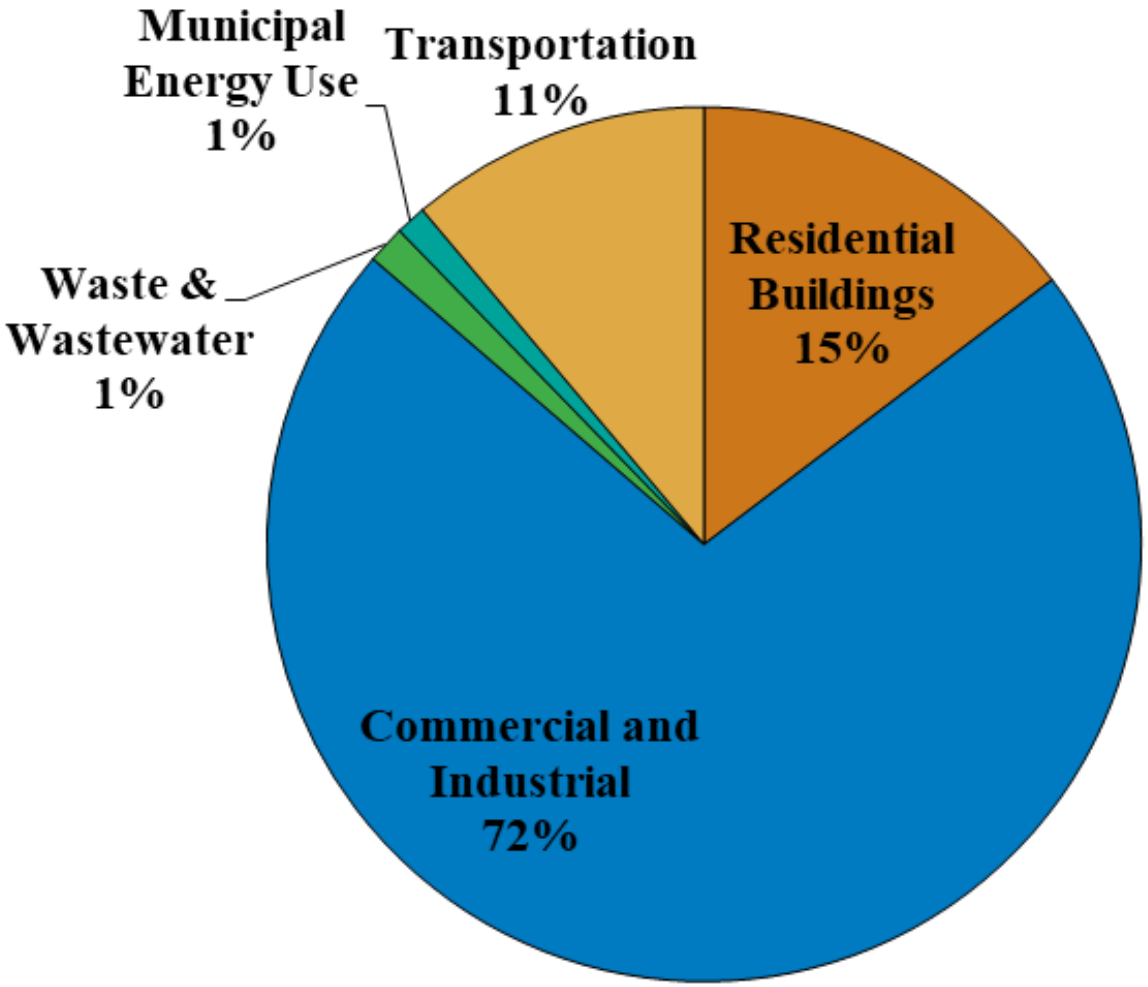


Image and figures from Clean Energy Green Bay Plan, developed by Slipstream, 2023.

2030 INTERIM TARGETS

Buildings

Municipal: Reduce energy use by 20% and electrify 10% of fossil-fuel energy use by 2030.

Communitywide: Reduce communitywide energy use by 10% by 2030.

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Transportation

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Communitywide: Reduce private transportation emissions by 15% by 2030.

Image and figures from Clean Energy Green Bay Plan, developed by Slipstream, 2023.

PROGRESS

- **ENERGY STAR Portfolio Manager tracking**
  - *26 municipal facilities*
- **Solar**
  - *Present at Leicht Park & Fire Station 5*
  - *Funded for 2025*
- **Energize Green Bay (EGB)**
  - *energizegreenbay.com*
  - *Clean energy guidance*
  - *Incentives*
- **Grow Solar Green Bay**
  - *energizegreenbay.com/grow-solar*
  - *MREA, Endries Solar*
  - *The more enrolled, the cheaper the cost per watt*
  - *In-Person Solar Power Hour: Wednesday, June 25th at 5:00pm at Kavarna Coffee*

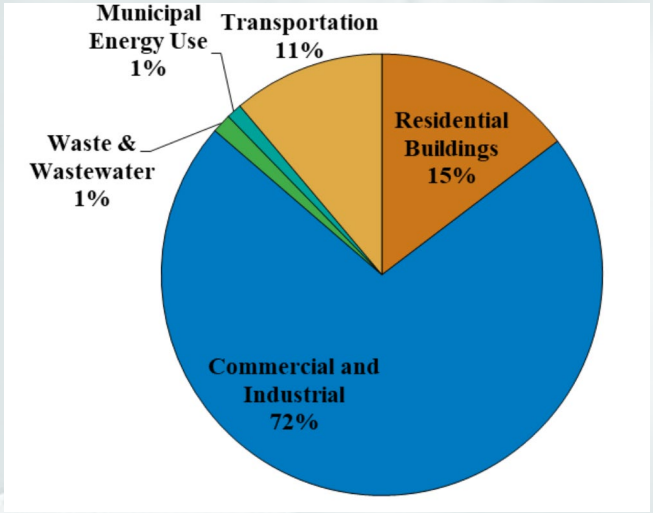
Weather Normalized Source EUI (kBtu/ft²)	Why not score?
Current:	122.4
(1.95% lower than median.)	
Baseline:	168.9
(35.23% higher than median.)	

energize GREEN BAY

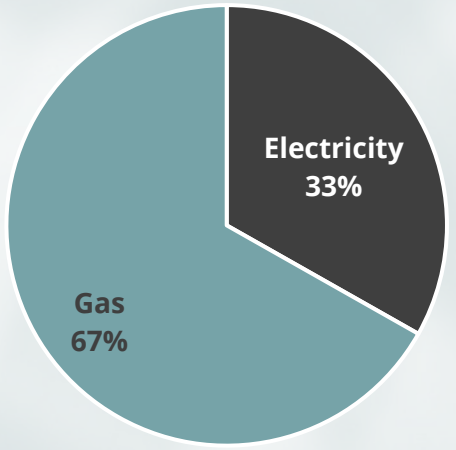
LARGE ENERGY USERS

- Meets Quarterly at NWTC
- City, Focus on Energy, GBAPS, New North, NWTC, Oneida, UWGB, WPS, and more.
- Data tracking
- Resource Sharing

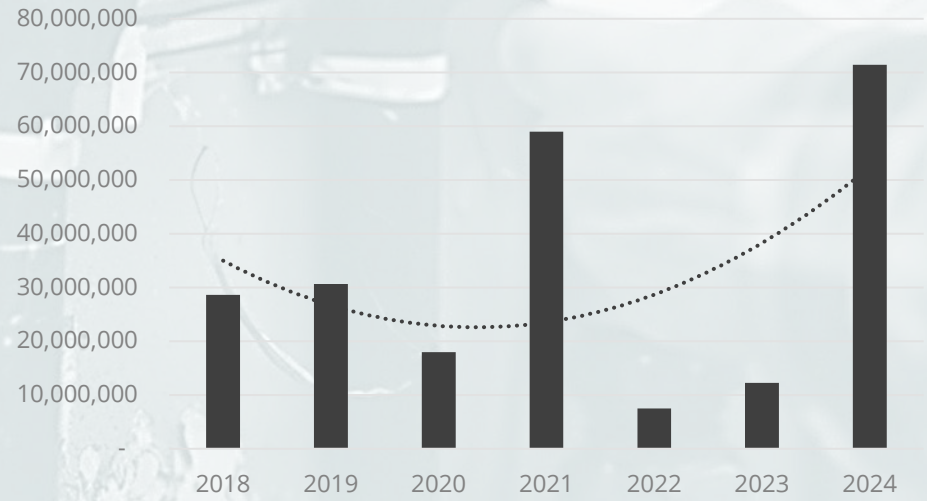
2018 Carbon Emissions



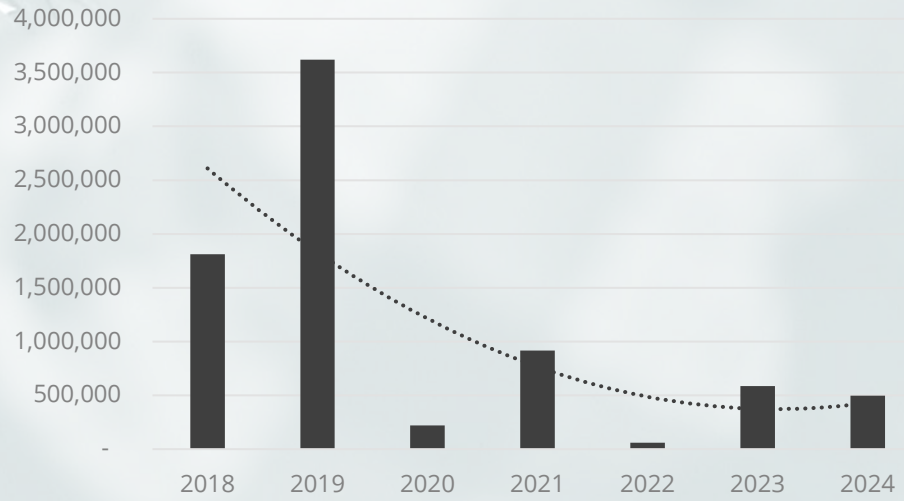
Non-Residential MMBtu



Annual kWh Savings



Annual Therm Savings



FOCUS ON ENERGY – PRACTICAL ENERGY MANAGEMENT

focusonenergy.com/business/building-optimization

step 1
BEFORE YOU APPLY

- Confirm your gas and/or electric utility participates in Focus on Energy at **focusonenergy.com/utilities**.
- The PEM offering is available to commercial, small and midsize industrial, school, and government customers. Large industrial, agriculture, and multifamily customers should contact their Energy Advisor for available energy management offerings.
- Customers must have a minimum annual utility cost of $15,000 to be eligible for PEM.
- Contact your Focus on Energy Advisor for assistance. If you do not know who your Energy Advisor is, call **800.762.7077** for assistance.

step 2
WHAT YOU WILL NEED

- PEM Enrollment Application with all sections of the form completed.
- Signed utility release form.
- Use of existing benchmarking software or willingness to use:
  - ENERGY STAR® PORTFOLIO MANAGER®.
  - American Society for Health Care Engineering (ASHE ™) Energy to Care Dashboard.
  - Other software capable of inputting monthly utility usage, tracking energy-saving projects, and computing site energy intensity as approved by Focus on Energy.
  - Attend a one-hour PEM training conducted by your Energy Advisor. Attendance from all Energy Team members is strongly encouraged.

step 3
UNDERSTAND YOUR INCENTIVE RATE AND OFFERING REQUIREMENTS

Benchmarking Incentive

- After completing PEM training with your Energy Advisor, enter your monthly utility usage into benchmarking software to qualify for an incentive of $200 per month for a maximum of six months within a twelve-month time frame ($1,200 total).
- Utility data must be entered within 30 days of the bill date to be eligible for the monthly incentive.
- Confirmation of timely data entry must be provided to your Energy Advisor via granting permission to access your database of record or supplying screenshots upon entering utility data.

Recognition Incentive

- Receive up to $500 in reimbursements for costs associated with promoting the success of your energy management program. Eligible costs include attending or hosting public relations opportunities, creating and distributing co-branded memos or other marketing materials, and sponsoring an employee engagement activity such as a Lunch and Learn.
- Reimbursements are capped at 100% of cost and advance approval is required.
- Internal labor costs are not reimbursable.

Training Reward

- Receive up to 100% of registration costs for energy-related trainings, up to $1,000 per customer.
- Advance approval of training is required. Contact your Energy Advisor for details.

step 4
SUBMIT ENROLLMENT APPLICATION

- Enrollment approval is contingent upon receipt of necessary documentation, including the Enrollment Application, and utility release form.
- Trainings attended prior to enrollment are not eligible for reimbursement.

step 5
RECEIVE ENROLLMENT APPROVAL

- Customers will be notified in writing of their approved enrollment and provided a Participation Guide detailing next steps in the process.
- Your Energy Advisor will schedule the initial PEM training within one month of enrollment.

WI COMMUNITIES WITH CLIMATE GOALS

PRESENTED BY GDS ASSOCIATES, INC.

THANK YOU!

