

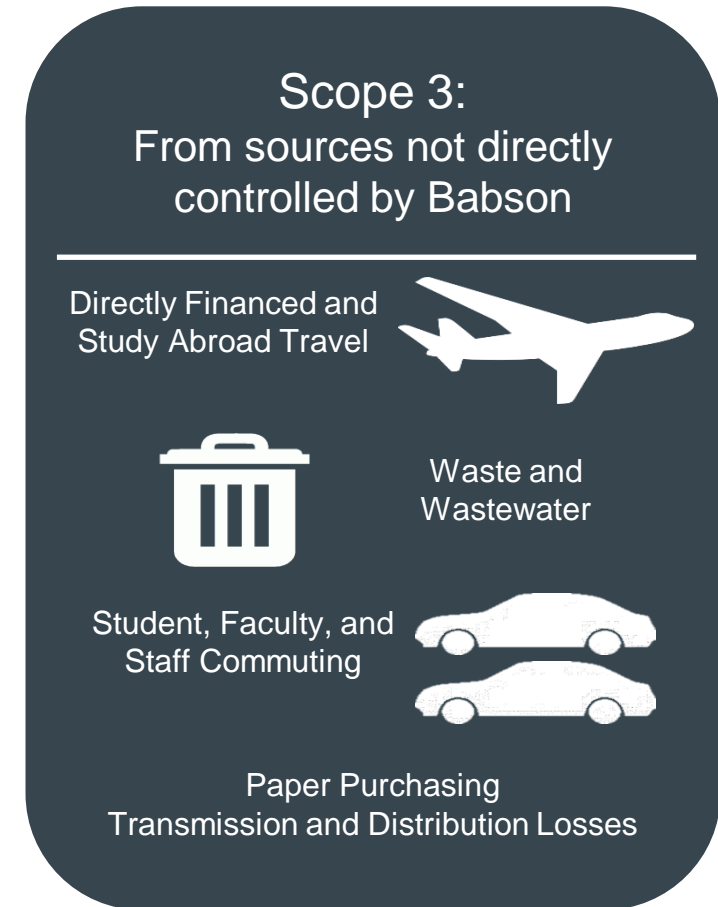
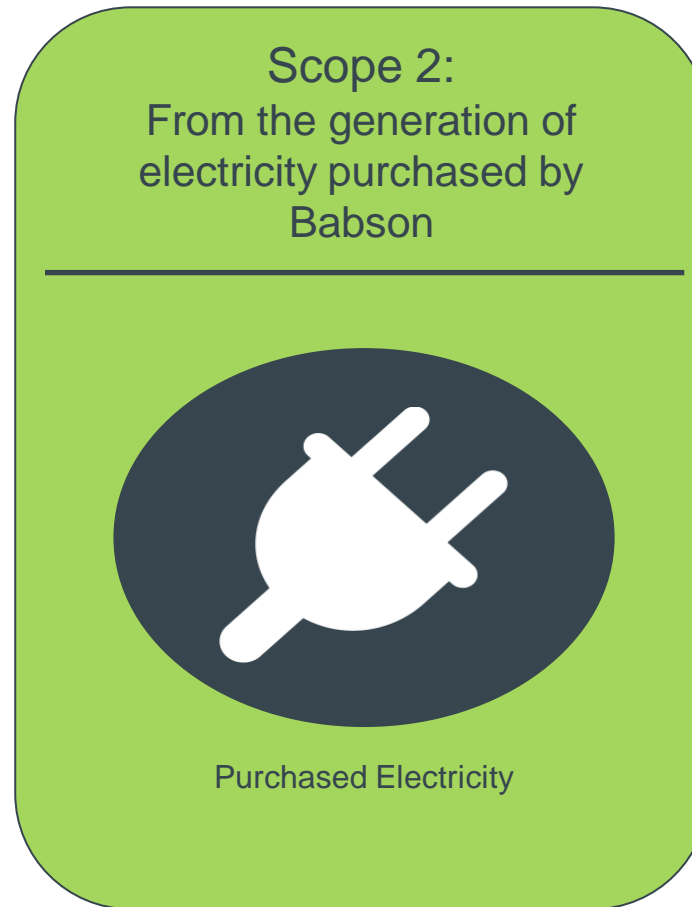
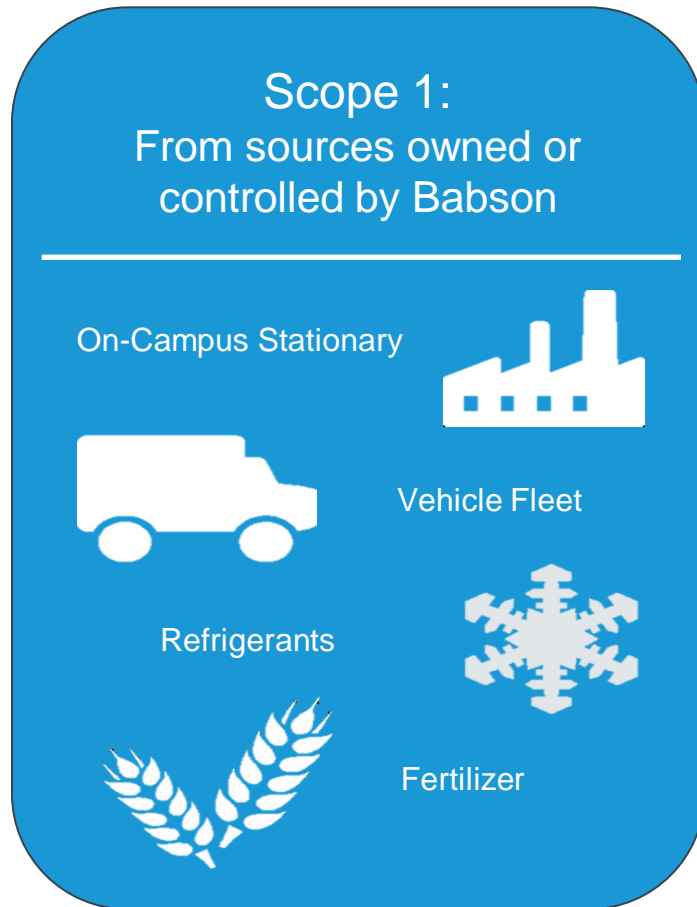


GORDIAN[®] **Babson College** **FY21-FY23 Preliminary Sustainability** **Analysis**

March 27, 2024

Gordian Team: Victoria Vasile & Carly Tortora

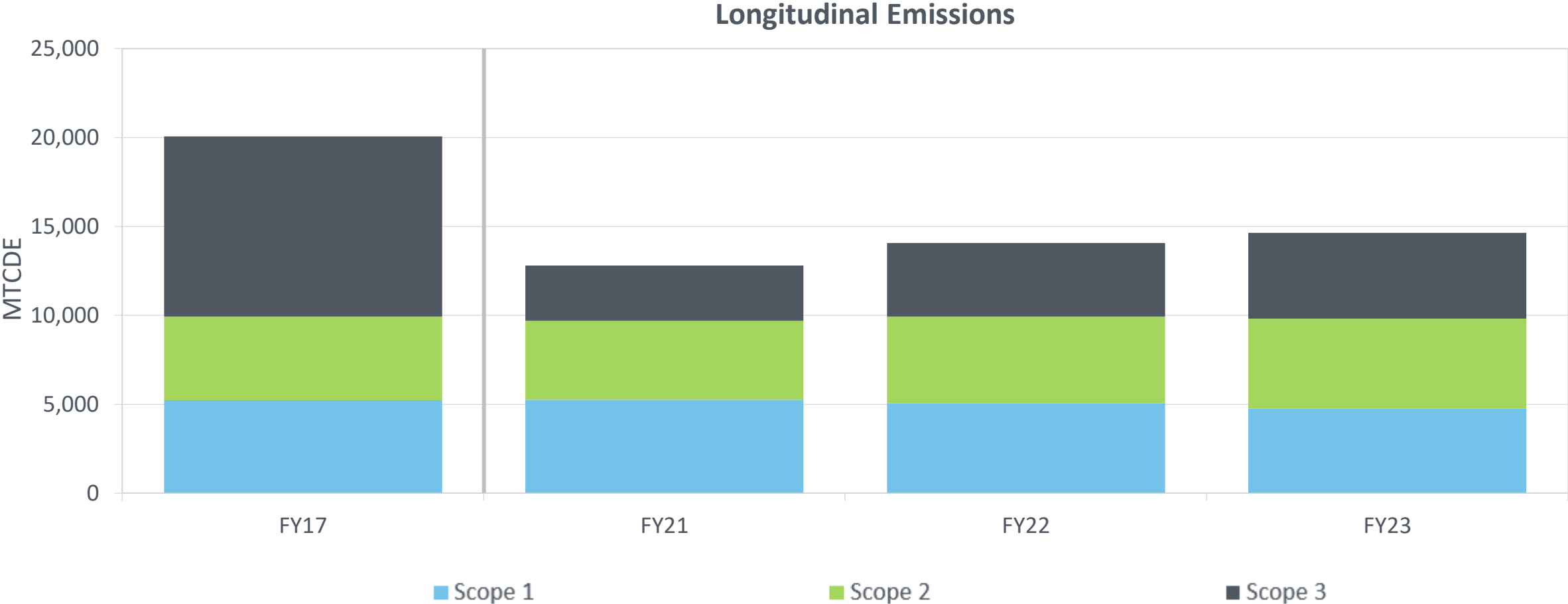
Overview of Scopes 1, 2 and 3



Increasingly Difficult to Track, Control and/or Mitigate

Longitudinal Emissions by Scope

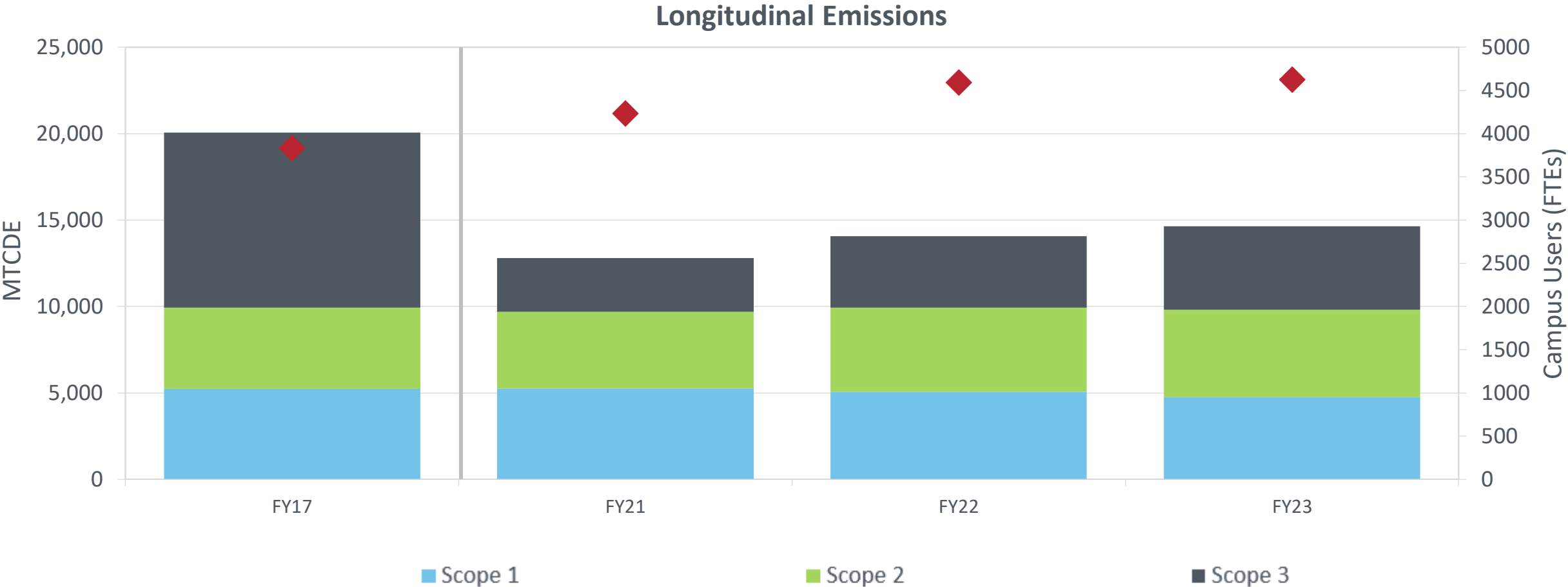
Increase in Scope 3 emissions due to campus returning to “new normal” post-pandemic



