


Pitt Climate Action Plan

Dr. Aurora Sharrard
Executive Director of Sustainability



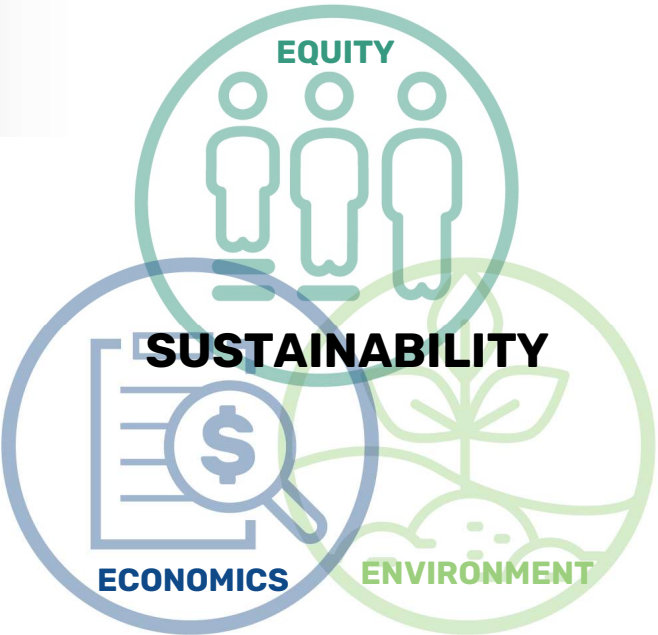
University of Pittsburgh

Staff Council, 8-23-22

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Defining Sustainability

Balancing equity, environment, & economics so current & future generations can thrive.



SUSTAINABILITY

EQUITY

ECONOMICS

ENVIRONMENT

University of Pittsburgh

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Pitt Plans

- Plan for Pitt
- Pitt Campus Master Plan
 - Pitt Institutional Master Plan
- Pitt Campus Energy Plan
- Pitt Sustainability Plan
- Pitt Climate Action Plan



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Pitt Sustainability Plan



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2020 GOAL:

Reduce greenhouse gas emissions 50% by 2030 (below 2008 baseline) **& achieve carbon neutrality by 2037.**

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Pitt Sustainability Dashboards

Stewardship

- Greenhouse Gas Emissions
- Compostable Collection

Exploration

- Building Energy Use Intensity

Community & Culture

- Building Water Use Intensity



Greenhouse Gas Emissions
Annual GHG emissions for the Pittsburgh campus & compared to higher education peers.

University of Pittsburgh Greenhouse Gas Emissions Overview




Pitt GHG Emissions Comparison by Source


Fiscal Year	Total Emissions (Metric Tons CO2e per year)
2010	273,420
2011	268,481
2012	233,815
2013	224,188
2014	216,822
2015	186,068

% GHG Emissions by Source

Source: Electricity (Purchased), Steam (Purchased), Air Travel (Pit Sponsor), Steam (On-Campus), Commuter Travel (Fac), Electricity (T&D Losses), Commuter Travel (Stud), Natural Gas to Buloin, Air Travel (Study Abroa), Refrigerants & Chemi..., Paper, Pitt Fleet Vehicles, Waste-water, Travel (Other Pitt Sp...), Agriculture, Electricity (Cogenera...), Carbon Offsets, Solid Waste.



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HECC PGH

HIGHER EDUCATION CLIMATE CONSORTIUM


REDUCE THE GHGs OF PITTSBURGH by actively engaging all Pittsburgh region colleges and universities to:

- 1) **COLLABORATE,**
- 2) **SHARE INFORMATION, &**
- 3) **SET GOALS REGARDING:**
 - Research agenda
 - Education curricula,
 - Operations,
 - Outreach activities, &
 - Commitments that reduce GHG emissions

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City of Pittsburgh Sustainability

PITTSBURGH CLIMATE ACTION PLAN v3

- 50% energy & water consumption reduction
- 100% renewable electricity by 2035
- 50% transportation emissions reduction
- Fossil fuel free fleet
- Zero Waste
- Pension divestment
- Advance carbon neutrality objectives

DEPARTMENT OF MOBILITY & INFRASTRUCTURE

- Zero traffic related deaths or serious injuries on city streets
- Every household in Pittsburgh can access fresh fruits and vegetables within 20 minutes travel of home, without the requirement of a private vehicle
- All trips <1 mile are easily & most enjoyably achieved by non-vehicle travel
- Streets and intersections can be intuitively navigated by a 14-year-old
- The combined cost of transportation and housing does not exceed 45% of household income for any population quintile.

20%	50%	80%
Below 2003 levels by 2023	Below 2003 levels by 2030	Below 2003 levels by 2050
Source: City of Pittsburgh, 2016		

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Pennsylvania Carbon Goals

(Jan 2019)

Governor Wolf Establishes First Statewide Goal to Reduce Carbon Pollution in Pennsylvania

January 08, 2019



ENVIRONMENT, PRESS RELEASE

Harrisburg, PA – Governor Tom Wolf announced that he has signed a new executive order establishing the first statewide goal to reduce carbon pollution in Pennsylvania, which is contributing to climate change. The executive order also establishes the GreenGov Council to boost green and sustainable practices in state government to help achieve the goals set in the executive order, while saving taxpayers money and creating jobs in the state's clean energy economy.

- **Below 2005 levels,**
 - **26% reduction of greenhouse gas emissions by 2025**
 - **80% reduction by 2050**
- Reduce energy consumption 3% per year, and 21% by 2025
- Replace 25% of state passenger car fleet with battery electric and plug-in electric hybrid cars by 2025.
- Procure renewable energy to offset at least 40% of Commonwealth's annual electricity use.

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 A promotional graphic for the University of Pittsburgh. The background is a lush green campus scene with large trees and a building. In the foreground, there are large green leaves. The University of Pittsburgh crest is in the top right corner.

The University of Pittsburgh will be Carbon Neutral by 2037.

<http://pi.tt/2037>

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Carbon Commitment

- 1) Institutional Structure
 - Annual Second Nature Dues
- 2) Annual GHG Inventories
 - Annual Reporting to Second Nature
- 3) Climate Action Plan
- 4) Develop operational, curricular, research, and community engagement strategies related to carbon neutrality.
- 5) Celebrate accomplishments and performance.
- 6) (Re)focus on existing and emerging areas of GHG emissions reduction opportunity.



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Carbon, Climate, & Resilience Commitments



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Carbon Commitment Committee

As part of our commitment to achieve carbon neutrality on our Pittsburgh campus by 2037, the University of Pittsburgh is creating a **Carbon Commitment Committee**.

- The Committee's goals are to:
 - Hone, design, and manage the University's plan to achieve its carbon neutrality goal by 2037.
 - Develop of a *Pitt Climate Action Plan* to achieve carbon neutrality.
 - Annually evaluate progress towards carbon neutral goal and submit progress evaluations.
 - Develop operational, curricular, research, and community engagement strategies related to carbon neutrality.
 - Celebrate accomplishments and performance.
 - (Re)focus on existing and emerging areas of GHG emissions reduction opportunity.



MEMBERS

- **CHAIR:** **Dr. Aurora Sharrard**, *Director of Sustainability, Office of Sustainability*
- **Joshua Ash**, *PhD Candidate, Graduate School of Public and International Affairs*
- **Jennifer Barnes**, *Supplier Diversity & Sustainability Coordinator, Purchasing Services*
- **Scott Bernotas**, *Vice Chancellor, Office of Facilities Management*
- **Dr. Melissa Bilec**, *Co-Director, Mascaro Center for Sustainable Innovation; Professor, Civil and Environmental Engineering*
- **Federica Geremicca**, *PhD Candidate, Civil and Environmental Engineering*
- **Dustin Gray**, *Executive Associate Athletic Director for Administration, Athletics*
- **Dr. Michael Holland**, *Vice Chancellor for Science Policy and Research Strategies, Office the Senior Vice Chancellor for Research*
- **Mary Beth McGrew**, *Vice Chancellor, Planning, Design, and Real Estate*
- **Rebecca Roadman**, *Chief of Staff, Business and Operations*
- **Annie Ryan**, *Undergraduate Student, Environmental Science, '23*

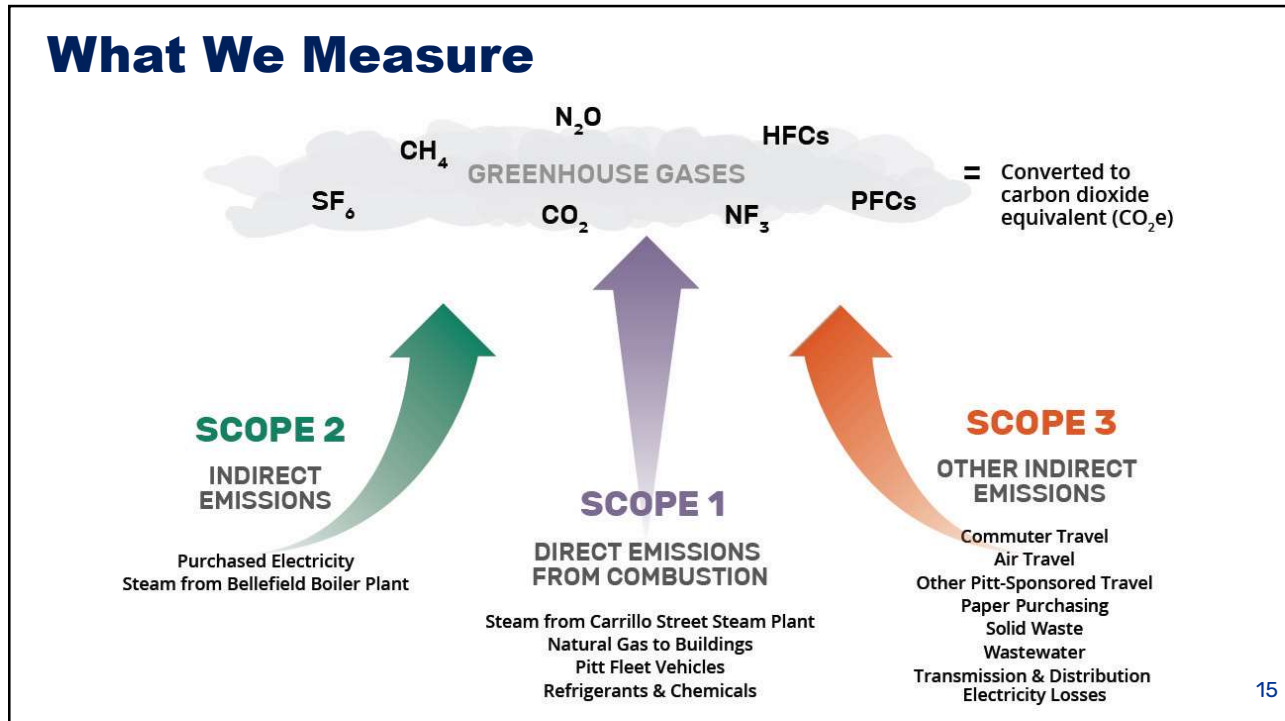
PAST MEMBERS (2020-21)

