



Greenhouse Gas Emissions at Portland Public Schools

Greenhouse Gas Overview

What is a greenhouse gas (GHG)?

Greenhouse gases trap heat and make the planet warmer. Human activities are responsible for almost all of the increase in greenhouse gases in the atmosphere over the last 150 years. The largest source of greenhouse gas emissions from human activities in the United States is from burning fossil fuels for electricity, heat, and transportation.

Source: <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

Type of GHG	Main Sources
Carbon dioxide	Burning of fossil fuels (coal, natural gas, oil, transportation fuels), burning of biological materials, manufacturing of cement
Methane	Production and distribution of fossil fuels (coal, natural gas, oil), decay of organic waste in landfills
Nitrous oxide	Agricultural and industrial processes, wastewater treatment
Fluorinated gases	Industrial processes, refrigerants

Source: <https://www.epa.gov/ghgemissions/overview-greenhouse-gases>

What is Included in Tracking Emissions?

Scope 1

Includes GHG emissions generated from on-site fossil fuel combustion, including **natural gas** use and **fleet fuel consumption**

Scope 2

Includes GHG emissions generated from any on-site fuel combustion, such as **natural gas** and **fleet fuel consumption**. It also includes emissions that result from the **generation of electricity used** (i.e. is the electricity used generated by fossil fuels or renewables?)

Scope 3

Includes GHG emissions generated from **all of scope 2** plus **waste disposal** (landfill-bound garbage, recycling, food waste), **production and transportation of food and building construction materials, employee travel, and wastewater treatment**.

What Does this Mean for PPS? (Scope 1 & 2)

Scope	Emissions Source	PPS End Use	Data Availability
1	Natural gas	Space heating, Water heating, Kitchen/cooking	Good data is available. Can be measured and benchmarked.
1	Transportation fuel - gasoline, diesel, propane	School buses, District fleet vehicles	Good data is available. Can be measured and benchmarked.
2	Electricity - emissions that result from the generation of electricity we use	Lighting, Cooling, Plug loads, Ventilation	Good data is available. Can be measured and benchmarked.

What Does this Mean for PPS? (Scope 3)

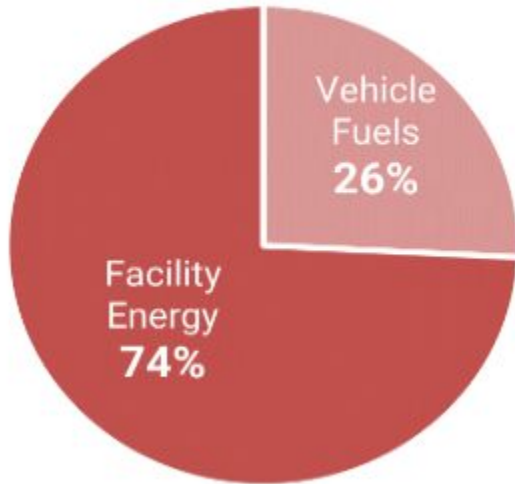
Scope	Emissions Source	PPS End Use	Data Availability
3	Waste disposal	Landfill-bound waste, Recycling	Quality data is not readily available.
3	Wastewater treatment	Energy/emissions associated with domestic water use	Water use data is available. Water treatment data needed from city.
3	Transportation fuel - non-district fleet	Staff and student commutes, employee trips and air travel	Quality data is not readily available.

What Does this Mean for PPS? (Scope 3)

Scope	Emissions Source	PPS End Use	Data Availability
3	Food - upstream production and transportation (before reaching PPS)	School cafeteria food	Quality data is not readily available.
3	Building construction materials - upstream production and transportation (before reaching PPS)	Materials used for construction (concrete, steel, wood etc.)	Quality data is not readily available.

What Are Other Organizations Doing?

