



#### NASEO State Industrial Working Group Webinar: Assisting Manufacturing – Focus on Pennsylvania January 27, 2025, 3:00 pm ET

Welcome and Introduction to NASEO Industrial Working Group

Rodney Sobin, Senior Fellow, NASEO

Pennsylvania's Industrial Sector and PA State Energy Office Efforts to Provide TA

Michelle Ferguson, Energy Program Specialist, PA Dept. of Environmental Protection – Energy

Program Office

Reducing Industrial Sector Emissions in Pennsylvania (RISE PA) Grant Program Overview Louie Krak, RISE PA Director, PA Dept. of Environmental Protection

Pennsylvania Technical Assistance Program (PennTAP) Programs Overview *Alanna Colvin, Associate Director – Programming, PennTAP* 

**Q&A** and Open Discussion







#### NASEO State Industrial Working Group Webinar: Assisting Manufacturing – Focus on Pennsylvania January 27, 2025, 3:00 pm ET

#### Logistics:

- Please mute when not speaking.
- Please use Q&A box or chat to offer questions.
- Slides and recording will be posted.

### **+ NASEO State Industrial Working Group**

https://www.naseo.org/naseo-state-industrial-working-group

- Help State Energy Offices and others to identify, develop, and enhance resources to advance clean manufacturing/industry.
- Enhance cooperation and coordination across technical and business assistance programs.
- Support economic development and productivity, emissions and environmental, and energy reliability and resilience objectives.
- Strengthen existing industries.
- Advance new technologies and industries.

Thank you to the U.S. DOE and its Industrial Efficiency and Decarbonization Office (IEDO) for generous support.

Inquiries: <a href="mailto:industry@naseo.org">industry@naseo.org</a>

## **+ NASEO State Industrial Working Group**

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Working Group

California North Carolina

Colorado Pennsylvania

Connecticut South Carolina

Georgia Tennessee

Indiana Texas

Kentucky Utah

Maine Virginia

Michigan Washington

Mississippi Wisconsin

New York

State Energy Offices and others (TA programs, Economic Development Agencies/Authorities)

Inquiries: industry@naseo.org

### **NASEO State Industrial Working Group**

https://www.naseo.org/naseo-state-industrial-working-group

- Web resources and e-mail updates
  - Technical and business assistance programs
  - Funding and financial provisions
  - Reports, studies, tools, organizations
  - Events
- New/Recent items
  - NASEO, <u>Manufacturing and Energy: Advancing Productivity, Prosperity, and the Environment An</u>
     Overview of Industrial Technical Assistance for State and Territory Energy Offices
  - DOE, <u>Transformative Pathways for U.S. Industry: Unlocking American Innovation</u>
  - Industrial Heat Pump Alliance, Industrial Heat Pump Economics in the United States, January 16 webinar recording is available.
  - Renewable Thermal Collaborative, <u>Utility Engagement Playbook for Industrial Customers</u>
  - Thermal Battery Alliance <a href="https://www.thermalbatteryalliance.com/">https://www.thermalbatteryalliance.com/</a>
  - DOE <u>announces</u> \$13M to Incentivize Smart Manufacturing in Small- and Medium-Sized Manufacturers (SMMs)
  - DOE announced more than \$136 million for 66 selected projects to support transformational industrial technology R&D



#### NASEO, <u>Manufacturing and Energy: Advancing Productivity</u>, <u>Prosperity</u>, and the Environment - *An Overview of Industrial* <u>Technical Assistance for State and Territory Energy Offices</u>

- Importance of Manufacturing National and State
  - Box: State Manufacturing Data Sources
  - Box: Clean Manufacturing Clean Energy Manufacturing
- State Energy Office Interests and Roles
  - Planning, policy, financial support, tech and business assistance
- Technical Assistance Programs and Resources
  - Descriptions and Links
- State Examples
  - CA: Advancing Energy Tech Innovation
  - CT: Chief Manufacturing Officer concierge and collaboration
  - ME: Industrial Innovation Task Force
  - PA: PennTAP and collaboration across programs
  - TX: Texas Industrial Energy Efficiency Program and Network
  - UT: Industrial Assessment Center State Energy Office collaboration







