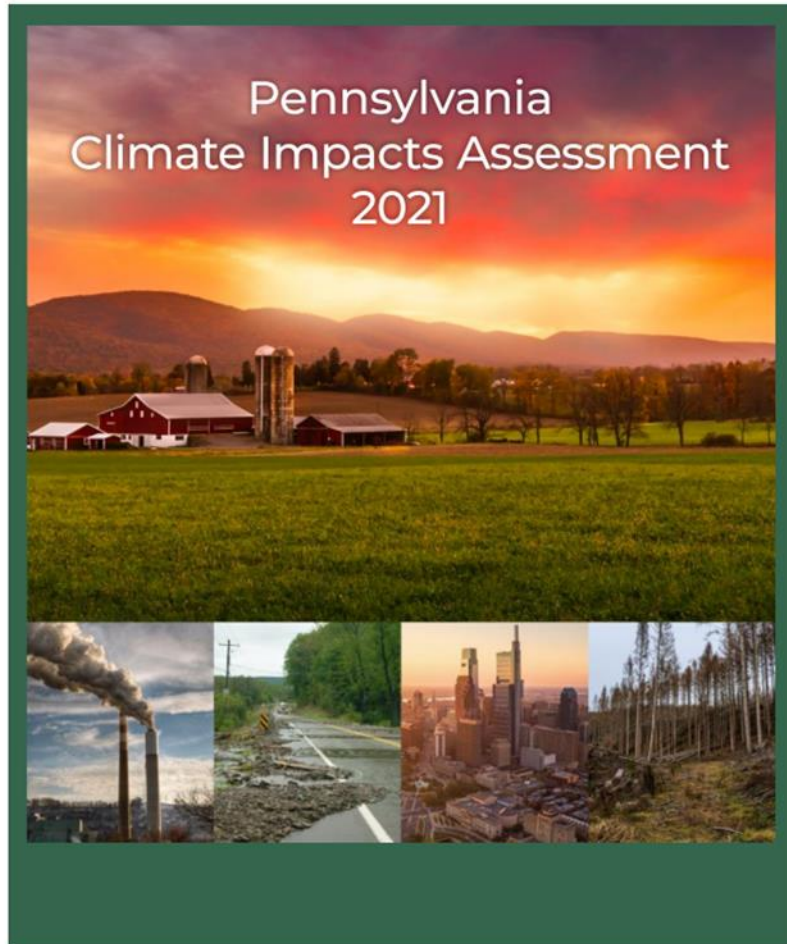
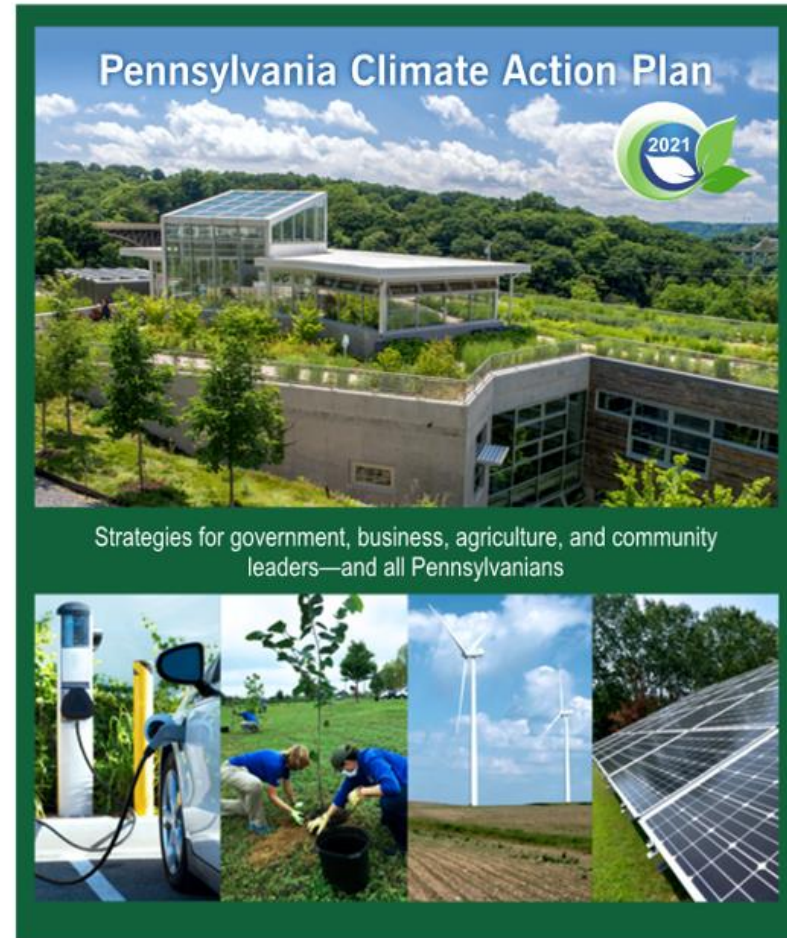


