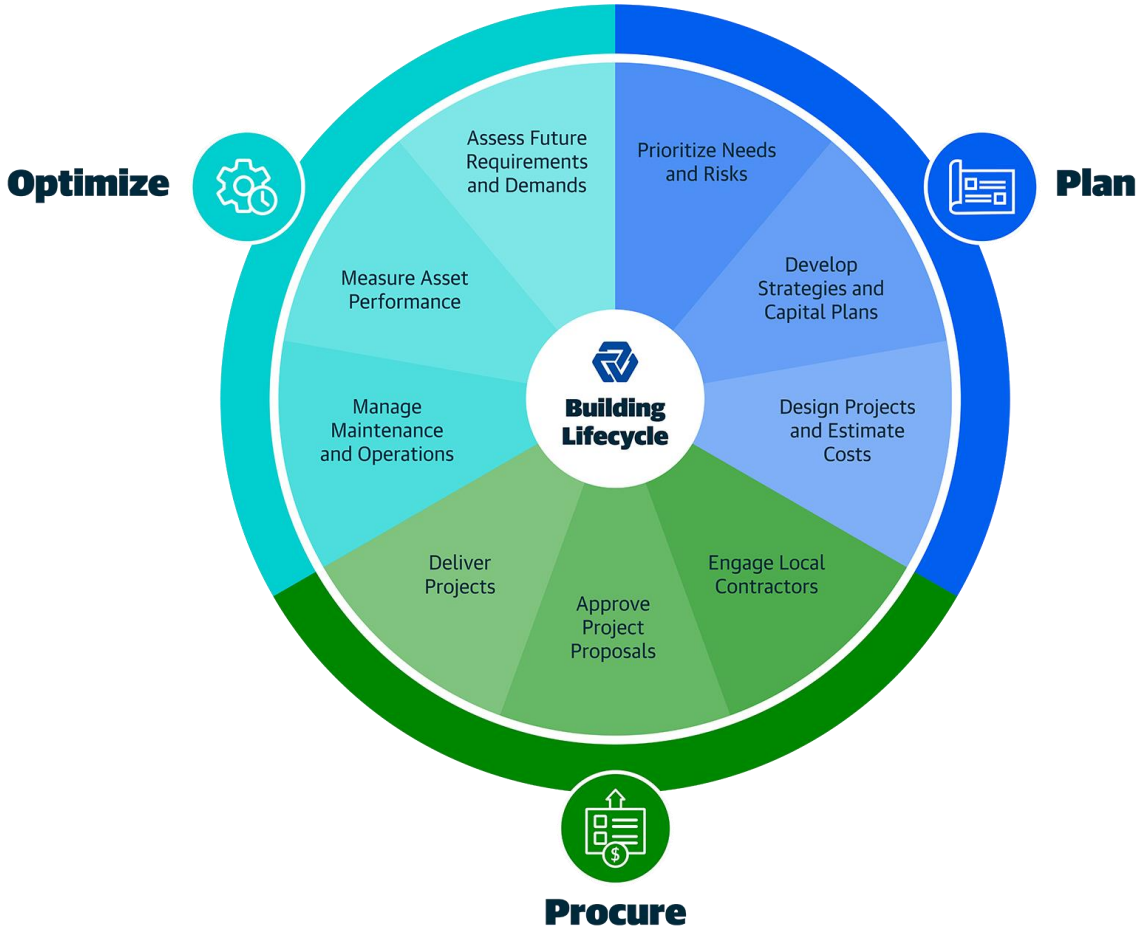
GORDIAN®

Chapman University
FY25 Greenhouse Gas Analysis

February 2026

Duncan Ketel & Geoff Garcia

Effectively Manage the Entire **Building Lifecycle**



GORDIAN®

Comprehensive Capital Planning Solutions

Return on Physical Assets (ROPA)

Benchmark key facilities metrics against peers and Gordian's database to improve efficiency and effectiveness of space, operation & investment

Space Utilization

Utilization analysis for teaching spaces to identify opportunities to match campus space with programmatic needs

Sustainability Solutions

Quantify GHG inventory, identify opportunities for carbon mitigation, satisfy reporting requirements

Facility Condition Assessments

Expert evaluation of facilities and site conditions to identify deferred needs, upcoming needs, critical issues and compliance considerations

Strategic Capital Planning

Develop, communicate and execute capital investment plans that are inclusive, credible, flexible, affordable and sustainable

GORDIAN®

Sustainability Solutions Agenda

- Scope of Gordian Data Analysis
- Summary of Emissions Profile
- Utility Specific Analysis
- Scope 1 Emissions Overview
- Scope 2 Emissions Overview
- Scope 3 Emissions Overview

SIMAP Partnership

At the end of 2017, Gordian entered into a partnership with the Sustainability Institute at the University of New Hampshire, ensuring our Sustainability Solutions are always based on the most up-to-date science and methods.

They host *Sustainability Indicator Management & Analysis Platform* (SIMAP). This is a carbon and nitrogen-accounting platform that tracks and analyzes campus-wide sustainability based on nearly two decades of work supporting campus inventories.

University of New Hampshire

SIMAP
SUSTAINABILITY INDICATOR MANAGEMENT & ANALYSIS PLATFORM

GORDIAN®

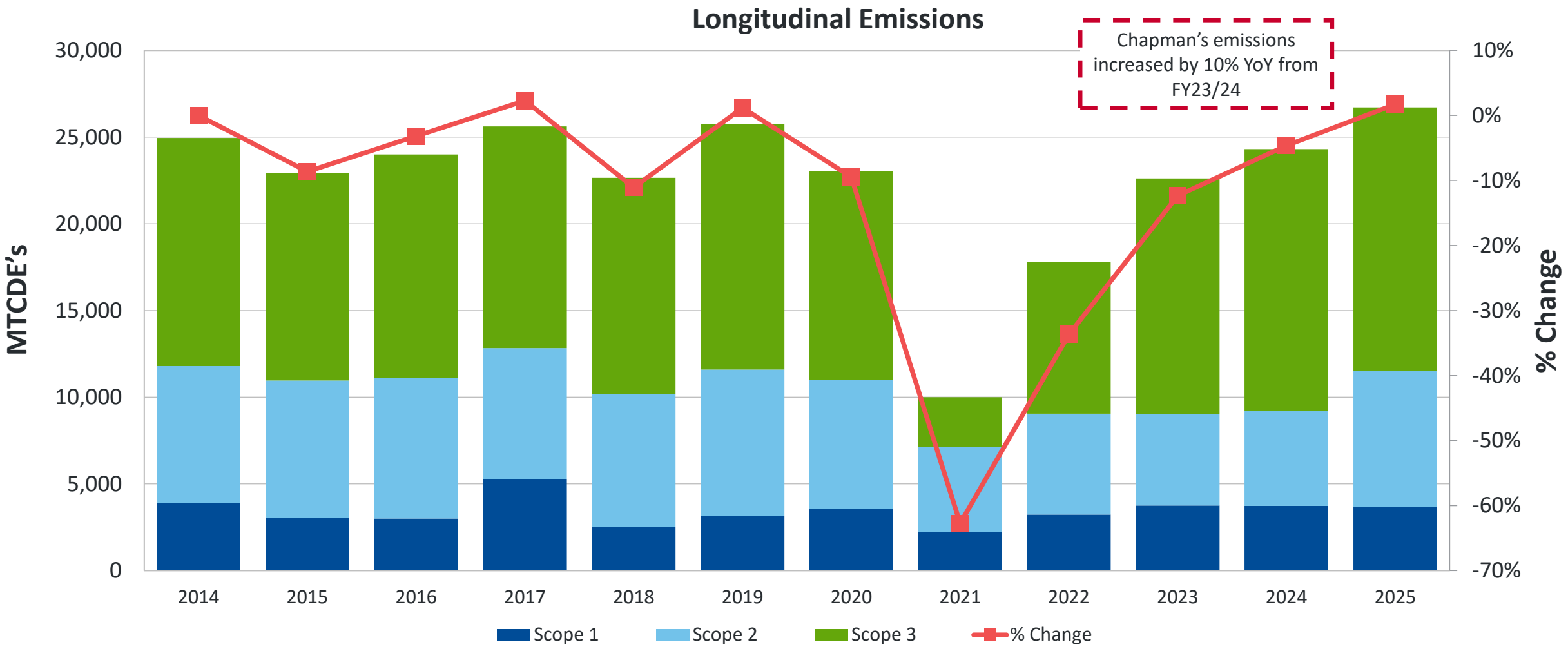
Components of Chapman's Emissions Profile

Scope 1 Direct GHGs	Scope 2 Upstream GHGs	Scope 3 Indirect GHGs
• On-Campus Stationary • Vehicle Fleet Fuel • Refrigerants • Fertilizer	• Purchased Electricity	• Faculty/Staff/ Student Commuting • Directly Financed Air & Ground Travel • Study Abroad Travel • Solid Waste • Wastewater • Paper Purchasing • Transmission & Distribution Losses

GORDIAN®

Emission Summary

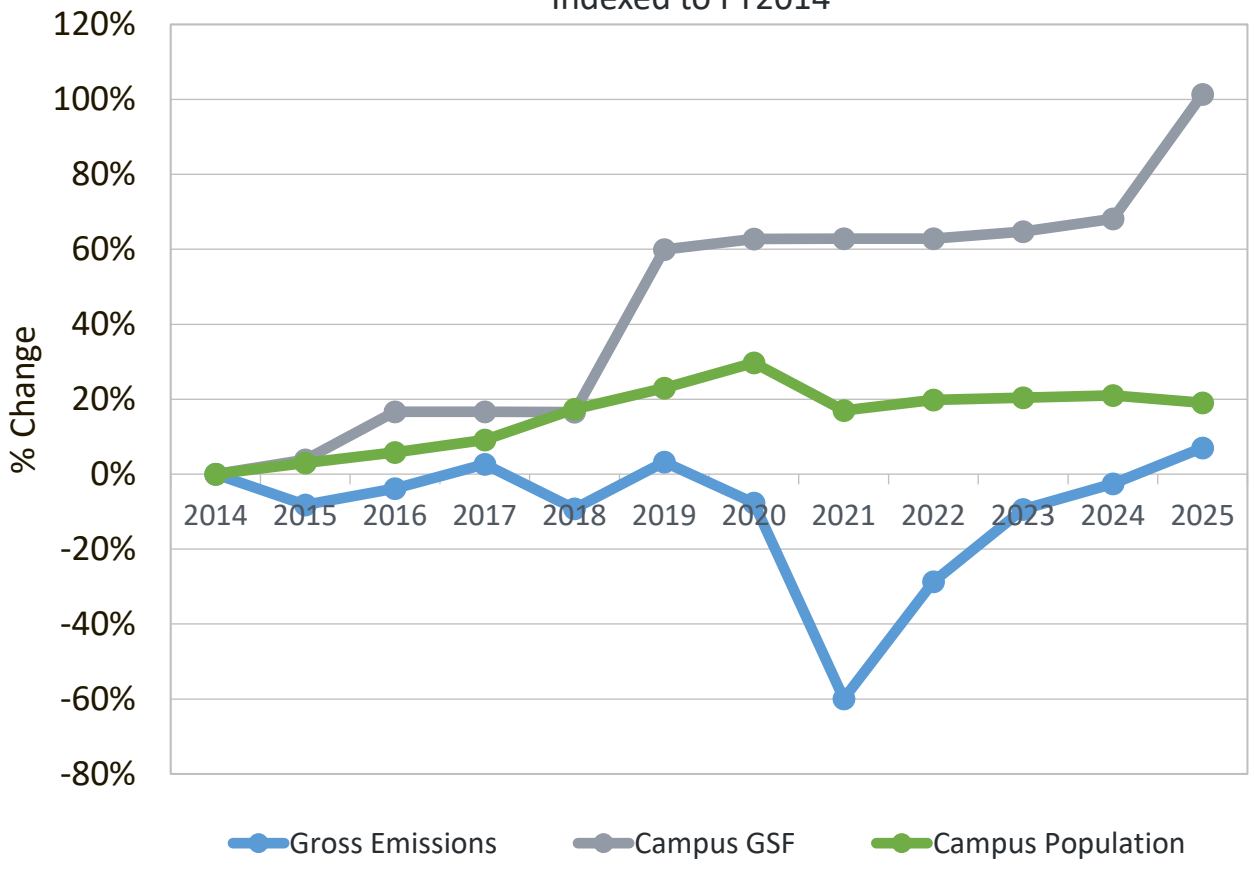
Longitudinal Emissions by Scope



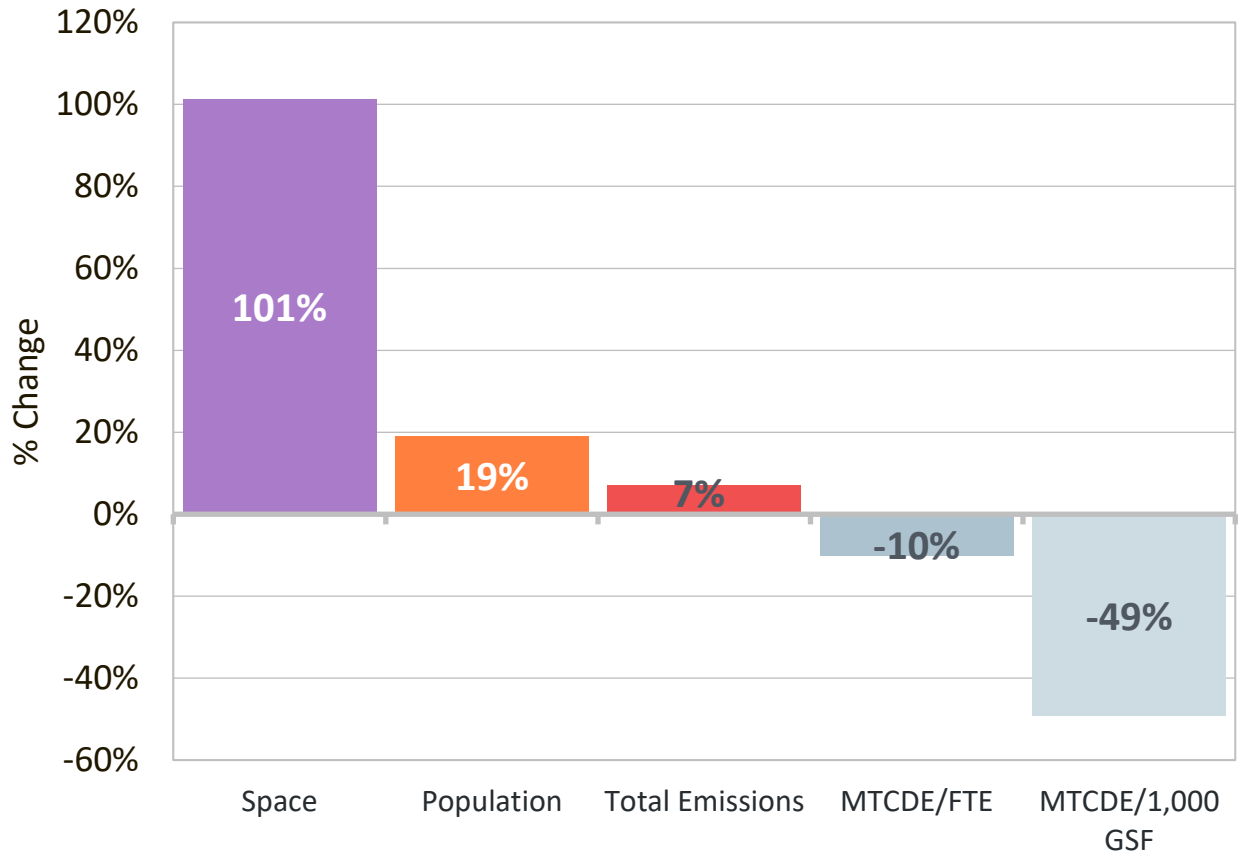
Progress Against 2014 Baseline

Chapman's emissions substantially decreased when normalizing by population and space

Change in Emissions (MTCDE) vs. Campus Size and Population (FTE)
Indexed to FY2014



Change in Space, Population, and Emissions
Indexed to FY2014



GORDIAN®

Sustainability Peers

Peers determined using location, campus size, and population

Peer Institution	Location
American University	Washington D.C.
Catholic University of America	Washington D.C.
Loyola University of Maryland	Baltimore, Maryland
St. Mary's College of California	Moraga, California
University of San Francisco*	San Francisco, California
University of Denver	Denver, Colorado

**Chapman institutional peers*

GORDIAN®

Two Ways to Normalize Emissions

GSF vs EUI-Adjusted Floor Area

Energy Use Intensity (EUI) is a unit of measurement representing energy consumed by a building relative to its size, per square foot.

