

# Sightlines LLC FY10 Go Green MB&A Presentation University of Alabama

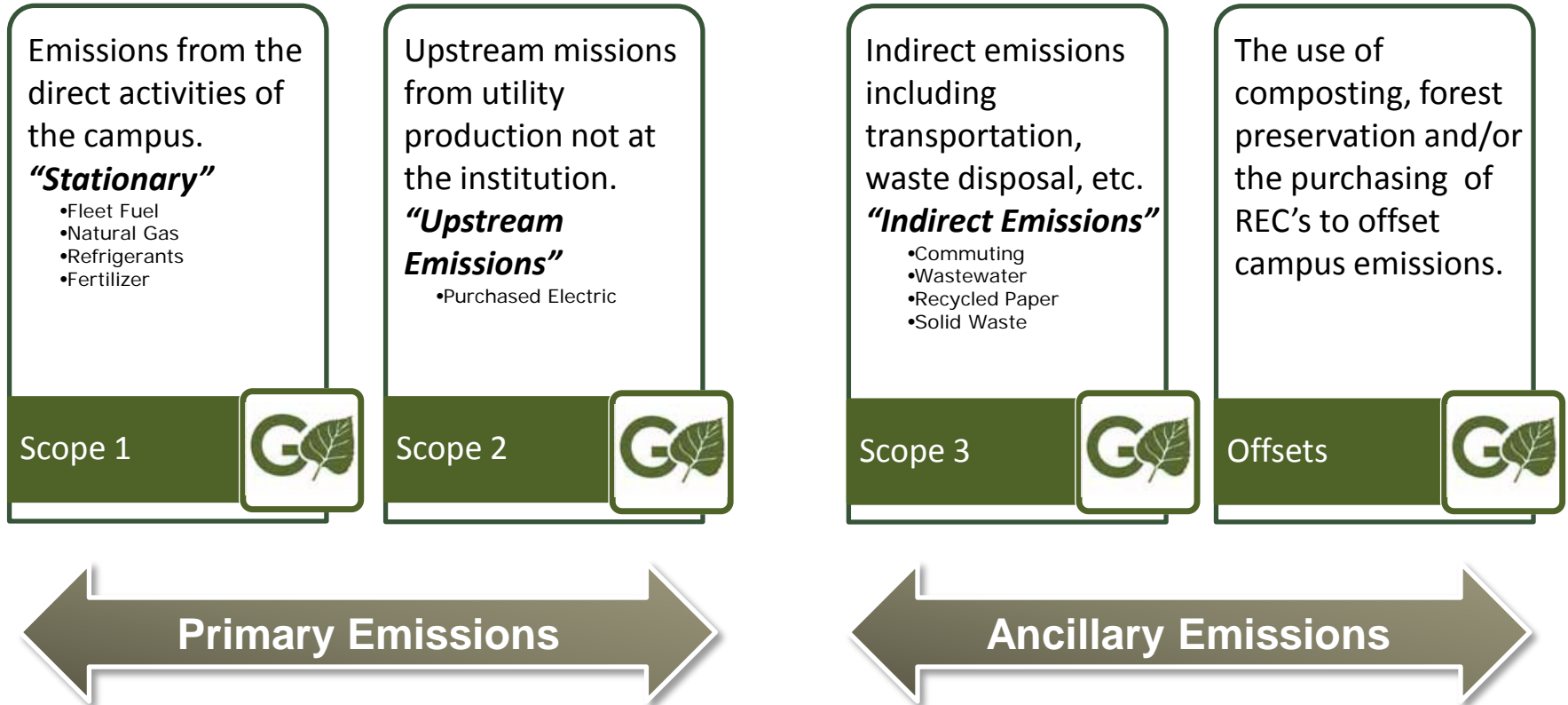
*March 29, 2011  
Presented by: Mike Anderson & Ramona Perry*



- University of Illinois at Urbana-Champaign
- The University of Maine
- University of Maine at Augusta
- University of Maine at Farmington
- University of Maine at Machias
- University of Maine at Presque Isle
- University of Maine at Fort Kent
- University of Maryland
- University of Massachusetts Amherst
- University of Massachusetts Boston
- University of Massachusetts Dartmouth
- University of Massachusetts Lowell
- University of Michigan
- University of Minnesota
- University of Missouri
- University of Missouri - Kansas City
- University of Missouri - St. Louis
- University of New Hampshire
- University of New Haven
- University of Notre Dame
- University of Oregon
- University of Pennsylvania
- University of Portland
- University of Redlands
- The University of Rhode Island, Narragansett B
- The University of Rhode Island, Feinstein Providence
- The University of Rhode Island, Kingston
- University of Rochester
- University of San Diego
- University of San Francisco
- University of St. Thomas (TX)
- University of Southern Maine
- University of Toledo
- University of Vermont
- Upper Iowa University
- Utica College
- Vassar College
- Virginia Commonwealth University
- Virginia Department of General Services
- Wagner College
- Wellesley College
- Wesleyan University
- West Chester University of Pennsylvania
- West Virginia University
- Western Connecticut State University

# A vocabulary for measurement

## Measurement, benchmarking and analysis

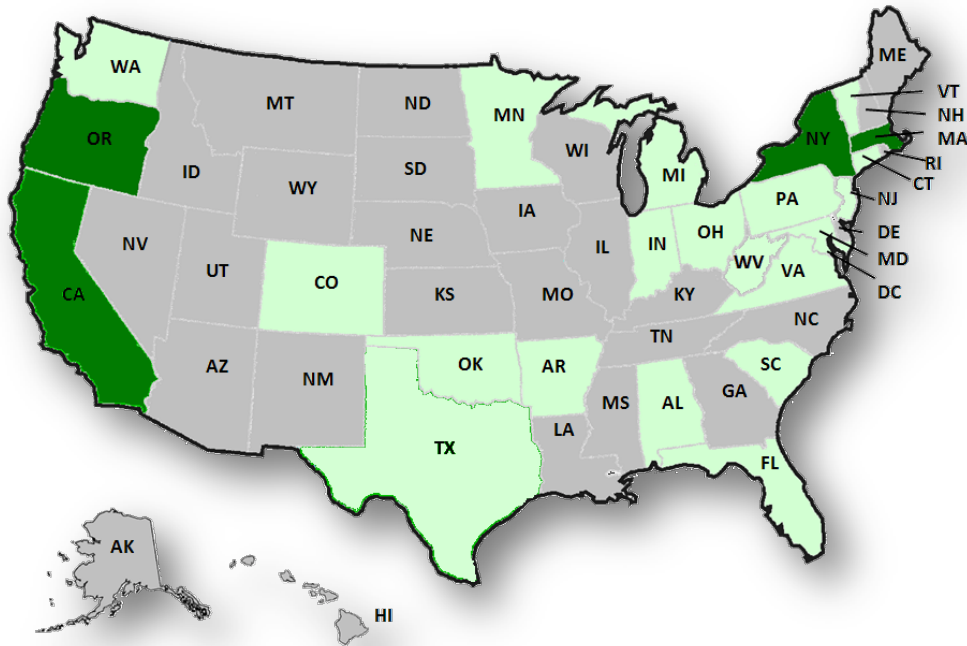


# A vocabulary for measurement

## Go-Green Measurement, Benchmarking and Analysis



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### Go-Green Peer Institutions

Clemson University
George Mason University
Southern Methodist University - Dallas
Texas A&M University
The University of Oklahoma
University of Arkansas
Virginia Commonwealth University

### Comparative Considerations

Size  
Complexity  
Location  
Program

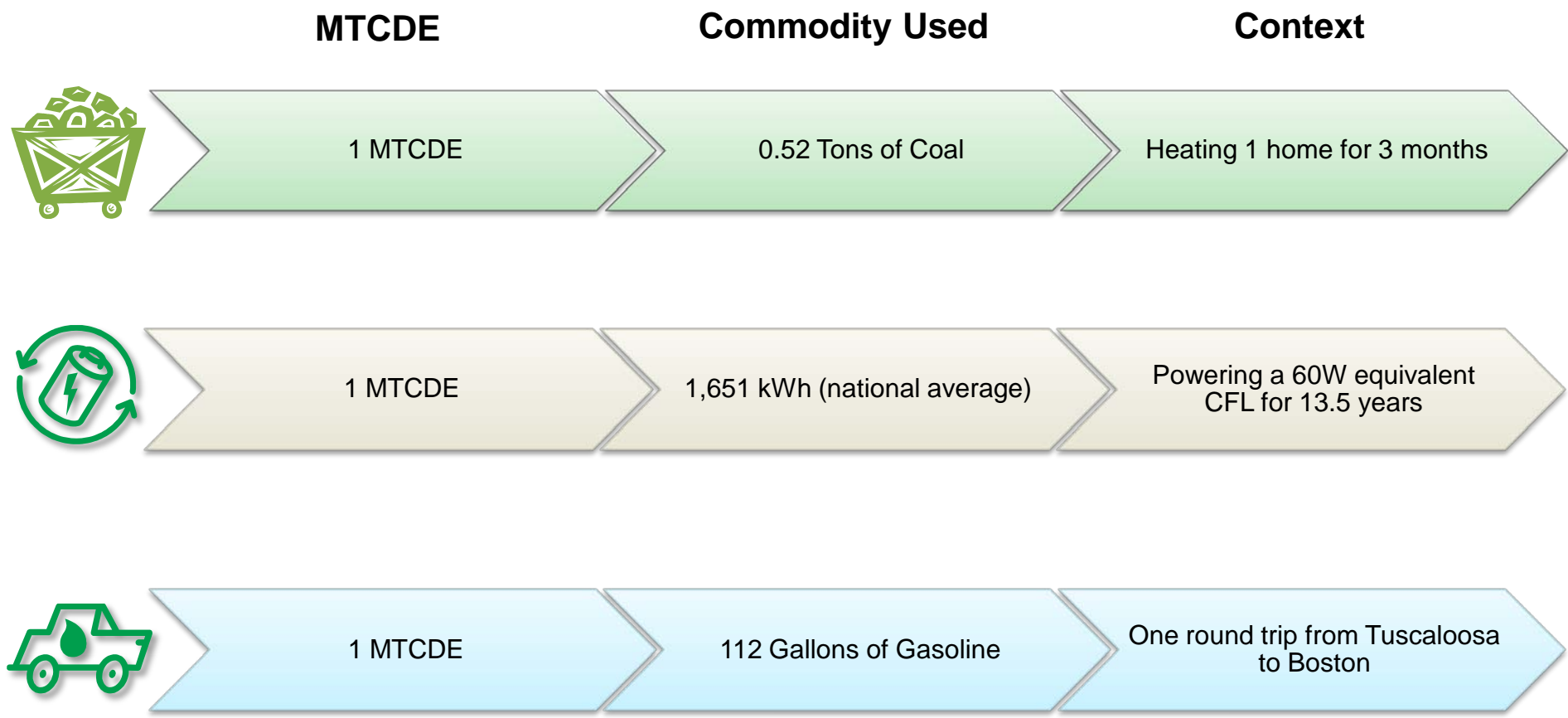
### Go-Green Measurement and Analysis Members

- Sightlines has approximately 50 Members
- Approximately two-thirds are private
- Approximately one-third are public
- Approximately two-thirds have signed the ACUPCC
- Approximately forty percent are Charter Signatories of the ACUPCC



# Understanding MTCDEs

## What is a Metric Ton of Carbon Dioxide Equivalent?



# Total Emissions Profile



## Positive Trends

- Fossil fuel consumed has low carbon intensity.
- Efficient utility consumption profile.
- Commuting miles/trip for students is among the lowest in peer group.