- **Dr. Max Harleman**, *Alum, Graduate School of Public and International Affairs (GSPIA '21)*
- **Dr. Katrina Kelly-Pitou**, *Former Assistant Research Professor, Electrical and Computer Engineering*
- **Ellen Oordt**, *Undergraduate Student, Ecology and Evolution, '22*

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Pitt GHG Boundaries

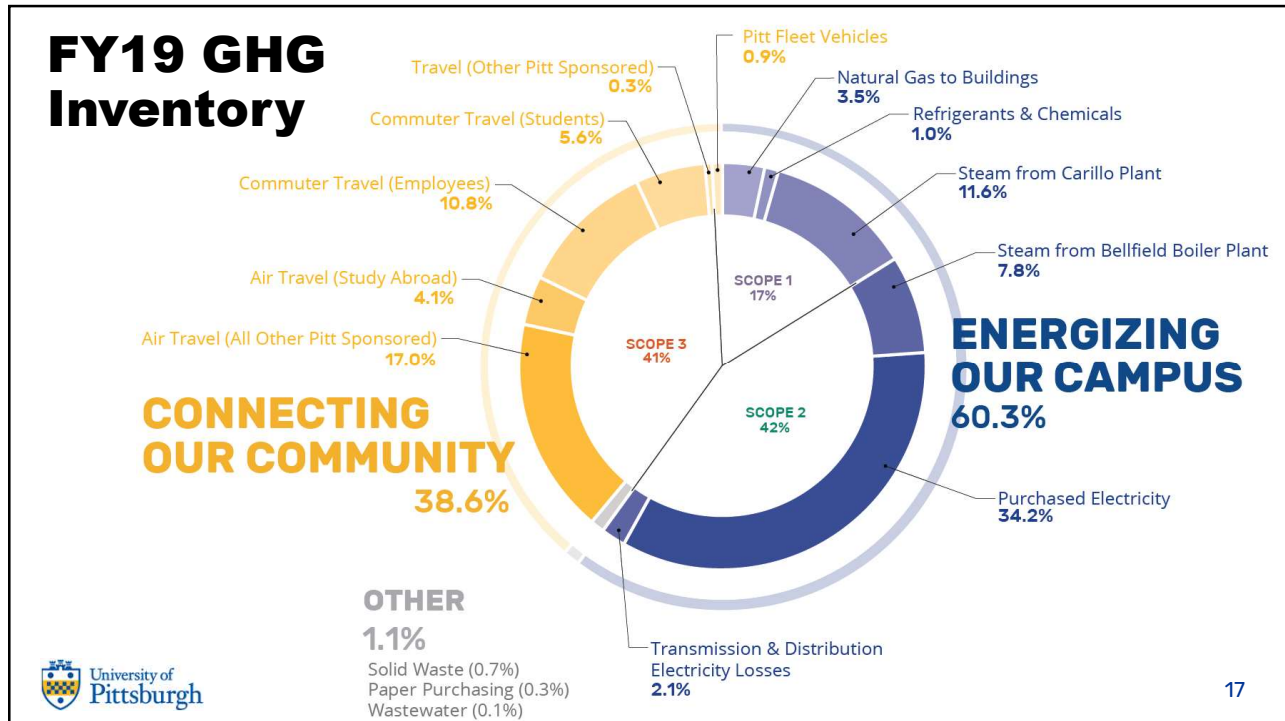
- Pittsburgh campus only.**
- Leased Space NOT included**
 - Currently: 10.3% space & GHGs ↑ 8.4%
 - Could be reduced in future given changing space needs
- Embodied Carbon**
 - Research & practice consideration
 - A couple projects in design exploring
- Investments**
 - GHG Protocol → GHG emissions from investments counted by financial service companies
- Food**
 - Tracking w/World Resources Institute's Cool Food Pledge

Category	Space (gsf)	Percentage
Pitt Occupied Area	12.9M	89.7%
Leased Area	1.3M	10.3%
Oakland	700k	52.8%
Outside Oakland	164k	12.4%
UPMC	462k	34.8%

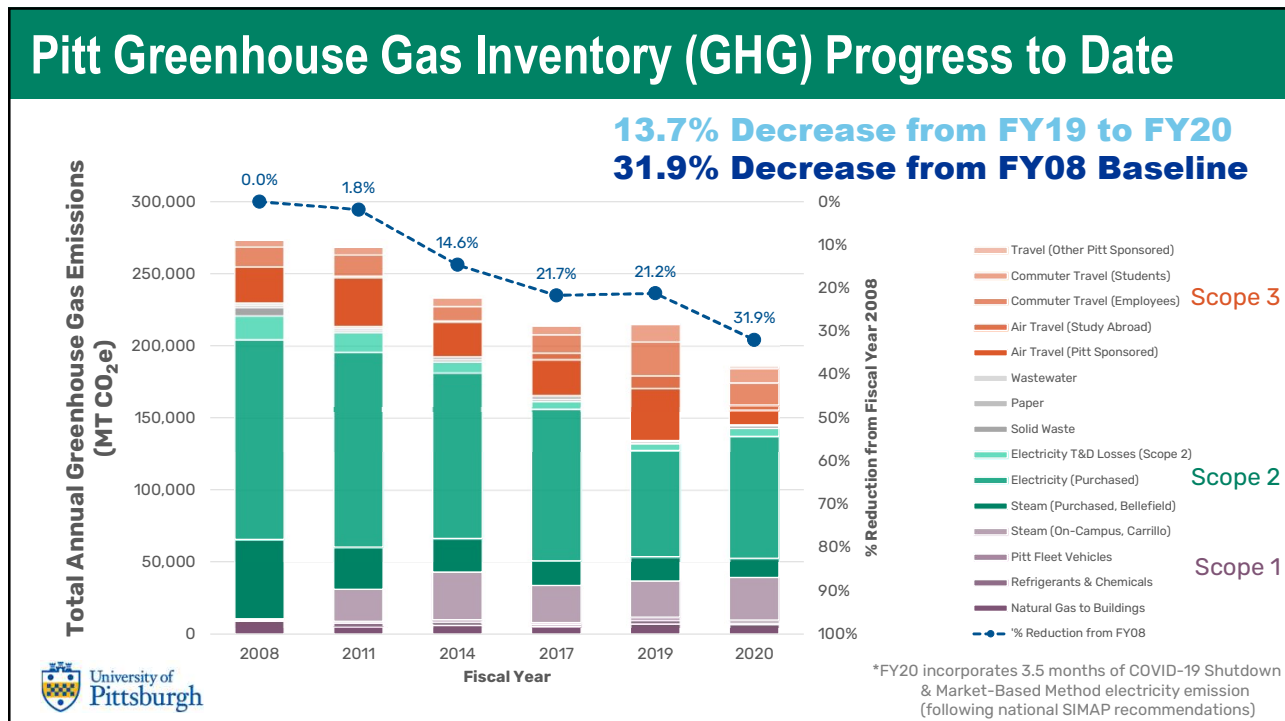
University of Pittsburgh
has joined
COOL FOOD
DELICIOUS CLIMATE ACTION
and is putting climate-friendly foods on the menu