Energy intensive space includes “laboratory space”, “healthcare space”, and “other energy intensive space”.

AASHE STARS calculates the formula the following way:

EUI-AFA = A+(2*(B+C))+D

A = Gross floor area of bldg. space
B = floor area of lab space
C = floor area of healthcare space
D = floor area of other energy intensive space

Total Campus FTE vs Weighted Campus User

The Weighted Campus User metric is used more widely in campus sustainability in order to give more credence to onsite residents, and the energy use they require by being onsite full-time.

$$WCU = (A+B+C) + 0.75\ [(D-A) + (E-B) – F]$$

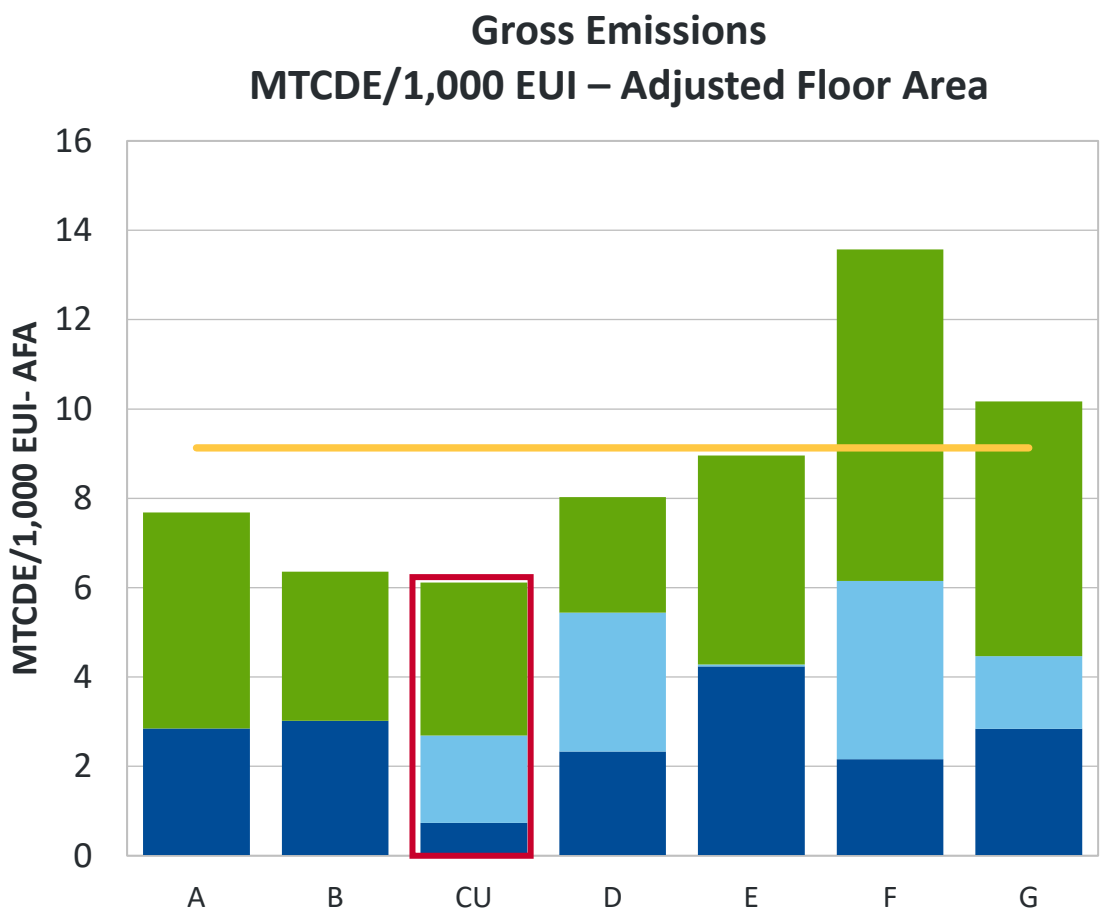
A = student residents onsite
B = employee residents onsite
C = other residents onsite/staffed hospital beds

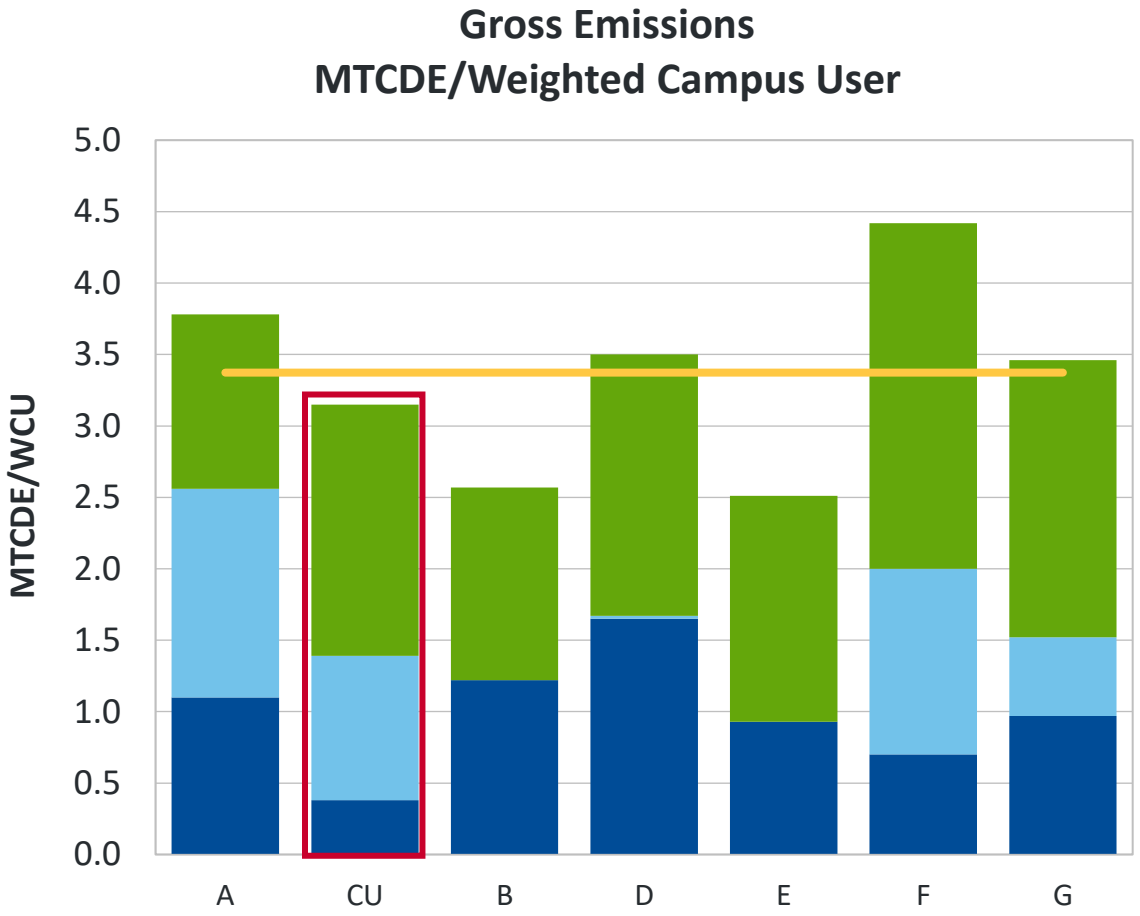
D = Total FTE student equivalent enrollment
E = FTE of employees (faculty and staff)
F = FTE of students enrolled ONLY in distance education

GORDIAN®

Total Gross Emissions per Space and Campus User

Chapman emits less than peers when normalized by GSF and population



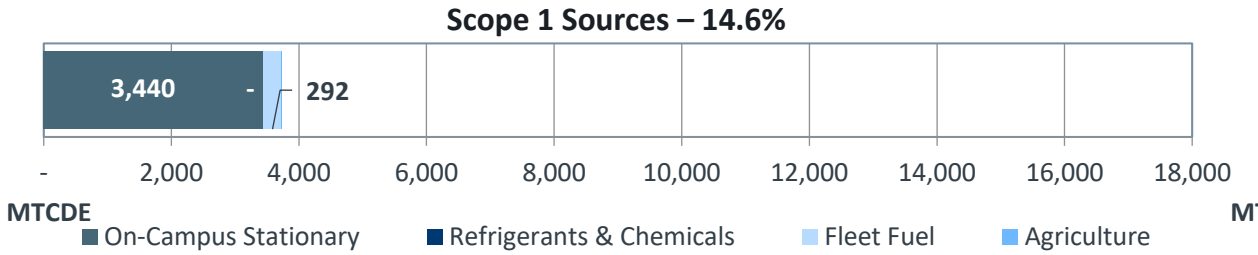


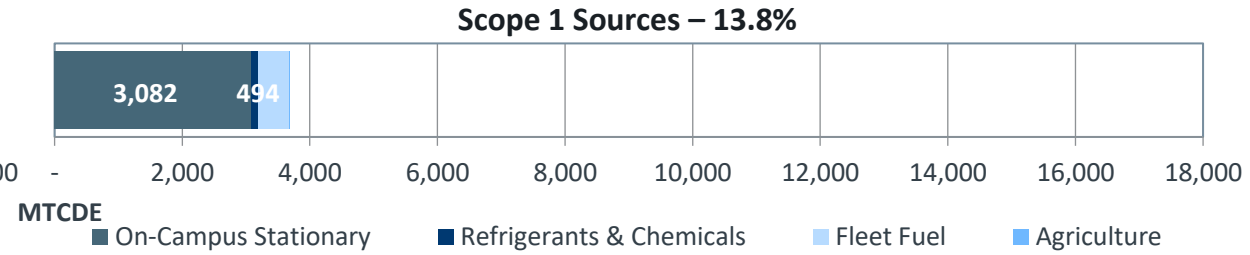
Scope 1 Scope 2 Scope 3 Peer Average

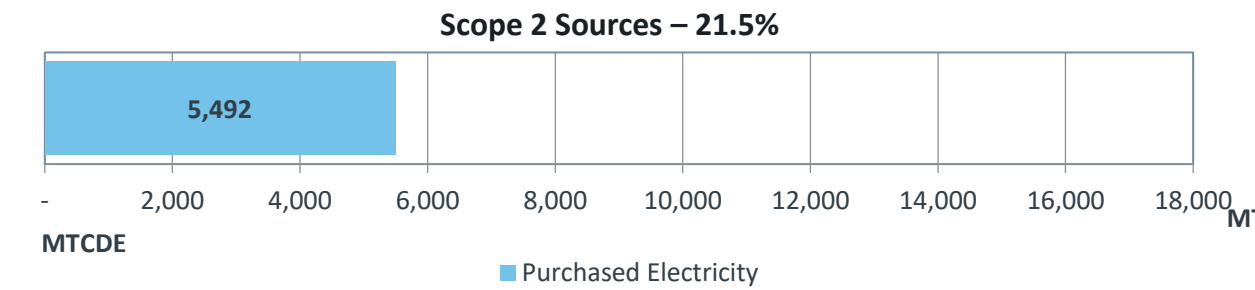
GORDIAN®

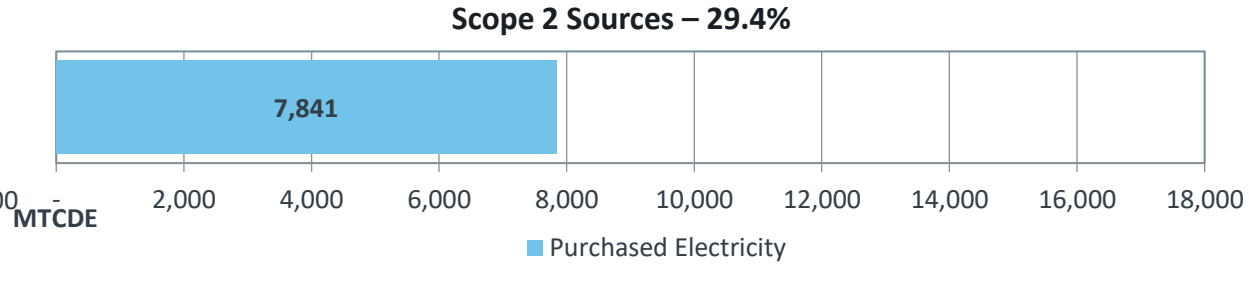
FY24 vs. FY25 Distribution of Emissions

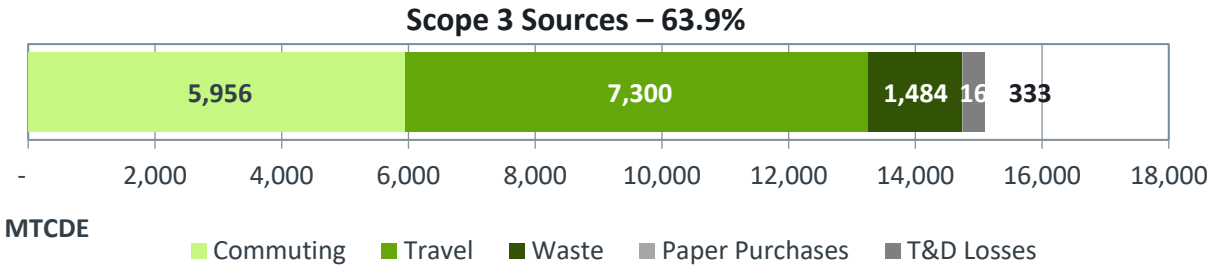
Scope 2 had the largest increase in Chapman's emissions in FY25

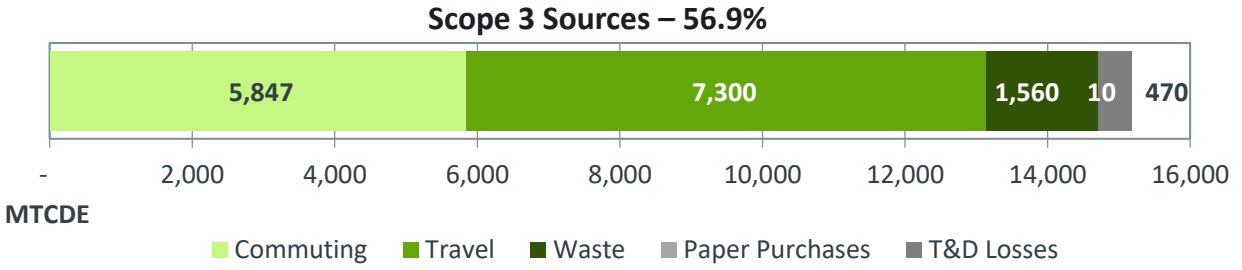












Utilities

ROPA Peer Institutions for Utility Analysis

Facilities Peers	
Institution	Location
Gonzaga University	**Spokane, WA**
Pepperdine University	**Malibu, CA**
Pomona College	Claremont, CA
Seattle Pacific University	Seattle, WA
Seattle University	**Seattle, WA**
University of San Diego	**San Diego, CA**
University of San Francisco	**San Francisco, CA**