## Opportunities

- Determining importance of sustainability and setting goals for future emissions reductions.
- Update student survey to reassess commuting habits.
- As campus grows, align facilities goals with sustainability goals; emissions from purchased electricity present the greatest opportunities for reduction.





## GHG Emissions per 1,000 SF



Stresses efficient operation  
of physical plant.

$$\frac{\text{Net GHG Emissions}}{\text{Total GSF in Footprint}} * 1,000$$

## GHG Emissions per Student

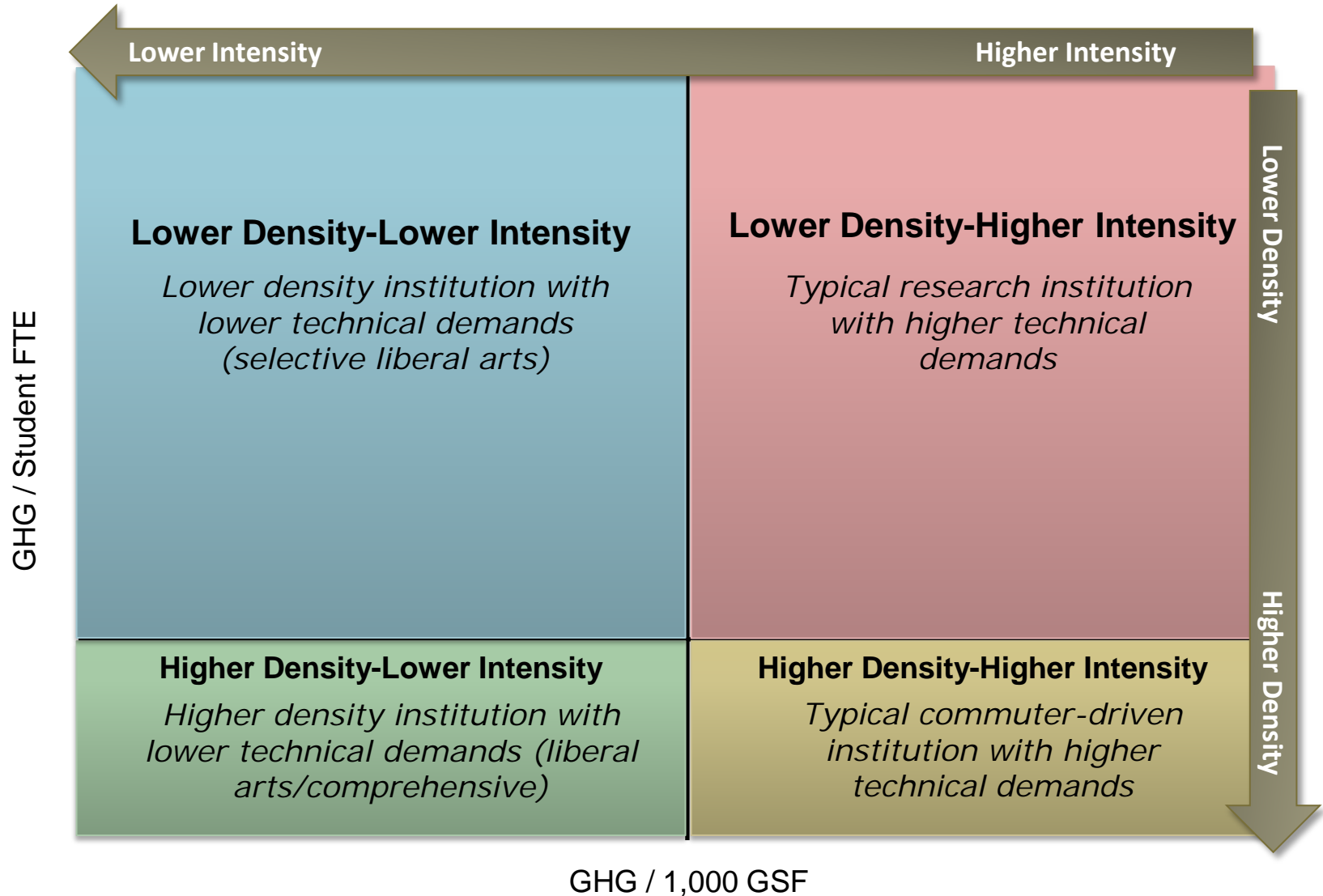


Stresses efficient  
use of space.

$$\frac{\text{Net GHG Emissions}}{\text{Total Student FTE}}$$

# Gross Carbon Snapshot (Space vs. Density)

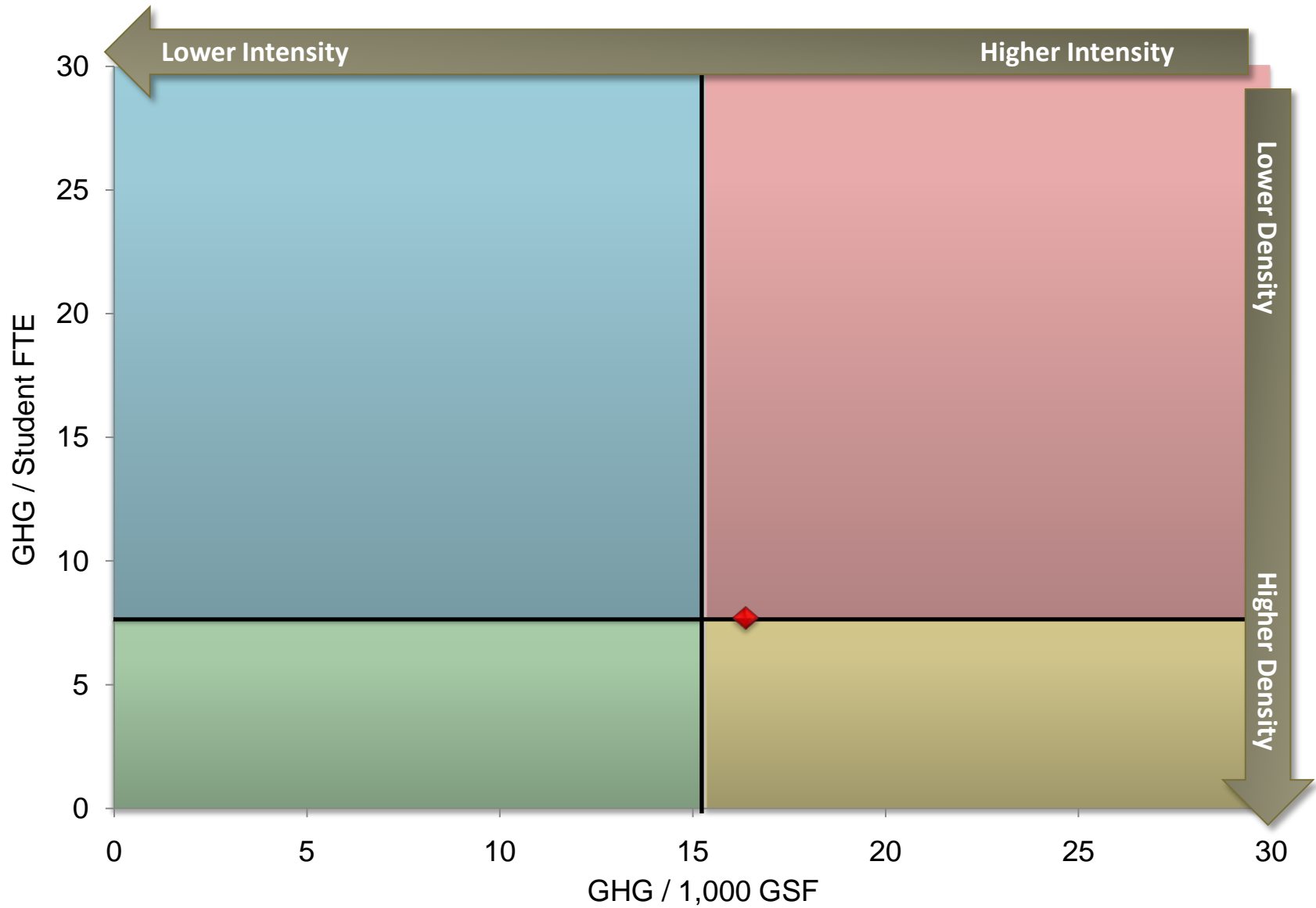
## Understanding "Performance Portfolios"



