Pennsylvania Action on Climate Change

Presentation to Environmental Justice Advisory Board
May 21, 2020

Tom Wolf, Governor

Patrick McDonnell, Secretary
Feedback/Input

- What specific sectors/strategies/actions from the 2018 Climate Action Plan (CAP) need additional attention?
- What sector/strategy/action was missing in the 2018 CAP that should be included in 2021?
- Should the CAP include more specific sections on adaptation to climate change?
- Should the CAP contain educational content about causes of climate change?
- Should the CAP provide details on how actions would need to be carried out, and by whom?
- Should the CAP include implementation plans for greenhouse gas reduction/mitigation measures?
Pennsylvania Climate Change Act (Act 70 of 2008) requires DEP to:

• Develop a climate impacts assessment (3 yrs.)
• Prepare and update a climate action plan (3 yrs.)
• Develop an inventory of greenhouse gases (GHGs) (update annually)
• Administer a Climate Change Advisory Committee (bimonthly)
Why a Climate Action Plan?

According to the 2015 Pennsylvania Climate Impacts Assessment:

• Over past 110 years, temperatures in PA increased by more than 1.8°F and are expected to increase by an additional 5.4°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%
According to the 2015 Pennsylvania Climate Impacts Assessment:

• Higher temperatures will increase mortality from heat-related stress, but will decrease mortality from cold-related stress

• Climate change will worsen air quality relative to what it would otherwise be, causing increased respiratory and cardiac illness

• The linkage between climate change and air quality is most strongly established for ground-level ozone creation during summer
Why a Climate Action Plan?

According to the 2015 Pennsylvania Climate Impacts Assessment:

- Surface water quality could be impacted by 1) increased pathogen loads due to greater surface runoff from livestock farms & sewer overflows; and 2) increased risk of harmful algal blooms in eutrophied lakes and reservoirs

- Distribution and prevalence of vector-borne diseases such as Lyme Disease and West Nile Virus could increase
Climate change impacts will vary by sector:

- PA dairy production is likely to be negatively affected due to losses in milk yield caused by heat stress.
- Warmer climates in southern states could stimulate a large-scale movement of poultry and hog production north to states like PA.
- PA’s downhill ski and snowboard resorts are not expected to remain financially viable past mid-century.
- Impacts of climate change on trout (cold-water) fishing are expected to be particularly severe in southeastern and northwestern PA.
GHG Emissions by Sector in 2016

Pennsylvania 2016 GHG Emissions

- Residential: 23%
- Commercial: 7%
- Industrial: 31%
- Transportation: 4%
- Electricity Production (in-state): 3%
- Agriculture: 2%
- Waste Management: 3%
Call to Action

PA Leaders, Citizens, and Businesses should:

• Consider how PA’s climate will change in the future
• Understand the impacts from those changes
• Take action to adapt to those changes and reduce GHG emissions
Climate Action Plan Goals

• Minimize disruptions to Pennsylvania’s citizens, economy, and environment from climate-related hazards
• Increase PA’s ability to prepare for and adapt to changing conditions and respond to and recover from climate-related disruptions
• Maintain cost-effectiveness
Mitigation Targets:

- 26% reduction of net GHG emissions by 2025, from 2005 levels
- 80% reduction of net GHG emissions by 2050, from 2005 levels
Summary of Strategies:

- 8 Sectors
- 19 Strategies
- Over 100 Leadership Actions
- 15 Quantitatively Analyzed Actions
- Additional Actions for Citizens and Businesses
Strategies and Actions

- Energy Consumption
  - Increase end use energy conservation and efficiency
  - Implement sustainable transportation planning and practices
  - Develop, promote, and use financing options to encourage energy efficiency
  - Update building codes
  - Increase adoption of energy efficiency, and expand Act 129
  - Expand energy assessments and provide more trainings on energy efficiency for industry

8 Sectors
19 Strategies
> 100 Actions
Sectors

- Energy Consumption
- Energy Production
- Agriculture
- Ecosystems & Forestry
- Outdoor Rec. & Tourism
- Waste Management
- Water Resources
- Human Health
19 Strategies

1. Increase end use energy conservation & efficiency
2. Implement sustainable transportation planning & practices
3. Develop, promote, & use financing options to encourage energy efficiency
4. Increase use of clean, distributed electricity generation resources
5. Create a diverse portfolio of clean, utility-scale electricity generation
6. Reduce upstream impacts of fossil fuel energy production
7. Increase production & use of alternative fuels
8. Use agricultural best practices
9. Provide resources & technical assistance to farmers to adapt
10. Protect ecosystem resilience, including forest systems where species will shift
11. Monitor, identify, & address ecosystem vulnerabilities
12. Help the outdoor tourism industry manage shifting climate patterns
13. Reduce & use waste sent to landfills
14. Use stormwater best management practices
15. Promote integrated water resources management & water conservation
16. Improve reliability & accessibility of public information about climate-related health risks
17. Bolster emergency preparedness and response
18. Lead by example in commonwealth & local government practices & assets
19. Incorporate historical & projected climate conditions into siting & design decisions for long-term infrastructure
15 Modeled Leadership Actions