Institutional Peers

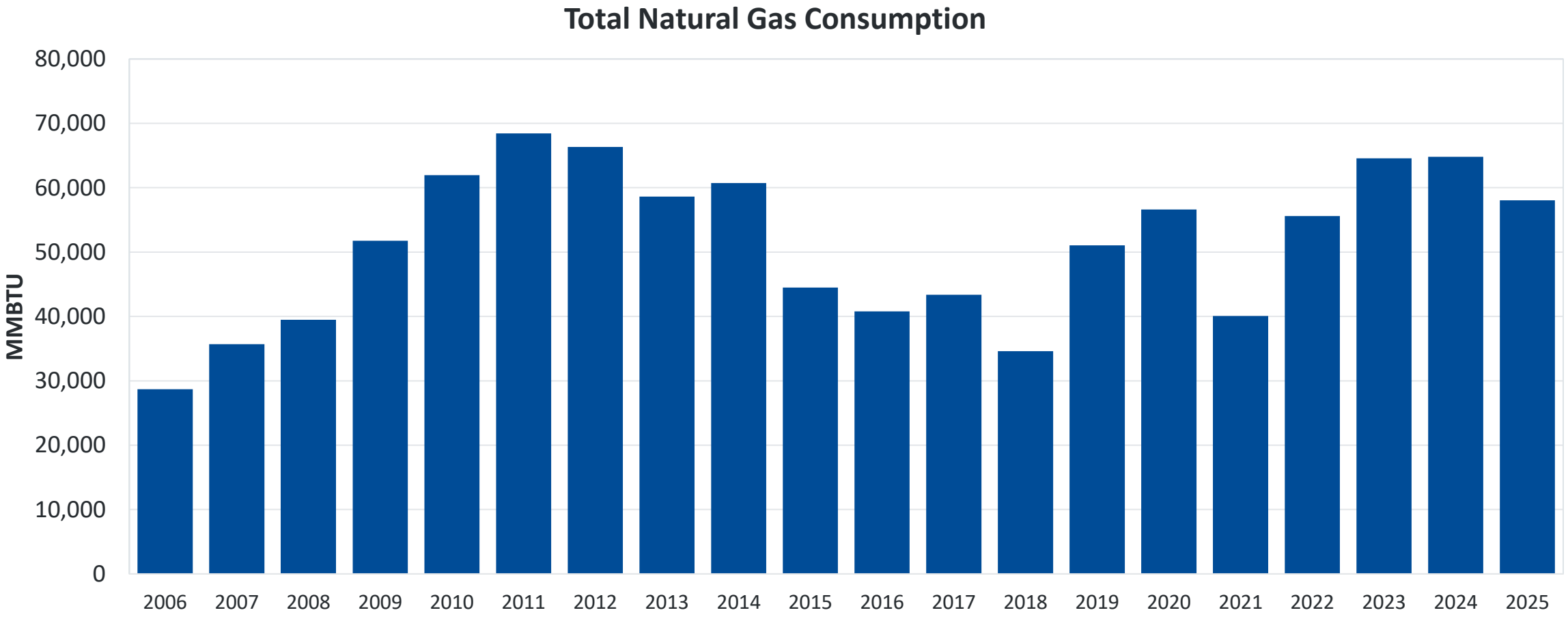
Comparative Considerations

Size | Age | Region | Technical Complexity | Location

GORDIAN®

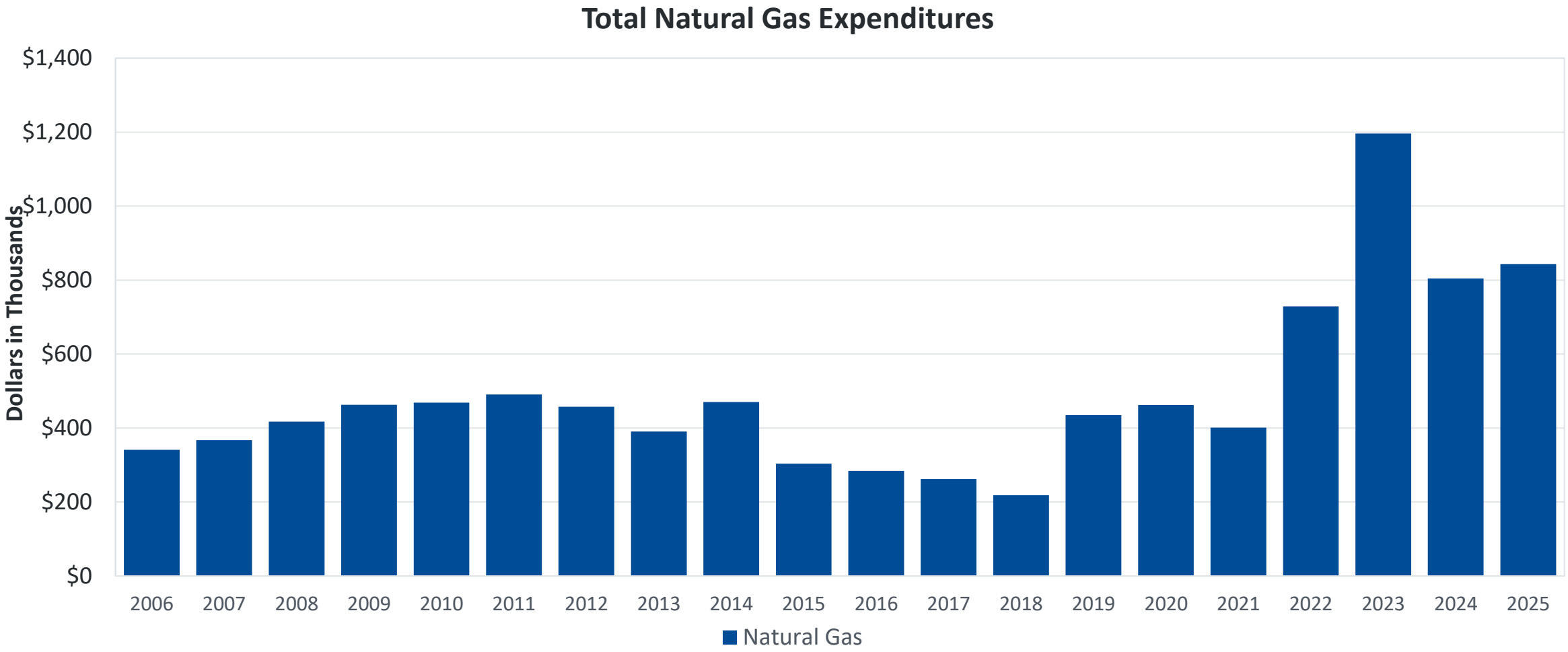
Trending Fossil Fuel Consumption

Natural Gas usage has fluctuated substantially at Chapman, but stabilized recently



Fossil Fuel Expenditures

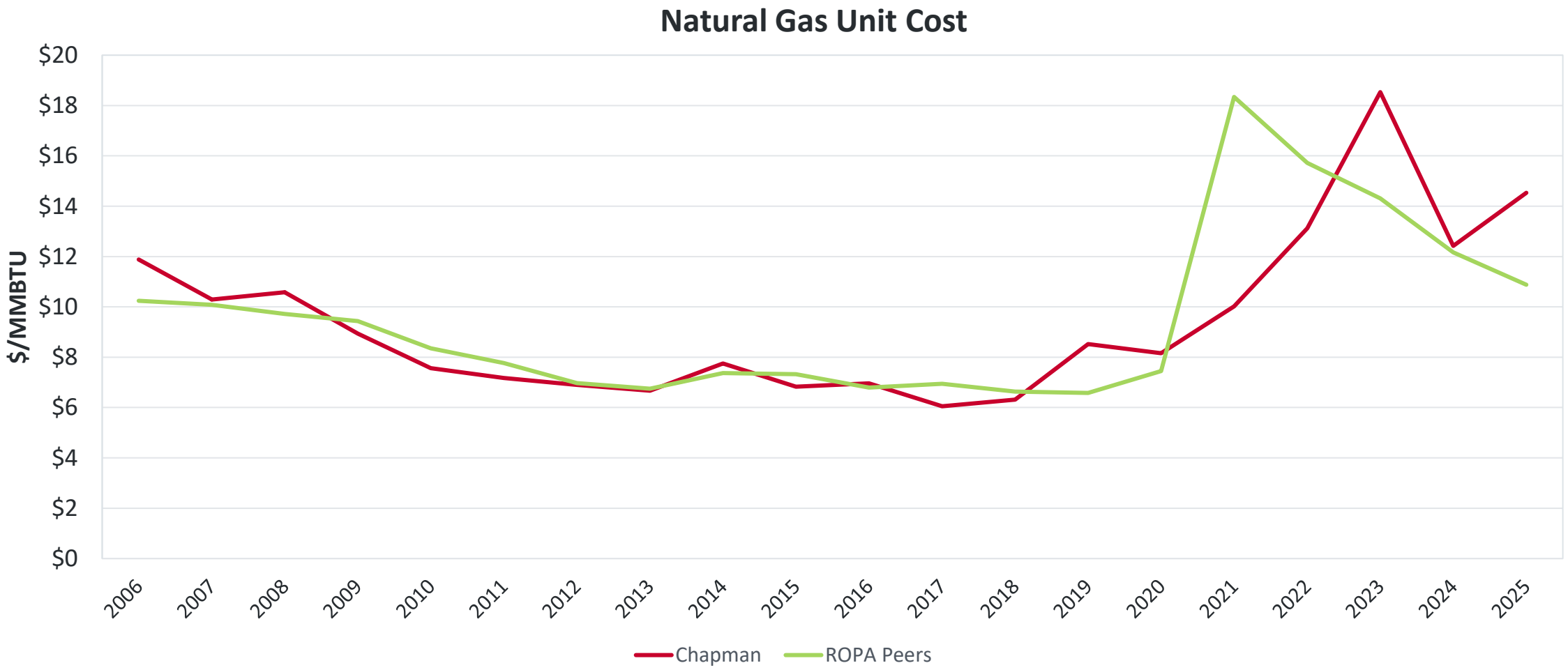
Natural Gas costs increased by 5% in FY24/25, but has decreased 30% from FY22/23 high



GORDIAN®

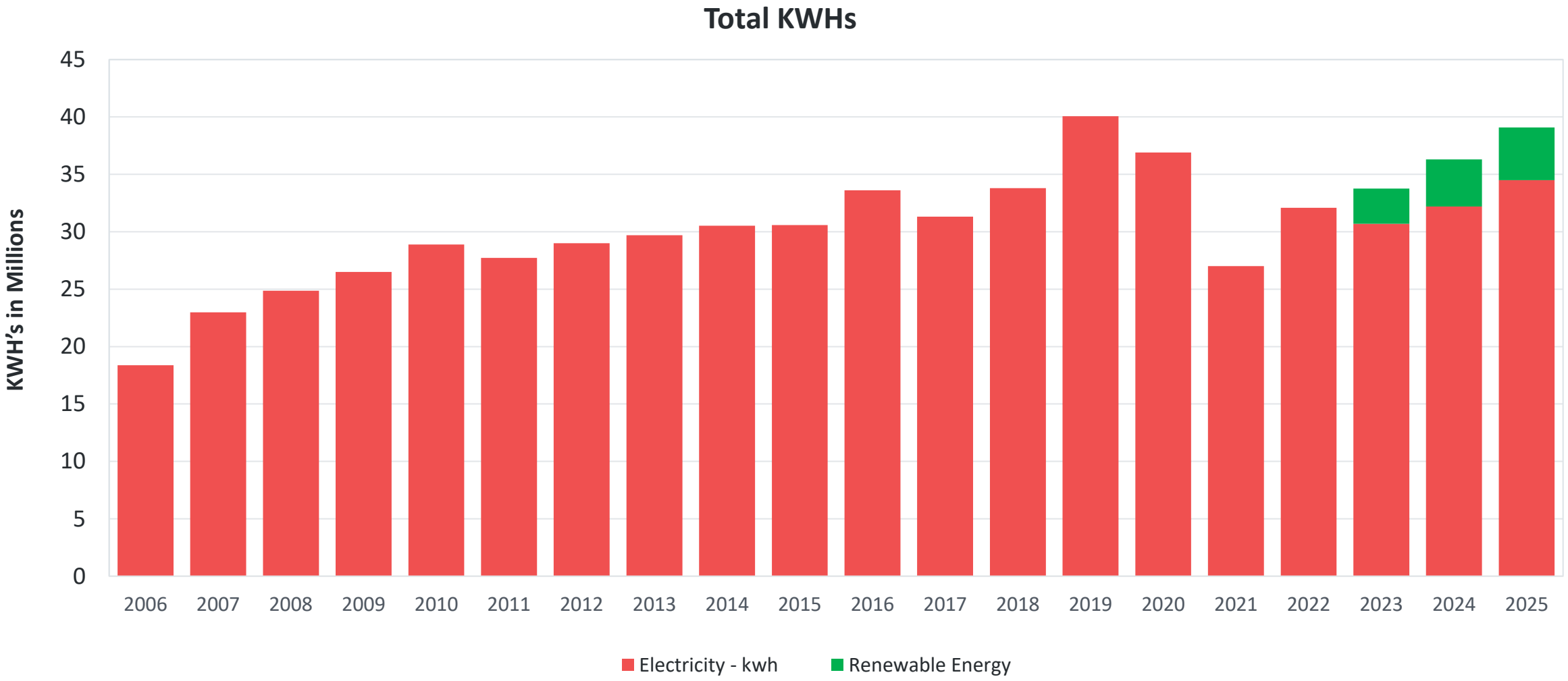
Differences in Unit Costs vs. Peers

While below peak costs, since FY19/20 costs have risen by 78% for Chapman, 46% for peers



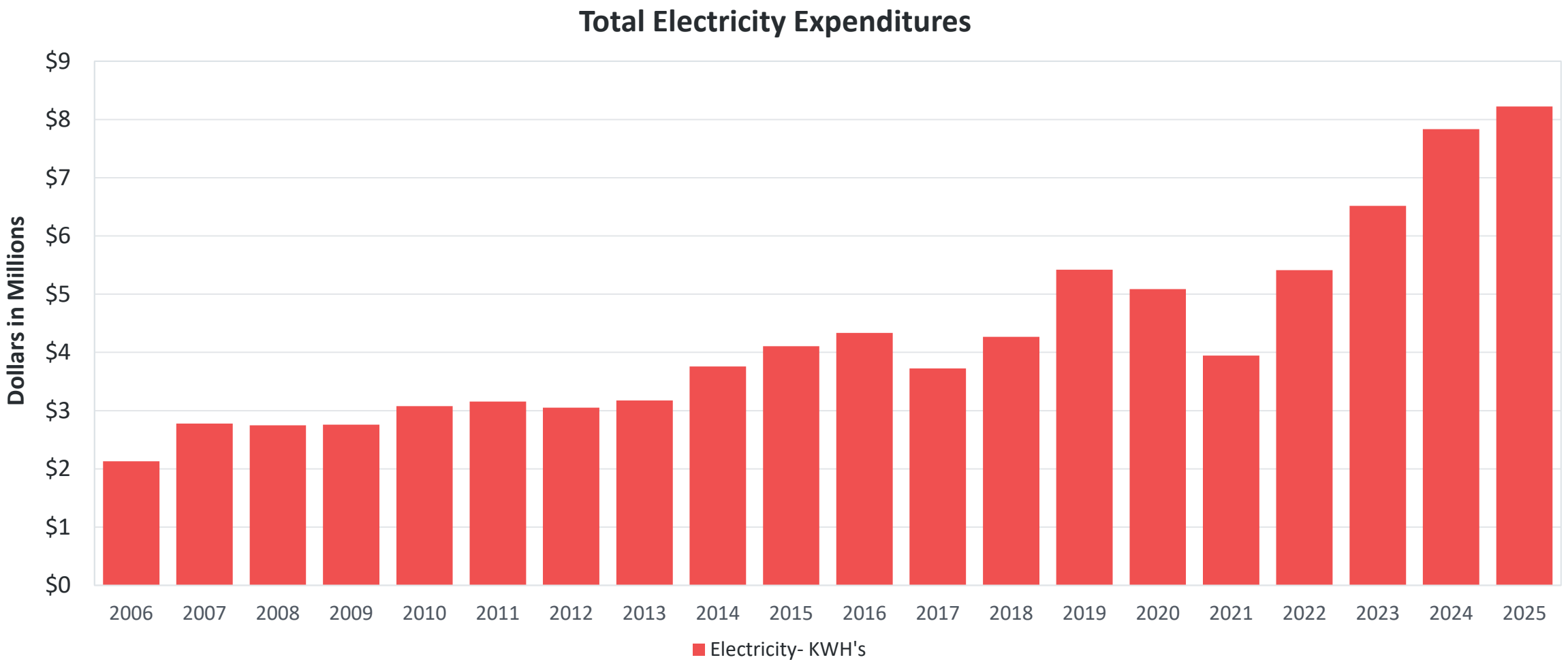
Electricity Consumed by Campus

Total KWH's have increased since FY23/24 by 8%, proportion of renewable energy increased!



