

# Exploring Industrial Decarbonization and Pollution Prevention - Overview of DOE and EPA Technical Assistance Services at UIC

ERC Speaker Series

March 27, 2024



# Energy Resources Center (ERC) Overview

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- **Interdisciplinary public service, research, and special projects organization** based out of UIC's College of Engineering
- **Established in 1973** as an **energy advisor** to the State of Illinois and City of Chicago, today operates as a **“fast response” team** of professionals and academia researchers
- Committed to **providing most comprehensive and up-to-date solutions** to the **energy and environmental problems** affecting industrial, commercial, institutional, and residential sectors



# Center Services and Core Research Areas

## ERC Services

Targeted Education

Technical Assistance

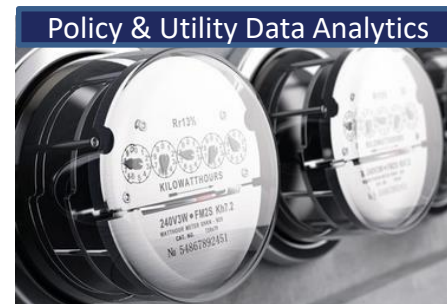
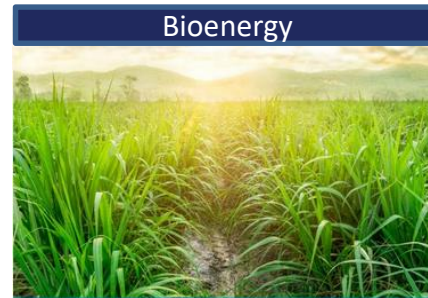
Academic Research

Policy Analysis

Workforce Development



## ERC Current Core Research Areas



# 2024 ERC Speaker Series Monthly Topics

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- **Wednesday, March 27 – Industrial Decarbonization and Pollution Prevention**
- **Wednesday, April 24 – Green Horizons: Collaborative Conservation Initiatives for Expanded Infrastructure along Energy & Transportation Rights-of-Way**
- **Wednesday, May 29 – Better Buildings Better Living**
- **Wednesday, June 26 – Wastewater**
- **Wednesday, July 31 – Aviation Fuels**
- **Wednesday, August 28 -- Empowering Marginalized Youth Through Environmental Education: Insights and Lessons Learned from the STEM Scholars Program**
- **Wednesday, September 25 – Public School Bus-to-Grid Assisted Resilient Microgrids**
- **Wednesday, October 16 – Utility Scale Solar Photovoltaics Co-located with Pollinator Vegetation**
- **Wednesday, November 20 – Onsite Energy Technical Assistance Partnership**



# Featured Topic and Presenters

**Title:** Exploring Industrial Decarbonization and Pollution Prevention - Overview of DOE Technical Assistance Services at UIC

**Agenda:**

1. Exploring Industrial Decarbonization *with the US DOE Industrial Decarbonization Roadmap*
2. Energy Efficiency *with the US DOE Industrial Assessment Center (DOE IAC)*
3. Industrial Pollution Prevention with US EPA P2 Program and Onsite Energy Technologies *with the US DOE Onsite Energy Technical Assistance Partnerships (DOE Onsite TAPs)*
4. Q&A



**Marcello Pibiri**  
Senior Research Engineer, Energy Resources Center  
University of Illinois Chicago



**Faaran Bangash**  
Research Engineer, Energy Resources Center  
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**Rashed Hossain**  
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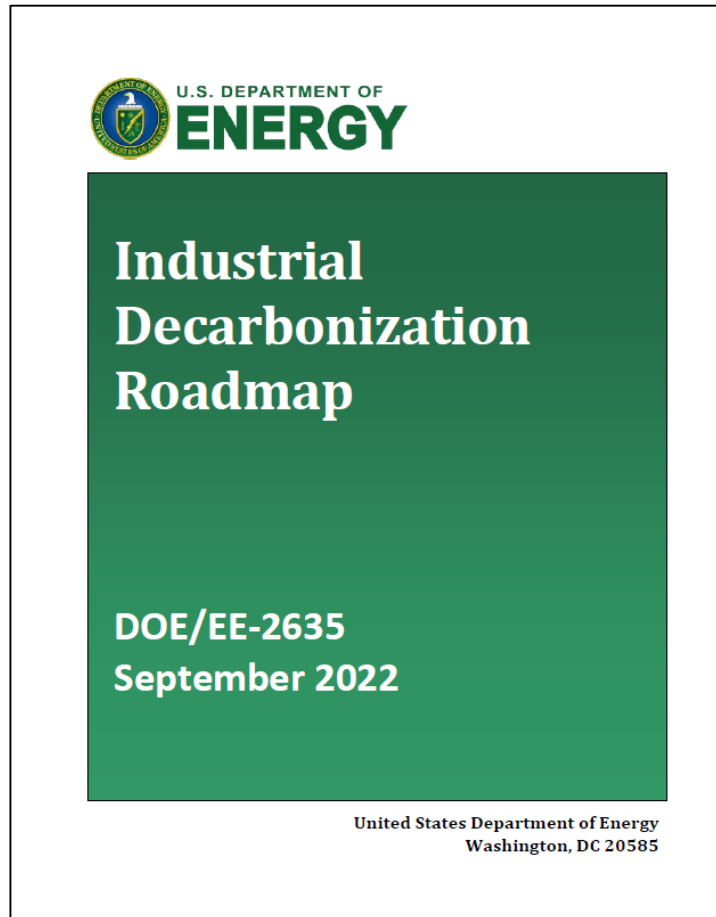


**Muhammad Talha Alam**  
Master Student, Energy Engineering  
University of Illinois Chicago



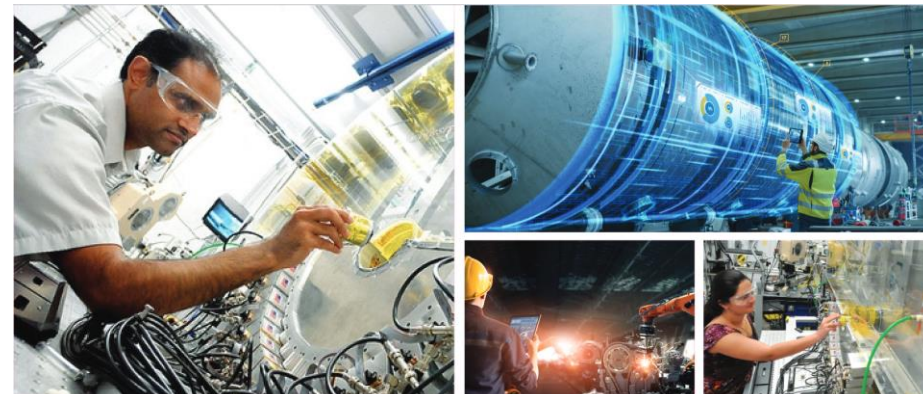
# Industrial Decarbonization

# U.S. DOE “Industrial Decarbonization Roadmap”



## Definition of Industrial Decarbonization:

Industrial decarbonization refers to the phasing out of atmospheric greenhouse gas (GHG) emissions from the industrial sector. Globally, the most important gases contributing to the GHG effect are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated gases. While emissions of all of these gases must be minimized to achieve U.S. industrial decarbonization, scenario modeling in this roadmap focuses primarily on energy-related CO<sub>2</sub> emissions attributable to industrial activity. In the United States, CO<sub>2</sub> emissions represent over 80% of U.S. manufacturing energy-related GHG emissions on a CO<sub>2</sub>-equivalent basis.



