



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Energy Programs Office



Beyond Savings: The Non-Energy Benefits of Energy Efficiency

NASEO Annual Meeting
October 2021

Tom Wolf, Governor

Patrick McDonnell, Secretary

Presenter



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Director, Pennsylvania Energy Programs Office

DEP's Energy Office

The Pennsylvania Energy Programs Office (State Energy Office) is the primary entity under the Governor's jurisdiction for the implementation of:

***Energy efficiency**, energy conservation and the promotion of indigenous, clean, diverse, and alternative fuels, including energy production and use technologies.*

Pennsylvania State Energy Office - History

- 1979** Governor's Energy Council - EO
- 1980** Building Energy Conservation Act
- 1984** Monitoring of Petroleum Products - EO
- 1986** Energy Conservation and Assistance Act
- 1987** The Pennsylvania Energy Office -- EO

Functions:

- To promote the development of Pennsylvania's Indigenous energy resources
- To promote the efficient use of energy
- Point of contact for energy matters and lead agency for energy policy
- Primary manage and coordinator of federal energy grants, and private energy funds
- To assist in review of energy related plans, programs, policies, assist Commonwealth agencies, intervene in proceedings of the PAPUC and other energy-related regulatory proceedings
- Monitor supplies of petroleum products to determine if an emergency shortage exists and/or conduct allocation

PADEP's Energy Programs Office (EPO)

Mission

We will work as partners with individuals, organizations, governments and businesses to achieve a balance in the energy sector for deploying energy technologies that prevent pollution, protect our natural resources while ensuring affordable and abundant energy resources for Pennsylvanians that support economic growth.

Our shared approach to our mission focuses on:

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

Recent Significant Activities

Executive Order 2019 -1

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

- Sets a statewide goal to reduce greenhouse gas emissions 26 percent by 2025, and 80 percent by 2050.
- Sets Performance goals for state government (2025).
 - Energy Efficiency/High Performance Buildings* (new/major retro)
 - Electric Vehicles (25% by 2025)
 - Renewable Energy Procurement

*Reduce overall energy consumption by 3% per year through 2025 (from 2017 levels);
Build any new buildings, major renovations, build to suit leased buildings to high-performance building standards.

Climate Change

“Climate change is the most critical environmental threat confronting the world...Given the urgency of the climate crisis facing Pennsylvania and the entire planet, the commonwealth must continue to take concrete, economically sound and immediate steps to reduce emissions.”