PA Impacts Assessment & Climate Action Plan 2021



7200-RE-DEP404 5/2021 02/5/21



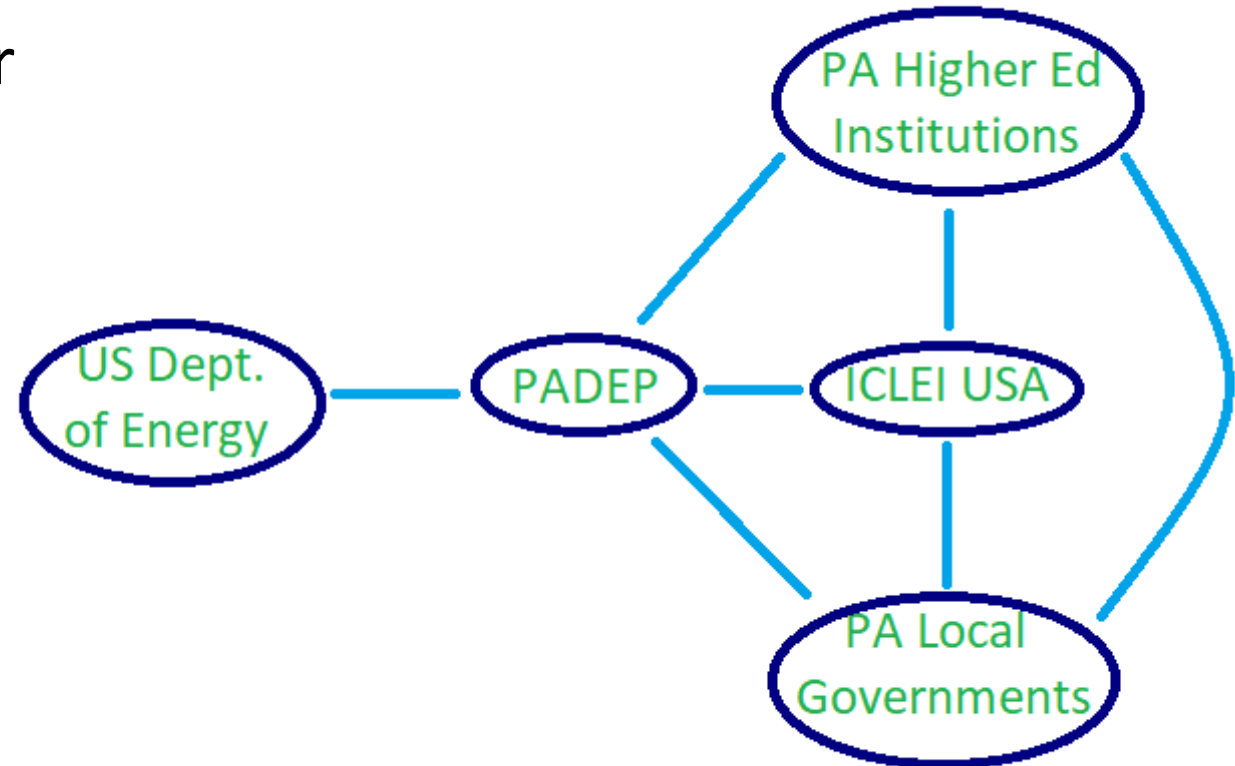
Strategies for government, business, agriculture, and community leaders—and all Pennsylvanians



Local Climate Action Program (LCAP)

