



## Port Authority's Values:

Equitable, Sustainable

### Overview

As greenhouse gas emissions (GHG) contribute to climate change, Port Authority should try to reduce its carbon footprint as much as possible. Where feasible, Port Authority could utilize its properties and facilities to generate renewable energy, and to the greatest extent possible, purchase clean energy credits to offset agency-wide electricity usage.

Transit agencies produce carbon emissions through the operation of their transit vehicles and non-revenue vehicles, as well as from their administrative, maintenance, and operations facilities. Advancements in transit vehicle technology continue to reduce carbon emissions. Many transit agencies are also reducing their emissions by building new facilities or retrofitting existing facilities to Leadership in Energy and Environmental Design (LEED) standards or higher.

According to the definition of the Intergovernmental Panel on Climate Change (IPCC) carbon neutrality refers to achieving net-zero carbon dioxide emissions by balancing carbon dioxide emissions with removal or simply eliminating carbon dioxide emissions. Failing to mitigate climate change could damage transportation infrastructure, lead to service disruptions, lead to service closures, and slow economic growth. Both corporations and the public are increasingly demanding that public agencies act to address climate change. Carbon neutrality can be achieved by calculating a carbon footprint and reducing it to zero through a combination of efficiency measures in-house and supporting

external emission reduction projects. The growing voluntary market should foster a more rapid implementation of widespread policy initiatives that will lead to reduced carbon emissions. The goal of carbon neutrality is to ultimately stabilize and decrease the atmospheric CO<sub>2</sub> concentration.

### Analysis

An organization that is carbon neutral removes the same amount of carbon dioxide which it emits into the atmosphere in order to achieve net-zero carbon emissions. This is usually accomplished by purchasing carbon offsets or credits from companies that are carbon negative to make up the difference. The transportation sector of the accounts for 29% of carbon emissions in the United States. Medium- and heavy-duty trucks, buses, ships and boats, aircraft, and trains contribute for approximately 40% of the carbon emissions with the remainder being generated by light-duty trucks, passenger cars, and motorcycles. It is aspirational for Port Authority to achieve carbon-neutral status as it would benefit Allegheny County's residents, employees, businesses, institutions and its environment as well as the nation and the overall global community.

Port Authority is a member of the American Public Transportation Association (APTA) Sustainability Commitment initiative, which recognizes members becoming more sustainable in their operations and practices. The Commitment provides transit agencies with a framework that helps define, initiate, and advance sustainability in the public transportation industry. Transit agencies must fulfill the Commitment's core principles:

1. Strategic Objective: Making sustainability a part of the organization's strategic objectives
2. Champion: Identifying a sustainability champion within the organization coupled with the proper human and/or financial resources and mandates
3. Employee Outreach: Establishing an outreach program (awareness-raising and education) on sustainability for all staff of the organization
4. Inventory: Establishing a base-line measurement for the organization of the following indicators:
  - Water usage
  - Criteria air pollutants
  - Greenhouse gas emissions
  - Energy use (electricity, fuel)
  - Recycling levels/waste
  - Operating expense per unlinked passenger trip and vehicle revenue mile
  - Unlinked passenger trips per capita in the service area of operation
  - Vehicle-miles traveled per capita in the service area of operation

In March 2020, Port Authority began operating its first two battery electric buses, which are 40' vehicles. Six more 40' electric buses scheduled to be delivered by the end of 2021. Fifteen 60' electric buses are proposed for the Bus Rapid Transit project. The first two buses as well as the next 21 vehicles are all assigned to the East Liberty Garage to operate on routes in the eastern sector of Port Authority's service area.

Other projects that could assist in meeting this goal include:

- Produce/use renewable energy through solar and wind projects, such as soliciting solar or wind power purchasing agreements and partnerships with Energy

- Savings Companies (ESCOs) (firms that specialize in implementing energy efficient technologies to provide their partners with energy savings guarantees).
- Reducing energy consumption through energy efficiency projects, such as replacing incandescent lighting with energy-efficient LED lighting on all light rail vehicles and facilities; utilizing wayside energy storage systems (WESS) to capture, store and reuse energy created by braking trains; and designing new structures with solar reflectance index surfaces (SRI) to reflect sunlight and reduce cooling costs.
  - Purchasing of credits from carbon neutral organizations. Credits from carbon neutral organizations could be obtained through methods other than purchases such as joint development opportunities, land rights, air rights, or free passage.

Technological advancements will continue to make this goal more feasible throughout the lift of this long-range plan. For example, there is a renewed focus on drop-in alternatives in the transportation industry. Drop-in alternatives include technologies that can be used with existing rolling stock which reduces carbon emissions. Companies are producing fuels from non-fossil sources and from waste products from other industries which can be used in current diesel engines. Advancements such as drop-in alternatives continued enhancements in zero-diesel vehicles, and advancements in power sources for structures will increase opportunities for Port Authority to reduce carbon emissions.

The U.S. Federal government has prioritized the reduction of carbon emissions by organizations that receive federal funding. On April 21, 2021, President Biden announced his administration's target of reducing GHG pollution by 50-52% by the year 2030.

Initiatives that apply to the transportation sector include reducing carbon pollution by reducing tailpipe emissions and increasing vehicle efficiency, providing funding for charging infrastructure, and spurring research, development, and implementation of very low carbon new-generation renewable fuels. Increasing investments in lower carbon modes such as transit is also critical.

### Peer Examples

#### Arlington, VA

In 2019, the Arlington County Board adopted an update to the original Community Energy Plan from 2013. This plan helps Arlington to achieve community carbon neutrality by 2050 by serving as an integrated energy policy and climate action framework. The interim milestones include transitioning to 100% of Arlington's electricity coming from 100% renewable energy by 2035, Arlington County Government operations running on 100% renewable energy by 2025, and energy equity must be considered during the implementation of the plan.

#### San Francisco, CA

Between 1990 and 2018, the city of San Francisco reduced its footprint by 35%. During the same period, its population increased 22% and economy grew by 172%.

#### Philadelphia's SEPTA

SEPTA adopted its first-ever Sustainability Program Plan, *SEP-TAINABLE*, in 2011, as a part of the first-generation plan, and recently implemented its second-generation plan, *SEP-TAINABLE 2020*. Achievements during the first generation included publishing an Energy Action Plan in 2012, a Climate Adaptation Plan in 2013, a Cycle-Transit Plan in 2015, and an Environmental and Sustainability Management System (ESMS). SEPTA's early success and comprehensive approach earned it the APTA "Gold" designation. *SEP-TAINABLE 2020* focuses on the encouragement of Transit-Oriented Development through community

and regional planning efforts, expanding the ESMS program to additional SEPTA facilities, and creating a Renewable Energy Plan and Stormwater Management Plan.

**Level of Effort for Implementation:** Low to Moderate

### Resources

[U.S. Department of Transportation, Federal Transit Administration](#)

[American Public Transportation Association](#)  
[Environmental Protection Agency](#)

[Global Carbon Project](#)

[Intergovernmental Panel on Climate Change](#)  
[Arlington County, VA](#)

[San Francisco Department of the Environment](#)  
[Southeastern Pennsylvania Transportation Authority](#)