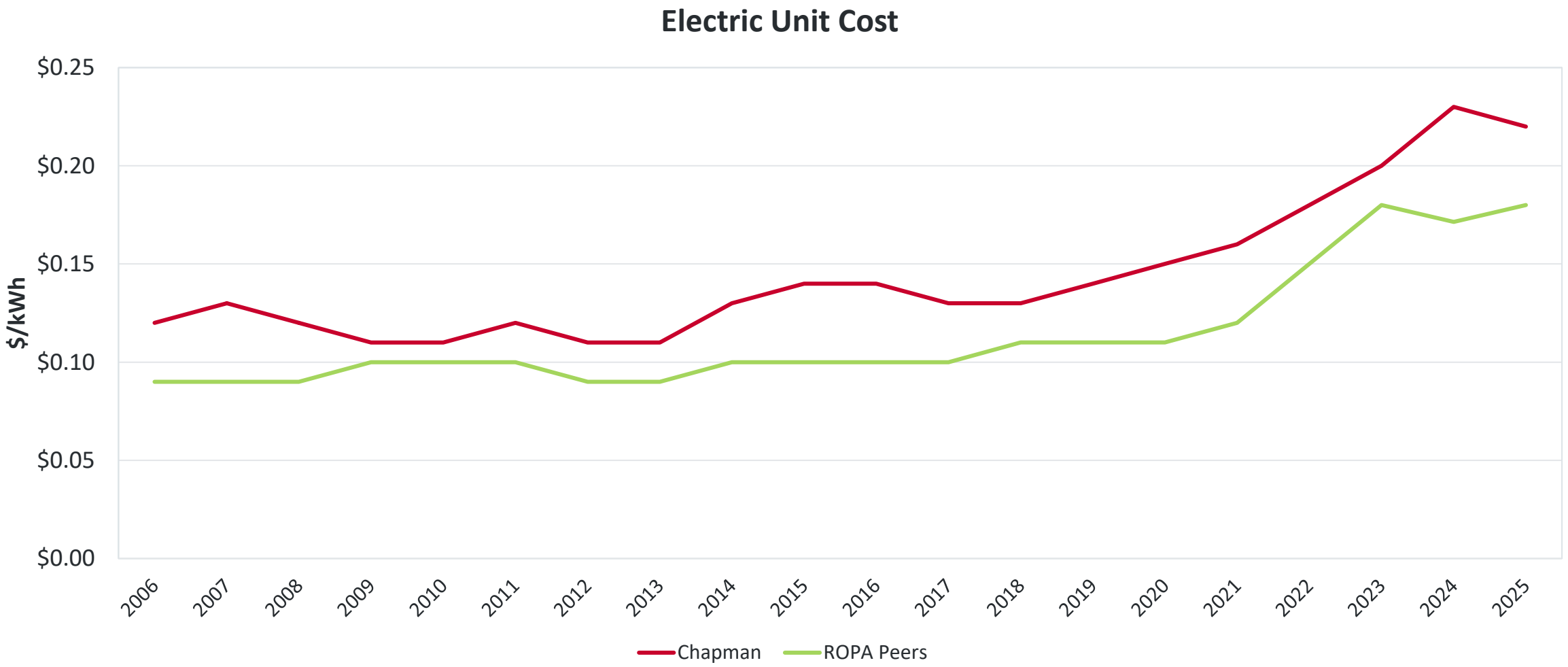
Electricity Expenditures

Unlike natural gas, electricity costs have continued to increase in FY24/25



Differences in Unit Costs vs. Peers

Chapman's unit costs have decreased by 4% since FY23/24, while peers have increased 5%

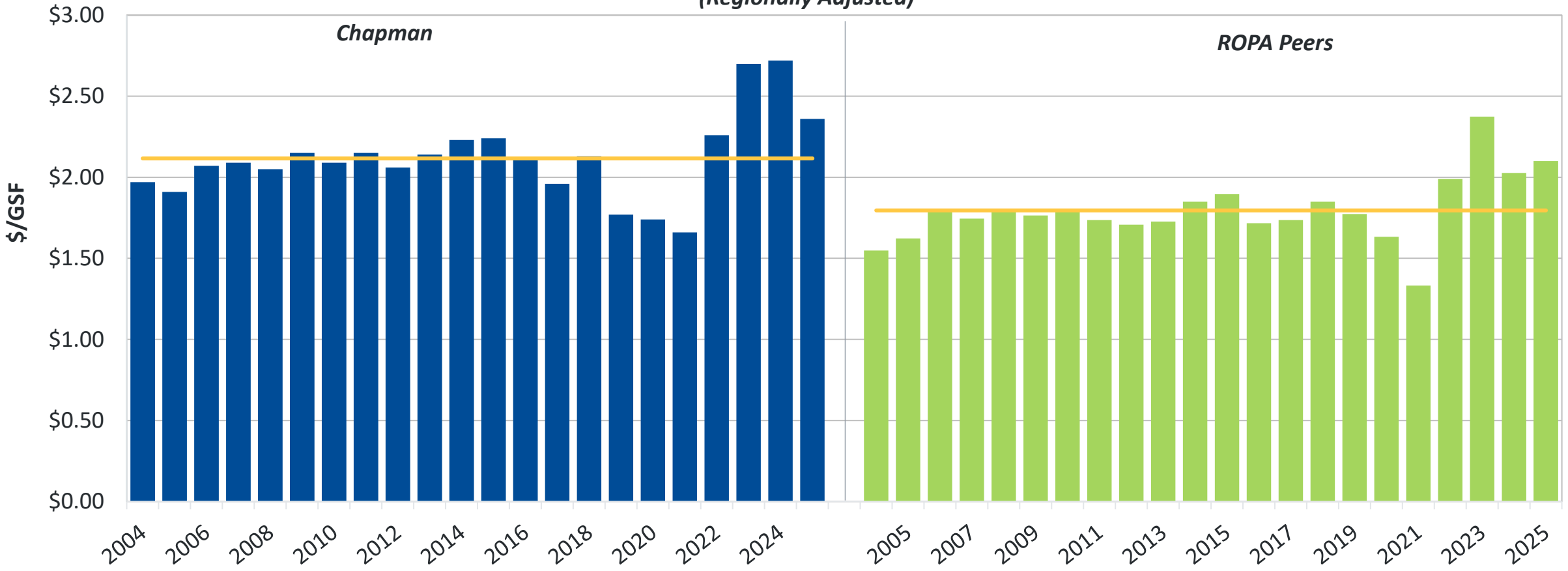


Utility Operating Expenditures Compared to Peers

Chapman's utility expenditures are 12% above peer spending

Chapman versus Peer Utility $ per GSF

(Regionally Adjusted)