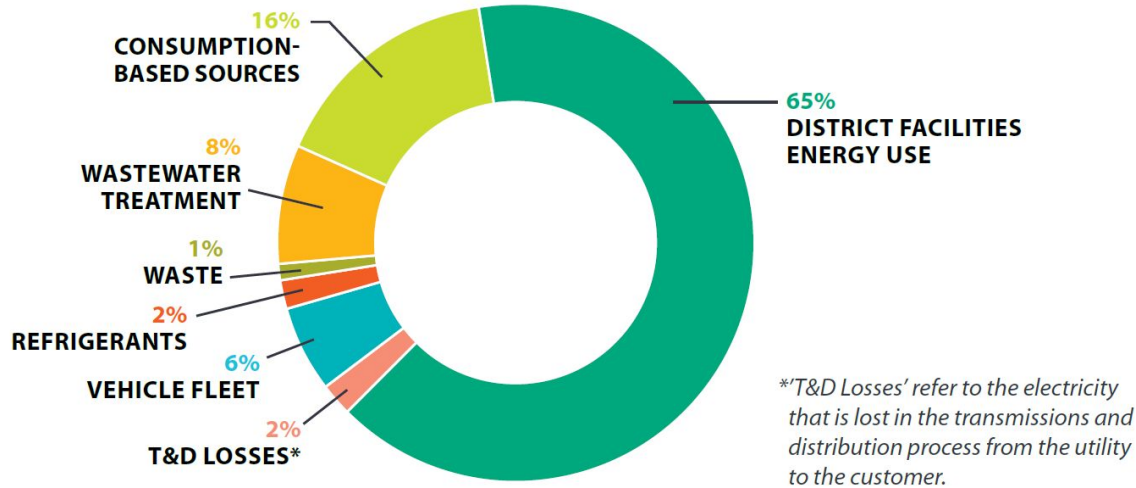
GHG Emissions
FY 19: 18,500 mtCO₂e



San Francisco Unified School District

- Scope 2
- Goal: Carbon neutral by 2040

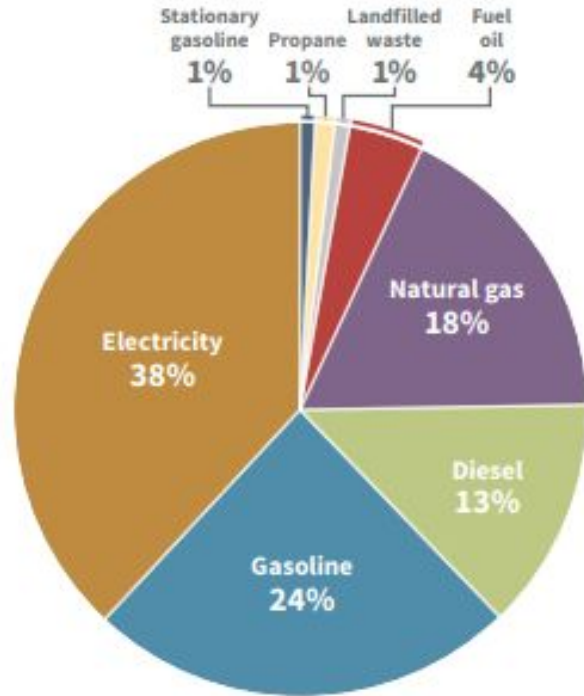
What Are Other Organizations Doing?



Adams 12 Five Star Schools (North Denver)

- Scope 3 (minus employee/student commutes)
- Consumption: food and paper use
- Goal: no specific carbon reduction goal

What Are Other Organizations Doing?



City of Portland

- Scope 2 + waste
- Goal: 50% reduction (below 2006-07 baseline) by 2030

What Should PPS Track?

PPS Sustainability staff are recommending that the district start with tracking all scope 2 + waste + wastewater treatment.

- Accounts for a substantial percentage of overall emissions
- Data is readily available or reasonable to obtain and track
- Making improvements toward emissions reduction is within the district's direct control
- Includes a visible and educational component