# U.S. Primary Energy-Related CO<sub>2</sub> Emissions by End Use Sector and Breakout by Industrial Subsector

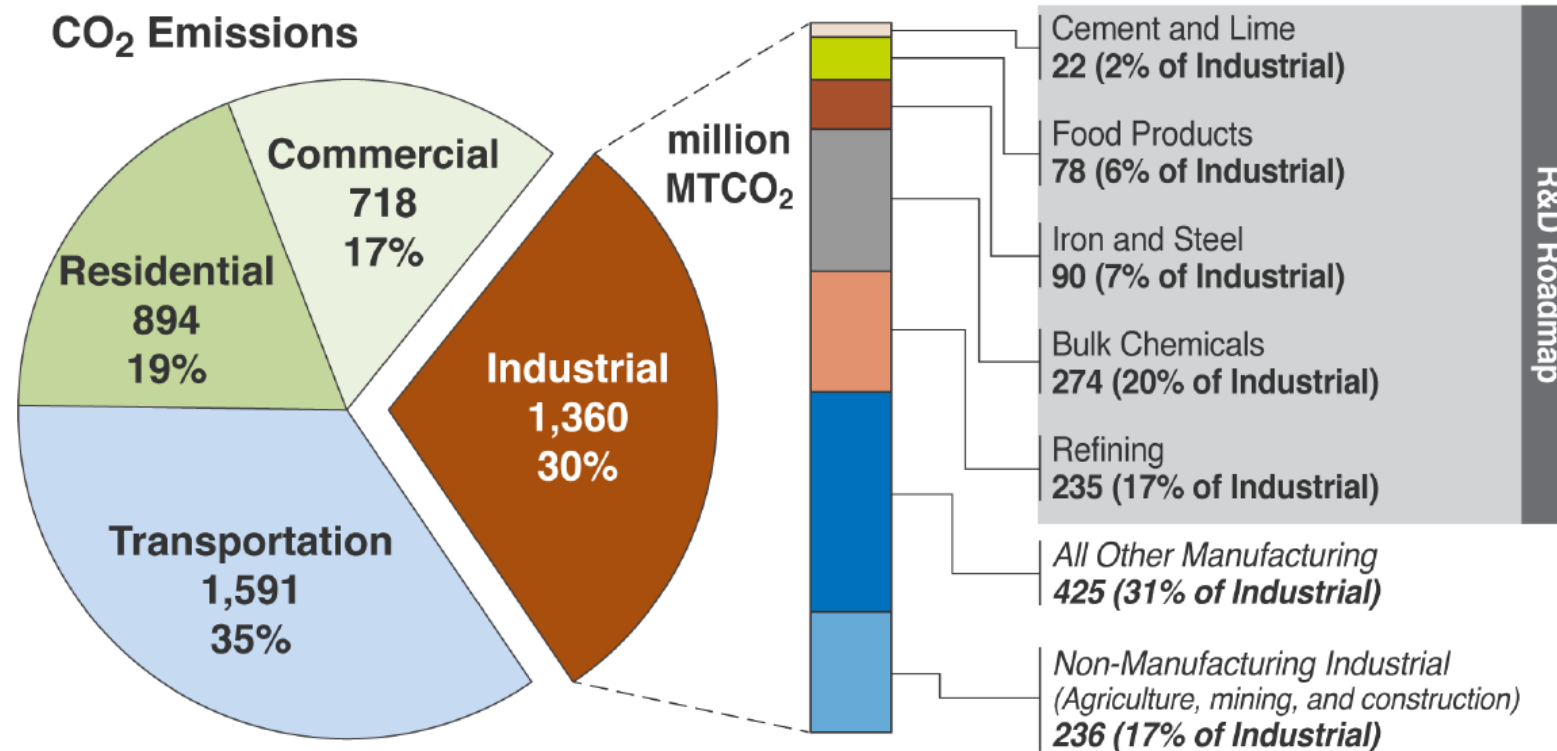


FIGURE 3. U.S. PRIMARY ENERGY-RELATED CO<sub>2</sub> EMISSIONS BY END USE SECTOR (LEFT PIE CHART) AND A BREAKOUT BY INDUSTRIAL SUBSECTOR (RIGHT STACKED CHART) IN 2020.



# Distribution of Process Heat Temperature Ranges by Industrial Subsector

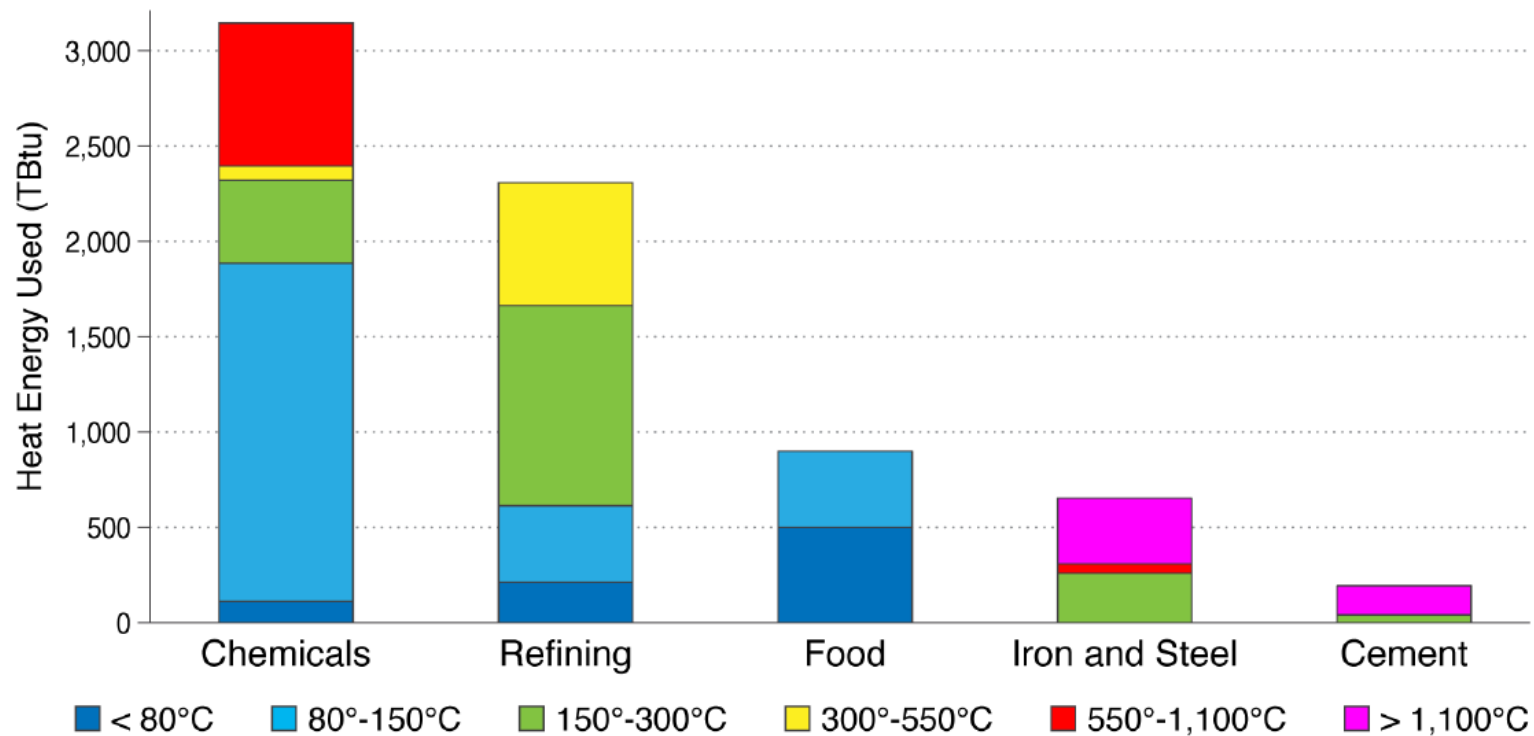


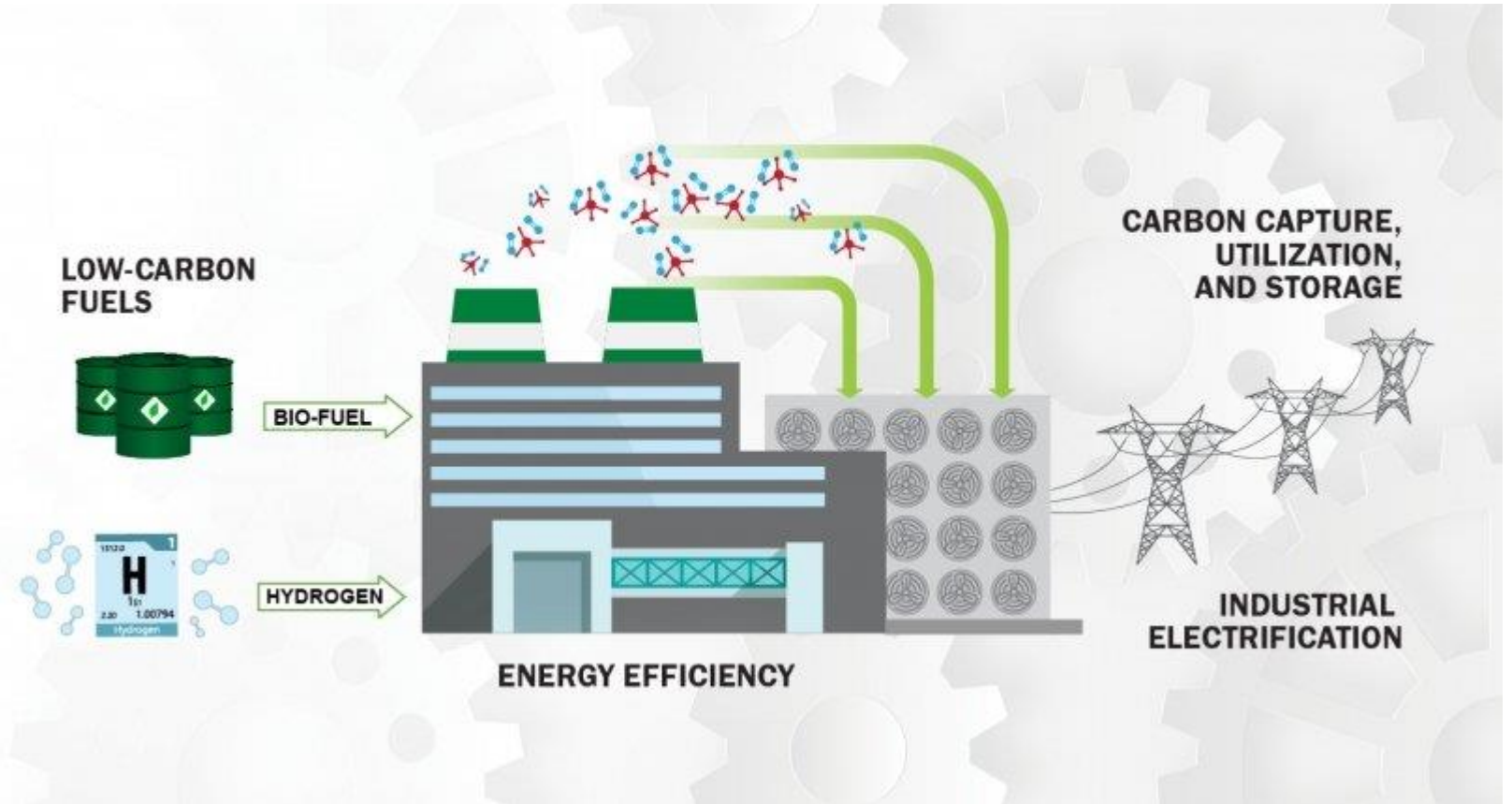
FIGURE 6. DISTRIBUTION OF PROCESS HEAT TEMPERATURE RANGES BY INDUSTRIAL SUBSECTOR IN 2014.

