



# Building Long-Term Success with Energy Efficiency

March 31, 2022





# Overview

- Incentives Overview
- Industrial/Manufacturing Customers Campaign Overview
- Incentives Breakdown
- Program Process

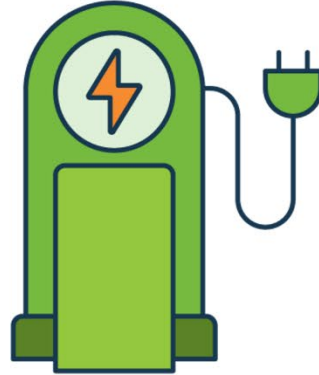
# Evergy's Programs



# Business Energy Solutions



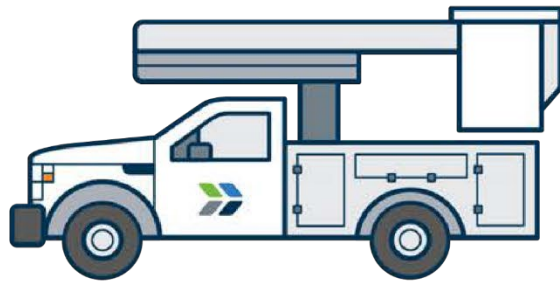
**Business Energy Savings**



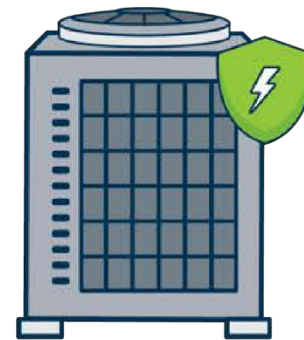
**EV Charging Station**



**Business Demand Response**



**Fleet and Transit Program**



**Electrification Services**

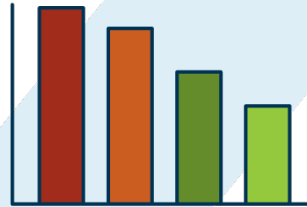


# Business Energy Savings Program

Standard



Custom



Retro-Commissioning



New Construction



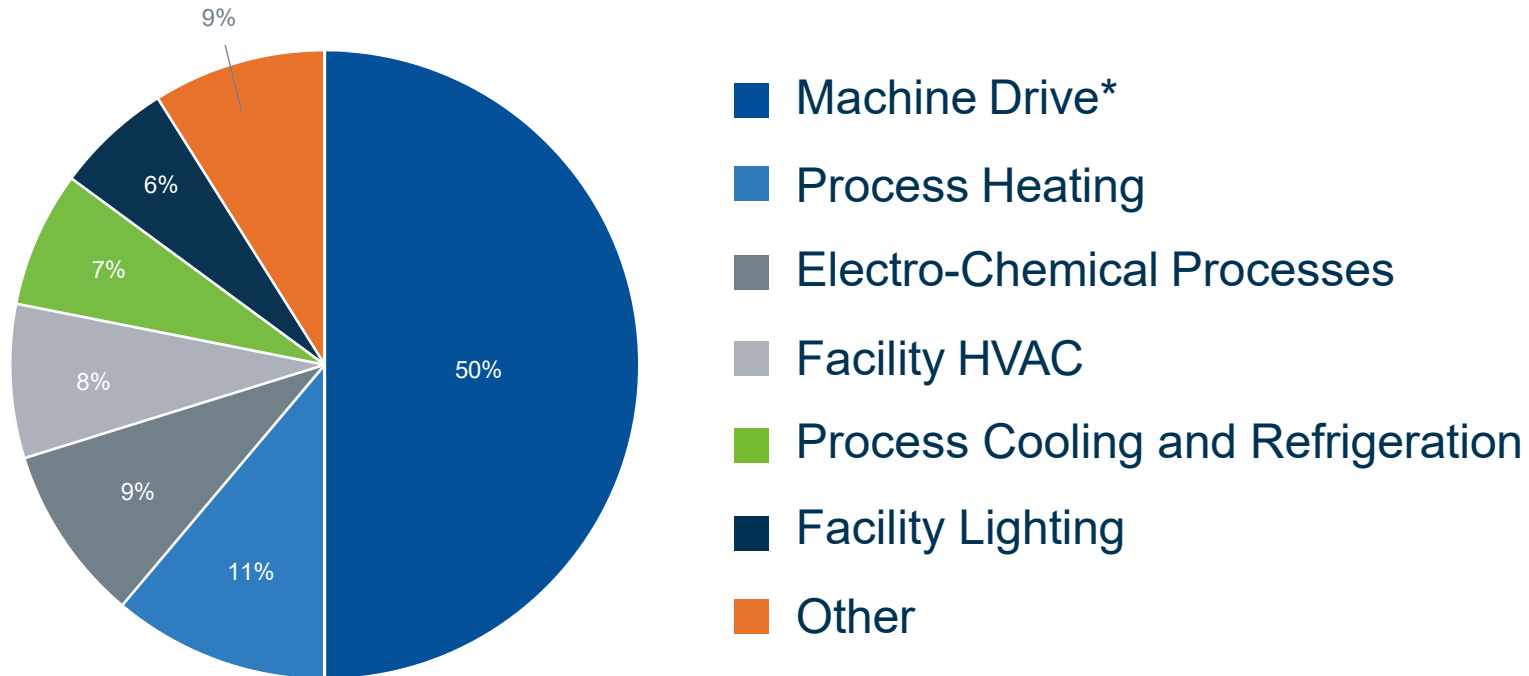
# Industrial Energy End Users





# Evergy Manufacturing Customers

Manufacturing Use by Equipment Type



**\*Machine Drive:**

- Pumping Motors
- CNC Machining
- Compressed Air
- Welding
- Stamping
- Material Handling
- Forging and Shaping
- Grinding and Drilling
- Fabrication
- Laser Cutting
- Process Cooling



# Common Energy Upgrade Opportunities for Commercial and Industrial Customers

- Compressed air
- Motor System Optimization
- Lighting + Lighting Controls
