

Chapman University Sustainability Solutions

FY19/20 GHG Benchmarking Update

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What We Do





Data Drive Meaningful Action



Software Improve Workflows



Expertise Deliver Results



Sightlines Solutions







Overview of Sightlines Data Analysis

Summary of Emissions Profile

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 campuswide sustainability based on nearly two decades of work supporting campus inventories.







Components of Emissions Profile



Scope 1: Direct GHGs



- On-Campus Stationary Fuel
- Vehicle Fleet Fuel
- Fertilizer
- Refrigerants

Scope 2: Upstream GHGs



• Purchased Electricity

Scope 3: Indirect GHGs



- Commuting
- Directly Financed Travel
- Solid Waste
- Paper Purchasing
- Transmission & Distribution Losses



Longitudinal Emissions by Scope

Chapman's emissions were similar to baseline year of analysis





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Progress Against 2014 Baseline

Chapman's total emissions have been minimally impacted by increases in space and FTE's







FY20 Distribution of Emissions by Level of Control

Purchased electricity, commuting and travel make up the majority of emissions





Sustainability Peers

Peers determined using location, campus size, and population



Peer Institution	Location
The Thacher School	Ojai, California
California Institute of the Arts	Santa Clarita, California
St. Mary's College of California	Moraga, California
University of San Francisco*	San Francisco, California
University of San Diego*	San Diego, California
University of Denver	Denver, Colorado
Nova Southeastern University	Fort Lauderdale, Florida





Two Ways to Normalize Emissions for Comparison



GHG Emissions per 1,000 GSF EUI Adjusted



Stresses intensity of operations.

Gross GHG Emissions EUI Adjusted GSF

5 X 1,000

GHG Emissions per Weighted Campus User



Stresses efficient use of space.

Gross GHG Emissions

Weighted Campus User



Total Gross Emissions per Space and Campus User





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Scope 1: Direct Emissions

Chapman's scope 1 emissions are significantly below peer average when normalized





Scope 1 Emissions vs Peers



Scope 1: Stationary Fuel Consumption

Chapman's natural gas consumption continues to increase from historic FY17/18 low.









Scope2: Total Electric Consumption vs. Peers

Since FY18/19 Chapman's electric consumption has been comparable to peers







Scope 2: Total Electric Consumption vs. Peers

Chapman relies solely on purchased KWH, but consumption is equivalent to peers



Peers arrayed by technical complexity; The relative mechanical complexity of the campus on a scale of 1-5





Scope 2: Total Electric Consumption vs. Peers

Chapman consumed less than peers when normalized by CDD in FY19/20

FY20 Electric Consumption vs. Peers

Normalized by Cooling Degree Days





Energy Emissions vs. Peers

Chapman has seen total energy emissions decrease at a greater rate than peers









Scope 3: Indirect Emissions Overview

Commuting, Travel, and Waste are largest proportions of Scope 3 emissions



Scope 3 Emissions vs Peers

Paper data was extrapolated for all years from FY17 20

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Normalized Wastewater Production

Chapman produces less wastewater than peers









Scope 3: A Closer Look at Waste

Chapman diverts more waste than peers, and produces less waste per user









Scope 3: Commuting Profile

Comparing Chapman commuting modes to peers and database



Commuting Mode by Demographic

sightlines

Scope 3: Total Commuting Emissions

Reduction of time spent on campus correlates to reduction in commuting emissions









Scope 3: Total Travel Emissions

While travel was suspended in March, emissions increased from FY19 to FY20





Paper Profile

Chapman consumes more paper and has higher paper related emissions than peers





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