TEMPERATURE RANGES ARE IN °C AND HEAT USE IS IN TRILLION BTU (TBTU). DATA SOURCE: MCMILLAN 2019<sup>81</sup>

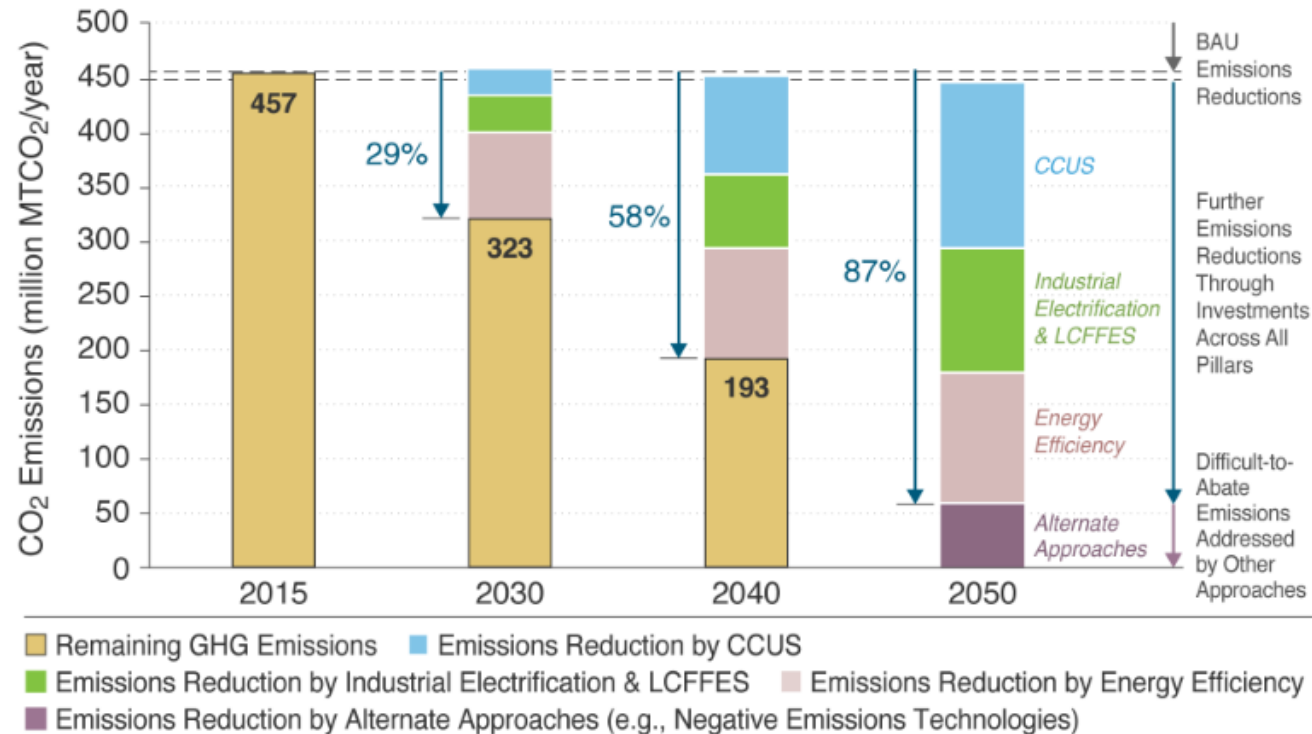
# Strategies for Decarbonizing U.S. Industries

The DOE Industrial Decarbonization Roadmap identifies 4 key technological pillars to significantly reduce emissions for these five subsectors studied. With the application of alternative approaches, 100% of annual CO<sub>2</sub> emissions could be mitigated.

1. Energy Efficiency
2. Industrial Electrification
3. Low-Carbon Fuels, Feedstocks, and Energy Sources (LCFFES)
4. Carbon Capture, Utilization, and Storage (CCUS)



# Path to Net-Zero Industrial CO<sub>2</sub> Emissions in U.S. for 5 Carbon-Intensive Industrial Subsectors



**FIGURE ES 1. THE PATH TO NET-ZERO INDUSTRIAL CO<sub>2</sub> EMISSIONS IN THE UNITED STATES FOR FIVE CARBON-INTENSIVE INDUSTRIAL SUBSECTORS, WITH CONTRIBUTIONS FROM EACH DECARBONIZATION PILLAR: ENERGY EFFICIENCY; INDUSTRIAL ELECTRIFICATION; INDUSTRIAL ELECTRIFICATION; LOW-CARBON FUELS, FEEDSTOCKS, AND ENERGY SOURCES (LCFFES); AND CARBON CAPTURE, UTILIZATION, AND STORAGE (CCUS)). EMISSIONS ARE IN MILLIONS OF METRIC TONS (MT) PER YEAR.**

# Landscape of Major RD&D Investment Opportunities for Industrial Decarbonization across All Subsectors by Decade & Decarbonization Pillar

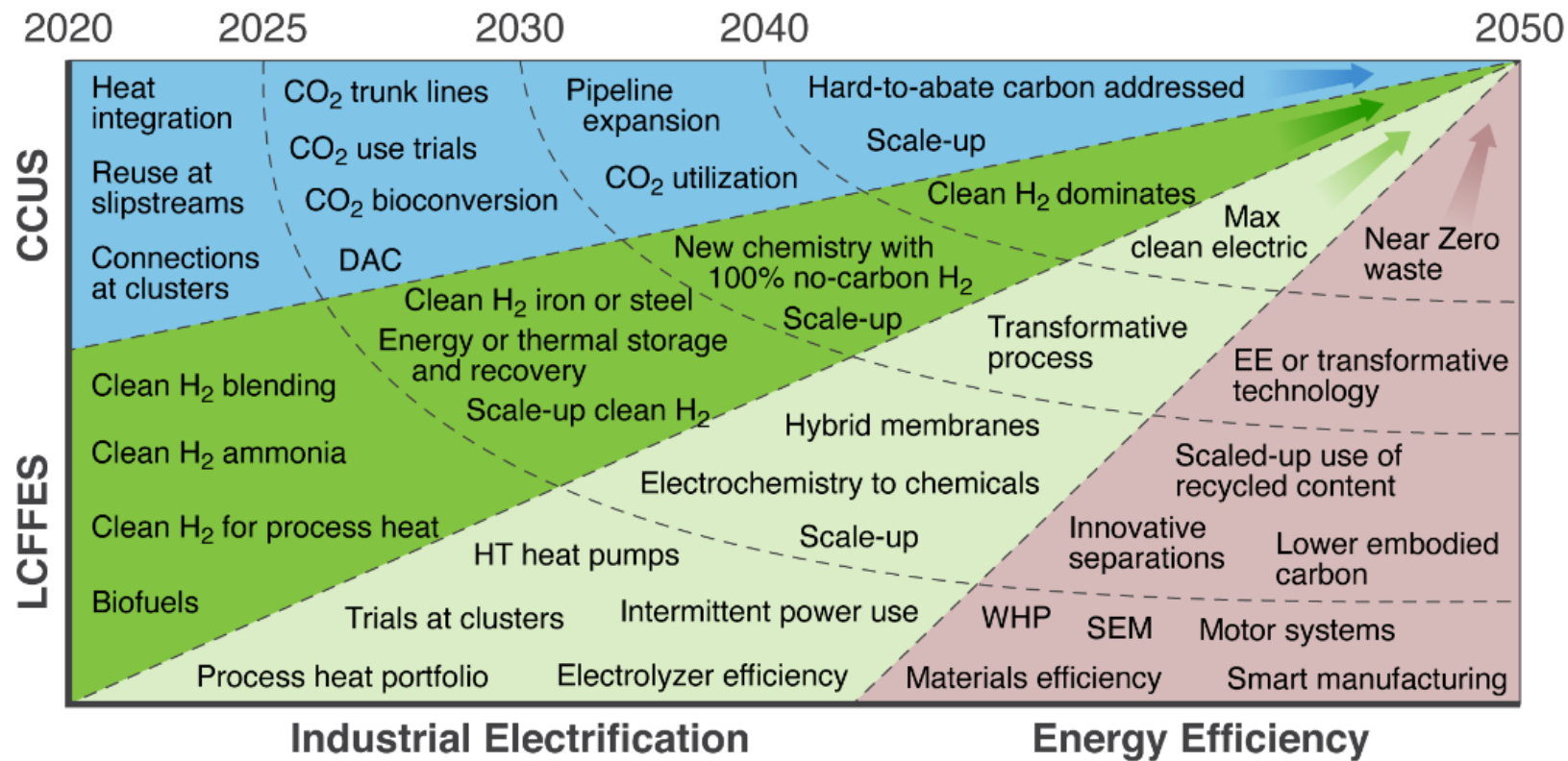


FIGURE 10. LANDSCAPE OF MAJOR RD&D INVESTMENT OPPORTUNITIES FOR INDUSTRIAL DECARBONIZATION ACROSS ALL SUBSECTORS BY DECADE AND DECARBONIZATION PILLAR.