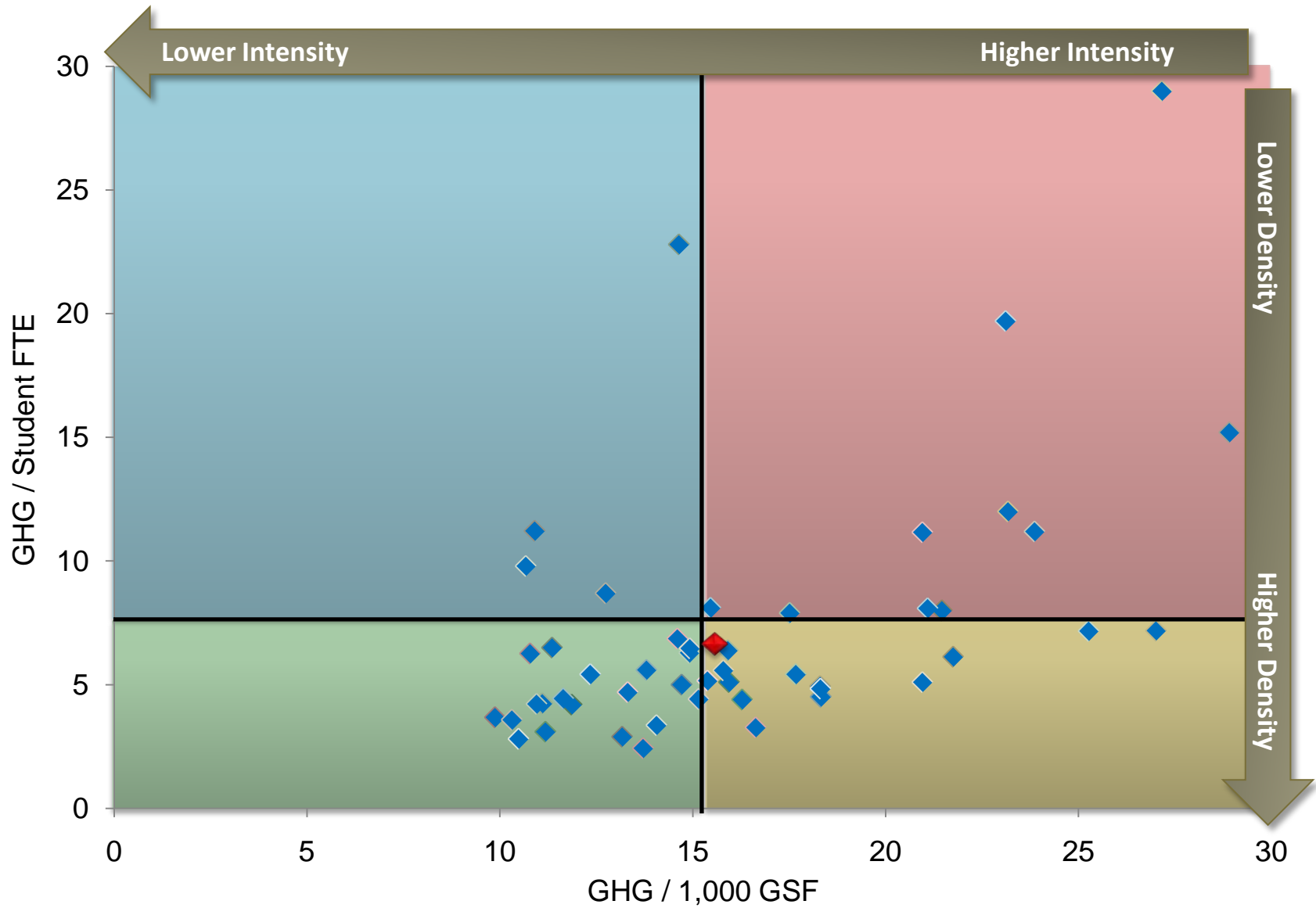


# Understanding emissions profile

## Setting targets for future emissions



# Gross Carbon Snapshot (Space vs. Density)



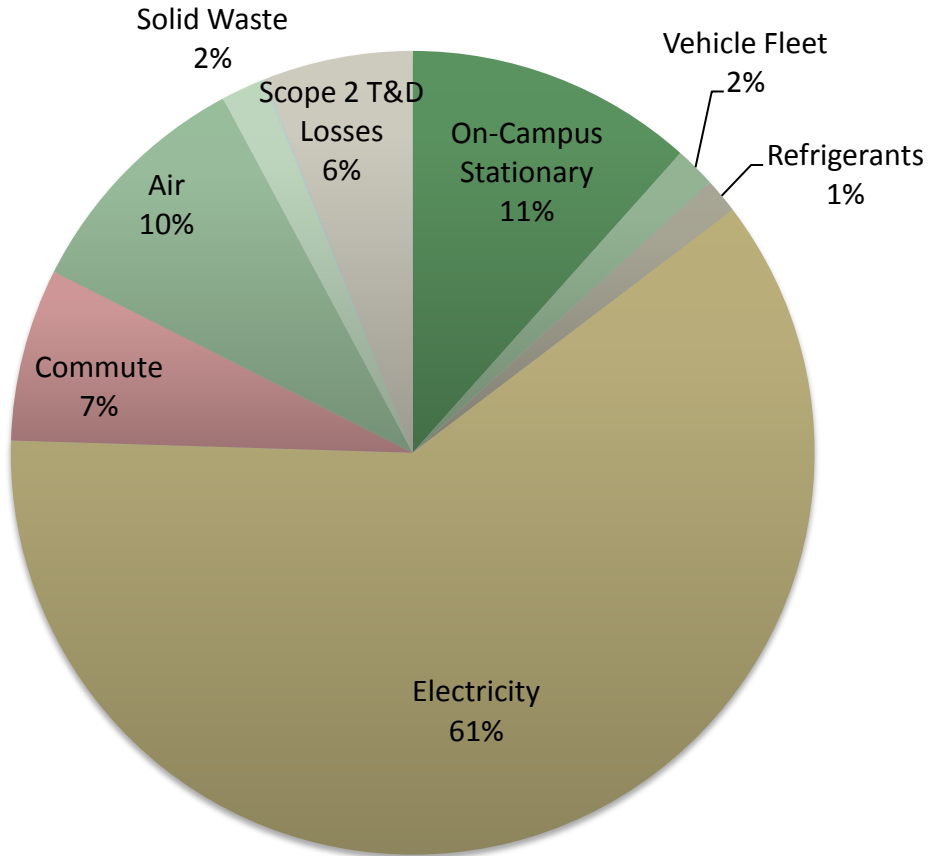
# Total carbon emissions - Gross

FY10: 206,888 MTCDE

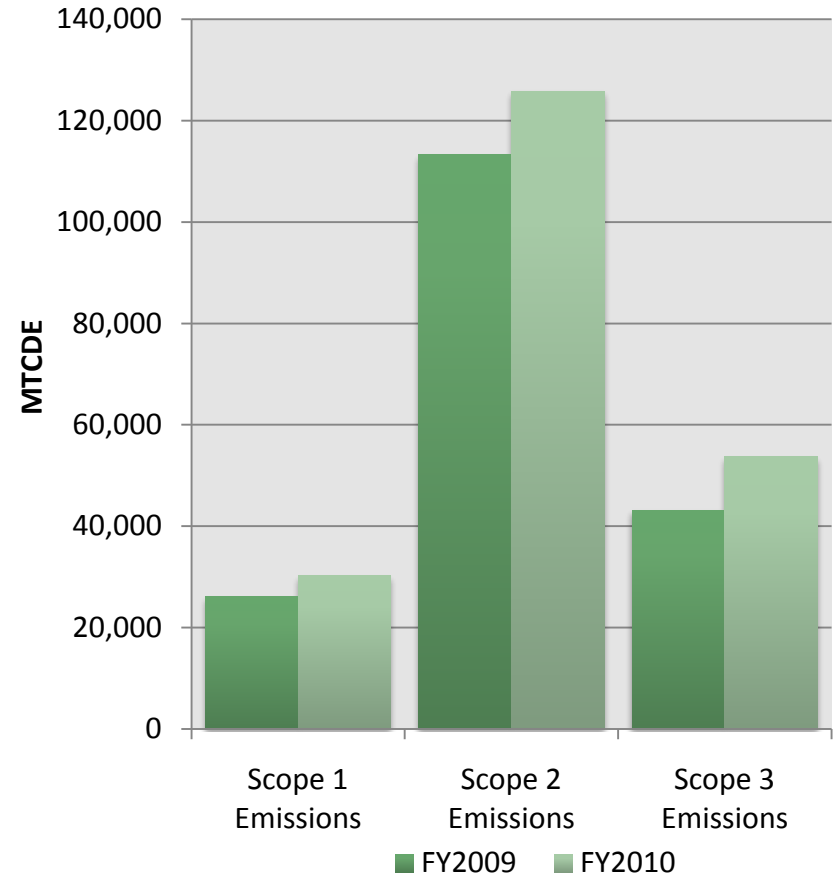


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## Carbon Emissions by Type