- Process Cooling
- Process Optimization + Controls
- HVAC Upgrades, Optimization + Controls





# Compressed Air



# Common Compressed Air users

- Production Line Tools
- Automation & Assembly Stations
- Chemical Manufacturing
- Agriculture
- Cement
- Foundries
- Plastics
- Sewage Plants
- Painting Lines
- Pharmaceutical
- Woodworking



# Compressed Air

Supply
Compressors – single stage, two-stage, or variable speed
Storage Tanks
Controls/Sequencers

Delivery
Piping
Filters and Air Dryers (dirt & moisture removal)
Drains
Valves

Demand
Process Equipment (using compressed air in manufacturing process)
Air Tools
Inappropriate uses of compressed air
Leaks



# Compressed Air Incentives

## **Standard Incentives:**

Replace Standard Compressors with:

- Variable Speed Drives (VSD) Compressors
- Engineered Compressed Air Nozzle
- Compressed Air No-Loss Condensate Drain or Valve

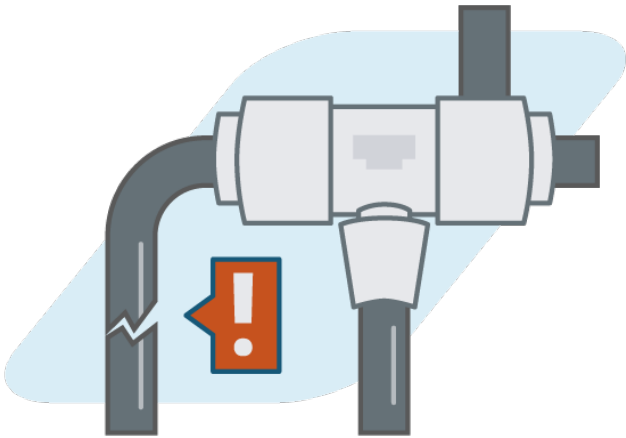
## **RCx Study Incentive (per kWh reduction)**

Comprehensive system analysis focused on low-cost/ no-cost measures

## **Custom Incentives (per kWh)**

- Compressed Air System Leak Survey and Repair
- Compressed Air System Optimization
- Efficient Compressed Air Equipment