# Landscape of DOE Office Activities Across the Four (4) Decarbonization Pillars to Achieve Net-Zero Emissions by 2050

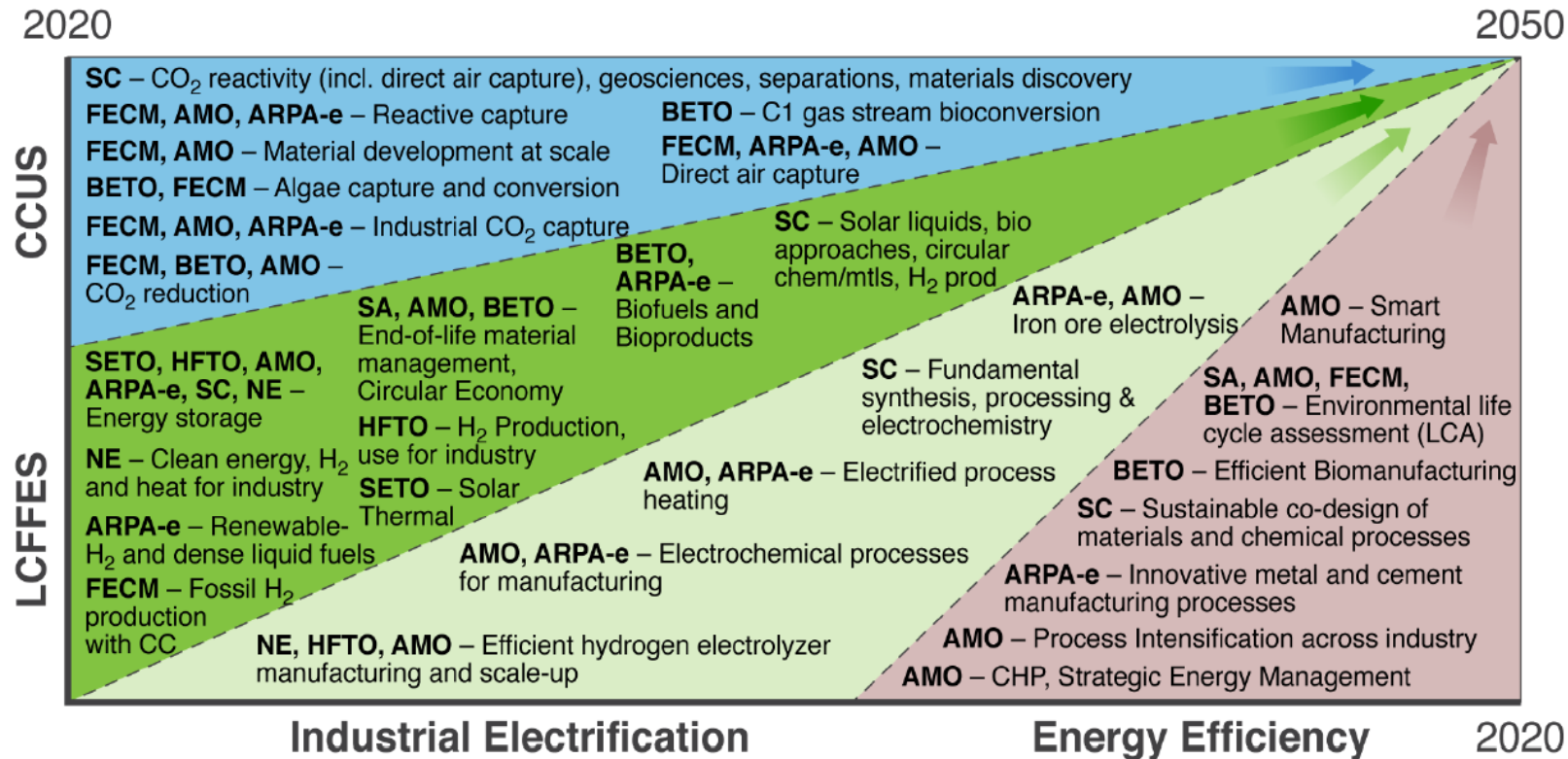


FIGURE 59. LANDSCAPE OF DOE OFFICE ACTIVITIES ACROSS THE FOUR DECARBONIZATION PILLARS TO ACHIEVE NET-ZERO EMISSIONS BY 2050.

AMO: ADVANCED MANUFACTURING OFFICE; ARPA-E: ADVANCED RESEARCH PROJECTS AGENCY – ENERGY; BETO: BIOENERGY TECHNOLOGIES OFFICE; FECM: OFFICE OF FOSSIL ENERGY AND CARBON MANAGEMENT; HFTO: HYDROGEN AND FUEL CELL TECHNOLOGIES OFFICE; NE: OFFICE OF NUCLEAR ENERGY; SA: EERE STRATEGY ANALYSIS; SC: OFFICE OF SCIENCE; SETO: SOLAR ENERGY TECHNOLOGIES OFFICE.



# UIC's No-Cost Technical Assistance Resource Programs

# US Department of Energy Industrial Assessment Centers (IACs)

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- Established by the US Department of Energy in 1976
- One of the US DOE's longest ongoing programs
- Serves small and medium sized US manufacturers and medium to large wastewater treatment plants nationwide
- Teams of university-based faculty and student engineers (trained 3,300+ students to date)



# The US Department of Energy Industrial Assessment Centers (IACs) Goals

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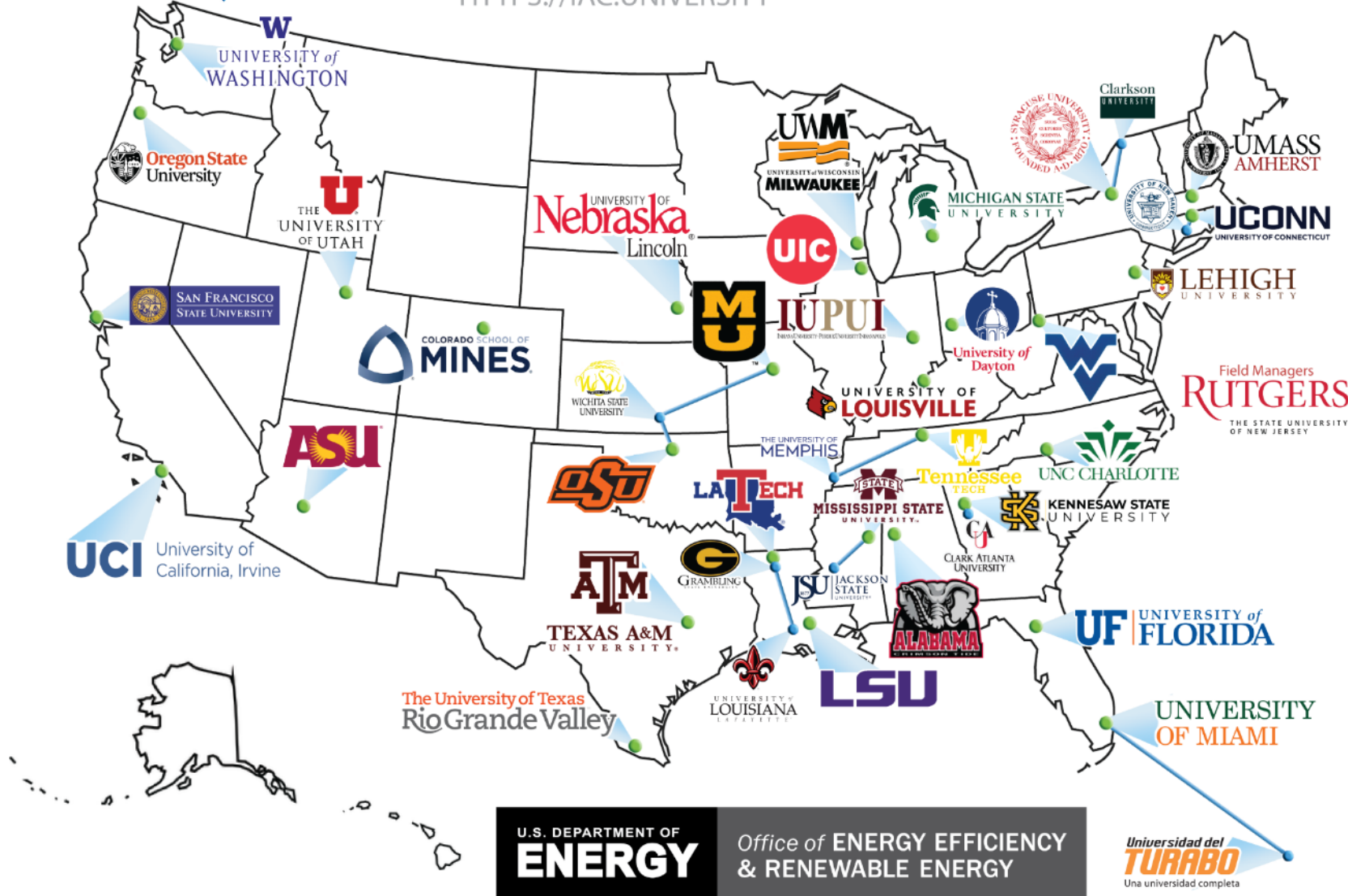
Three main goals of the IAC Program:

1. Assessments – Provide no-cost in-depth evaluations of a facility which will include baseline energy analysis, a walkthrough of the facility, and a full list of identified measures including savings, possible incentive funding, and economic analysis
2. Workforce Development – IACs are used to train the next-generation of energy savvy engineers, more than 60% of which pursue energy-related careers upon graduation.
3. Research – Conduct research on cutting edge technologies to constantly refine the assessment process and identify new potential methods of cost effective energy reduction.



# Industrial Assessment Centers 2022-2026

[HTTPS://IAC.UNIVERSITY](https://iac.university)



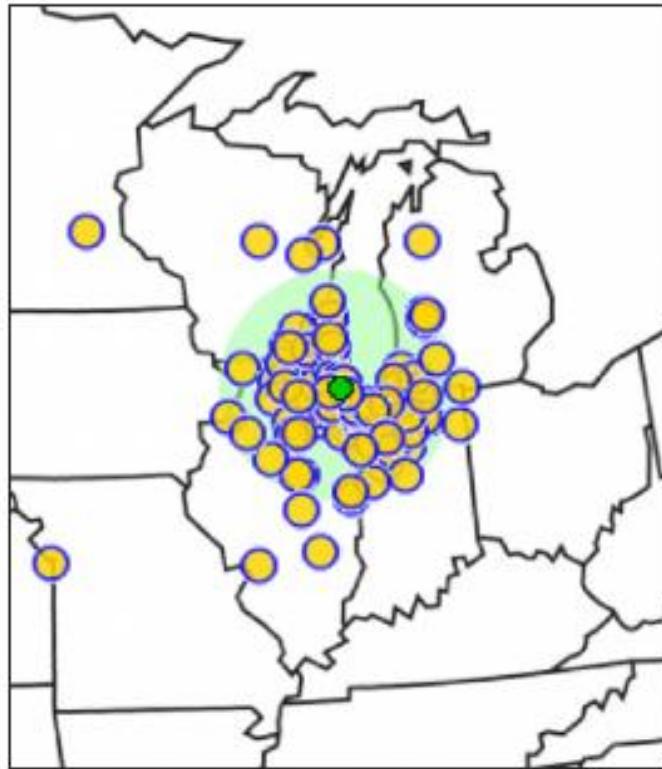
The IAC program has already conducted over **21,190** assessments with more than **157,901** associated recommendations. Average recommended yearly savings is **\$139,906** (as of 3/15/24).