CoolFoodPledge.org

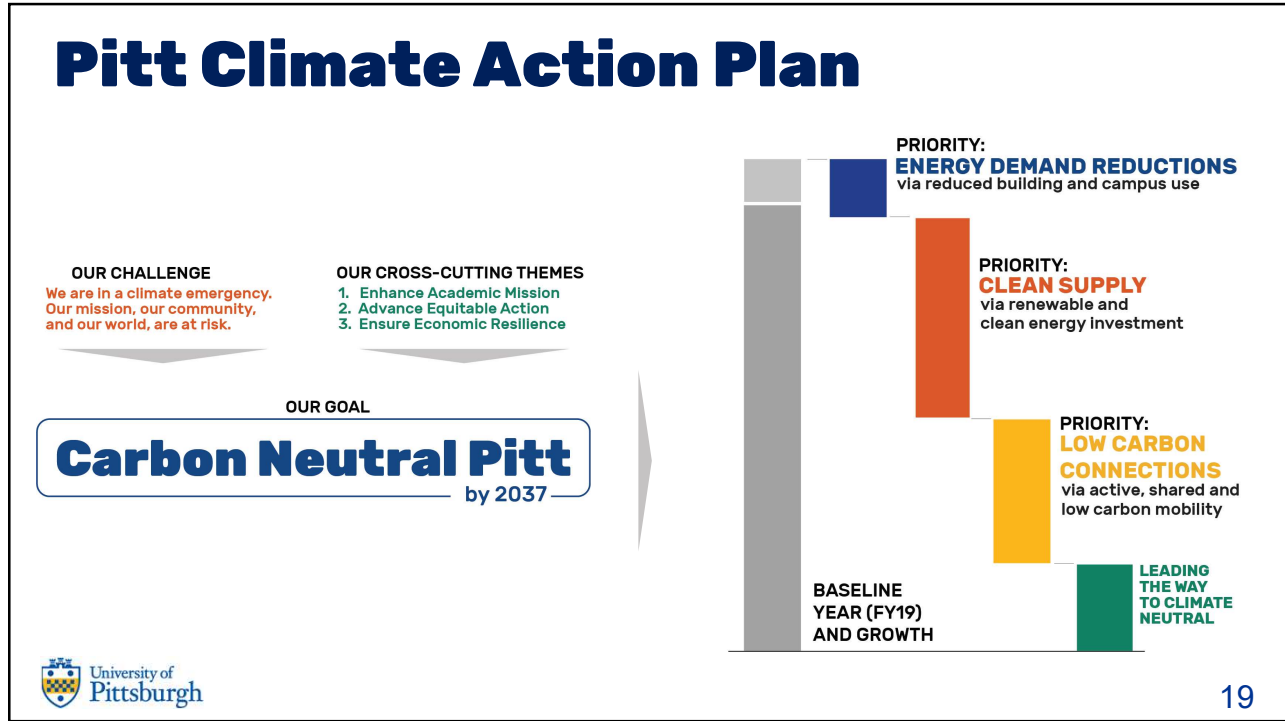
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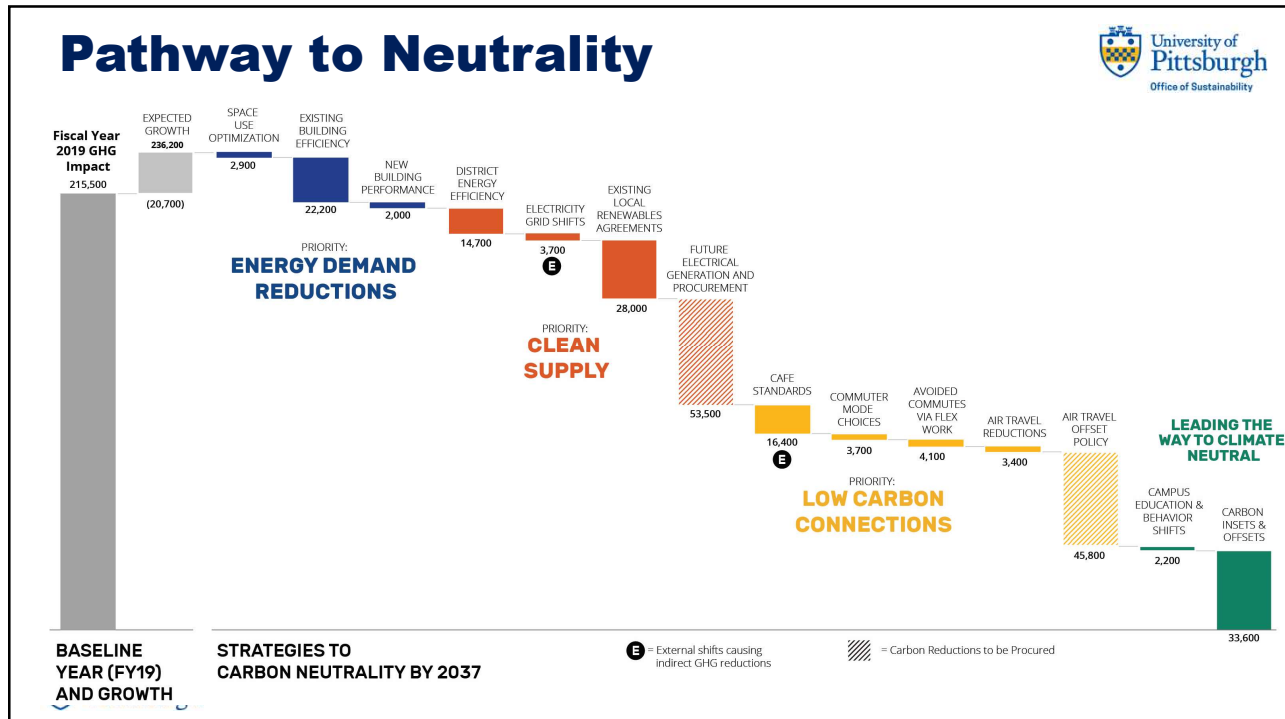
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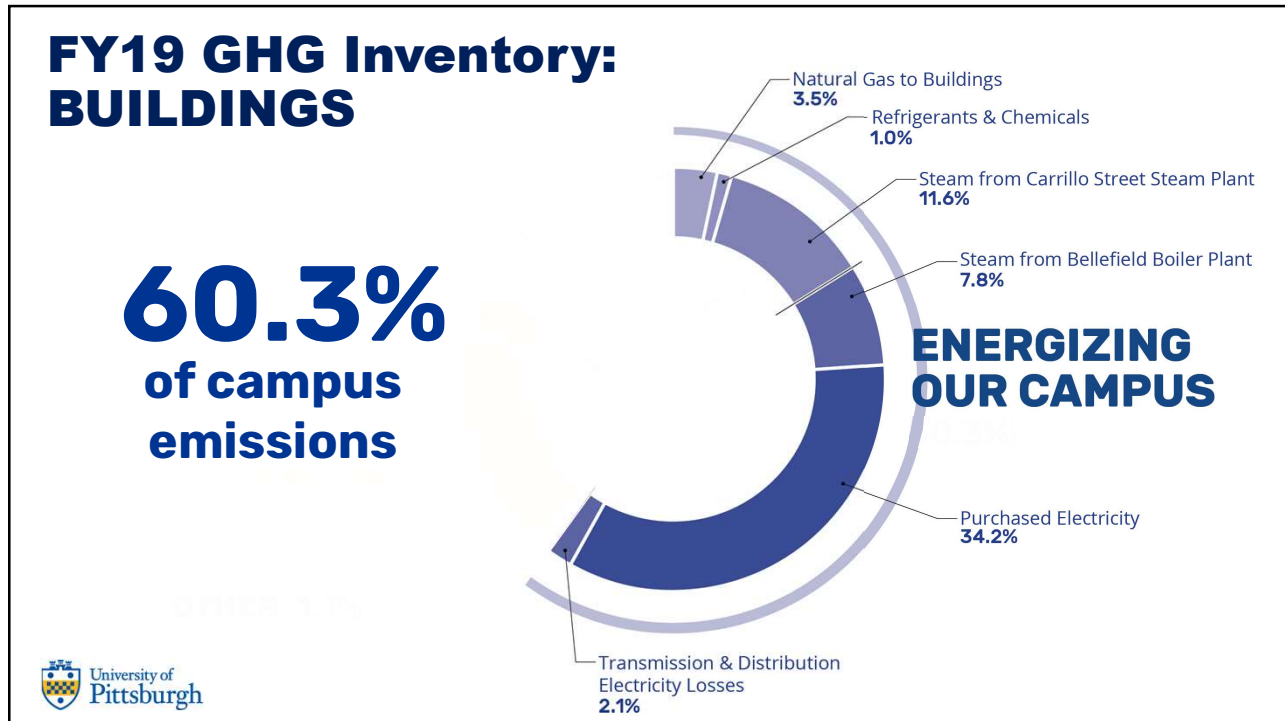
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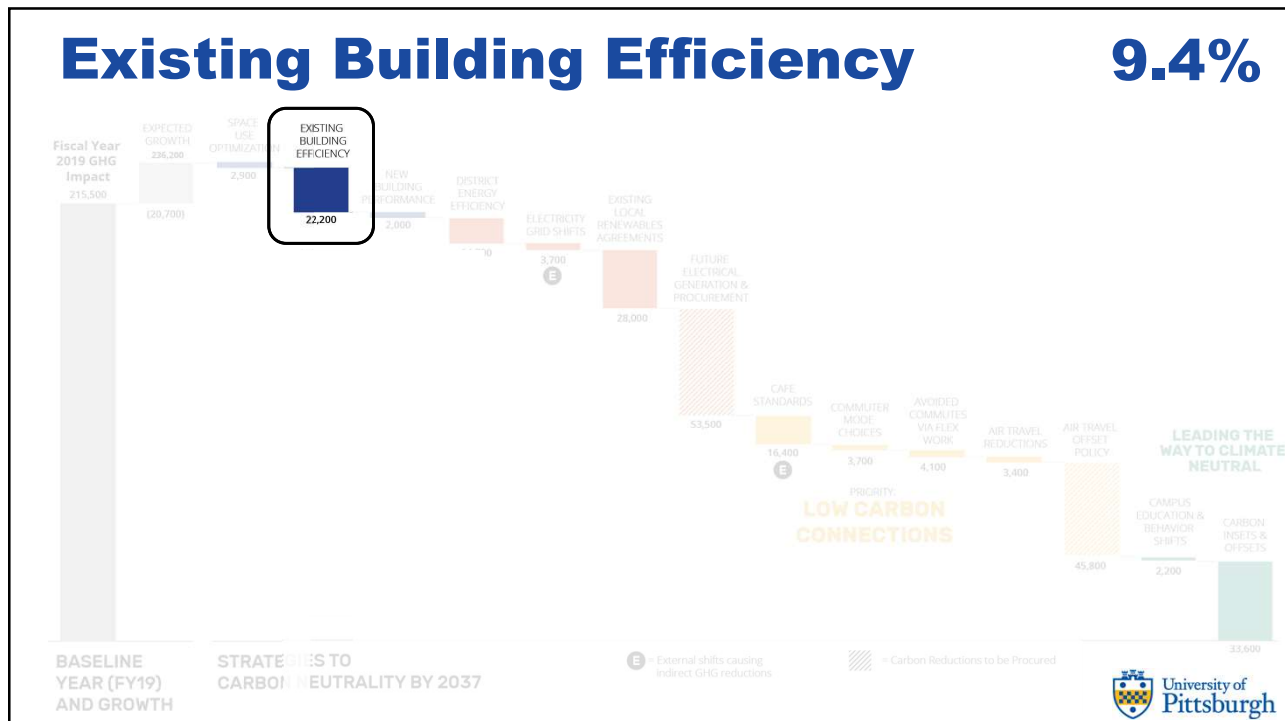
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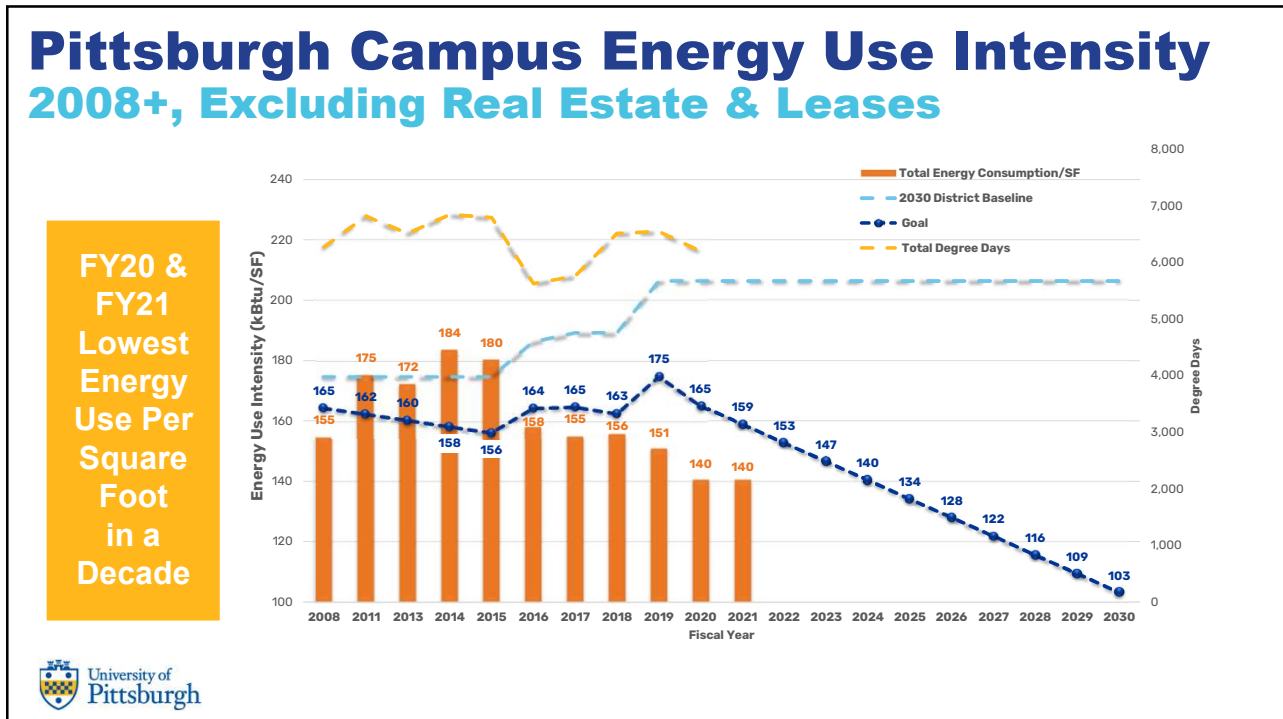
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GOALS:

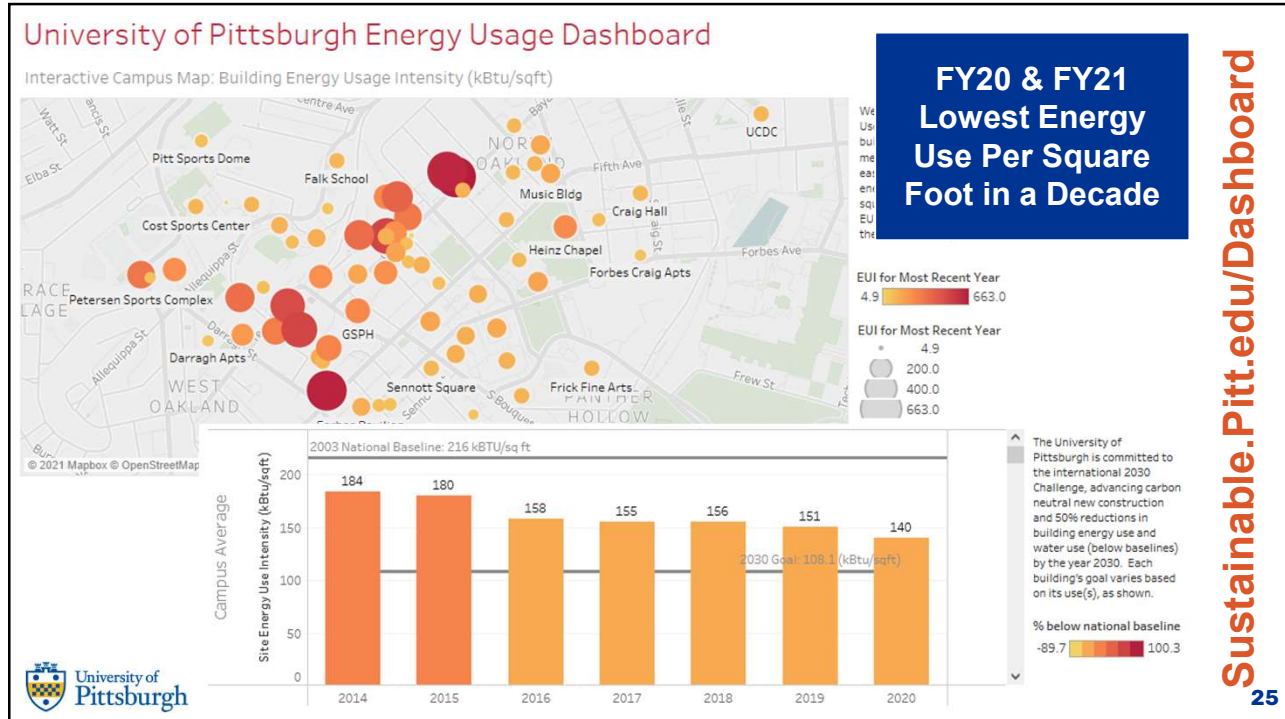
Reduce energy & water intensity 50% by 2030 (from baselines)

DEMAND REDUCTIONS
via reduced building and campus use

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Pitt Green Buildings (2005 - present)

- **16 LEED certified projects**
- **11+ current & recent projects pursuing LEED certification**

- **LEED Gold**
 - Chevron Science Center Annex (2013)
 - McGowan Institute for Regenerative Medicine (2005)
 - Mascaro Center for Sustainable Innovation (2012)
 - Benedum Hall - Phase I Renovations (2011)
 - Biomedical Science Tower - 12th Floor Renovation (2013);
 - University of Pittsburgh at Greensburg, Cassell Hall (2014)
- **LEED Silver**
 - Benedum Hall - Phase 2a Renovation (2016)
 - Clapp Hall Renovation (2020)
 - School of Public Health Renovations (2021)
 - Mark A. Nordenberg Hall (2014)
 - Mid-Campus Research Complex – Nuclear Physics Laboratory Renovation (2014)
 - Salk Hall Pavilion (2016)
 - University of Pittsburgh at Johnstown, Nursing and Health Sciences Building (2015)
 - University of Pittsburgh at Bradford, Livingston Alexander House (2020)
- **LEED Certified**
 - School of Public Health Addition (2018)
 - University of Pittsburgh at Johnstown, John P. Murtha Center for Service (2022)

University of Pittsburgh

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Pitt Green Buildings (In Process)

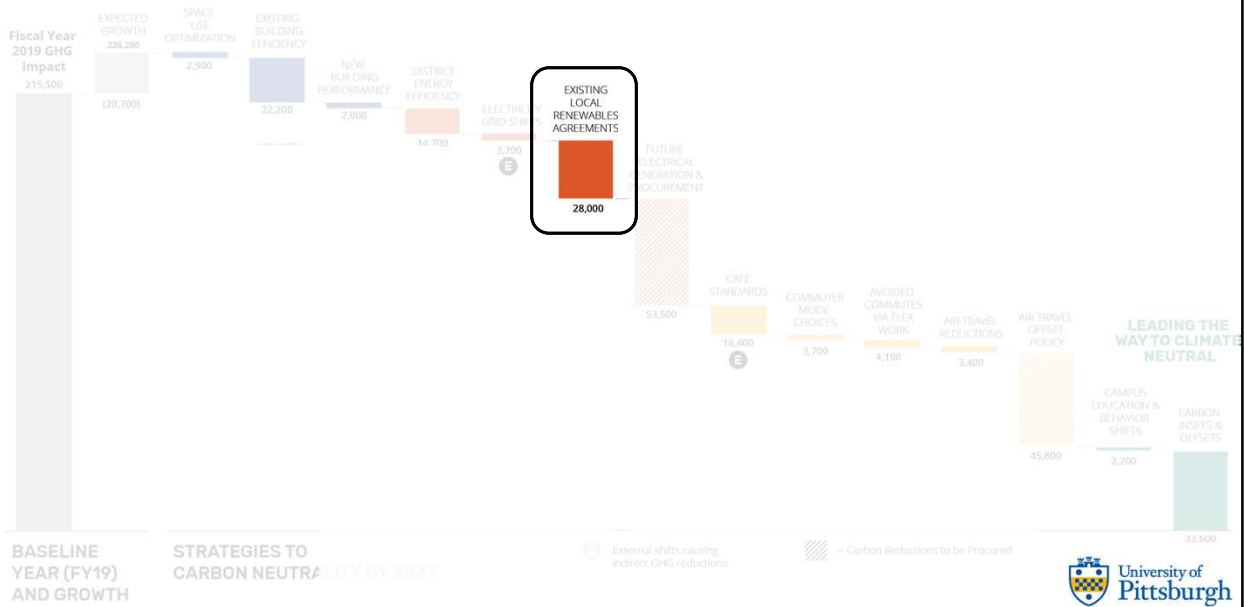
- **Construction Completed**
 - Petersen Sports Complex – Addition & Renovation
 - Salk Hall
 - UPJ, Engineering & Science Building Renovation
- **In Construction**
 - Campus Recreation & Wellness Center
 - Hillman Library – Renovation
 - Scaife Hall
 - UPB, Engineering & Info Technologies Building
 - UPG, Life Sciences Building
- **Under Design**
 - Athletics Arena & Performance Center
 - Central Oakland Housing
 - Hillside Housing



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Existing PPAs

11.9%



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GOALS:

Produce or procure 50% renewables by 2030 & 100% by 2037

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Pitt Renewables on Campuses

2012
Benedum Hall

- **4.32 kW**
- 18 panel research array
- 25 and 45° tilts
- 3 directions (E,S,W)
- ~4,000 kWh annually

2014
McDowell Hall
Pitt Bradford

- **2.6 kW**
- 8 panels
- ~2,500 kWh annually

2020
Energy Innovation Center




- **~50 kW**
- Dr. Brandon Grainger's electric power technologies lab
- Pitt leasee

2022
Engineering & IT Bldg
Pitt Bradford

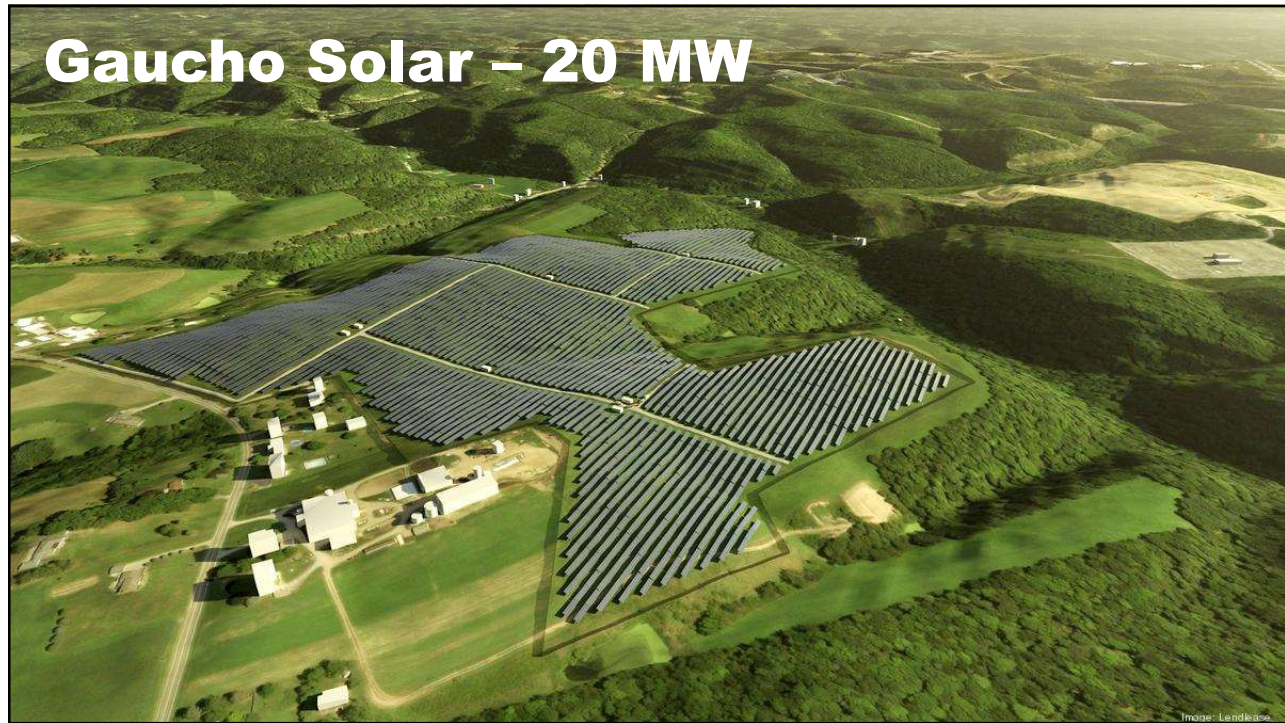
- **~130 kW**
- New building
- MetEd/Penelec Sustainable Energy Fund grant

2023 +
Pittsburgh Campus

- **??? MWh**
- Bids under review for up to 8 buildings
- New rooftop arrays in design







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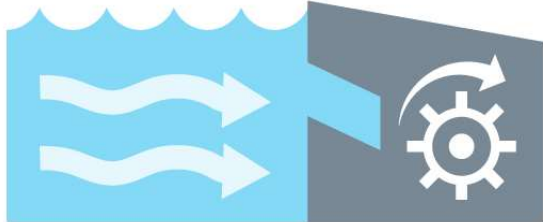



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Pitt Low-Impact Hydropower

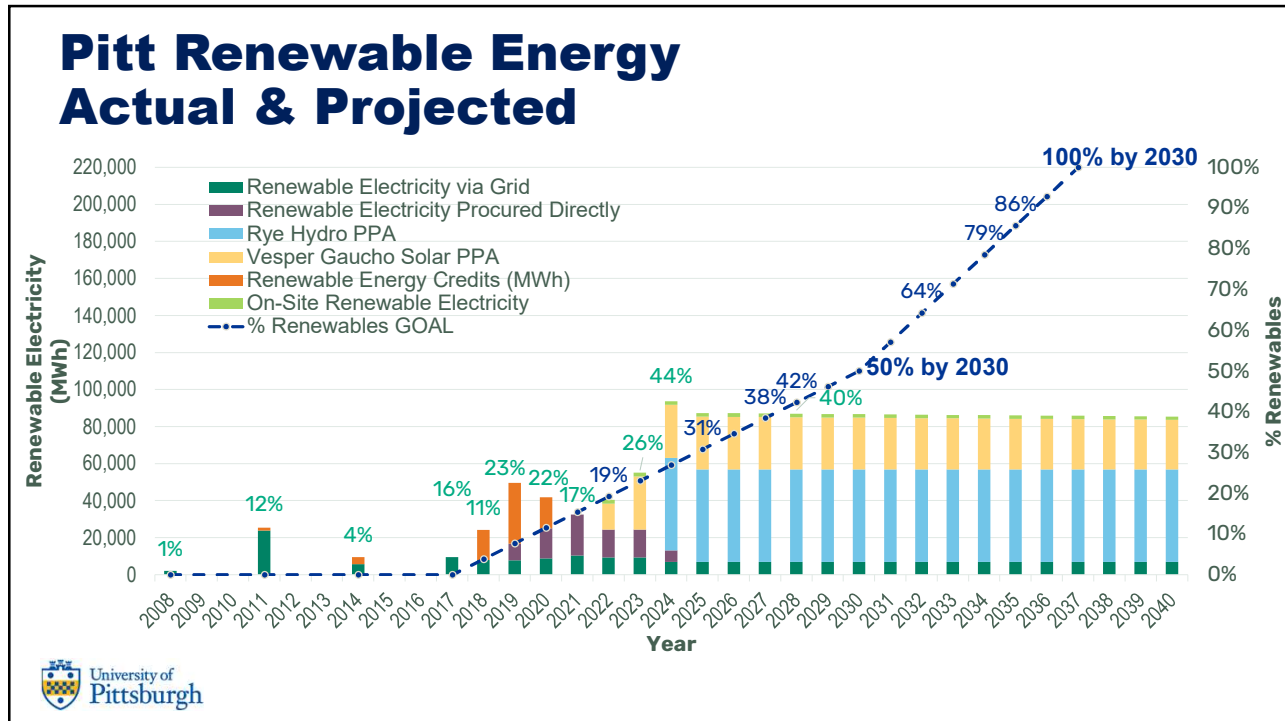
 **Sustainability Goal:**
50%
By **2030**, 50% of Pitt's electricity will be renewable



