

Feb 28, 2023

Megan Meadows

Chief, Community Services
Division

Luke Stedke

Assistant Chief, Community
Services Division

Shaun Sagle

Energy Programs Manager

Manny Anunike, PhD

Energy Specialist

Karla Gulker

Energy Loan Program
Coordinator

Achieving Cost Savings with Energy Efficiency and Finance Programs



Department of
Development



Energy Efficiency and Energy Finance Programs

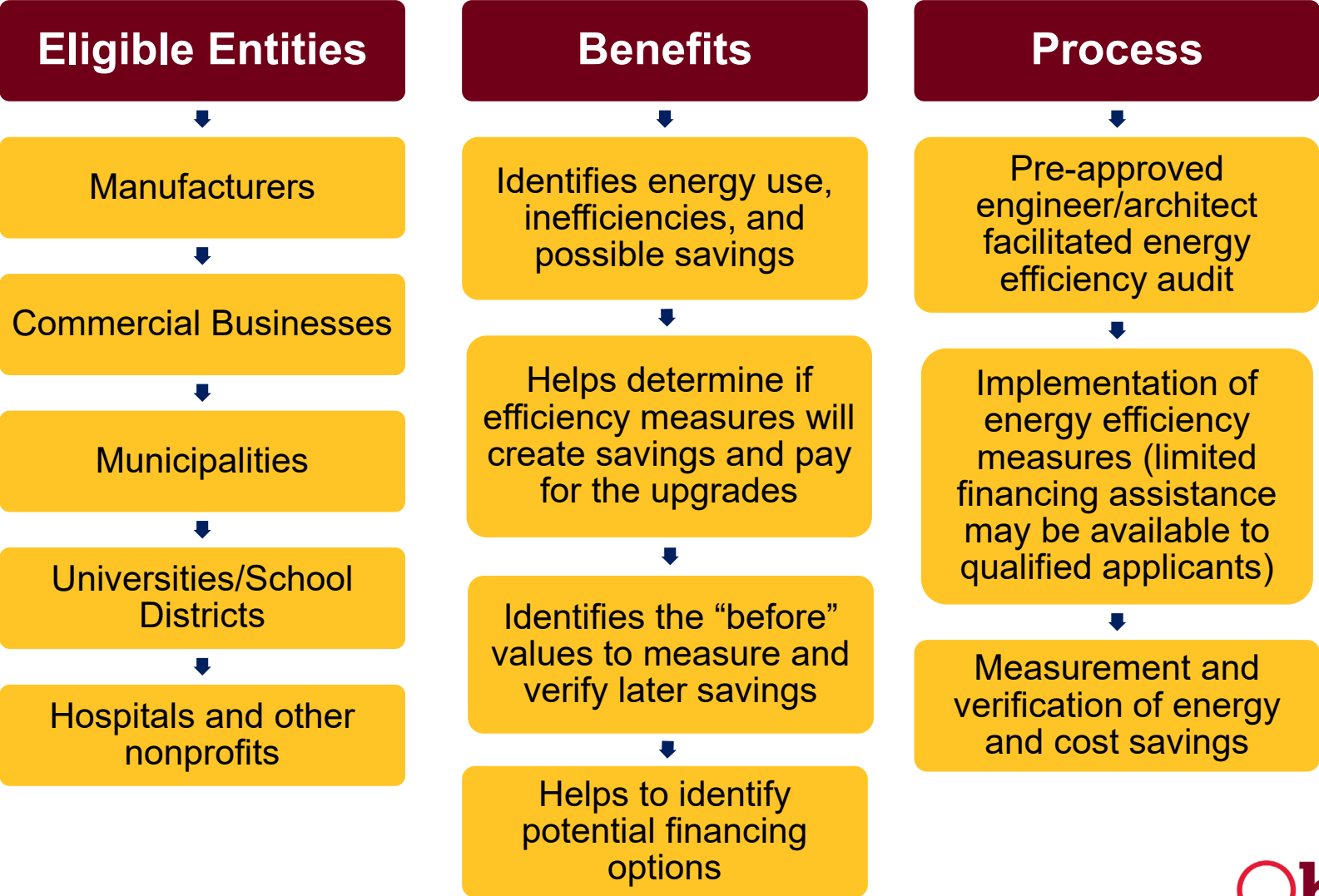
- Energy Efficiency Program (EEP)
- Energy Financing Programs (Energy Loan Fund)
- Energy Efficiency Training Opportunities (EETM)