## Carbon Emissions by Scope



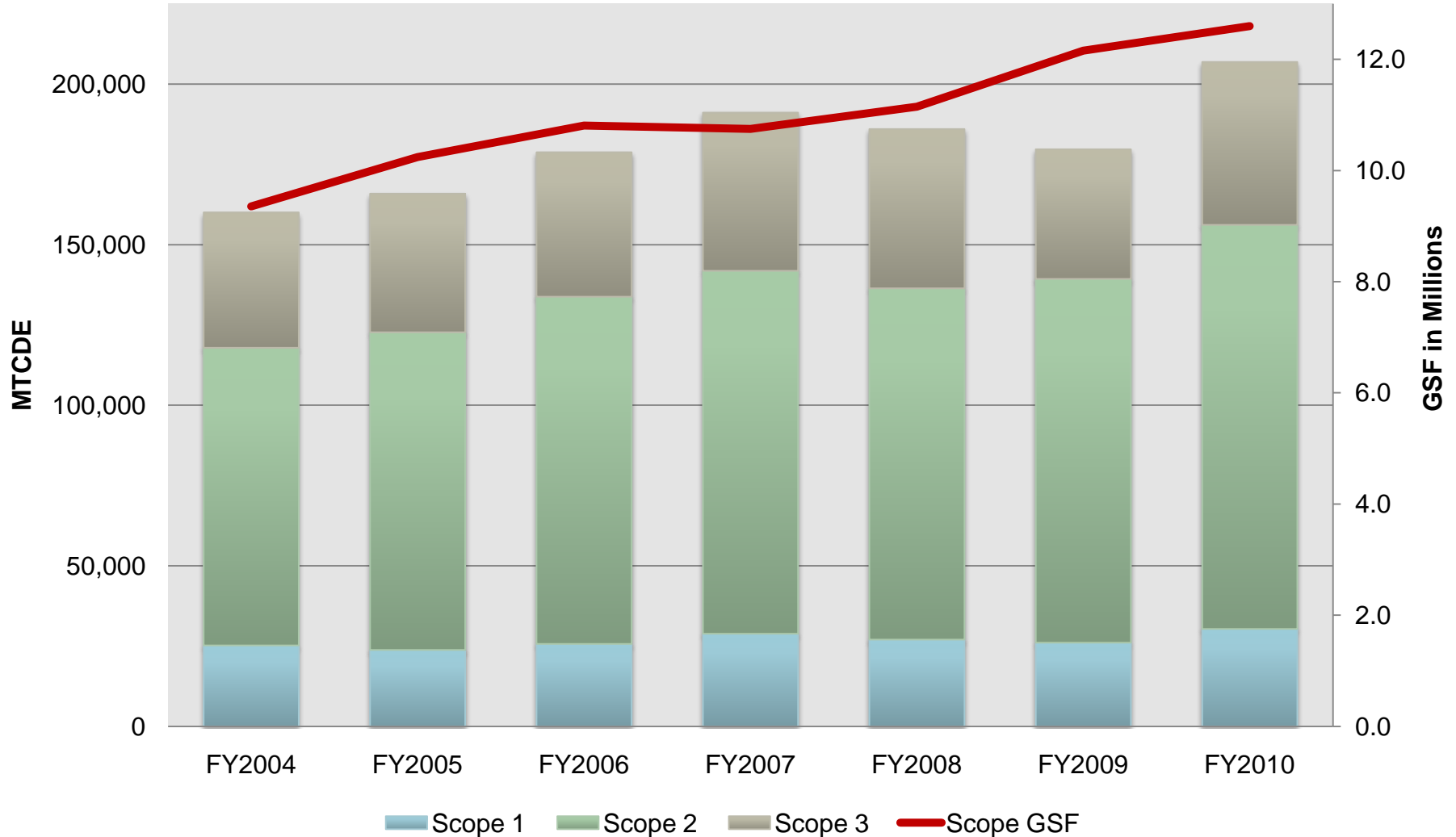
# Rising emissions in each scope

Rising emissions trend with increasing footprint



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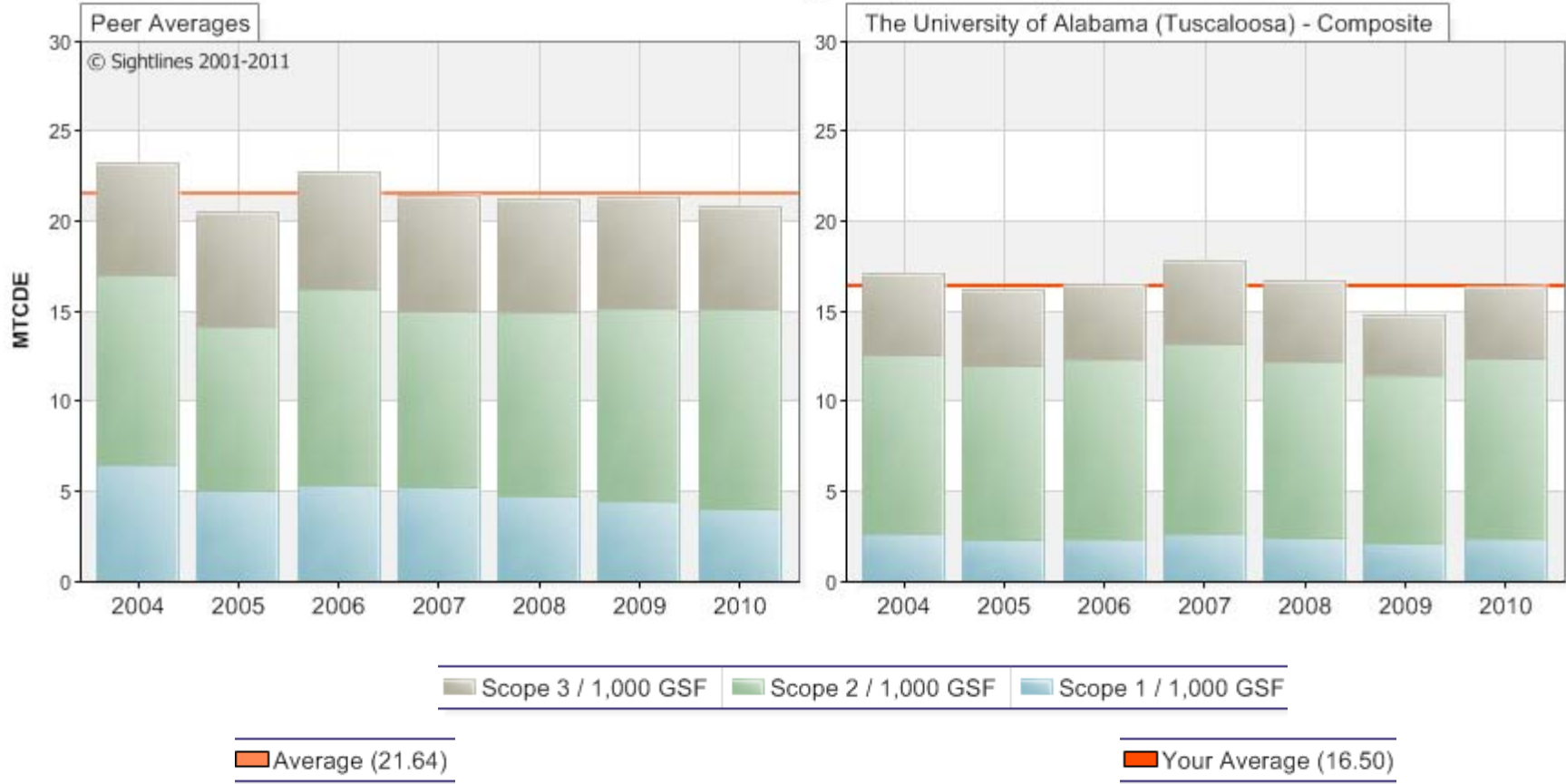
### Total Emissions by Scope



# Total emissions by GSF



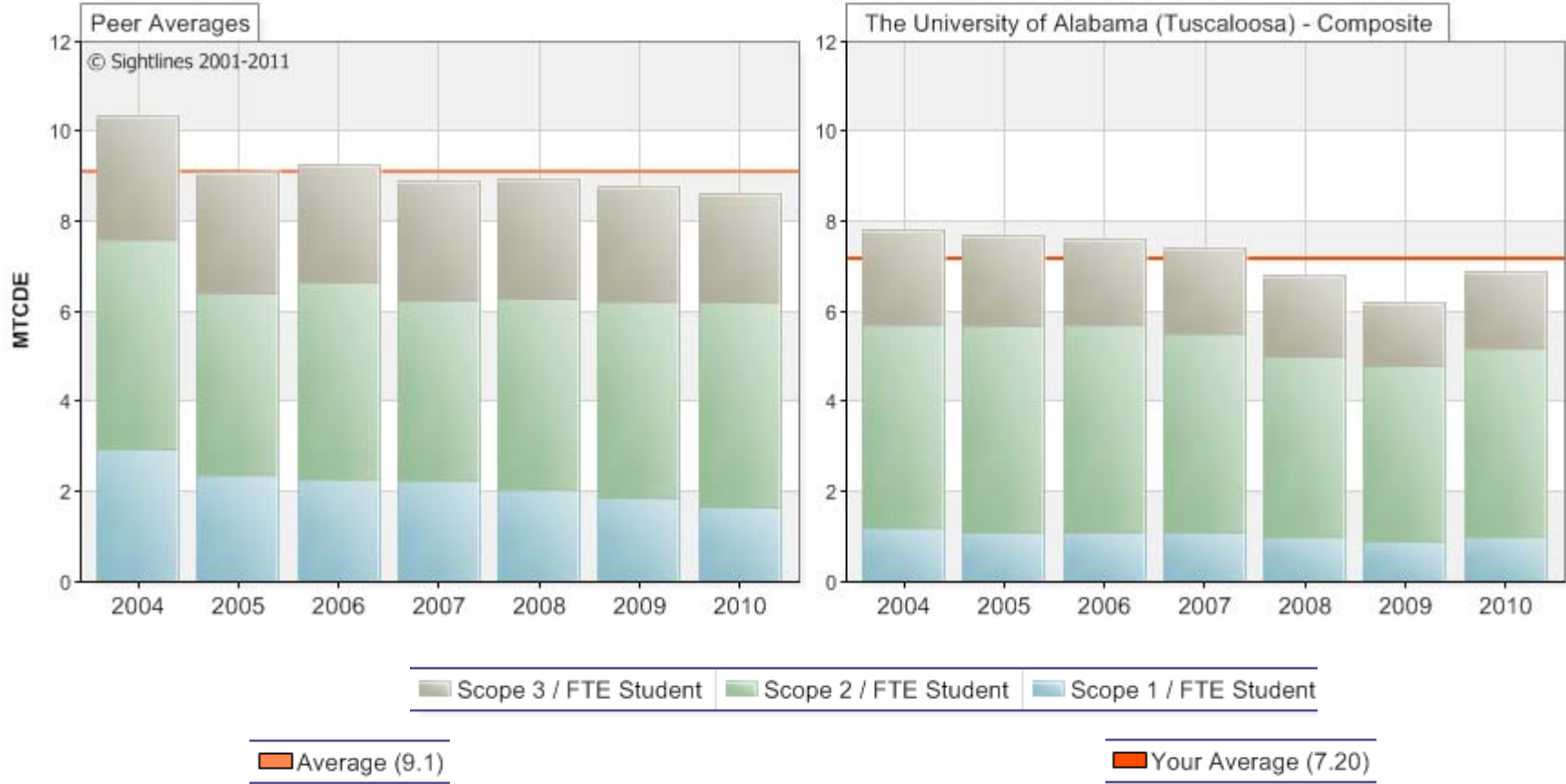
## Gross Emissions (per 1,000 GSF)