Please email me if you're interested in joining our Roundtable.

jenny.brinker@gdsassociates.com

GDS Associates, Inc.
ENGINEERS & CONSULTANTS

Compressed Air System Optimization: Practical, Low-Cost Steps to Reduce Waste and Improve Reliability

Adam Johnson
Technical Solutions Group
Zorn Compressor & Equipment

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Low and No-cost Compressed Air Fixes for a More Efficient System

Presented by: Adam Johnson

ZORN
COMPRESSOR & EQUIPMENT

Let’s Start in the Compressor Room

Understand how compressors work and where energy goes

- Up to 94% of compressor energy becomes heat
- Only ~6% is used for compression
- Opportunity: Recover heat for process or facility
- Focus on compressor type, control, and layout

Compressor Inlet Piping Matters

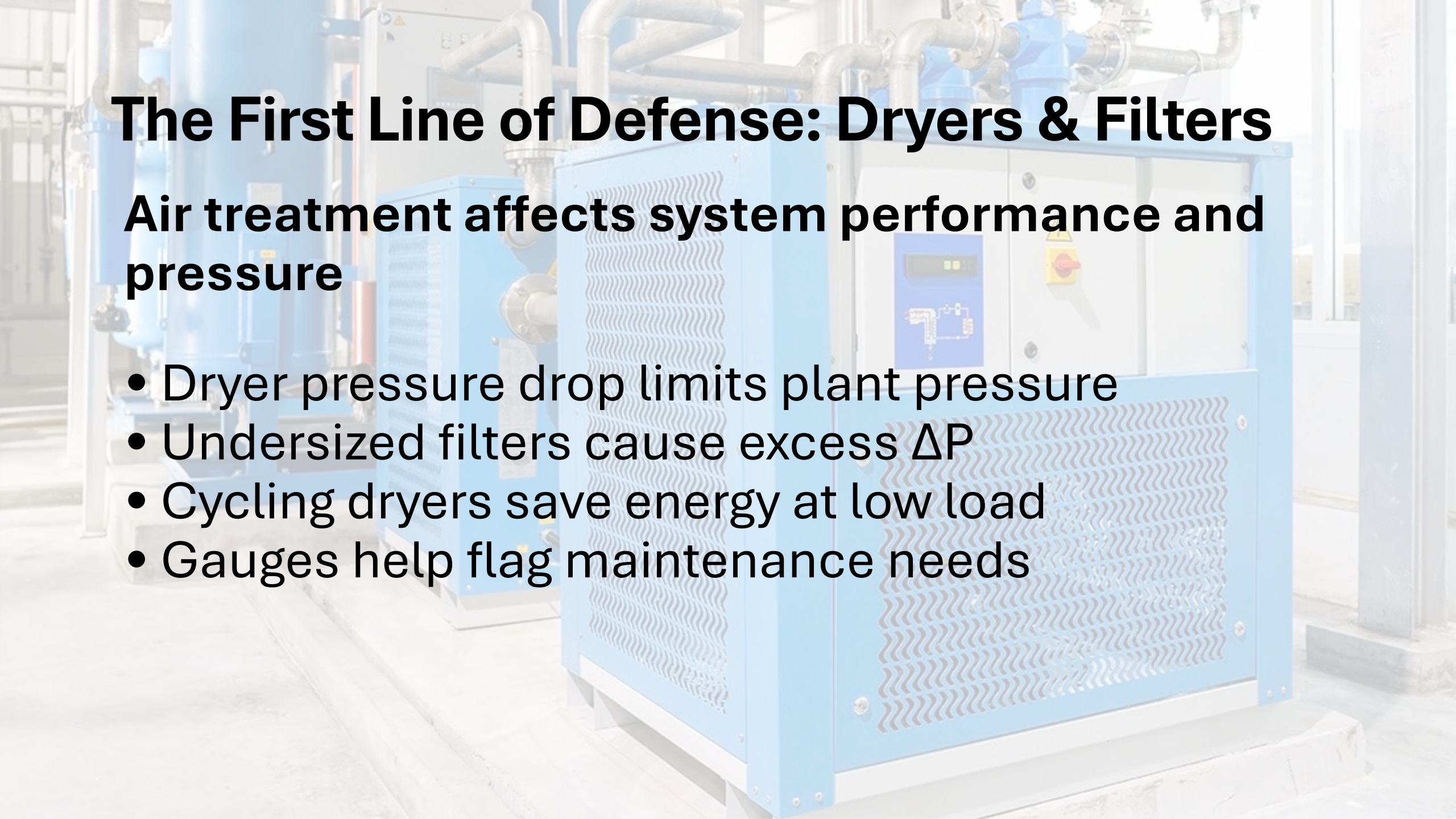
Poor inlet piping reduces compressor efficiency

- Undersized or restricted inlet pipe = low inlet pressure
- 1" Hg drop = 4% more power needed
- Use smooth, short, straight inlet piping
- Install inlet vacuum gauge to confirm losses

Fix Header Layout Restrictions

Clean up piping to reduce backpressure and compressor load

- Avoid 'crossing tees' and sharp-angle connections
- High backpressure causes wasted compressor power
- Directional Y entries and large-radius bends improve flow



The First Line of Defense: Dryers & Filters

Air treatment affects system performance and pressure

- Dryer pressure drop limits plant pressure
- Undersized filters cause excess ΔP
- Cycling dryers save energy at low load
- Gauges help flag maintenance needs

Point-of-Use Desiccant Dryers

Localized drying minimizes system-wide purge losses

- Central desiccant dryers waste air in purge cycles
- Small dryers at sensitive points reduce total loss
- Right-sizing saves energy without systemwide impact

Cycling Refrigerated Air Dryers

Match dryer energy use to demand

- Non-cycling dryers run full-power 24/7
- Cycling models ramp energy to match flow
- Great for variable-load applications

Lowering System Pressure Reduces Energy

Every PSI counts in energy and leak savings

- Lower pressure reduces compressor energy demand
- Leak rate tied directly to pressure
- Reducing pressure by 10 PSI can save 5% in energy
- Match lowest necessary pressure for demand

Receiver Tanks as Pressure Buffers

Storage helps stabilize pressure and reduce compressor cycling

- Receivers absorb short bursts in demand
- Stabilize pressure drops across delay or system
- Enable trim compressor shutdown
- Size tanks based on system dynamics

Leak Reduction Without Repairs

Strategically reduce leak impact without fixing holes

- Lower system pressure reduces leak rate
- Isolate idle zones to reduce leak exposure
- Timed valves and solenoids can auto-isolate areas
- Savings without a wrench

Leak Detection with Repairs

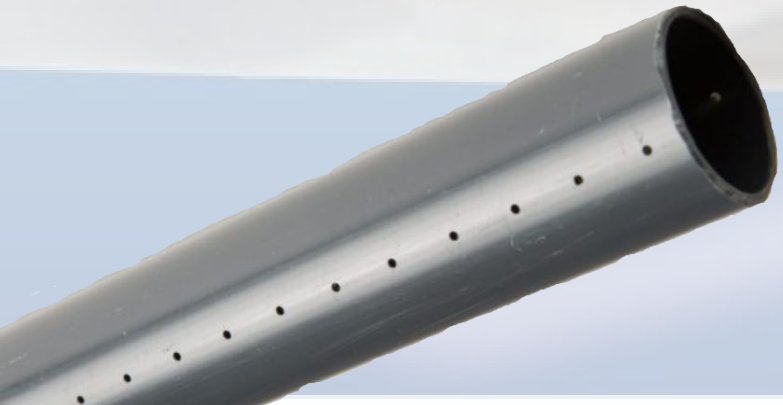
Fixing leaks pays back faster than most energy projects

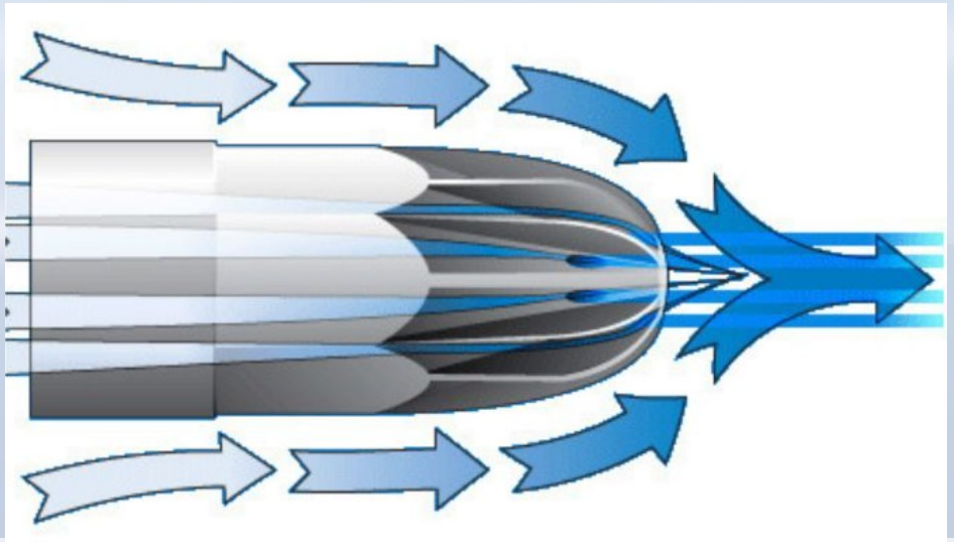
- Leaks can account for 20–30% of air demand
- Detection via ultrasonic, soap bubble, or visual sensors
- Typical ROI for repairs is under 6 months
- Fixing ¼-inch leak at 100 PSI saves ~$2,500/year

Nozzles vs. Open Blowing

Replacing open blow-off with engineered nozzles saves energy

- Open blowing = high, uncontrolled air loss
- Engineered nozzles reduce flow and maintain effectiveness
- OSHA compliance often improves with nozzle use
- ROI can be achieved in weeks





Pressure Regulation at the Point of Use

Reduce consumption by regulating pressure only where needed

- Not all tools need full system pressure
- Regulators downstream of filter/dryer save energy
- Prevents over-driving tools and components

Best Practices for Air Gun Usage

Control compressed air at the user level

- Use OSHA-compliant nozzles to limit pressure
- Train staff to shut off guns when not in use
- Add triggers, timers, or foot pedals to reduce runtime
- Swap out for vacuum or mechanical tools where possible

Blow-Off Alternatives

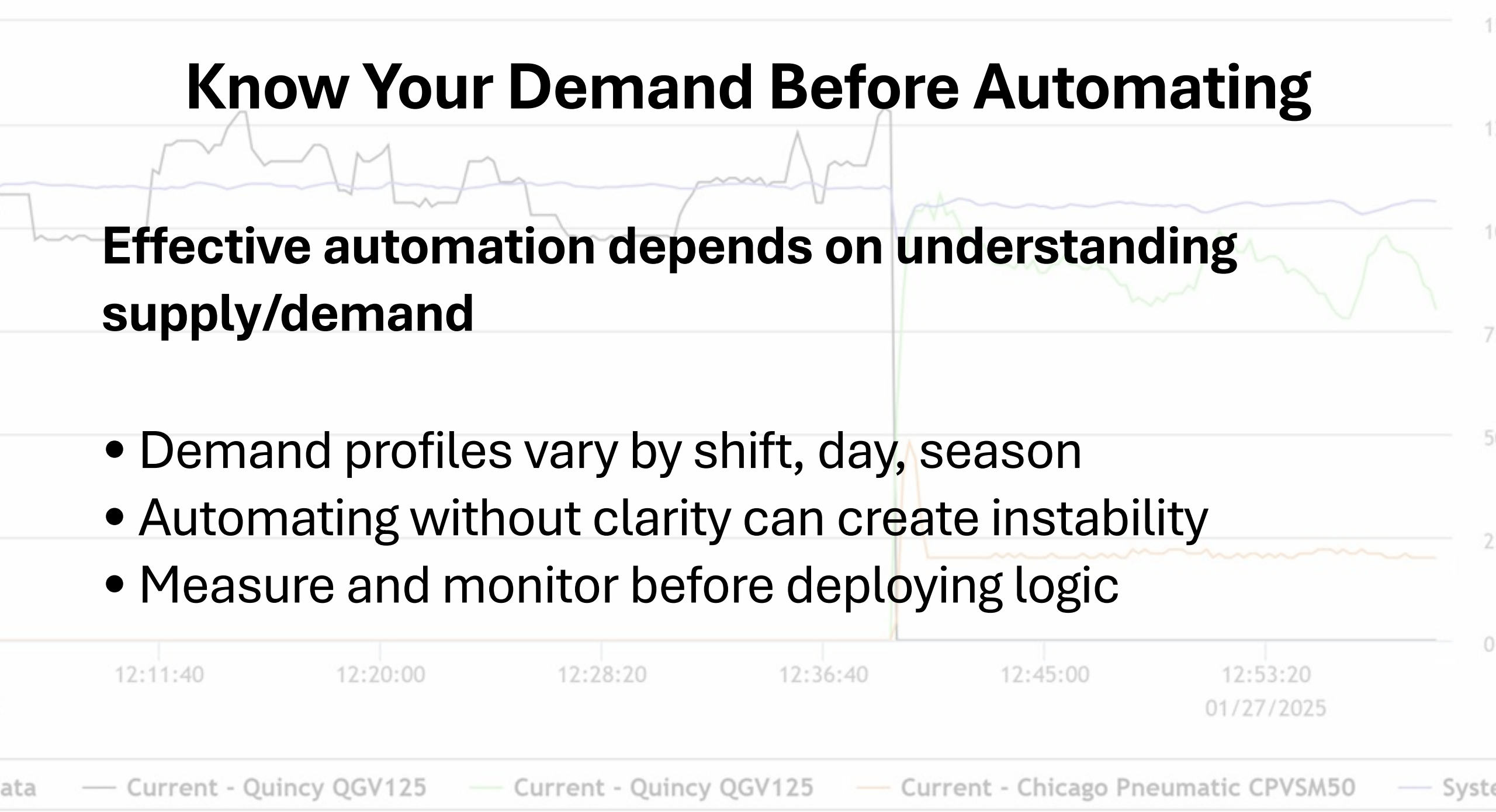
Replace open air blow-offs with targeted solutions

- Air knives or curtains optimize flow across wide areas
- Vacuum-based systems reduce blow-off demand
- Brushes, rollers, or mechanical scrapers can replace air
- Evaluate each application: don’t assume air is best

Know Your Demand Before Automating

Effective automation depends on understanding supply/demand

- Demand profiles vary by shift, day, season
- Automating without clarity can create instability
- Measure and monitor before deploying logic



Automated Isolation of Idle Zones

Use timed or demand-based valves to reduce idle air usage

- Solenoid or timed shutoff valves for breaks, weekends
- Reduces system volume exposed to leaks
- Maintains uptime while cutting waste