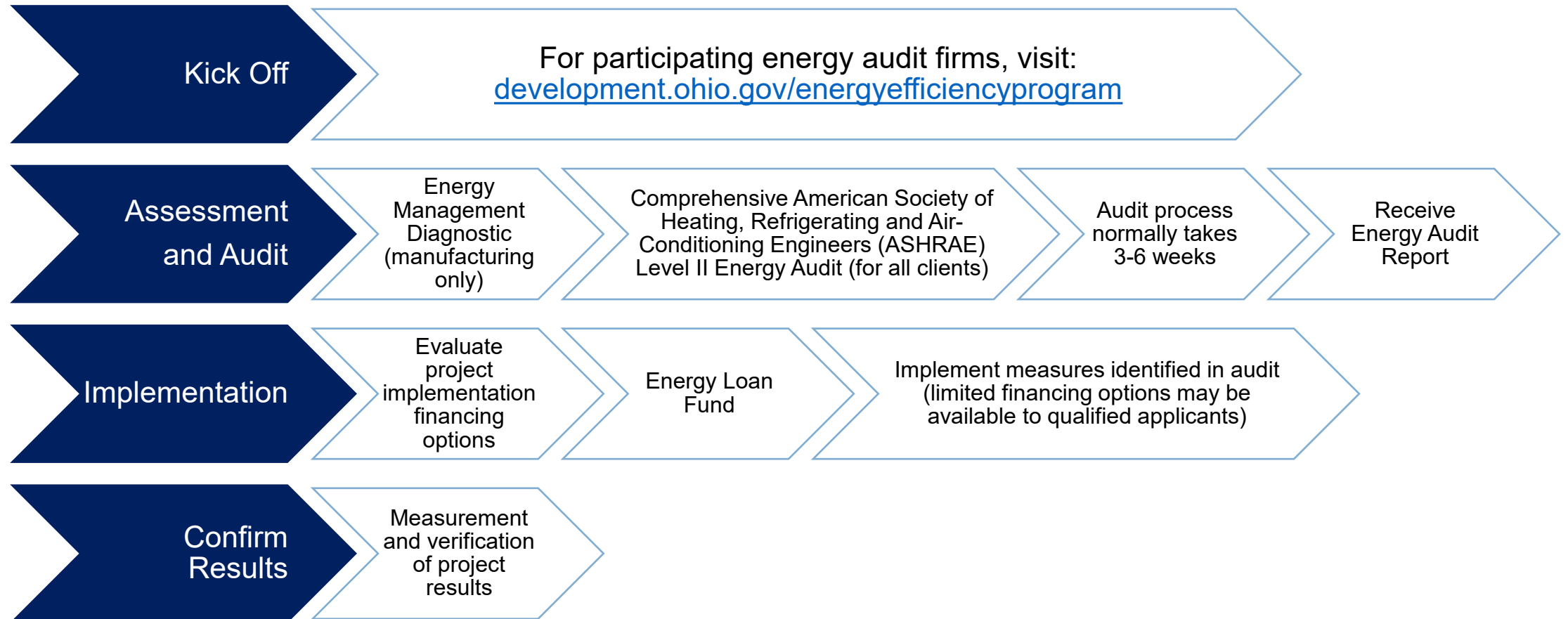
Development's Energy Efficiency Program

Helps businesses, manufacturers, nonprofits, schools, and local governments reduce energy use and improve energy efficiency – resulting in lower energy costs.

EEP Eligible Entities/Benefits/Process



EEP Process



EEP Process Detail

Energy Management Diagnostic

- One-to-two-hour meeting for manufacturing sites, with facilitator.
- No charge.

ASHRAE Level II Audit

- For manufacturing and non-manufacturing sites.

Final Audit Report

- Existing facility conditions analysis.
- Energy use patterns and utilities analysis.
- Energy efficiency measures analysis and recommendations.
- Potential funding strategies and resources (Energy Loan Fund).
- Measurement and verification strategies.

