Center for Environmental Research and Education

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DUQUESNE UNIVERSITY

ONE STEP AT A TIME

Duquesne University's Eleventh Greenhouse Gas Emissions Inventory

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1. EXECUTIVE SUMMARY

The eleventh greenhouse gas (GHG) emissions inventory was conducted for fiscal year 2023 (FY23), which began on July 1, 2022, and ended on June 30, 2023. Assembled by graduate assistants Maria Mlinarcik and Meghan Phillips at the Center for Environmental Research and Education (CERE), these findings were compared with those derived from the previous inventories to assess trends in Duquesne University's GHG emissions. Furthermore, this inventory discusses options for reducing Duquesne's carbon footprint in future years.

Duquesne University's total GHG emissions were 60,745.21 MT eCO_2 for FY23. After calculating the full-time student equivalent and the full-time faculty/staff equivalents, SIMAP was able to generate the emissions per weighted campus user (WCU). This resulted in a carbon footprint of 7.51 MT eCO_2 per WCU in FY23. The largest contributor to Duquesne's GHG emissions was on-campus stationary combustion, which includes the natural gas cogeneration plant and auxiliary boilers. During FY23, the cogeneration plant accounted for 56.14% of Duquesne University's emissions. The second-largest contributor of GHG emissions during FY23 was Fuel- and Energy-Related Activities (FERA), which accounted for 22.73% of emissions, while student and employee commuting accounted for 13.51% of emissions. Purchased electricity (electricity not generated at the co-gen facility) made up 12.05% of emissions. In previous years, emissions from purchased electricity did not count towards the reported total emissions, as they were offset entirely with renewable energy credits (RECs). For FY22 and FY23, purchased electricity emissions were not completely negated by REC purchasing as in previous years, with these emissions accounting for 1.26% of the total in FY23. Other emission sources, such as directly financed athletics and business travel, the university fleet, fertilizer, solid waste, wastewater, and paper purchasing contributed to total emissions as well. However, these sources were comparatively insignificant.

Although Duquesne University began completing GHG inventories in 2006, assessing long-term trends in this data is difficult as all fiscal years prior to 2018 utilized a different reporting methodology. However, the adoption of SIMAP as Duquesne's primary emissions calculation tool and implementation of a detailed protocol for data collection has allowed for standardization of GHG emission calculations. Therefore, this report - as well as future reports - will focus on changes in emissions from FY18 to present.

This inventory found that, compared to FY22, FY23 GHG emissions increased by 11.97%. FY21 experienced a 1.57% increase in total emissions when compared to FY20, coinciding with students return to campus and the restarting of some university activities and travel after the COVID-19 pandemic. As students gradually returned to campus through FY21, campus activity increased but was not yet operating at full capacity. The unique nature of the COVID-19 pandemic significantly impacted total reported emissions during FY21, making it difficult to distinguish between GHG emissions variations from campus activity and emissions improvements purposefully made by the University. Despite these limitations to reporting, total emissions remain lower than pre-lockdown emission values, with a 7.67% reduction observed between FY18 and FY23. However, in FY23 the emissions per weighted campus user exceeded pre-lockdown levels for the first time, with a 4.08% increase observed between FY18 and FY23.

There are several measures Duquesne must take to ensure that future reductions continue to decrease. These steps could include (1) increasing the purchasing and use of renewable energy, (2) improving the energy and water efficiencies of campus facilities, (3) providing alternative transportation options for commuters and/or incentivizing them to utilize sustainable transportation, and (4) increasing composting or considering additional sinks/offsets that will help neutralize Scope 1 and Scope 3 GHG emissions.

2. INTRODUCTION

As a partner of the nation's first EcoInnovation District, Duquesne University has committed to "creating an equitable and sustainable community."[10] Some of the EcoInnovation District goals include increasing compost rates; reducing pesticide use; increasing sustainable forms of transportation; and most importantly, reducing carbon emissions from waste disposal, transportation, and energy.[10] The University is also a member of the Pittsburgh 2030 District which, according to their website, is "an internationally recognized, locally driven strategic initiative of Green Building Alliance (GBA) that supports building owners and managers as they strive toward 50% reductions in energy use, water consumption, and transportation emissions by 2030 while improving indoor air quality."[20]

In addition to Duquesne's commitment to Pittsburgh's EcoInnovation District and 2030 District, the University also promotes sustainability following the Catholic Church's commitment to "the integrity of creation."[5,10,20] This idea is expressed on the University's sustainability webpage:

> *At Duquesne, we work each day to find new ways to reduce our consumption of natural resources and to promote sustainable practices on campus. Pursuing bigger goals of sustainability—whether through green operations, construction projects, research endeavors, academic coursework or community engagement initiatives—is just one of the ways that we walk alongside you, while we honor our Catholic founding in the Spiritan tradition.*[5]

Per Duquesne University's commitment to sustainability, the Center for Environmental Research and Education (CERE) conducted its first greenhouse gas (GHG) emissions inventory in 2006. At the time, it served as the first completed GHG inventory by any university in Western Pennsylvania. This inventory provided campus officials, students, and community members with knowledge regarding the size and sources of Duquesne's GHG emissions. As a result of the inventory's success, Duquesne University decided to publish a GHG emissions inventory biennially to determine overall emission generation trends. To date, the University has published ten GHG inventory reports.

In 2019, it was determined that the GHG emissions inventory should be published annually rather than biennially. As such, plans were set in place to release a FY19 report in the spring of 2020. However, the COVID-19 pandemic hindered these plans, and as a result, FY19 and FY20 findings are both included in the eighth edition of Duquesne's GHG report. Going forward, reports has been released annually, beginning with the ninth edition.

While the purpose of the GHG emissions inventory is to provide the University with knowledge of their GHG emissions, the report also serves as a valuable tool for creating innovative solutions to reduce carbon emissions over time. Additionally, the report compares the most current inventory to previous inventories in an effort to track the University's progress toward its goal of achieving carbon neutrality.

3. METHODS

In 2017, the University of New Hampshire Sustainability Institute launched a new GHG emission inventory platform, the Sustainability Indicator Management & Analysis Platform (SIMAP). SIMAP uses state-of-the-art GHG emission knowledge and well-researched formulae to convert institutional data into emission figures.[14] This program was first used to complete the FY18 report after replacing an older version of similar software known as Clean Air-Cool Planet.

SIMAP categorizes data into four broad functional fields:[14]

- Scope 1: Direct emissions from sources owned and/or controlled by the University.
    - Cogeneration facility, auxiliary boilers, combustion of fossil fuels in university-owned facilities or vehicles (campus fleet), and refrigerant use
- Scope 2: Indirect emissions from sources neither owned nor operated by the University but whose products are directly linked to on-campus energy consumption.
    - Purchased electricity, steam, chilled water, and renewable energy including renewable energy credits
- Scope 3: Other emissions that are directly financed but are neither owned nor operated by the University or are otherwise linked to campus activities.
    - Commuting, travel (by plane and bus), solid waste disposal, wastewater disposal, and paper usage
- Sinks: Projects on or off-campus that reduce the institutional carbon and/or nitrogen footprint.
    - Compost, non-additional sequestration, and offsets (e.g., reforestation and biogas projects)

3.1 SCOPE 1 SOURCES

3.1.1 Stationary Fuel

On May 1, 2019, Duquesne University's Tri Generation facility (Energy Center) was sold to Clearway Energy, Inc., which is now known as Cordia.[6] While this transaction means that Duquesne no longer owns the Energy Center, the facility is still controlled and operated by Duquesne employees. As a result, the Energy Center remains classified under Scope I as a stationary fuel source for FY23.

Stationary fuel data were provided by David Chismar via a monthly Energy Center report. This report details the University's usage of natural gas by building. The natural gas usage at the Energy Center and its associated boilers were recorded into SIMAP as cogeneration natural gas. The remaining natural gas usage was then recorded in SIMAP as a non-cogeneration form of natural gas. The University's natural gas was reported in million cubic feet (MCF) and converted to million British Thermal Units (MMBtu).