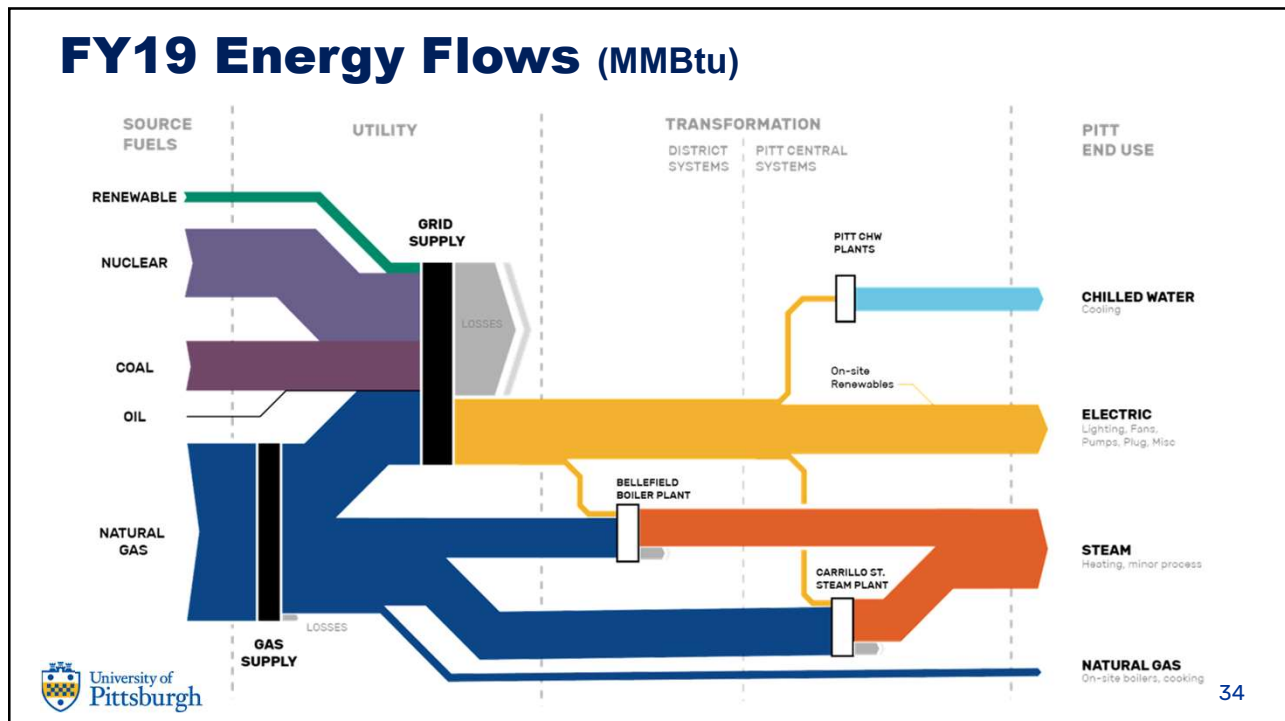


 **25%**
In **2023**, 25% of Pitt's electricity will be hydropower

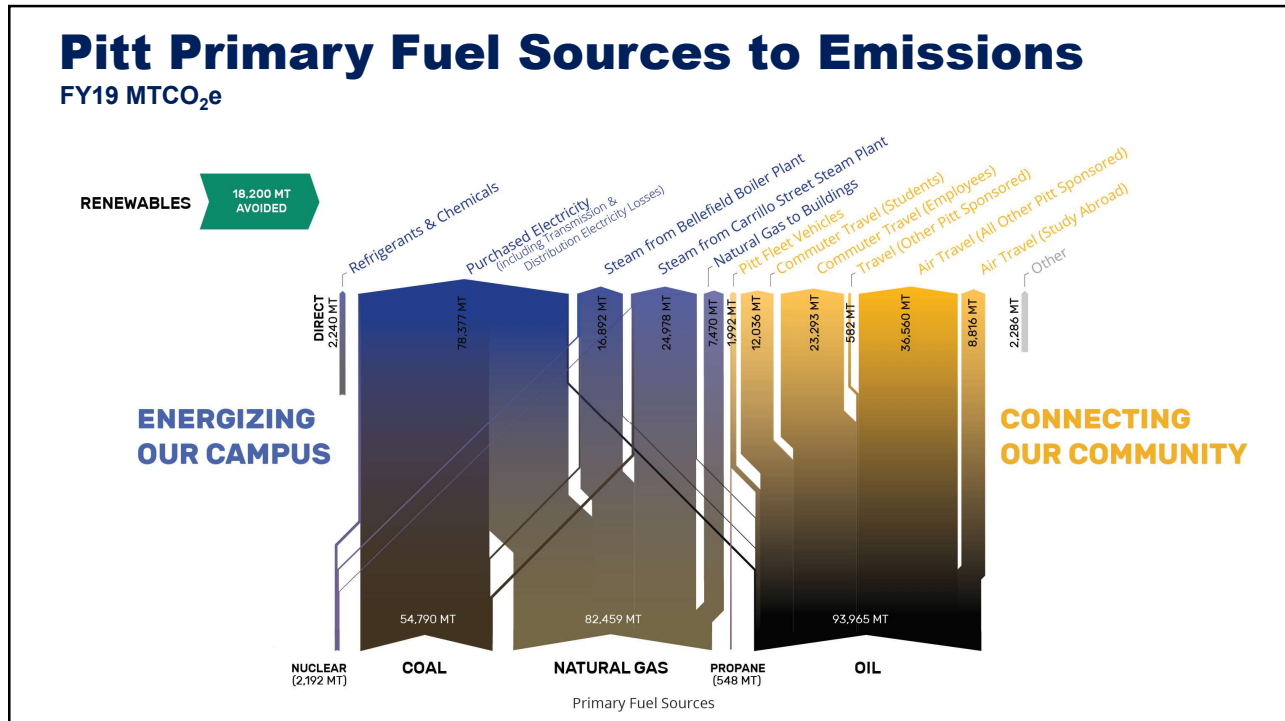
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GOAL:

Reduce GHG emissions from fleet vehicles 50% by 2030

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Electric Vehicles @ Pitt

• 238 fleet vehicles

- 4 electric utility vehicles
 - 2 Athletics
 - 1 Pitt Eats
 - 1 Parking
- 8 Pitt Police electric bikes
 - 4 Pittsburgh
 - 2 Greensburg
 - 2 Johnstown
- 1 electric cargo bike



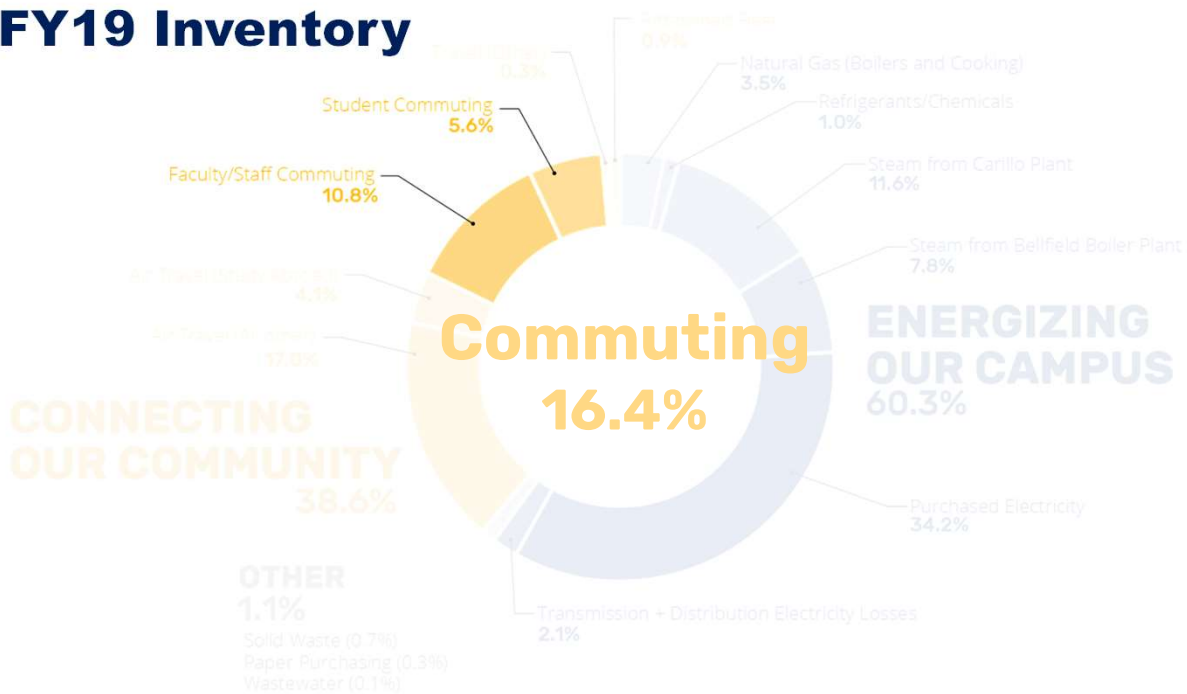
• 56 pieces electric grounds equipment (26%)

- Up from 9 in 2014



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FY19 Inventory



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GOAL:

Reduce GHG emissions from commuting 50% by 2030

LOW-CARBON CONNECTIONS
via active, shared and low-carbon mobility

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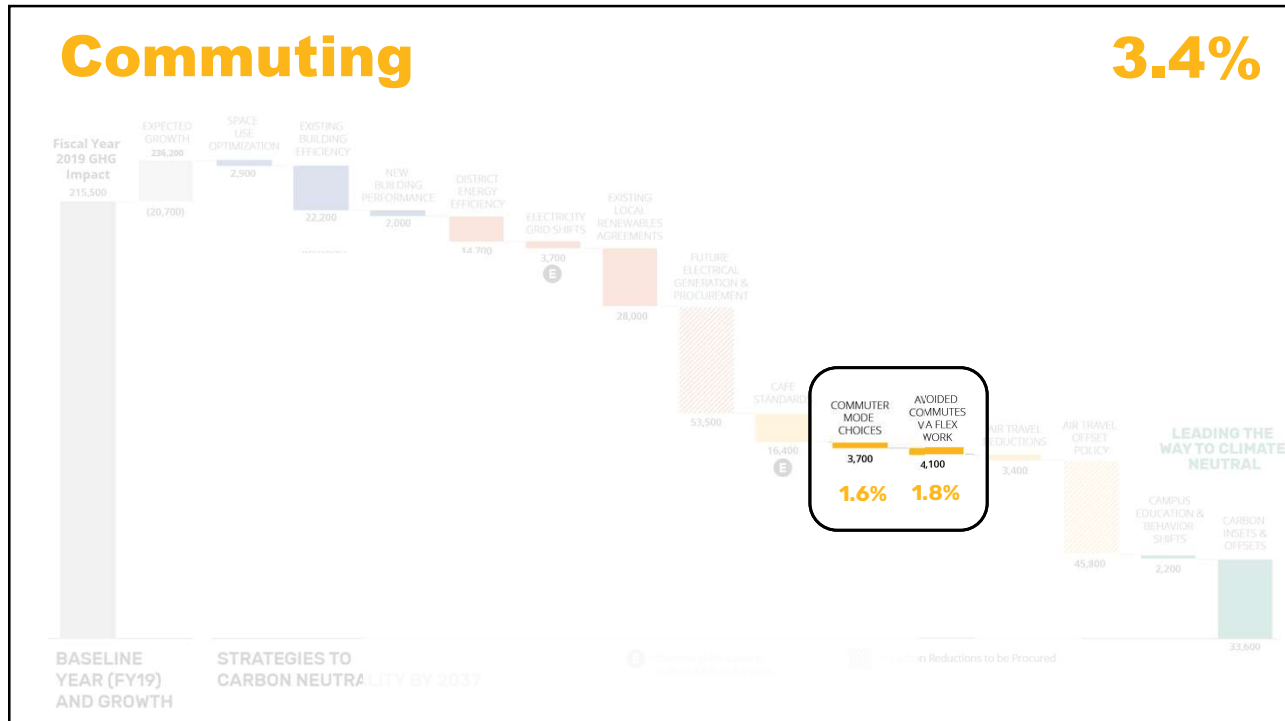
Commuting Assumptions

Mode	Students (%)	Employees (%)
Walk	48.7%	3.1%
Bus	46.4%	59.0%
Bike	3.1%	3.1%
Carpool	0.0%	2.5%
Drive Alone	1.9%	32.4%