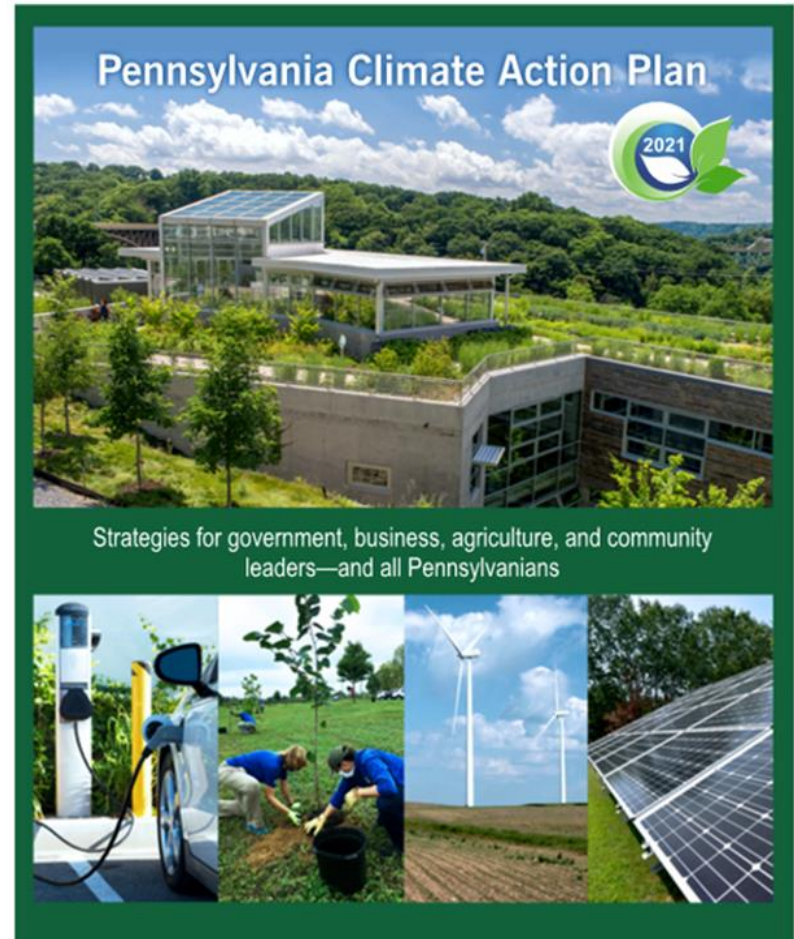
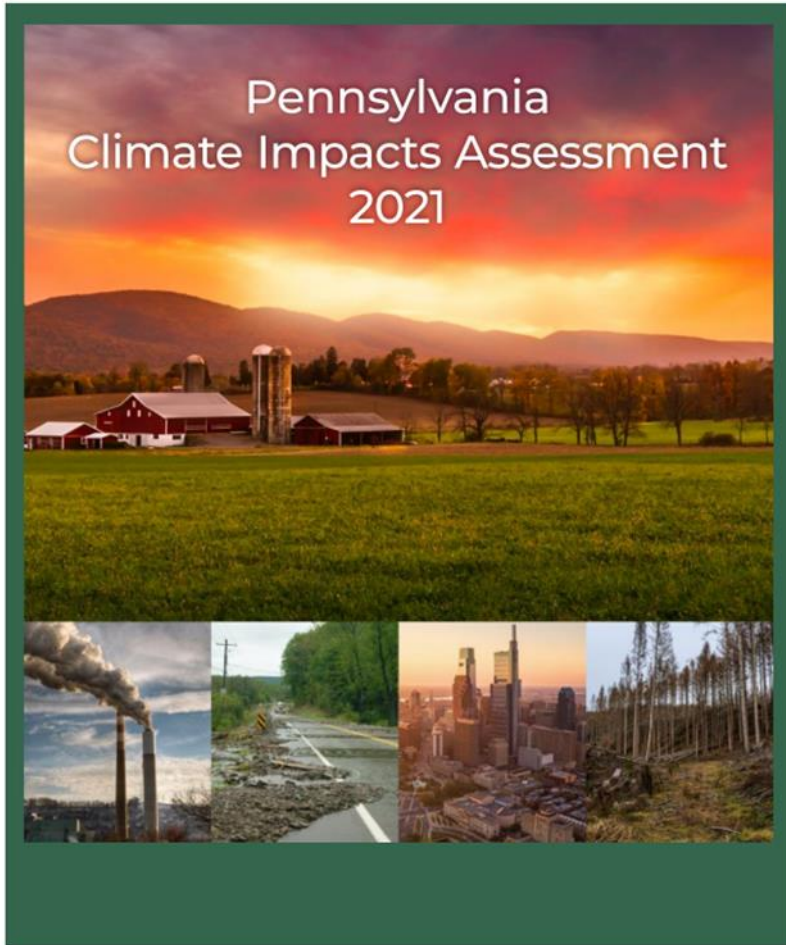
– Governor Tom Wolf, October 3, 2019

What Can We Do?

Because Pennsylvania has a diverse energy mix and a rich set of indigenous resources that are inextricably linked to our environment and our economy.