System Pressure Band Control

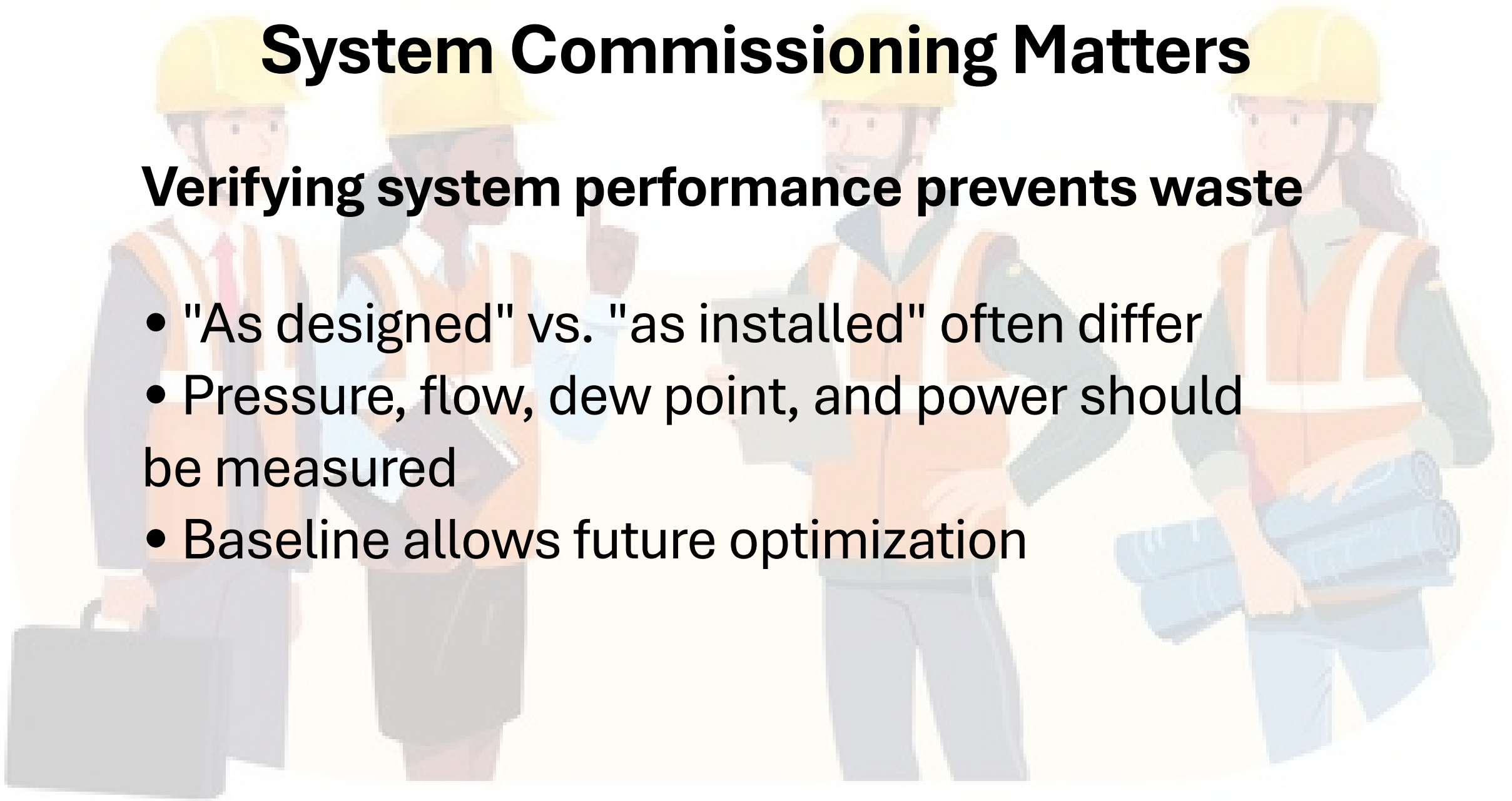
Match compressor staging to system demand

- Prioritize base-load machines with best efficiency
- Use trim compressors for fine-tuning system pressure
- Automate for shift-based or seasonal demand changes
- Use cascade or VFD logic to smooth pressure control
- Avoid "short cycling" and unnecessary starts

System Commissioning Matters

Verifying system performance prevents waste

- "As designed" vs. "as installed" often differ
- Pressure, flow, dew point, and power should be measured
- Baseline allows future optimization



Use Data Logging to Find Hidden Losses

Logging flow, pressure, and power reveals patterns

- Detect pressure drops, wasteful cycles, off-hours use
- Data informs targeted improvement
- Enables smarter controls and maintenance

Remote Monitoring Dashboards & Alerts

Use real-time visibility to catch problems early

- Web dashboards show flow, pressure, dew point, and power
- Set alarms for high dew point, filter ΔP, or rapid cycling
- Track daily trends, uptime, and peak usage
- Enables proactive maintenance and faster response

Optimize Pneumatic Tubing Layout

Shorter tubing saves air and speeds actuation

- Shorter tubing = less air per stroke
- Improves responsiveness, reduces purge loss
- Layout changes = big savings in automated tools

Reduce Internal Blow-Off in OEM Machinery

Customize machine blow-off timing or sequence

- Delay blow-off until part is clear
- Use proximity sensors or timers
- Switch from always-on to intelligent control

Match Air Cylinders to Load

Right-sizing actuators saves air

- Oversized cylinders waste air on every stroke
- Lower pressure needs smaller volume
- Review all high-cycle applications

Pressure vs. Flow Misunderstandings

High pressure doesn’t equal high flow

- Flow is volume over time; pressure is force
- Many systems raise pressure to “fix” flow problems
- Often masks layout or restriction issues

Don't Assume Demand Reduction = Energy Savings

Control scheme determines energy savings

- Fixed-speed compressors may not respond
- VFDs must be properly programmed
- Must link demand and supply behavior


Thank you
ZORN

Networking Break

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Unlocking the Potential Of AI in Buildings

Erin Rau
North America Digital Service Commercialization Leader
Trane

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Unlocking the Potential of AI in Buildings

WPS Energy Efficiency & Sustainability Summit

- June 10, 2025

Agenda

1. AI in our world today – what does the market want/need
2. Technology is here – are we ready
3. How does AI work in buildings
4. Considerations
5. Case studies and examples
6. Wrap and Questions

Erin Rau
Digital Solutions Commercialization Leader,
Trane Technologies

To AI or Not to AI:

Brushing Your Teeth

To AI or Not to AI:

Brushing Your Teeth

The Oral-B app uses Bluetooth and AI Brushing Recognition to coach you to your best clean yet—without ever missing a zone.

To AI or Not to AI:

Presentation Feedback

To AI or Not to AI:
Presentation Feedback

Ovation AI software allows you to speak with realistic virtual avatars and get AI-generated feedback about your performance.

To AI or Not to AI:
Walking

To AI or Not to AI:
Walking

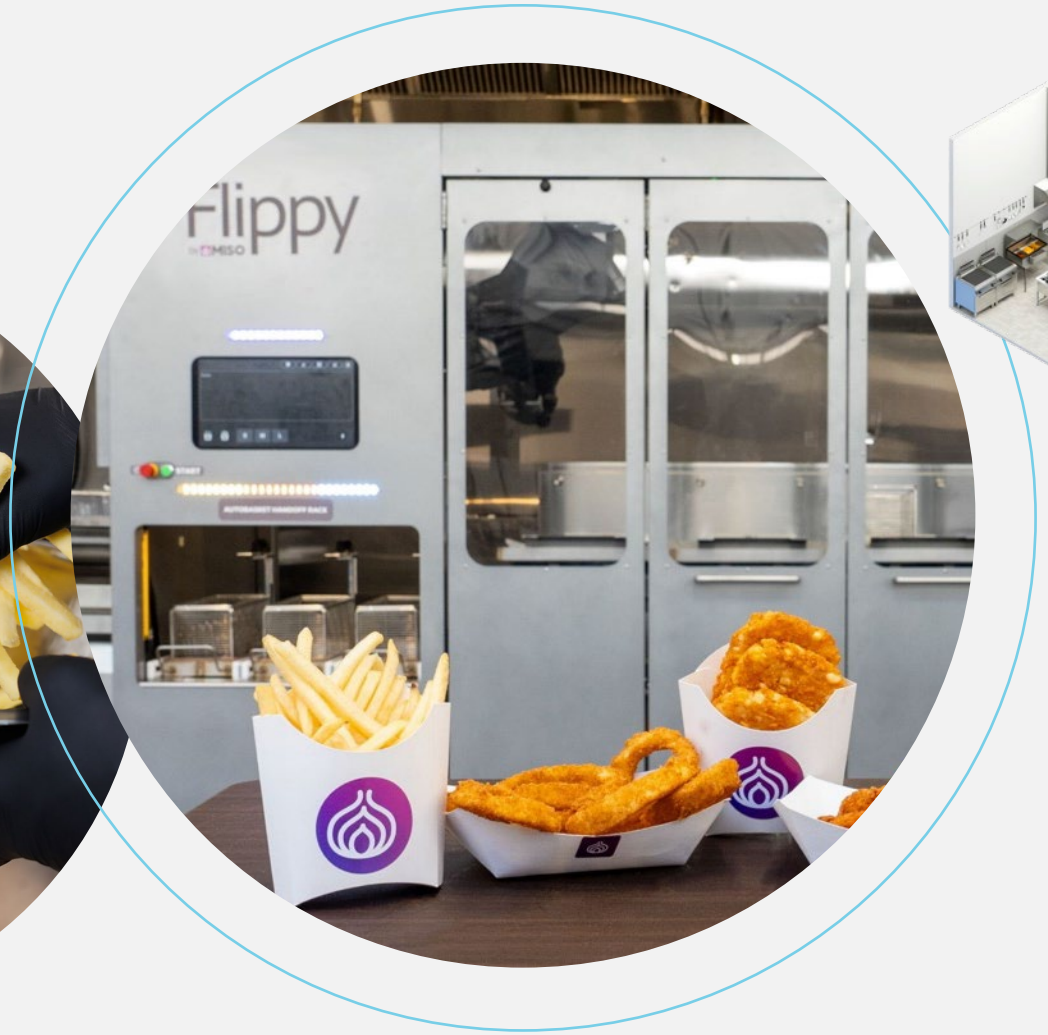
Moonwalkers shoes use AI to sense when you're speeding up or slowing down and adjust themselves accordingly, and the wheels lock when you're taking the stairs.

To AI or Not to AI:

Fast Food

To AI or Not to AI:

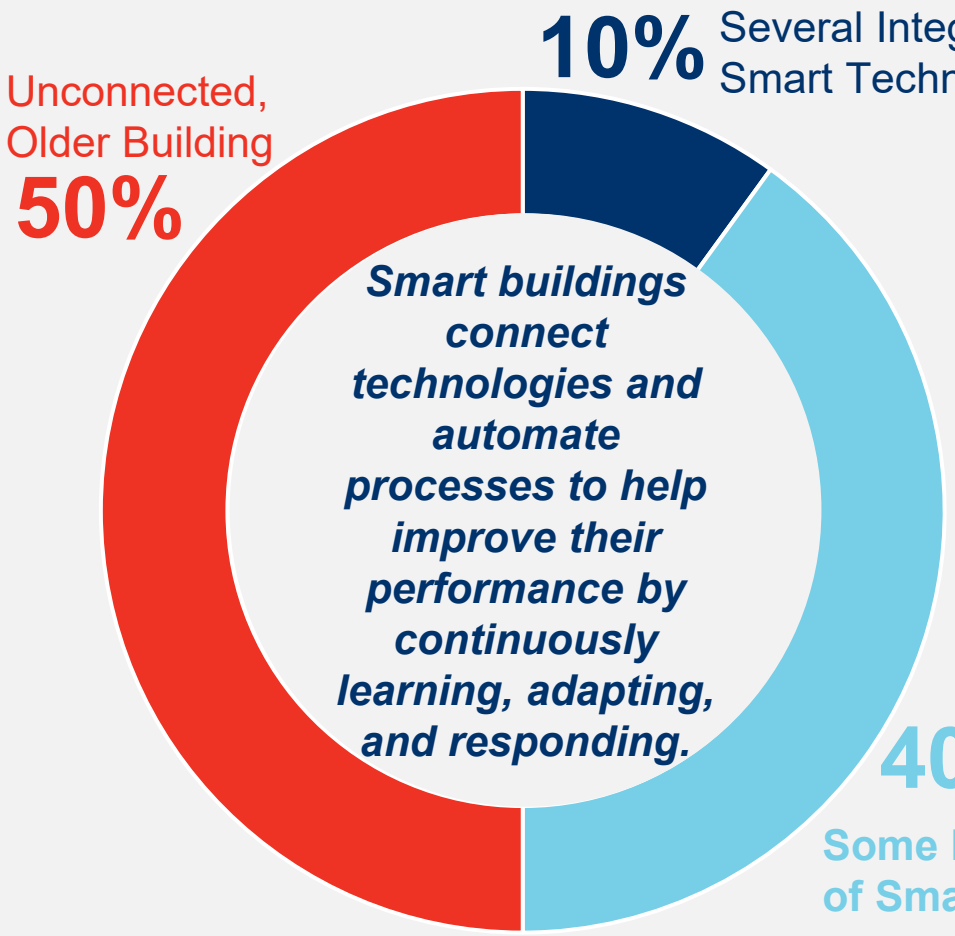
Fast Food

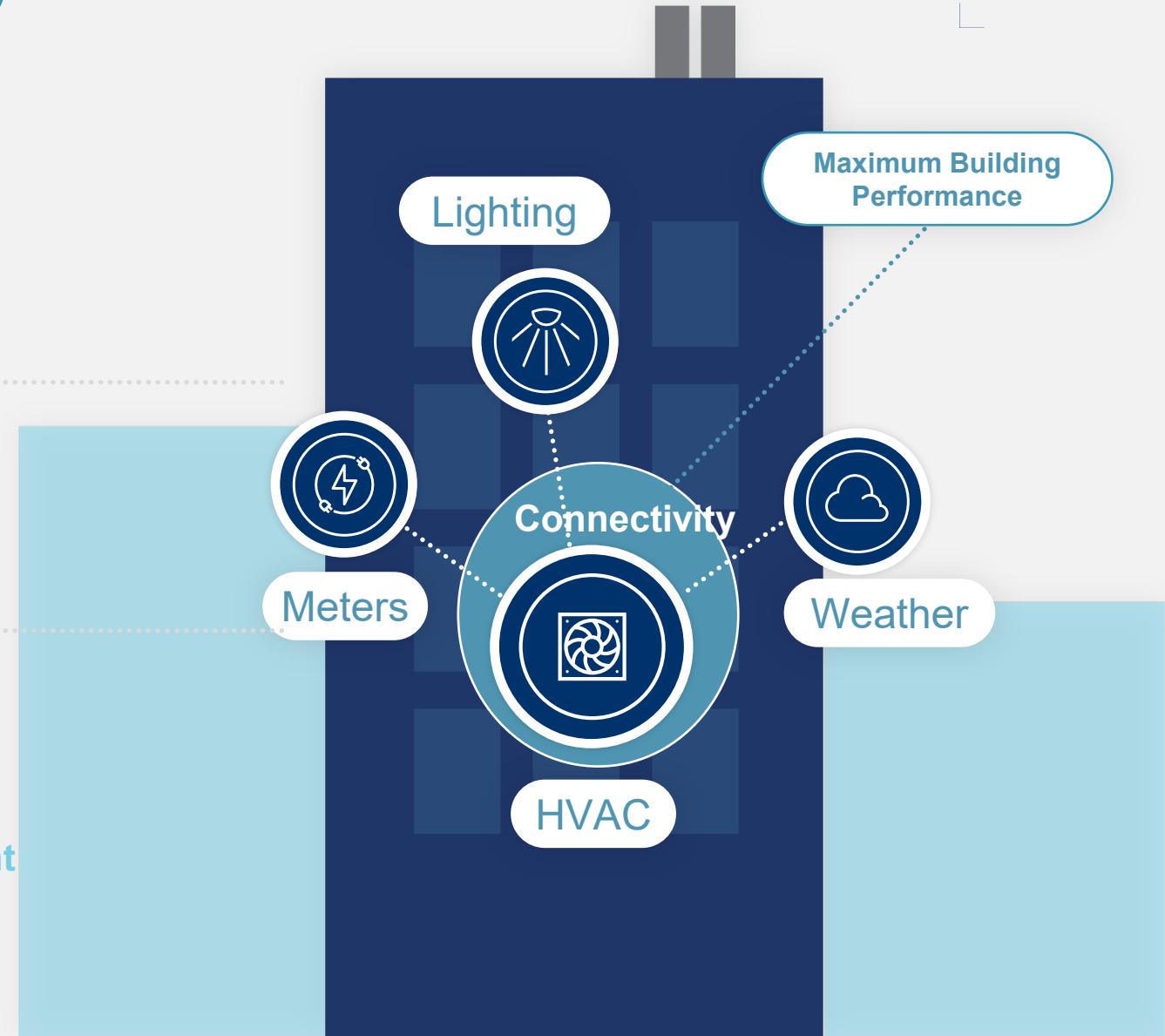


Flippy Fry Station, the next-generation robot designed to improve commercial kitchen efficiency, reduce food waste, and increase customer satisfaction.

The Modern Building

(Automated, Intelligent, Connected Buildings)



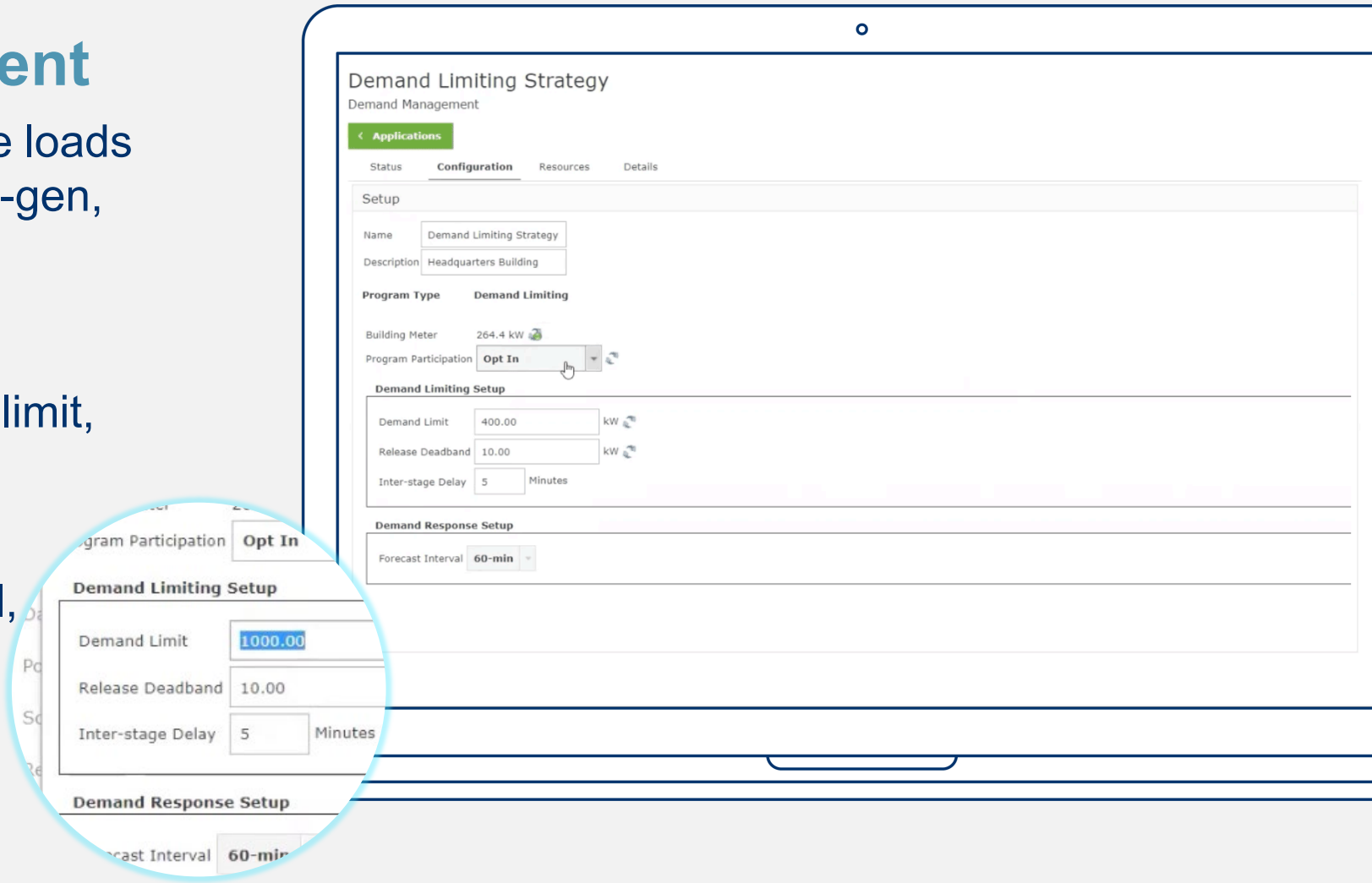


Source: BSRIA, "Global Trends in HVAC & Smart Technologies," 2022

BAS Optimization Strategies

Demand Management

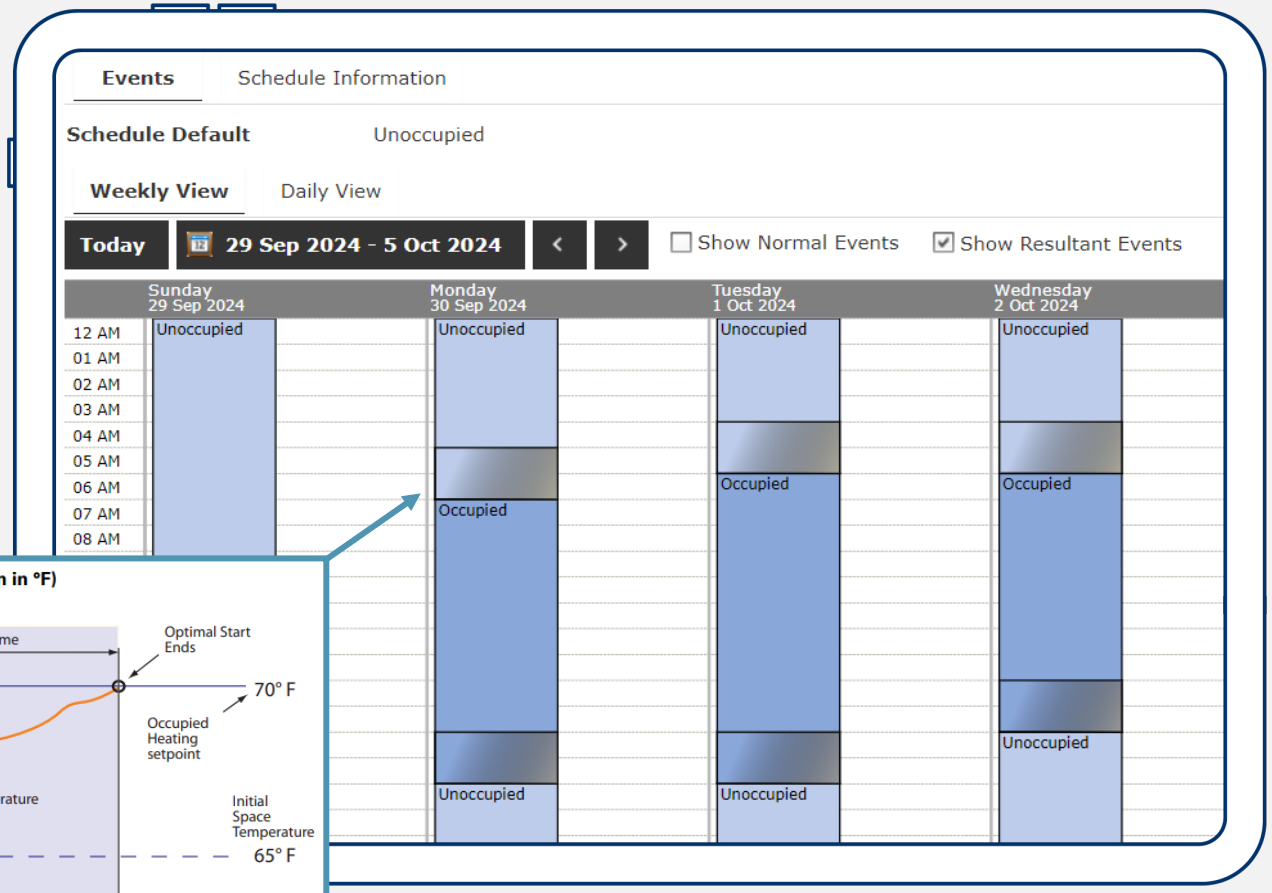
- Identify available resource loads (lighting, heat/cool SP, co-gen, etc.)
- Set Demand Ceiling/Limit
- As utilization approaches limit, shed desired load(s)
- As utility sends Demand Response signal, shed desired load(s)

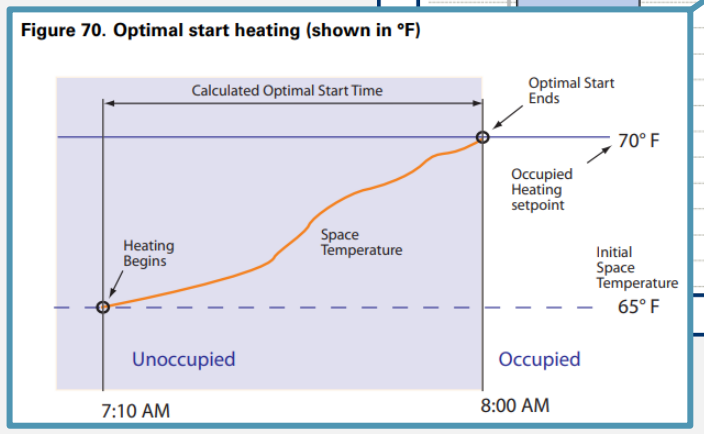


BAS Optimization Strategies

Balanced Energy and Comfort

- Identify occupied start time with current and target space temps
- Apply learned time/temp factor
- Heat/Cool at necessary time

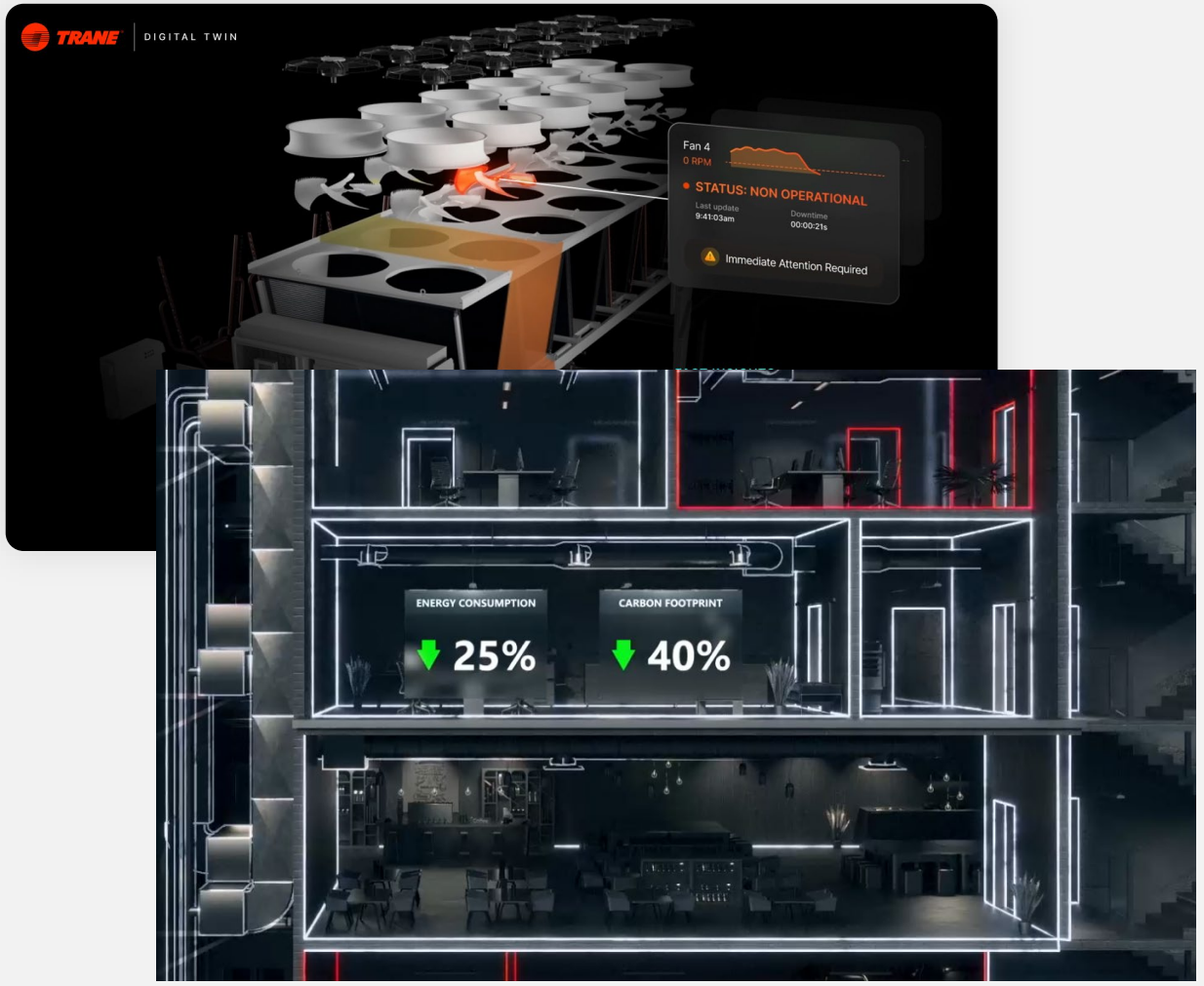




Buildings can leverage AI with Building Autonomation

Emerging Technologies

- ✓ Predictive Maintenance (analysis of inefficiencies or abnormal performance to identify potential equipment failure) and other Analytics
- ✓ Digital Twin Technology
- ✓ Trane® Autonomous Control