3.1.2 Cogeneration Efficiencies and Outputs

Information regarding cogeneration efficiencies and outputs was obtained by Mark Johnson via the Clearway Energy ECP Gibbon – Monthly Production Report. The total electric usage in kWh and the total electrical efficiency and steam efficiency were recorded. Additionally, steam usage was recorded in Mlbs and converted to MMBtu. This information was then entered into SIMAP.

3.1.3 Transport Fuel

Both Public Safety and Facilities Management were contacted regarding the university fleet, and these departments provided gasoline and diesel usage. Public Safety reported operation of seven vehicles with a fuel economy of 9.7 mpg in FY23. It was stated that each vehicle traveled approximately 11,500 miles throughout the year. Thus, the Public Safety vehicles traveled approximately 80,500 miles throughout FY23 while consuming roughly 8,299 gallons of gasoline.

While Public Safety provided the total vehicle miles, Facilities Management provided the total dollar amount spent on gasoline and diesel fuel. Since SIMAP requires data to be entered in the form of U.S. gallons, the monetary gasoline value provided by Facilities Management was divided by the average price of regular gasoline for the Pittsburgh area. This value was obtained by the Energy Information Administration (EIA) and was calculated to be $3.62 for FY23.[19] The same methodology was used to determine the total diesel miles, with the cost of diesel averaging $4.74 for FY23.

3.1.4 Fertilizer

Fertilizer usage was received from Facilities Management in total bags purchased for FY23. According to Facilities Management, each bag weighed 50 lbs. The total amount of fertilizer used was converted into pounds and then entered into SIMAP.

3.2 SCOPE 2 SOURCES

3.2.1 Utility Consumption

Purchased electricity was obtained through David Chismar via Duquesne University's Monthly Summary of Commodities report. This information was given in kWh, which was consistent with SIMAP reporting units. Steam and hot water were not recorded in SIMAP under Utility Consumption, as the cogeneration facility produces these utilities, and thus, fall under Scope 1.

3.2.2 Renewable Energy

In 2020, Duquesne University renewed its Power Purchase Agreement with Direct Energy Business, LLC. The new contract, which supports 66,362 MWh of any national Green-e Energy certified Renewable Energy Credits (REC), extends over four years resulting in a yearly offset of approximately 16,590.5 MWh. REC data is "Green-e" verified and entered as MWh in SIMAP.[4]

3.3 SCOPE 3 SOURCES

3.3.1 Commuting

Commuting information was obtained via the Duquesne University 2018 IMP Parking Memorandum.[17] This report provided an average number of commute days per week for both students (4.6) and faculty and staff (4.5). These values were multiplied by two to generate the number of one-way trips per week (9.2 and 9.0), which is the measure required by SIMAP. The number of one-way student trips was multiplied by the total number of commuter students (both full-time and part-time) to generate the total number of one-way student trips per week. This same process was repeated to determine the total number of faculty and employee one-way trips. All institutional data used was obtained by Angela Chirumbolo from the Office of Institutional Research and Planning.

When entering data into SIMAP, student, faculty, and staff commuting were all recorded separately. This allowed the difference in percentages of commuting methods (e.g., automobile, bike, bus, carpool, walking, etc.) between students and employees to be accounted for, which is also detailed in the Parking Memorandum.

3.3.2 Business Travel & Study Abroad

This category comprises four subgroups: (1) faculty and staff travel, (2) athletic air travel, (3) athletic bus travel, and (4) study abroad travel. Subgroups 1-3 are referred to as "Other Directly Financed Travel" throughout this GHG inventory, while subgroup 4 is denoted "Air Travel." This categorization is a direct result of the restraints imposed from the predetermined SIMAP categories. Additionally, SIMAP requires faculty and staff travel to be entered as either passenger miles or U.S. dollars. Previous inventories reported data as passenger miles, which has been used again for FY23.

Faculty and Staff Travel

The amount of money spent for faculty and staff travel was obtained by Lisa Newell from Procurement and Payment Services. This value was converted to passenger miles using the average Standard Industry Fare Level (SIFL) for FY23 ($0.2013 per mile).[11,12] The average miles flown were estimated to be between 501 and 1500 miles per trip.

Athletic Travel

Athletic travel was obtained from the Duquesne University Athletic webpage by analyzing all athletic schedules. When two or more events were scheduled one or two days apart, on the weekend, or during a University break, it was assumed that the team would not return to Duquesne in between. It was also assumed that any event located further than 8 hours away would require air transportation. Ground travel was calculated as round-trip miles via a diesel charter bus. All teams, excluding football, were assumed to have utilized one bus, while football

is known to use two buses for game travel. The number of ground miles was obtained from *Google Maps*.

Along with faculty and staff travel, the amount of money spent on athletic air travel was also obtained from Lisa Newell from Procurement and Payment Services. Similarly, the amount of money spent on athletic air travel was converted to passenger miles using the average SIFL of FY23.[11,12]

Study Abroad

Study abroad data were obtained from the Study Abroad Office and the Palumbo-Donahue School of Business for all semester and summer trips that occurred during FY23. The data was provided as the number of students that participated in each program and the distance traveled to and back from each location was determined using *Webflyer*. Due to the nature of data collection, all flights were considered direct, although this is likely inaccurate. The number of students was then multiplied by the number of miles traveled for each location. Then, this was entered into SIMAP as passenger miles.

3.3.3 Paper

In previous GHG inventories, paper usage was provided by the Duquesne Print Shop and Receiving offices. Beginning in FY21, paper purchasing at Duquesne became the responsibility of individual departments. Each department now purchases paper from Office Depot. Data for university department paper purchasing was provided by Office Depot Senior Account Manager Maribeth Morel-Smith in the Green Usage Report. Weight of paper purchased was obtained from the Green Usage Report, and paper was assumed to contain 30% recycled content. However, the Duquesne Print Shop still purchased paper individually and provided the number of reams purchased during FY23. Weight of paper reams purchased by the Print Shop was assumed to be 2 lbs each with the same percentage of recycled content. Thus, to generate the total weight of paper used by the Print Shop, the total number of reams purchased by Duquesne University Print Shop was multiplied by 2 lbs. This number was then added to the total weight of 30% recycled content paper purchased through Office Depot to obtain the total weight of paper purchased by the university.

3.3.4 Waste & Wastewater

Facilities Management provided the quantity of waste in short tons taken to a landfill during FY23. Wastewater generation was also obtained from Facilities Management and recorded in gallons in SIMAP. Emissions from wastewater generation result from treatment method(s) used at the designated treatment facility. The Allegheny County Sanitary Authority treats wastewater using anaerobic digestion.[2]

3.4 SINKS

In 2011, Duquesne University began partnering with AgRecycle - Pennsylvania's largest composting company.[1] As a result, food waste from Duquesne's dining halls is collected and composted via this third party. Composting of dining waste was obtained from Facilities Management and was recorded in SIMAP in short tons. Continuing with the precedent set by the GHG inventories from FY18-22, composting data are also reported for FY23.

3.5 EMISSIONS CALCULATIONS

SIMAP calculates GHG emissions values using the most recent version of emission factors. Updated emissions factors are typically released annually, with the most recent update (2022 version) released in February 2023.[14] These updates help to improve the accuracy of reported emissions; however, they also make it difficult to assess changes in GHG emissions from year-to-year. All emissions values discussed in this report, including those from FY18-FY22, were calculated using the 2022 version of emissions factors, as well as the fifth Assessment Report (AR5) of the United Nations Intergovernmental Panel on Climate Change (IPCC) 100-year version for global warming potential, Bureau of Transportation Statistics (BTS) version of air travel cost conversion and a radiative forcing value of 2.7. It should be noted that, because the recommended calculation factors have been updated, the total emissions values discussed in this report for FY18-FY21 will not match the total emissions values reported in the seventh, eighth, and ninth GHG inventories.

As part of the updated SIMAP calculations in the 2022 version, an additional metric was added to the assessment. Fuel- and Energy-Related Activities (FERA) is now included in Scope 3 emissions as a way to measure upstream emissions not included in Scope 1. These emissions could be included in one of four categories: upstream emissions of purchased fuels, upstream emissions of purchased electricity, transmission & distribution (T&D) losses, and generation of purchased electricity sold to end users. FERA calculations have been added to previous fiscal year calculations for this report.