EEP Energy Audit Grants

	Manufacturers	Non-Manufacturers
Qualifications	All Ohio manufacturers	Facility > 10,000 sq. ft.
Development grant funding	75% of total audit cost, up to \$22,500	50% of total audit cost, up to \$15,000
Customer share	Remaining 25%, plus any amount >\$30,000	Remaining 50%, plus any amount >\$30,000

Development and client pay engineer/auditor directly

Visit: development.ohio.gov/energyefficiencyprogram

EEP Contractors/Energy Auditors

NON-MANUFACTURING

Sol design + Consulting
Cleveland and Cincinnati
Sanyog B. Rathod
(513) 455-8228 x700
sanyogr@solconsults.com

Heapy Engineering
Dayton
Stephanie L. Drenten Ferro
(937) 224-0861 x4514
sldrenten@heapy.com

Plugsmart/Amaersco
Columbus
Jarret Kelley
(800) 518-5576
jarret.kelley@plugsmart.com

**University of Dayton
School of Engineering**
Dayton
Andrew Chiasson, Ph.D.
(937) 229-5344
achiasson1@udayton.edu

MANUFACTURING

Energility LLC
Columbus
Justin Kale
(614) 746-9276
justin@energility.com

Go Sustainable Energy LLC
Columbus
Greg Raffio
(614) 268-4263 x 305
graffio@gosustainableenergy.com

Graphet Data Mining
Cincinnati
Nikhila Rao
(513) 474-4870 x 202
nrao@graphet.com

JCC Energy Controls
Akron
Jack Ceisa
(330) 285-5491
jack@jccenergysolutions.com



EEP Customer Case Studies

Case Study by Jack Ciesa

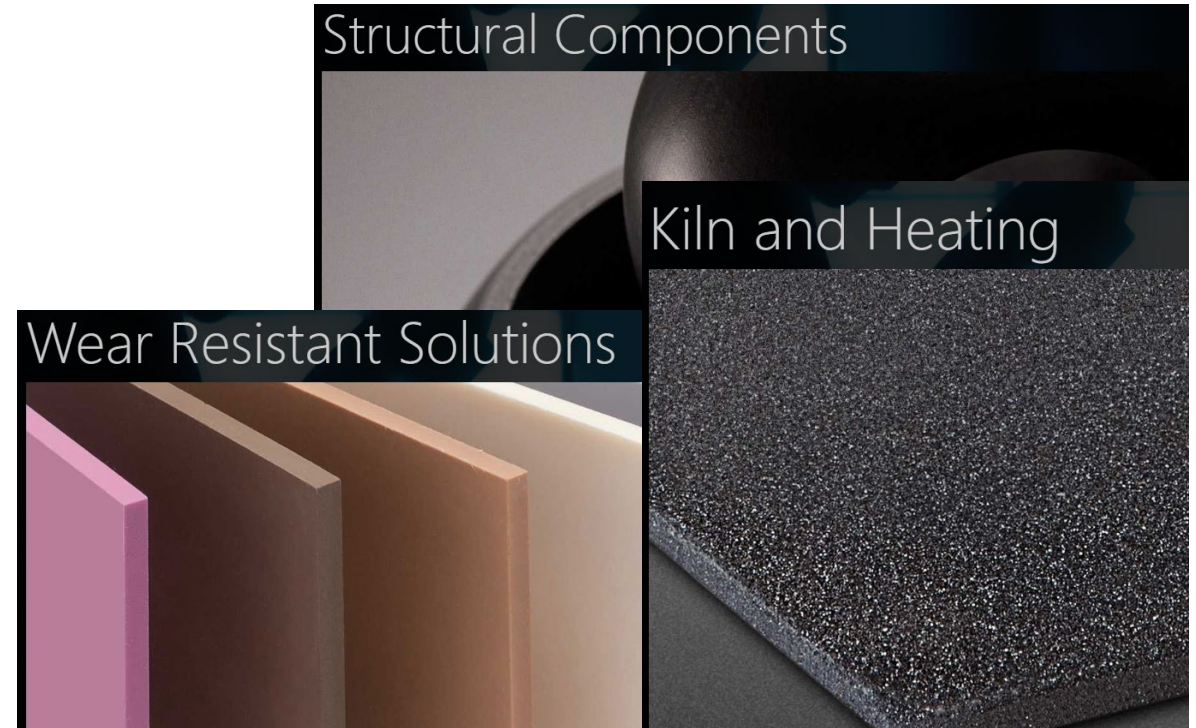
Cerco, Inc. - Specialty Ceramics



Baseline Energy Cost	\$655,561/year
Projected Energy Savings	\$284,630/year (43%)
Estimated Project Costs	\$1,222,950
Rebate Potential	\$15,720
Simple Payback	4.2 years