TRANE DIGITAL SERVICES

Aligning to Outcomes

Connect
Buildings, Assets

- Reduce commissioning time
- Enable updates & upgrades
- Enable buildings & asset management

Maintain
Mechanical, Controls

- Maximize uptime
- Extend equipment lifetime
- Enable regulatory compliance

Optimize
Consultative, Autonomous, Energy

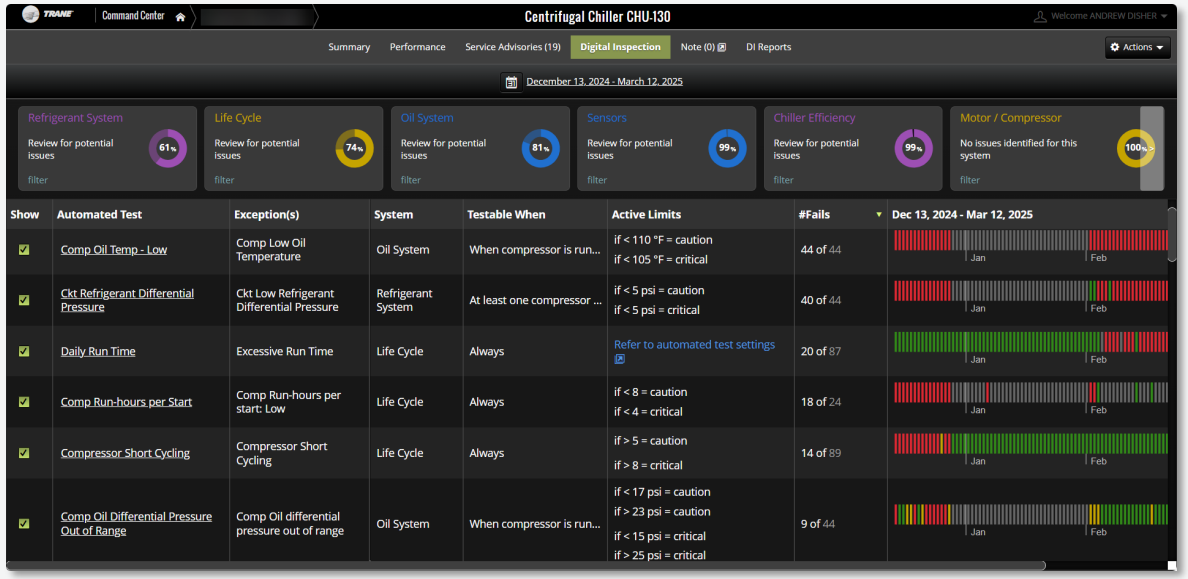
- Reduce energy costs
- Reduce carbon footprint
- Improve comfort & productivity

Manage
Buildings, Assets

Delivering with results

Trane's Approach to Service

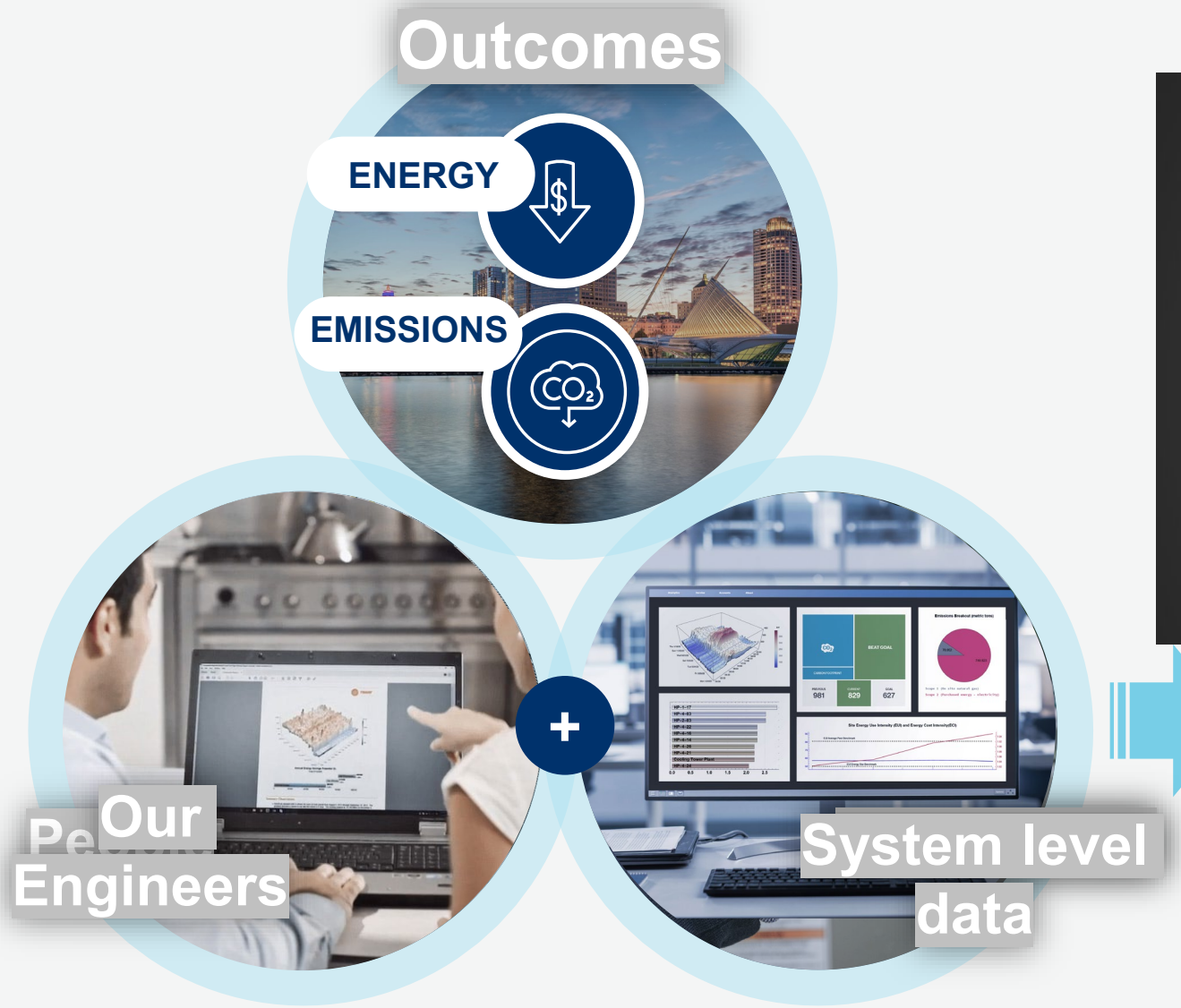
Connected Services



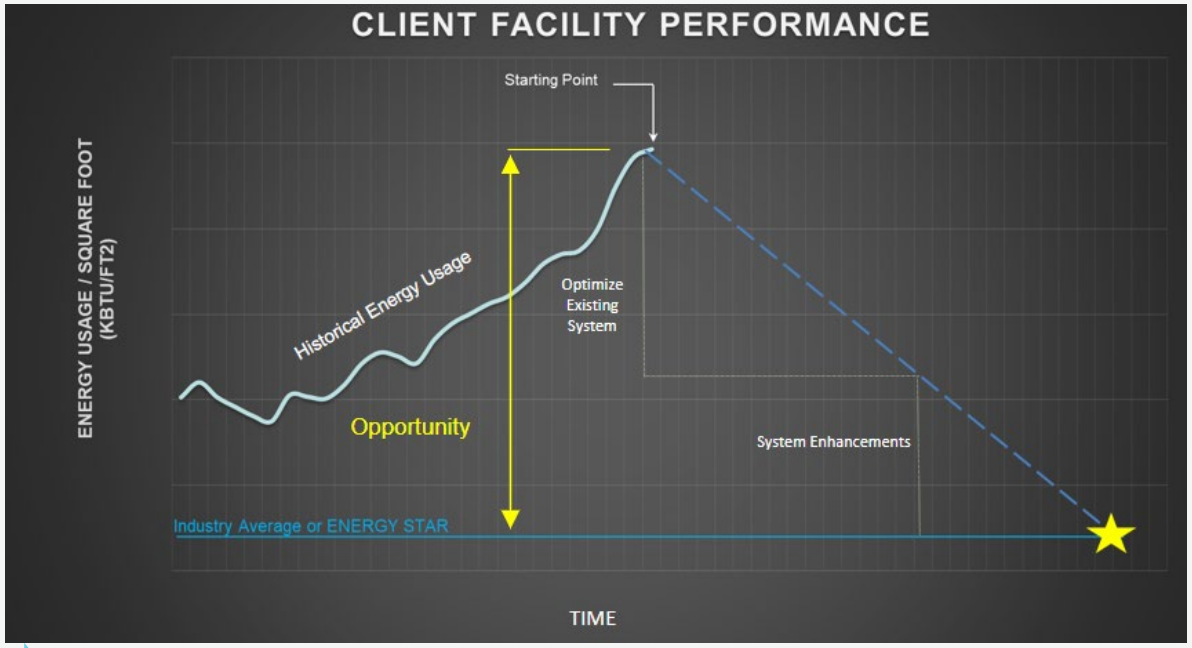
Fix Problem Remotely

Fix Problem Onsite

Trane's Approach to Optimization



Consultative Services

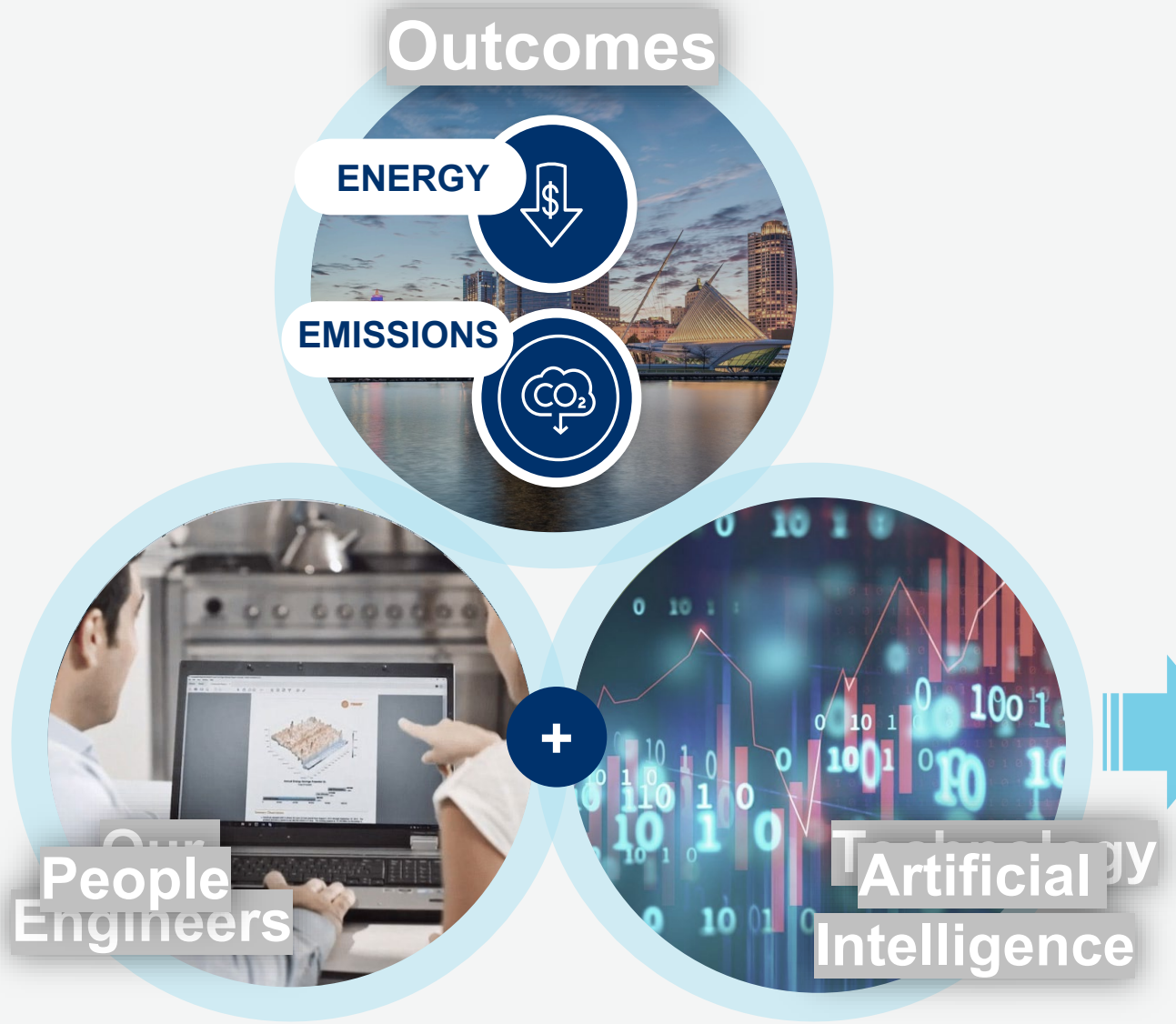


Deep System Analysis

Monetization & Future Planning

CUMULATIVE ENERGY COST AVOIDANCE	OPERATIONAL COST INCREASE	CO_{2E} EMISSIONS AVOIDANCE
Customer has avoided.	Electric bill spend has increased.	Customer has reduced their carbon footprint by.
$28,642.48	**$6,701.70**	**1,000** MTC02e/year
We have dropped 477,374.60kwh **Down 35.67%** since 2022.	operational costs have risen 2.2% since 2022 (4 month comp.)	Metric tons of CO_2 equivalent emissions since 2022