SIMAP also conducts calculations for GHG emissions per weighted campus user (WCU). Full-time student equivalents and full-time faculty/staff equivalents were calculated to generate the emissions per WCU. Angela Chirumbolo from the Office of Institutional Research and Planning provided institutional data, including information regarding student enrollment and the number of university faculty and staff. In previous GHG inventory reports, these values represented the most up-to-date information, which did not always align with the fiscal year being reported. However, to improve the accuracy of the emissions per WCU, the tenth GHG inventory, and those following, will now include enrollment values which align with the fiscal year reported.

Additionally, SIMAP calculates Scope 2 emissions based on both a location-based and a market-based approach.[14] These approaches vary based on how they account for market-purchases, such as renewable energy credits (RECs). The location-based approach produces emissions values based on eGrid regions and does not account for RECs, while the market-based approach does account for RECs. In previous years, Duquesne University purchased enough RECs to cover their annual purchased electricity, so Scope 2 emissions were not included in the total emissions values reported in inventories for FY18 to FY21. However, not all purchased electricity was negated by the purchased RECs for FY22 and FY23. Therefore, Scope 2 emissions will be present in both market-based and location-based data but will not be equal in each

approach. Total emissions values throughout this inventory are reported using the market-based approach unless otherwise indicated.

4. RESULTS

Duquesne University's total GHG emissions for FY23 were 60,745.21 metric tons of carbon dioxide equivalent (MT eCO_2), equaling 7.51 MT eCO_2 per WCU. In FY23, 56.37% of emissions (34,240.14 MT eCO_2) were attributed to Scope 1 sources, 1.26% of emissions (766.81 MT eCO_2) were attributed to Scope 2 sources, and 42.37% of emissions (25,738.26 MT eCO_2) were attributed to Scope 3 sources (Figure 1A). To ensure that Scope 2 values were represented appropriately, location-based percentages also included in Figure 1B.

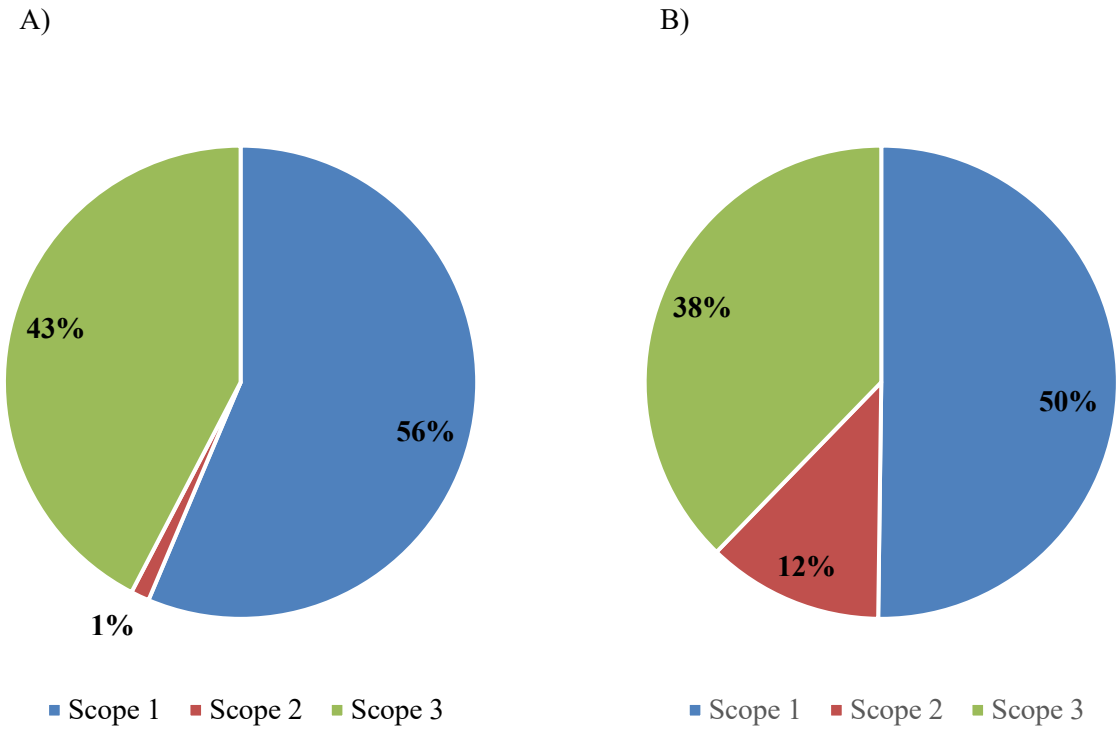

Figure 1. Distribution of FY23 GHG emissions by scope. A) Scope 1-3 GHG emissions calculated with market-best approach. B) Scope 1-3 GHG emissions calculated with location-based approach. The location-based GHG emissions totaled 68,197.29 MT eCO_2.

When broken down individually, the source that produced the most emissions during FY23 was the co-generation facility on Duquesne's campus. Emissions from this source made up 56.14% of the total emissions (34,099.89 MT eCO_2) for FY23. All sources considered to be "minor emissions sources" were grouped together in Table 3. This group comprised 0.67% of total FY23 emissions (405.74 MT eCO_2), which made up the lowest source of emissions for this fiscal year (Figure 2).

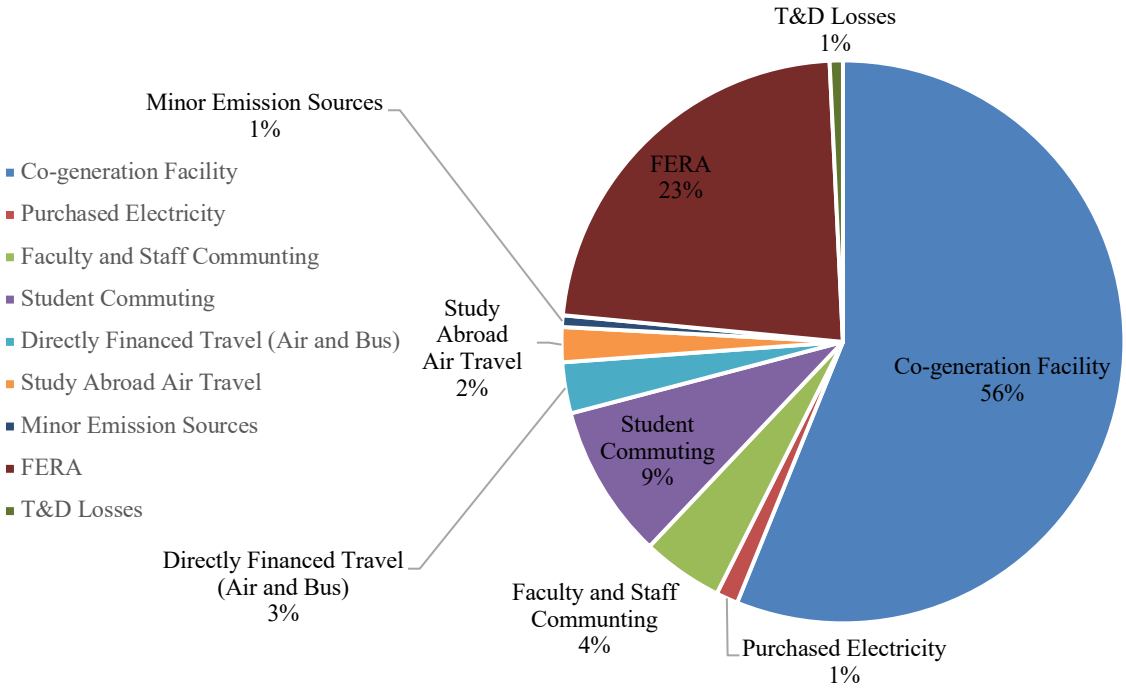

Figure 2. Distribution of FY23 GHG emissions by source

Stationary combustion from Duquesne's cogeneration facility has consistently been the University's largest source of GHG emissions over time. In FY23, Duquesne University consumed 593,310 MCF of natural gas, and the cogeneration facility produced 12,971,020 kWh of electricity and 130,268 Mlbs of steam. This production of electricity and heat from the cogeneration facility accounted for 56.14% of GHG emissions for FY23 (Figure 2). In FY23, an additional 18,293,880 kWh of electricity was purchased to supplement the electricity produced by the cogeneration facility. However, this additional electricity was counterbalanced by the purchasing of 16,590,500 kWh worth of RECs (Figure 3), resulting in a net 766.81 MT eCO_2 Scope 2 emissions.