**Commuting survey conducted in FY23 and pulled back through FY21*

Longitudinal Emissions by Scope

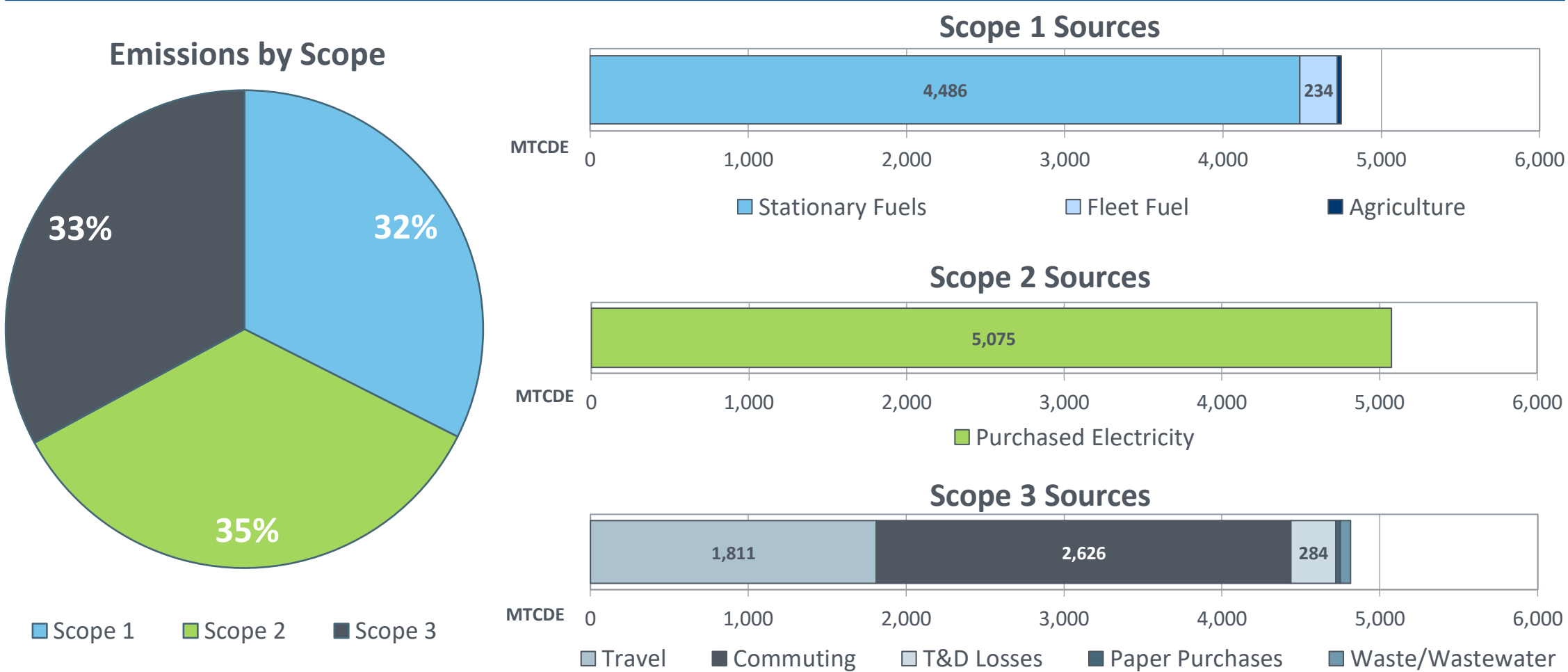
Increase in Scope 3 emissions due to campus returning to “new normal” post-pandemic