### **NASEO State Industrial Working Group**

https://www.naseo.org/naseo-state-industrial-working-group

- Forums (states only), webinars, events
  - Past
    - NASEO Industrial Working Groups Forum: Industrial Heat Electrification and Storage August 28, 2024
    - NASEO Response to DOE Request for Information on Transforming Industry Strategies for Decarbonization
    - NASEO-NARUC Grid-interactive Efficient Buildings (GEB) and NASEO Industrial Working Groups Joint Forum: Industrial Demand Flexibility - June 11, 2024
    - NASEO Midwest Regional Meeting (Indianapolis, IN, June 4-6, 2024), industrial session and Trane Technologies site visit.
    - NASEO Industrial Working Group Forum: State and Local Pollution Prevention Programs (P2) and Small Business Environmental Assistance Programs (SBEAP) February 21, 2024
  - Candidate future topics:
    - DOE, Transformative Pathways for U.S. Industry: Unlocking American Innovation
    - Manufacturing USA Institutes
    - Smart Manufacturing Leadership Program and Regional Smart Manufacturing Pilot Initiative
    - Revisit of ITACs expanded programs and workforce roles
    - Plus, State Focus Features
- State cases studies experiences, lessons

We welcome your feedback and suggestions! industry@naseo.org

## Pennsylvania Industrial Energy Assessment Program

Energy Programs Office 1/27/2025





## **DEP's EPO Purpose and Mission**

DEP's Energy Programs Office (EPO) supports energy policies and programs that prevent pollution, protect our environment, improve public health, and ensure access to affordable energy options for all Pennsylvanians.

Our shared approach to our mission focuses on:

- Conservation and Efficiency
- Advanced Energy Technologies
- Energy Security and Resiliency
- Education and Outreach
- Climate



## Pennsylvania's Energy History

Pennsylvania is home to the first commercially successful oil well, the Drake oil well, established in 1859.

PA contains the Marcellus shale formation, which is rich in natural gas and found beneath 60% of the state's total land mass

PA is the nation's second-largest natural gas producer after Texas, and since 2018, shale gas has been shipped via pipeline to surrounding states

PA is the third-largest coal-producing state after Wyoming and West Virginia and is the second-largest coal exporter after West Virginia.

In 2022, PA ranked second after Illinois in electricity generation from nuclear power.

PA exports approximately one third of electricity generation to surrounding states

Source: U.S. Energy Information Administration



## **State Climate Goals**

#### **Executive Order 2019 -1**

Commonwealth Leadership in Addressing Climate Change and Promoting Energy Conservation and Sustainable Governance

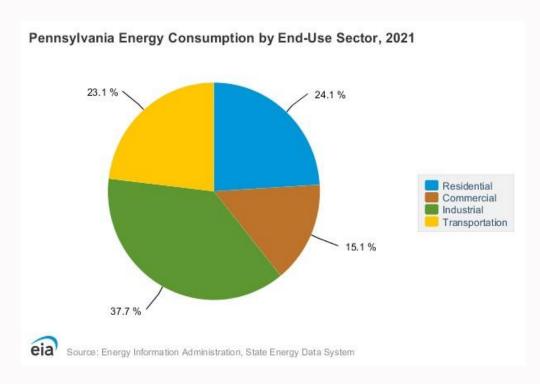
Set a statewide goal to reduce GHG emissions 26% by 2025, and 80% by 2050.

- Sets energy performance goals for state government (lead by example)
  - Energy Efficiency/Buildings
  - Electric Vehicles
  - Renewable Energy Procurement
- Established a Green Government Council
  - Multiple agencies jointly develop strategies to ensure state government meets these goals.