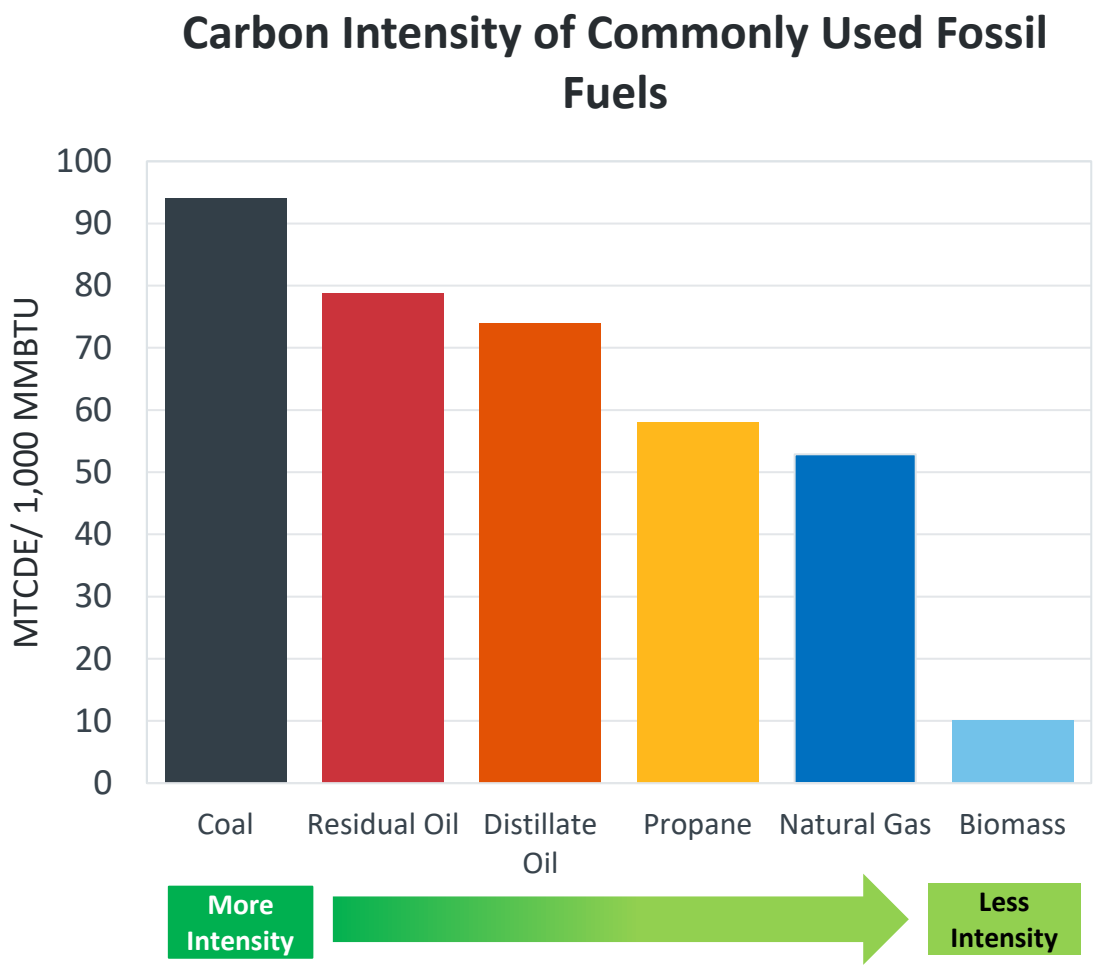


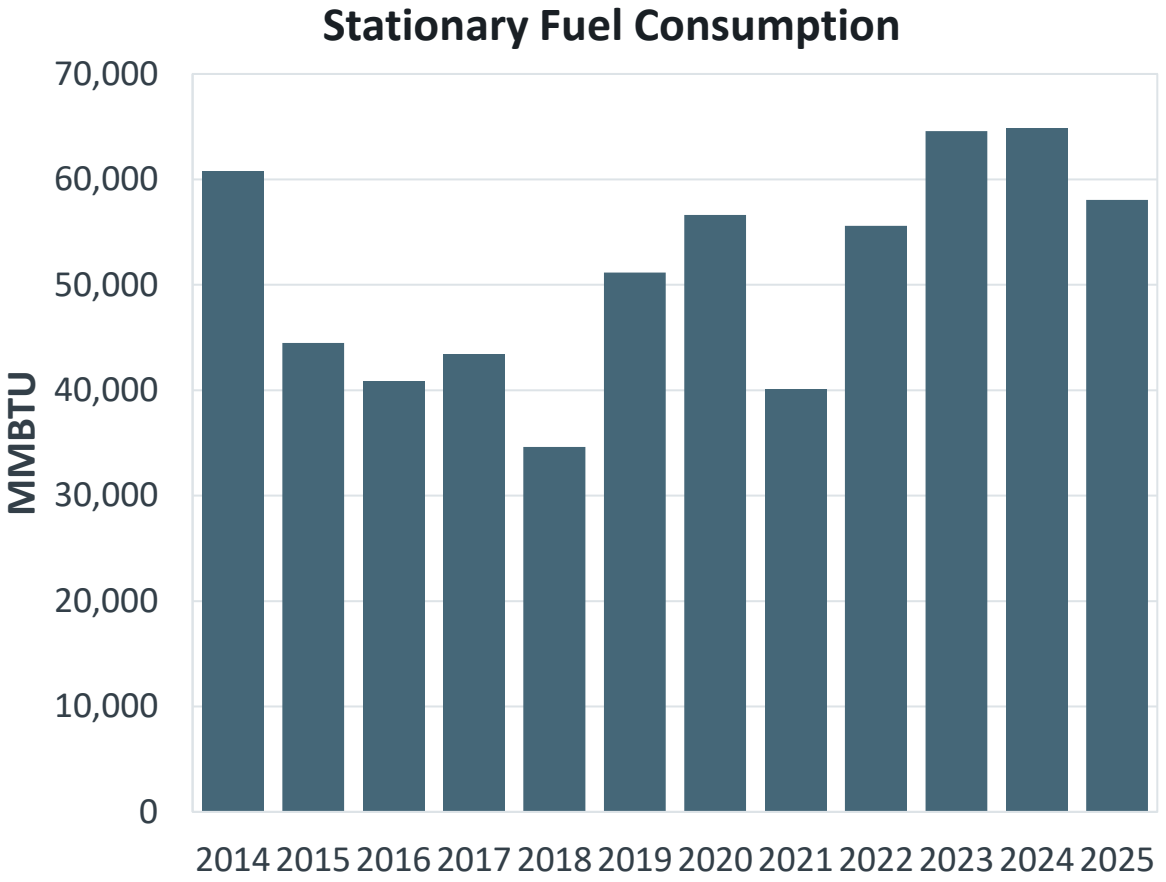
GORDIAN®

Utilities – Sustainability Analysis

Scope 1: Stationary Fuel Consumption

Chapman's FY24/25 Scope 1 natural gas decreased 10% from FY23/24

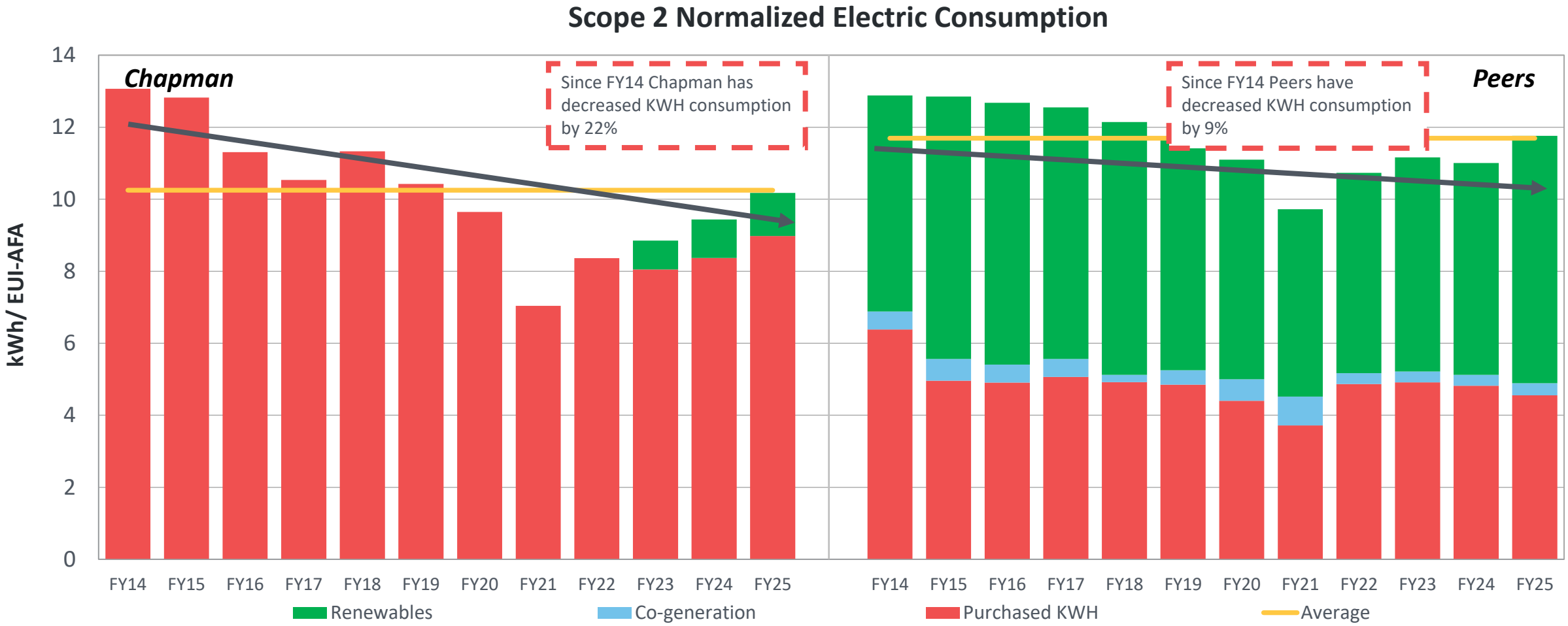




GORDIAN®

Scope 2: Electric Consumption vs. Peers

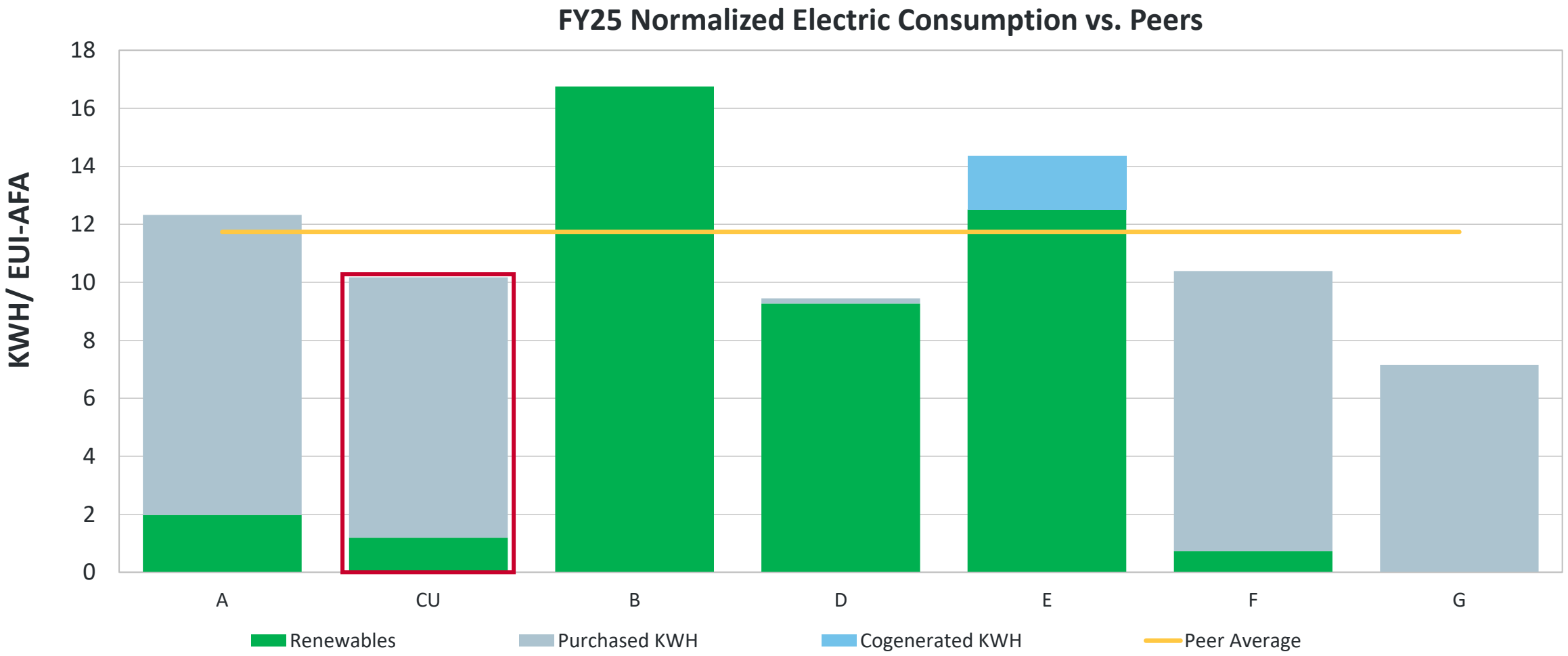
While Chapman consumes less than peers, a greater proportion of peer KWHs are renewable



GORDIAN®

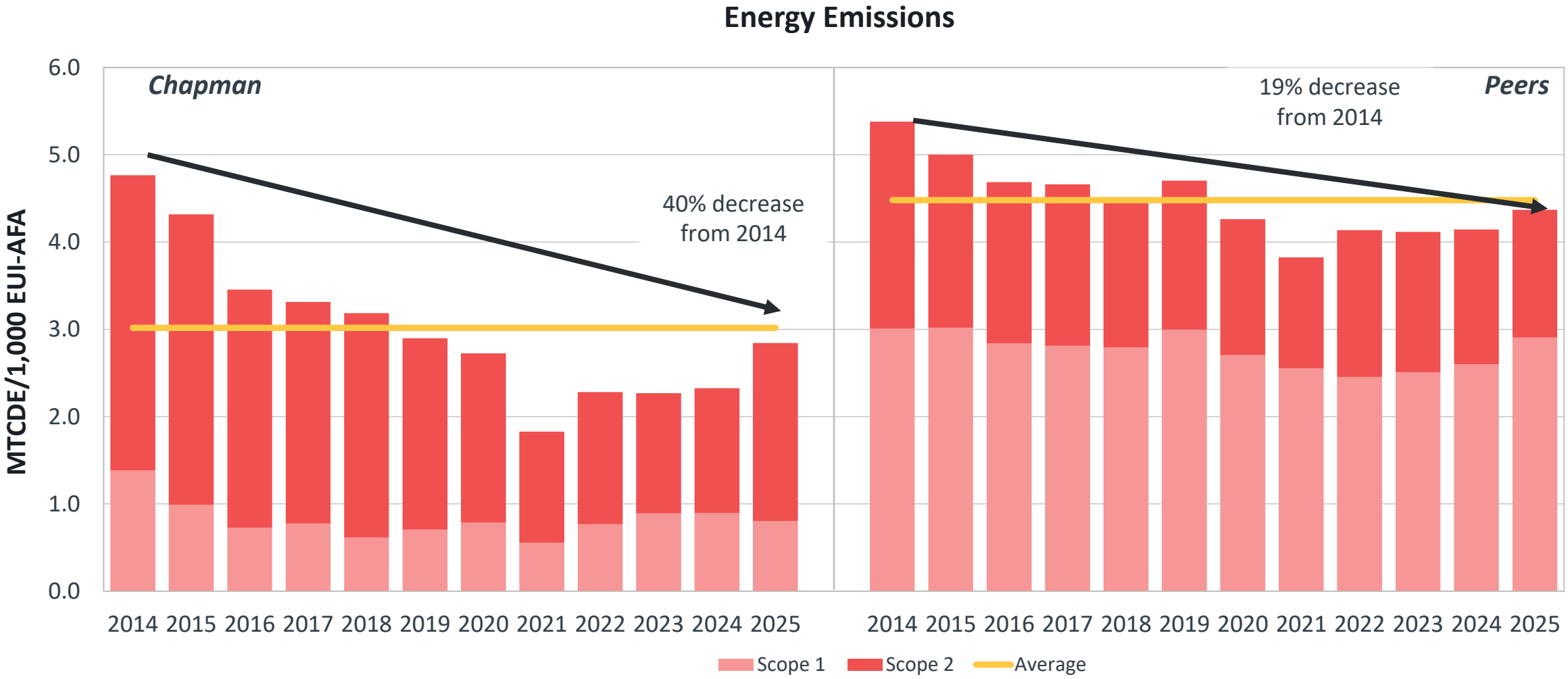
Scope 2: Total Electric Consumption vs. Peers

Chapman consumed 13% less KWH than peers when normalizing by GSF



Energy Emissions vs. Peers

Overall normalized emissions have decreased, but emissions increased this past fiscal year