- ICLEI Local Governments for Sustainability – USA hired as contractor
- College student matched with local government
- ICLEI trains student/local government on ClearPath inventory tool and climate action planning – 11 months total
- Final result: Greenhouse gas inventories and *draft* Climate Action Plans

dep.pa.gov/LocalClimateActionProgram



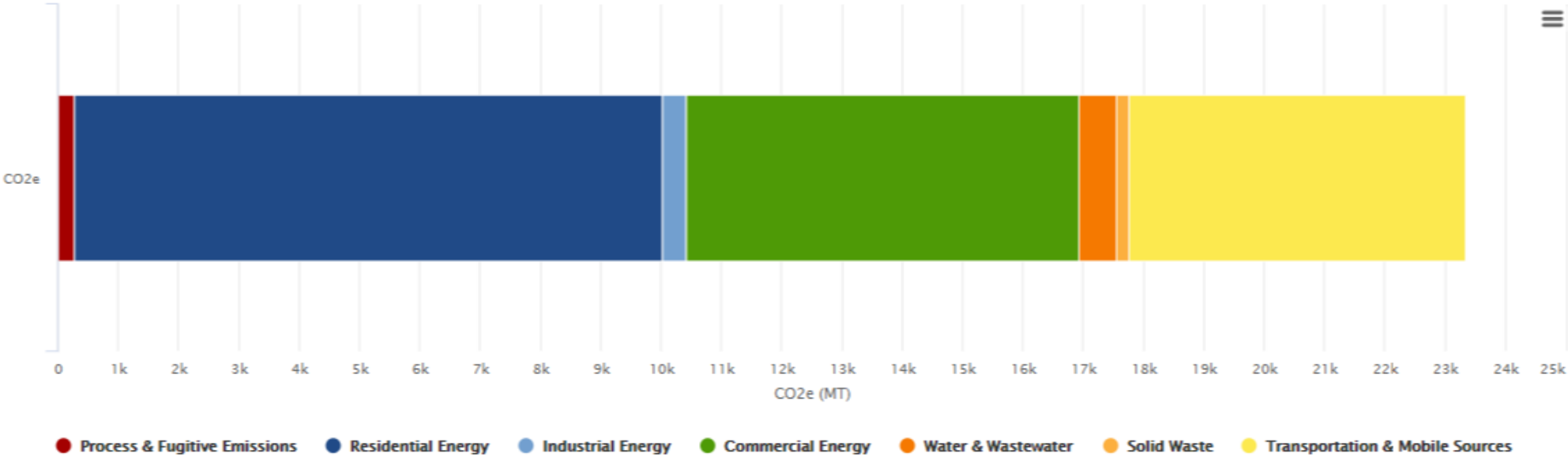
Local GHG Inventory

Inventory By Sector

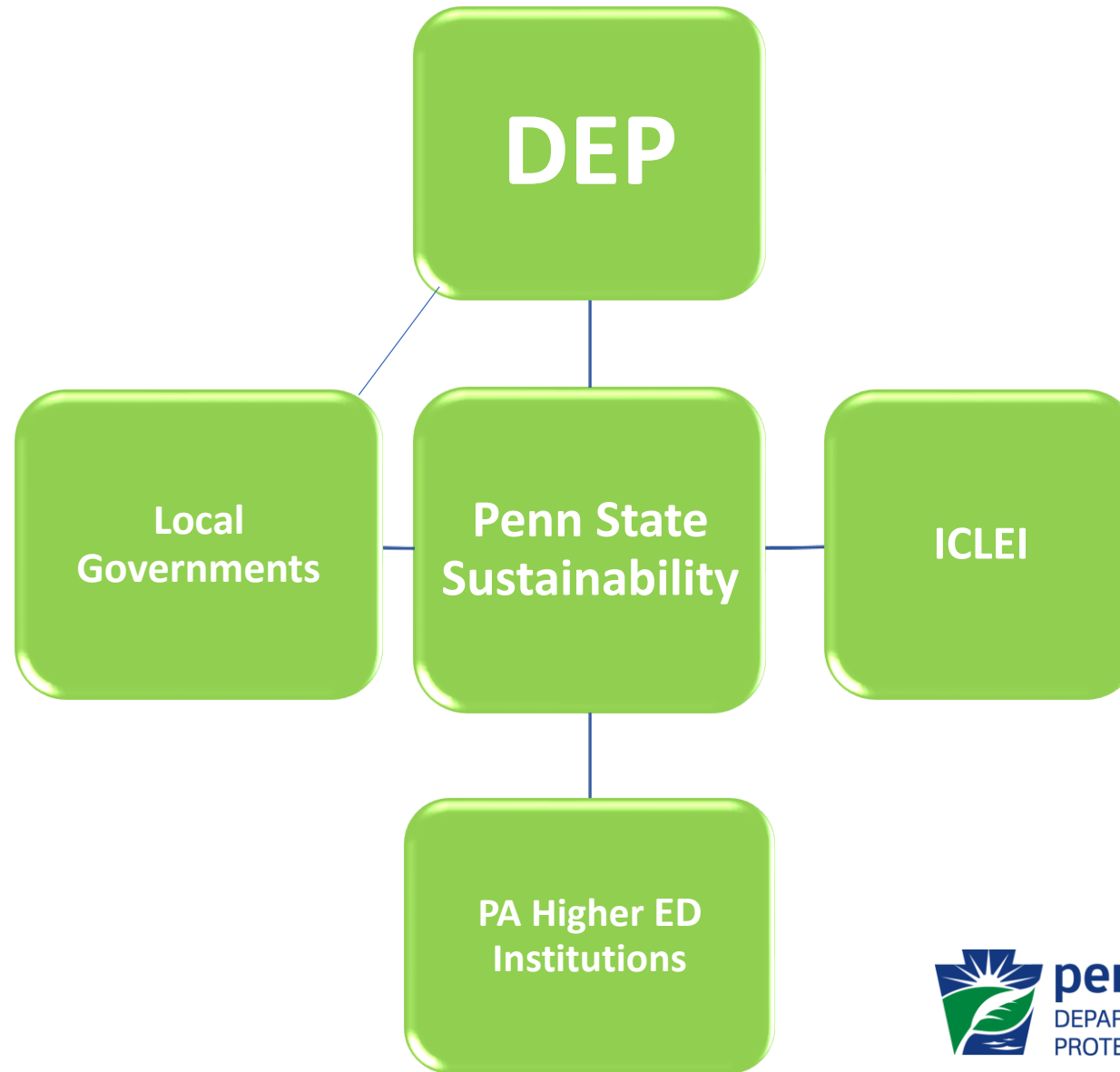
CO2e by sector for the selected inventory year.