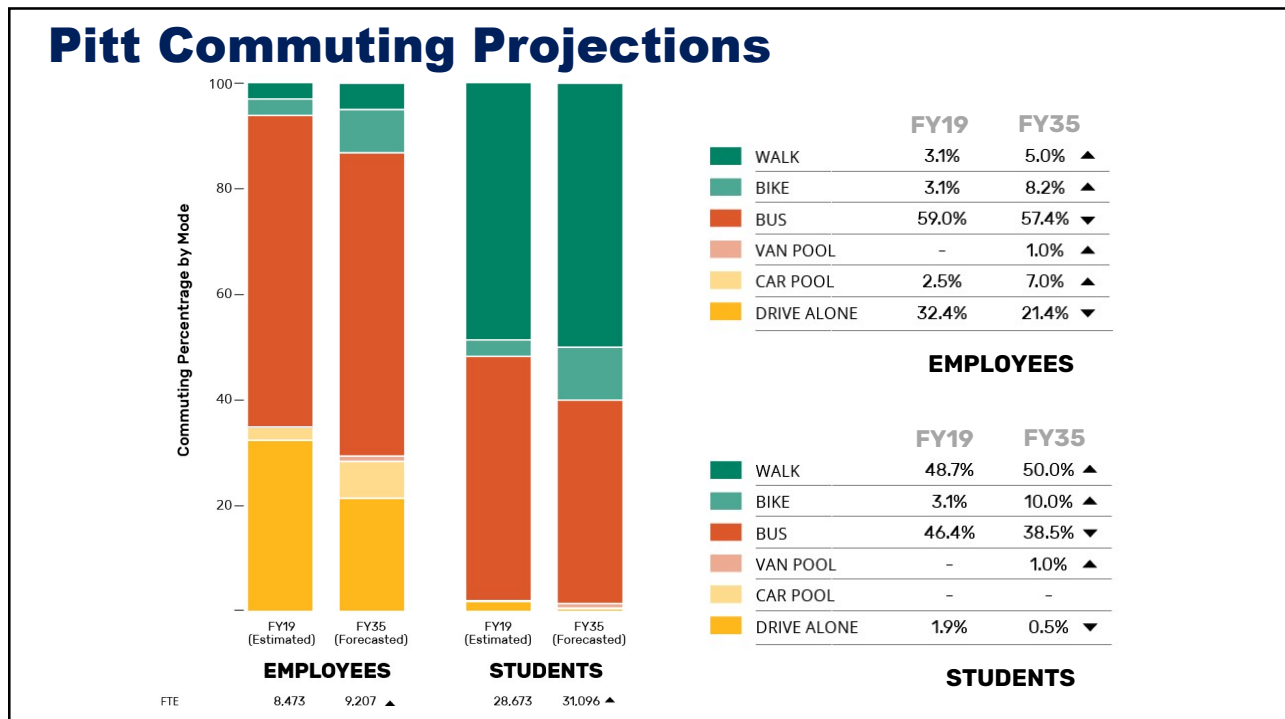
40% of Students Walk to Campus

~1/3 of Employees drive alone

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Active, Shared, & Low Carbon Commuting



80 EV charging plugs @ Pitt

- The Assembly (5051 Baum)
- Meade Street
- Posvar Garage
- Residences at Bigelow
- Soldiers & Sailors Garage
- Schenley Garage (*coming soon*)

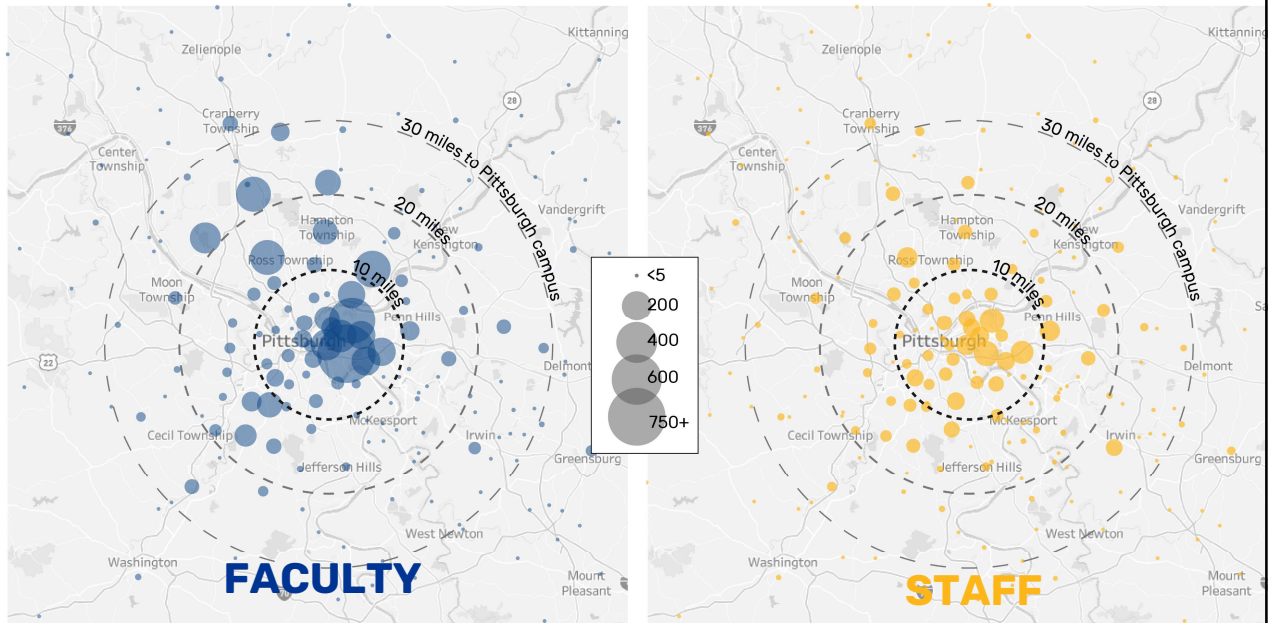
POGOH

FREE UNLIMITED 30 MIN RIDES FOR ALL STUDENTS, FACULTY & STAFF



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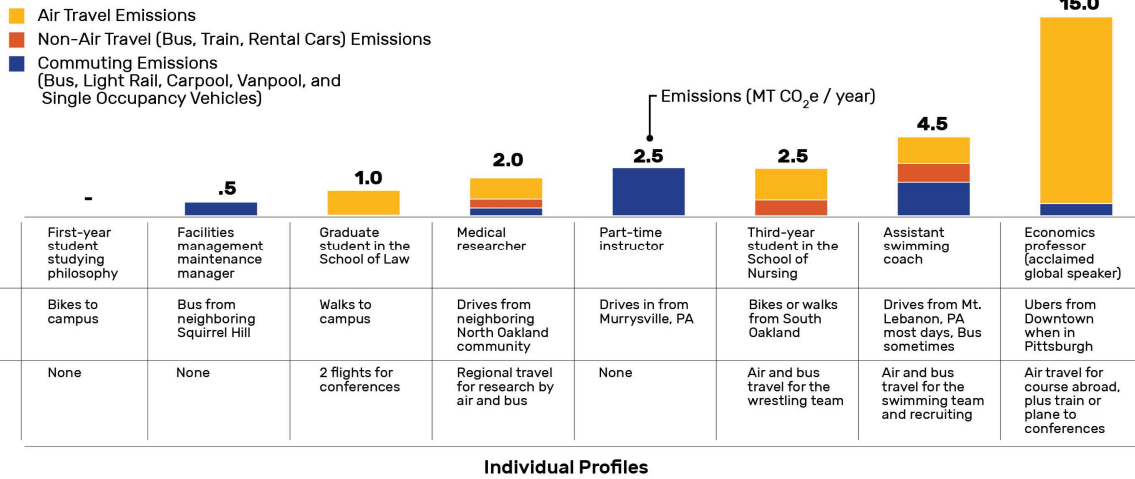
Pitt Employee Commuting Review (Pitt IT)



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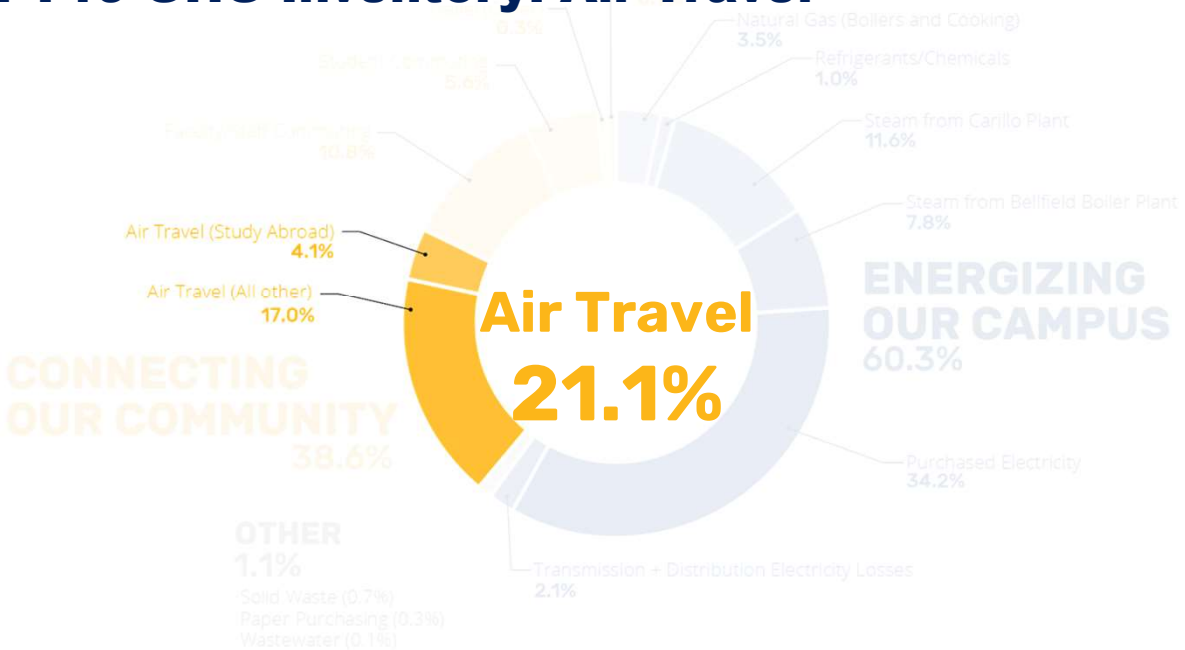
Connecting Our Campus

