



Energy Programs Office



2023 Potomac River Conference Session 4: Government Innovation

September 21, 2023

Josh Shapiro, Governor

Rich Negrin, Secretary

DEP Climate Program

Pennsylvania Climate Change Act (Act 70 of 2008) Requires DEP to:

- Develop a <u>climate impacts assessment</u> (3 yrs.)
- Prepare and update a <u>climate action plan</u> (3 yrs.)
- Develop an <u>inventory of greenhouse gases</u> (GHGs) (update annually)
- Administer a <u>climate change advisory committee</u> (CCAC) (bimonthly)
- Set up a voluntary registry of GHG emissions (<u>TCR</u>)





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











Impacts Assessment – Climate Projections

Climate Projections - PA is getting warmer and wetter.

- Over past 110 years, temperatures in PA increased by more than 1.8°F and are expected to increase by an additional 5.9°F by 2050
- Cities are expected to see increased frequency of 100+ degree days
- Annual precipitation in PA has increased by 10% since early 20th century and is expected to increase by another 8% by 2050, with a winter increase of 14%



Impacts Assessment – Climate Projections



Baseline: 5 days

Mid-century: 37 days End-of-century: 66 days



Baseline: 12.4 days Mid-century: 15.4 days End-of-century: 16.8 days

2050 Risk Assessment Results

Consequence Category Hazard	Human health	Environmental justice and equity	Agriculture	Recreation and tourism	Energy and other economic activity	Forests, ecosystems, and wildlife	Built infrastructure	Overall Risk Rating
Increasing average temperatures	12	12	8	12	8	16	4	10.7
Heavy precipitation and inland flooding	12	8	12	8	8	8	12	9.9
Heat waves	16	12	8	4	8	4	8	9.3
Landslides	3	6	3	3	6	3	12	5.6
Sea level rise	3	3	3	3	6	6	12	5.6
Severe tropical and extra- tropical cyclones	6	4	6	4	4	4	8	5.3



Risk Assessment Key Findings

- Flooding is currently the highest-risk hazard facing Pennsylvania, and flood risks are projected to increase; at the same time, risks from increasing average temperatures and heat waves could rise to be as high as flooding is today by mid-century
 - Flooding from heavy rain events affects built infrastructure, human health, and agriculture, with ripple effects throughout the economy
 - Increasing average temperatures could affect nearly every aspect of life
- Heat waves will become increasingly common and will create particular health and economic risks for vulnerable populations
- All hazards could affect public health negatively—especially heat waves, increasing temperatures, and flooding
- Climate change will not affect all Pennsylvanians equally. Some may be more at risk because of their location (and inability to relocate), income, housing, health, or other factors



Pennsylvania Climate Action Plan 2021

Purpose of this Report:

- Updated Business-As-Usual Emissions Scenario Projections
- Outlines a pathway to reaching PA's GHG reduction goals: 26% by 2025 and 80% by 2050 from 2005 levels
- Quantifies GHG reduction and economic costs/benefits of climate action
- Includes discussion on the role of "enabling technologies" in meeting PA's GHG reduction goals
- Priority adaptation actions directly informed by the Pennsylvania Climate Impacts Assessment 2021
- Focus on equity throughout



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







2021 Pennsylvania Climate Action Plan – Business As Usual

GHG reductions by strategy, through 2050 (MMTCO₂e) 350 Base Year, 2005 300 250 200 150 100 50 2050 GHG Emission **Reduction Goal** 0 2005 2010 2015 2020 2025 2030 2035 2000 2040 2045 2050 **Reductions Needed** LULUCF Fuel Supply Agriculture Industrial Electricity Generation Buildings ·····Goal Emissions Transportation ----GHG Emissions to Date —BAU GHG Emissions — Start of Projections 9