Savings Opportunities:

No/Low-cost measures	Motors/Drives
Compressed Air	Kiln Conversion



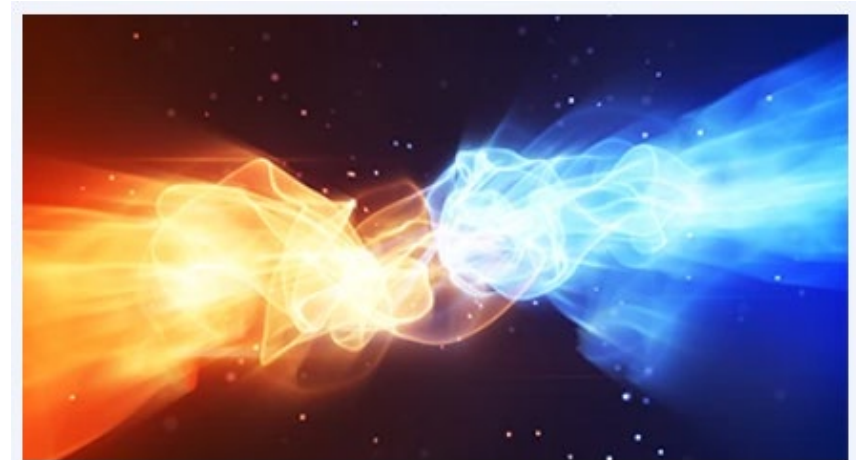
Case Study by Jack Ciesa

Morgan Advanced Materials – Thermal Ceramics

Baseline Energy Cost	\$2,883,868/year
Projected Energy Savings	\$1,217,675/year (42%)
Estimated Project Costs	\$10,636,500
Rebate Potential	\$84,669
Simple Payback	8.7 years

Savings Opportunities:

No/Low-cost measures	Motors/Drives
Compressed Air	Regenerative Thermal Oxidizers



Thermal Ceramics

Case Study by Energility

Food Production

Baseline Energy Cost	\$68,800/year
Projected Energy Savings	\$38,600/year (55.3%)
Estimated Project Costs	\$666,500
Rebate Potential	\$169,500 (<i>tax credits</i>)
Simple Payback	12.9 years
System Savings Opportunities:	
Lighting	HVAC and Controls
Domestic Hot Water	Adding Solar PV



Case Study by Energility

Metal Production

Baseline Energy Cost	\$228,800/year
Projected Energy Savings	\$115,700/year (61.5%)
Estimated Project Costs	\$1,570,000
Rebate Potential	\$605,300 (+ <i>tax credits</i>)
Simple Payback	7.9 years

System Savings Opportunities:

Lighting

Heating Systems

HVAC Controls

Adding Solar PV



Case Study by Graphet Data Mining

Deceuninck Monroe, OH

Baseline Energy Cost	\$2,810,173/year
Projected Energy Savings	\$251,867/year (8.9%)
Estimated Project Costs	\$1,280,666
Rebate Potential	\$4,067
Simple Payback	5.1 years

System Savings Opportunities:

Smart Metering	Lighting
Compressed Air	Extrusion



Case Study by Graphet Data Mining

Parker Hannifin, Ravenna OH

Baseline Energy Cost	\$1,207,307/year
Projected Energy Savings	\$32,997/year (2.7%)
Estimated Project Costs	\$94,500
Rebate Potential	\$0
Simple Payback	2.9 years

System Savings Opportunities:

Chilled Water	Smart Metering
Compressed Air	Extruder



Case Study by Ameresco

Commercial Office Space

Baseline Energy Cost \$693,626/year

Projected Energy Savings \$197,246/year (28%)

Estimated Project Costs \$6,733,986

Rebate Potential \$9,987

Simple Payback 12.1 years with O&M

System Savings Opportunities:

DDC Controls Entirely New HVAC System

LED Fixtures Roof Upgrades



Case Study by Ameresco

Convention Center

Baseline Energy Cost	\$221,407/year
Projected Energy Savings	\$46,927/year (21%)
Estimated Project Costs	\$1,643,745
Rebate Potential	\$0
Simple Payback	15.6 years with O&M

System Savings Opportunities:

DDC Controls	Boiler Upgrades
LED Lighting	Roof Upgrades



Development's Energy Efficiency Finance Programs



Energy Loan Fund

Low-interest loans

- For improvements to existing structures
- Energy efficiency
- Renewable energy

Expected results

- Energy use reduction > 15%
- Payback < 15 years
- Economic impacts: job creation/retention, community improvements
- Improvement in environmental quality

Loan details*

- \$250,000 – \$2,500,000
- 1% – 3% interest for most applicants

*Numbers may adjust annually. Additional program requirements/restrictions are available in the program guidelines.