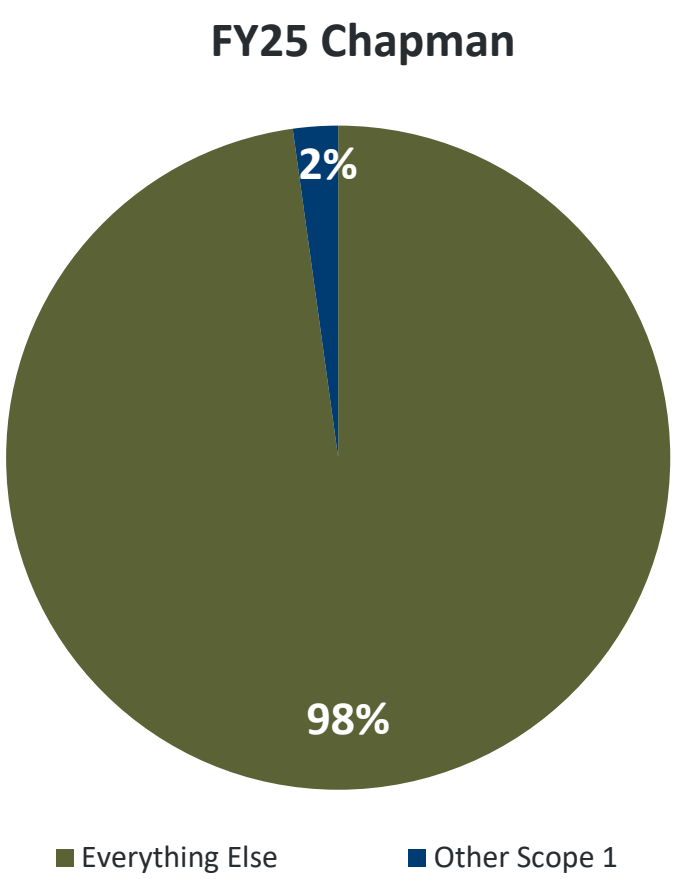


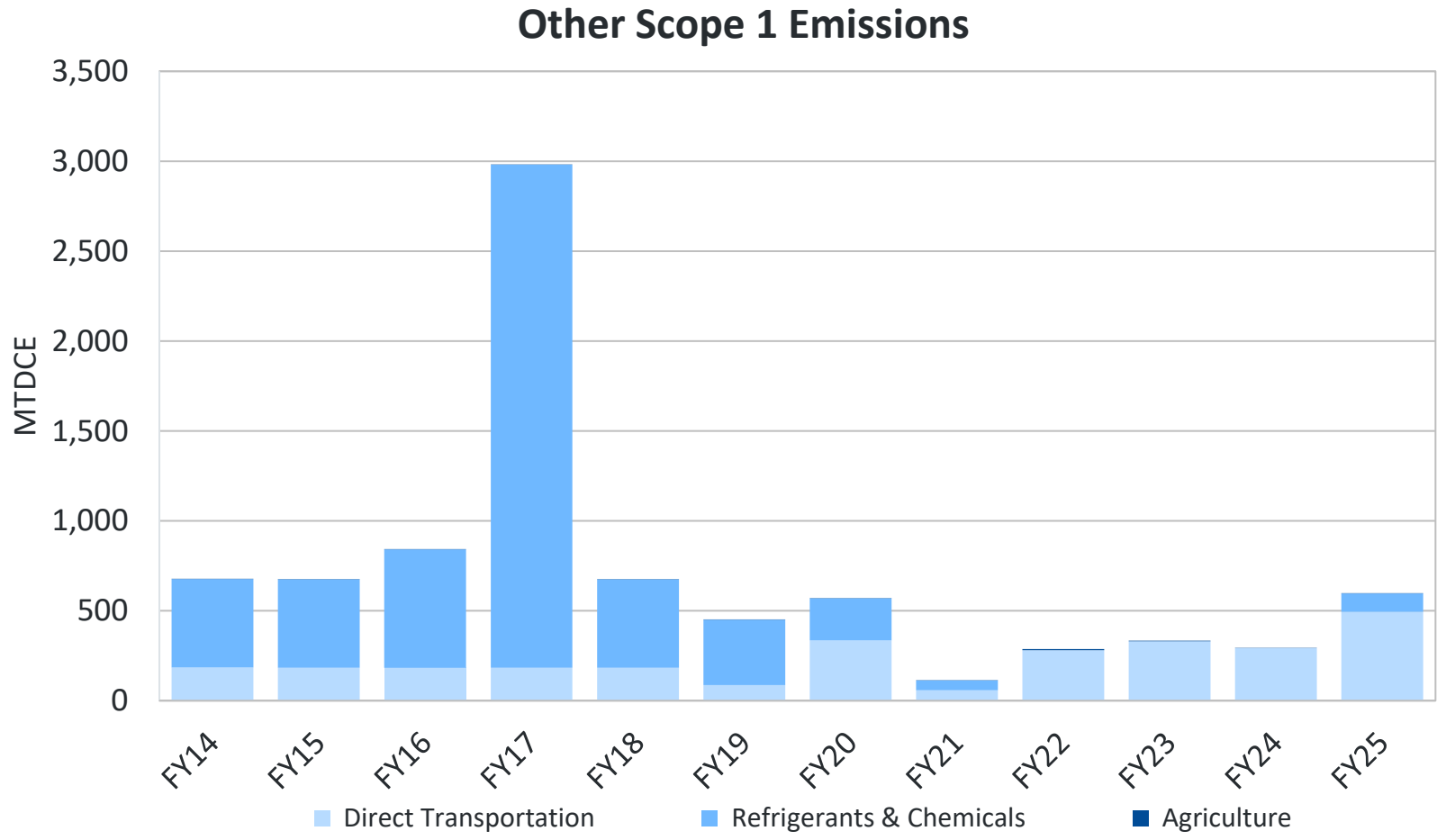
GORDIAN®

Non-Utility Emissions Sources

Other Scope 1 Emissions Are Small Portion of Total

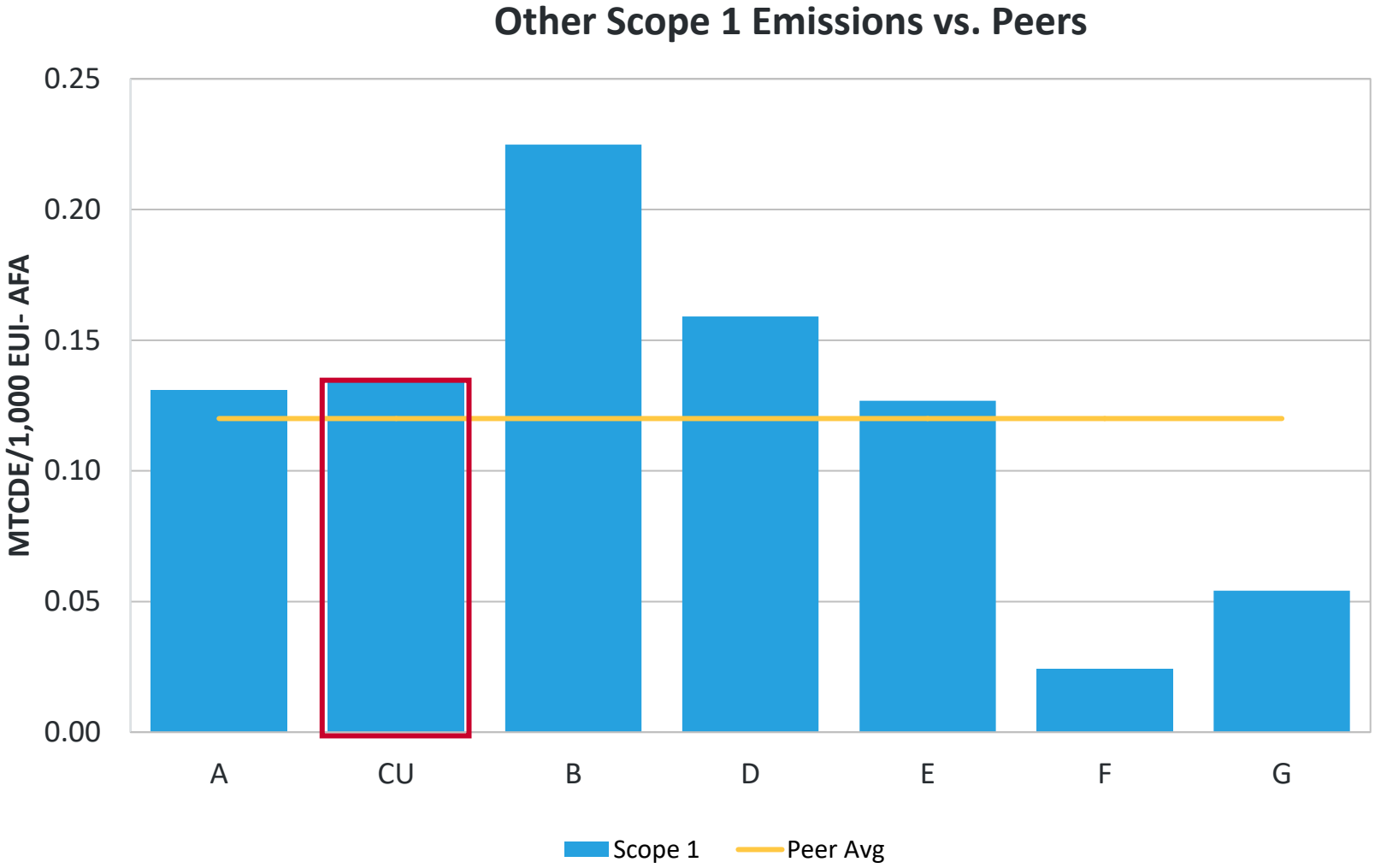
Direct Transportation (Fleet Fuel) emissions increased with the expansion of shuttle service

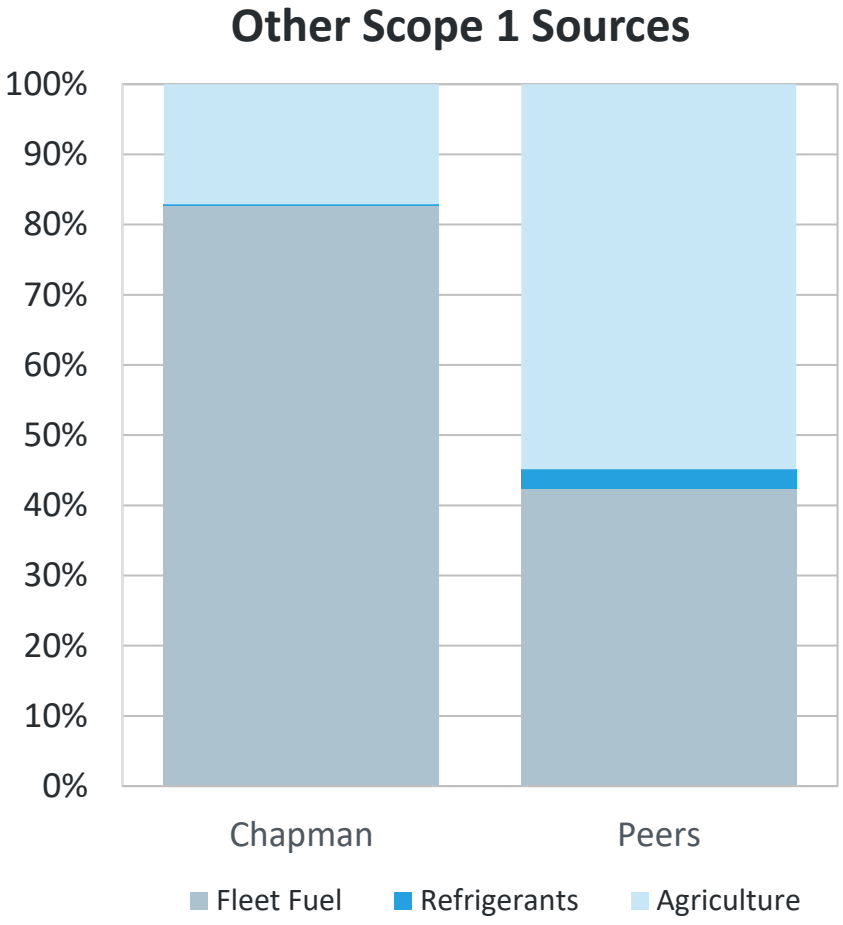




Other Scope 1 Emissions Compared to Peers

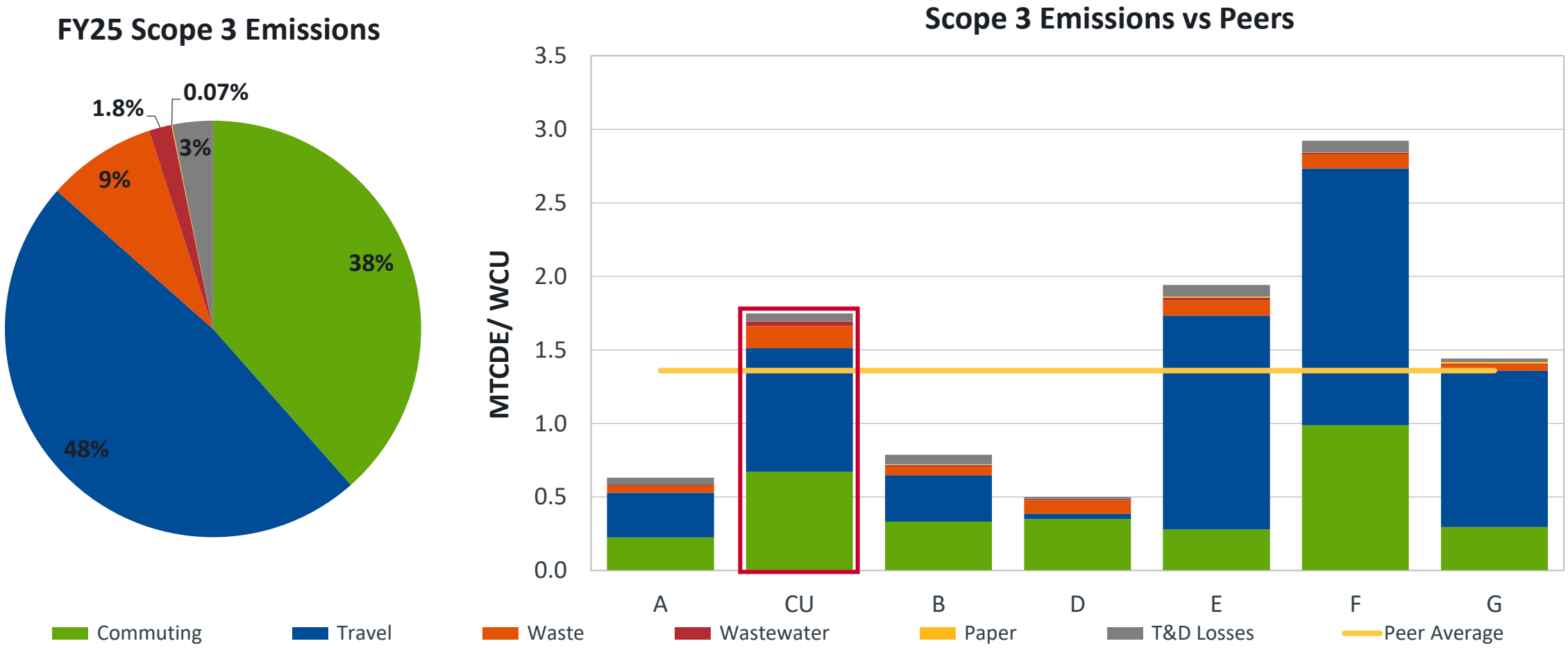
Chapman other scope 1 emissions above peer average, fleet fuel is main source of emissions





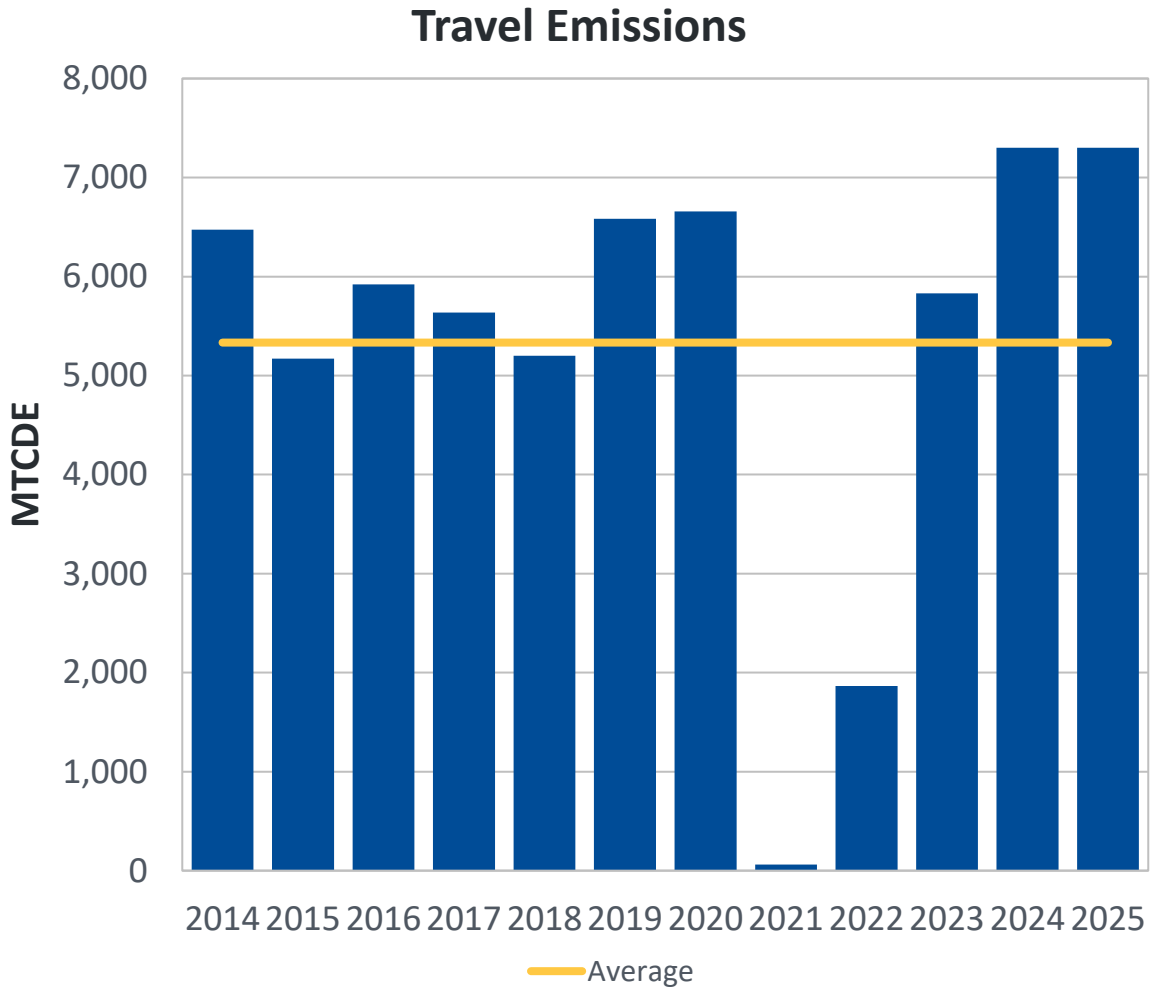
Scope 3: Indirect Emissions Overview

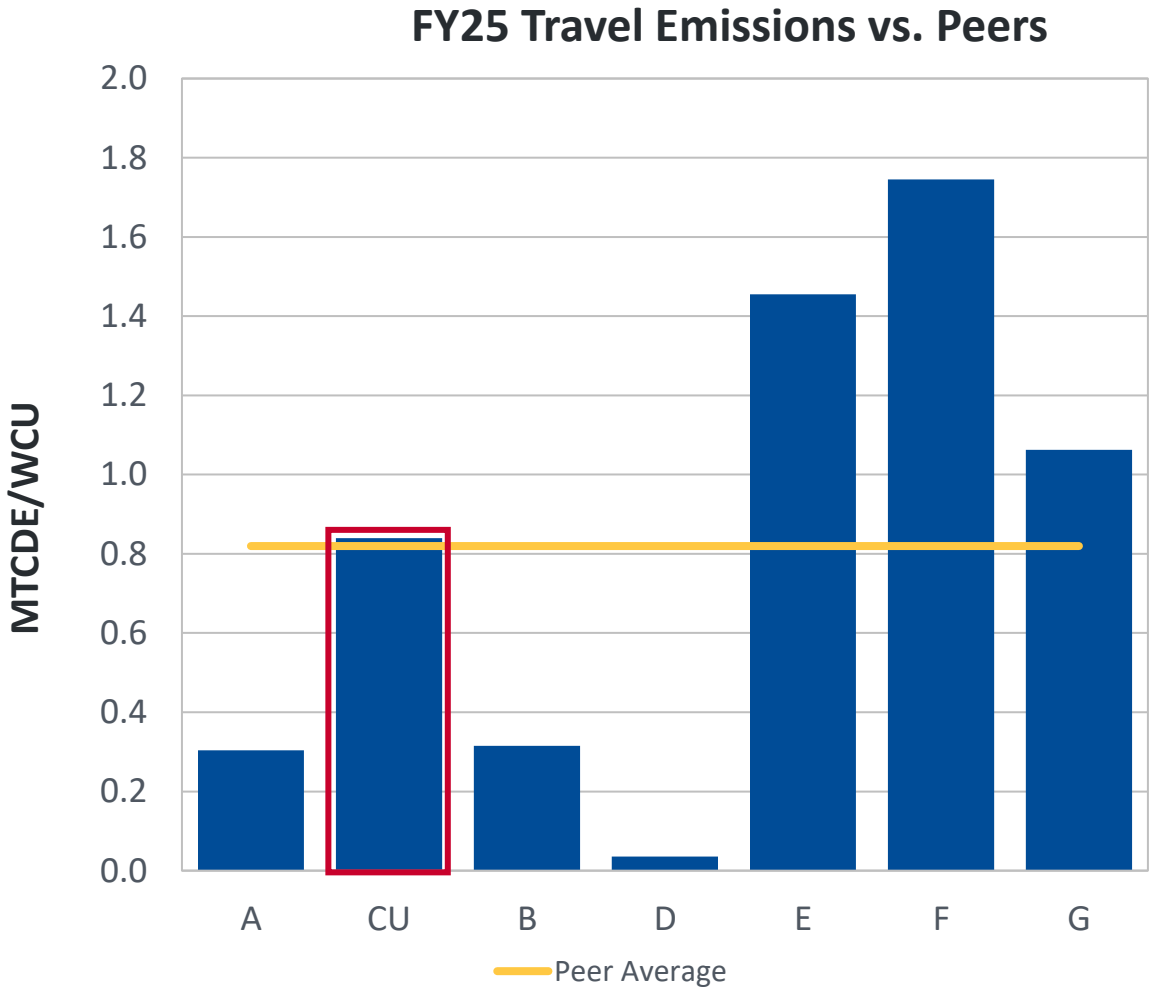
When normalizing by user, Chapman has the 3rd highest emissions in peer group