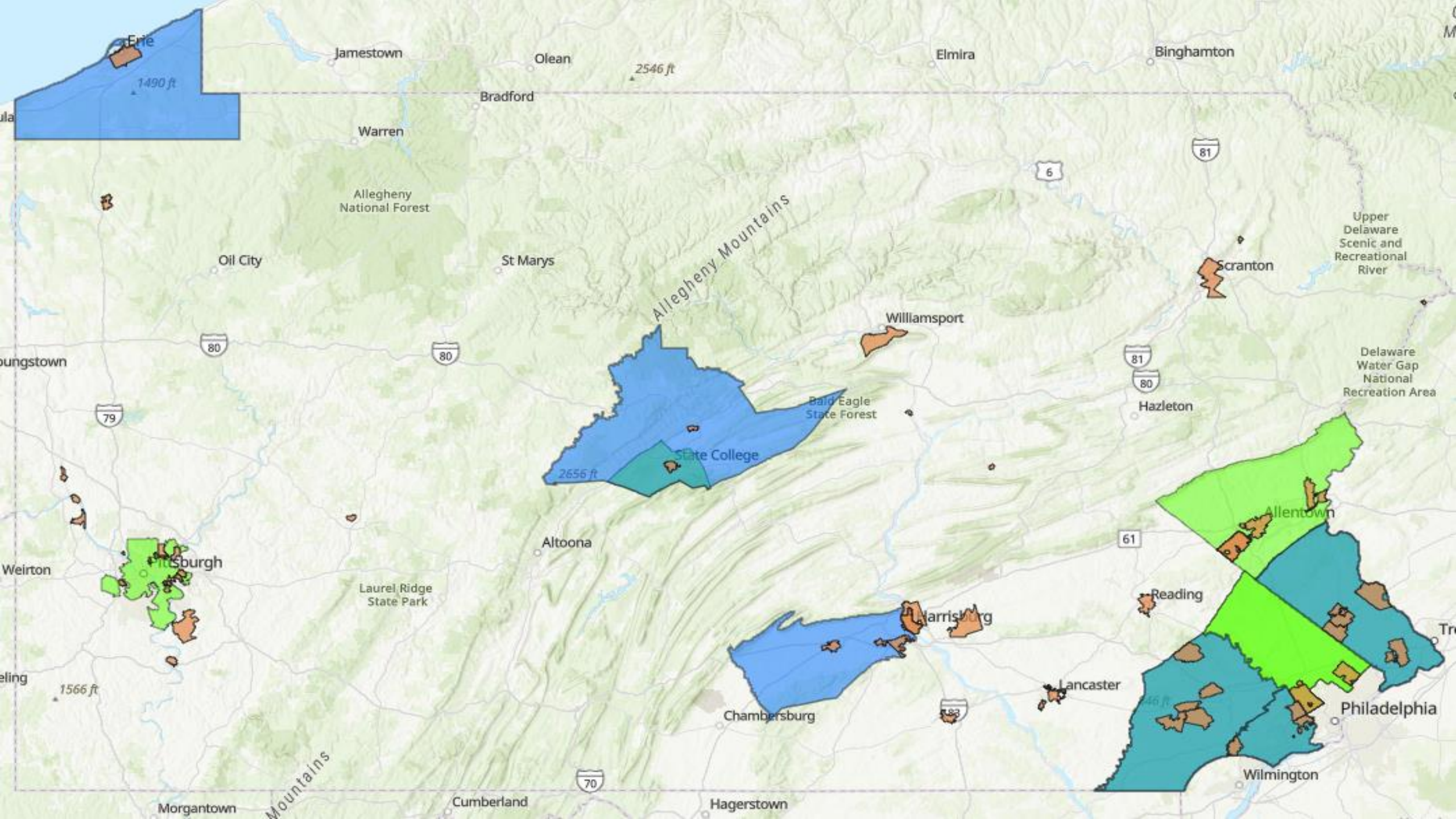
Bellefonte Borough

Sector	CO2e
Transportation & Mobile Sources	5,570
Solid Waste	219
Water & Wastewater	617
Commercial Energy	6,507
Industrial Energy	404
Residential Energy	9,754
Process & Fugitive Emissions	261



LCAP Transition





Municipalities and Scope of Work

Table 7 – SUV Replacement Options Economic Comparison

Parameter	Toyota Rav4 (ICE)	Toyota Rav4 Prime (PHEV)	Hyundai Ioniq 5 (BEV)	Chevy Bolt EUV (BEV)
Dealer Price	\$28,190	\$41,015	\$41,245	\$34,495
Gov. Incentives	\$0	\$0	\$7,500	\$7,500
Purchase Price	\$28,190	\$41,015	\$33,745	\$26,995
Annual Maintenance	\$1,000	\$800	\$500	\$500
Annual Fuel	\$981	\$297	\$210	\$210
Total Annual Cost	\$1,981	\$1,097	\$710	\$710
5-year Cost	\$38,097	\$46,502	\$37,294	\$30,543
10-year Cost	\$48,004	\$51,990	\$40,843	\$34,091
Annual CO2e (metric ton)	2.1	1.0	0.6	0.6



LED Street Light Upgrade Locations

Estimated 1300 total City-owned street lights. Estimated 715 poles with 752 fixtures to be upgraded to LED. Estimated , of which estimated 408 are eligible for CDBG funding (Residential, LowMod, not Flood Plain). Currently, fixtures are a mix of High-Pressure Sodium Vapor, Mercury Vapor and Metal Halide.

Prepared: 8/27/2020
by Kevin Lugo, SSW Manager



Easton Wastewater Treatment Plant RNG Opportunity

PATRICK MARTIN & MICHAEL STAHLY
WILSON ENGINEERING SERVICES, PC

This presentation is provided through support and funding from the U.S. Department of Energy's State Energy Program and the Pennsylvania Department of Environmental Protection.



Shared Energy Manager Results

Table 1: Quantitative Totals for Identified Energy Management Opportunities¹

Year 1

Municipality	Annual Cost Savings (\$)	Incentive Funding Potential ² (\$)	Electric Savings (kWh)	Natural Gas Savings (MCF)	Annual GHG Emissions Reduction (MT CO ₂ e) ³
Bellefonte Borough	\$141,097	\$106,310	2,359,715	0	857
Chester County	\$82,210	\$57,381	1,426,581	0	272
City of Reading	\$17,378	\$16,949	182,783	632	34
Elizabeth Township	\$26,054	\$148,265	129,770	101	22
Indiana Borough	\$158,933	\$398,530	1,089,564	710	275