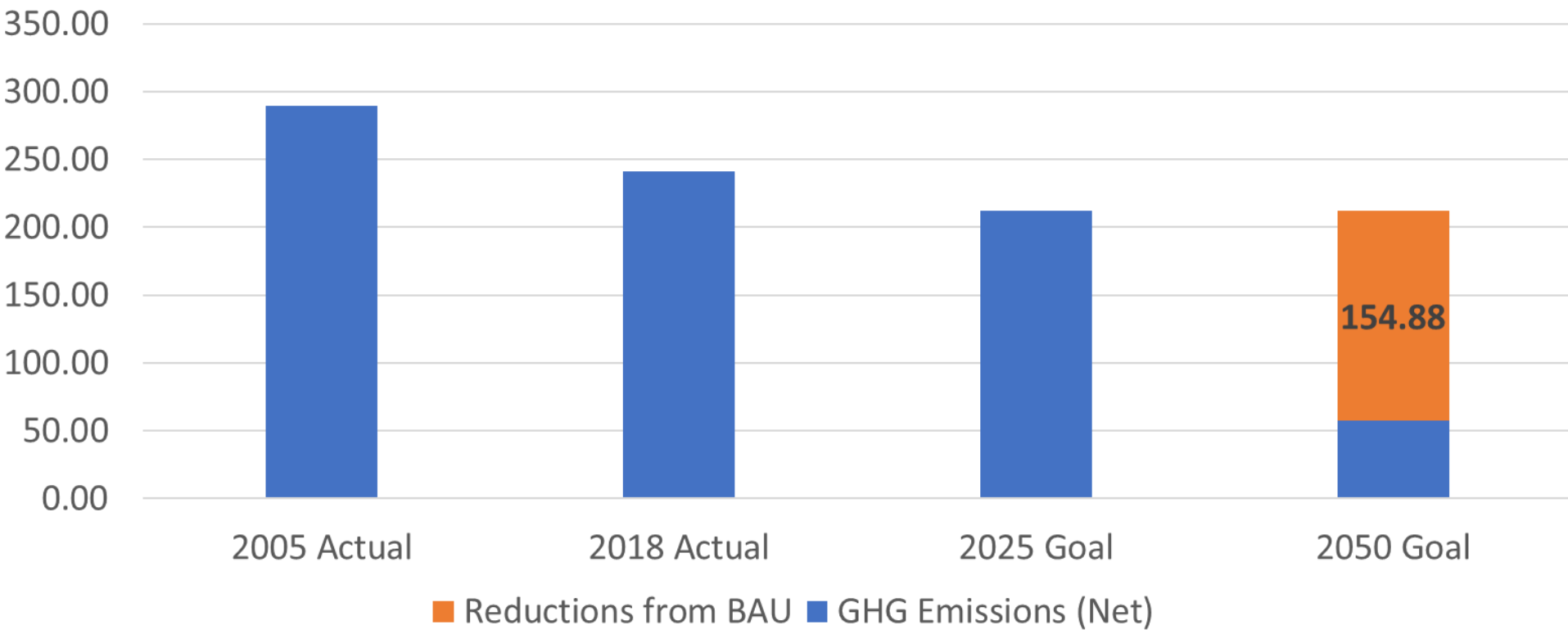
- The Energy Office/DEP's Energy Programs Office has the ability through our non-regulatory partnerships to assist Pennsylvanians with priority level energy choices and the ability to describe the impacts of those choices on the environment, the economy, and public policy systems.
- The Energy Office/DEP's Energy Programs Office is able to provide opportunities to **optimize an energy resource or energy using system** such that it adds value to the environment, the economy, resiliency and our energy resource sustainability.