# Impact of Compressed Air Leaks



Cost of Compressed Air Leaks						
Hole Diameter	Annual Energy Loss					
	At 110 psi	cost at 10¢/kWh	At 100 psi	cost at 10¢/kWh	At 90psi	cost at 10¢/kWh
3/8"	226,100 kWh	\$22,600	208,100 kWh	\$20,810	190,000 kWh	\$19,000
1/4"	100,500 kWh	\$10,050	92,500 kWh	\$9,250	86,300 kWh	\$8,630
1/8"	25,100 kWh	\$2,510	23,100 kWh	\$2,310	21,100 kWh	\$2,110
1/16"	6,300 kWh	\$630	5,800 kWh	\$231	5,300 kWh	\$530
1/32"	1,600 kWh	\$160	1,400 kWh	\$140	1,300 kWh	\$130



# Compressed Air Case Study

MEASURES INSTALLED: replaced air compressor motor  
at packaging facility

TOTAL COST: **\$29,968**

TOTAL INCENTIVE: **\$2,400**

TOTAL KWH SAVINGS: **55,412**

TOTAL KW SAVINGS: **6.3**

SIMPLE PAYBACK: **<5 years**





# Motor System Optimization



# Motor System Optimization

## **Pumping systems**

- Chilled water
- Process water
- Liquids for production

## **Fan Systems**

- Ventilation for process air
- HVAC Systems
- Exhaust and Dust collection systems





# Motor System Optimization Incentives

## **Standard Incentives:**

- High Efficiency Pool Pump replacing Standard Efficiency Pool Pump
- Pool Pump Variable Speed Drive (VSD) replacing Standard Efficiency Pool Pump
- High Volume Low Speed (HVLS) Fan (20ft Diameter) replacing Non-HVLS Fan
- HVLS Fan (22ft Diameter) replacing Non-HVLS Fan
- HVLS Fan (24ft Diameter) replacing Non-HVLS Fan

## **Custom Incentives (per kWh)**

- Variable Speed Drives for Pumps or Fans
- Motor Drives
- Premium Efficiency Motors
- Electronically Commutated Motor (ECM)



# Motor System Optimization Case Study

MEASURES INSTALLED:	Hospital-installed array VFD fan walls
TOTAL COST:	<b>\$227,000</b>
TOTAL INCENTIVE:	<b>\$79,800</b>
TOTAL KWH SAVINGS:	<b>532,000</b>
TOTAL KW SAVINGS:	<b>96</b>
SIMPLE PAYBACK:	<b>&lt;3 years</b>



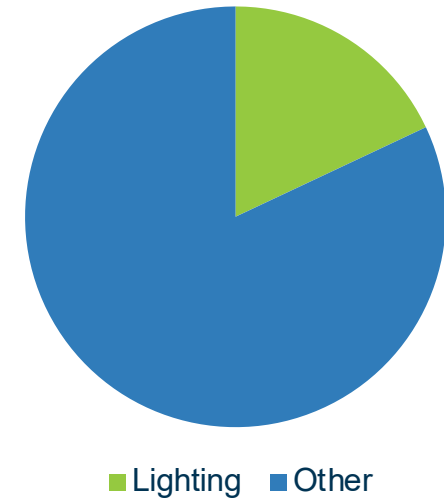
# Lighting & Lighting Controls



# Lighting & Lighting Controls

- High-intensity discharge lamps/fixtures
  - metal halide
  - high pressure sodium
  - mercury vapor
- High output fluorescent lamps/fixtures
- Replacing HID and fluorescent lamps with LED can cut down lighting energy costs by **as much as 40%**

Plant Electrical Usage





# Lighting Incentives

## **Standard Incentives:**

- Replacing High bay HID or Fluorescent fixtures with LED fixtures
- Workstation task lighting upgrades with LED lamps or fixtures
- LED lamp or fixture upgrades for exterior security or egress lighting
- Daylight harvesting controls, where sufficient ambient daylight can meet lighting needs
- Occupancy sensors, that dim or turn off light in unoccupied areas