# Industrial Energy Use in PA

- >16,000 industrial facilities in Pennsylvania
- Largest energy consumer (by sector) in PA, industrial facilities account >37 % of Pennsylvania's energy use





## Importance of Industry to the PA Economy

- The industrial sector contributes \$116 billion to the State's economy.
- More than 550,000 people are employed in manufacturing in PA
- Manufacturing accounts for more than 10% of all jobs

Source: Pennsylvania Department of Community and Economic Development



## **Major Industrial Sub-Sectors**

Industrial Sub Sector	Annual Emissions (tons CO2e)	Maximum Emissions Reduction from Energy Improvements
Cement and Lime Production	4,272,108	25%
Chemical Manufacturing	2,971,240	30%
Glass Manufacturing	571,656	20%
Iron and Steel	6,612,619	20%
Oil and Gas	10,607,077	-
Petroleum Refining	3,621,766	38%
Pulp and Paper	1,881,527	15%
Underground Coal Mining	10,009,982	-

Based on the **EPA's FLIGHT tool** 



## **Utility Programs for Industrial**

- Pennsylvania currently has utility incentive programs through Act 129 of 2008, administered by the PA Public Utility Commission (PUC)
- Requires the 7 largest electric distribution companies (EDC's) to develop energy efficiency and conservation plans to reduce the amount of electricity consumed
- Examples of funded projects include: prescriptive and custom rebates, such as for lighting, HVAC, compressed air, and variable frequency drives, as well as incentives for the installation of audit-recommended measures

## Reducing Industrial Sector Emissions in Pennsylvania - RISE PA -









## Greenhouse Gas Emissions Reduction Projects

#### **Emissions sources**

- Industrial fossil fuel combustion
- Industrial process emissions
- On-site electricity usage
- Natural gas & oil systems
- Coal mining



#### **Eligible applicants**

- Manufacturers
- Industrial facilities
- Coal mine owners/operators
- Natural gas & oil systems owners/operators
- Other entities "As-a-service" companies



## **Eligible Projects**





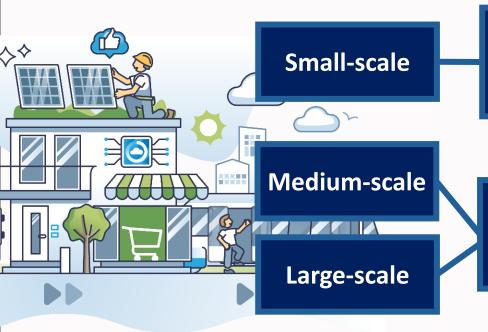
#### **Project Types**

- Energy efficiency
- Electrification
- Process emissions reduction
- Low-carbon fuels
- On-site renewable energy
- Carbon capture utilization and storage
- Fugitive emissions reductions
- Other technology



## **Award Tracks**





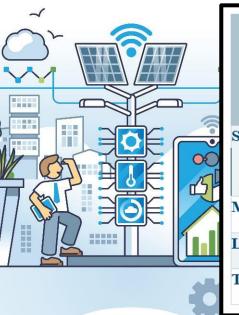
- Industrial manufacturing facility
- 500 or fewer employees
- Administered by PennTAP

- 20% facility-wide GHG emissions reduction
- Administered by DEP



## **Award Tracks**





Award Track	Total Available Funding	Base Grant Award Percentage (% of Total Project Cost)	Anticipated Minimum Single Base Grant Award (DEP Share)	Anticipated Maximum Single Base Grant Award (DEP Share) <sup>2</sup>
Small-scale (SAT)	\$40,000,000	50%	\$25,000	\$74,999
			\$75,000	\$149,999
			\$150,000	\$500,000
Medium-scale (MAT)	\$100,000,000	30%	\$300,000	\$20,000,000
Large-scale (LAT)	\$220,000,000	30%	\$20,000,001	\$110,000,000
Total	\$360,000,000			