Energy Loan Fund

Eligible Applicants

- Manufacturers
- Commercial Businesses
- Public Entities
(including local governments)
- Nonprofits
- Hospitals
- Colleges/Universities
- Ohio K-12 School Districts



Energy Loan Fund

Approximately \$8.5 million available in FY21-22 (program details may change subject to funding availability and current interest rates)

More information or to apply:
development.ohio.gov/energyloanfund

Loan Loss Reserve Fund

Offers credit/collateral enhancement of up to 50% of a qualified energy efficiency project on an existing structure.

Administered in partnership with eligible Ohio Port Authorities which originate loans for energy projects. A minimum of 15% energy savings and a simple payback period of 15 years or less is required.

\$18 million originally available for this program; Approx. \$4.9 million remaining.

Loan Loss Reserve Fund

Participating Ports



- Cincinnati
- Cleveland-Cuyahoga County
- Columbus-Franklin County
- Dayton-Montgomery County
- Lake County
- Lorain County
- Summit County
- Toledo-Lucas County

ohioportauthorities.com

Case Study

Warren Co. Career Center

Projected Energy Savings \$128,147/year

Estimated Project Costs \$1,442,393

Simple Payback 12 years

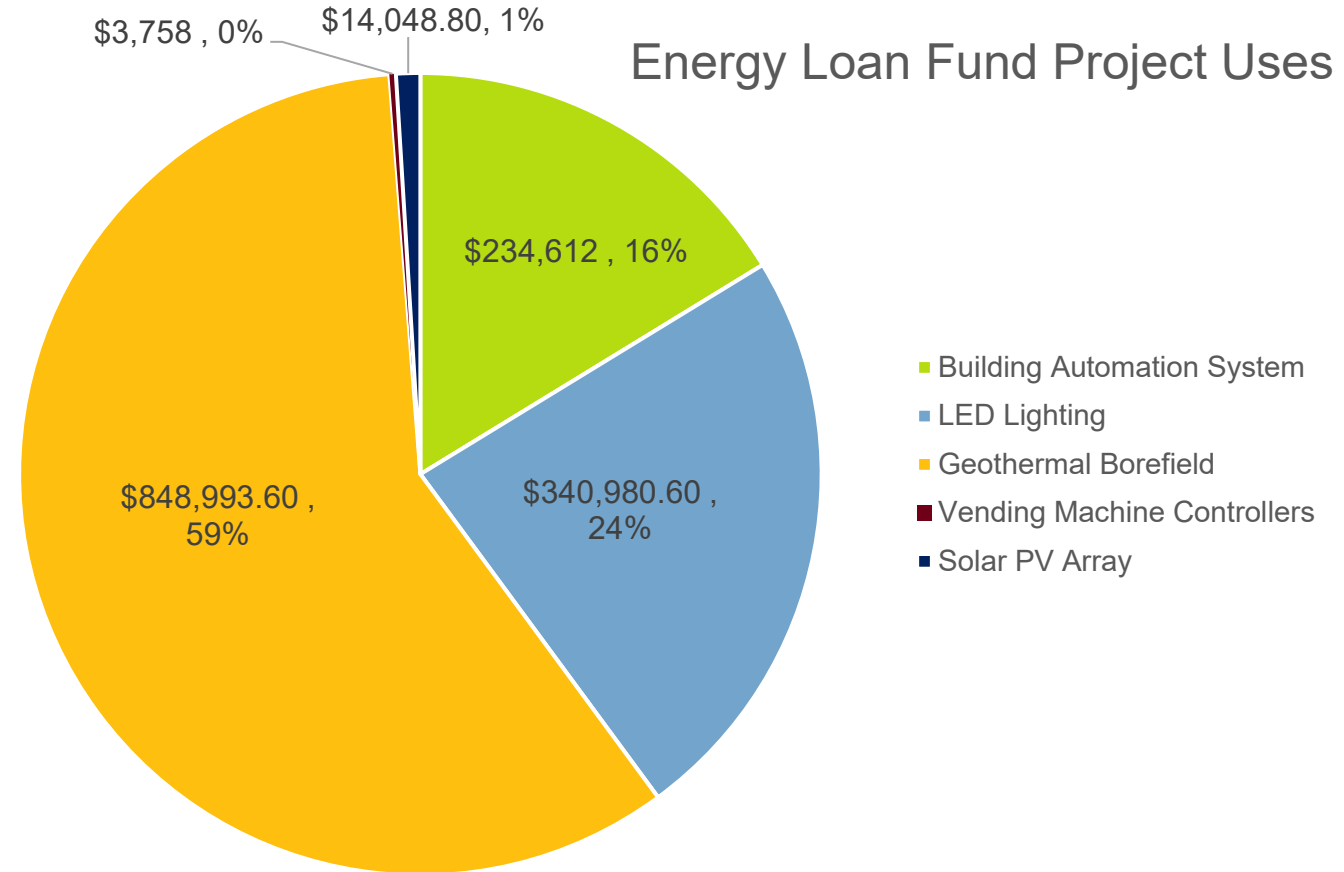
Projected CO₂ Emissions Reduction 1,556 t/year