## **Custom Incentives (per kWh)**

- Efficient Interior Lighting Redesign
- Interior Lighting Controls
- Install Networked Lighting Controls



# Lighting & Lighting Controls Case Study

MEASURES INSTALLED: Exterior LED lighting retrofit

TOTAL COST: **\$28,313**

TOTAL INCENTIVE: **\$12,142**

TOTAL KWH SAVINGS: **189,027**

TOTAL KW SAVINGS: **34.8**

SIMPLE PAYBACK: **<1 year**



# Process Cooling



# Process Cooling

## **Common process support system for:**

- plastics processing
- chemical and pharmaceutical plants
- food processing plants
- metal melting and fabrication





# Process Cooling Incentives

## **Custom Incentives:**

- Process Chiller
- Optimizing Process Cooling



# Process Cooling Case Study

MEASURES INSTALLED: chemical plant chiller  
replacement with VFD

TOTAL COST: **\$110,000**

TOTAL INCENTIVE: **\$66,800**

TOTAL KWH SAVINGS: **673,223**

TOTAL KW SAVINGS: **121.5**

SIMPLE PAYBACK: **<1 year**





# Process Optimization & Controls



# Process Controls Optimization

- Any method used to improve the operating efficiency of industrial systems
- Typically includes a management system
  - process controls
  - energy recovery systems



# Process Controls Optimization Incentives

## **Custom (per kWh reduced)**

- HVAC Controls Optimization with and without Peak Demand Reduction
- Exterior Lighting Controls Optimization with and without Peak Demand Reduction

## **Retro-Commissioning**

- Retrofitting / enhancing equipment controls
- Retro-commissioning of controls

## **New Construction**

The Whole Building Performance Incentive aims to encourage the use of whole-building computational energy-use simulations (energy models) to optimize the energy efficiency of a building design



# Process Optimization & Controls Case Study

MEASURES INSTALLED: HVAC controls upgrade and replacement at University

TOTAL COST: **\$69,097**

TOTAL INCENTIVE: **\$30,453**

TOTAL KWH SAVINGS: **289,073**

SIMPLE PAYBACK: **2.2 years**





# Attendee Poll

# Next Steps







## Standard Incentives: Interior Lighting (HID Replacements)

Inefficient Equipment	Efficient Equipment	2022 Incentive
HID 150–300W	LED Lamp or Retrofit Kit	\$25 per fixture
	LED Fixture	\$45 per fixture
HID 301–500W	LED Lamp or Retrofit Kit	\$35 per fixture
	LED Fixture	\$65 per fixture
HID 501–850W	LED Lamp or Retrofit Kit	\$60 per fixture
	LED Fixture	\$110 per fixture
HID >850W	LED Lamp or Retrofit Kit	\$150 per fixture
	LED Fixture	\$275 per fixture

## Standard Incentives: Interior Lighting Controls

Measure	2022 Incentive
Remote or Wall-Mounted Daylight Sensor Controlling $\geq$ 570W	\$35 per sensor
Remote or Wall-Mounted Occupancy Sensor Controlling $\geq$ 425W	\$25 per sensor
Networked Lighting Controls	Moved to Custom



## Standard Incentives: Compressed Air

Measure	2022 Incentive
Variable Speed Drive (VSD) Compressor replacing Standard Compressor – 1 Shift Weekdays	\$45 per horsepower
VSD Compressor replacing Standard Compressor – 2 Shifts Weekdays	\$55 per horsepower
VSD Compressor replacing Standard Compressor – 3 Shifts Weekdays	\$60 per horsepower
VSD Compressor replacing Standard Compressor – 3 Shifts Weekdays Plus Weekends	\$65 per horsepower
Engineered Compressed Air Nozzle replacing Standard Compressed Air Nozzle – 1/8"	\$20 per nozzle
Engineered Compressed Air Nozzle replacing Standard Compressed Air Nozzle – 1/4"	\$45 per nozzle
Compressed Air No-Loss Condensate Drain or Valve	\$155 per drain or valve