## **Bonus Awards**





**Community Benefits Bonus** 



Fair Labor Bonus



GHG Reduction Bonus



## Community Benefits Bonus

#### **Community Benefits Plan**

- Define a Community Beneficiary
- Community Beneficiary informs plan development
- Provide community partnership documentation
- Commitment to develop Community Benefits Agreement (Large-scale projects only)
- Pursue one or more project tracks:
  - Improved environmental impacts
  - Economic security measures



## Fair Labor Bonus

#### **Three Components**

- 1. Good Neighbor Agreement
- 2. Collective Bargaining Commitments
- 3. Commonwealth Workforce Transformation Program

Small projects: Complete 1, 2, or 3

Medium-scale: Complete 2 of 3

Large-scale: Complete all 3



## **GHG Emissions Reduction Bonus**

GHG Emissions Reduction Percentage Range	Percentage of Total Project Cost
21-24%	2%
25-29%	4%
30-34%	6%
35-40%	8%
41%+	10%



## **Program Rollout**





## Reducing Industrial Sector Emissions in Pennsylvania (RISE PA)

#### **Timeline**

The Pennsylvania Department of Environmental Protection (DEP) will begin accepting project applications for RISE PA in early 2025. The application window will remain open with multiple rounds annually until all funds have been obligated. DEP will revise the program guidelines, materials, and application periodically in response to participant and community feedback.

**Early 2025** 

DEP anticipates beginning to accepting project applications

Mid 2025

Application review and selection anticipated to begin

Late 2029

RISE PA program funding projected to close



## Thank You



Louie Krak
DEP Energy Programs Office
400 Market St
Harrisburg, PA, 17101



#### For questions or comments, email RA-EP-CPRG@pa.gov

The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water resources and to provide for the health and safety of its residents and visitors, consistent with the rights and duties established under the Environmental Rights Amendment (Article 1, Section 27 of the Pennsylvania Constitution).





## Programs Overview

January 27, 2025



penntap.psu.edu

## **Our Mission**

To provide Pennsylvania companies with technical assistance and access to Penn State's talented faculty and students in order to solve business challenges.

Simultaneously, PennTAP provides Penn State faculty and students with opportunities to broaden their impact, expertise and experiences through engaged applications.









## **PennTAP Staff Expertise**

Our team has a combined 200 years of experience in areas custom-fit to serve PA manufacturers:

- Certified Energy Managers
- Professional Engineer
- **Certified Energy Auditor**
- **Certified Six Sigma Green Belts**
- Chemical & Electrical Engineers, Environmental **Scientists**
- Certified Water Efficiency Professional
- LEED Green Associate





































## PennTAP Impact - 2024

\$8.4M

2023\* economic benefits

975

individuals educated

115 client cases

34 counties

193 students engaged

44 jobs created/saved

4.94/5 Client Satisfaction





### **PennTAP Services Overview**





#### **Innovation**

- Pollution Prevention and Energy Efficiency Projects (P2/E2)
- Economy, Energy & **Environment Assessments (E3)**
- **Energy Management Systems** (EnMS)

- Engagement with Penn State Faculty, Students, Facilities
- Product and Process **Development**
- Technology Assessments
- Entrepreneurial Assistance







## **Custom Container** Solutions (CCS)

- Produces roll-off, hook lift, and front and rear load steel containers.
- Locations: Hadley and Milton, Pennsylvania
- Total employees: ~100











## RISE PA SAT Grant Program



penntap.psu.edu/rise-pa

**Small-scale Award Track** (SAT)

#### **Eligibility:**

#### Small to Mid-Sized Manufacturers (SMM)\*

- The site requesting funds must have manufacturing processes occurring at the assessed plant site
- Fewer than 500 employees at the plan site or manufacturing firm
- Project costs between \$50K and \$1M

\*Manufacturing is defined as an entity that engages in the mechanical, physical, or chemical transformation of materials, substances, or components. Eligible Applicants that are not SMMs cannot apply for the Small-scale Award Track (SAT), regardless of Total Project Cost (TPC). However, SMMs can apply to the Medium-scale Award Track (MAT) or Large-scale Award Track (LAT) if their Total Project Cost (TPC) exceeds \$1M.