# IAC Covers All Manufacturing Sectors

## IAC Assessments cover ALL manufacturing sectors

NAICS	Asmts	NAICS	Asmts	NAICS	Asmts
311	1084	322	349	332	1209
Food Manufacturing		Paper Manufacturing		Fabricated Metal Product Manufacturing	
312	249	323	229	333	728
Beverage and Tobacco Product Manufacturing		Printing and Related Support Activities		Machinery Manufacturing	
313	118	324	107	334	330
Textile Mills		Petroleum and Coal Products Manufacturing		Computer and Electronic Product Manufacturing	
314	64	325	617	335	241
Textile Product Mills		Chemical Manufacturing		Electrical Equipment, Appliance, and Component Manufacturing	
315	50	326	905	336	767
Apparel Manufacturing		Plastics and Rubber Products Manufacturing		Transportation Equipment Manufacturing	
316	9	327	323	337	212
Leather and Allied Product Manufacturing		Nonmetallic Mineral Product Manufacturing		Furniture and Related Product Manufacturing	
321	409	331	505	339	299
Wood Product Manufacturing		Primary Metal Manufacturing		Miscellaneous Manufacturing	
322	349	332	1209		
Paper Manufacturing		Fabricated Metal Product Manufacturing			
323	229	333	728		
Printing and Related Support Activities		Machinery Manufacturing			
324	107	334	330		
Petroleum and Coal Products Manufacturing		Computer and Electronic Product Manufacturing			

# IAC Impact: Recommendations and Implementation



294 Assessments

2,285 Recommendations

3.85 Tbtu Energy  
Saving\*

\$57.78 million Cost  
Savings\*

159 Students Trained

*\*Recommended Savings*

# IAC Eligibility Requirements

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- Within Standard Industrial Codes (SIC) 2000-3999
- Located less than 150 miles of a participating university
- Gross annual (site) sales below \$350 million
- Fewer than 500 employees at the plant site
- Annual energy bills more than \$100,000 and less than \$3.5 million
- No professional in-house staff to perform assessments

## **Eligibility for Water and Wastewater Treatment Facilities**

- Water treatment plant  
>5 MGD
- Wastewater treatment plant  
>2 MGD
- Annual energy bills between  
\$250,000 and \$3.5 million

# Assessment Overview, Procedure, and Timeline

After a facility applies and is approved for an IAC assessment, the IAC will request records of 12 months of utility bills for analysis.

During the assessment, the IAC team will meet with the client, tour the facility, search for energy and environmental savings opportunities, and discuss initial findings with client.

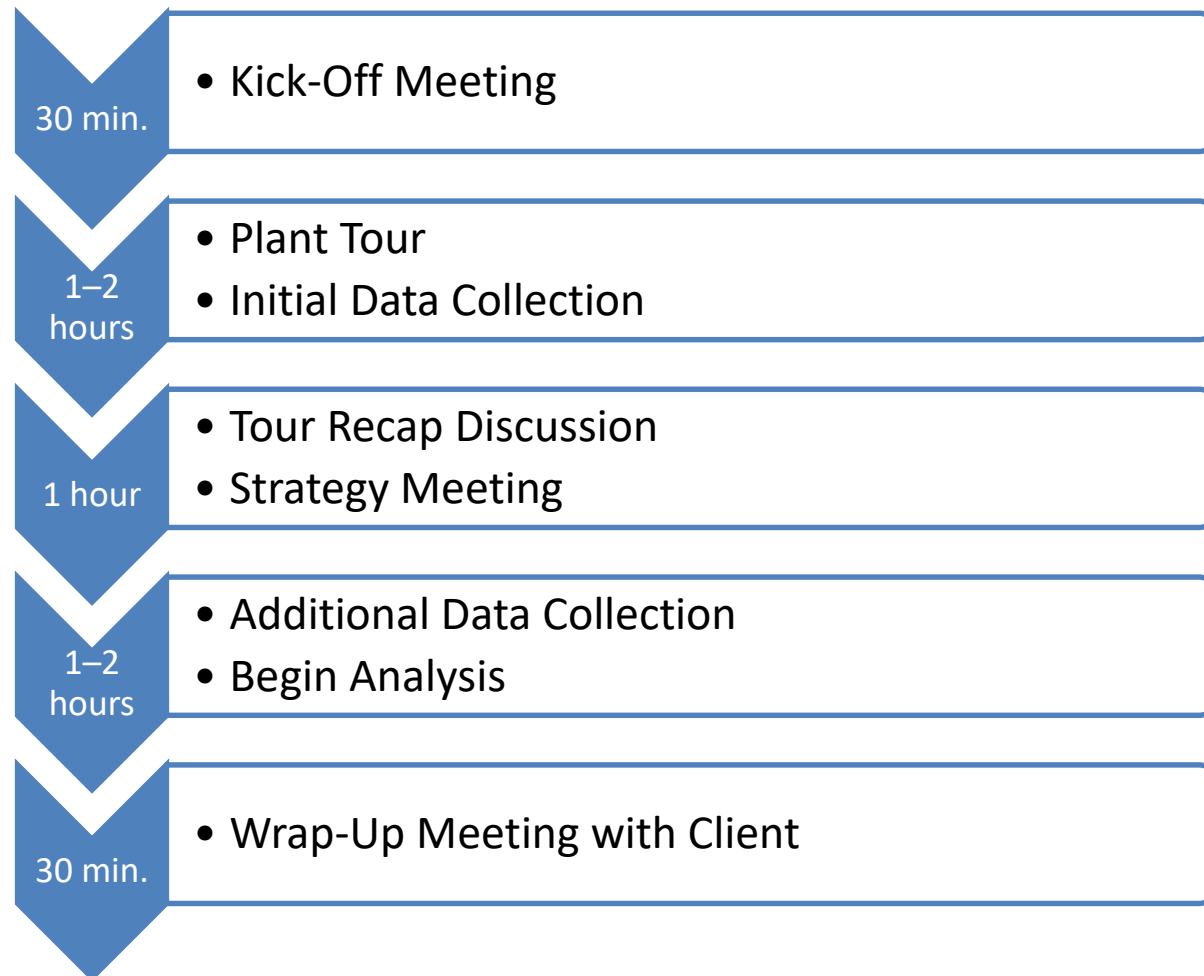
About 6-9 months after the report is delivered, the IAC will follow up with an implementation survey to help measure the success of the IAC assessment the effectiveness of the measures.



During the pre-assessment (e.g. zoom meeting 3-5 business prior to the assessment), the IAC team will present information on the facility's energy usage and interview the client on goals, needs, processes, and equipment.

The IAC team will use information collected on the site visit to formulate a report with recommendations for savings opportunities. A report will be delivered within 2 months of the site visit.

# IAC Site Visit Overview



# IAC Assessment Overview: Site Visits

## Site Visit Focus

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- Steam / Hot Water Systems (Boilers, Steam Traps)
- Compressed Air Systems (Compressors, Air Leaks, Storage, End Uses)
- Process Heating / Process Cooling (Ovens, Chillers, Cooling Towers)
- Large Motors and Pumps
- HVAC Equipment
- Lighting
- Other Process Equipment
- Cybersecurity



# IAC Assessment Overview: Report

## Report Highlights

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- Client will be delivered a detailed report within 60 days of the site visit
- Includes full utility analysis, electric / natural gas usage profiles, and equipment list found in pre-assessment report
- Recommendations on energy efficiency, waste reduction, and productivity improvement, including cost savings and economics
- The report will include information on utility incentive programs where applicable to make sure the client is aware of them
- All reports are confidential





# IAC Assessment Overview: Follow-Up

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- The client will always be offered a follow up meeting after delivery to discuss the report findings and answer any questions
- In 6 to 9 months, the IAC will follow up with a phone call to see if the company has implemented or initiated plans to implement any of the recommended measures

# IAC Example Assessment

IAC Center	University of Illinois, Chicago
Assessment Year	2018
Principal Product	Rubber Hose Manufacturing
NAICS	<b>326299</b> - All Other Rubber Product Manufacturing
SIC	<b>3061</b> - Mechanical Rubber Goods
Sales	\$100,000,000-\$500,000,000
# of Employees	550
Plant Area (Sq.Ft.)	250,000
Annual Production	9,960 <i>Tons</i>
Production Hrs. Annual	8,760
Location (State)	MI

Source	Yearly Cost	Usage	Unit	Unit Cost
Electricity Usage	\$876,317	13,903,105	kWh	\$0.06
Electricity Demand	\$12,320	2,504	kW-months/year	\$4.92
Natural Gas	\$421,797	100,986	MMBtu	\$4.18
<b>TOTAL ENERGY COSTS</b>	<b>\$1,607,291</b>			
<b>RECOMMENDED SAVINGS*</b>	<b>\$430,333</b>		*Non-energy impacts included in savings.	
<b>IMPLEMENTED SAVINGS*</b>	<b>\$430,333</b>		See recommendations below	