Table 1 - Quantitative Totals for Identified Energy Management Opportunities

Year 2

Municipality	Estimated Savings (\$/yr)	Estimated Incentive Potential (\$)	Estimated Electric Savings (kWh/yr)	Estimated NG Savings (mmBtu/yr)	Estimated Gasoline/Diesel Savings (gal/yr)	Estimated GHG Emissions Reduction (MT CO ₂ e/yr)
Abington Township	\$16,863	\$21,451	-139,126	23,764	-	136
Ben Avon Borough	\$13,711	\$2,514	-101,220	2,030	-	54
Cumberland County	\$31,792	\$266,070	258,102	-	2,428	98
City of Easton	\$379,596	-	116,992	528	-	64
City of Shamokin	-	-	-	-	-	-

EPA Climate Pollution Reduction Grants

Phase I: CPRG Planning Grants

- \$3M for States, \$1M for large metro areas for planning.
- Deliverables:
 - Priority Climate Action Plan (PCAP)
 - Comprehensive Climate Action Plan (CCAP)
 - Status Report

Phase II: CPRG Implementation Grants

- \$4.6B nationally, competitive grants for States, Tribes, Municipalities, Air Pollution Control Agencies
- Funding for projects that implement climate pollution reduction strategies **identified in PCAP**

EPA Climate Pollution Reduction Grants

Preliminary Schedule:

ACTIVITY	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26	Oct-26	Nov-26	Dec-26	Jan-27	Feb-27	Mar-27	Apr-27	May-27	Jun-27	Jul-27								
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48								
Ongoing Processes and Meetings																																																								
Develop Stakeholder Outreach Plan																																																								
Interagency Meetings																																																								
Stakeholder Meetings																																																								
Meetings with Municipal Partners																																																								
Priority Climate Action Plan																																																								
Comprehensive Climate Action Plan																																																								
Status Report and Ongoing Activities																																																								



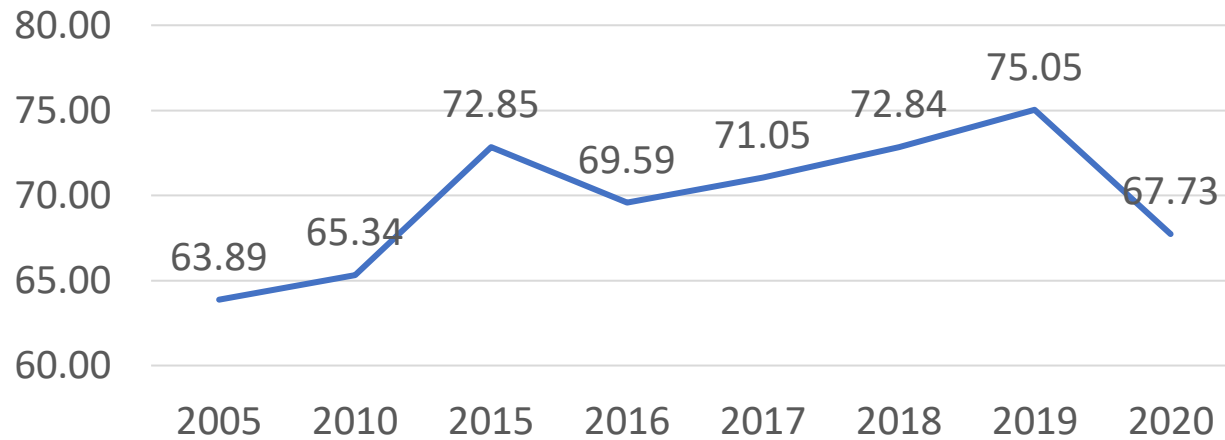
Implementation Grant NOFO – Sept. 2023



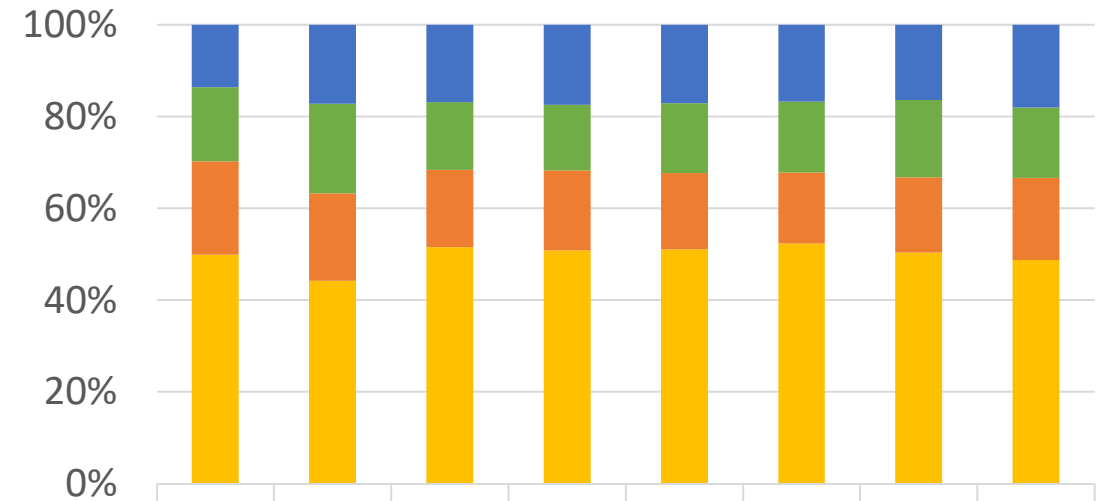
Implementation Grant Application Deadline – April 1, 2024

