

GANNETT FLEMING

Landlord Engagement & Emissions Calculations



Prepared by the
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Gannett Fleming Leased Office Emissions Report

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School of Sustainability, Arizona State University

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Executive Summary

The Arizona State University (ASU) Masters of Sustainability Solutions (MSUS) program connects student teams with real-world clients to solve real-world sustainability problems as a part of the students' Culminating Experience in the program. This report details the project assigned to our group, the Emissions Data Detectives (EDD), in partnership with our client, Gannett Fleming. This project focuses on calculating greenhouse gas (GHG) emissions from the client's leased office spaces across the United States and Canada.

In excess, GHGs trap heat in the atmosphere, negatively affecting global air quality and human health. In addition, top companies similar to our client are already disclosing their emissions, new legislation is aiming to require such reporting, and stakeholders are trending to gravitate towards firms measuring and reducing their environmental impact. During the first semester of this project, we noticed that Gannett Fleming lacked data on specific utility usage in their leased office spaces, as not all data is shared, standardized, or robust enough for accurate emissions calculations.

After conducting a landscape analysis where group members interviewed companies facing a similar problem, the team identified best practices for addressing this issue. Such practices included using mixed methods for calculations based on data availability, leveraging organizational connections for efficient communication with landlords, creating custom communication plans, and using concise language with landlords. The team also conducted an sTOWS analysis to understand better how our research could best be applied to Gannett Fleming's problem. From there, we developed a project plan that included an Invitation to Participate and Data Request to collect the necessary data. Next, the team outlined strategies for emissions calculations, including applying calculations from the GHG Protocol and compiling all calculations in a navigable spreadsheet.

Greenhouse gas calculations were made using a mix of asset-specific data from the Data Request forms and average data from the EPA estimates using equations from Scope 3, Category 8, or Leased Upstream Assets per the Greenhouse Gas Protocol. Emissions were categorized under Scope 3 since the client has no control over the leased offices, and the control approach was used. Final results showed that the emissions calculated for the 8 offices where asset-specific data was used combined with the 31 offices where average data was used totaled 2,390 metric tonnes of CO₂e for FY2022.

In order to ensure that this project can be helpful to Gannett Fleming long-term, we came up with three main deliverables including a GHG spreadsheet including all calculations and findings, a GHG roadmap with simplified step-by-step instructions of our methodology, and a Sustainable Leasing Policy information to ensure the client's emissions reduction goals are communicated and considered in the decision-making process for future lease agreements.

This version contains results that have been edited to ensure client confidentiality. Offices have been anonymized, and numbers used are not representative of actual emissions findings.

Introduction

Client: Gannett Fleming

Gannett Fleming wants to expand their reporting of greenhouse gas (GHG) emissions. Founded in 1915, Gannett Fleming is a design, engineering, and construction company with offices across the United States, Canada, and Qatar. They have worked on many projects, from flood control and water resource engineering to constructing transit systems (Smith et al., 2022). These projects span 65 countries with over 2,500 employees (Smith et al., 2022).

As a company that designs built infrastructure, it mainly emits GHGs through its administrative and operational activities. Gannett Fleming has reported their emissions from vehicle travel with personal vehicles, rental cars, and corporate fleet vehicles, as well as their electricity and natural gas usage at their owned locations (Sustainability, 2022). With sustainability as a core goal, Gannett Fleming continues to scout out methods to reduce their GHG emissions. In partnering with Arizona State University's (ASU) Masters of Sustainability Solutions program, Gannett Fleming wants to ascertain the company's leased office GHG emissions, which will be analyzed and reported.