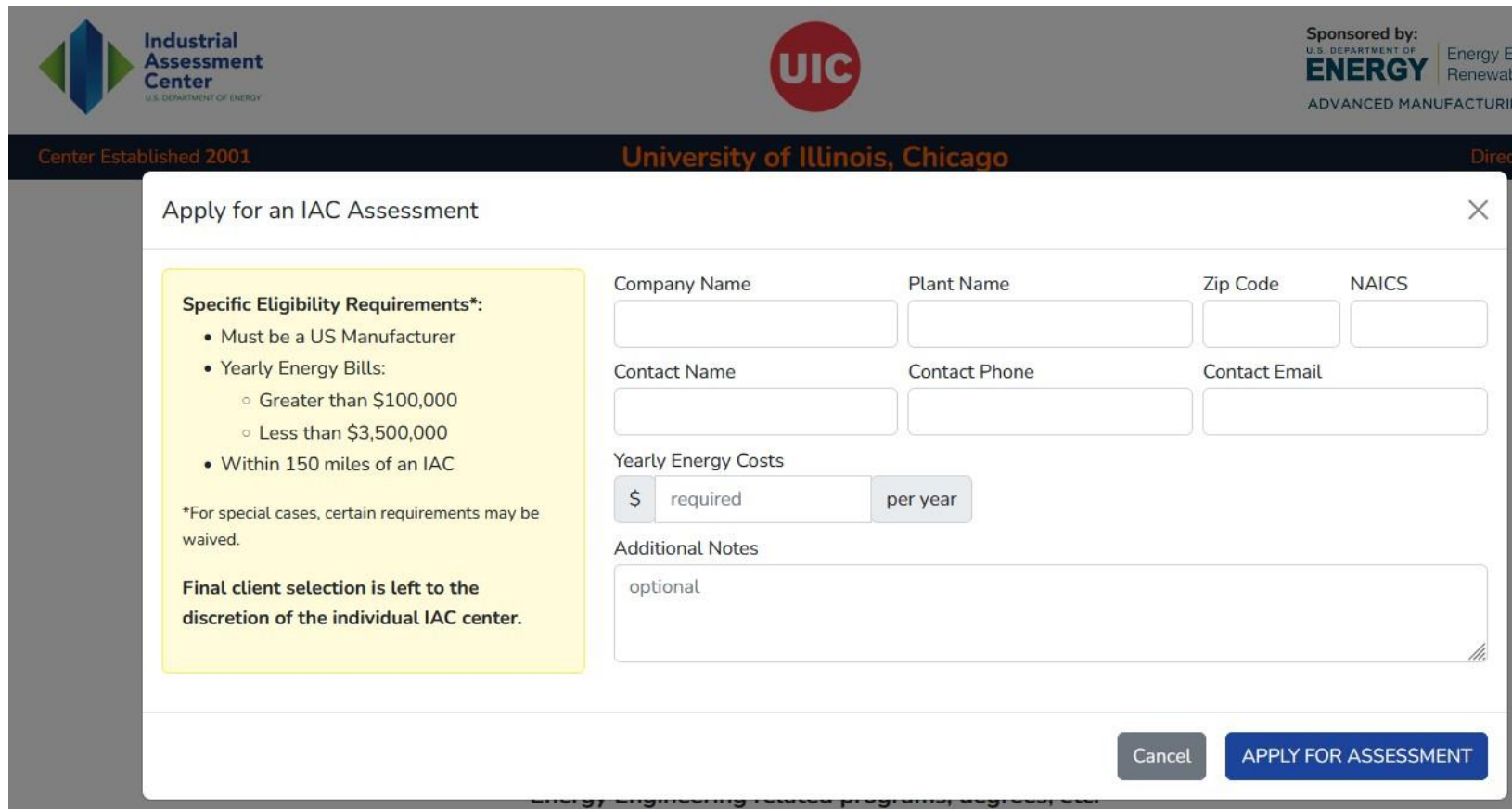
# IAC Example Assessment (cont.)

# Description	Savings Cost	Status	Electricity Usage		Electricity Demand		Natural Gas		Water Usage		Water Disposal	
			\$	kWh	\$	kW- months/year	\$	MMBtu	\$	Tgal	\$	Tgal
01: 2.2414 USE WASTE HEAT FROM HOT FLUE GASES TO PREHEAT	\$71,958 \$100,000	✓	-	-	-	-	\$71,958	17,215	-	-	-	-
02: 3.3111 ADJUST PH FOR NEUTRALIZATION	\$132,488 \$180,000	✓	-	-	-	-	-	-	\$32,284	31,363	\$100,204	31,363
03: 2.1224 REPLACE BOILER	\$97,199 \$211,342	✓	-	-	-	-	\$97,199	23,253	-	-	-	-
04: 3.4156 USE FLOW CONTROL VALVES ON EQUIPMENT TO OPTIMIZE WATER USE	\$71,357 \$8,712	✓	-	-	-	-	-	-	\$17,388	16,892	\$53,969	16,892
05: 2.6218 TURN OFF EQUIPMENT WHEN NOT IN USE	\$21,223 -	✓	\$21,223	303,191	-	-	-	-	-	-	-	-
06: 2.4133 USE MOST EFFICIENT TYPE OF ELECTRIC MOTORS	\$36,108 \$187,206	✓	\$22,116	315,934	\$13,992	2,844	-	-	-	-	-	-
<b>TOTAL RECOMMENDED</b>	<b>\$430,333</b> <b>\$687,260</b>		\$43,339	619,125	\$13,992	2,844	\$169,157	40,468	\$49,672	48,255	\$154,173	48,255
<b>TOTAL IMPLEMENTED</b>	<b>\$430,333</b> <b>\$687,260</b>		\$43,339	619,125	\$13,992	2,844	\$169,157	40,468	\$49,672	48,255	\$154,173	48,255
	Savings Cost		\$	kWh	\$	kW- months/year	\$	MMBtu	\$	Tgal	\$	Tgal
			Electricity Usage		Electricity Demand		Natural Gas		Water Usage		Water Disposal	

# IAC Teams



# IAC Assessment: How to Apply?



The screenshot shows a web form titled "Apply for an IAC Assessment" with the following fields and sections:

- Specific Eligibility Requirements\*:**
  - Must be a US Manufacturer
  - Yearly Energy Bills:
    - Greater than \$100,000
    - Less than \$3,500,000
  - Within 150 miles of an IAC

\*For special cases, certain requirements may be waived.

**Final client selection is left to the discretion of the individual IAC center.**
- Company Name** (text input)
- Plant Name** (text input)
- Zip Code** (text input)
- NAICS** (text input)
- Contact Name** (text input)
- Contact Phone** (text input)
- Contact Email** (text input)
- Yearly Energy Costs** (text input with a "\$" icon and a "per year" dropdown menu)
- Additional Notes** (text area with "optional" placeholder)

Buttons at the bottom: "Cancel" and "APPLY FOR ASSESSMENT".

Apply at the website:  
<https://iac.university/>

or reach out directly to:

Cliff Haefke  
[chaefk1@uic.edu](mailto:chaefk1@uic.edu)

or

Faaran Bangash  
[fbanga2@uic.edu](mailto:fbanga2@uic.edu)

# \$300k DOE Implementation Grant Funding



**\$80M in funding** available through FY 2026  
(Additional funding available in the next couple years depending on demand)



Grants awards of up to **\$300,000 per manufacturer**, at a 50% cost share<sup>1</sup>;  
Criteria: 50% impact/feasibility; 25% financial need + cost share; 25% community benefits



Eligibility exclusively for **small- and medium-sized manufacturing firms**,<sup>2</sup> water treatment facilities, and Controlled Environment Agriculture (CEA) facilities



To **address energy assessment recommendations** by IACs, DOE Combined Heat and Power/Onsite Energy Technical Assistance Partnerships, or other third-party assessors deemed equivalent by DOE

To learn more about the grants program, including FAQs and how to apply, visit  
<https://www.energywerx.org/opportunities/iacimplementationgrants>

# Onsite Energy Technical Assistance Partnerships (TAPs)

DOE's 10 regional Onsite Energy TAPs provide technical assistance to end users and other stakeholders about technology options for achieving clean energy objectives. Key services include:



**Technical Assistance:** Screen sites for opportunities to implement onsite energy technologies and provide advanced services to maximize economic impact and reduce risk from initial screening to installation to operation and maintenance.



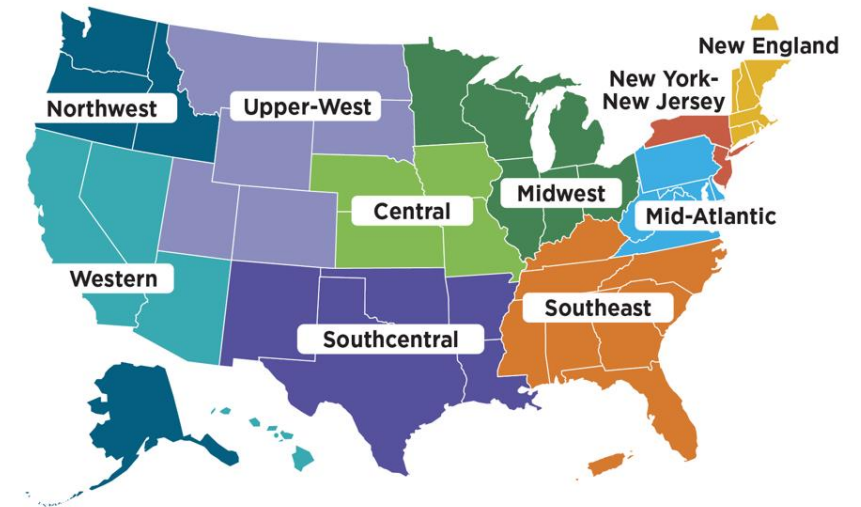
**End-User Engagement:** Partner with organizations representing industrial and other large energy users to advance onsite energy as a cost-effective way to transition to a clean energy economy.



**Stakeholder Engagement:** Engage with strategic stakeholders, including utilities and policymakers, to identify and reduce barriers to onsite energy through fact-based, unbiased education.



**Onsite Energy Technical Assistance Partnerships**  
U.S. DEPARTMENT OF ENERGY



<https://betterbuildingsolutioncenter.energy.gov/onsite-energy/taps>

# Onsite Energy Program

The U.S. Department of Energy's (DOE) Onsite Energy Program provides technical assistance, market analysis, and best practices to help industrial facilities and other large energy users increase the adoption of onsite clean energy technologies.

battery storage | combined heat and power | district energy | geothermal | industrial heat pumps |  
renewable fuels | solar PV | solar thermal | thermal storage | wind





# Pollution Prevention (P2) Technical Assistance Program

The goal of the program is to provide technical and educational assistance to around 10 small to medium industrial plants in some of Chicago's underserved communities each year. UIC-ERC, in partnership with the City of Chicago, will help facilities find and achieve energy and cost savings, emissions reduction, and waste reduction.