# Total emissions by student



## Gross Emissions (per Student)



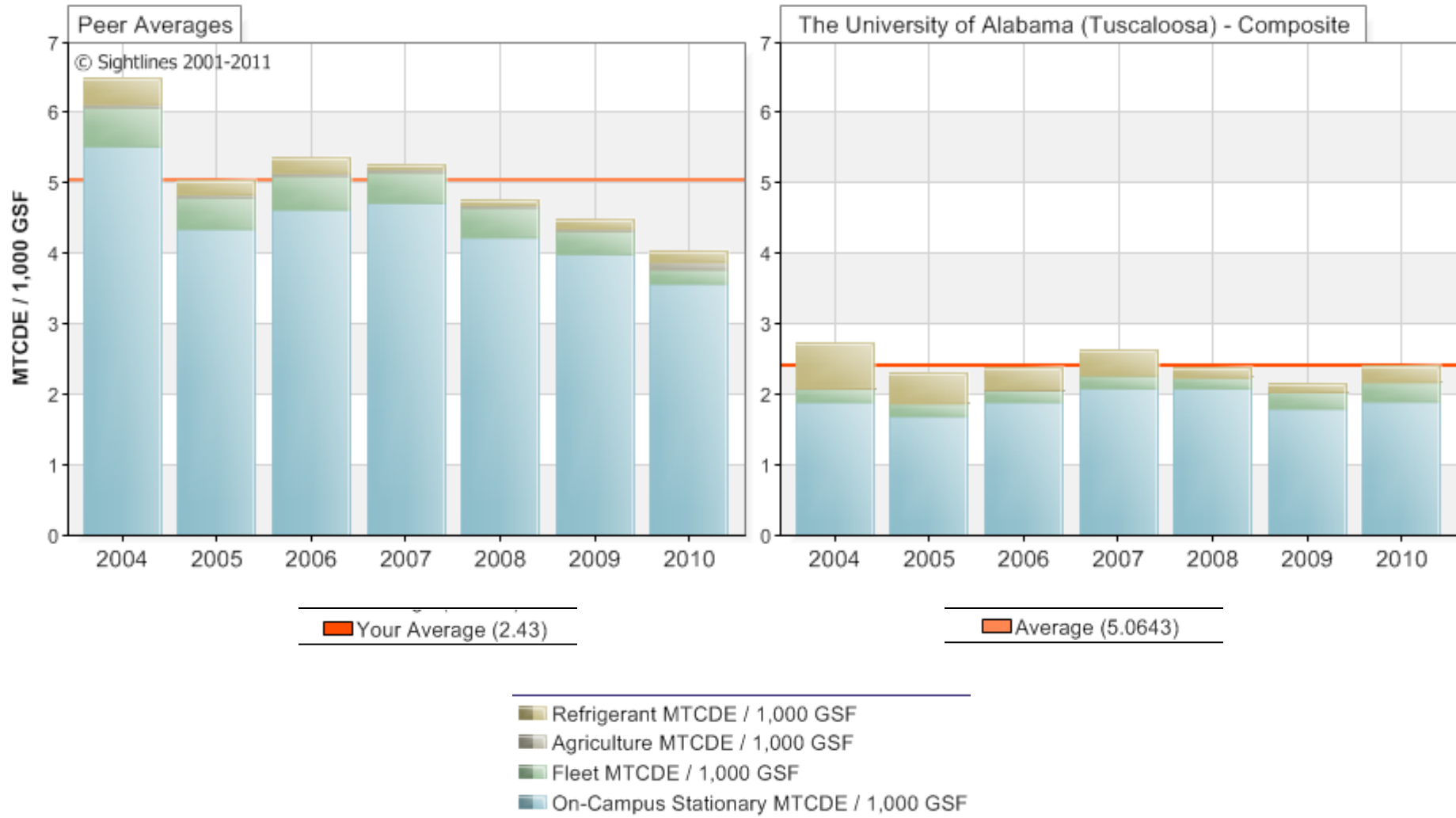
# Scope 1 Emissions Profile



# Alabama's scope 1 emissions well below peers



## Scope 1 Emissions (per 1,000 GSF)

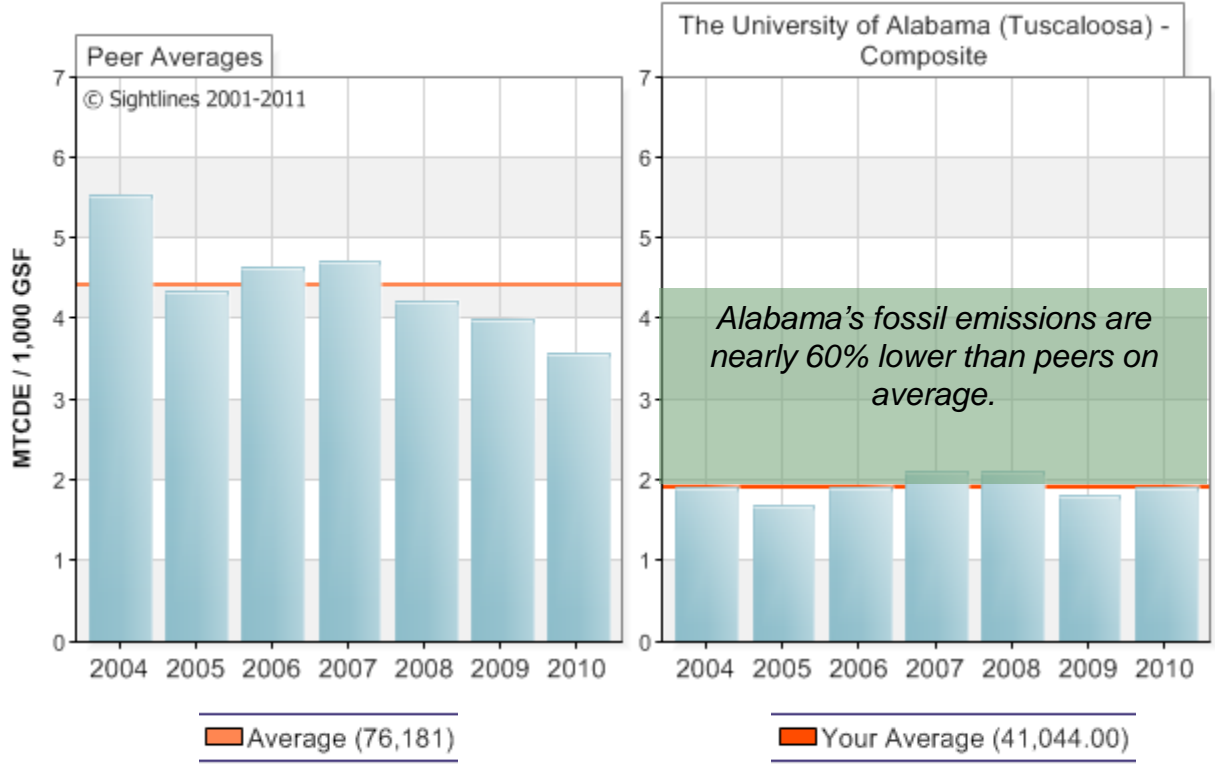




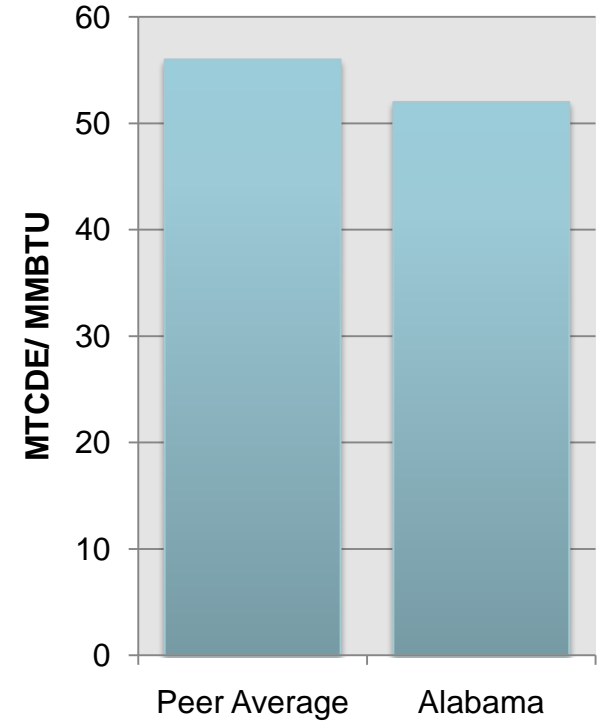
# Fossil consumption profile drives low emissions



## Stationary Emissions (per 1,000 GSF)



## Scope 1 Intensity



- Primary Drivers of Scope 1:**
- Lower consumption levels
  - Building Efficiency