**Commuting survey conducted in FY23 and pulled back through FY21*

FY23 Net Emissions Profile at Babson

FY23 net emissions total 14,638 MTCDE

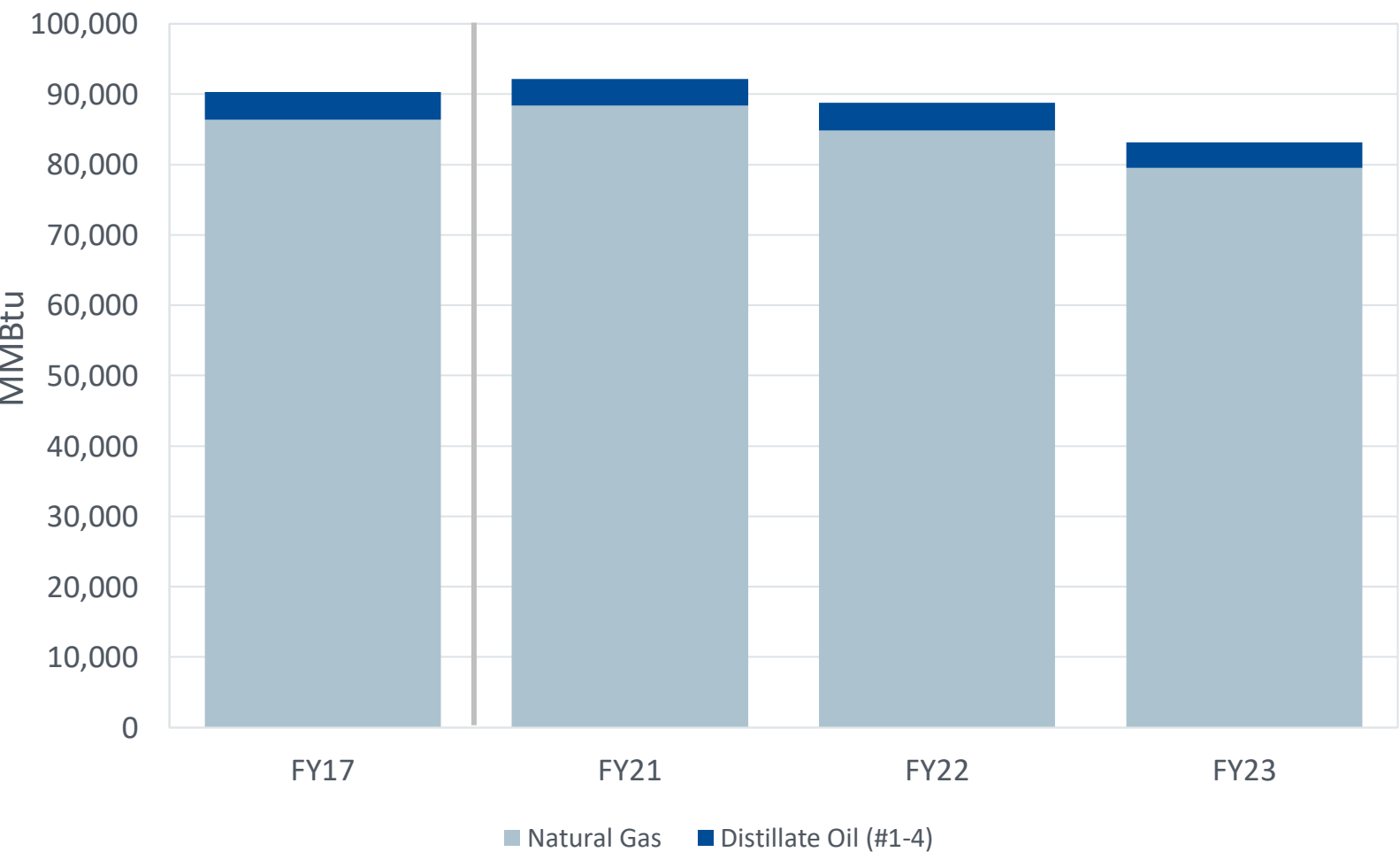


Scope 1

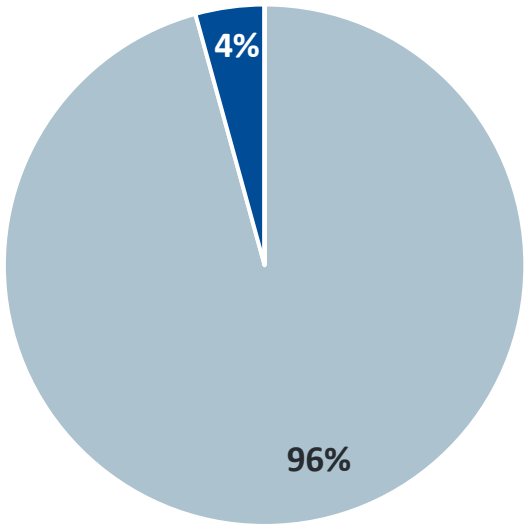
Scope 1 Stationary Fuel Consumption

Natural Gas use makes up 96% of Scope 1 stationary fuel profile in FY23

On Campus Stationary - Breakout



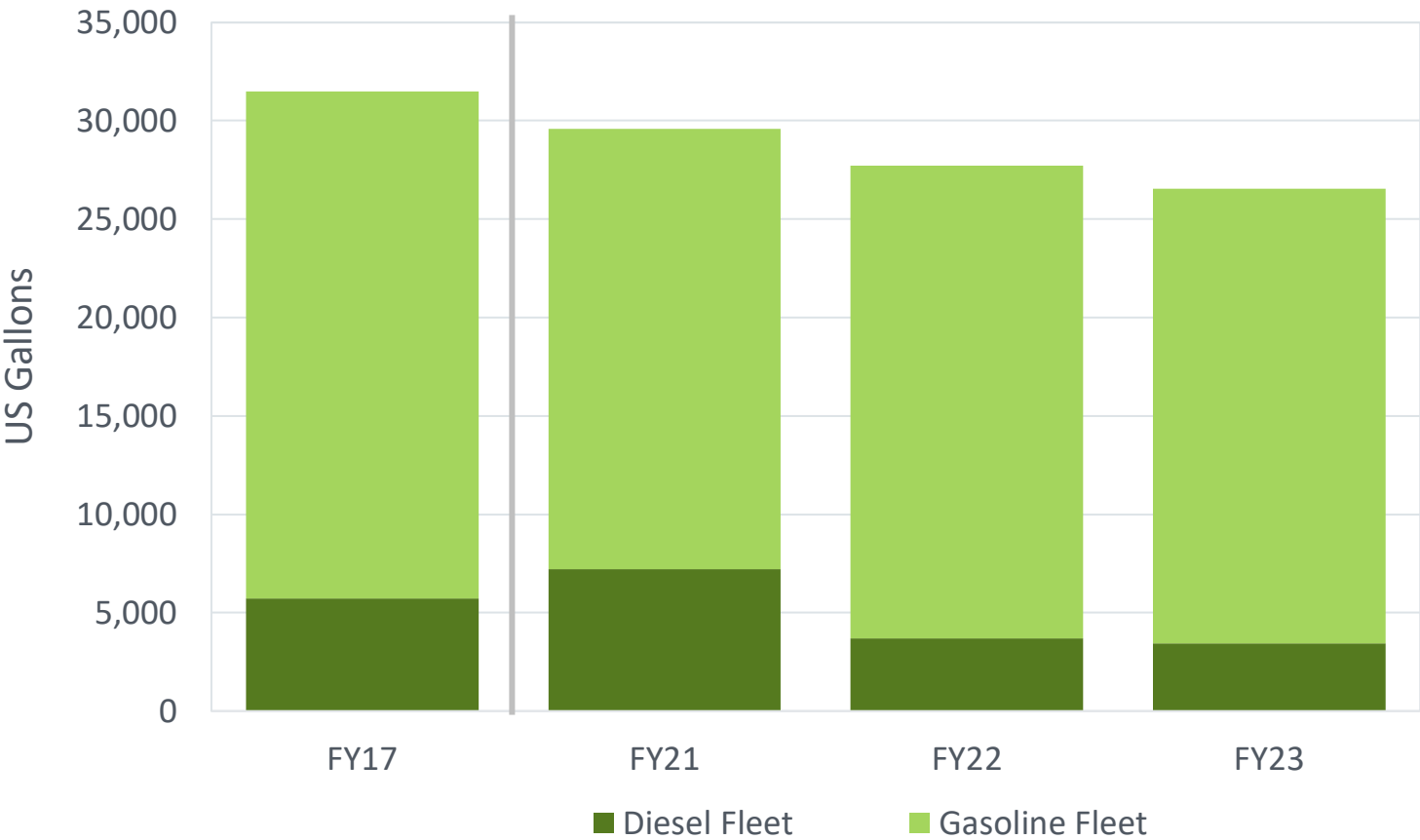
On Campus Stationary FY23-
Breakout



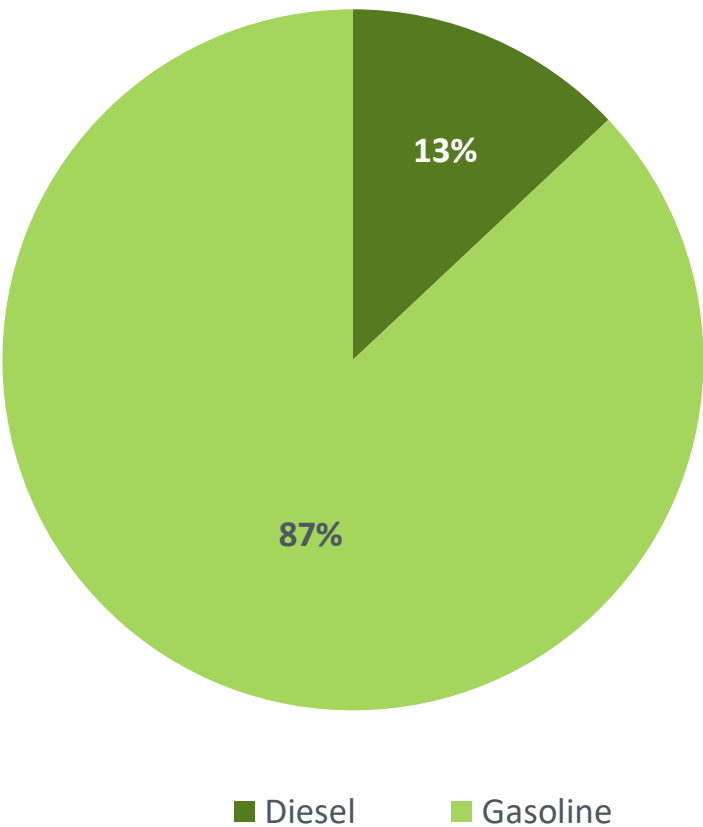
Fleet Fuel – Additional Scope 1 Sources

15% reduction in fleet fuel consumption since FY17

Fleet Fuel – Type Breakout

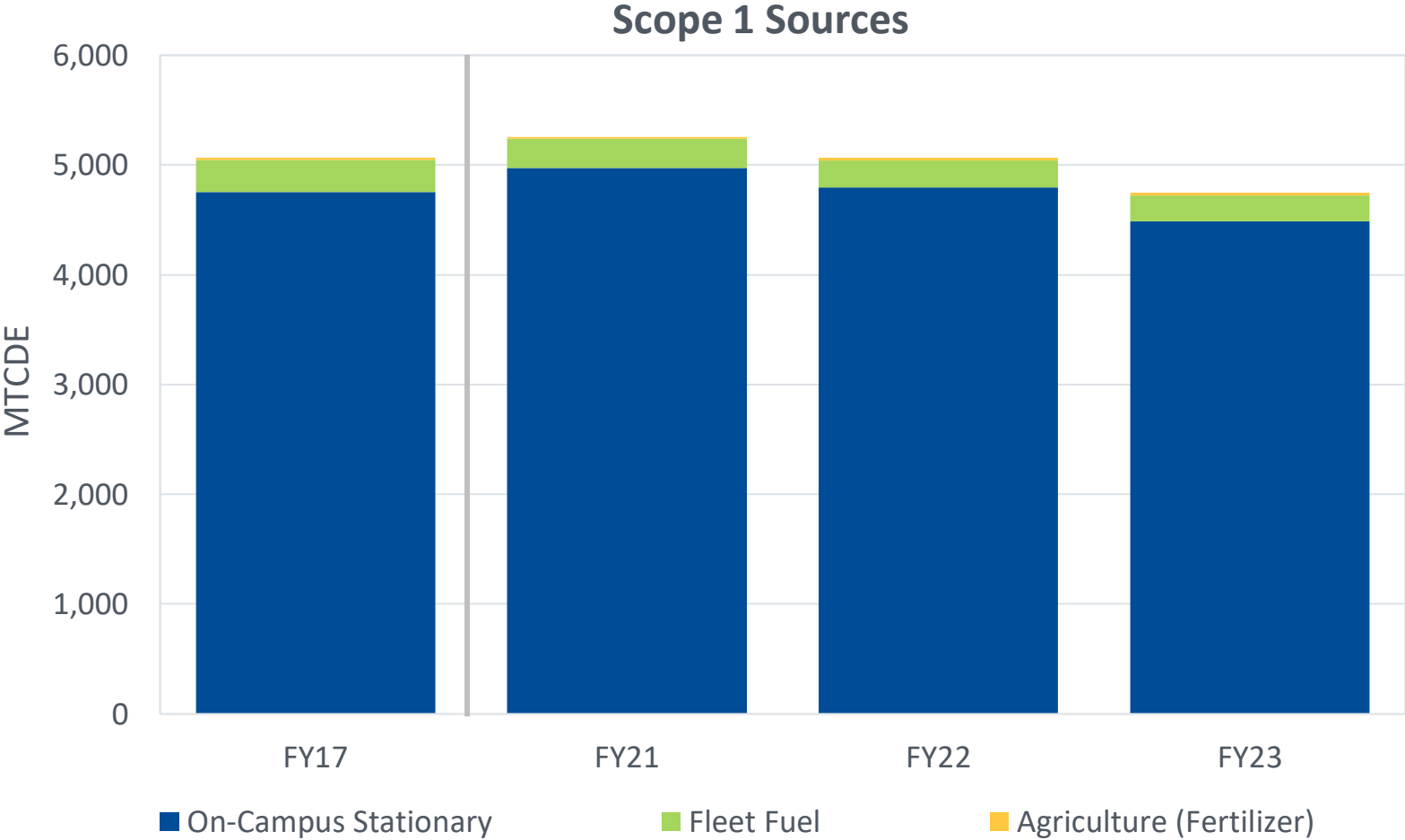


Fleet Fuel FY23 – Consumption Breakout

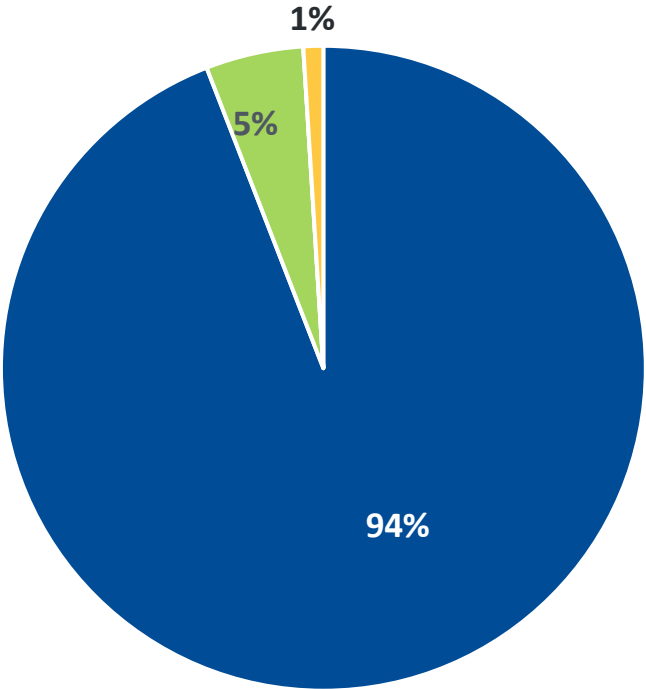


Scope 1 Emissions Sources

On-Campus Stationary use is the most impactful contributor to Scope 1 emissions profile



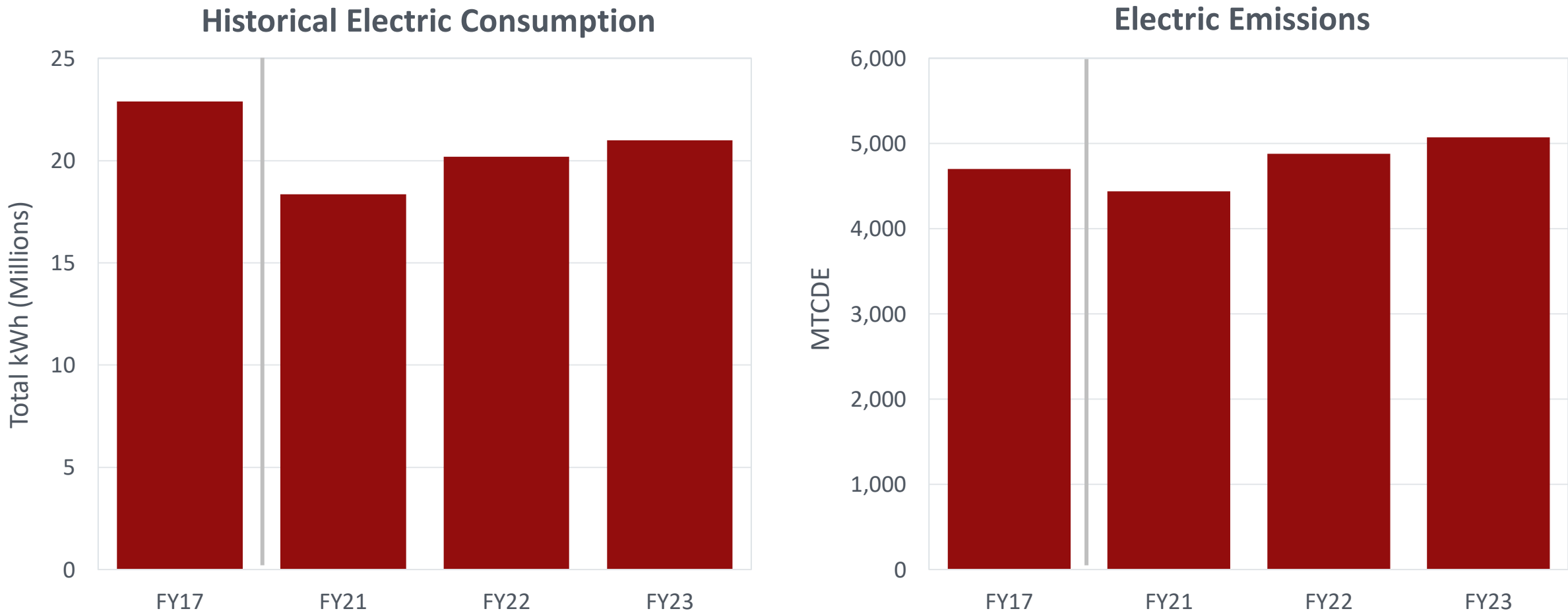
FY23 Scope 1 Emissions Profile



Scope 2

Scope 2: Electricity Consumption vs. Emissions

Electricity consumption and emissions returning to pre-pandemic levels



Babson College Energy ROPA Peer Institutions

Energy Peers	Location
Amherst College	Amherst, MA
Bentley University	Boston, MA
Boston College	Chestnut Hill, MA
Boston University	Boston, MA
Brown University	Providence, RI
Rhode Island School of Design	Providence, RI
Siena College	Loudonville, NY
Wesleyan University	Middletown, CT



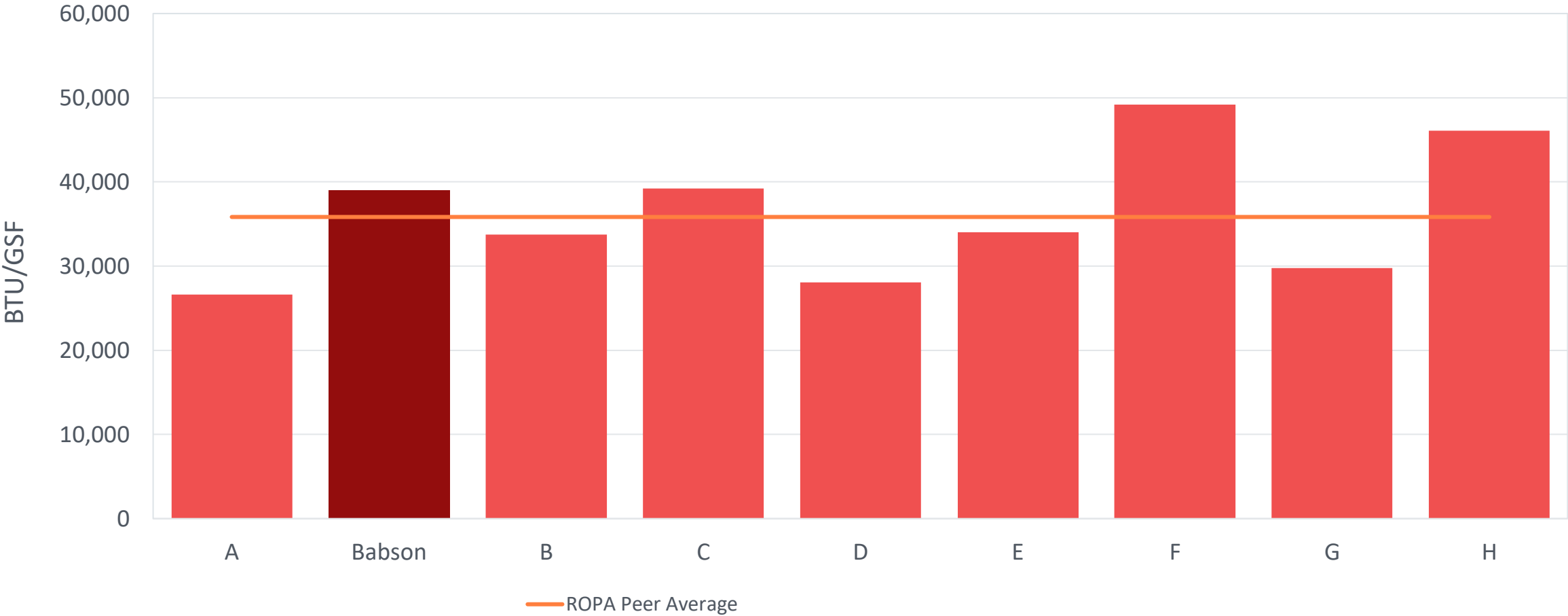
Comparative Considerations

Size, technical complexity, region, geographic location, and setting are all factors included in the selection of peer institutions