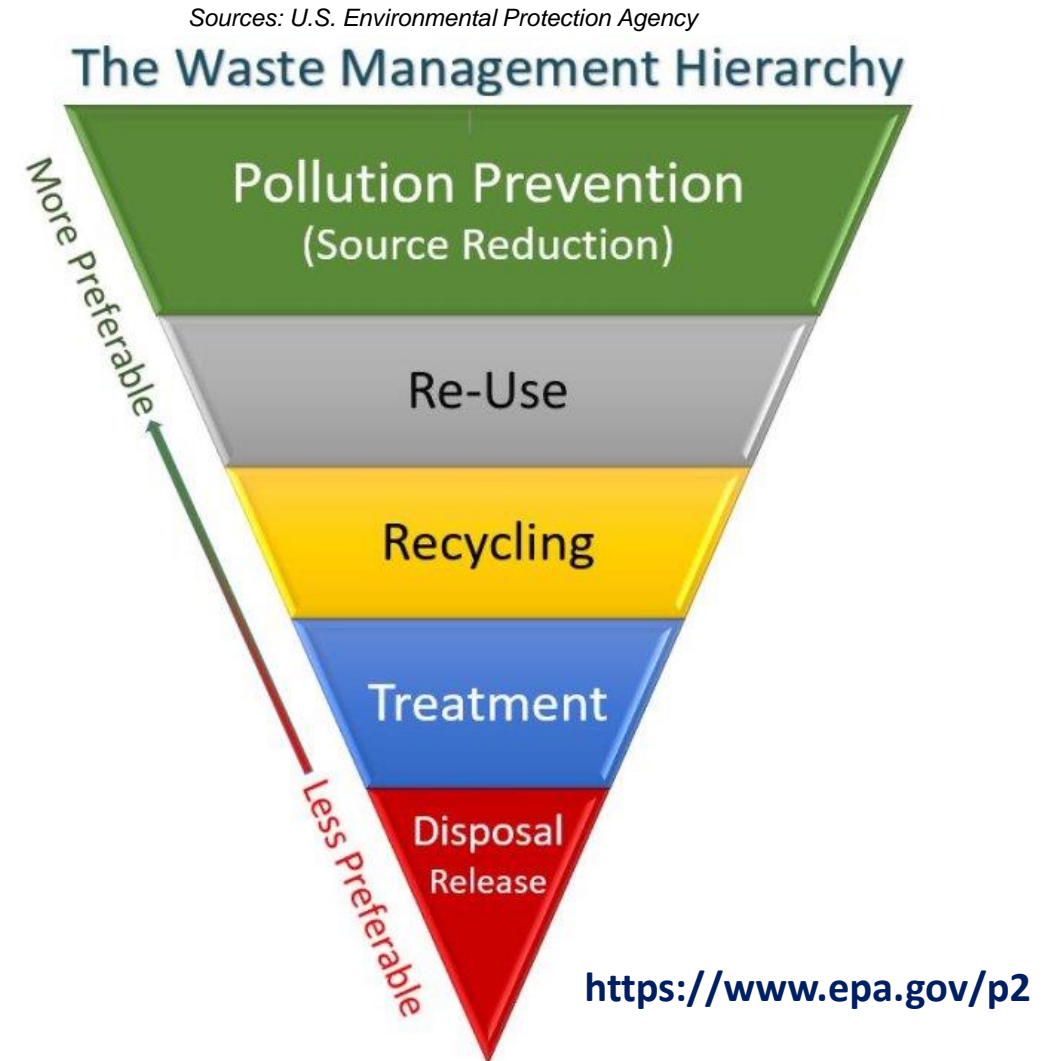
- Technical Assistance
- Educational Assistance



**Marcello Pibiri**  
Program Manager  
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Email: [mpibir2@uic.edu](mailto:mpibir2@uic.edu)

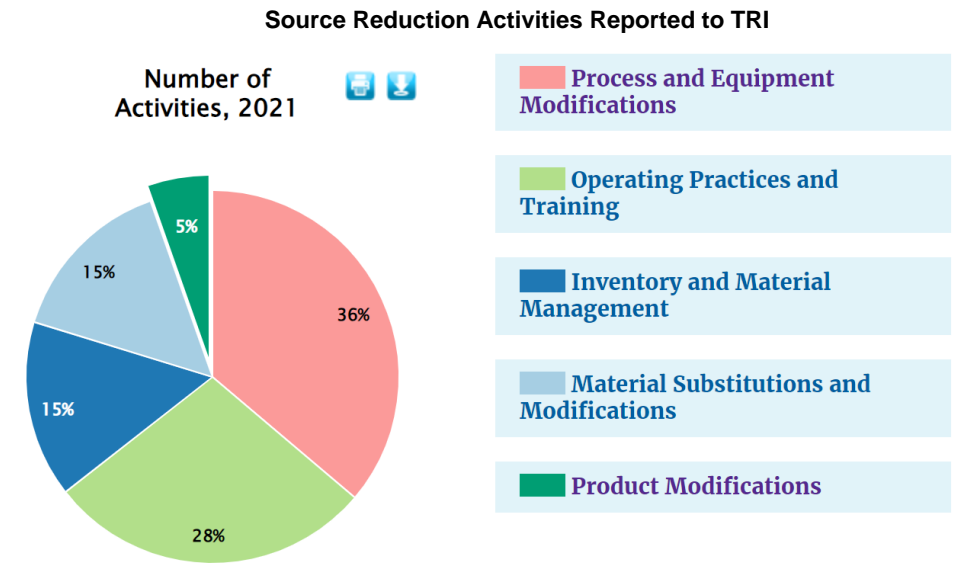
# What is Pollution Prevention (P2)?

- **Pollution prevention** (P2) is any practice that reduces, eliminates, or prevents pollution at its source before it is created.
- P2, also known as "**source reduction**," is fundamentally different and, where feasible, more desirable than **recycling**, treatment or disposal.
- It involves the judicious use of resources through source reduction, **energy efficiency**, **reuse** of input materials during production, and reduced water consumption.
- Energy conservation and pollution prevention are complementary activities.



# Specific Pollution Prevention Approaches

- P2 approaches can be applied to many sectors including energy, agriculture, federal, consumer and **industrial** sectors.
- Examples of P2 Practices for Industrial Facilities:
  - Modifying a production process to produce less waste
  - Using non-toxic or less toxic chemicals as cleaners, degreasers and other maintenance chemicals
  - Implementing water and energy conservation practices
  - Reusing materials, such as drums and pallets rather than disposing of them as waste



Sources: U.S. Environmental Protection Agency

<https://www.epa.gov/toxics-release-inventory-tri-program>

# P2 Activities Examples

## Material Substitutions and Modifications

An architectural metal work manufacturer replaced liquid paint with powder coating in its operations to reduce releases of methyl isobutyl ketone.



Sources: <https://superiorsteelfab.com/precision-metal-fabrication/benefits-of-powder-coating/>

# P2 Activities Examples

## Product Modifications

An aircraft engine manufacturer transitioned its product line from solid titanium fan blades to composite blades with bonded titanium sheaths, which reduced chemical milling and the use of hydrogen fluoride and nitric acid.



Sources: <https://aviationweek.com/air-transport/aircraft-propulsion/pictures-rolls-royce-ultrafan-building-blocks>

# P2 Activities Examples

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## Inventory and Material Management

A chemical manufacturer increased the use of 55-gallon drums instead of smaller containers to reduce n-methyl-2-pyrrolidone (NMP) chemical handling and workload associated with manual repacking.



Sources: <https://bascousa.com/55-gallon-plastic-water-storage-drums-blue.html>

# P2 Activities Examples

## Process and Equipment Modifications

A dairy processing facility reduced water consumption by 30% reusing tank rinse water for cleaning in less critical areas and reusing pasteurizer cleaning waters for the first rinse on tanks.

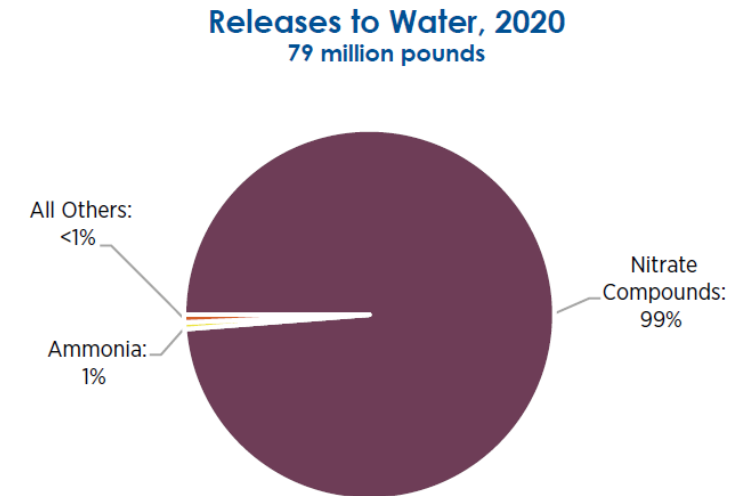
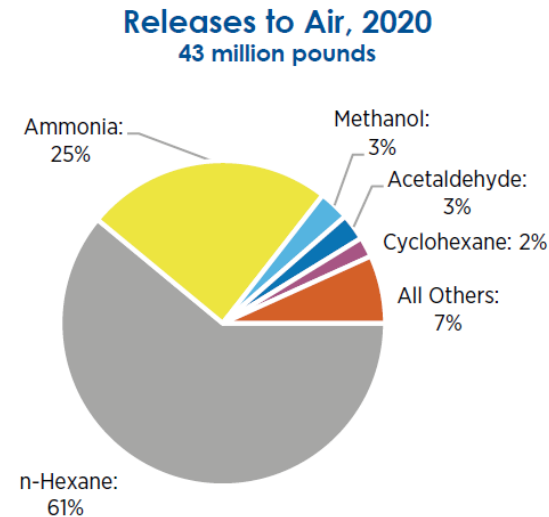


Sources: <https://www.ecolab.com/nalco-water/about/industries-we-serve/food-and-beverage-processing/dairy-processing>

# Waste Streams and Environmental Releases

- Air Emissions (including GHGs)
- Water Discharges
- Solid Waste
- Hazardous Waste

## Food and Beverage Manufacturing



Sources: [https://www.epa.gov/system/files/documents/2022-02/food-and-beverage-manufacturing-and-processing\\_508.pdf](https://www.epa.gov/system/files/documents/2022-02/food-and-beverage-manufacturing-and-processing_508.pdf)



# Pollution Prevention (P2)

## Technical Assistance Program

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This US EPA sponsored program will provide on-site technical assistance and education to industrial plants in Chicago with an emphasis on plants located in underserved communities.