Emissions related to travel represent a significant portion of Duquesne University's total emissions each year. Duquesne has a variety of transportation related emissions including commuting, study abroad air travel, and other directly financed travel (faculty/staff business travel and athletic travel). These sources contributed 11,205.91 MT eCO_2 in FY23, which accounted for 18.45% of Duquesne's GHG emissions (Figure 2).

Minor emissions sources of university GHG emissions include university fleet vehicle usage, fertilizer usage, wastewater production, office paper usage, and solid waste production. These sources are considered minor emissions as the totals of these categories constitute less than 1.00% of the total university GHG emissions each fiscal year. In FY23, minor emissions sources made up 0.67% of total campus emissions (405.74 MT eCO_2) (Figure 2). The largest contributor out of this group was mobile combustion from fleet vehicle usage, which resulted in 138.25 MT eCO_2 for FY23. Fertilizer contributed the least emission with only 2.00 MT eCO_2 throughout the fiscal year (Table 3).

5. DISCUSSION

Using the 2022 version of emissions calculation factors, emissions for FY18, FY19, FY20, FY21, FY22, FY23 were 65,790.56 MT eCO_2, 60,895.20 MT eCO_2, 52,614.80 MT eCO_2, 53,441.05 MT eCO_2, 54,252.18 MT eCO_2, and 60,745.21 MTeCO_2, respectively (Table 1). FY19 observed a 7.44% decrease when compared to FY18 and FY20 observed a 13.60% decrease when compared to FY19. The dramatic decrease in emissions from FY19 to FY20 coincides with lockdown measures associated with the COVID-19 pandemic, which resulted in limited campus activity. As lockdown measures were reduced and students returned to campus for the 2020-2021 academic year, emission levels rose with an observed increase of 1.57% from FY20 to FY21. Duquesne campus activities had not completely returned to pre-COVID levels throughout FY21, as study abroad and athletics travel were limited. This could still be contributing to the sustained lower emissions of FY21 compared to FY18. As of FY22, campus activity had resumed pre-COVID levels with only limited study abroad travel. Despite these limitations to reporting, total emissions remain lower than pre-lockdown emission values, with a 7.67% reduction observed between FY18 and FY23. However, in FY23 the emissions per weighted campus user exceeded pre-lockdown levels for the first time, with a 4.08% increase observed between FY18 and FY23.

Table 1. Total and per weighted campus user GHG (MT eCO_2) emissions from FY18 to FY23

Fiscal Year	Total Emissions (MT eCO_2)	Emissions Per Weighted Campus User (MT eCO_2)
2018	65,790.56	7.21
2019	60,895.20	6.75
2020	52,614.80	5.79
2021	53,441.05	6.51
2022	54,252.18	6.65
2023	60,745.22	7.51

5.1 MAJOR EMISSIONS

Major emissions sources of university GHG emissions include the heating- and electricity-related sources, such as stationary combustion at the cogeneration facility and purchased electricity, in addition to travel related sources, such as commuting, study abroad travel, and other directly financed travel. These sources consistently make up the majority of Duquesne University's total GHG emissions each fiscal year. In FY23, major emissions sources comprised 88.11% of total campus emissions. A 29.13% increase in major emissions was seen from FY22 to FY23 (Table 2). Due to the complete offset of purchased electricity by RECs, emissions from purchased electricity were not included in this calculation from FY18 to FY21. However, the net purchased electricity emissions were included in the market-based calculations for FY22 and FY23. Total major emissions remained lower than pre-lockdown values between FY18 and FY22, with a 16.52% reduction observed between these years. However, in FY23 this value exceeded pre-lockdown levels for the first time, with a 7.80% increase observed between FY18 and FY23.

Table 2. Major GHG emission sources and values (MT eCO_2) from FY18 to FY23

Emission Source Category	**FY18 Emissions (MT eCO_2)**	**FY19 Emissions (MT eCO_2)**	**FY20 Emissions (MT eCO_2)**	**FY21 Emissions (MT eCO_2)**	**FY22 Emissions (MT eCO_2)**	**FY23 Emissions (MT eCO_2)**
Cogeneration Facility	37,384.87	33,015.44	25,985.18	30,951.58	29,688.06	34,099.89
**Purchased Electricity*	9,705.82	8,016.01	7,277.47	7,097.93	8,608.17 (1,005.92)	8,219.76 (766.81)
Commuting	7,073.84	9,619.86	9,259.26	8,889.23	8,200.69	8,208.96
Study Abroad Travel	2,777.77	1,891.03	1,946.18	0	835.04	1,217.99
Directly Financed Travel	2,417.43	2,138.27	4,088.28	358.94	1,703.32	1,778.96
Total	**49,653.91**	**46,664.60**	**41,278.90**	**40,199.75**	**41,450.80**	**53,525.56**

**Values for purchased electricity in Table 2 were completely offset by REC purchasing from FY18 to FY21 and were not included in the calculation of total emissions. However, in FY22 and FY23, purchased electricity was not completely offset. The market-based purchased electricity value for these years is found in parentheses.*

5.1.1 Heating and Electricity

A 14.86% increase in stationary combustion emissions occurred from FY22 to FY23. Emissions from purchased electricity fluctuate yearly, with a 2.82% decrease observed from FY22 to FY23 (Figure 3). REC purchasing decreased by 4,581.9 MWh in FY20 after a new four-year contract with Direct Energy Business, LLC was signed. This level was maintained in FY23. It is worth noting that in FY18-FY21, emissions from purchased electricity were entirely offset by REC purchases, resulting in net-zero Scope 2 emissions. However, FY22 and FY23 saw net- positive emissions of purchased electricity.

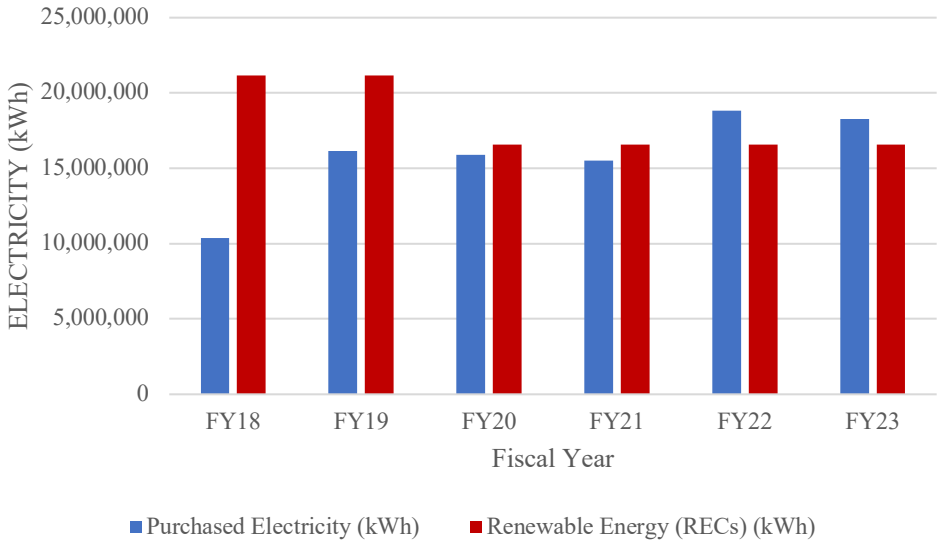

Figure 3: Purchased electricity and renewable energy credits (kWh) from FY18 to FY23 (calculated using the location-based approach)

5.1.2 Travel

Commuting emissions increased 0.10% from FY22 to FY23. Variations in commuting emissions fluctuate depending on enrollment. Notably, COVID-19 lockdowns occurred during FY20 resulting in cessation of campus commuting for several months. However, SIMAP's methodology was unable to remove the months during FY20, where commuting ceased due to lockdown. SIMAP was also unable to account for hybrid-learning during FY21, which reduced the number of commuter trips students and employees were making to campus. Due to this limitation, it is likely that emissions from commuting are being over-reported in FY20 and FY21. Additionally, emission calculations are based on the average number of one-way commuter trips, which were reported in the 2018 parking memorandum.[17] The creation of the 2018 parking memorandum significantly improved previous methodology for calculating commuting emissions. However, a new memorandum has not been produced since, and therefore, these averages may no longer accurately represent commuting behavior in FY23.