Scope 2: Electricity Consumption vs. ROPA Peers

Babson electric consumption on par with ROPA peer average

FY23 Electric Consumption

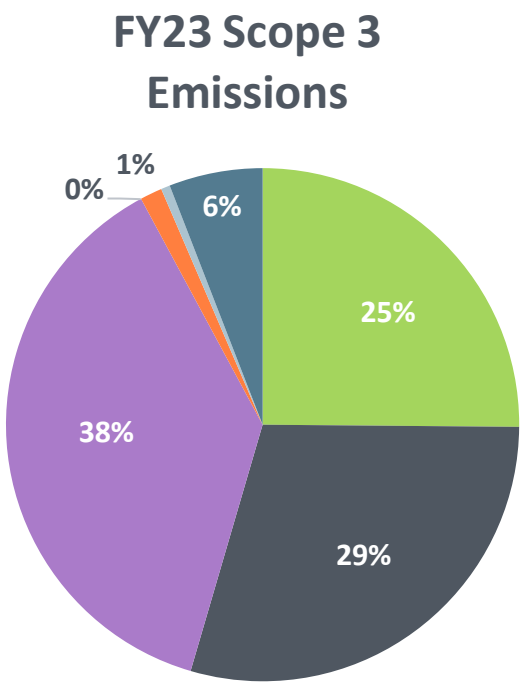
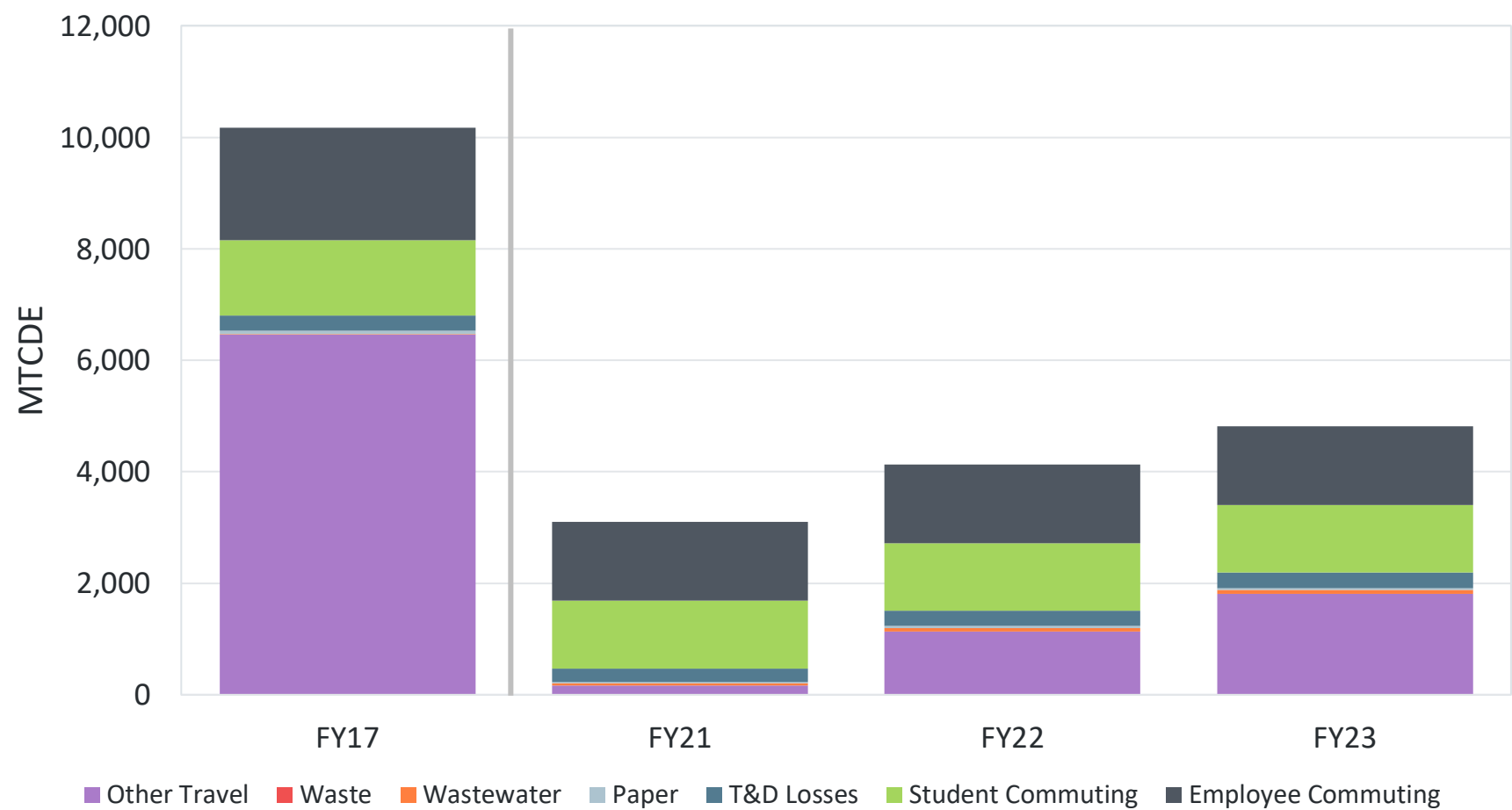


Scope 3

Scope 3 Distribution by Source

With a new commuting survey offered in FY23, student and employee commuting emissions account for 54% of Scope 3 emissions

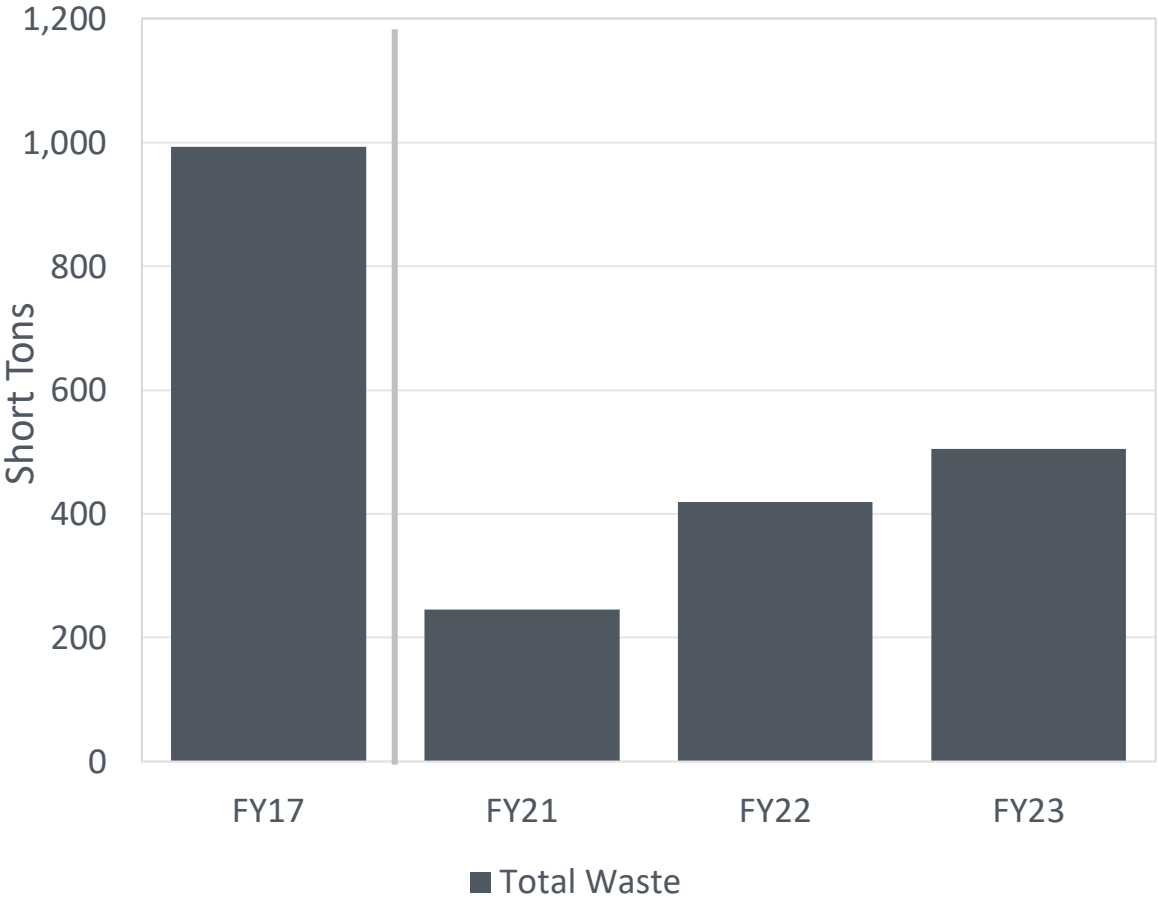
Total Scope 3 Emissions



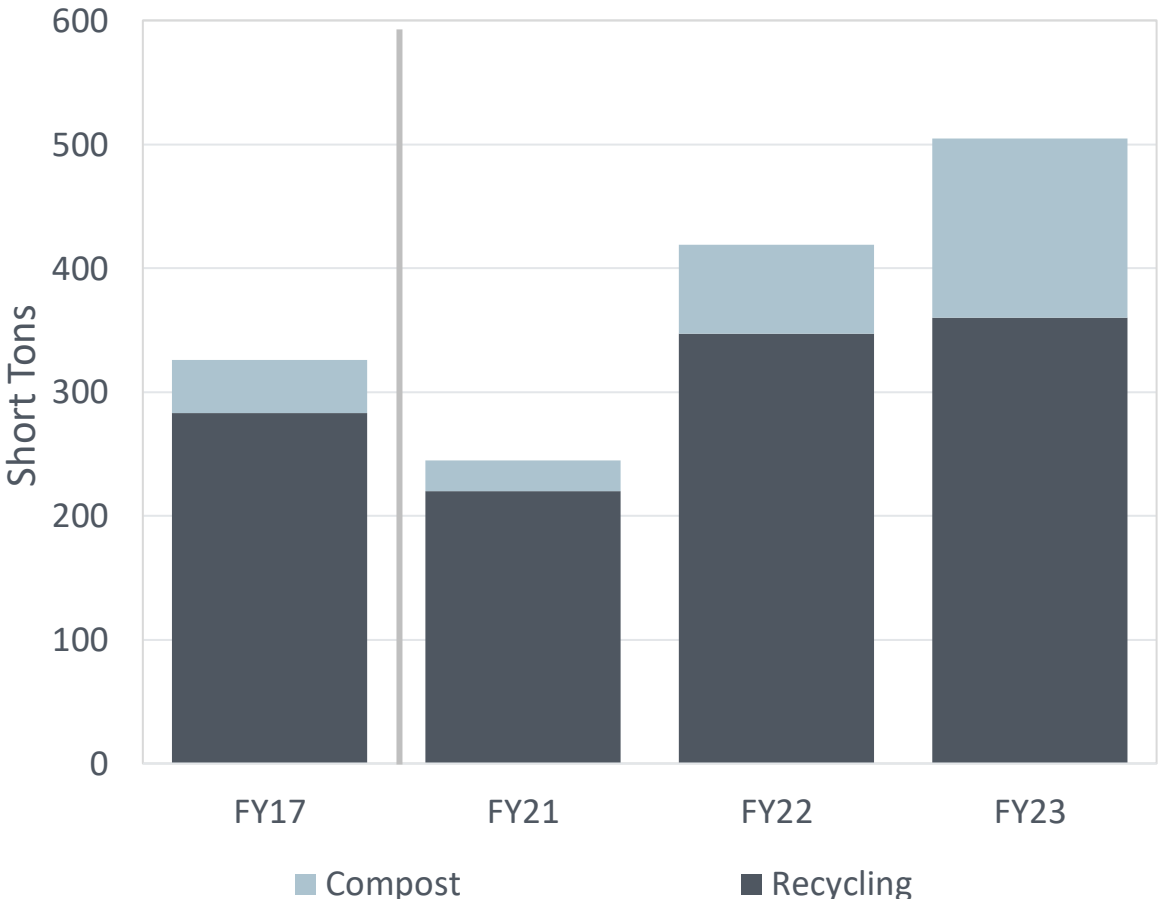
Waste Emissions

Through compost and recycling Babson has been able to avoid associated landfill emissions