## Standard Incentives: Motors & Drives

Measure	2022 Incentive
High Volume Low Speed (HVLS) Fan (20ft Diameter) replacing Non-HVLS Fan	\$800 per fan
HVLS Fan (22ft Diameter) replacing Non-HVLS Fan	\$1,000 per fan
HVLS Fan (24ft Diameter) replacing Non-HVLS Fan	\$1,200 per fan



# Standard Incentives: HVAC Controls Optimization w/Peak

Efficient Equipment		2022 Incentive
VFD for HVAC Supply and Return Fans Replacing Motor Without Method of Speed Control	1-5HP	\$450 per unit
	6-15HP	\$1,250 per unit
	16-25HP	\$1,500 per unit
	26-50HP	\$2,000 per unit
	51-75HP	\$3,500 per unit



# Retro-Commissioning Incentives



- A systematic process to improve the efficiency of an existing building's equipment and/or energy intensive systems
- Approved RCx measures could be incentivized up to 100% of implementation cost
- RCx Study costs could be incentivized up to 100% of study cost for installed measures
- 6 months to complete RCx measures
- Total project payback must be  $\leq 18$  months to qualify for RCx incentives
- Measures with payback  $> 18$  months may qualify for a Custom incentive



# Retro-Commissioning (RCx)

Retro-Commissioning is a process focused on identifying and implementing low-cost/no-cost energy efficiency measures.

Retro-Commissioning in Industrial facilities falls into two categories:

- Compressed Air RCx
- Whole Building RCx\*

*\*requires a Building Automation System or Energy Management System (EMS) controlling the building.*

Frequency of Measures Implemented in RCx Projects

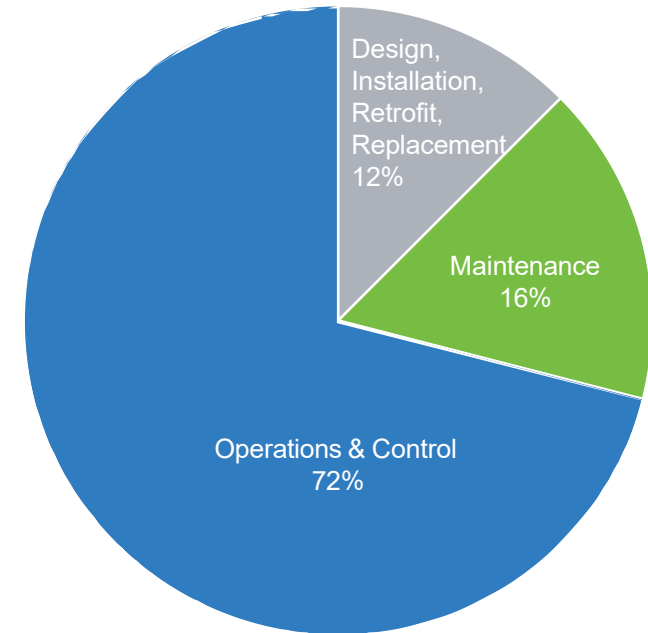


Figure Data Source: Mills, E., 2009. "Building Commissioning: A Golden Opportunity for Reducing Energy Costs and Greenhouse Gas Emissions"



# RCx: Pre-Apply Online

The screenshot shows the 'Welcome!' page of the 'Business Energy Savings Program' Retro-Commissioning Incentive Pre-Application. The header features the Evergy logo and the program name. Below the header is a navigation bar with tabs: WELCOME, ELIGIBILITY, GENERAL INFO, PROJECT INFO, STUDY & SCHEDULE, and PAYMENT & SUBMIT. The main content area includes a welcome message, terms and conditions, a link to the full terms and conditions, an authorization for release of customer account information, and an agreement section.

**Business Energy Savings Program**

**Retro-Commissioning Incentive Pre-Application**

**WELCOME** | ELIGIBILITY | GENERAL INFO | PROJECT INFO | STUDY & SCHEDULE | PAYMENT & SUBMIT

**Welcome!**

Thank you for your interest in conducting a Retro-Commissioning (RCx) project in your facility. This form will collect basic project information and data that will be used to determine eligibility for incentives and expedite the application process.

**Terms & Conditions**

1. Download and read through the Program terms and conditions using the link below.
2. Electronically sign below to indicate you understand and agree to the terms and conditions.