Travel Emissions

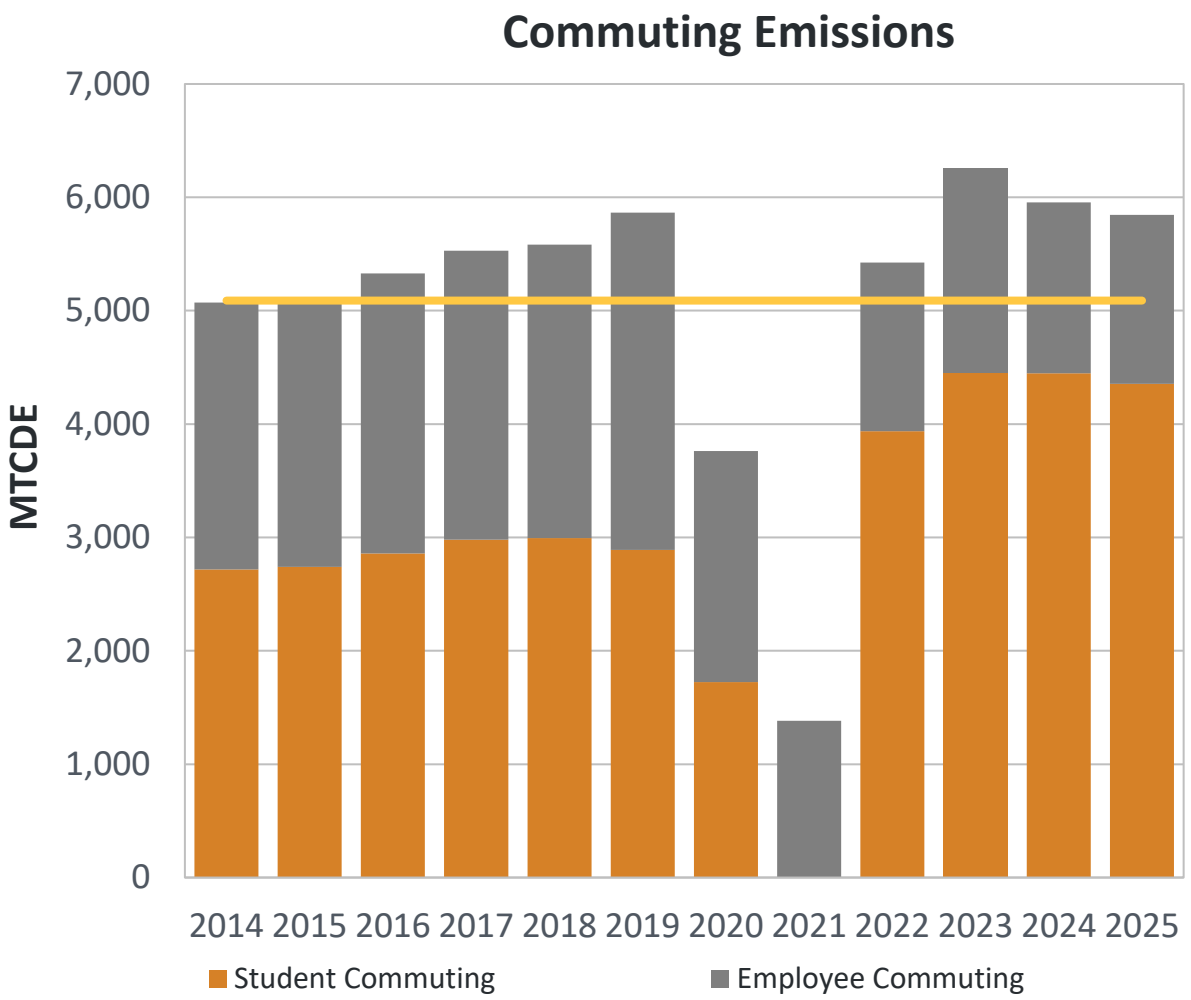
Chapman has 4th highest travel emissions among peers, similar to peer average

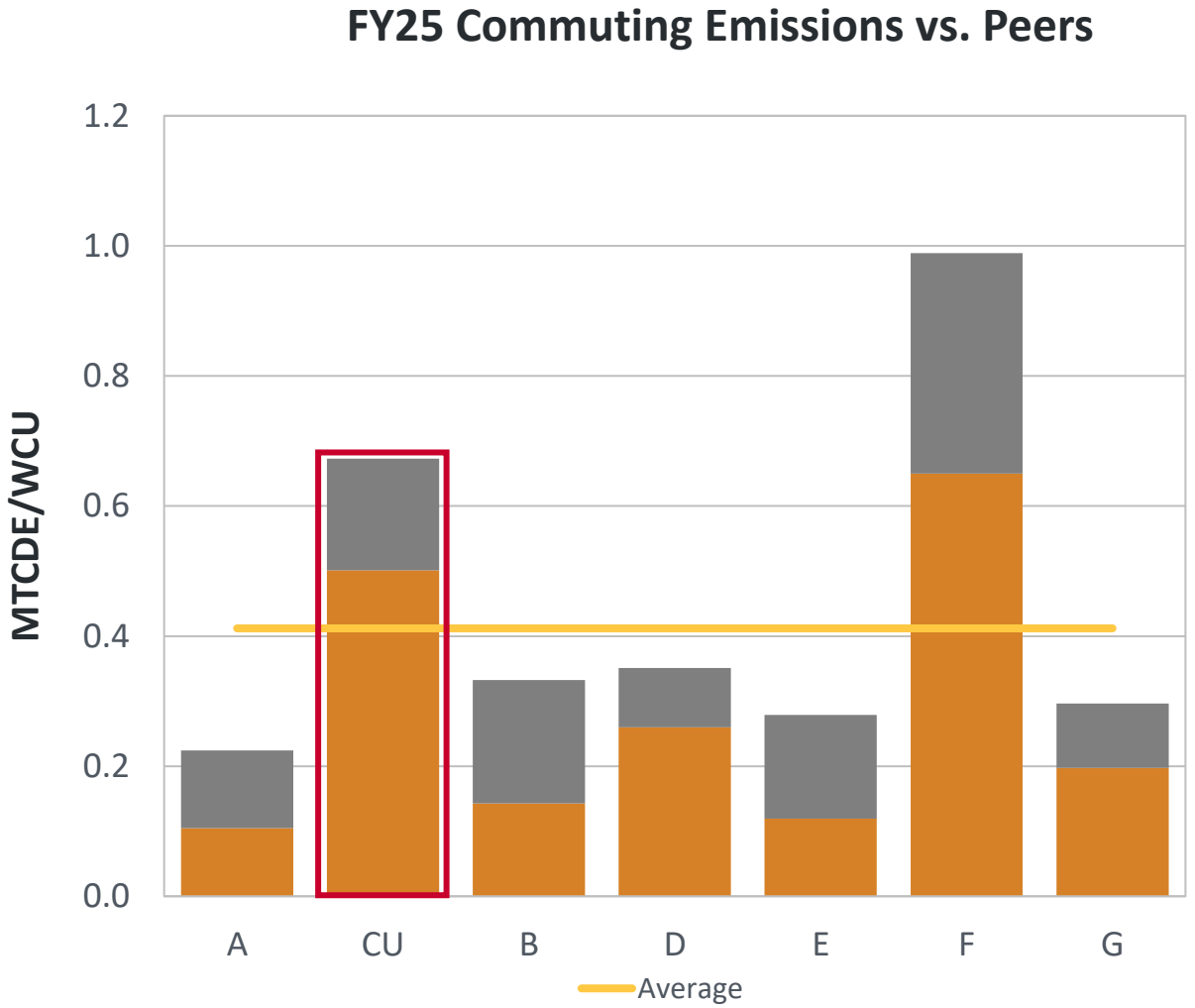




Commuting Emissions

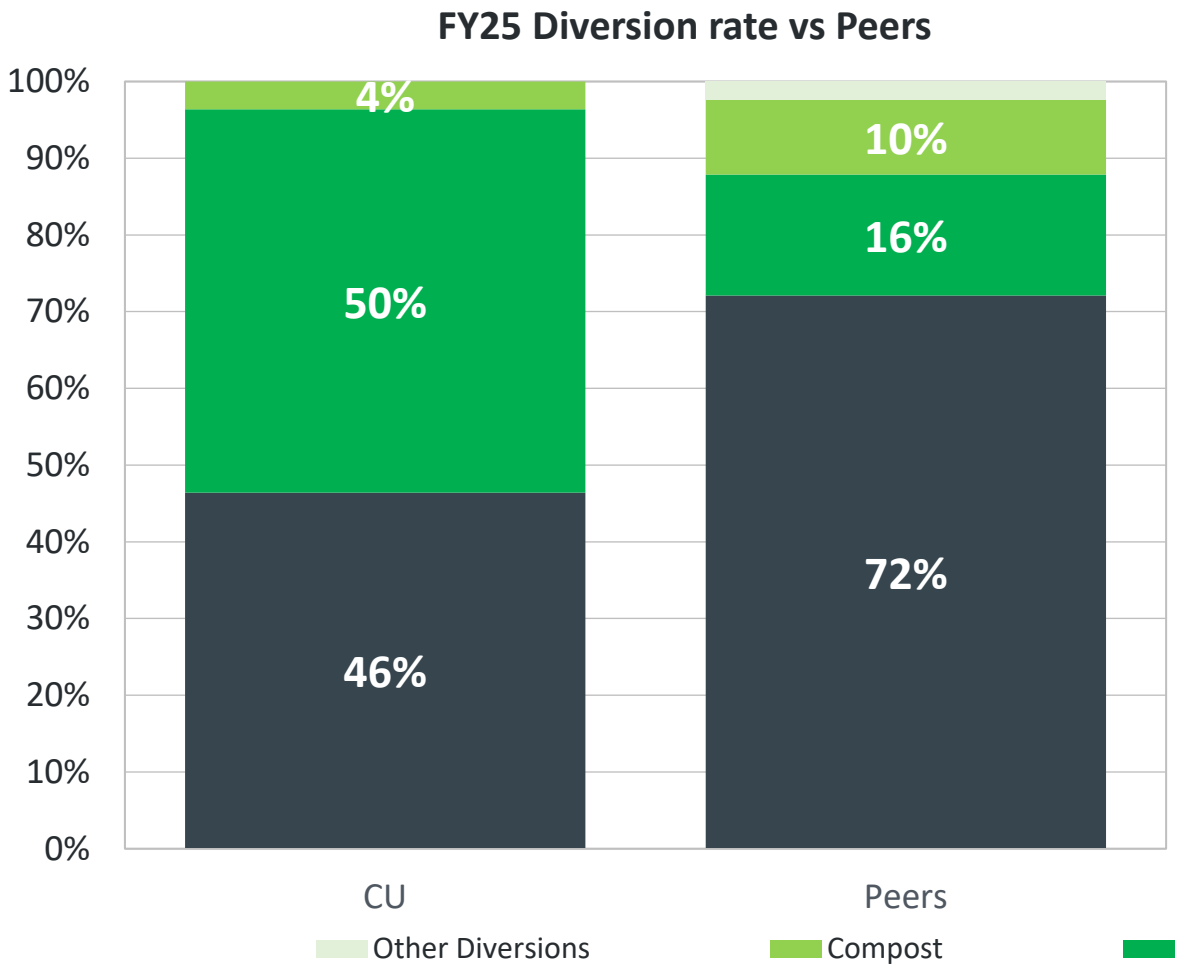
Chapman has the 2nd highest commuting emissions in peer group

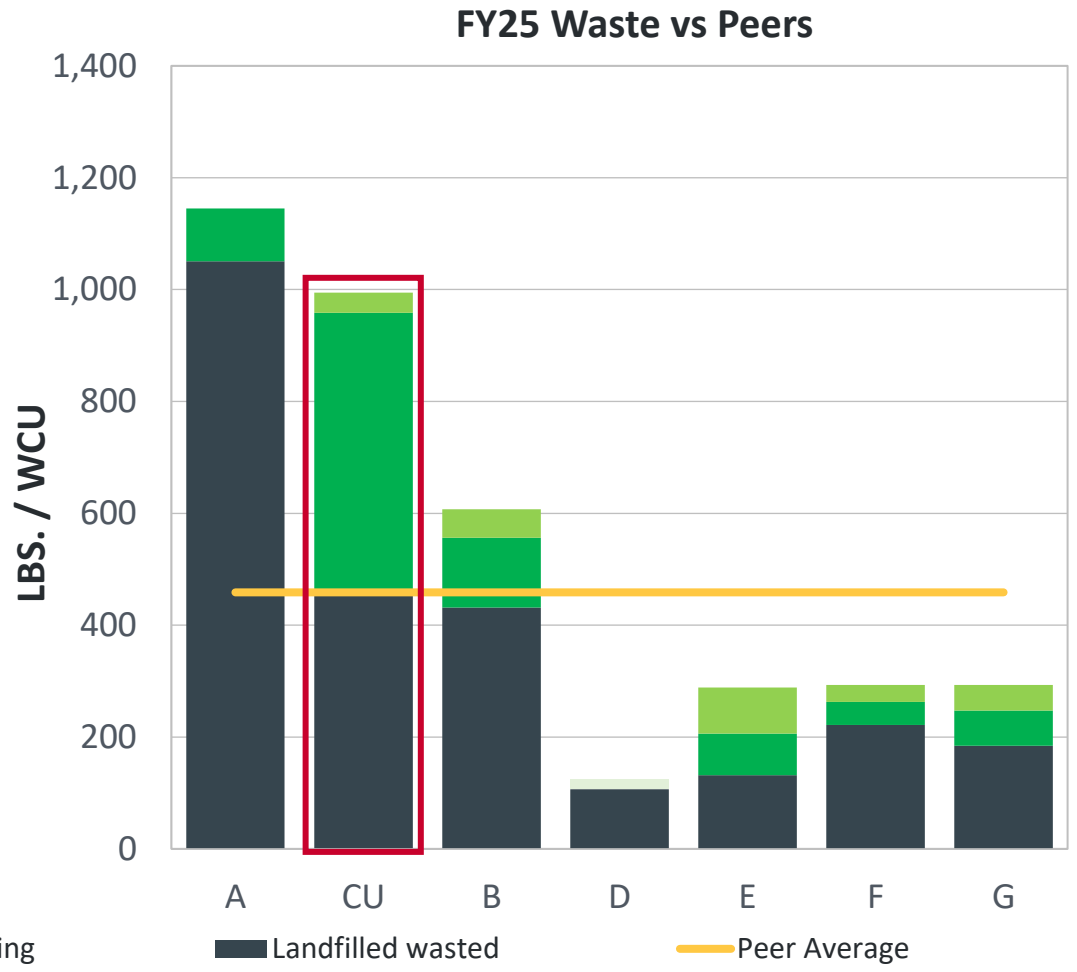




A Closer Look at Waste

Chapman diverts more waste to recycling than peers, but produces more total waste