### **SAT versus MAT & LAT**

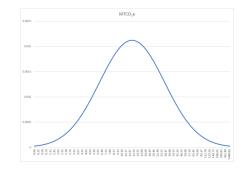
Award Track Selection	Small-scale Award	Medium-scale	Large-scale Award		
Award Track Selection	Track (SAT)	Award Track (MAT)	Track (LAT)		
Funding Available	\$40M	\$100M	\$220M		
Facility Employee Count	<500	>500	>500		
Total Project Cost	\$50,000 minimum	\$600,000 minimum	\$40M minimum		
	\$1M maximum	\$40M maximum	\$220M maximum		
Greenhouse Gas Emissions Reduction per Application	no minimum – competitiv ely reviewed	20% facility wide	20% facility wide		
Grant Cycles	4-month cycles	6-month cycles	6-month cycles		
Bonus Awards	Community Benefits & Fair Labor	Community Benefits, Fair Labor &	Community Benefits, Fair Labor &		
		GHG Reductions	GHG Reductions		
Grant Reimbursement	50-70%	30-60%	30-60%		
<b>Grant Administrator</b>	<u>PennTAP</u>	<u>PA DEP</u>	<u>PA DEP</u>		



### **Total Project Costs**

These tiers are intended to separate eligible projects to be competitively compared against similarly weighted GHG emission outcomes.

SAT Grant Tiers		Minimum Project Cost	Maximum Project Cost		
	Tier 1	\$50,000	\$149,999		
	Tier 2	\$150,000	\$499,999		
	Tier 3	\$500,000	\$1,000,000		





### **Application Requirements:**

- Project and Budget Information
- Technical Assessment Report
  - Completed by a Qualified Assessor
  - Project Description
  - Utility Bill Analysis
  - Energy Baseline
  - GHG Emissions Baseline
  - Project Savings: Cost, Energy, GHG, Simple Payback, Project/Equipment **Estimated Lifespan**
- Monitoring, Measurement, and Verification (MMV) Plan
- EPA's Simplified GHG Emissions Calculator





### **RISE PA: Sites Assessments**

SAT Applications require a comprehensive Technical Assessment Report that has been developed using the guidance and best practices of (but not limited to) ASHRAE 211: Standard for Commercial Building Energy Audits – Level II Audits; EPA's Guide to Industrial Assessments for Pollution Prevention and Energy Efficiency; ISO 50002; The Greenhouse Gas (GHG) Protocol; ISO 14064, ISO 14065 and/or ISO 14067.

The assessments do not need to be a holistic facility audit as defined by these standards, however, for the purposes of the RISE PA SAT program, the approach of these assessments must align with professional and industry standards, and include current energy usage; recommended potential improvements, their costs, and generally estimated equipment life; energy savings from these improvements; dollars saved per year; the GHG emissions and the potential reduction; and simple payback.



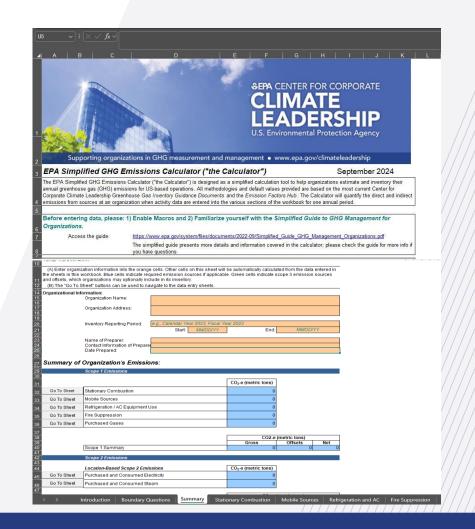
#### **EPA's Simplified GHG Emissions Calculator**

The Simplified GHG Emissions Calculator is a free tool that helps organizations estimate and inventory their annual greenhouse gas (GHG) emissions. It calculates scopes 1, 2, (and 3) emissions based on an organization's activity data for one annual period.