- **Facility Assessment:** A small team of UIC staff and students trained in pollution prevention, industrial energy efficiency and decarbonization will visit your facility for one day to compile a customized report with recommendations for energy, emissions, and waste reduction.
- Educational assistance: Yours and other selected industrial facilities will be part of a cohort led by UIC-ERC and the City of Chicago that will focus on:
  - Strategic energy and pollution prevention management
  - Educational and training resources
  - Best practices
  - One-on-one climate strategy solutions
  - Connections to utility and federal strategic energy management programs
  - Peer-to-peer networking opportunities

# Assessment Overview, Procedure, and Timeline

After a facility applies and is approved for an assessment, the UIC-ERC will request records of 12 months of utility bills, raw material costs, waste streams and environmental releases for analysis.

During the assessment, the UIC-ERC team will meet with the client, tour the facility, search for P2 opportunities, and discuss initial findings with client.

The UIC-ERC will follow up with an implementation survey to help measure the success of the assessment the effectiveness of the measures.

Initial Data Collection

Pre-Assessment Meeting

Assessment

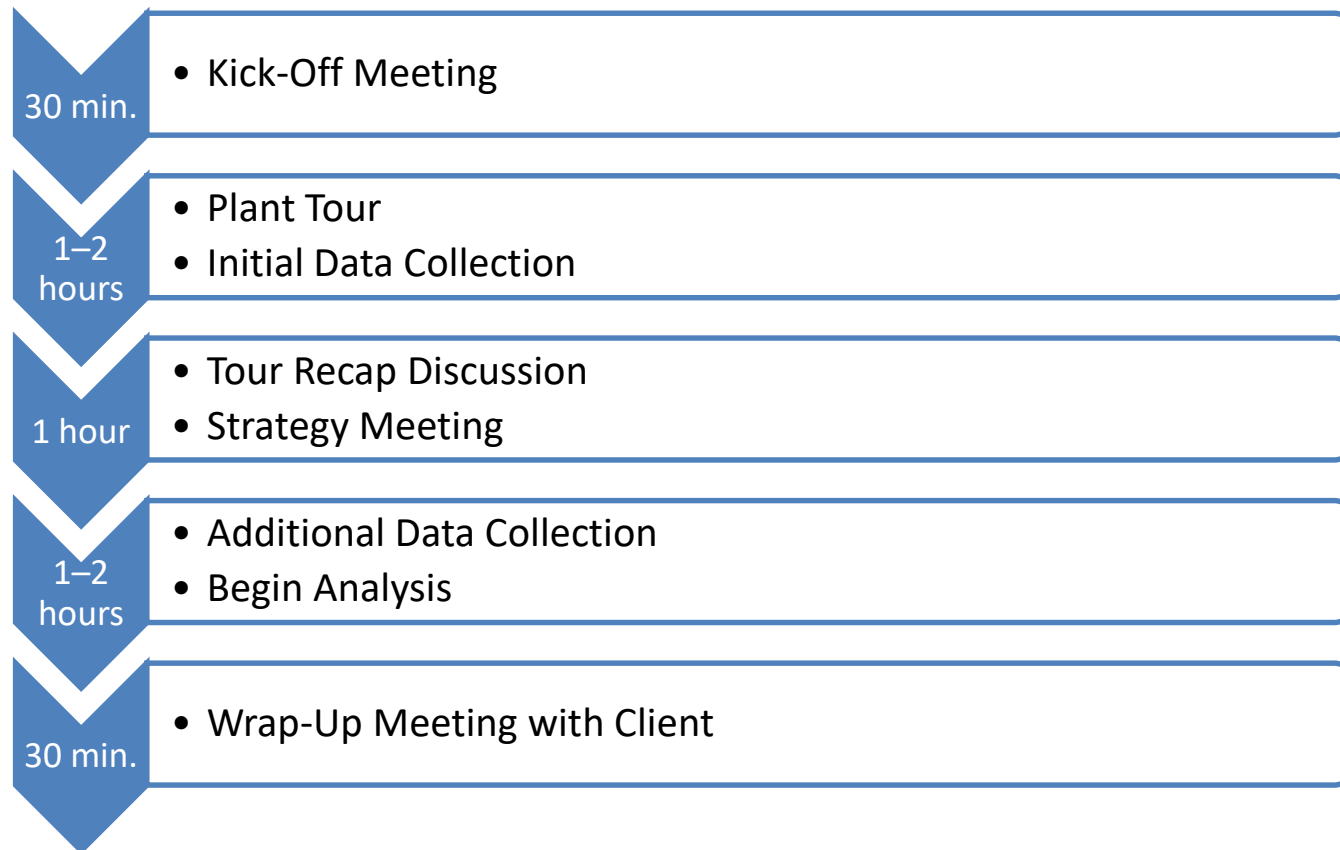
Report

Follow-Up

During the pre-assessment (e.g. zoom meeting 3-5 business prior to the assessment), the UIC-ERC team will present information on the facility's energy and material usage and interview the client on goals, needs, processes, and equipment.

The UIC-ERC team will use information collected on the site visit to formulate a report with recommendations for P2 opportunities. A report will be delivered within 2 months of the site visit.

# P2 Site Visit Overview



# Assessment Purpose

UIC's US EPA sponsored assessment will identify pollution prevention (P2) projects that will calculate:

1. Reductions in hazardous and non hazardous substances, pollutants and contaminants (lbs. reduced)
2. Energy and GHG emission reductions for P2 projects (MT CO<sub>2</sub>e, kWh, Therms reduced)
3. Cost savings for recommended P2 projects (\$ saved)

# Pollution Prevention (P2) Educational Assistance



## Educational Assistance

- 10 Plants each year (2 years)
- On-line Webinars
- In-person Workshops
- Focus on strategic energy and P2 management practices
- Training and education
- Networking opportunities
- Best practices sharing

# Financing and Incentive Programs

- To ensure that the recommendations provided by UIC are adopted, partners at the City of Chicago, the EPA Region 5, and the various utilities will introduce selected facilities to various financing and incentive programs.
- The City of Chicago's Department of Planning and Development (DPD) administers numerous business assistance and financial incentive programs.
- Assistance includes grants, tax reductions, loans, fee waivers and other forms of business aid.
- Inflation Reduction Act
- Utilities Rebate Programs



# Eligibility Requirements

- P2 National Emphasis Areas (NEAs)
  - NEA #1: Food and Beverage Manufacturing and Processing (NAICS 311 and 3121)
  - NEA #2: Chemical Manufacturing, Processing and Formulation (NAICS 325)
  - NEA #3: Automotive Manufacturing and Maintenance (NAICS 3361, 3362, 3363, and 8111)
  - NEA #4: Aerospace Product and Parts Manufacturing and Maintenance (NAICS 3364 and NAICS 488190)
  - NEA #5: Metal Manufacturing and Fabrication (NAICS 331 and 332)
- Gross annual (site) sales below \$100 million
- Fewer than 500 employees at the plant site
- Annual energy bills more than \$100,000 and less than \$3.5 million
- Competitive selection process, priority will be given to facilities located within or adjacent to a community with environmental justice concerns (Check with [Chicago EJ Index](#) or [EPA P2 EJ Facility Mapping Tool](#))
- [Open to work with other facilities in EPA Region 5](#)

# Eligibility Form

- Eligibility Form / Flyer
- Form to be completed if you want to participate in the program
- Available as handout on this webinar
- At the end of today's webinar the form will pop up as a web based survey

**UIC Energy Resources Center**  
A U.S. Environmental Protection Agency Program

## ELIGIBILITY FORM

If you answer "yes" to all of the questions below, you may be eligible to participate in this Pollution Prevention Technical Assistance Program. UIC team members will review your application and get in touch with you shortly. Please note that this is a competitive selection process and priority will be given to facilities located within or adjacent to a community with environmental justice concerns (Check with [Chicago EJ Index](#) or [EPA P2 EJ Facility Mapping Tool](#))

FACILITY NAME: \_\_\_\_\_  
CITY: Chicago STATE: IL ZIP: \_\_\_\_\_  
FACILITY ADDRESS: \_\_\_\_\_

DOES THE FACILITY FALL UNDER ONE OF THE FOLLOWING INDUSTRIAL SECTORS?  Yes  No  
IF YES, WHICH ONE?  
 Food and Beverage Manufacturing and Processing (NAICS 311 and 3121)  
 Chemical Manufacturing, Processing and Formulation (NAICS 325)  
 Automotive Manufacturing and Maintenance (NAICS 3361, 3362, 3363, and 8111)  
 Aerospace Product and Parts Manufacturing and Maintenance (NAICS 3364 and NAICS 488190)  
 Metal Manufacturing and Fabrication (NAICS 331 and 332)

ARE THE GROSS ANNUAL SALES OF THE FACILITY LESS THAN \$100 MILLION?  
 Yes  
 No

IS THE NUMBER OF EMPLOYEES AT THE PLANT SITE LOWER THAN 500  
 Yes  
 No

IS THE TOTAL AMOUNT OF THE FACILITY'S ANNUAL ENERGY BILLS BETWEEN \$100K and \$3.5M?  Yes  No  
IF YES, PLEASE ENTER THE \$ AMOUNT: \_\_\_\_\_

PLEASE DESCRIBE YOUR COMMITMENT TO CREATE A HEALTHY COMMUNITY: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PLEASE DESCRIBE WHY YOU ARE INTERESTED IN THIS PROGRAM: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TECHNICAL CONTACT  
Name: \_\_\_\_\_ Title: \_\_\_\_\_ Email: \_\_\_\_\_ Phone: \_\_\_\_\_

C-SUITE CONTACT  
Name: \_\_\_\_\_ Title: \_\_\_\_\_ Email: \_\_\_\_\_ Phone: \_\_\_\_\_

For more information, please contact:  
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1309 South Halsted St., Ste. 209 Chicago, IL 60607  
P: (312) 355-3823 | M: (312) 358-4990 - E: [mpibiri2@uic.edu](mailto:mpibiri2@uic.edu) | [wi.erc.uic.edu](http://wi.erc.uic.edu)

For more information on Pollution Prevention and P2 Assistance, visit [www.epa.gov/P2](http://www.epa.gov/P2)



# Questions ?



**ENERGY RESOURCES  
CENTER**

# Thank You

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