In the FY18 and FY19 inventories, study abroad air travel was a major source of GHG emissions for Duquesne University. However, reduced emissions were reported from study abroad air travel in FY20 - specifically cancellation of the "May-mester" program - and no emissions reported in this category in FY21 due to restrictions from the COVID-19 pandemic (Figure 4). Study abroad travel recommenced in FY22 with 835.04 MT eCO_2 total emissions resulting from this source. In FY23, study abroad travel contributed 1,217.99 MT eCO_2 to total emissions. This is 35.59% lower than the FY19 study aboard emissions, which show pre-COVID lockdown levels. Emissions from other directly financed travel, which includes air and bus travel for business and athletics, were still impacted by COVID-19 travel restrictions in FY21, with a 374.5% increase observed from FY21 to FY22. This continued to increase by 4.44% in FY23.

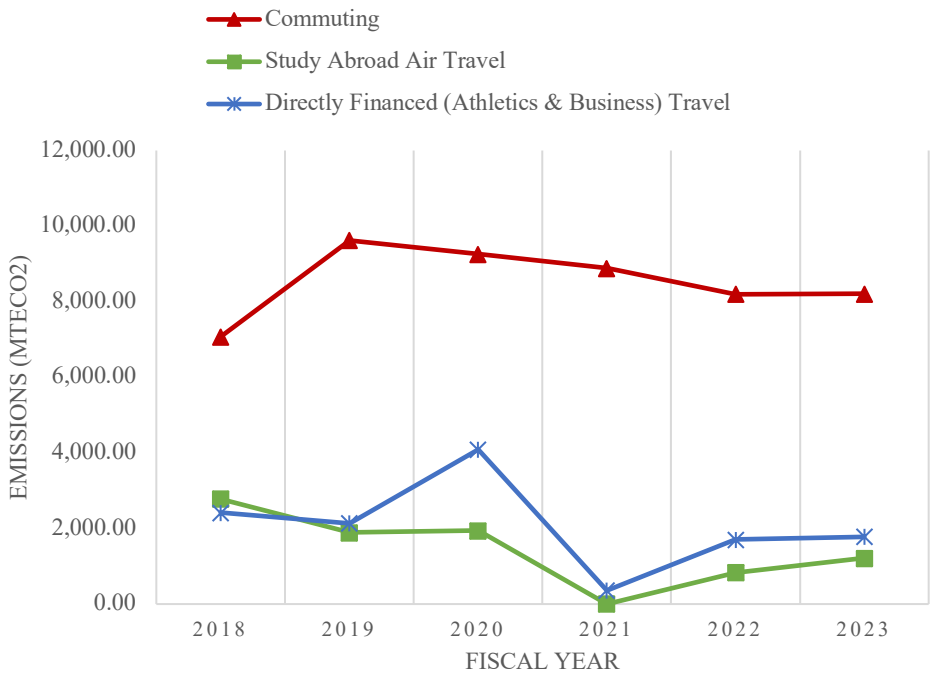

Figure 4. Transportation-related GHG emissions (MT eCO_2) from FY18 to FY23

5.2 MINOR EMISSIONS

Minor emissions for FY23 show an increase of 24.80% compared to FY22, with totals of 325.11 MT eCO_2 in FY22 and 405.74 MT eCO_2 in FY23. However, a reduction in minor emissions of 21.55% was seen from FY18 (517.22 MT eCO_2) to FY22. Mobile combustion from fleet vehicle usage produced the most emissions in this category in FY23 at 138.25 MT eCO_2 (Table 3). While total minor emissions have increased since FY21, the data supports an overall decreasing trend in emissions from FY18.

Table 3. Minor GHG emissions sources and values (MT eCO_2) from FY18 to FY23

Emissions Source Category	FY18	FY19	FY20	FY21	FY22	FY23
Mobile Combustion - Fleet Vehicle Usage	130.04	120.25	127.98	108.47	81.29	138.25
Fugitive Emissions - Fertilizer	1.00	0.84	0.84	0.48	2.6	2.00
Wastewater	174.24	158.88	121.58	98.21	106.8	121.39
Office Paper - Usage	20.97	17.13	13.2	14.57	11.61	9.82
Solid Waste	190.97	150.59	150.77	97.22	122.81	134.28
Total	**517.22**	**447.69**	**414.37**	**318.95**	**325.11**	**405.74**
Percentage of Total Emissions	**0.79%**	**0.74%**	**0.79%**	**0.60%**	**0.60%**	**0.67%**

5.3 FERA AND T&D LOSS EMISSIONS

As per FY22, SIMAP added an additional emissions category with the updated 2022 emissions factors. This category is titled Fuel- and Energy- Related Activities (FERA) and is included in Scope 3 emissions as a way to measure upstream emissions not included in Scope 1.[14] The addition of FERA caused total emissions to increase significantly compared to past reports. However, FERA calculations have also been added to previous fiscal year calculations for this report so that all values are comparable. FERA accounted for the second largest emissions category in FY23 with 22.73% of emissions (13,805.94 $MTeCO_2$). This shows a 14.86% increase in FERA emissions from FY22 and an 8.79% decrease from FY18. T&D losses only accounted for 0.76% of emissions in FY23. These emissions remained relatively consistent over previous years with a 5.65% decrease in T&D losses from FY18 to FY23 (Table 4).

Table 4. FERA and T&D loss emissions sources and values (MT eCO_2) from FY18 to FY23

Emissions Source Category	FY18	FY19	FY20	FY21	FY22	FY23
FERA	15,135.93	13,366.89	10,520.56	12,531.29	12,019.74	13,805.94
T&D losses	498.36	430.94	408.05	397.99	482.66	460.90

5.4 COMPARISON WITH OTHER UNIVERSITIES

In an effort to gauge Duquesne University's GHG emissions, Duquesne was compared to other universities affiliated with the Pittsburgh Higher Education Climate Consortium (HECC). HECC is a partnership between 10 Pittsburgh institutions of higher education that aim to reduce greenhouse gas emissions. The most recent GHG inventories from two HECC-affiliated universities - Carnegie Mellon University and the University of Pittsburgh - were compared to Duquesne University.

Duquesne University ranks the lowest GHG emissions per full-time equivalent (FTE) user behind the other universities selected for this comparison. It should also be noted that Duquesne is the smallest university on the list in terms of FTE users and is geographically the smallest campus on the list, with an area of only 49.5 acres.

Table 5. Recent GHG emissions of Duquesne University and other HECC universities

Institution	Reporting Year	Campus Area (Acres)	Total FTE Users	Total GHG Emissions (MT eCO_2)	GHG Emissions per FTE (MT eCO_2)
Carnegie Mellon University	FY2021	157	17,386	38,785	2.23
Duquesne University	FY2023	49.5	9,673	60,745	6.28
University of Pittsburgh	FY2022	157	40,600	173,006	4.26

5.5 METHOD CHALLENGES

One of the most considerable challenges of compiling this report involves the methodology and assumptions that are required when considering travel-related emissions. For example, in 2018 Duquesne University produced a parking memorandum that outlines employee and student commuting behavior, including the average number of commuter days per week.[17] This method does not take into account the distance that employees and students travel to and from the University. Additionally, a recent inventory has not been completed, and therefore, these values may not accurately represent FY23 commuting activity. Significant changes in commuting behavior that occurred mid-way through FY20 and FY21 associated with hybrid learning during the COVID-19 pandemic were unable to be accounted for in SIMAP's methodology.

Another limitation to calculating Duquesne's travel-related emissions is a lack of flight information for study abroad programs. Through Duquesne's Center for Global Engagement, we are provided with the destinations of study abroad programs and the number of students that attend each program. Information regarding flight layovers is not provided, however. As a result, it must be assumed that all flights are direct, thereby underreporting the actual number of air miles flown.