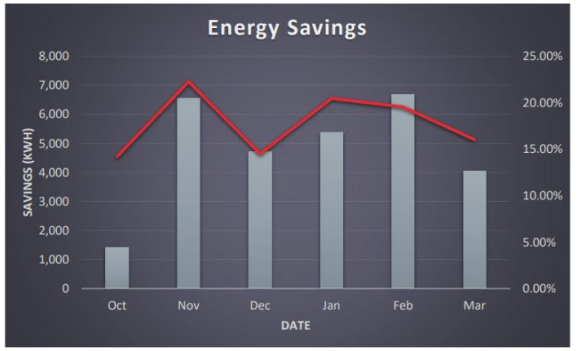
Our Approach to Optimization with AI



Autonomous Control

Energy Savings Overview

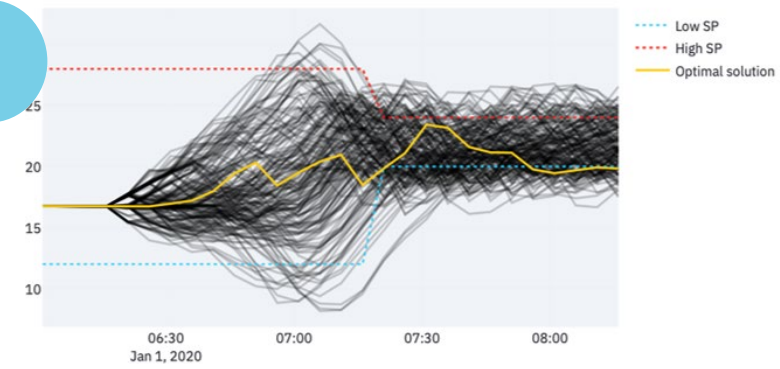
Oct 26, 2023 – Mar 26, 2024



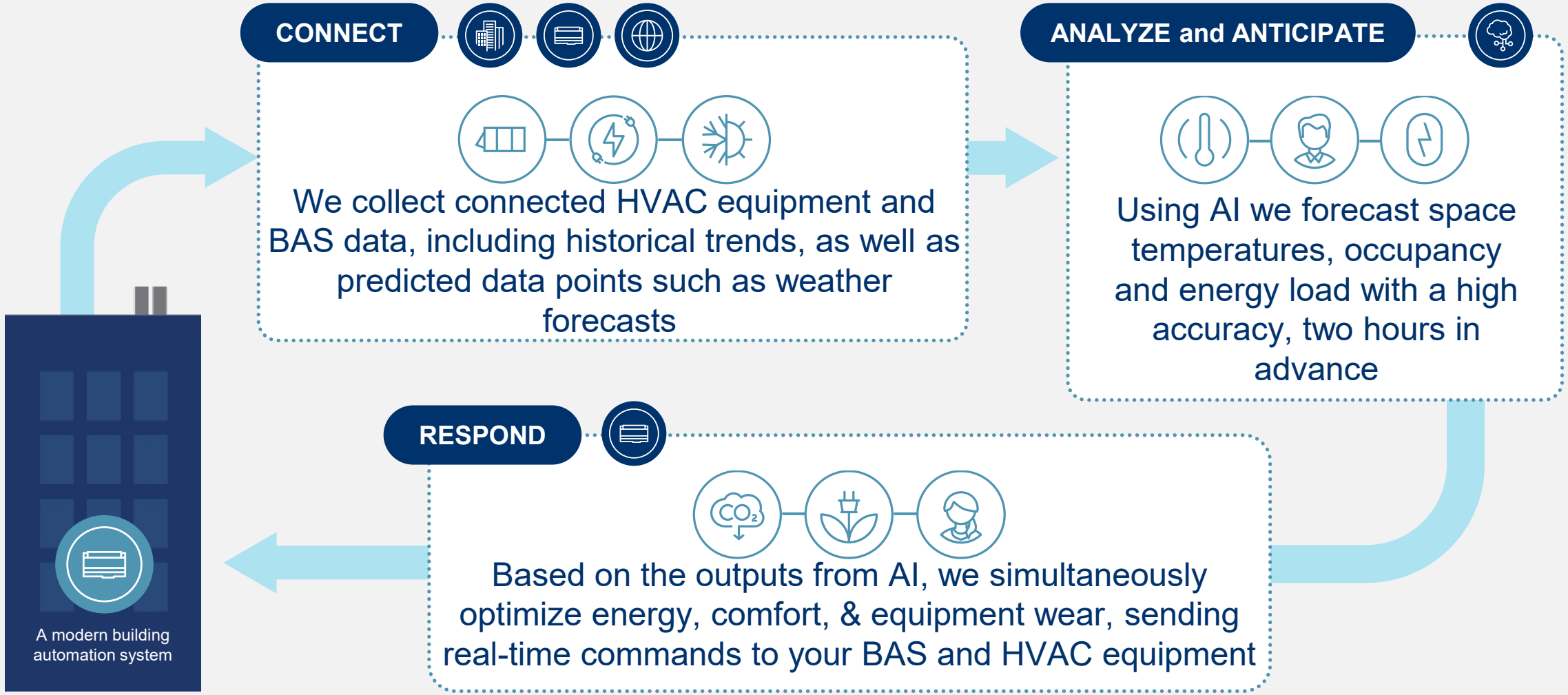
Month	Savings (kWh)	Savings %
October	1,423.28	14.2%
November	6,545.13	22.3%
December	4,715.32	14.5%
January	5,371.32	20.5%
February	6,668.91	19.5%
March	4,044.64	16.0%
Total	**28,768.61**	**18.3%**

BRAINBOX AI.

Autonomous Execution



How does it work?



What is Autonomous Control doing?

Pulling the 3 main levers to impact the building performance

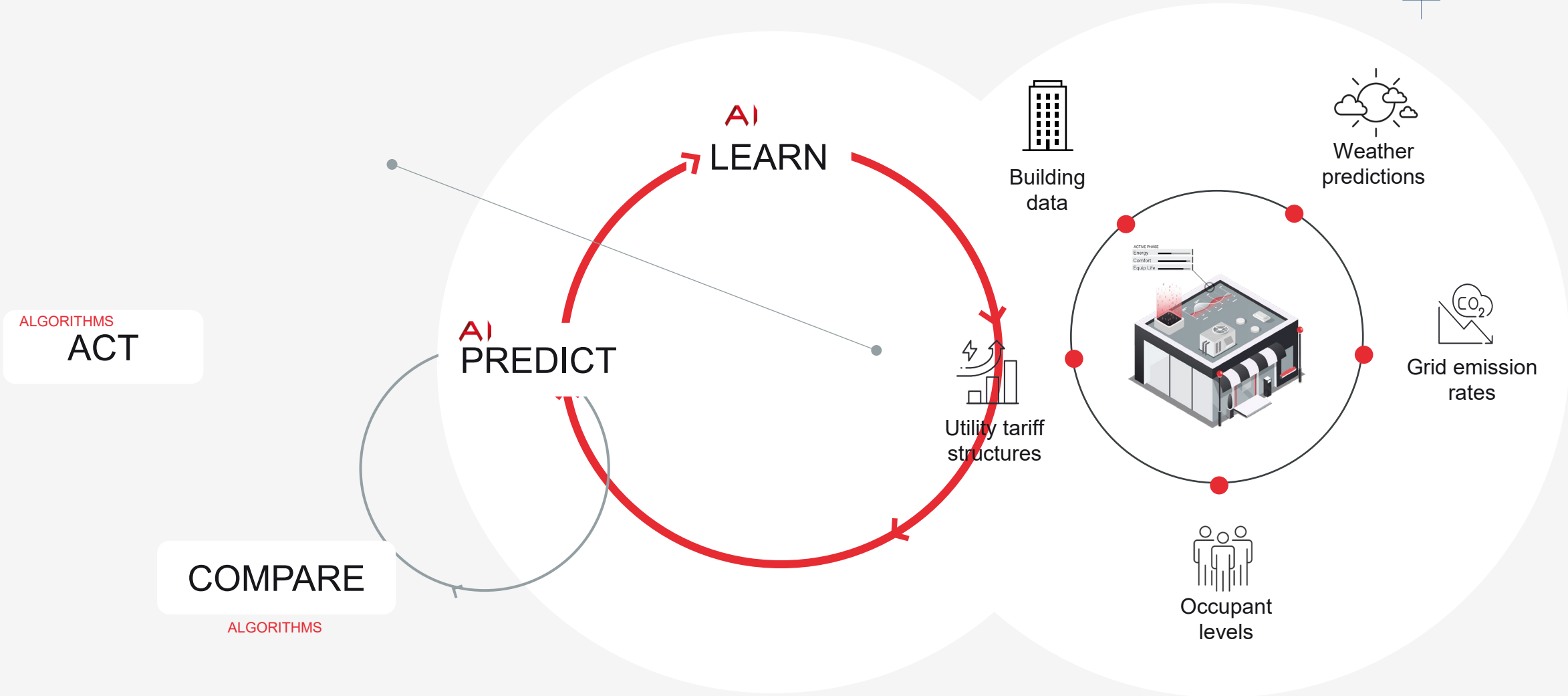
Autonomous Control is designed to optimize energy consumption while maintaining or improving occupant comfort.

To achieve this, there are **3 Main Levers** to Pull:

1. **Schedules** – When should the equipment run?
2. **Setpoints** – What is the goal of the equipment running?
3. **Sequences** – How do the systems operate to achieve the goal?