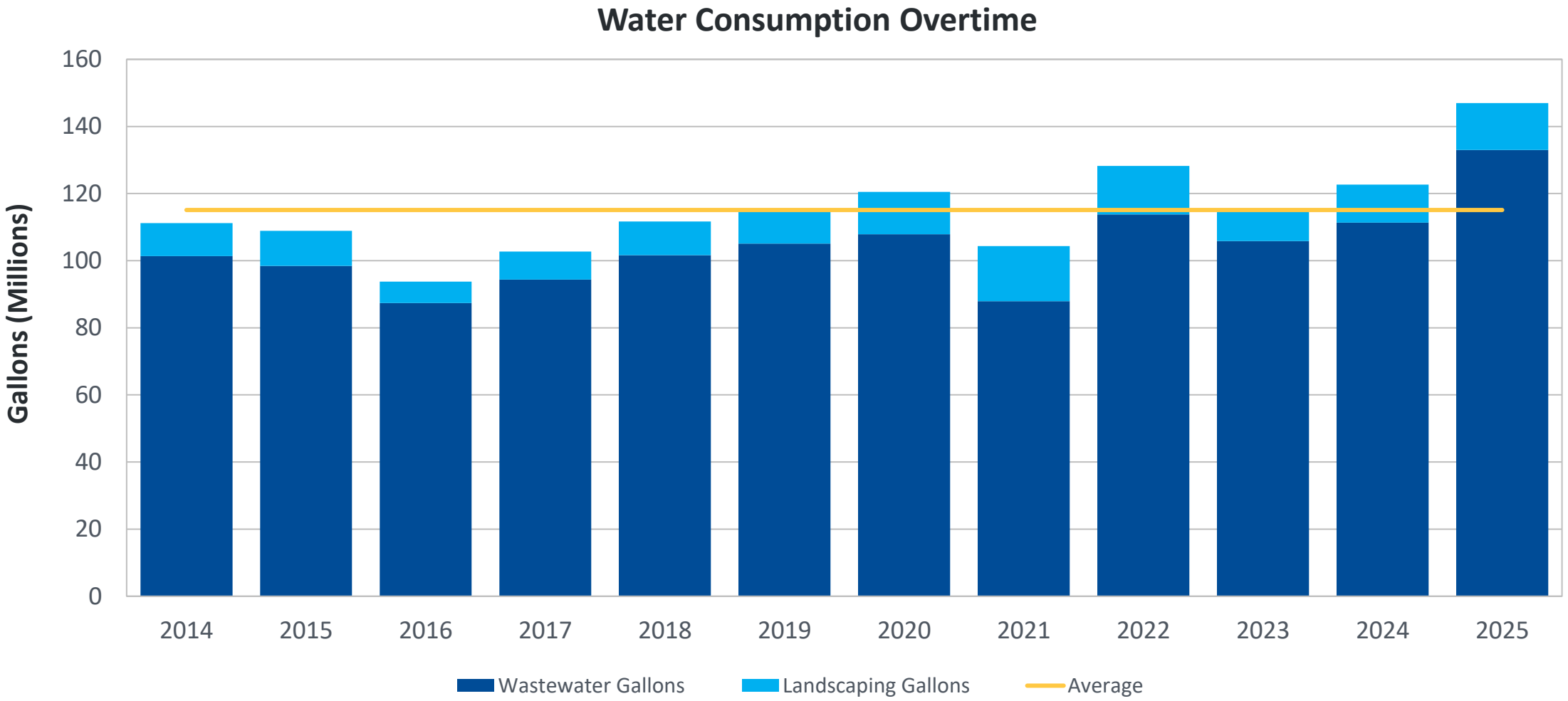




GORDIAN®

Total Water Consumption

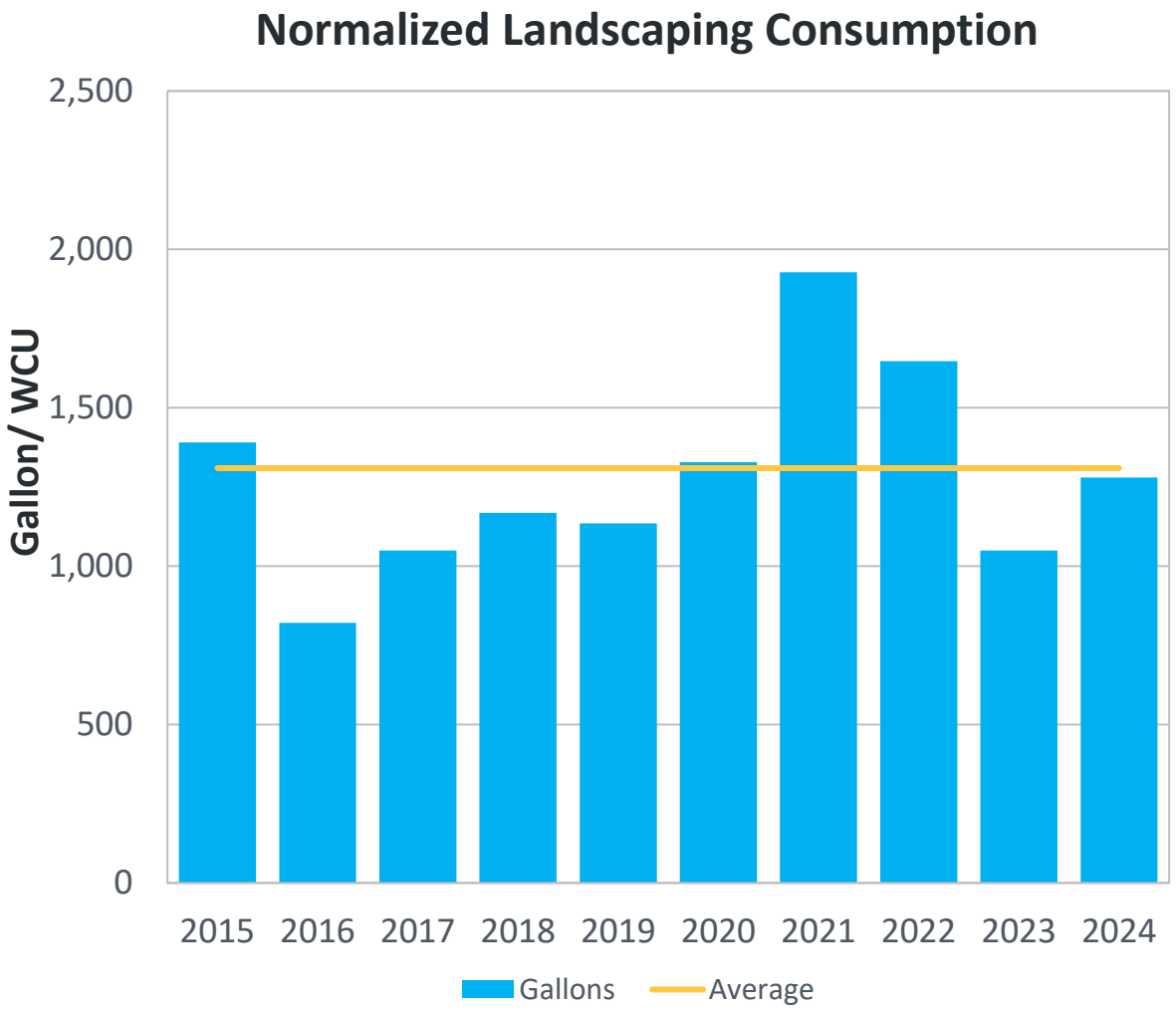
Landscaping and building water consumption increased by 20% YoY

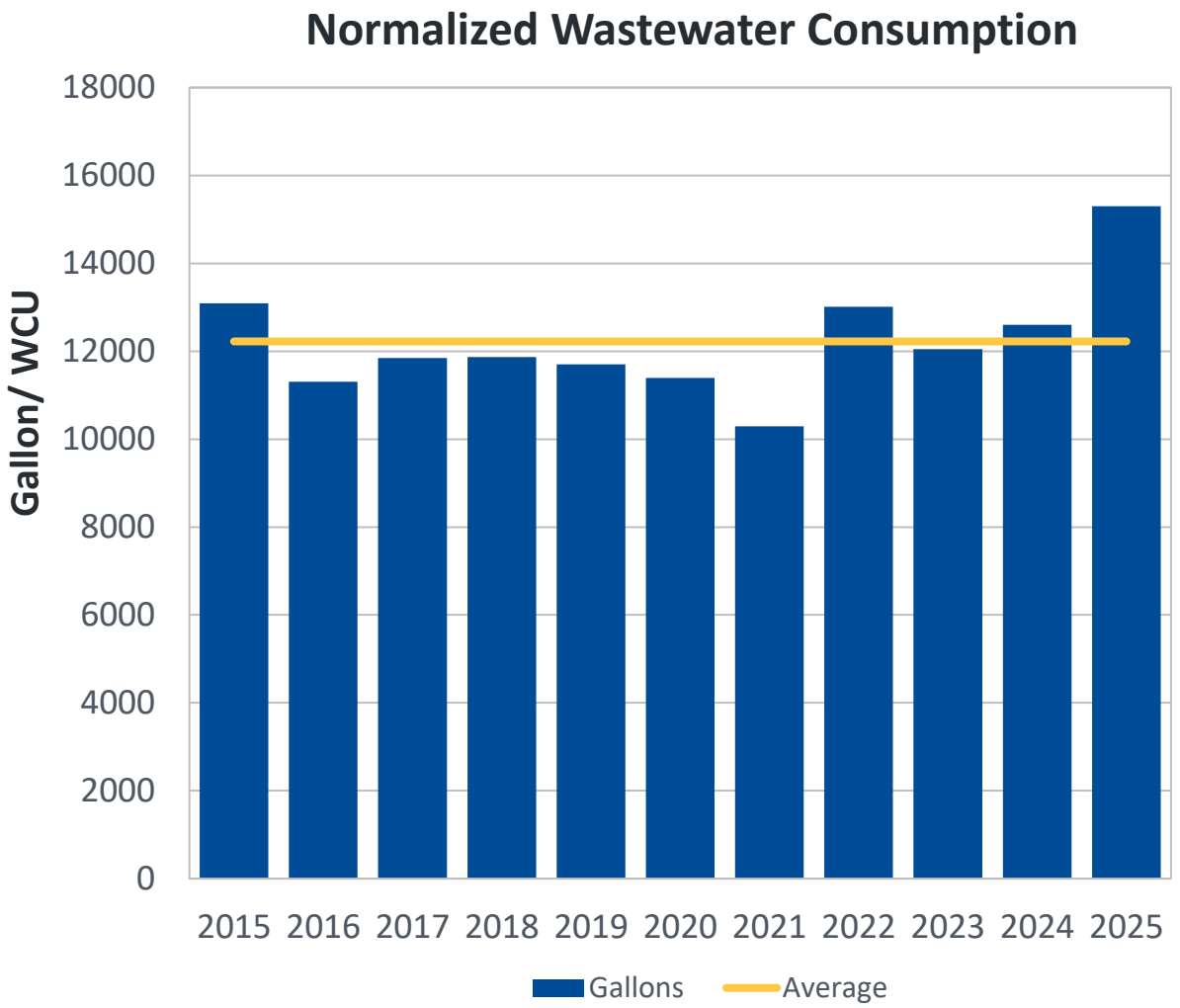


GORDIAN®

Total Water Consumption Normalized

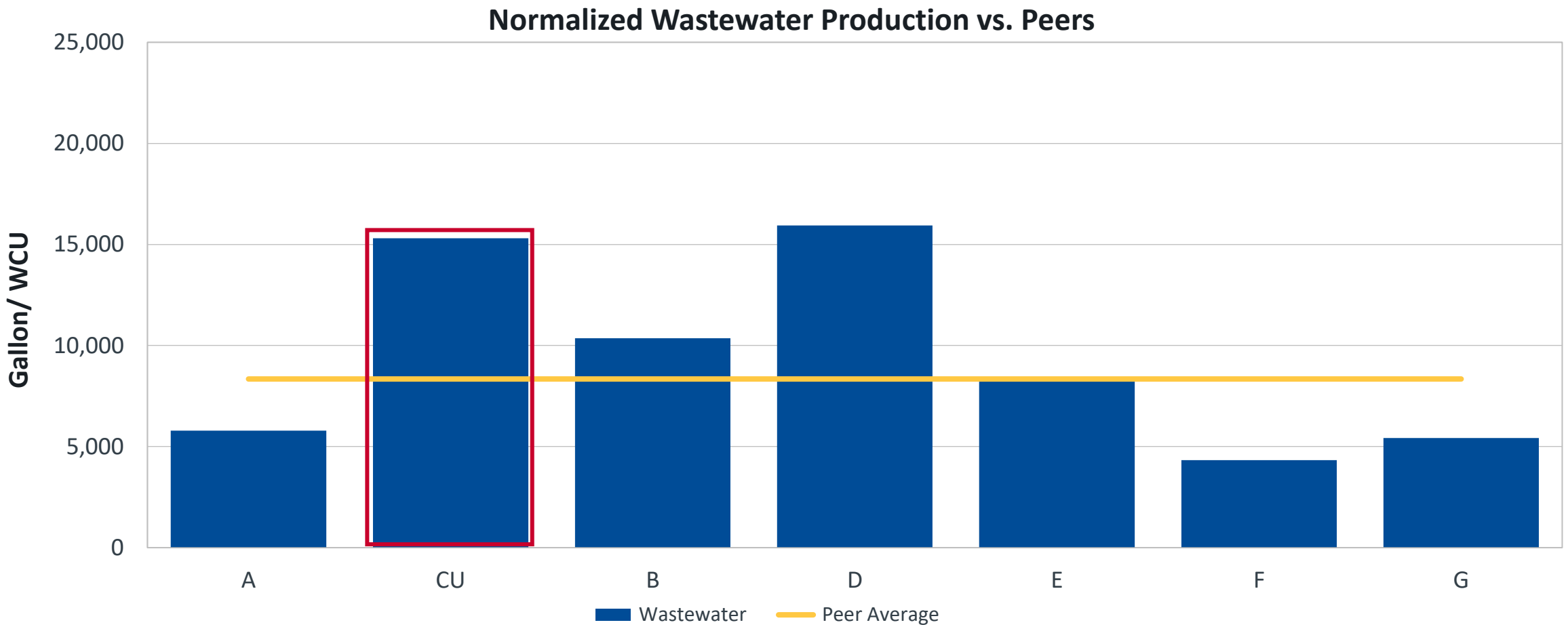
When normalizing by user, both irrigation and wastewater increased





Wastewater Production Above Peers

While wastewater is less than 1% of total emissions, water remains a scarce resource in Southern California



Concluding Comments

Scope 1: Chapman's Scope 1 emissions decreased due to reductions of the consumption of natural gas. However, fleet fuel emissions grew. To continue to offset potential future natural gas increases and fleet fuel emissions, Chapman should focus on electrifying the fleet and reducing natural gas usage through targeted deferred maintenance updates.

Scope 2: Chapman's scope 2 electricity will continue to increase as residence halls are occupied and online for an entire fiscal year. Additionally, emissions will increase if renewables are no longer purchased. Chapman should invest in onsite solar or purchase renewables to decrease emissions and manage future expansion.

Scope 3: Scope 3 remains Chapman's largest proportion of emissions, currently over 60%. Prior to purchasing offsets, Chapman must focus on behavior change, by discouraging single occupancy vehicles and minimizing waste through targeted outreach.

GORDIAN®

GORDIAN®
Building knowledge

Questions? Comments?