System Savings Opportunities:

Building Automation System Geothermal Borefield

LED Lighting Solar PV Array

Vending Machine Controllers



Case Study

Worthington City School District

Projected Energy Savings \$379,117/year

Estimated Project Costs \$2,849,775

Simple Payback 7.5 years

System Savings Opportunities:

Building Insulation

EMS Control

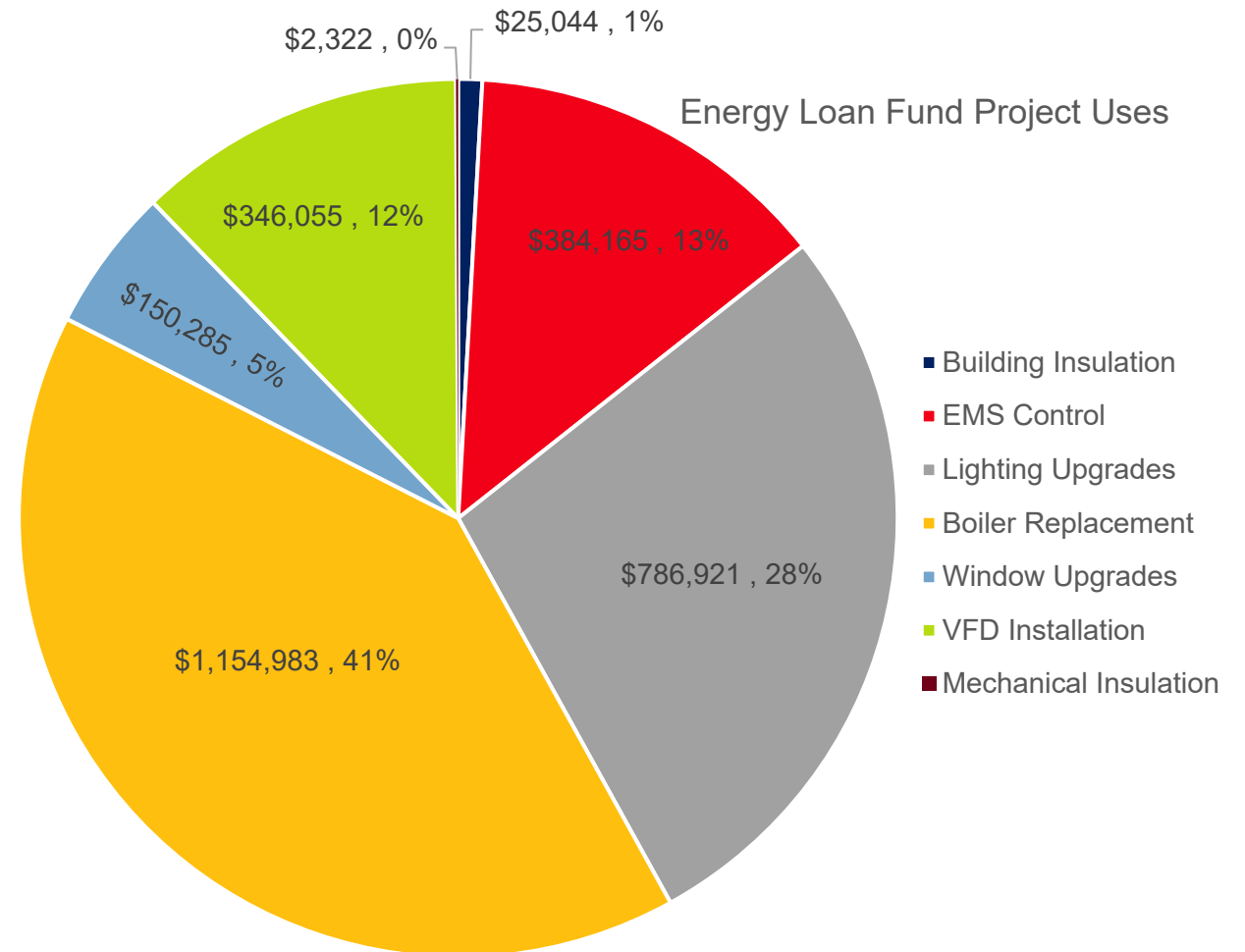
Lighting Upgrades

Boiler Replacement

Window Upgrades

VFD Installation

Mechanical Insulation



Energy Efficiency and Finance Programs Contacts

Karla Gulker, Energy Loan Program Coordinator
(614) 466-7387
karla.gulker@development.ohio.gov

Manny Anunike, PhD, Energy Specialist
(614) 466-4092
manny.anunike@development.ohio.gov

Megan Meadows, Chief, Community Services
Division (Policy)
megan.meadows@development.ohio.gov

Ohio Department of Development
Office of Energy and Environment
77 South High Street
Columbus, Ohio 43215

Links:

[Development.ohio.gov/energyefficiencyprogram](https://development.ohio.gov/energyefficiencyprogram)

[Development.ohio.gov/energyloanfund](https://development.ohio.gov/energyloanfund)

A group of people are gathered in a meeting room. A woman is standing at the front, pointing at a whiteboard. The whiteboard has handwritten notes, including "MEETING TODAY /", "SUMMER VACATION", and "JULY AGENDA". Other people are seated around a table, looking towards the presenter. The scene is dimly lit, with a blue tint.

Energy Efficiency Training for Manufacturers

Melisa Adrien
Development Education Outreach Program Coordinator

Ohio Programs Provide Required Elements for Energy Efficiency Results

Incentives and Financing

- Energy Loan Fund