Autonomous Control is Continuously self-optimizing

Around the clock 24/7/365



What types of buildings are utilizing this today

Comprehensive Market Impact

Small Retail

Large Retail

Grocery Store

Shopping Mall

Small Office

Large Office

School/University

Warehouse

Trusted by Major Brands

Landsec

TSC TRACTOR SUPPLY Co

Advance Auto Parts

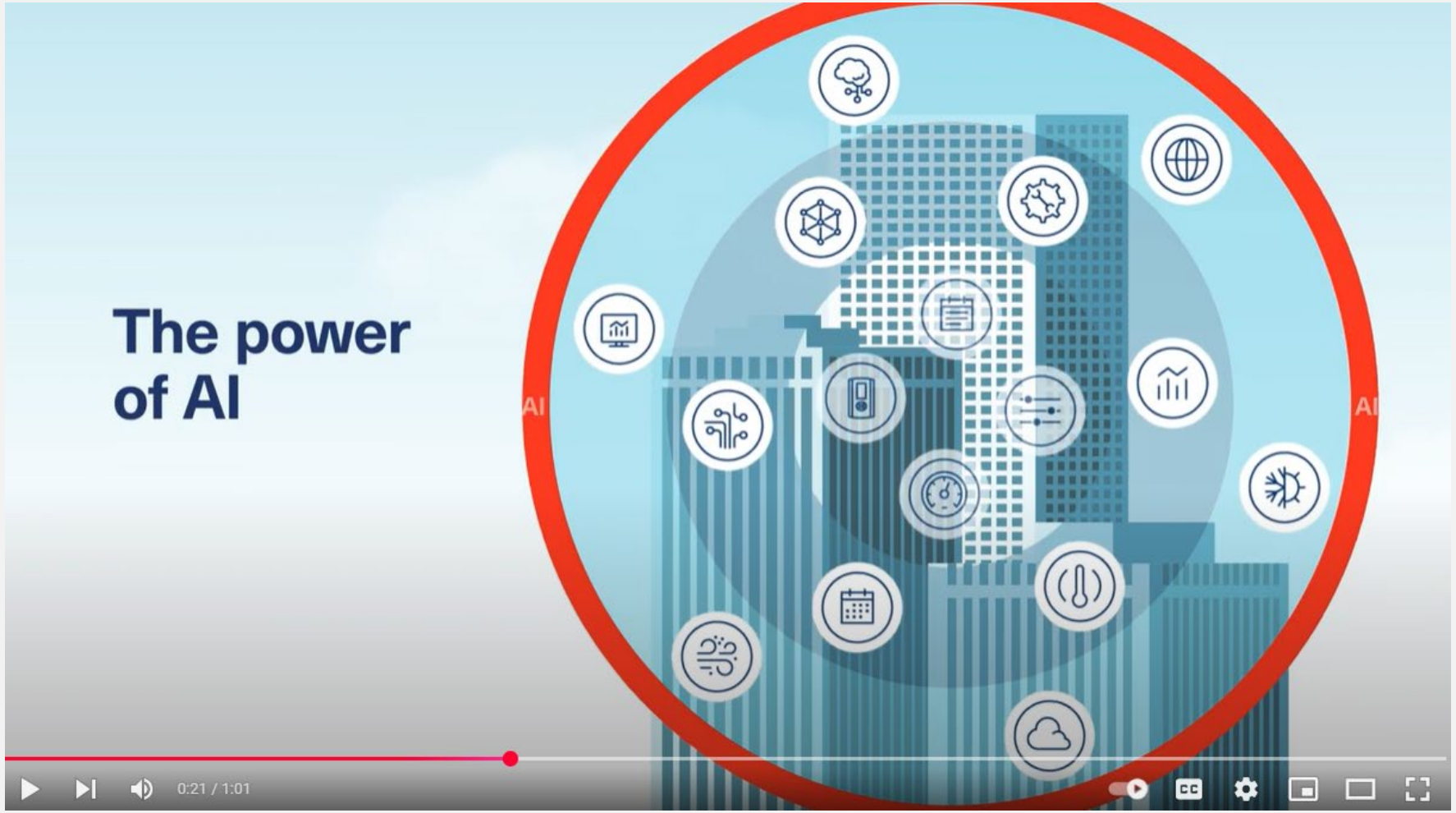
Cammeby's

SleepCountry

DOLLAR TREE

FIFTH THIRD BANK

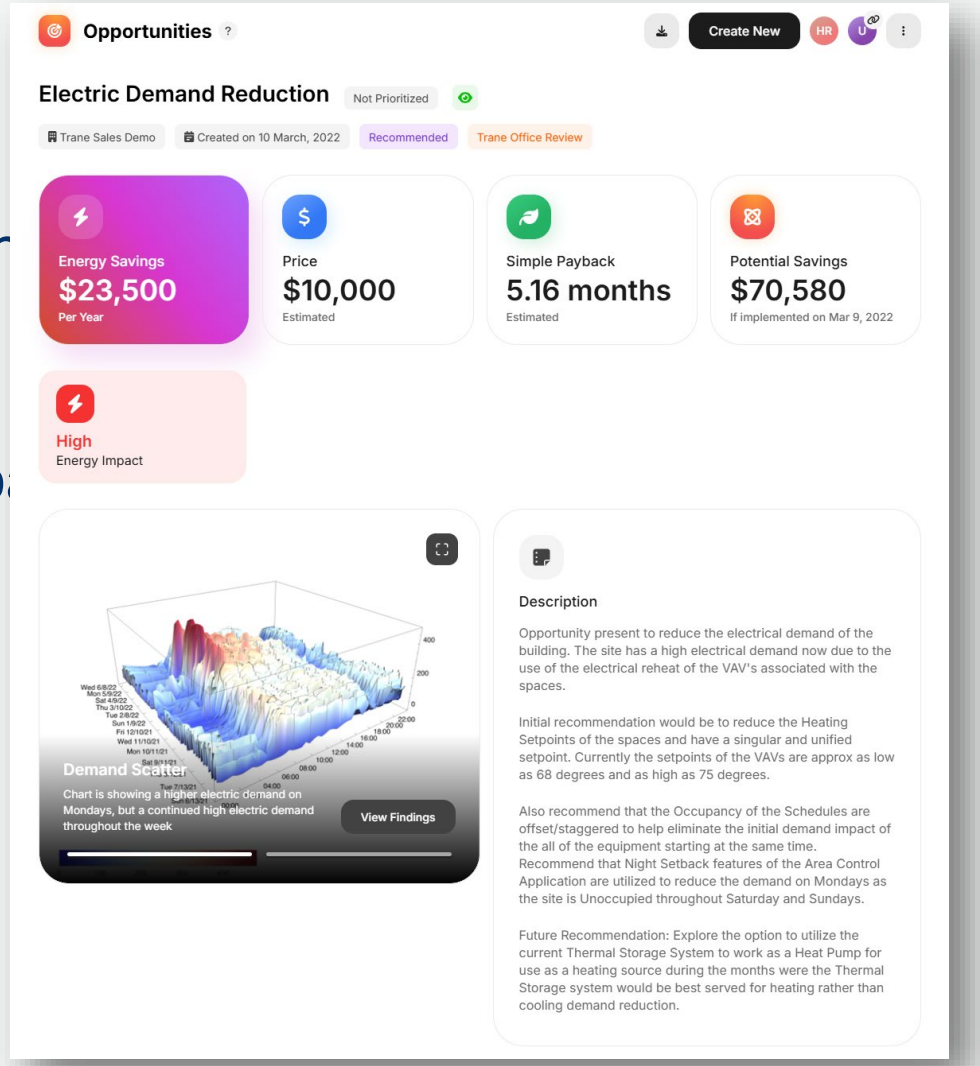
A Day in the Life of a Facility Manager with Trane Autonomous Control



[A Day in the Life Video]

Considerations

- Is the data reliable
- What are the important outcomes for my busir
- How will we measure and document
- What is the right level of technology for my go



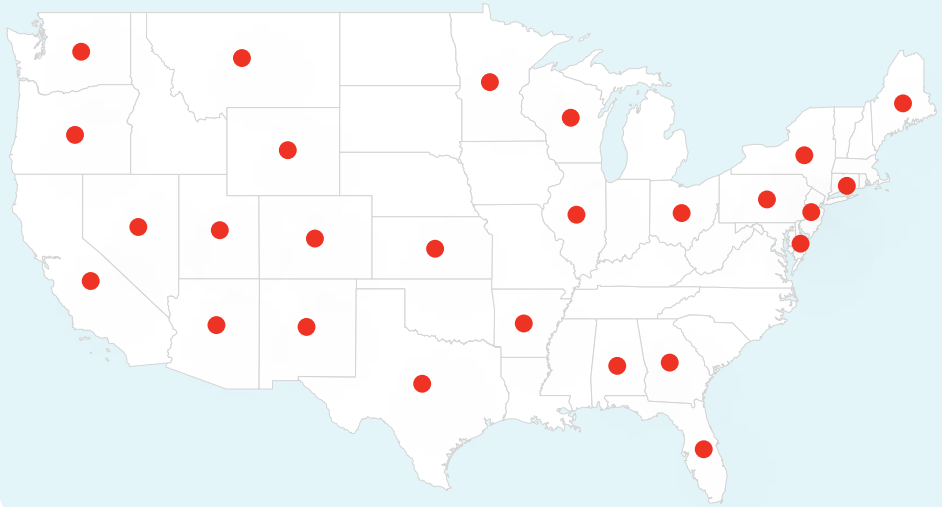
Life Sciences

Building Profile and Goals

Vertical:
Biological collection and processing

Number of buildings:
~200 locations

Location:
Multi-site national



Goals

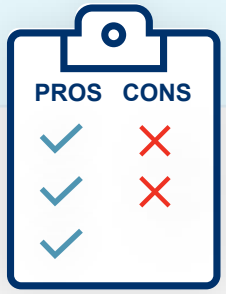
- Maintain precise environmental conditions on a zone-by-zone basis while **optimizing overall energy consumption**
- **40%** reduction in GHG emissions by 2025
- Net zero by **2035**

Life Sciences

Options

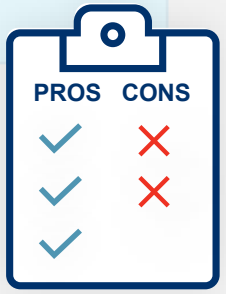
Replace all RTUs with Ultra-High Efficiency Units and add DOAS

- Update aging HVAC mechanical equipment
- Resize all equipment to reduce load where possible
- Add DOAS units



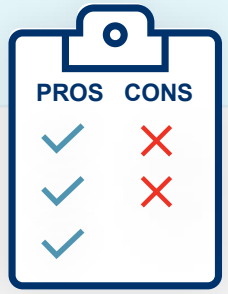
Utilize Intelligent Services to identify Small Energy Projects

- Targeted approach to identifying and fixing “1-off” problems
- Use energy analysis tools to create targeted upgrade list and phased fix on fail approach to inefficient equipment and building envelope issues



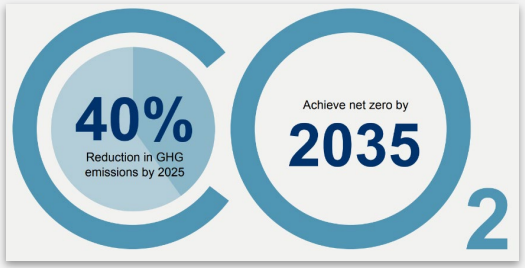
Leverage Trane Autonomous Control

- Coordinate HVAC equipment scheduling, setpoints and performance via Tracer SC+
- Fine-tune equipment performance based on real-time data



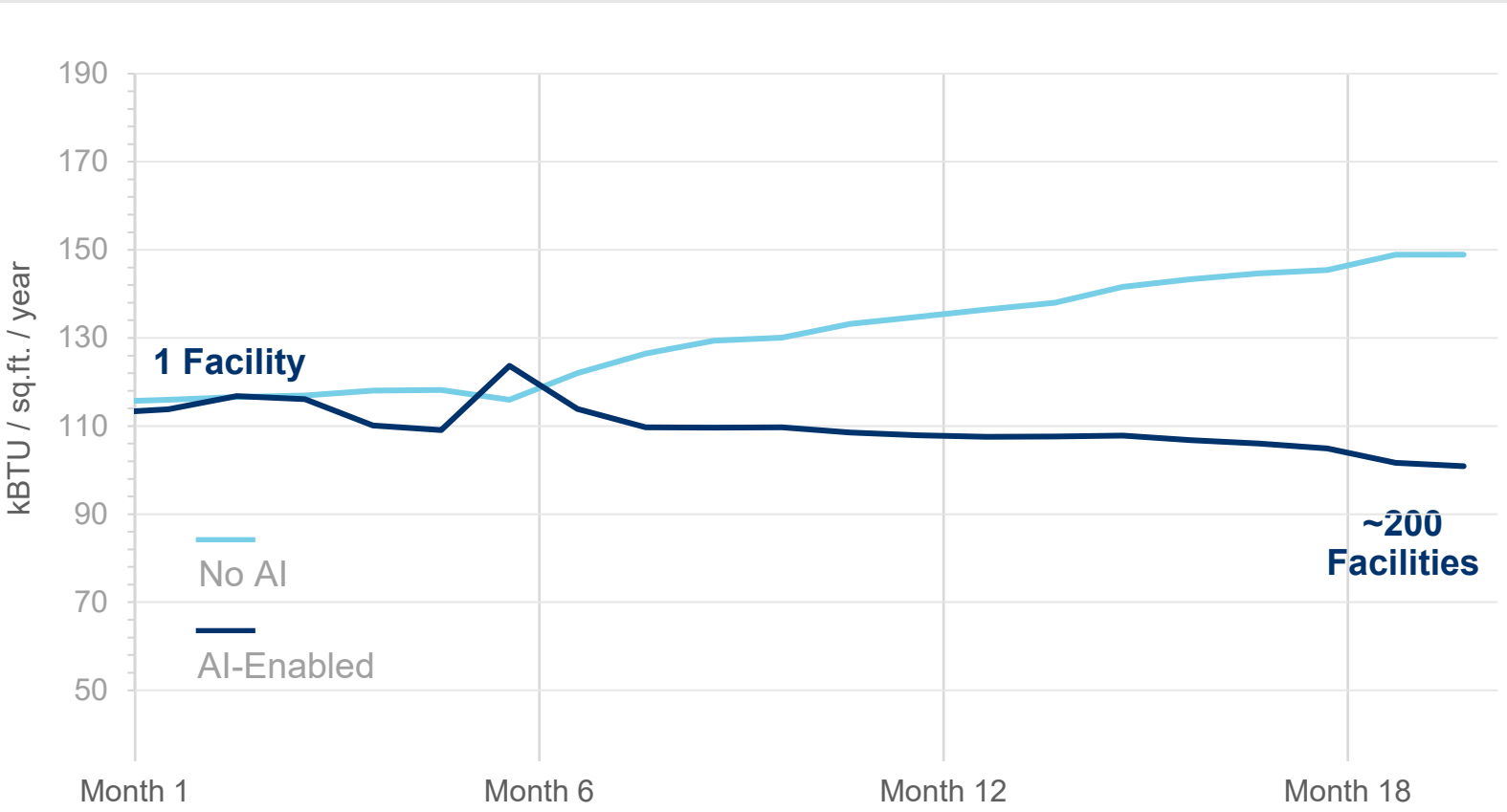
Life Sciences

Solution and Results



TRANE

Rolling Total Energy Use Intensity



Savings the Customer Saw After 18 months:

25%+ reduction in total energy costs

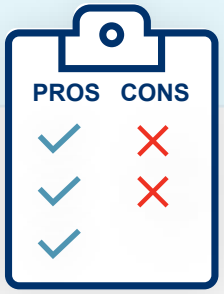
- EUI Reduced: **22%**
- Energy $$ Savings: **$777k**
- **Total Therms Reduced: 41k+**
- CO_2e Savings: **1,547mt**

Santikos Entertainment

Our Journey – Starting with San Antonio

Where We Were

- Building Automation System with smart scheduling
- Manual preventative maintenance on key assets
- Fix on fail when technicians are available



Where We Are

- Piloting ticket sales integration and real-time AI implementation (Trane Autonomous Control)
- Digitally enabled predictive maintenance on key assets
- Troubleshoot (and fix if able) issues remotely faster

Where We Go From Here

- Invest in smart assets at newly acquired facilities
- As we build and gain positive results, standardize the approach across the newly acquired portfolio