Impacts - Actions



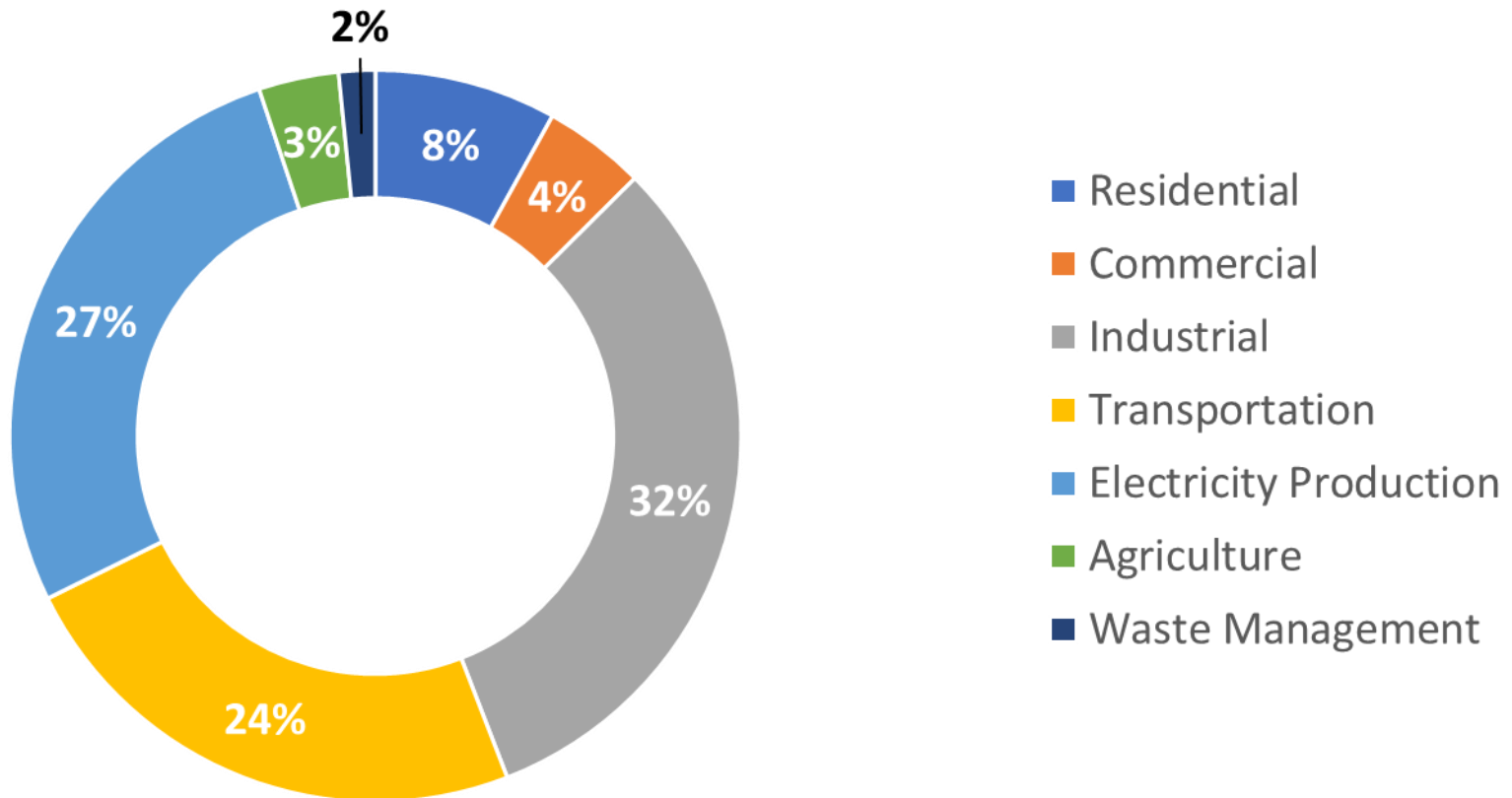
Reductions

GHG Reductions Needed to Meet 2025 and 2050 Goals (MMT_{CO2e})