[Evergy Business Energy Savings Program Terms & Conditions](#)

**Authorization for Release of Customer Account Information**

I authorize Evergy to access energy usage data for the specified accounts at the physical site address of the project and release to the Trade Ally listed on this application. I agree that Evergy may include my name, city or county of business, Program services/incentives and resulting energy savings in reports or other documentation submitted to Evergy and relevant agencies administering energy programs. Evergy will treat all other information gathered through the Program as confidential.

**Agreement**

I understand and agree to comply with the Terms and Conditions of the Evergy Energy Efficiency Program and that all energy efficiency measures identified in this application comply with program rules.

- [jotform.com/trcco/evergy-rcx](https://jotform.com/trcco/evergy-rcx)
- Apply online to establish eligibility
- We'll gather all the info we need for the project
- A Program Representative will contact you regarding next steps



# New Construction Incentives



- Intended to help implement higher degree of energy efficiency above code requirements
- New building projects, additions to existing buildings, gut rehabs, or “warm shell” projects
- 4 types of incentives available:
  - Interior Lighting
  - Standard Incentives
  - Custom Incentives
  - Whole Building Performance Incentives



# Application Checklist

## **Required**

- ☐ Specification sheets of all new equipment
- ☐ Payee Company's W-9
- ☐ Labor Cost Documentation (such as a detailed invoice or labor cost form)
- ☐ Material Cost Documentation (such as a detailed invoice or receipts)

## **If Applicable**

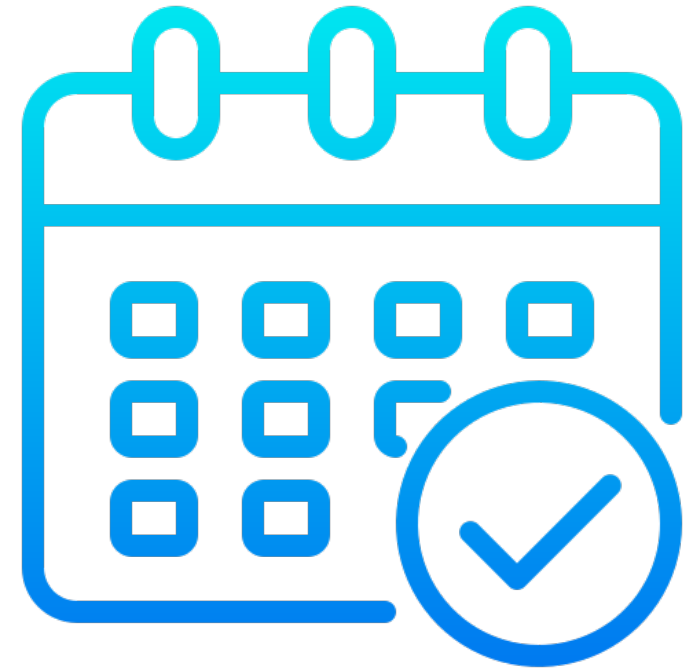
- ☐ Tax exempt letter
- ☐ Additional project assumption documents
- ☐ Calculation or model output





# Act Now

- MEEIA extension has been filed
- Hopeful for approval
- Kansas voting for KEEIA in Summer 2022
- Limited time to complete projects in 2022



# MEC Benchmarking Event

**Who:** Metropolitan Energy Center

**What:** Free training and support to submit your building's 2021 energy and water data in order to comply with the KCMO's benchmarking requirements

**When & Where:** April 28, 11:30am-12:30pm CT Virtual

**Register:** [MetroEnergy.org](https://MetroEnergy.org)



# Questions?





# Business Development Representatives



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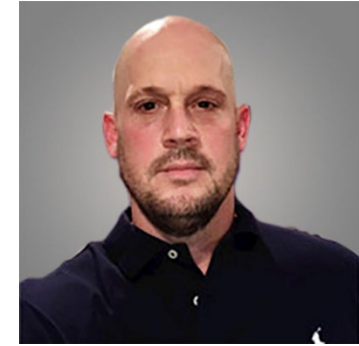


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