Total Waste Trending

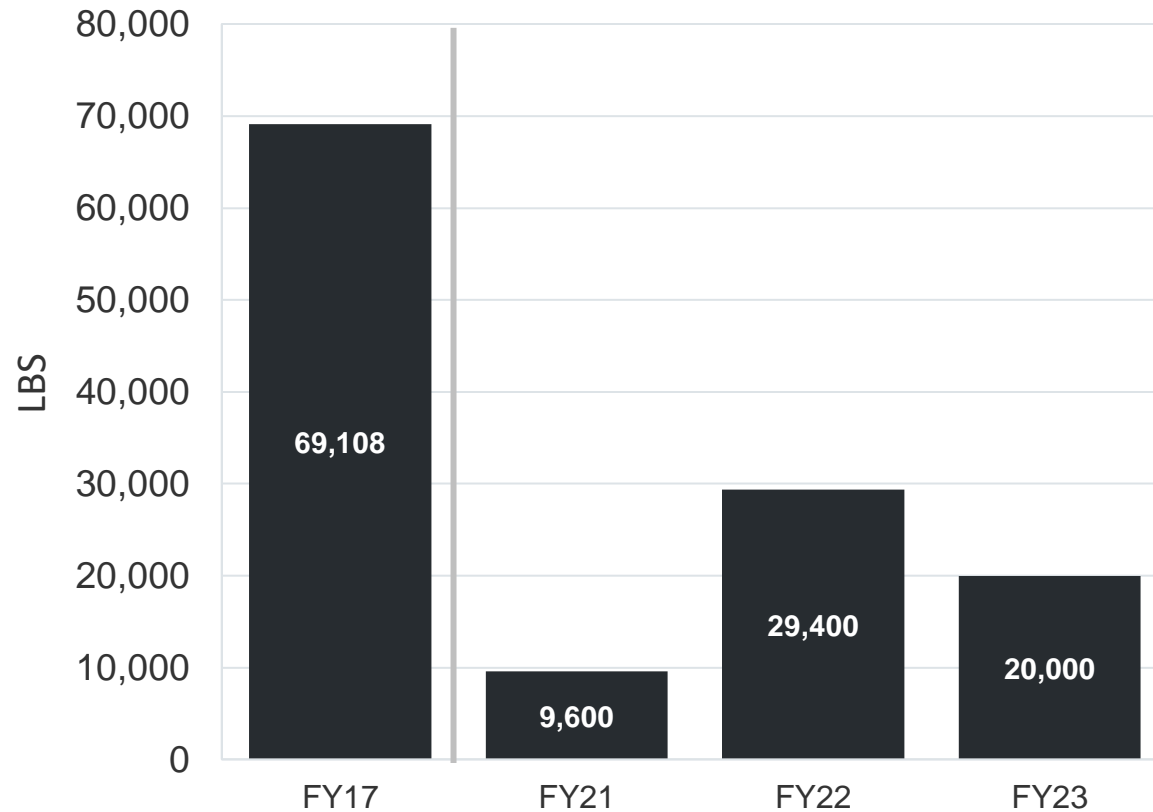


Waste Diverted Trending

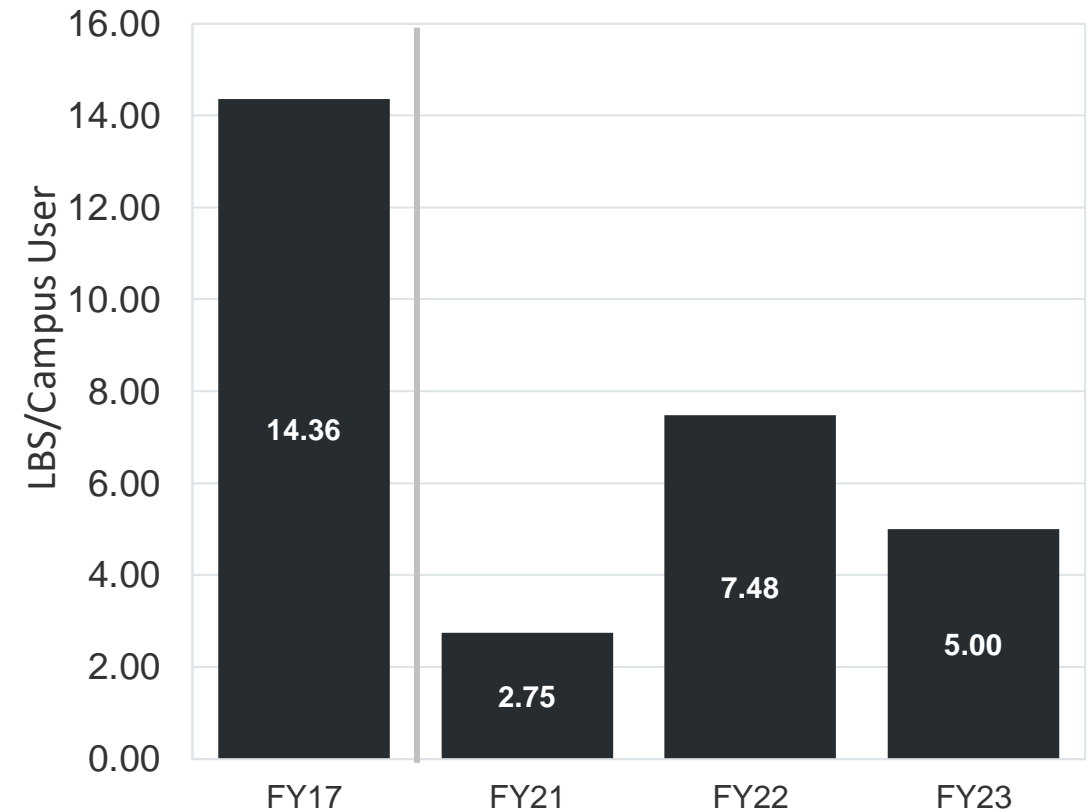


Paper Profile

Paper Consumption

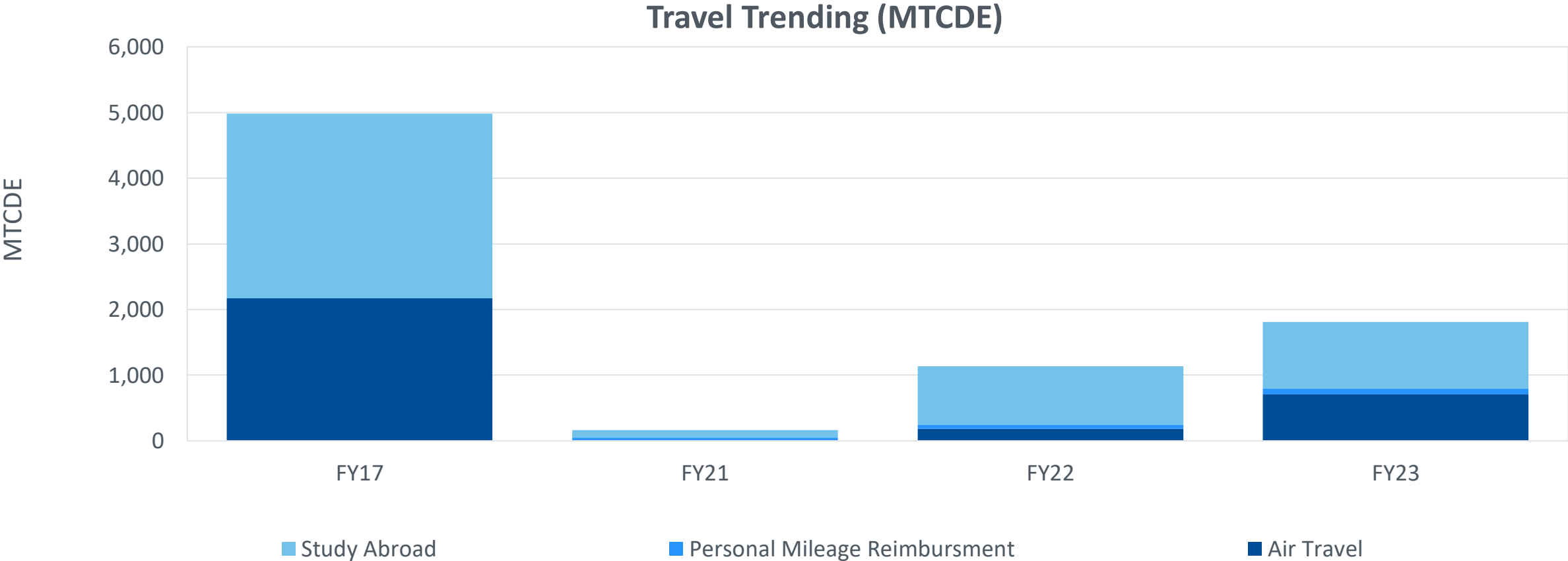


Paper Consumption (Normalized)



Travel Emissions

Overall, FY23 travel emissions are just down 64% from what they were in FY17



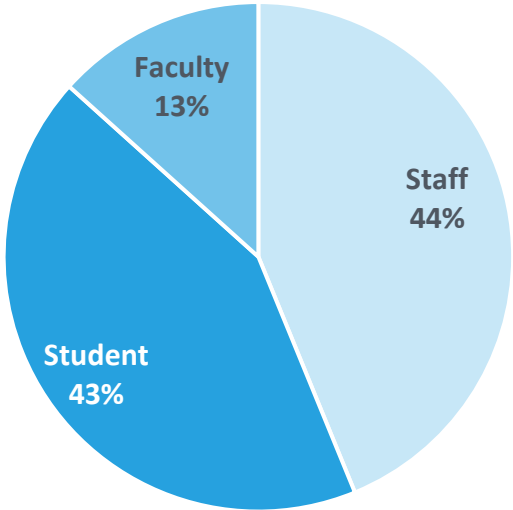
Offsetting air travel via offsets, partnerships with green airlines, and more virtual interactions could lower travel emissions

Commuting Data Based on January 2024 Survey

105 responses collected from January 16, 2024 to January 31, 2024.

	Commuters
Faculty	14
Staff	46
Student	45
Total	105

Commuter Respondents
by Role



Respondents who dropped out of the survey before completing the first question about commuting mode are not included in the results

Commuting Data Based on January 2024 Survey

105 responses collected from January 16, 2024 to January 30, 2024

How many?

1,645 Student

Mode	Percent	Miles
Drive Alone	44.9%	10.95
Carpool	25%	10.64
Bus	11.9%	3.99
Light Rail	9.5%	13.71
Commuter Rail	0.4%	4.00
Carbon Free	3%	2.60
Electric Vehicle	3%	8.88
Telecommute	2.3%	-

What mode?

256 Faculty Commuters

Mode	Percent	Miles
Drive Alone	57%	10.56
Carpool	0%	-
Bus	0%	-
Light Rail	0%	-
Commuter Rail	0%	-
Carbon Free	2%	3.00
Electric Vehicle	26%	27.67
Telecommute	15%	-

How far?

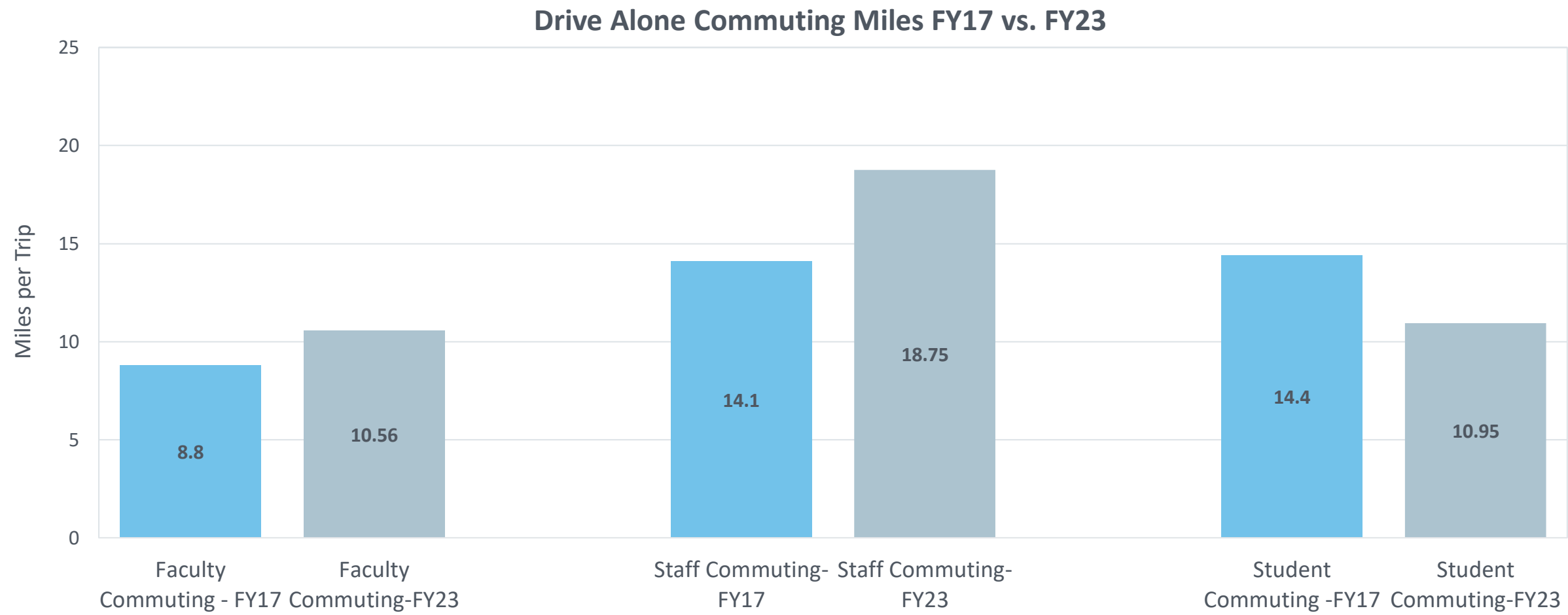
How often?