2021 Adaptation Planning – Climate Action Plan

	 Impacts of Increasing Average Temperatures and Heat Waves on Health Impacts of Floc and Storms on Heat 				boding Health		3. Imp Increasin Temper Environme and	pa rat en Ec	acts of Average tures on tal Justice quity	4. I Flo Environ ar	mp odi me nd E	acts of ing on ntal Justice Equity		
5. Impacts of Increasing Average Temperatures on Forests, Ecosystems, and Wildlife			6. Impae Warmer ar Clima Agricu	cts of a nd Wetter te on ulture		7. Imp Increasing Tempero Recrea Tou	ac g A atu tior risr	ts of verage ires on n and m		8. Impact Changing Cli Built Infrastr	s of a mate on ucture		9. Impacts Landslides on Infrastructu	of Built vre

Project Approach and Scope

Fundamental Updates

Drawing from new baseline and other information

Expanding and Deepening Selected Elements

Emerging Policy Technology Market Developments Impacts to Environmental Justice Communities

Task	2023							2024					
	Jul	Aug	Sep	Oct	Νον	Dec	Jan	Feb	Mar	Apr	May	Jun	
Kickoff	0												
Climate Impact Assessment (CIA)	In	itial Dra	ft CIA 🤇	Up Dra	dated ft CIA	Fir	Draft al CIA		Final (CIA			
Climate Action Plan (CAP)		Ini	tial Draf	t CAP 🤇		Upo Draf	dated t CAP	Fine	Draft al CAP		(🔵 Final (
Climate Change Advisory Committee (CCAC) Coordination		0		0		0		0		0		0	

A report that is shaped, populated, and refined throughout the process

2024 CIA Process

Initial Draft CIA

Report outline Current climate change data and trends

Annotated bibliography of literature review updates

Summary of community inputs

Updated to all items in initial draft CIA based on comments and feedback

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Updated Draft CIA

Updates to risk assessment ratings and content

Enhanced analysis of health and equity impacts

> Discussion of economic opportunities of CIA

Initial discussion on attribution science

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Draft Final CIA

Updates to all previous items based on comments and feedback (with focus on newly drafted sections)

Additional analysis of other priority topics as applicable

Initial draft of executive summary

Final CIA **A**

Updates on all previous items based on comments and feedback

Delivery of supplemental materials for DEP to share with a nontechnical audience

2024 CAP Process

GHG Emissions and Sequestration Trends	Collect key updates and new data sources Develop and model 3 BAU Scenarios Assess achievement of state GHG reduction goals Select BAU scenario	Strategies to Reduce GHG Emissions and Adapt to Climate Change	Update and prioritize mitigation and adaptation strategies Identify gaps and develop new strategies Incorporate equity approach Model GHG reductions Assess emerging technologies	Cost Effectiveness of Strategies	Assess Societal Benefits, Costs, and Cost- Effectiveness Metrics Evaluate mitigation strategies impacts to consumer energy rates Assess economic impacts of strategies	Implementation and Legislation	Identify specific, and actionable steps to implementation of strategies Develop technical support documentation for legislative action	Report Development G	Document, compile, and synthesize technical information into a visually attractive, data- driven, and understandable report Ensure clear communication of strategies supporting GHG reduction and climate resilience goals
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PA's Ongoing Energy and Climate Efforts

- Local Climate Action Program allows local governments and college students to work together to develop GHG inventories and climate action plans.
- Shared Energy Manager Program The SEM supported those local governments in implementing many of the energy-related strategies from their CAPs, such as energy benchmarking, energy audits, solar PV feasibility assessments, development of energy management plans, and alternative fuel evaluations for fleet vehicles.



-MIDDLETOWN-BUCKS COUNTY CLIMATE ACTION PLAN



Local Actions and Policies to Reduce Middletown Township's Greenhouse Gas Emissions



ADOPTED SEPTEMBER 20, 202

Produced by the Middletown Township Environmental Advisory Council & the Office of the Township Manager









Energy Programs Office

Thank you!

Megan Porta

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