Emissions

Pennsylvania 2018 GHG Emissions
% of Total by Sector



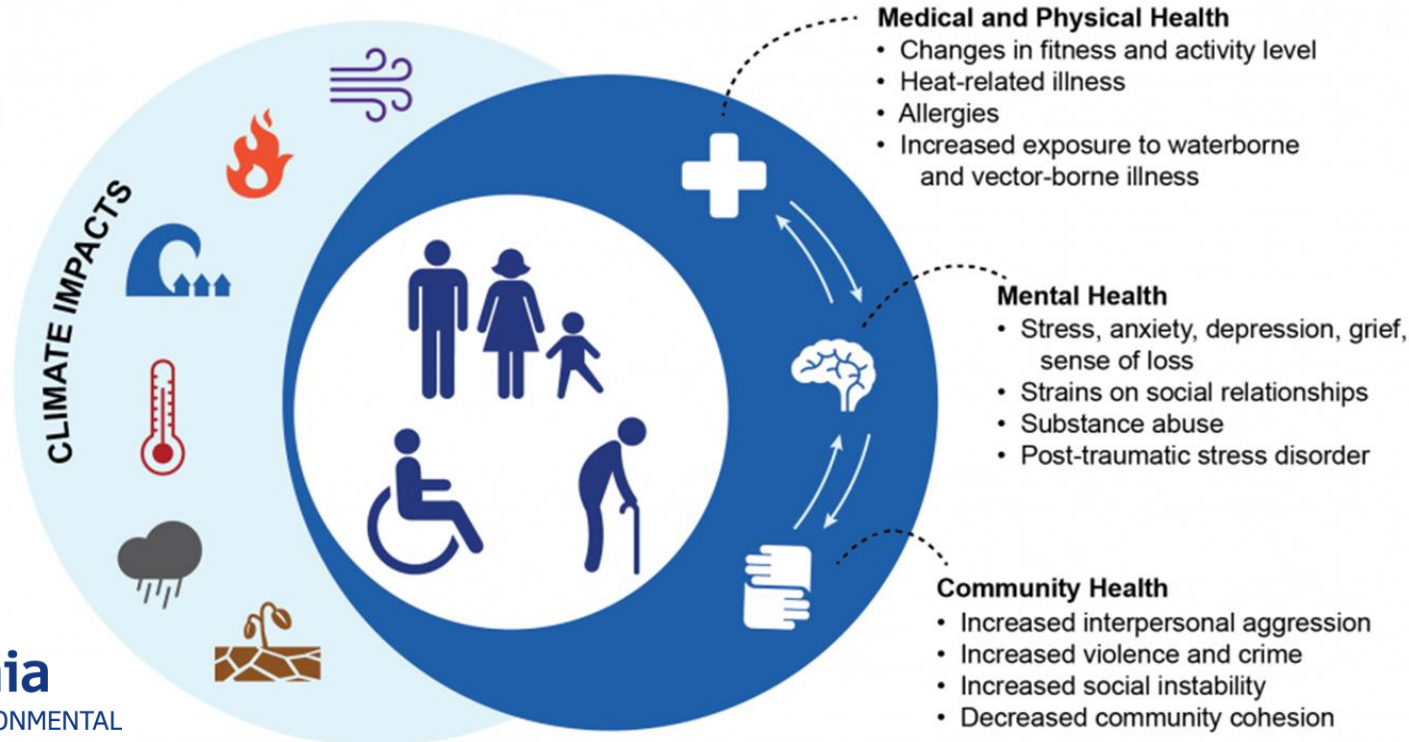
Impacts

Increasing average temperatures and heat waves are projected to increase:

- heat-related illnesses or deaths
- allergies
- violence and crimes
- anxiety and mood disorders

Flooding and severe cyclones can also have severe health impacts such as:

- disrupting critical services
- making conditions are more hazardous



DEP's Energy Programs Office Approach

DEP Energy Programs Office's approach to program development will be/are primarily influenced by the current workplans and efforts described in Pennsylvania's Climate Change Action Plan.