• Update building codes
• Increase adoption of energy efficiency, and expand Act 129
• Create an Act 129-like conservation and efficiency program for natural gas
• Expand energy assessments and provide more trainings on energy efficiency for industry
• Reduce vehicle miles traveled for single-occupancy vehicles
• Implement a strategic plan and incentives for increasing electric vehicle use
• Increase the use of clean public transportation through electric municipal bus fleets
• Invest in and promote building-scale solar
• Incentivize and increase use of combined heat and power (CHP)
• Increase Alternative Energy Portfolio Standard (AEPS) Tier 1 targets, and further increase in-state generation and use of renewables
• Implement policy to maintain nuclear generation at current levels
• Limit carbon emissions through an electricity sector cap and trade program
• Implement policies and practices to reduce methane emissions across oil and natural gas systems
• Increase recovery and use of gas from coal mines, agriculture, wastewater, and landfills for energy
• Increase adoption rate of and provide training for no-till farming practices
GHG emission would be reduced 21% from 2005 levels by 2025, and 36% from 2005 by 2050, if just 15 actions were adopted across Pennsylvania. Additional strategies and actions qualitatively addressed in this report would likely result in additional GHG reductions.
A social cost of carbon (the cost of damages of one ton of carbon emissions) of $95 is used as the benchmark for cost-effectiveness. Anything below the benchmark (dotted line) is cost-effective, based on this perspective.
If the 15 quantified actions were implemented, approximately 40,000 jobs would be created by 2050.
Each strategy outlined in the Plan includes actions the businesses and individuals can take.

**What Businesses Can Do to Implement Sustainable Transportation Planning and Practices**

Pennsylvania businesses can support this strategy by taking the following actions:

- Purchase fuel-efficient or low-emission vehicles (including fleets) to save money and reduce GHG emissions.
- Support sustainable transport by participating in transportation planning processes with your local government or metropolitan planning organization.
- Provide incentives to employees for smart commuting practices and allow for teleworking, where feasible.

**What You Can Do to Increase End Use Energy Conservation and Efficiency**

Pennsylvania citizens can support this strategy by taking the following actions:

- Install energy efficient lighting and appliances.
- Conduct a home energy audit to identify other efficiency opportunities.
- Install smart thermostats, home energy management systems, and other smart controls.
- Avoid energy intensive activities during peak times (especially late afternoon and evening). For example, run appliances (e.g., dishwashers, dryers) during utility off-peak hours.
Key Takeaways

• Suite of strategies recommended in the Plan maximize GHG reductions and are cost-effective

• Commonwealth government will need to prioritize and phase implementation for quantified and non-quantified strategies in the Plan

• Actions which are low cost and have large GHG and economic benefits offer PA the best short-term solutions

• Actions that may take more time and resources to implement and have more tradeoffs to consider still need to be enacted, as they’ll help PA maximize the impact of the Plan

• Ambitious and quick action is needed by all actors, including leadership, businesses, and citizens
Climate Goal for the Commonwealth of Pennsylvania

The Commonwealth shall strive to achieve a 26 percent reduction of net greenhouse gas emissions statewide by 2025 from 2005 levels, and an 80 percent reduction of net greenhouse gas emissions by 2050 from 2005 levels.
Executive Order 2019-01 directs commonwealth agencies to:

• Reduce energy use by 3% per year and 21% by 2025 from 2017 levels
• Procure renewable energy to offset at least 40% of the Commonwealth’s annual electricity use
• Design and construct new buildings/renovation projects as a high-performance buildings
• Replace 25% of the state vehicle fleet with battery electric and plug-in electric hybrid cars by 2025
On April 29, 2019, Governor Tom Wolf announced Pennsylvania’s membership in the U.S. Climate Alliance

• Alliance states commit to:
  – Implement policies that advance the goals of the Paris Agreement, aiming to reduce greenhouse gas emissions by at least 26-28 percent below 2005 levels by 2025
  – Track and report progress to the global community in appropriate settings, including when the world convenes to take stock of the Paris Agreement
  – Accelerate new and existing policies to reduce carbon pollution and promote clean energy deployment at the state and federal level
Executive Order 2019-07 directs commonwealth agencies to:

- Commits DEP to create a rule to limit CO$_2$ from electric power plants by July 31, 2020
- Engage in a robust public outreach effort
- Provide for the auction of CO$_2$ emissions allowances through a market-based mechanism
- Be consistent with the RGGI Model Rule
Local Climate Action Program

• ICLEI Local Governments for Sustainability – USA hired as contractor
• College student matched with local government
• ICLEI trains student on inventory tool (fall semester) and climate action planning (spring semester)
• Final product: 20 GHG inventories & 20 local climate action plans
• First training webinar in early September 2019 & final work completed by June 30, 2020
Local Climate Action Assistance Program

- Caln Township
- Narberth Borough
- Jermyn Borough
- Carlisle Borough
- Derry Township
- Armstrong Township
- Bellefonte Borough
- Indiana Borough
- Millvale Borough
- Etna Borough
- Sharpsburg Borough
- West Homestead Borough
- Borough of Munhall
- Elizabeth Township
- Borough of Forest Hills

- City of Reading
- City of York
- Chester County
- Erie County
- Centre Region Council of Governments
Inventory By Sector

CO2e by sector for the selected inventory year.

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<thead>
<tr>
<th>Sector</th>
<th>CO2e</th>
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<td>Transportation &amp; Mobile Sources</td>
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<td>Solid Waste</td>
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<td>Water &amp; Wastewater</td>
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<tr>
<td>Process &amp; Fugitive Emissions</td>
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</tbody>
</table>
[Jurisdiction]
Climate Action Plan

Local Actions and Policies to Reduce [Jurisdiction]’s Greenhouse Gas Emissions

Approved by [Local Authority]
[Date Approved]
[Reference to Public Record]
[Reference to Further Information]

Produced by [Name of Lead Department or Task Force]
Through partnership with ICLEI – Local Government for Sustainability (ICLEI)
Please read the CAP booklet:

www.dep.pa.gov/climate

Then, provide your feedback via our online survey:

https://www.surveymonkey.com/r/5JPCFFJ
Thank you!

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