633 Staff Commuters

Mode	Percent	Miles
Drive Alone	85%	18.75
Carpool	0%	-
Bus	0%	-
Light Rail	0%	-
Commuter Rail	1%	40.00
Carbon Free	0%	-
Electric Vehicle	7%	46.70
Telecommute	7%	-

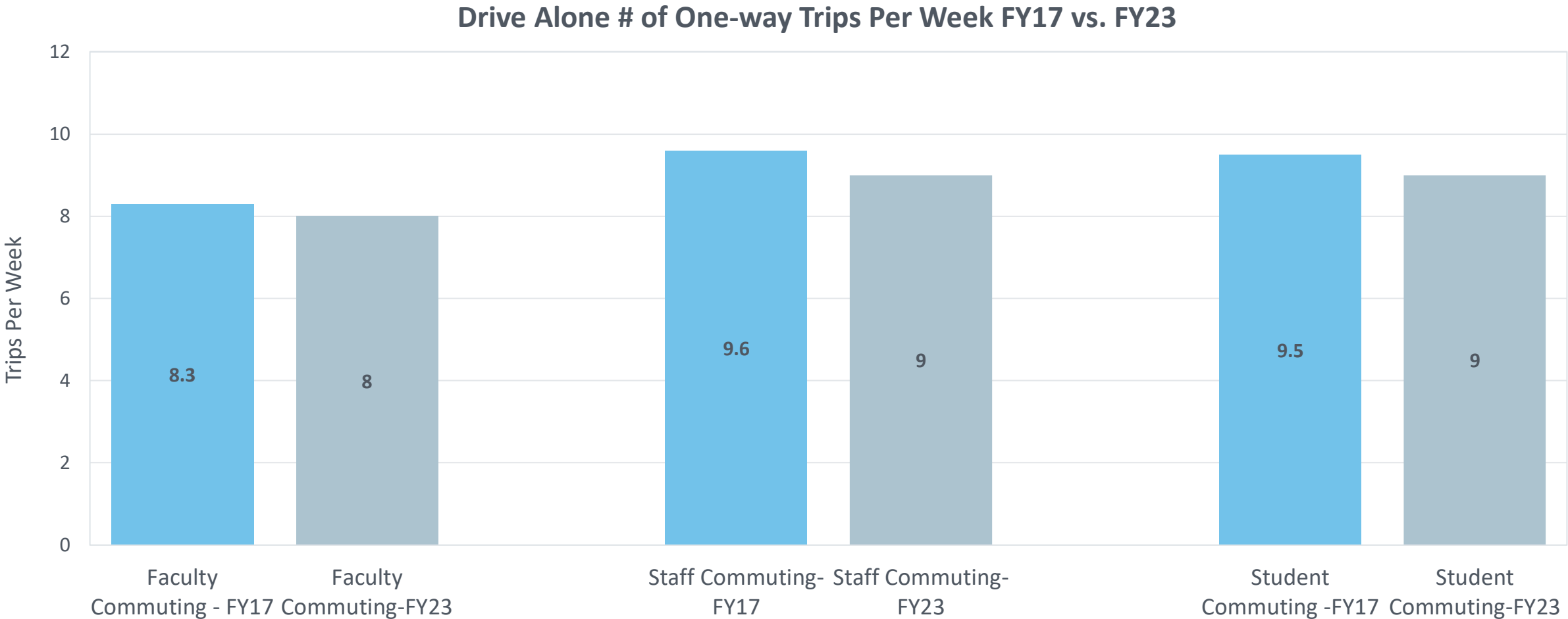
Faculty and Staff are Commuting Further in FY23

Less trips to campus offsets the longer trip distances



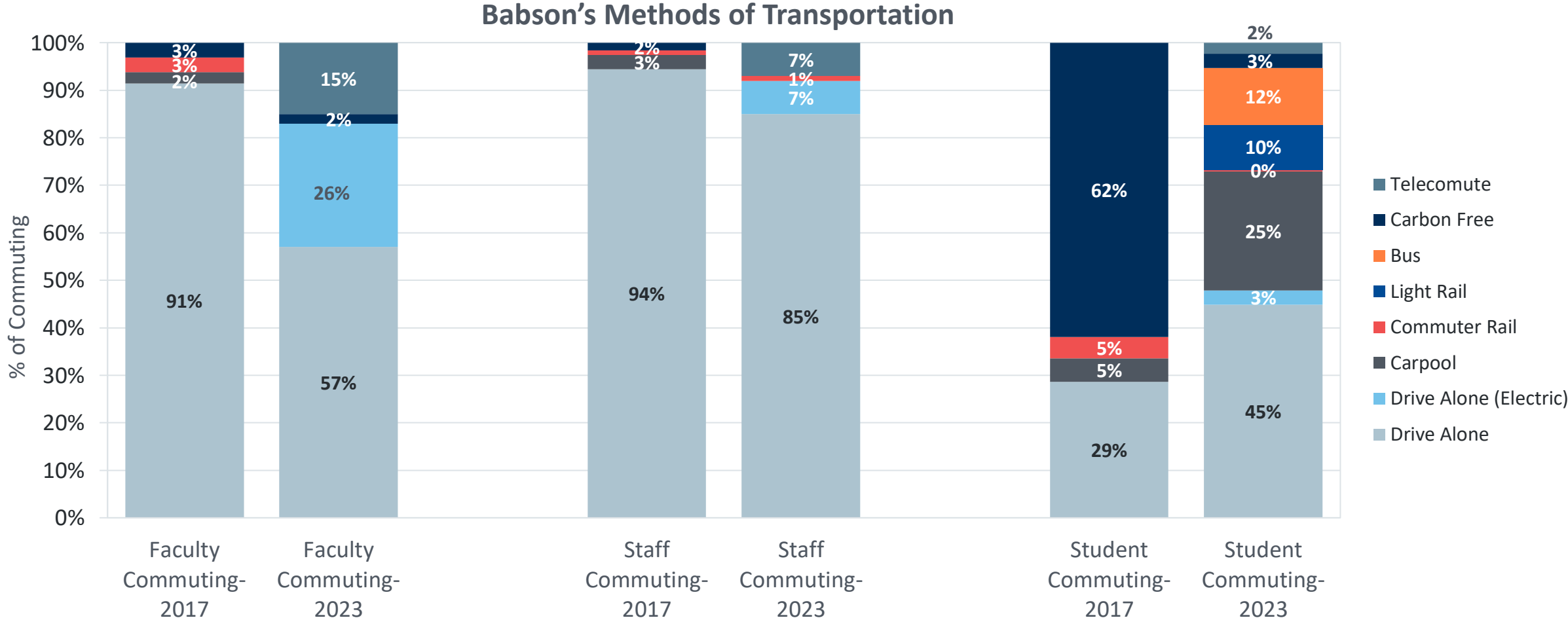
Fewer Trips Reduce Commuting Emissions

Less trips to campus offsets the longer trip distances



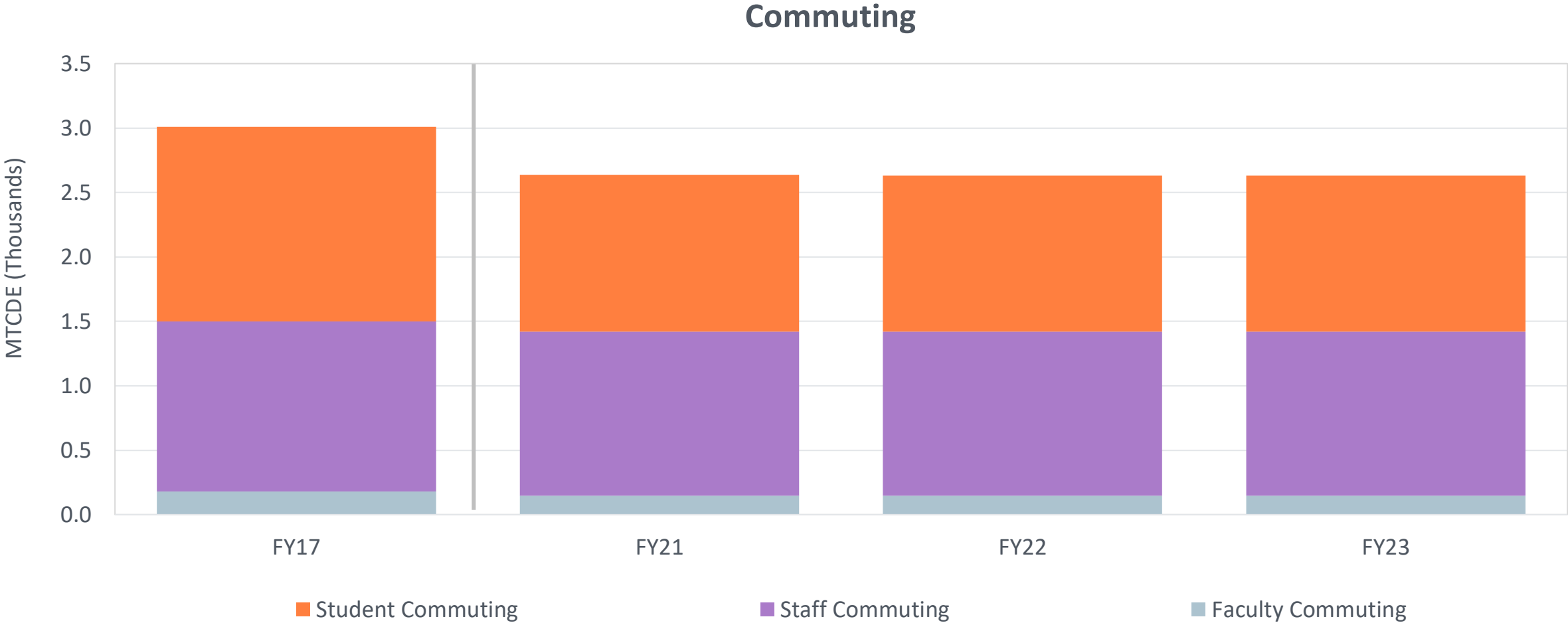
Mode of Transportation, FY17 vs. FY23

Electric Vehicles and Telecommuting were not options in FY17's survey



Commuting Emissions Based on Update Survey – January 2024

With travel heading back to pre pandemic rates, supporting green commuting behaviors will help maintain lower campus emissions



Peer Comparisons

The background of the slide is a solid blue color. On the right side, there are several overlapping, semi-transparent geometric shapes in a lighter shade of blue. These shapes include a large, stylized 'W' or 'M' shape, and several other angular, polygonal forms that create a modern, architectural feel.

Sustainability Peers

Institution Name	Location:	Carbon Neutral Date	GSF Range	Enrollment Range
Babson College	Wellesley, MA	2050	1 – 2.5M	2,500 – 5,000
Bentley University	Waltham, MA	2030	1 – 2.5M	2,500-5,000
Carleton College	Northfield, MN	2050	1 – 2.5M	5,000 – 10,000
Emerson College	Boston, MA		1 – 2.5M	5,000 – 10,000
Fitchburg State University	Fitchburg, MA		1 – 2.5M	5,000 – 10,000
Rider University	Lawrence Township, NJ	2050	1 – 2.5M	Under 2,000
Siena College	Loudonville, NY		1 – 2.5M	2,500-5,000
Worcester State University	Worcester, MA	2050	Less Than 1M	5,000-10,000

Two Ways to Normalize Emissions for Consumption

GHG Emissions per 1,000 GSF EUI Adjusted



Stresses intensity of operations.