Industrial Sector Emissions

GHG Emissions from Industrial Sector
(MMTCO₂e)



GHG Emissions from Industrial Sector by Source
(% of Total)



	2005	2010	2015	2016	2017	2018	2019	2020
■ Natural Gas and Oil Systems	8.74	11.30	12.27	12.15	12.19	12.22	12.33	12.26
■ Coal Mining and Abandoned Mines	10.32	12.74	10.76	9.95	10.76	11.23	12.61	10.38
■ Industrial Process	12.98	12.44	12.32	12.16	11.86	11.27	12.27	12.12
■ Combustion of Fossil Fuels	31.85	28.85	37.50	35.33	36.24	38.12	37.84	32.97

Table values presented in MMTCO₂e

Industrial Sector Emissions

Strategies from the 2021 PA Climate Action Plan:

Industrial: Increase industrial energy efficiency and fuel switching

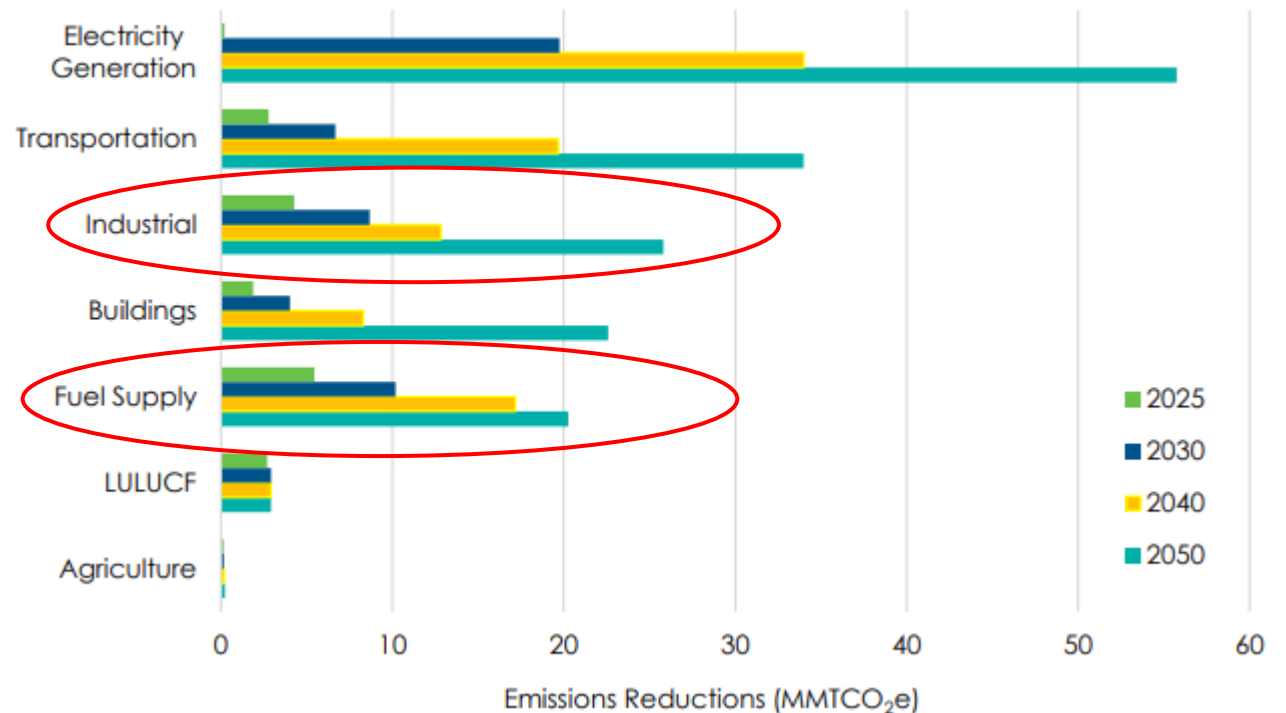
Fuel Supply:

- Increase production and use of biogas/renewable gas
- Incentivize and increase use of distributed Combined Heat and Power
- Reduce methane emissions across oil and natural gas systems

Additional strategies:

- Electrification of low-heat processes
- others??