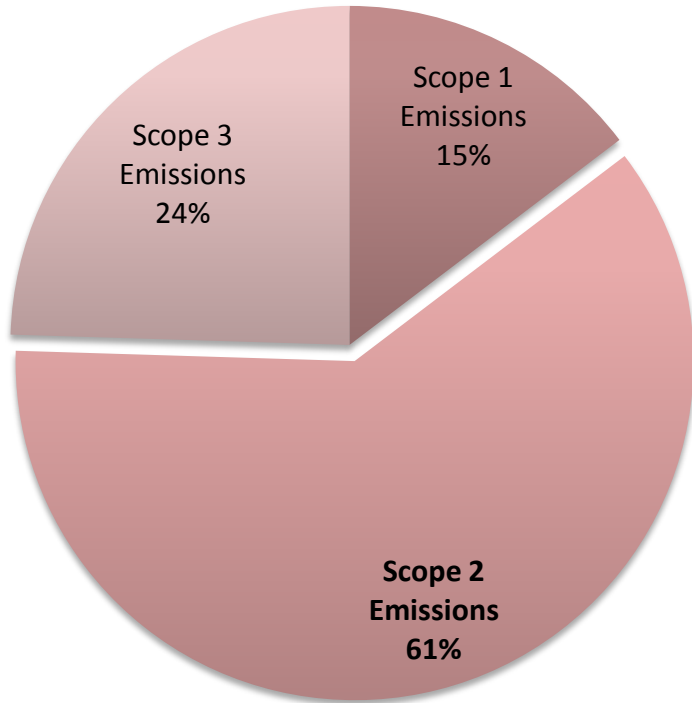
# Scope 2 Emissions Profile



# Scope 2 emissions large portion of profile



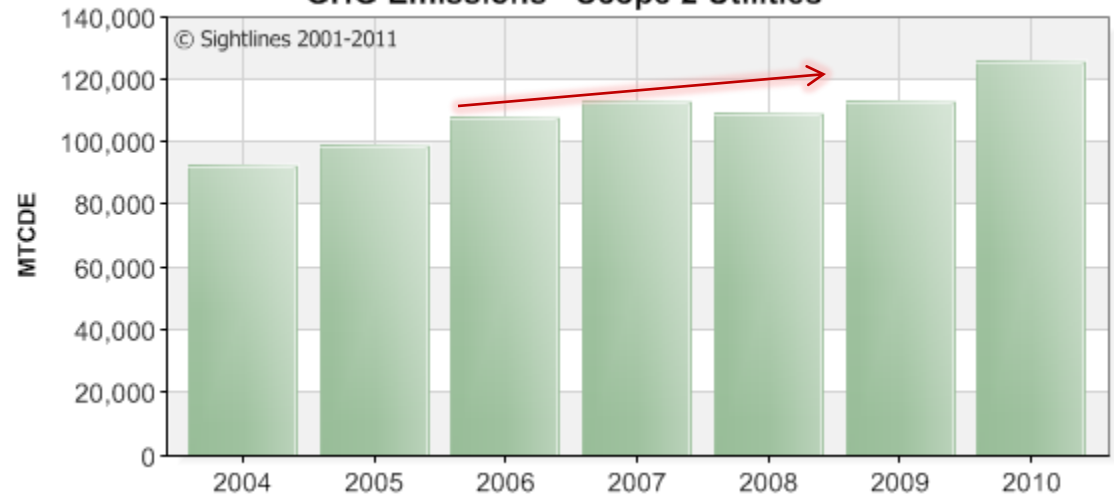
## Carbon Emissions by Scope



### Scope 2:

- Comprises over half of total emissions
- Has an increasing trend since FY2004

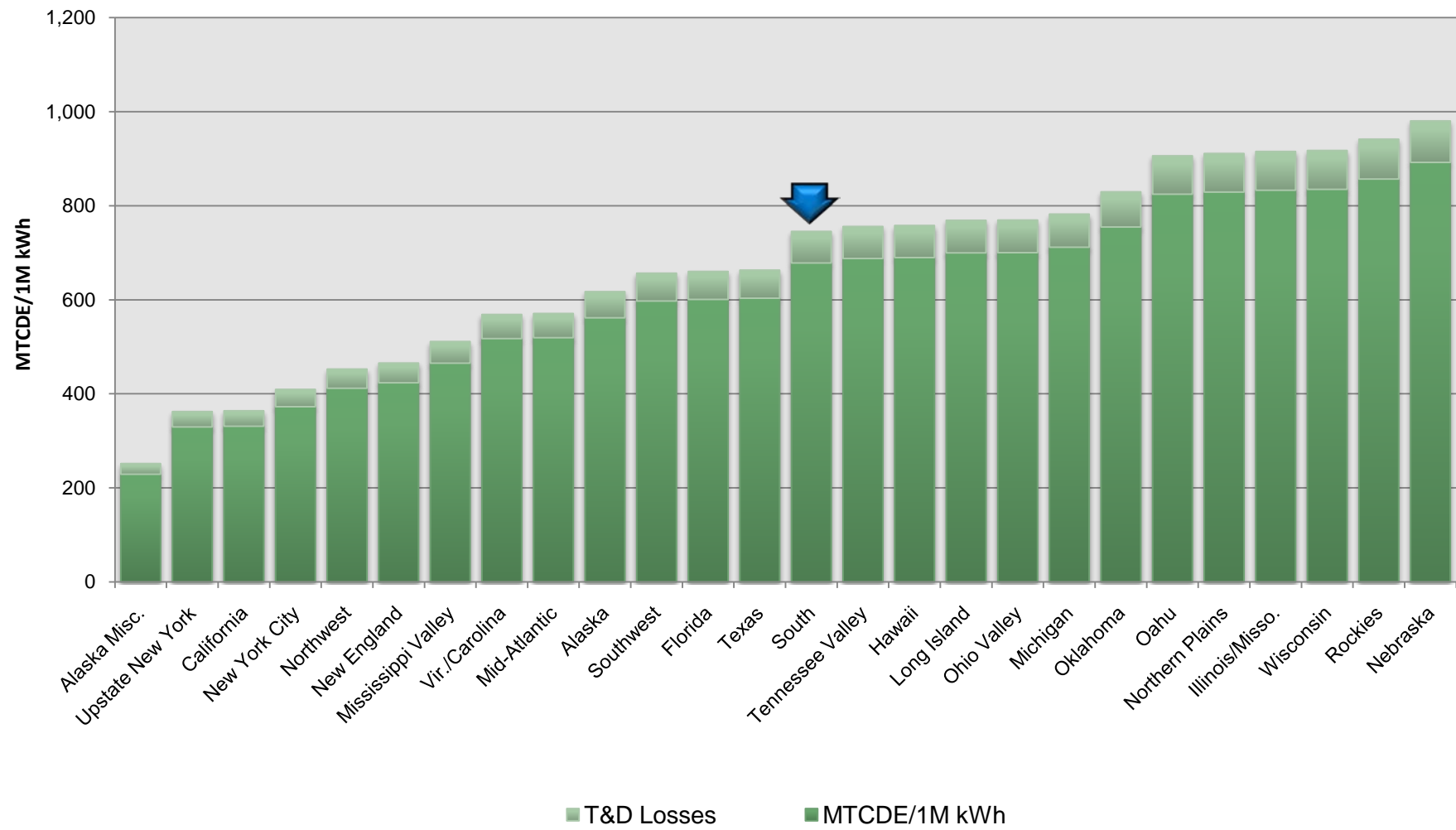
## GHG Emissions - Scope 2 Utilities



# Grid fuel mix impacts Scope 2 emissions

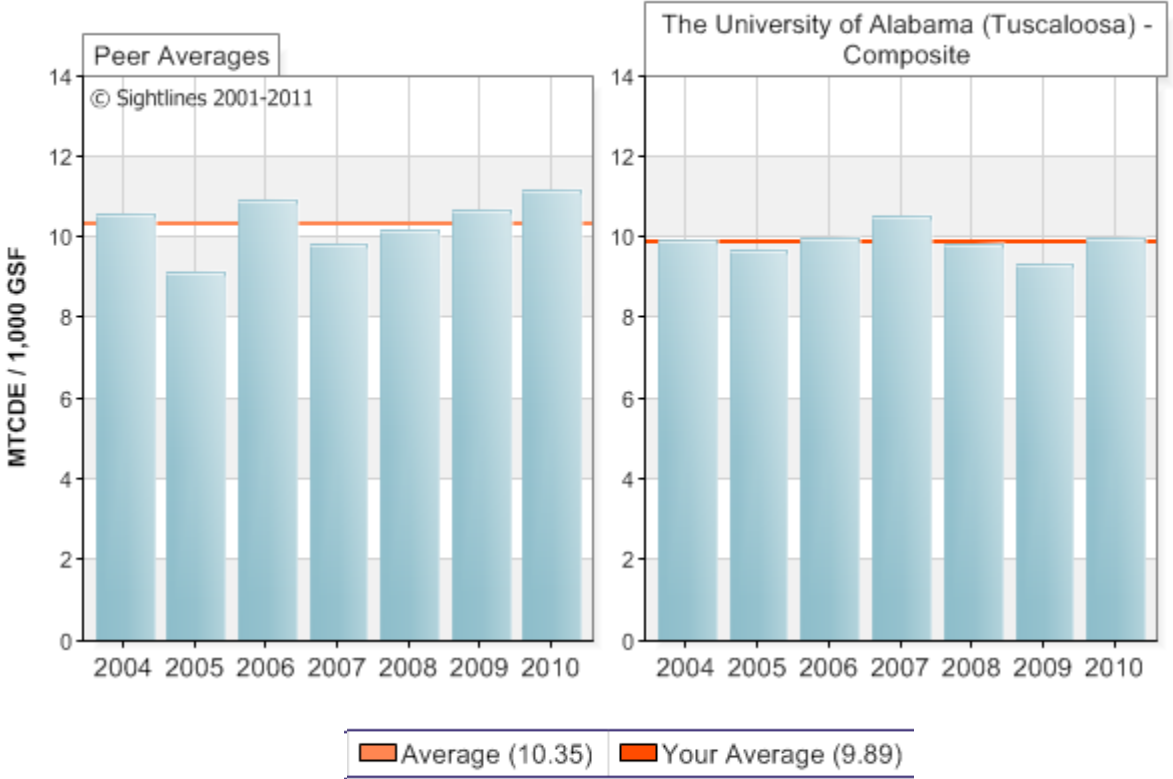


## MTCDE by Grid Operator

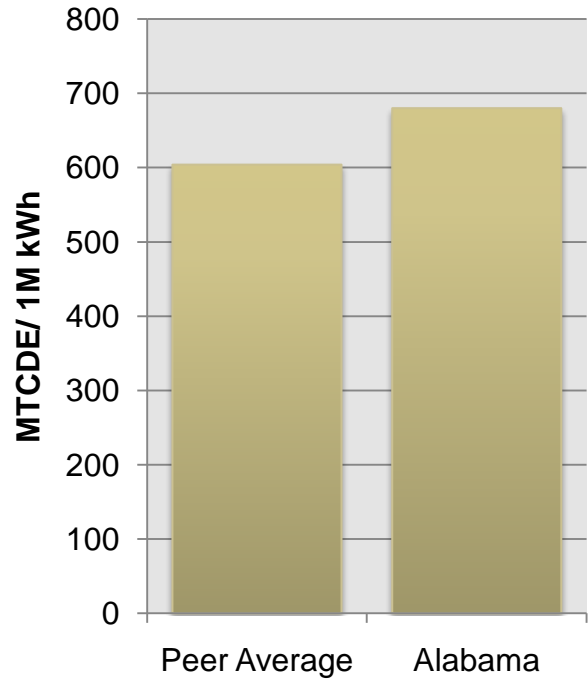




## Purchased Electricity Emissions (per 1,000 GSF)



## Regional Grid Carbon Intensity



- Primary Drivers of Scope 2:**
- Lower consumption levels
  - More carbon intense grid



# Total Utility Emissions



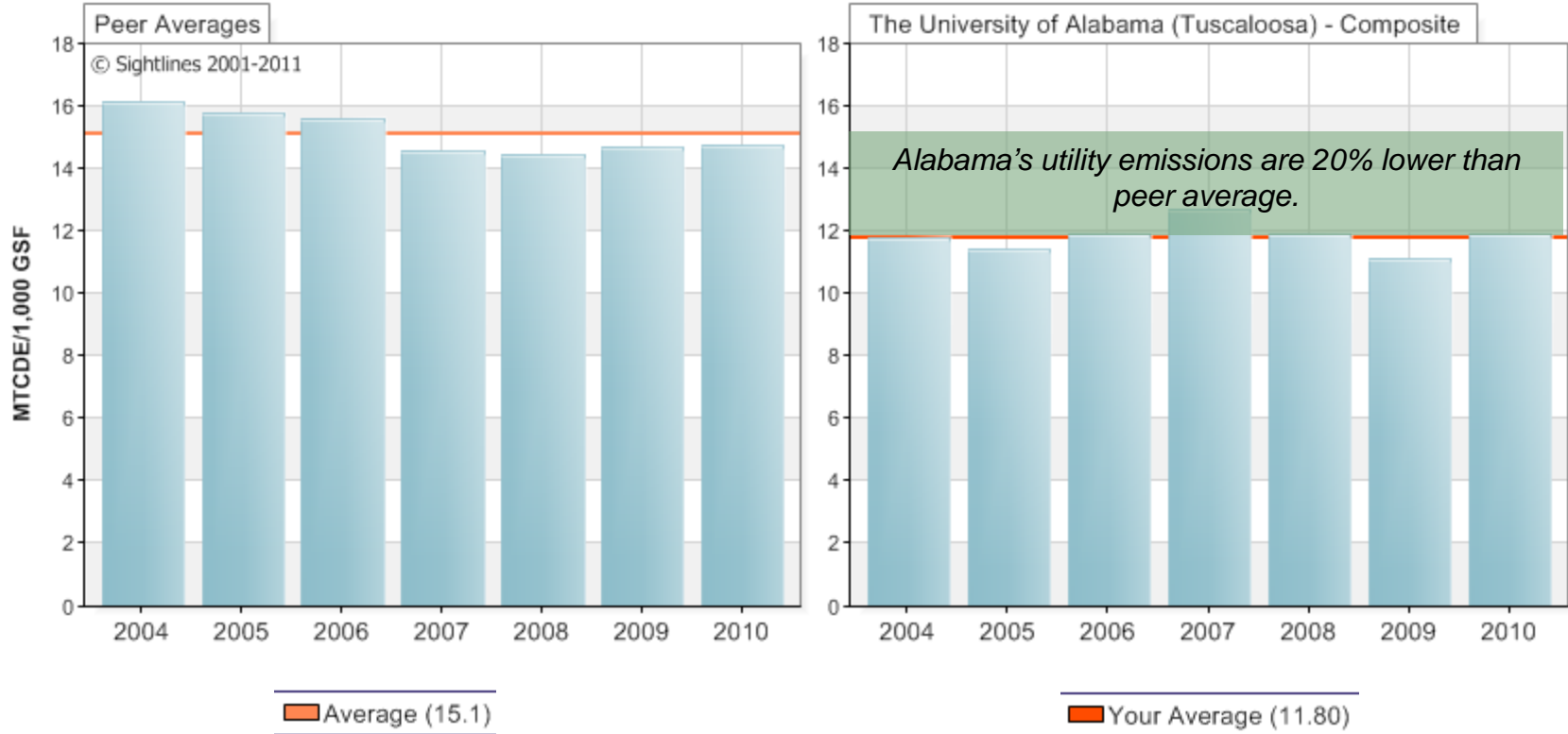
# Utility Emissions profile

Alabama's utility operations emit 20% less GHG than peers on average



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## Total Utility Emissions (per 1,000 GSF)



Utility Emission include both on campus stationary emissions & purchased electricity emissions.