$$\frac{\text{Gross GHG Emissions}}{\text{EUI Adjusted GSF}} \times 1,000$$

GHG Emissions per Weighted Campus User

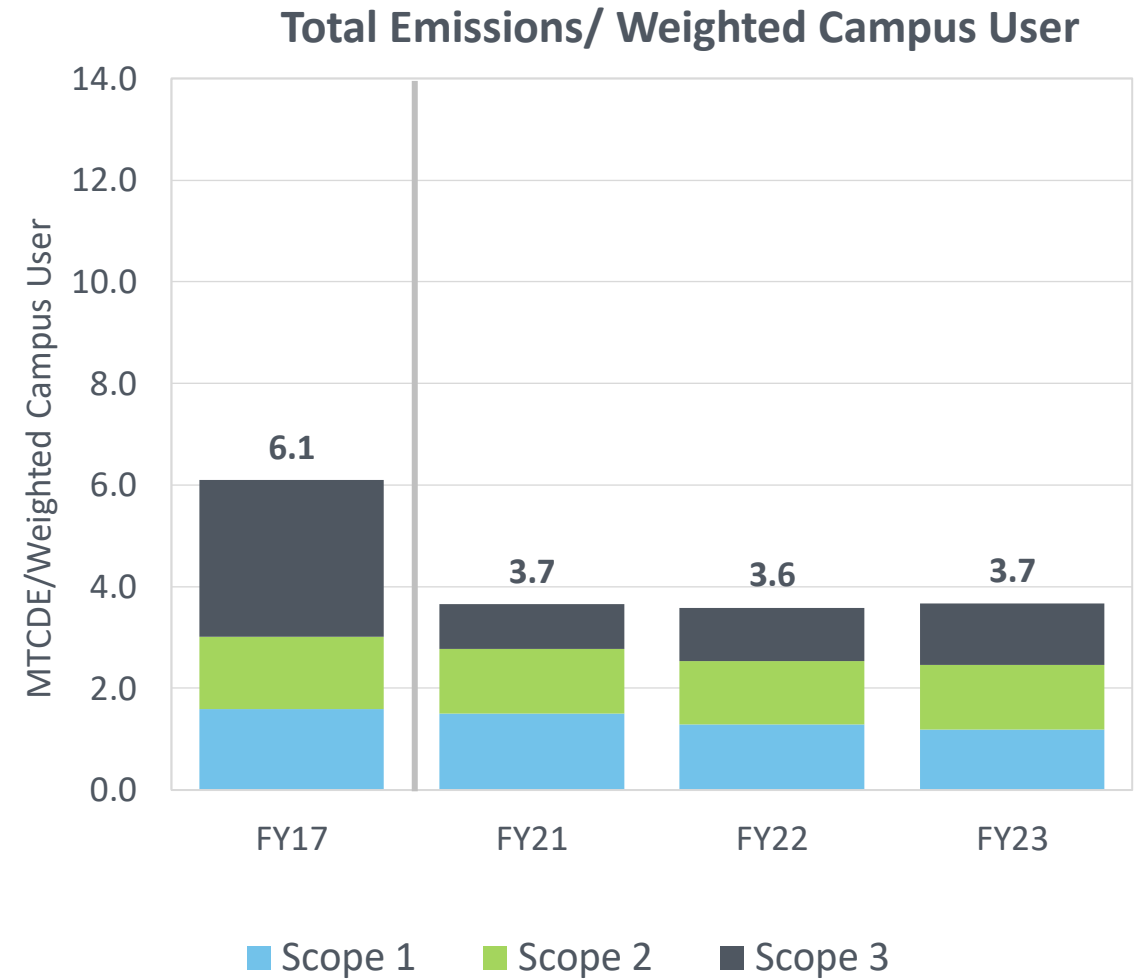
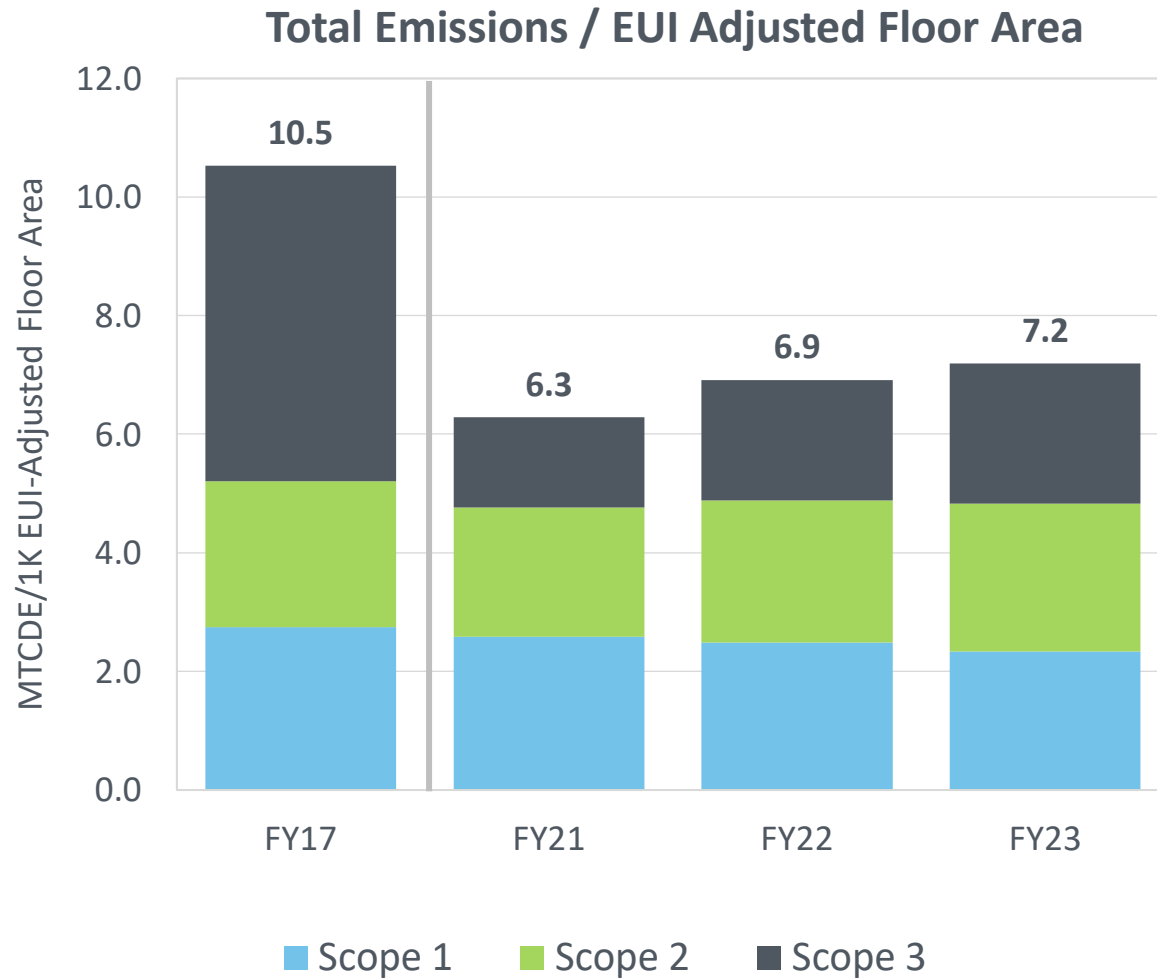


Stresses efficient use of space.

$$\frac{\text{Gross GHG Emissions}}{\text{Weighted Campus User}}$$

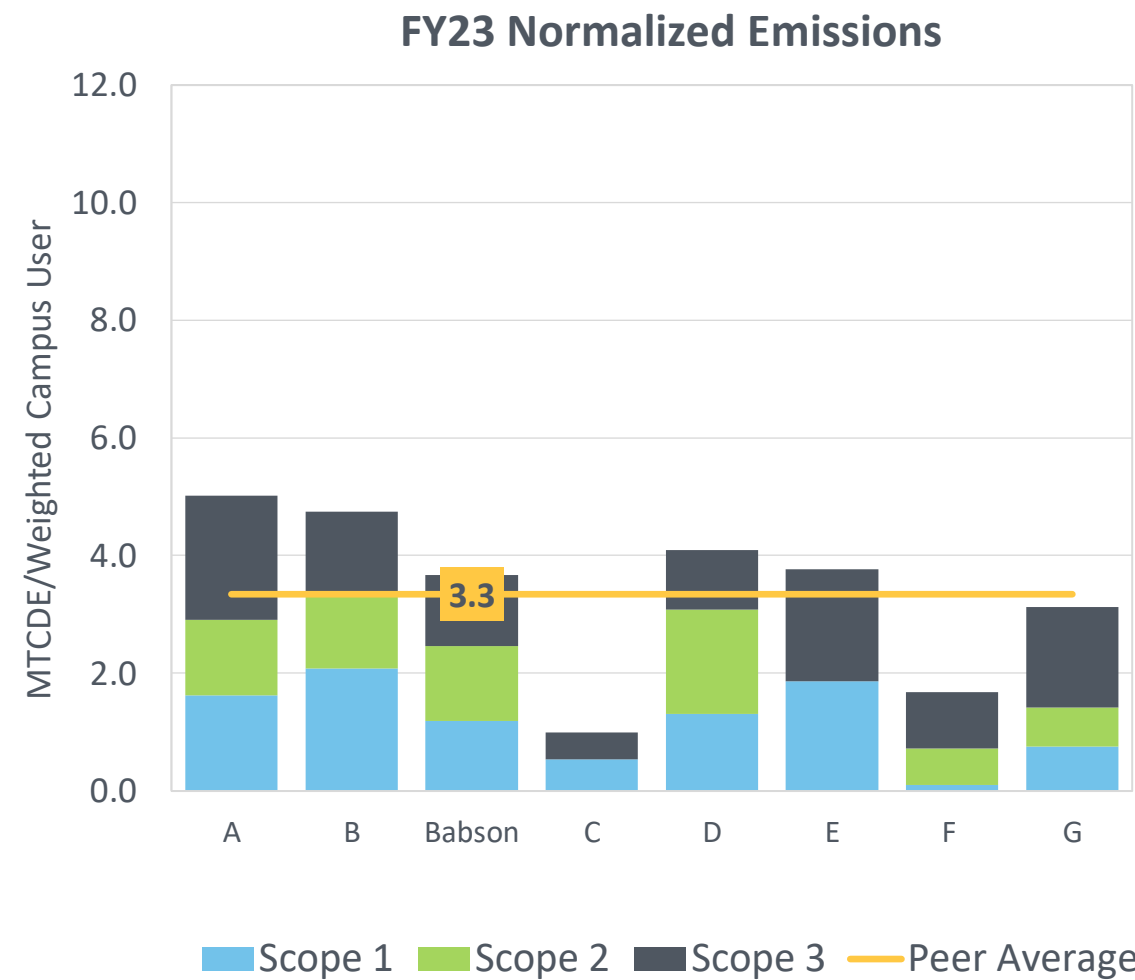
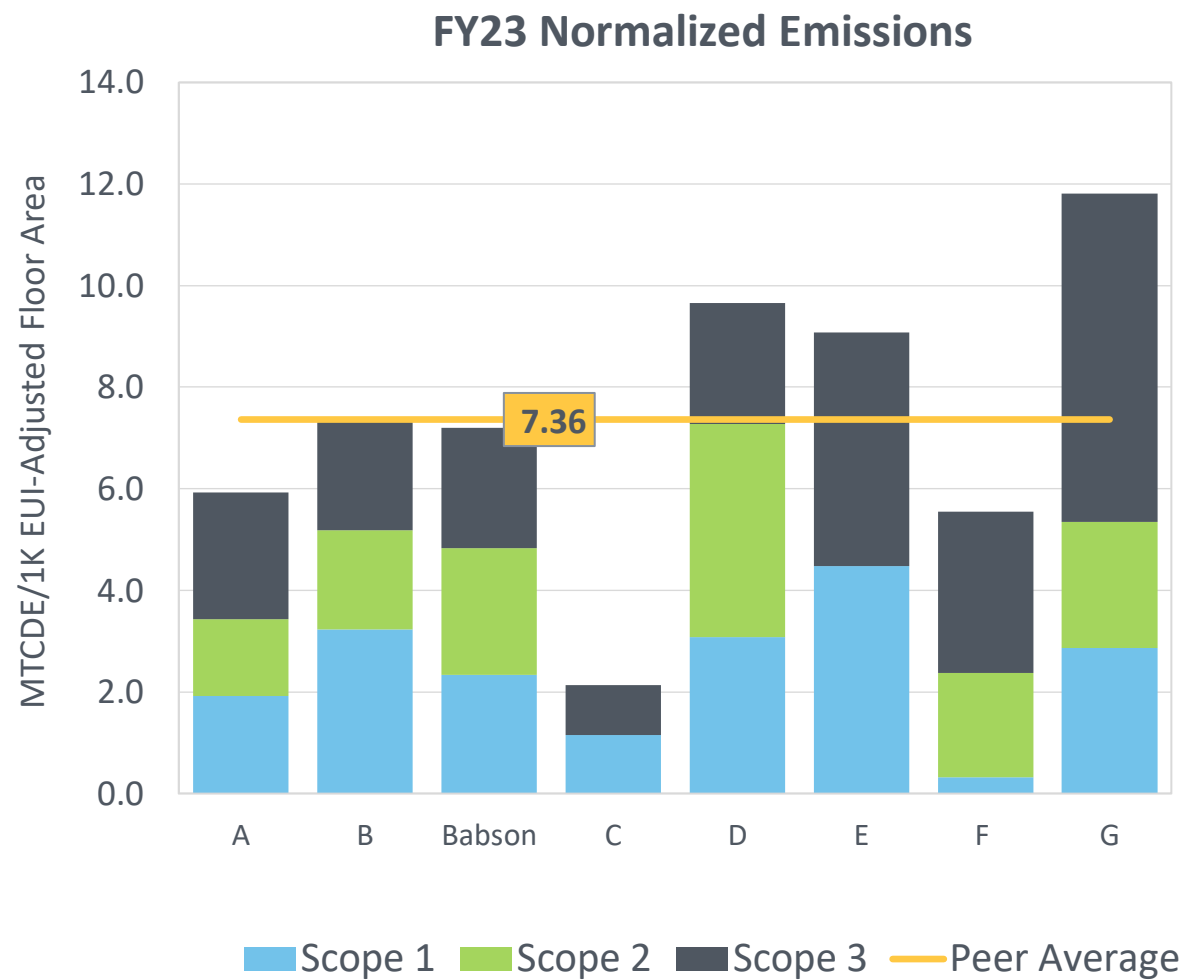
Total Normalized Emissions Profile

Normalized emissions by EUI adjusted floor area decreased by 32%; when normalized by weighted campus user, emissions have decreased by 40% since FY17