How Travel Impacts Pitt & GHGs



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FY19 GHG Inventory: Air Travel



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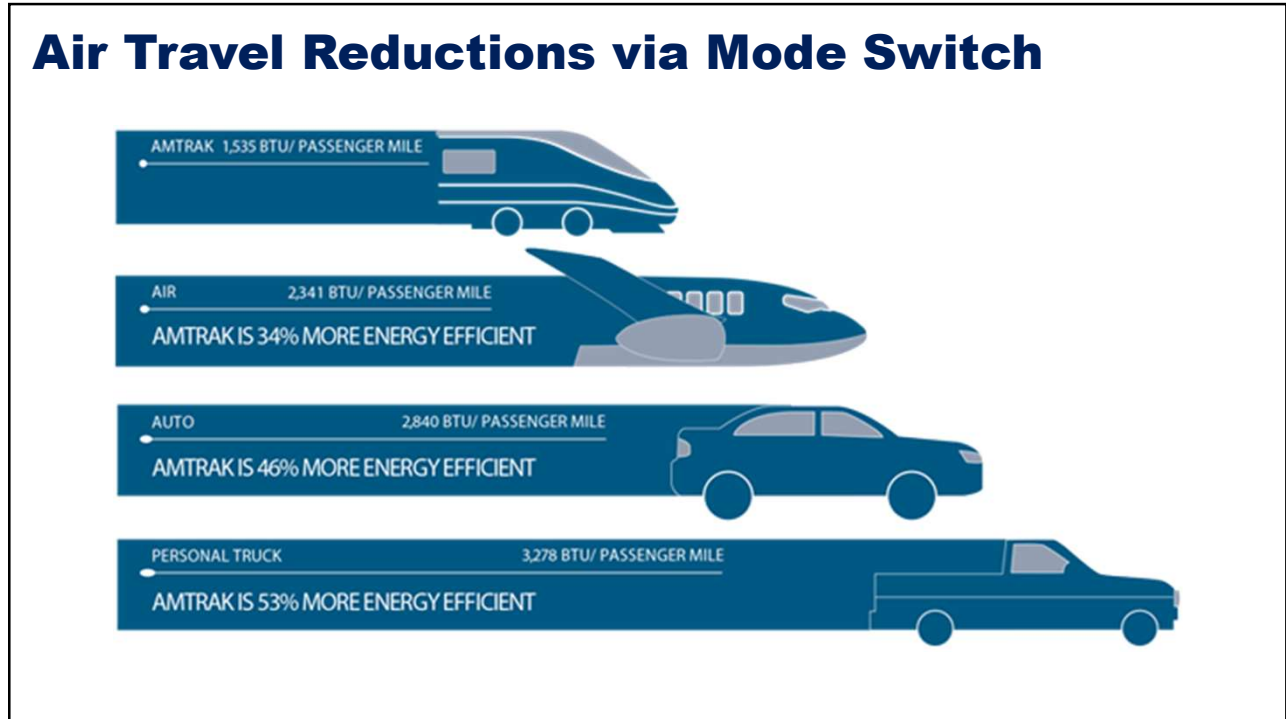
Air Travel Reductions

In FY19, Pitt faculty and staff purchased \$11,769,526 worth of *air travel*, and traveled an estimated 303,572 *land miles*, resulting in total emissions of 37,142 MT CO₂e. From FY17 to FY19, land miles increased by about 8% from FY17 to FY19, a total of 21,899 miles. In all of the previous inventories, the air

- **Core to academic, research, and athletic success.**
- Some minor reductions possible
 - ~1.5% reductions
- Increased proportionally with FTE

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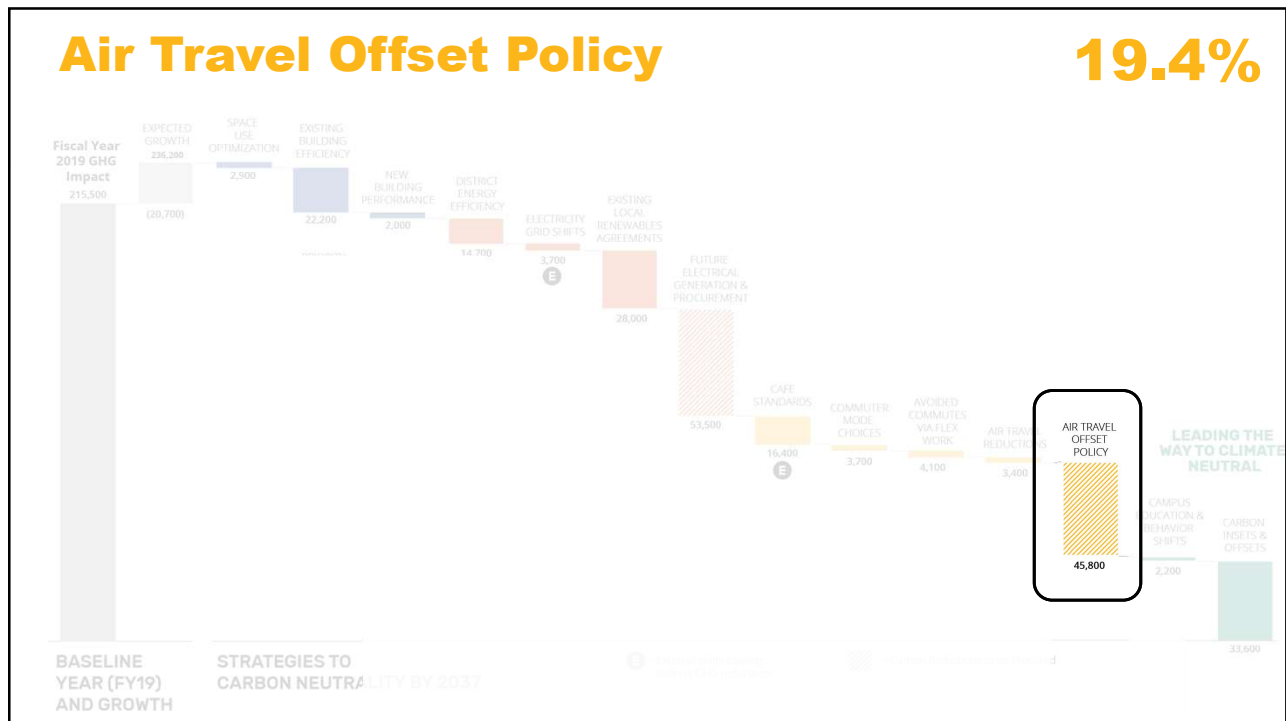
Air Travel Reductions via Mode Switch



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Air Travel Offset Policy

19.4%



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Air Travel Offsets

19.4%

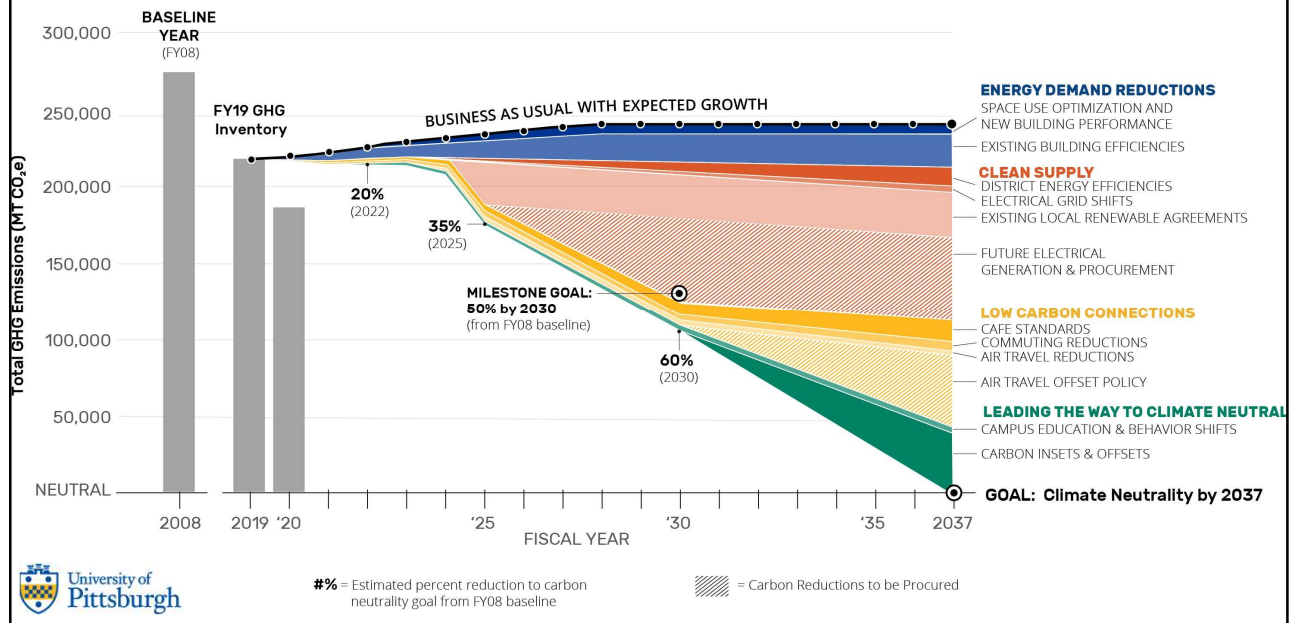
- **Need for offset strategy**
 - Campus unwillingness to pay
 - Who can pay & with fund sources?
 - How to capture funds?
 - Incremental solutions



- Leverage towards local, equitable, & impactful programs

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Pathway to 2037 Neutrality



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New & Coming Soon

- Sustainability Website Relaunch at sustainable.pitt.edu
- 2022 Progress Report
- Commuter Survey

Commitments & Reports

Sustainability Reports	
Pitt Sustainability Reports	AKSHE Stars Certification
Pitt Sustainability Plans	LEED Building Summaries
Pitt Climate Action Plans	Real College Survey Results
Greenhouse Gas Inventories	Nitrogen Inventories
MCSU Annual Reports	Pittsburgh 2030 District Reports

Pitt Sustainability

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