The Climate Action Plan includes: specific, tangible goals and targets; a Comprehensive Energy and Resource Analysis for PA; a greenhouse gas inventory; mitigation and adaptation strategies; and a discussion of challenges and opportunities applicable to all Pennsylvanians such as:

Reducing energy consumption, expanding use of solar, wind, biogas and other renewable energy sources, investing in microgrids and storage technologies, alternative fuels, increased electrification of transportation, energy efficiency upgrades, encouraging the expansion of combined heat and power and the growth of manure digesters.

DEP's Energy Office Programs/Projects

- **Energy Efficiency and Conservation (~3 years ago)**
 - Implementing outreach and awareness regarding the benefits of energy conservation, and energy efficiency.
 - Manufacturing EE Assessments/Small Business Grants
 - Building Energy Codes Support/Training
 - Green Energy Loan Fund (Commercial Bldg EE)
 - Act 129 Support*
 - Ag. Energy Efficiency**
 - EE Workforce development**

*Note: The Act 129 Energy Efficiency and Conservation program, enacted in 2008, established energy efficiency and demand response obligations for the seven largest Pennsylvania EDCs and is overseen by the Pennsylvania Public Utility Commission (PUC).

**ACEEE/Workgroup Recommendations 2018

Sector	2021 Greenhouse Gas Reduction Strategies
Residential and Commercial (R&C) Buildings	<ul style="list-style-type: none"> • Support energy efficiency through building codes
	<ul style="list-style-type: none"> • Improve residential and commercial energy efficiency (electricity)
	<ul style="list-style-type: none"> • Improve residential and commercial energy efficiency (gas)
	<ul style="list-style-type: none"> • Incentivize building electrification
	<ul style="list-style-type: none"> • Introduce state appliance efficiency standards
	<ul style="list-style-type: none"> • Take actions to promote and advance C-PACE financing and other tools for Net Zero Buildings and high-performance buildings
Transportation	<ul style="list-style-type: none"> • Increase fuel efficiency of all light duty vehicles and reduce vehicle miles traveled for single occupancy vehicles
	<ul style="list-style-type: none"> • Implement the multi-state medium-and heavy-duty zero-emission vehicle memorandum of understanding
	<ul style="list-style-type: none"> • Increase adoption of light-duty electric vehicles
	<ul style="list-style-type: none"> • Implement a Low Carbon Fuel Standard
Industrial	<ul style="list-style-type: none"> • Increase industrial energy efficiency and fuel switching

Sector	Greenhouse Gas Reduction Strategy
Fuel Supply	<ul style="list-style-type: none"> • Increase production and use of biogas/renewable gas
	<ul style="list-style-type: none"> • Incentivize and increase use of distributed Combined Heat and Power
	<ul style="list-style-type: none"> • Reduce methane emissions across oil and natural gas systems
Electricity Generation	<ul style="list-style-type: none"> • Maintain nuclear generation at current levels
	<ul style="list-style-type: none"> • Create a carbon emissions free grid
Agriculture	<ul style="list-style-type: none"> • Use programs, tools, and incentives to increase energy efficiency for agriculture
	<ul style="list-style-type: none"> • Provide trainings and tools to implement agricultural best practices
LULUCF	<ul style="list-style-type: none"> • Increase land and forest management for natural sequestration
Waste	<ul style="list-style-type: none"> • Reduce food waste
	<ul style="list-style-type: none"> • Reduce waste generated by citizens and businesses and expand beneficial use of waste

EE Planning: Mitigate and Adapt

Need EE focused strategies to both mitigate and adapt to for climate change impacts

- Primary outcomes to be identified: improve health, environmental justice and equity, and built infrastructure

Need to identify and discuss benefits to:

- At risk populations:
 - Age
 - Race
 - Underlying health conditions
 - Limited access to adapt
 - Non-resilient homes and living spaces

Need to measure and report value to the environment, the economy, resiliency and energy resource sustainability:

- Use terms and measures that resonate with communities
 - These measures may be unique



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Thank You !

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