- Grant funded audits and implementation

Subject Matter Expertise

- Facilitators provide Ohio Energy Efficiency Program outcomes

Information and Education

- Ohio Energy Efficiency Training for Manufacturers (EETM)

Training and Outreach

Energy Efficiency Training for Manufacturers (EETM) mission is to assist with energy efficiency education and best practices training.

EETM improves the competitiveness of Ohio industry by:

- Increasing energy efficiency
- Extending equipment life and reducing operating costs
- Reducing carbon footprint and environmental impact
- Creating and retaining Ohio jobs

Energy Champions MASTER Best Practices for Energy Efficiency

M

Measure

A

Analyze

S

Select

T

Track

E

Evaluate

R

Report

Training sessions help energy champions to:

- Achieve their ideas
- Ease energy decision making
- Prioritize top energy management actions to implement
- Set targets and track metrics
- Report progress and accomplish business goals

Training for Energy Intensive Systems

- Past topics include
 - Combined Heat & Power Technology Today
 - Combined Heat & Powers Role in Reducing Emissions through Renewable Energy
 - Energy Efficiency for Industrial Chilled Water Systems
 - Cutting Compressed Air Costs and Improving Efficiency
 - Steam and Boiler Efficiency
 - Advanced Controls for Energy Efficiency of Aging HVAC Systems
 - Data Closet/Data Center Optimization for Efficiency
- Virtual and in-person events are being planned for 2023

Ohio EETM Contact

Melisa Adrien

Development Education and Outreach Program Coordinator

431 Ohio Pike Suite 203-N, Cincinnati, Ohio 45255

(513) 474-4870 ext. 208 | madrien@graphet.com