Macros: The Excel Version uses macros for navigation within the tool using the buttons and are safe to employ. To use the calculator, please ensure that macros are enabled:

- **Windows:** Navigate to the "Trust Center" in the "Options" menu, then select Trust Center Settings > Macro Settings > Enable VBA macros.
- Mac OS: Select "Enable macros" in the dialog box that appears when opening the file.

Users may also need to unblock macros to use the calculator by right clicking on the file and checking "Unblock" at the bottom of the General tab.











### **Contact Info**

Alanna Colvin
Pennsylvania Technical Assistance
Program (PennTAP)

afc5057@psu.edu



## Recommendations for an Assessment Program

- DEP hired a contractor in 2023 to provide a framework for an assessment program, best practices recommendations
- Five case studies were conducted, summarizing industrial assessment programs in California, Colorado, New York, Ohio, and Vermont. These case studies identified best practices and lessons learned for energy efficiency assessment programs.
- This report was used as a basis for DEP's RFP for industrial energy assessments



# Industrial Energy Assessments (IEA)

### **Project Status:**

- DEP issued an RFP in April 2024 for a contractor to administer an industrial energy assessment program.
- DEP received 5 proposals.
- A P.O. was issued to The Cadmus Group, LLC for ~\$2.37 Million on 9/3/24 (using DOE SEP-BIL funds).



## **IEA Program Goals**

- The program will consist of cost-shared industrial energy assessments (ASHRAE Level II audits).
- There will be a simple online application process.
- Facilities will be provided with recommendation reports and action plans.
- A total of 200 industrial facilities will be audited by April 30, 2028.



## **Additional IEA Program Goals**

- The contractor will assist facilities in identifying funding sources for project implementation.
- The contractor will also be providing followup surveys and verification to see what projects were implemented and creating success stories from various industrial sub sectors.
- Ultimately-energy savings and GHG reductions





## **Eligible Facilities for IEA Program**

- Small to mid-sized manufacturing facilities with <500 employees</li>
- Gross annual sales below \$100 million
- Within Standard Industrial Codes (SIC) 20-39
- No professional in-house staff to perform the assessment
- No open violations with DEP
- Over 7,000 manufacturers meet our eligibility criteria



### The IEA Team

**Contractor**: The Cadmus Group, LLC

### **Subcontractors**:

Energy Infrastructure Partners, LLC

**EMC Insights** 

**InClime** 

Penn State's College of Engineering

Lehigh University IAC (Industrial Assessment Center)



### Focus on EJ Areas

Entity Type	Facility Audit	Cost	Share	for	SEP-BIL Audit	Funding	for
Priority facility or area (EJ or disadvantaged, includes minority, veteran, disabled, or woman-owned business)	10%				90%		
Non-priority facility or area	25%				75%		

There will be a focus on marketing to, and conducting assessments for, the above priority facilities and areas. We are offering highly discounted ASHRAE Level II energy audits.



## **IEA Next Steps**

- Finalizing the application portal
- Finalizing an IEA website
- Marketing and recruitment of industrial facilities
- Program to launch early 2025



### **Get In Touch**

Michelle Ferguson
Energy Programs Office
208 West 3rd Street
Williamsport, PA 17701

570-327-3783 / miferguson@pa.gov

The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water resources and to provide for the health and safety of its residents and visitors, consistent with the rights and duties established under the Environmental Rights Amendment (Article 1, Section 27 of the Pennsylvania Constitution).