# Scope 3 Emissions Profile



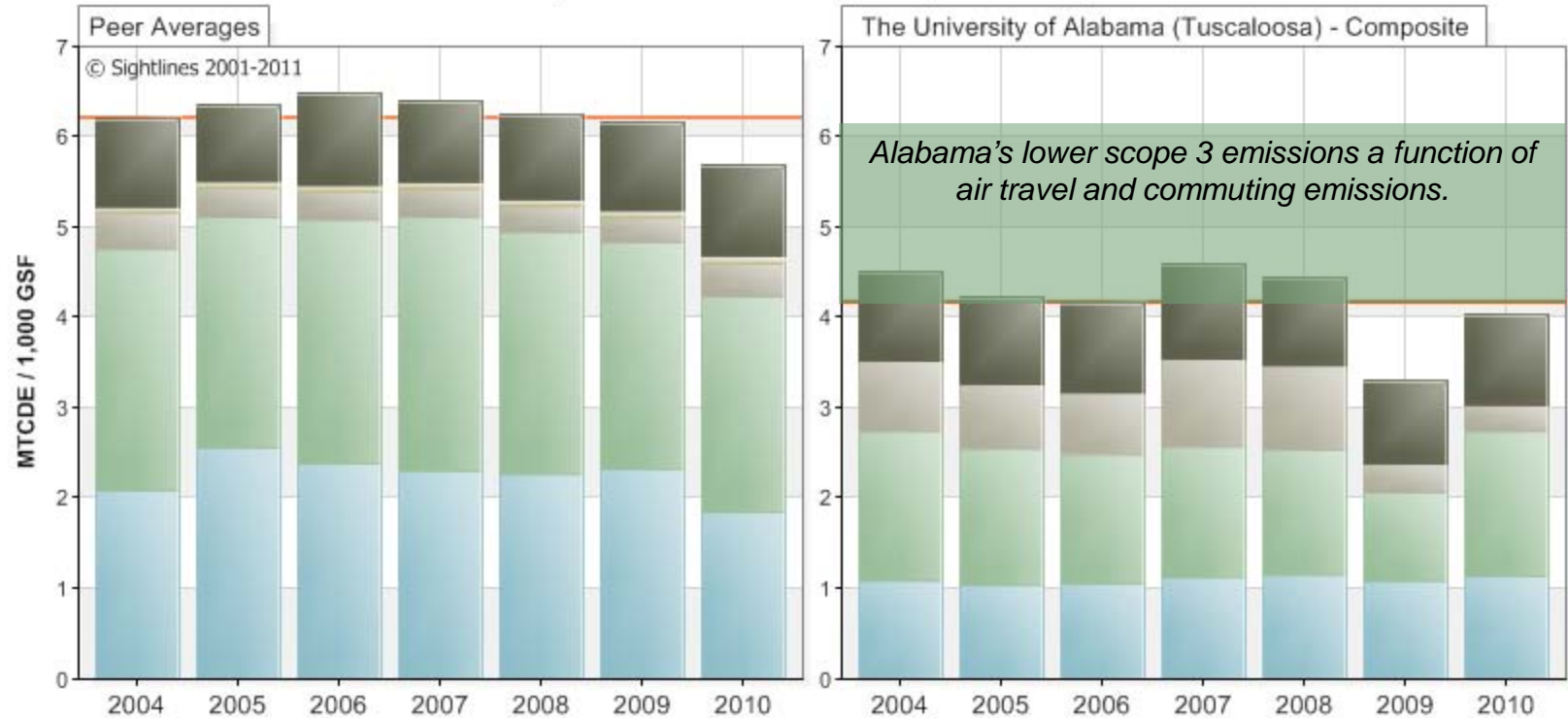


# Overall scope 3 emissions below peer average

## Understanding impact of air travel and commuting



### Scope 3 Emissions (per 1,000 GSF)



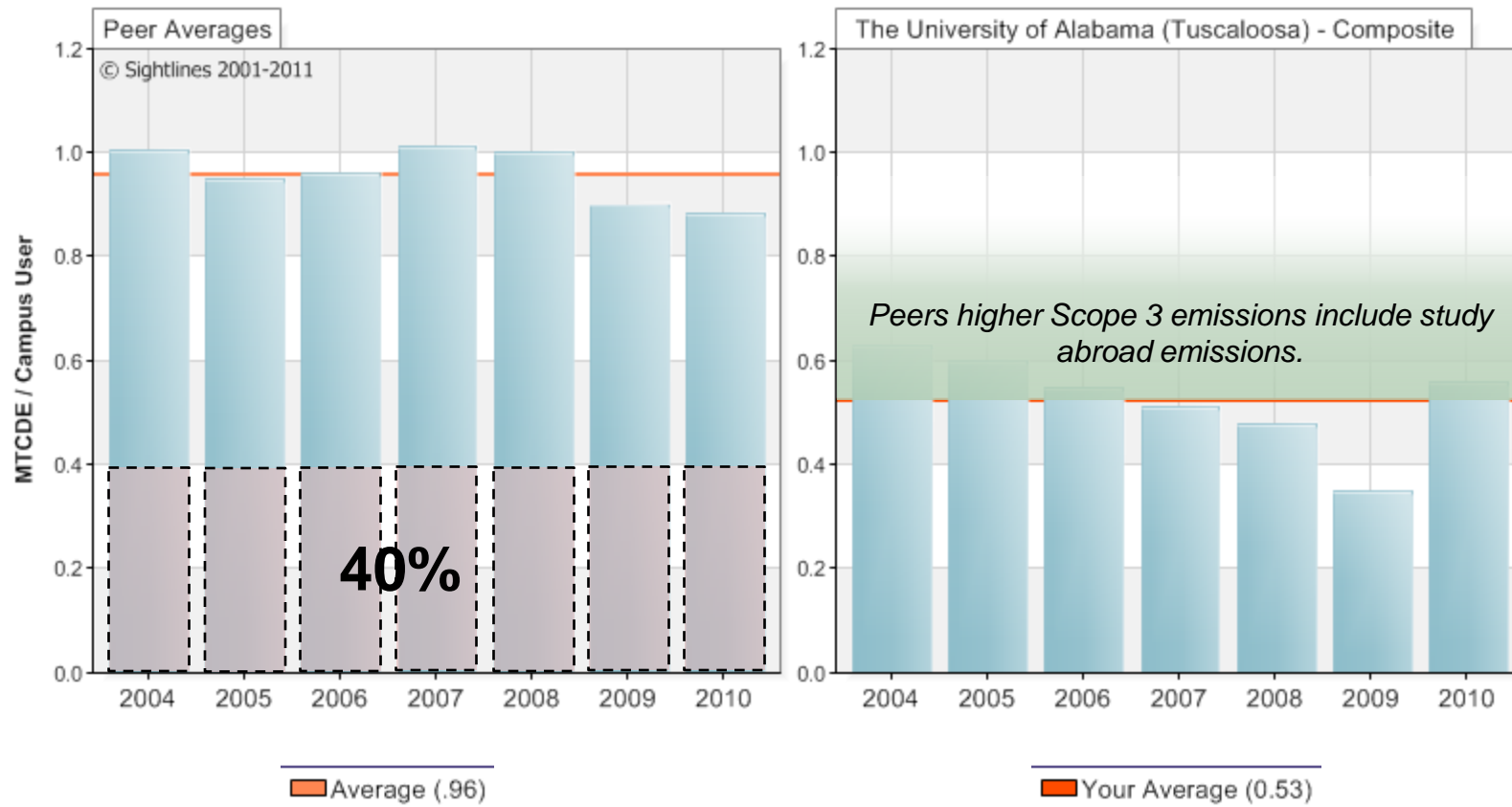
- Scope 2 T&D Losses MTCDE / 1,000 GSF
- Paper MTCDE / 1,000 GSF
- Wastewater MTCDE / 1,000 GSF
- Other Scope 3 MTCDE / 1,000 GSF
- Solid Waste MTCDE / 1,000 GSF
- Air Travel MTCDE / 1,000 GSF
- Commuting MTCDE / 1,000 GSF