There is also much room for error when documenting athletic travel in addition to uncertainty regarding general air travel and study abroad reporting methods. At the current time, there is no direct contact with the Athletics Department when reporting ground and air miles. Rather, information is obtained from online schedules, and assumptions are made to determine whether a trip involved ground or air travel. Fortunately, the total amount spent on athletic air travel was provided through the Procurement and Payment Services in FY23, and therefore, confidence in reported athletic air miles has increased. However, without direct contact with the Athletics Department, there is much uncertainty in the reported bus miles. Thus, it is suggested that contact with the Athletic Department is made to improve bus travel mileage accuracy on future reports.

5.6 COVID-19 AND ITS EFFECT IN EMISSIONS

The novel coronavirus (COVID-19) began as a small, isolated cluster of pneumonia cases in the city of Wuhan, China. The virus quickly spread around the world leading to over one million global cases only four months after its identification.[13] Due to the possible severity of COVID-19 and its initial rapid spread, lockdowns were ordered in various locations worldwide. On March 11, 2020, Duquesne University began the process of transitioning students to online learning, and by March 15th all students residing on campus were asked to return home. As a result, nearly all campus activities were ceased immediately (see Appendix C for official announcement). Classes continued to be held remotely during the summer semester.

Campus activity increased slightly but still remained limited throughout FY21 (see Appendix C for more information regarding the Fall 2020 semester). Throughout FY23, campus activity reached levels similar to before the COVID-19 lockdowns of 2020. Changes can most notably be observed in study abroad and directly financed travel emissions. Study abroad travel increased from no emissions in FY21 to 835.04 MT eCO_2 in FY22, and to 1,217.99 MT eCO_2 in FY23. In addition, directly financed travel saw a 199.02% increase from FY21 to FY22, and further increased by 4.44% in FY23.

5.7 EXISTING ENVIRONMENTAL ASSETS

5.7.1 Physical Facilities

Duquesne University has a cogeneration facility that is responsible for keeping GHG emissions low. This facility uses natural gas to produce electricity for nearly all of campus. Additionally, the facility's heat recovery system captures the steam produced by burning natural gas, which heats the University in return. This facility also contributes to an on-campus ice-making process, which provides cooling to university buildings. In addition to housing a cogeneration facility, the Duquesne University Facilities Management department has continuously improved building efficiency throughout campus. For example, renovations to the heating, ventilation, and air conditioning (HVAC) of 17 buildings provide one means of lessening the University's energy needs. The University has implemented a direct digital control (DDC) system that utilizes a variable air system to minimize energy usage during off-peak times. Another ongoing project includes improvements and upgrades to the University's lighting systems. While students were away from campus during the COVID-19 lockdown, Facilities Management replaced over 15,000 fluorescent light bulbs on campus with LEDs. Duquesne has also installed LED bulbs in all of the campus street lights and ballasts. The continued conversion to LED lighting will reduce electrical needs and the amount of purchased electricity required by the University. According to the 2021-2023 Institutional Master Plan, "the University is committed to applying sustainable practices to major new building and renovation projects where financially feasible. Going forward, this will include consideration of the Passive House criteria for building design."[7] By ensuring that future construction and renovation projects are green, the University will be able to reduce GHG emissions.

5.7.2 Institutional Approaches

Duquesne has a multitude of initiatives that support GHG emission reductions. First, the University is a member of the Association for the Advancement of Sustainability in Higher Education (AASHE), an organization described as a national coalition of universities and colleges dedicated to environmental responsibility.[16] As a member of AASHE, the University completes an annual STARS (Sustainability Tracking, Assessment, and Rating System) report. This report - which ranks Duquesne's sustainability efforts with those of other universities - provides a unique tool for Duquesne to assess sustainability strengths and weaknesses. The University has implemented several sustainable initiatives since completing the first STARS report in 2019. As a result, Duquesne's sustainability ranking has improved from a Bronze ranking in 2019 to a Silver ranking in all years following.

In addition to Duquesne's membership in AASHE, several departments on campus promote sustainability. The Center for Environmental Research and Education (CERE), a department within the School of Science and Engineering, focuses its education and research on critical environmental problems. Additionally, the Palumbo-Donahue School of Business One-Year MBA program (formerly the MBA in Sustainable Business Practices) trains future business leaders to integrate responsible climate approaches into sound economic management. This program is ranked 2nd in the world for its commitment to environmental and social issues by Corporate Knights.[3] Duquesne's computer store works to recycle and repurpose old electronics through their buy-back program.[8] The University also partners with Waste Management Inc. landfill in Monroeville, PA to dispose of waste and recover methane produced during decomposition to generate electricity.

Furthermore, a variety of on-campus organizations, including Net Impact, Evergreen, and the Ecology Club, help to promote and implement sustainable practices and environmental stewardship. Duquesne partners with organizations such as Uptown Partners of Pittsburgh, Pittsburgh 2030 District Challenge, and 3 Rivers Quest to maintain green practices in conjunction with other organizations in the area.[9,18,20] Duquesne also manages an on-campus garden through faculty and student volunteers. Since its creation in the spring of 2021, the garden has increased in size and popularity. The vegetables grown in the garden are donated to local food banks including the McAnulty College Community Food Pantry, Jubilee Soup Kitchen, and Food Rescue 412. Duquesne University also has a University Sustainability Committee, ratified in July 2022, which promotes the University's sustainability efforts in building a resilient campus by fostering opportunities for multidisciplinary engagement across academic units, facilities, and university leadership.

6. RECOMMENDATIONS

6.1 RENEWABLE ENERGY

Duquesne University has implemented renewable energy in a variety of ways across campus. During the construction of Des Places Living Learning Center, solar panels were installed on the rooftop to provide supplemental electrical generation to the building. The University also purchases RECs to promote renewable energy generation throughout the U.S., while offsetting the decreasing amount of purchased electricity required for campus operation. However, purchased electricity surpassed REC purchasing for the first time in this report's history in FY22, and this exceedance continued in FY23. Therefore, the University could look into purchasing additional RECs in future years to cover this difference. In addition to these uses of renewable energy on campus, there are more options that should be implemented to promote renewable energy at Duquesne. Some of these ideas include (1) purchasing electricity from renewable energy suppliers, (2) purchasing RECs generated in the southwest region of Pennsylvania to promote renewable energy expansion and innovation in the area, and (3) implementing more renewable energy sources directly on campus such as solar tables, solar-powered sidewalk lights, and additional solar panels on rooftops.

6.2 IMPROVED EFFICIENCY

To further reduce GHG emissions at the University, buildings' energy and water efficiency should be improved. The Facilities Management department recently renovated the HVAC systems in a majority of campus buildings. The new control systems will better regulate energy consumption in the buildings and will decrease emissions by requiring less energy for operation. Another improvement to building efficiency at Duquesne is the installation of LED lighting and rain barrels to reduce stormwater runoff. Facilities Management also installed a bioswale on campus in the spring of 2022. Despite these improvements, the University needs to take further steps to improve overall campus efficiency for newly acquired campus buildings and old buildings in order to reduce their electrical, heating, and cooling needs. Improvements should include updated double-paned windows, installing new insulation, LED motion-activated lights, and further renovating the HVAC systems. To improve water efficiency the University could consider updating faucets to be automatic and replacing toilets with 1.28 gallons-per-flush high-efficiency toilets for all campus facilities, as well as the installation of bioswales, rain gardens, or porous pavements. These advances would decrease stormwater runoff and overall energy use by the University as well as reduce GHG emissions. Additionally, further improvements to the cogeneration facility's efficiency and capacity could have the potential to reduce GHG emissions by producing more of the required electricity for campus while decreasing the amount of purchased electricity from the grid.

6.3 TRANSPORTATION

Commuting has continually been an aspect of Duquesne's GHG emissions that could be improved upon. Firstly, an updated parking memorandum should be completed to ensure that commuting activity is accurately being portrayed in inventory data. There are also various ways for faculty, staff, and students to reduce their carbon footprint by driving vehicles with higher fuel efficiency or electric vehicles, carpooling with peers, or using alternative transportation such as bicycling, public transit, or utilizing the campus shuttle bus. In FY22, the University began offering discounted bus passes for Duquesne students. However, Duquesne has a responsibility to improve students' knowledge of alternative transportation in Pittsburgh and provide accessible shuttle options to other areas in Pittsburgh. Additionally, the University should consider installing electric charging stations in campus parking garages and provide incentives for students to use alternative transportation methods.