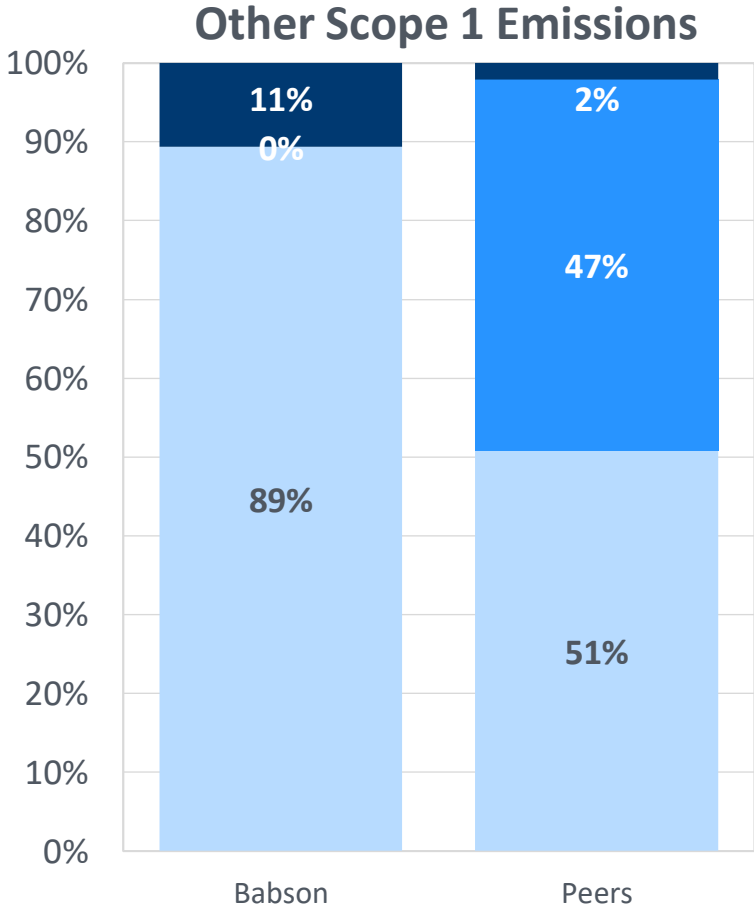
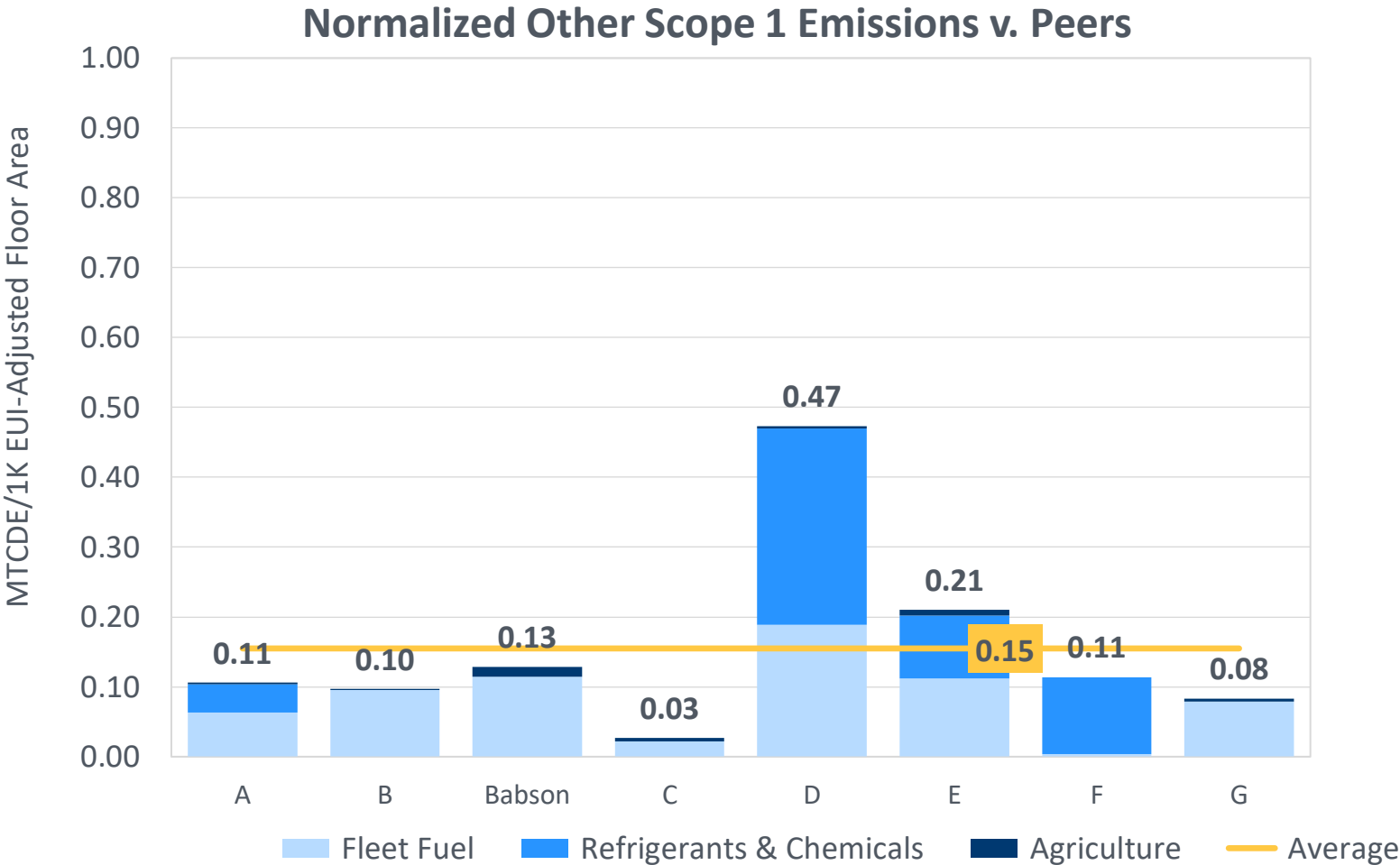
Babson Responsible for Similar Emissions to Peers

Babson emissions trending along peers when normalized by floor area and weighted campus users



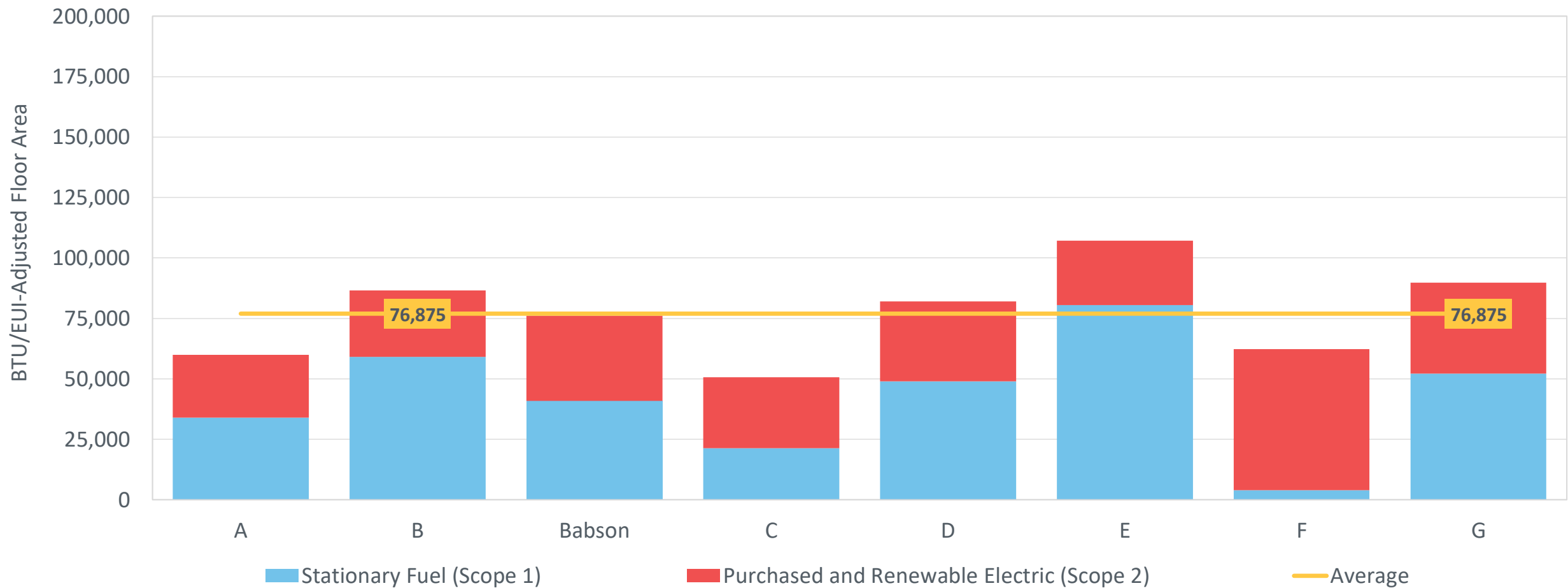
De Minimis Scope 1 Sources Compared to Peers

Fleet Fuel accounts for nearly 90% of other scope one emissions in FY23, well above peers



Babson FY23 Utility Footprint Similar to Peers

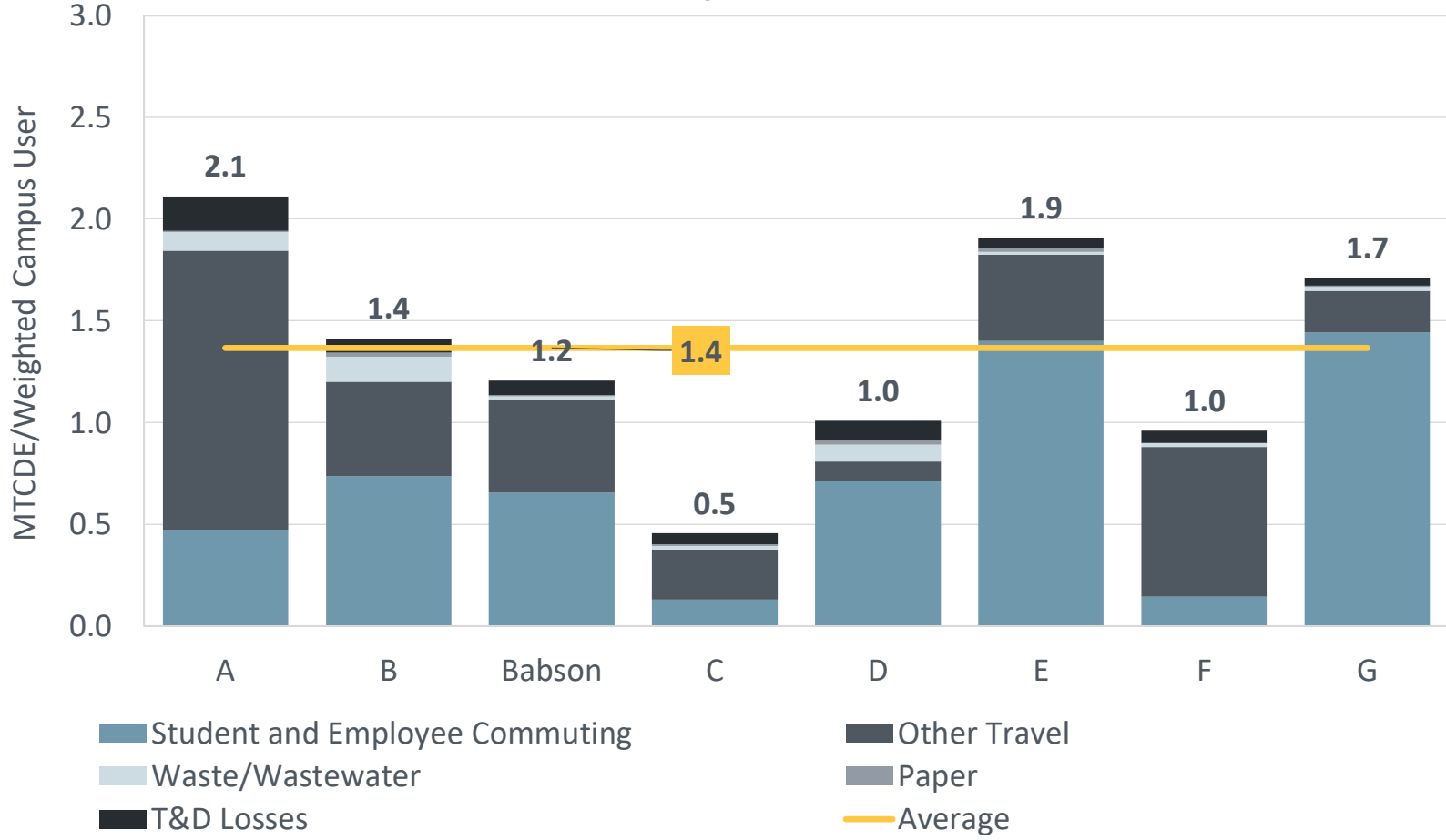
FY23 Normalized Utility Consumption



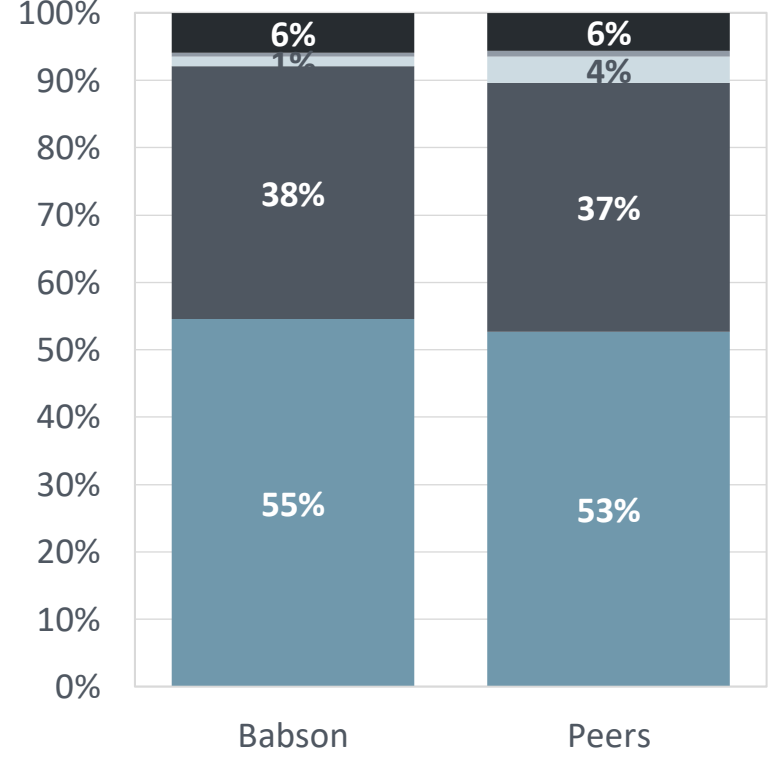
Babson Scope 3 Profile Lower than Peers

FY23 scope 3 consumption at Babson is 12% lower than sustainability peers

Normalized Scope 3 Emissions v. Peers



Scope 3 Emissions



Questions & Discussion