Figure ES-5. GHG reductions by sector for select years, compared to business as usual

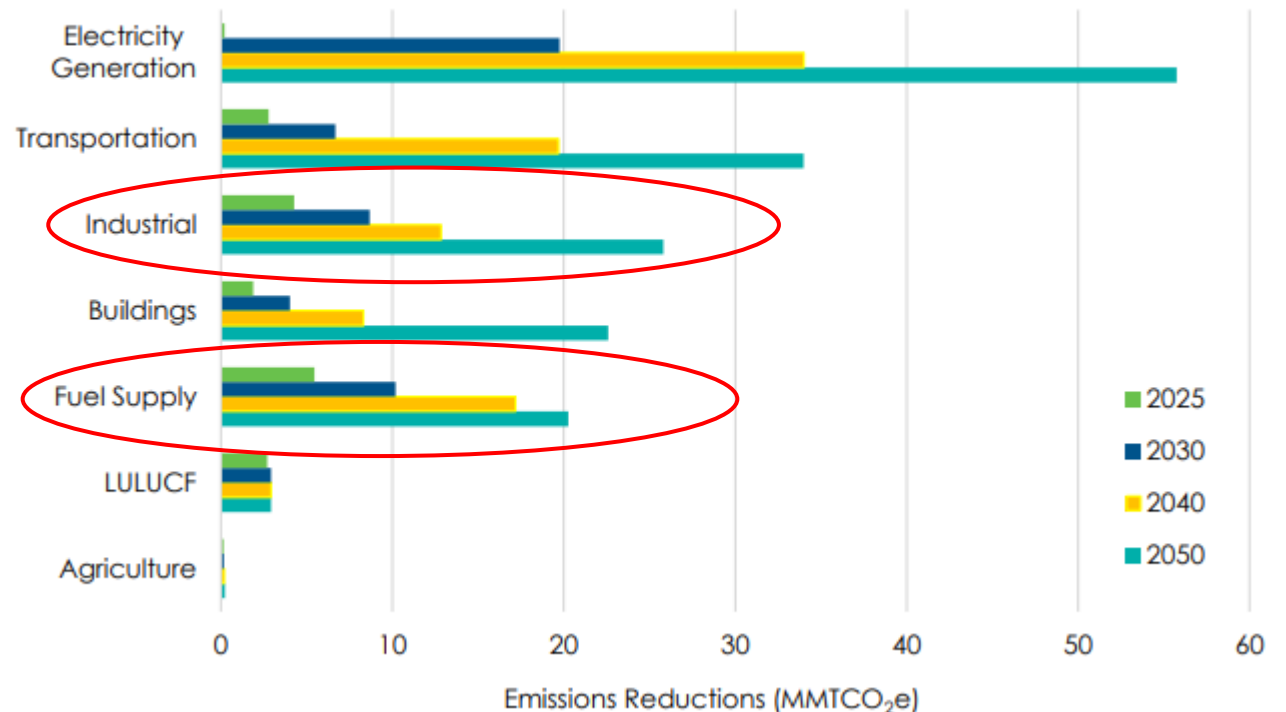


Industrial Sector Emissions

CPRG Program Goals for PA Industrial Sector:

1. Achieve significant and measurable near-term emissions reductions.
2. Provide substantial benefits to vulnerable communities, including the reduction of criteria and hazardous air pollutants.
3. Leverage other sources of public and private funding to maximize emissions reductions and community benefits
4. Demonstrate potential to replicate and scale the decarbonization solutions.

Figure ES-5. GHG reductions by sector for select years, compared to business as usual





pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Energy Programs Office



Thank you!

Christopher Nafe, MA, CCP

Energy Program Specialist

PADEP Energy Programs Office

chnafe@pa.gov

717-783-9726

DEP Climate Website: www.dep.pa.gov/climate

DEP Website: www.dep.pa.gov