# Impact of study abroad travel on emissions



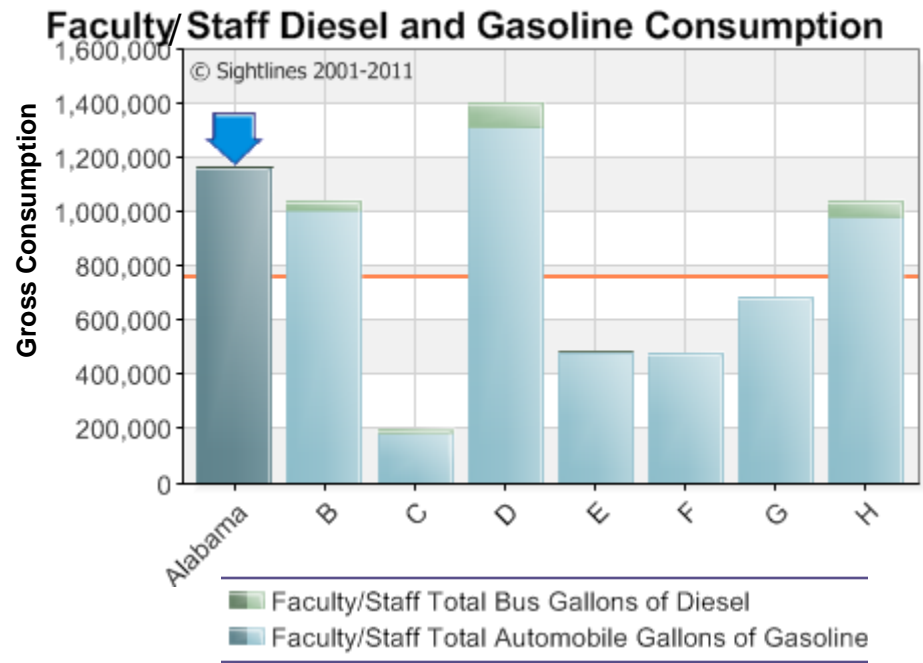
## Air Travel MTCDE / Campus User



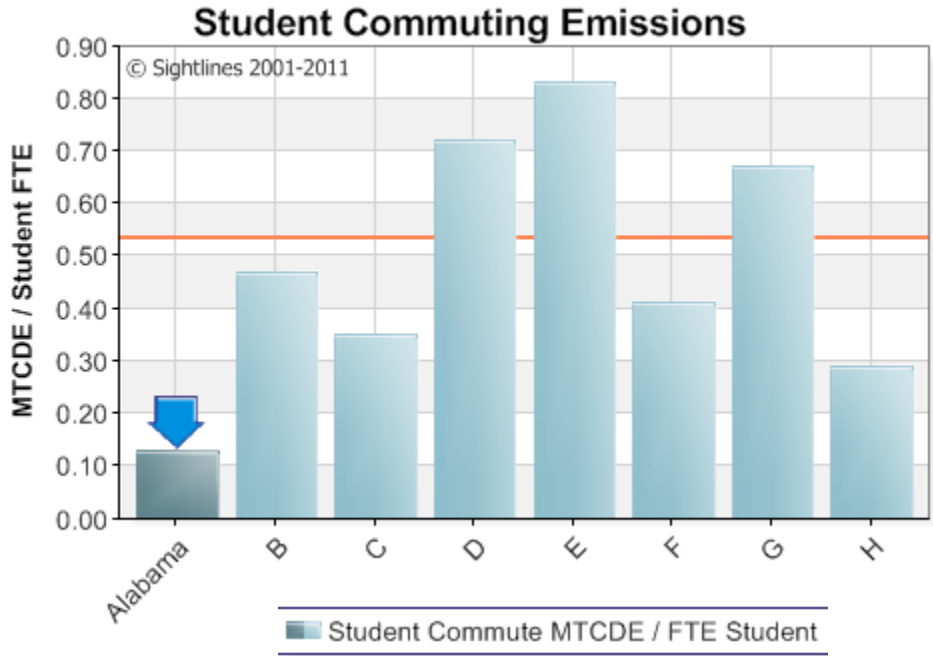
On average **40%** of peer air travel emissions are the result of study abroad programs.



# Shorter trip distances mean lower emissions for students



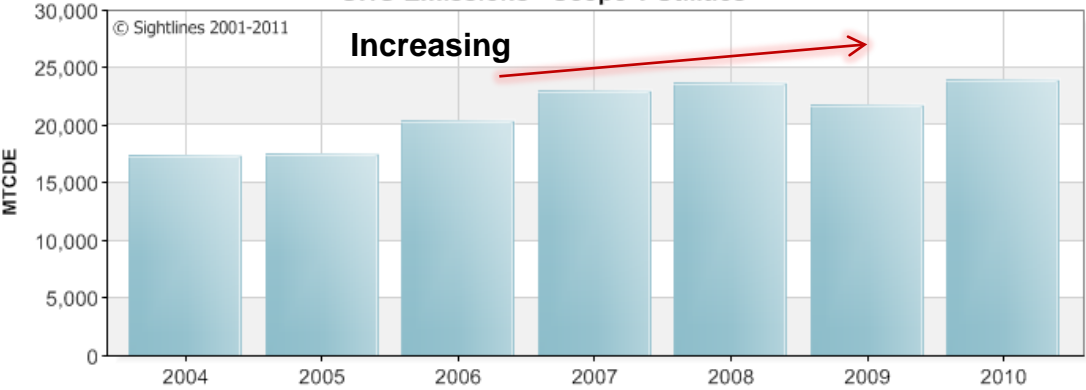
	<u>Average Trip Distance</u>
Alabama:	<b>2 miles</b>
Peer Average:	<b>9 miles</b>



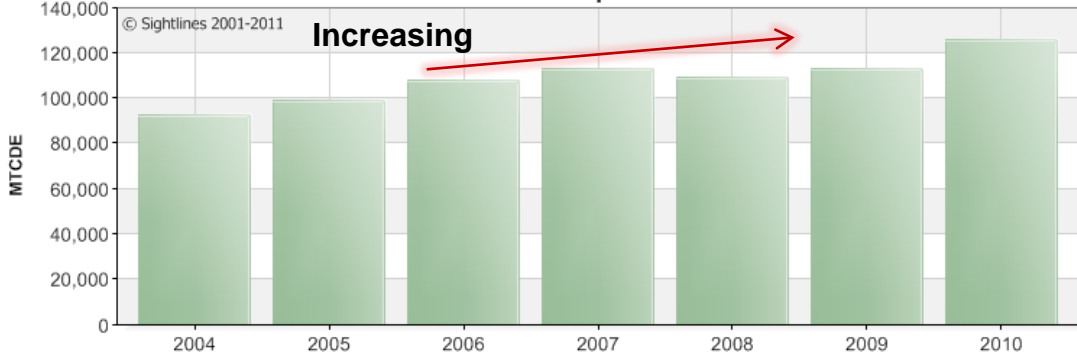
# Gross emissions trends by scope



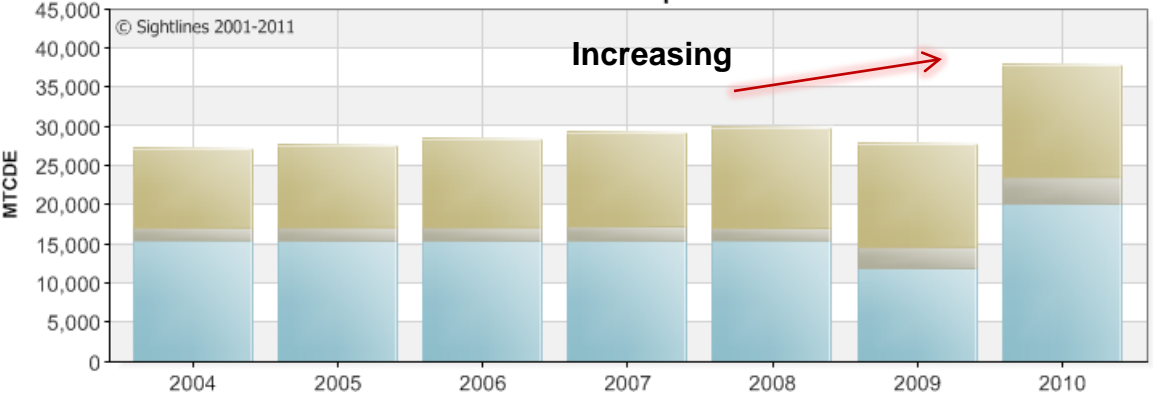
**GHG Emissions - Scope 1 Utilities**



**GHG Emissions - Scope 2 Utilities**



**GHG Emissions - Transportation**



- Study Abroad Air Travel GHG
- Total Commuting GHG
- Direct Transportation GHG
- Other Directly Financed Travel GHG
- Directly Financed Air Travel GHG





## **Emissions Reduction Goals:**

- Identify five, ten, and twenty year targets for emissions reduction.
  - Normalized Emissions targets
  - Gross Emissions targets

## **Utility Emissions:**

- Electricity comprises over 60% of total campus emissions.

### *Some options:*

- *Addressing aging building systems*
- *Expand use of LEED Performance Standards*
- *Investigate use of PPAs*
- *Use of biomass in heating operations*

## **Scope 3 Opportunities**

- Air Travel and commuting are the largest scope 3 contributors to emissions.

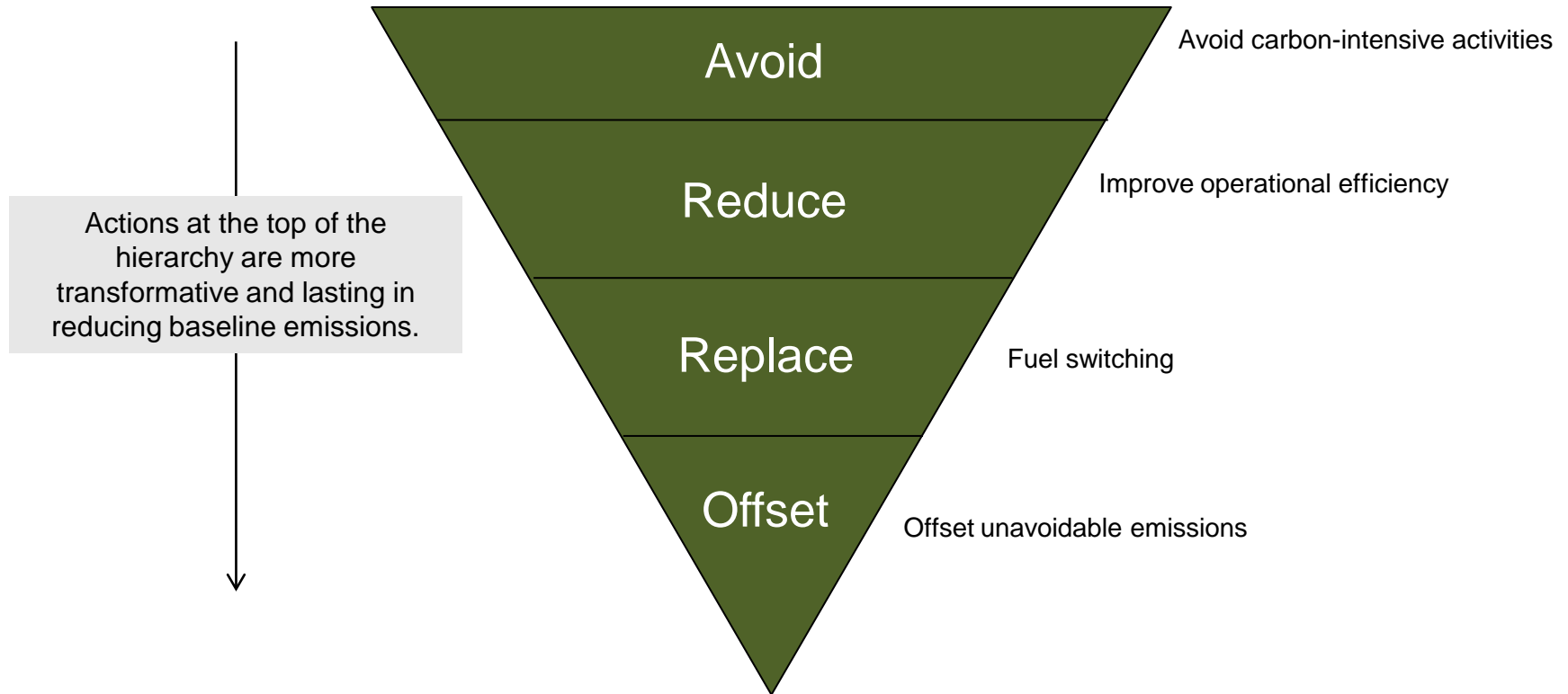
### *Some options:*

- *Track study abroad mileage and provide opportunities to offset travel emissions*
- *Increase faculty/staff use of alternative transportation.*
- *Use Sightlines survey to better quantify student commuting emissions*



# Questions & Discussion





Source: ACUPCC Voluntary Carbon Offset Protocol