32.6% less cooling

34.1% less fan

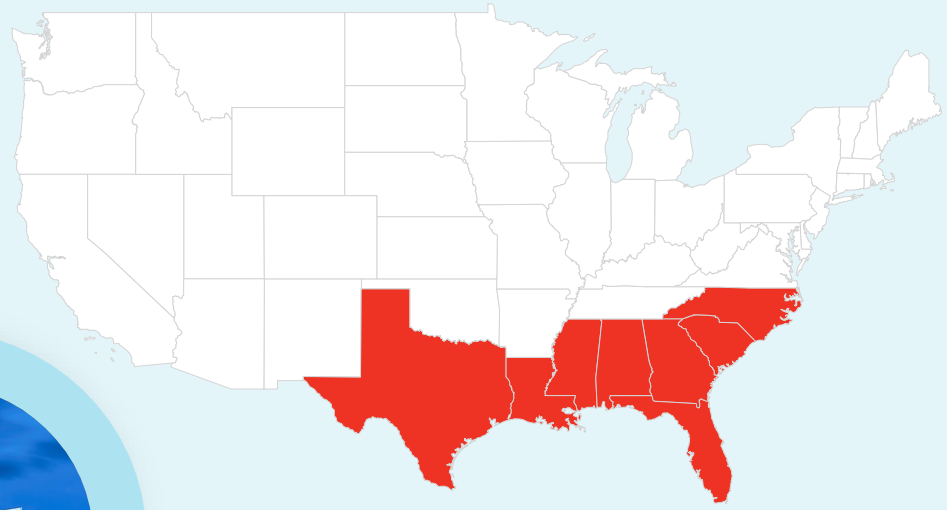
Santikos Entertainment

Who We Are and What's Important to Us

Mission:
Provide unparalleled experiences that create a lasting benefit in the community

Number of Cinemas:
- **27 locations**
- **377 Screens**

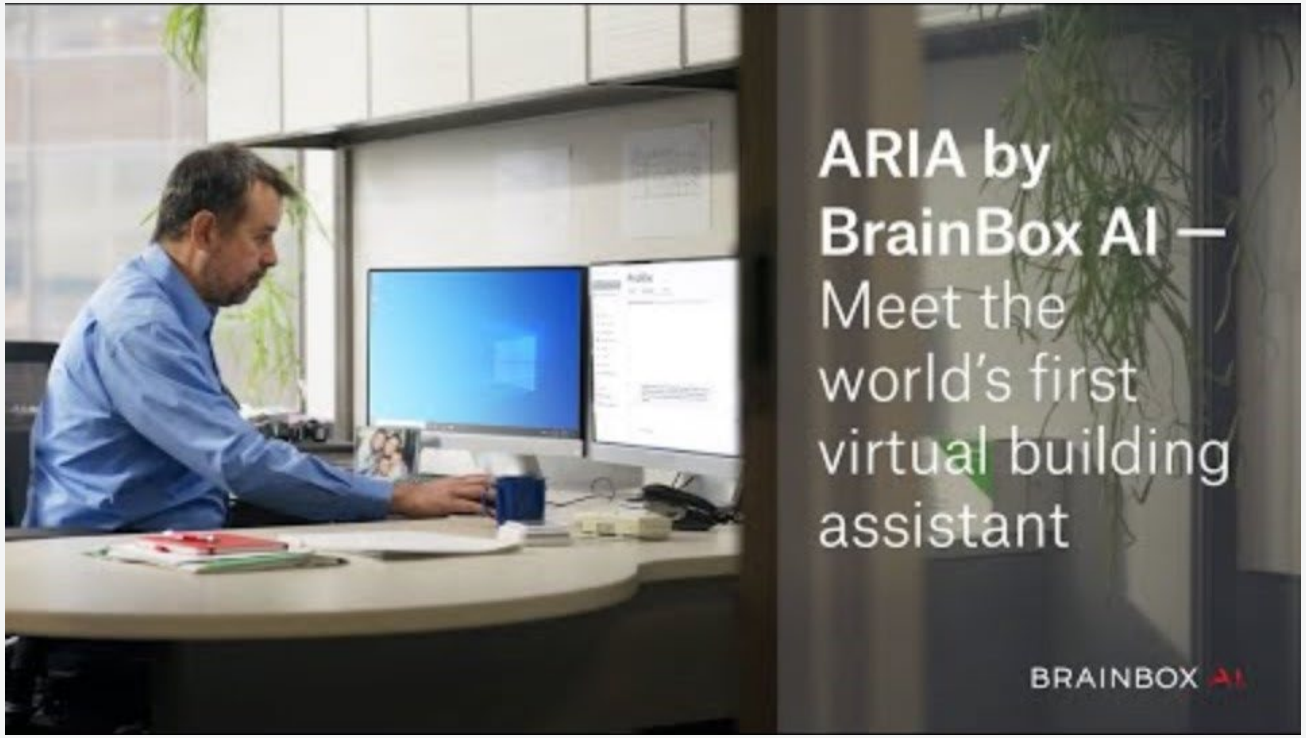
Location:
Texas & the Southeast



Goals

- Maintain **guest comfort**
- **Reduce annual deprecation** by extending Mechanical equipment life
- Increase overall **energy efficiency**
- Increase staff productivity and **reduce need for 24/7 on-site** HVAC team

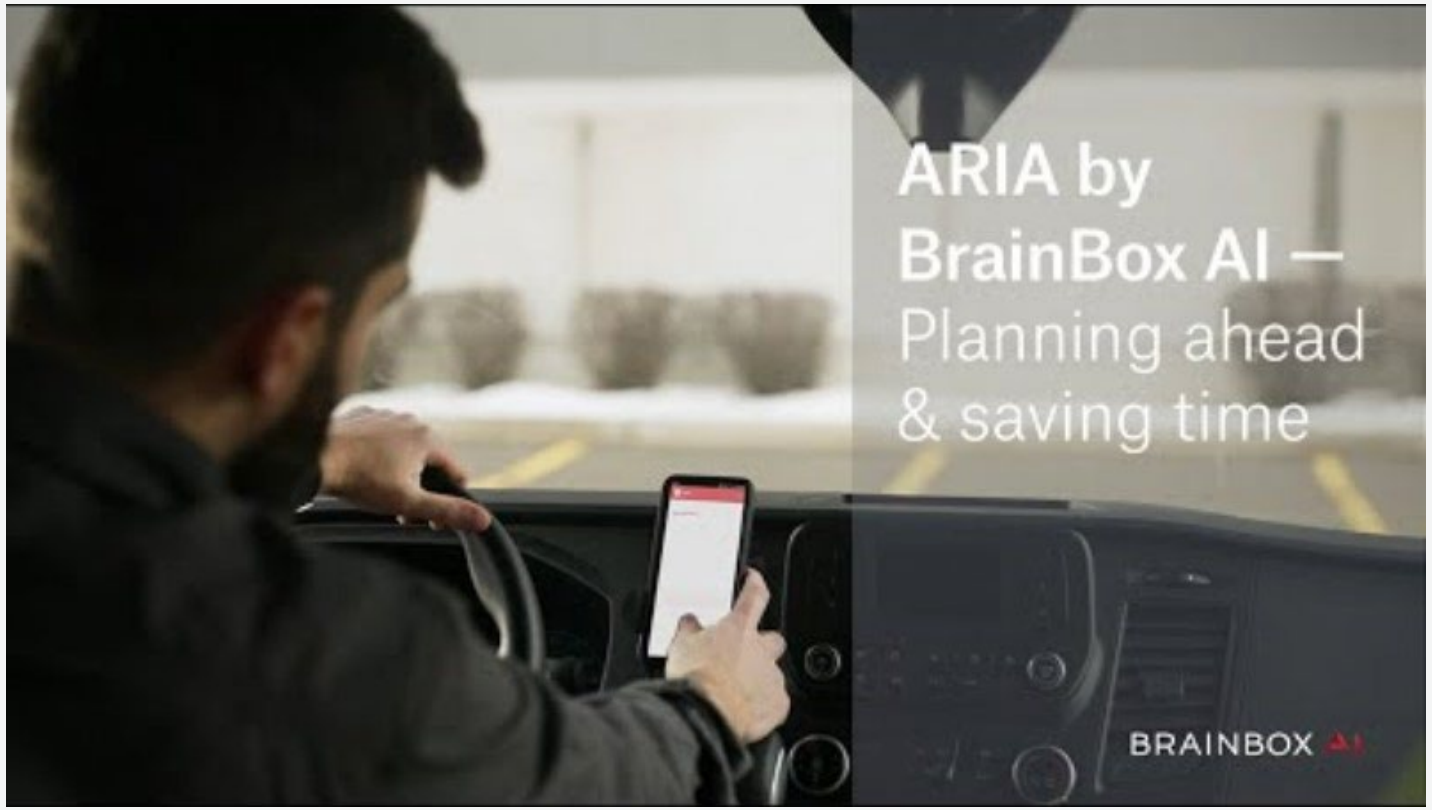
ARIA



The world's first AI virtual building engineer

Bringing unparalleled efficiency and insight to your facilities

ARIA



The world's first AI virtual building engineer

Bringing unparalleled efficiency and insight to your facilities

Just because we **can** brush our teeth with AI, doesn't mean we **have** to.

We believe the right approach starts with

1. Establishing clear outcome-based **goals**
2. Applying the **right technology** at the right time
3. **Measuring and documenting** progress over time to inform the next step

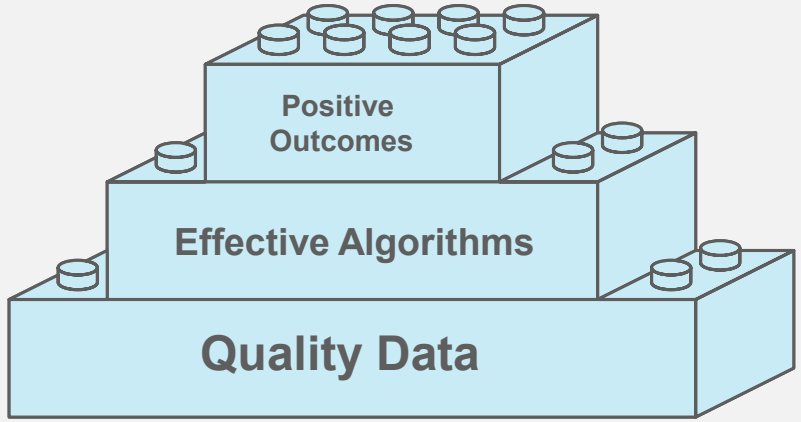
AI/ML applications in buildings is limited only to the amount of use cases you can dream up

AI adoption **is not** the end goal, but a tool to help meet current and future business objectives in a more efficient fashion.

AI/ML outcomes are only as good as the underlying **DATA** it leverages.

“It is inefficient to infer reality from its shadows.”

Data Quality Pyramid



Resources

- Trane Connectivity and Cloud
- Trane Autonomous Control
- ARIA - facilities engineers
- ARIA - technicians
- Article "How AI Optimizes Legacy HVAC Systems Without Breaking the Bank"

Thank you!

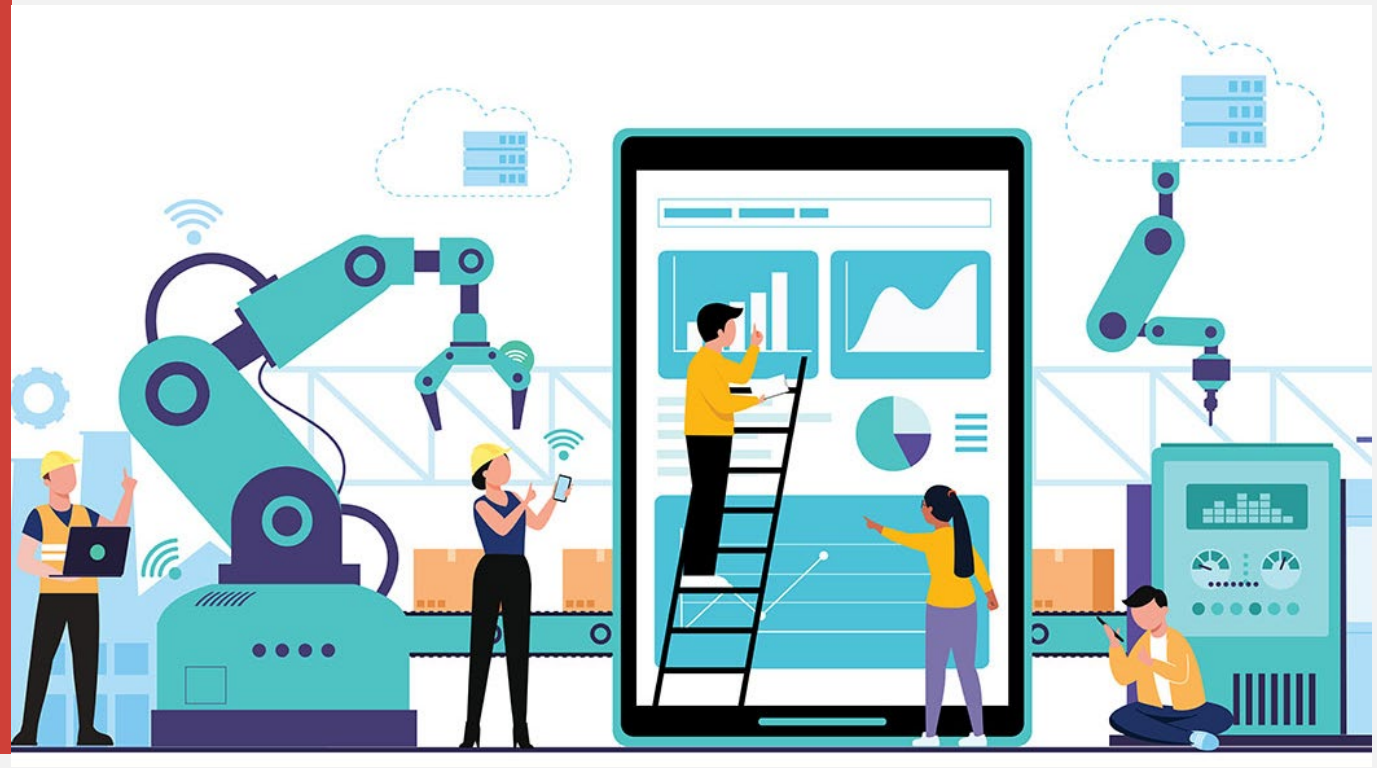
Join us as we boldly go!

Erin Rau
Digital Services
Commercialization Leader

TRANE

Raffle

Sponsored by Green Bay Packers



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Evaluation of this course

How successful were we at meeting these training objectives?	Failing				Excellent
	F	D	C	B	A

How much do you agree or disagree with these statements regarding the training?	Strongly Disagree		Neither Agree nor Disagree		Strongly Agree
Training content	1	2	3	4	5
Presentation	1	2	3	4	5
Logistics	1	2	3	4	5

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