6.4 OFFSETS

Offsets provide an opportunity for Duquesne to counteract some of its GHG emissions from Scope 1 and Scope 3 sources. FY18 was the first year in which composting was recorded as an offset, and the recording of composting has continued for this report. Although small, this offset may incentivize University officials to improve their composting methods and educate students on its importance. A Totemic Solutions food dehydration system was installed in Trinity Hall during the 2023-2024 academic year. The system uses heat and agitation technology to remove the water from any type of organic food waste, reducing the volume by 80% to 90%. The food waste is also sterilized and can be beneficially reused. Another way to offset Scope 1 and Scope 3 emissions could include the implementation of afforestation and reforestation projects. Duquesne has been successful in achieving Tree Campus designation for three consecutive years (2021, 2022, and 2023), but further actions in this area can still be taken. Alternatively, the University could look to counteract travel-associated emissions by purchasing carbon offsets through

vendors. For example, *Terrapass*, a carbon offset vendor, sells offsets to counteract GHG emissions produced due to flight and ground travel.[15]

7. CONCLUSION

In FY23, Duquesne University emitted 60,745.22 metric tons of carbon dioxide equivalent (MT eCO_2), equating to 7.51 MT eCO_2 per weighted campus user (WCU). This is a 11.97% increase in total emissions compared to FY22. It is likely that the decrease in emissions observed from FY19 to FY20 was likely a result of COVID-19 lockdown measures, and subsequent increases in emissions from FY20 to FY22 were due to the return of students on campus. Despite these limitations to reporting, total emissions remain lower than pre-lockdown, with a 7.67% reduction observed between FY18 and FY23. However, in FY23 the emissions per weighted campus user exceeded pre-lockdown levels for the first time, with a 4.08% increase observed between FY18 and FY23. Many campus activities are at capacities similar to pre-COVID-19 lockdown levels, particularly athletics and study abroad travel.

Consistent with previous GHG inventory reports, the cogeneration facility was responsible for the majority (56.14%) of campus emissions in FY23. This was followed by FERA, which accounted for 22.73% of emissions in FY23, and student and employee commuting, which accounted for 18.45% of emissions in FY23. Finally, purchased electricity accounted for 1.26% of emissions in FY23; however, Duquesne's purchasing of RECs mostly offset these emissions. In past reports, purchased electricity accounted for a larger portion of total emissions, but the addition of FERA has shifted this dynamic. Minor emission sources, such as the campus fleet, fertilizer, wastewater, paper purchasing, and solid waste, each account for less than 1% of total emissions.

There are several recommendations Duquesne University can follow to reduce their carbon footprint in coming years. Some of these recommendations include (1) increasing the purchasing and use of renewable energy, (2) improving the energy and water efficiencies of campus facilities, (3) providing alternative transportation options for commuters and/or incentivizing them to utilize sustainable transportation, and (4) increasing composting or considering additional offsets that will help neutralize Scope 1 and Scope 3 GHG emissions. Global concern regarding the reduction of GHG emissions will continue to impact the University as the institution continues to grow. However, if Duquesne makes sustainability a key mission by following the Catholic commitment to "the integrity of creation," campus GHG emissions can be diminished.[5] Continuation of environmental efforts will drive Duquesne University towards a sustainable future, one step at a time.

Appendix A: Acronyms

- AASHE – Association for the Advancement of Sustainability in Higher Education
- AR - Assessment Report
- BTS - Bureau of Transportation Statistics
- CERE – Center for Environmental Research and Education
- DDC - Direct Digital Control
- EIA - Energy Information Administration
- FERA – Fuel- and Energy-Related Activities
- FTE - Full-Time Equivalent
- FY – Fiscal Year
- GHG – Greenhouse Gas
- HECC - Higher Education Climate Consortium
- HVAC – Heating, ventilation, and air conditioning
- IPCC - Intergovernmental Panel on Climate Change
- kWh – Kilowatt hour
- MCF – Million cubic feet
- Mlbs – Million pounds
- MMBTU – Million British thermal units
- $MTeCO_2$ – Metric tonnes carbon dioxide equivalent
- MWh – Megawatt hour
- RECs – Renewable Energy Credits
- SIFL – Standard Industry Fare Level
- SIMAP – Sustainability Indicator Management & Analysis Platform
- STARS - Sustainability Tracking, Assessment and Rating System
- T&D - Transmission & Distribution
- WCU – Weighted Campus User

Appendix B: GHG Inventory Data from FY18 to FY22

Emissions Source	FY18	FY19	FY20	FY21	FY22	FY23
Co-gen Electricity	19.07	18.94	12.13	14.67	12.01	14.50
Co-gen Steam	35,663.47	31,890.11	25,168.99	29,659.14	28,324.85	32,647.20
Other On-Campus Stationary	1,702.33	1,106.39	804.06	1,277.77	1,351.20	1,438.19
Direct Transportation	130.04	120.25	127.98	108.47	81.29	138.25
Fertilizer & Animals	1.00	0.84	0.84	0.48	2.60	2.00
*Purchased Electricity	9,513.74	7,868.45	7,150.86	6,974.45	8,608.17 (1,005.92)	8,219.76 (766.81)
Faculty Commuting	1,189.88	1,396.59	1,344.50	1,309.99	1,297.57	1,258.92
Staff Commuting	2,247.09	1,791.09	1,688.22	1,601.26	1,523.96	1,570.89
Student Commuting	3,636.87	6,432.18	6,226.54	5,977.98	5,379.16	5,379.16
Directly Financed Air Travel	2,139.31	1,880.21	3,898.44	256.42	1,472.72	1,547.88
Other Directly Financed Travel	278.12	251.06	189.84	102.52	230.60	231.09
Study Abroad Air Travel	2,772.77	1,891.03	1,946.18	-	835.04	1,217.99
Solid Waste	190.97	150.59	150.77	97.22	122.81	134.28
Wastewater	174.24	158.88	121.58	98.21	106.80	121.39
Paper Purchasing	20.97	17.13	13.20	14.57	11.61	9.82
FERA	15,135.93	13,366.89	10,520.56	12,531.29	12,019.74	13,805.94
T&D Losses	488.30	422.86	400.21	390.33	473.39	460.90
Market-based total (includes REC purchasing)	**65,790.56**	**60,895.19**	**52,621.88**	**53,441.06**	**54,252.16**	**60,744.71**
Location-based total (does not include REC purchasing)	**75,304.10**	**68,763.49**	**59,764.90**	**60,414.77**	**61,703.76**	**68,198.16**

**Purchased electricity was entirely offset by Duquesne's REC purchasing over the past four fiscal years. This offset is accounted for in the market-based totals, but not in the location-based total. However, in FY22 and FY23 purchased electricity was not completely offset. The market-based purchased electricity value for FY22 and FY23 is found in parentheses.*

(All values were calculated using the 2022 version of SIMAP emissions factors.)

Appendix C. University Statements Regarding COVID-19 (Coronavirus)

Updated Information as of March 19, 2020

Students

At around 5 p.m. today, Pennsylvania Governor Tom Wolf ordered the closure of all non-life-sustaining businesses by 8 p.m. today, March 19, 2020. The governor's order does not categorize colleges and universities as life-sustaining businesses, with the exception of staffing the needs of our student residents who remain in our residence halls who have no other housing option.

As a result, **all University operations not related to the feeding and housing of the students remaining in our residences are supposed to cease all *on-campus* operations effective 8 p.m. tonight, March 19, 2020.**

IT IS IMPERATIVE THAT ALL STUDENTS WHO ARE ABLE TO LEAVE CAMPUS DO SO IMMEDIATELY. We recognize that those families at a distance may need time to complete this move. Please note that Governor Wolf has indicated that enforcement of this order will begin at **midnight on Saturday**. Therefore, time is of the essence in moving out of the residences.

Only students with no other safe housing option should remain on campus as we wind down operations dramatically.

Please share or update your plans for departure as soon as possible with the Office of Student Life through the web forms.

IMPORTANT:

- Because our faculty have planned well and transitioned to online delivery of courses, **classes will continue**.
- **Library services will remain available online**, as will other academic support provided remotely.
- All **academic and student services** offices will be open, staffed remotely. Phone numbers and emails for those offices, available on our website, all have been forwarded so that service can continue.
- **Administrative offices** will be open with staff working remotely.

Efforts will continue to ensure students intending to leave are able to do so, with full support of the University.

The state will take enforcement actions for non-compliance with this order starting at 12:01 a.m. on Saturday, March 21. Those businesses found non-compliant "will forfeit their ability to receive any applicable disaster relief and/or may be subject to other appropriate administrative action . . . includ[ing] termination of state loan or grant funding, including Redevelopment Assistance Capital Project (RACP) grant funding and/or suspension or revocation of licensure for violation of the law."

The Governor's measures are intended to slow the spread of COVID-19 and therefore align with the measures Duquesne already has adopted.

Employees

At around 5 p.m. today, Pennsylvania Governor Tom Wolf ordered the closure of all non-life-sustaining businesses by 8 p.m. today, March 19, 2020. The governor's order does not categorize colleges and universities as life-sustaining businesses, with the exception of staffing the needs of our student residents who remain in our residence halls and who have no other housing option.

As a result, **all University operations not related to the feeding and housing of the students remaining in our residences are supposed to cease all on-campus operations effective 8 p.m. tonight, March 19, 2020.**

The state's enforcement will begin at 12:01 a.m. on Saturday, March 21. **Employees who wish to retrieve items from their offices that are essential to their ability to work remotely must do so by noon tomorrow, March 20, 2020.** Individuals will not be able to return to their offices for an indefinite period of time.

All administrative offices and academic offices must be prepared to move to remote work immediately. **No employees are to come to campus offices** other than those identified as proving for the needs of our student residents.

Efforts will continue as possible to ensure students intending to leave are able to do so, with full support of the University.

Vice presidents and deans will be in contact with directors, department heads and other supervisors regarding business continuity of their respective units. Remote working will continue per plans already established, for those whose work permits such arrangements.

Once you have removed your essential belongings, DO NOT RETURN TO YOUR CAMPUS OFFICE UNTIL NOTIFIED.

The state will take enforcement actions for non-compliance with this order starting at 12:01 a.m. on Saturday, March 21. Those businesses found non-compliant "will forfeit their ability to receive any applicable disaster relief and/or may be subject to other appropriate administrative action . . . includ[ing] termination of state loan or grant funding, including Redevelopment Assistance Capital Project (RACP) grant funding and/or suspension or revocation of licensure for violation of the law."

The governor's measures are intended to slow the spread of COVID-19 and therefore align with the measures Duquesne already has adopted.

Updated Information as of June 24, 2020

I'm writing to share with you some specific details regarding our updated plans for the fall 2020 semester at Duquesne. Now that we've received input from students and their families, faculty, staff, and other members of the University community, we are able to provide you with a clearer report on key decisions even before the full Master Plan for fall 2020 is presented to the University's Board of Directors for approval on Monday, June 29.

More than 6,000 people—faculty, staff, students, and parents—participated in the surveys we conducted in the last few weeks. Your opinions and suggestions proved extremely helpful to the Master Plan team. We also consulted with leaders in Duquesne's Student Government, the Faculty Senate, the Staff Advisory Council, our Parents Advisory Council, and various others either through the work of the Task Forces or in other efforts. We listened carefully and the decisions we have made reflect the overwhelming preferences of all concerned and match with Pennsylvania Governor Tom Wolf's guidelines.

While we continue to finalize the Master Plan for fall 2020, our efforts have progressed to the point that we can provide several key specifics to help you make relevant plans and preparations.

Last week, my leadership team and I met with the executive committee of the University's Board. The decisions outlined below were approved:

DUQUESNE WILL RE-OPEN FOR FALL 2020

All constituents showed overwhelming support for having students **return to campus for the fall semester** and for classes and student life to operate in the **hybrid/blended model** outlined in my previous communication.

Classes will start on Monday, August 24, as originally planned. Students who wish to take courses remotely for any reason will be able to do so. Students who wish to take face-to-face courses in a hybrid fashion, on campus, will be able to do so. New protocols are being finalized that will ensure that these classes are conducted safely, with appropriate social-distancing and de-densification measures.

Living Learning Centers—the residence halls on campus—will be open, de-densified, and operating with new safety protocols. To ensure no students currently signed up for an on-campus residence will be turned away, the University has leased back St. Martin Hall (which had been acquired by a third-party partner and was to have been closed for renovations this academic year) to expand on-campus housing capacity. The Living Learning Centers will be arranged to lessen the number of students in each building and hygiene protocols will be implemented.

MOVE-IN AND ORIENTATION

To ensure safety for the arrival of all students and provide a positive orientation experience for freshmen, Duquesne has adjusted the **arrival schedule** as follows:

- **Freshmen will be able to move in** starting Sunday, August 16, and continuing through Tuesday, August 18. This early arrival will help to ensure social distancing during move-in and also provide time for freshmen to acclimate to campus, purchase books, and settle in prior to the start of classes.
- Freshmen also will have the opportunity to engage in various small-group orientation activities offered in the days leading up to the official freshman **orientation** on Wednesday, August 19. All events will be adapted to meet health and safety guidelines of the Master Plan.

- All upper-class students living on campus will be able to schedule times to **place their belongings** into their residences early, starting on Saturday, August 1, and continuing through Saturday, August 15. Upperclassmen can then move in completely during the times outlined below. This process of moving belongings in early provides for greater safety and for families to avoid the denser conditions of typical move-in days.
- Upperclassmen who were unable to participate in early move-in may select time slots to complete their move-in from Friday, August 21, until Sunday, August 23, after Mass of the Holy Spirit.
- Move-in times will begin at 8 a.m. and end at 8 p.m. daily and be segmented in three-hour time slots: 8 – 11 a.m., 11 a.m. – 2 p.m., 2 – 5 p.m., and 5 – 8 p.m.
- In total, upperclassmen will have 70 different blocks to select from.

Overwhelming support was shown for our ensuring that **coursework ended prior to the Thanksgiving holiday**. This will ensure that students do not have to go home and then return to campus, which could increase the risk of potentially carrying infection or exposing others.

In order to accomplish this without a serious overhaul of the schedule that would have entailed Saturday classes or extended days—which students did NOT support—**the University will hold classes on Labor Day as well as Monday, November 23, and Tuesday, November 24,** prior to Thanksgiving break. We confirmed that by making these adjustments, we can meet the standards established by our accrediting body while allowing students to return home on Wednesday, November 25, having completed the coursework necessary for the semester.

To ensure students will have sufficient time to study and enjoy a true break with families over Thanksgiving, the academic calendar will build in **three reading days** immediately after Thanksgiving, from Monday, November 30, through Wednesday, December 2, for studying. **Final exams** will then occur on Thursday, December 3, and Friday, December 4, followed by the weekend for additional study, and then continuing from Monday, December 7, through Friday, December 11. Winter commencement will occur as scheduled on Friday, December 18.

Calendars for the School of Law and the School of Pharmacy are unchanged.

Since Duquesne employees will be working on Labor Day, the University will identify another day off for employees, in consultation with the Staff Advisory Council.

SAFETY MEASURES

The University already has prepared in numerous ways to ensure we can operate with proper social distancing protocols in place. Students should know that it will be mandatory and a matter of student conduct policy to **wear masks in all public spaces**. Faculty and staff will have to adhere to the same policy. Many other safety measures will be detailed in our Master Plan. These specifics will be shared with you, in early July, after the plan is approved by the University's Board of Directors at its June 29 meeting.

As we complete this planning process, however, I thought it was important to ensure you knew about these key decisions, understanding that it is time for students and families, as well as faculty and staff, to plan for the fall. I continue to be grateful for the great support and goodwill everyone has shown throughout this process.

I look forward to updating you again soon. In the meantime, I hope that you and your families remain safe and healthy. Most of all, I look forward to an excellent semester when Duquesne University re-opens in the fall, thanks to all of your input and collaboration.
Warm regards,
Ken Gormley

Appendix D: Previous GHG Inventories

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