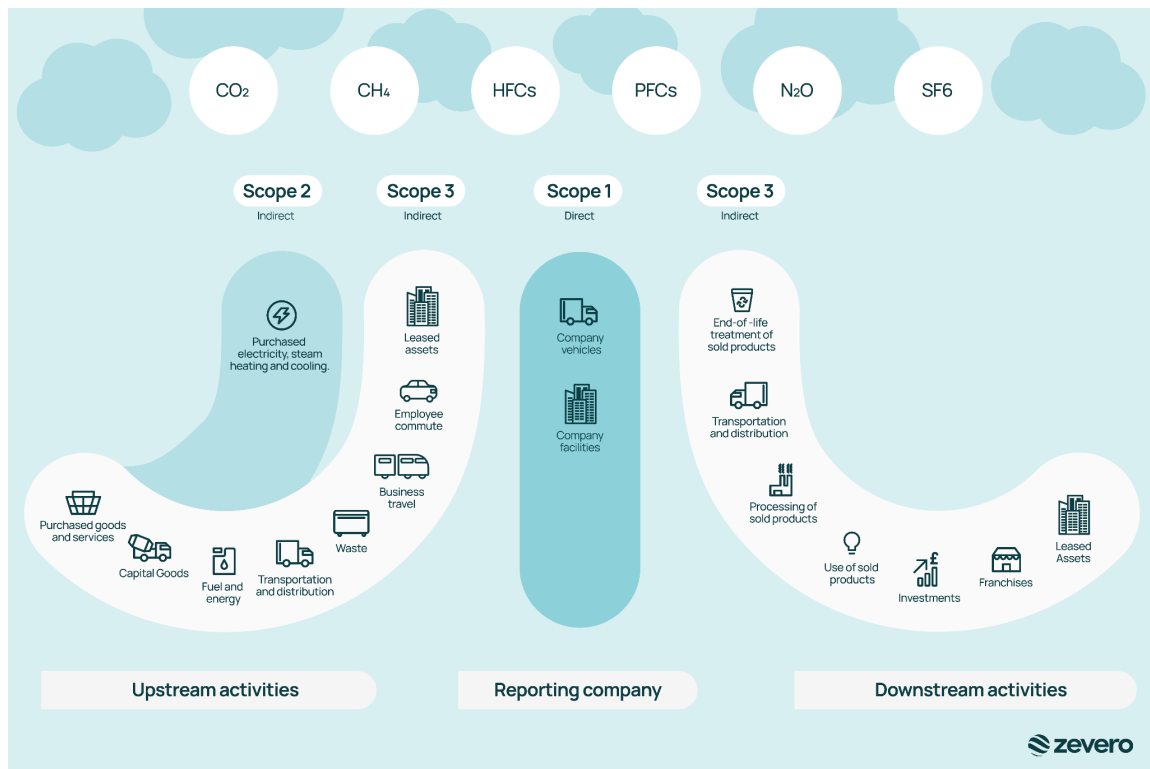


Image 1 (Scope 1,2, and 3 emissions, n.d.)

Goals & Scope

Our team collaborated with Gannett Fleming to establish effective communication methods with landlords and property managers regarding their buildings' emissions. We ensured that emissions calculations were conducted according to globally recognized standards such as the Carbon Disclosure Project (CDP), Global Reporting Initiative (GRI), and Sustainability Accounting Standards Board (SASB) to guarantee the reliability of data. This report explains how Gannett Fleming can gather and calculate emissions data from leased offices in various countries and which standards to follow. It also outlines the GHG Protocol, the global standard for measuring and managing greenhouse gas emissions. We have included a calculation spreadsheet created by the EPA, which will help replicate this project in the future. Additionally, we showcase our process of collecting data from leased offices, including sending out invitations to participate and data requests using established best practices. Finally, we discuss the next steps and considerations for increasing stakeholder engagement.

Project Background

Our Problem

For this project, Gannett Fleming has asked us to help calculate the greenhouse gas emissions of their leased office spaces. In order to calculate the emissions of Gannett Fleming's offices, we need data that specifies utility usage in each building site leased by our client. Currently, the relationship between landlords and office managers is almost exclusively transactional, so this specific data was not shared, standardized, or robust enough to make any accurate or widespread calculations. For some offices, utility data was billed by our client as a flat fee. For others, the utilities were itemized, and for a few of the sites, utilities were submetered and tracked. Additionally, no language in the leasing contracts held landlords accountable for tracking and reporting utility usage. Therefore, a new communication pathway was needed to facilitate this data sharing. Our job as the student team will be to create this foundation and collect needed data to do emissions calculations.

Our Investigation

First, we conducted a landscape analysis to assess how other companies manage their relationships with landlords, calculate GHGs, and report emissions. In total, we interviewed ten companies that have faced similar problems to ours and have found successful solutions. Of these, six were chosen due to their applicable guidance on reporting standards, and the other four were chosen due to their knowledge base as consulting firms. We learned from the consulting firms that using the GHG Protocol, a set of internationally recognized accounting standards, was the most reliable source for driving our emissions calculations. We also learned that a lack of robust data is a problem consistently observed for leased office spaces (Harper, 2022). From our reporting firms, we learned that using a mixed use of calculation types based

on available data will be the most helpful strategy for creating the most accurate emissions data (*GHG Emissions Calculation Tool*, 2021). We also learned through our interviews that landlords are reluctant to perform tasks outside their established job description (Fridel, 2022).

From these findings, we derived a list of four best practices to help guide our strategy. These include:

1. Apply mixed use of calculations based on data available to account for the mixed billing methods.
2. Leverage already-established organizational connections to bridge new conversations between landlords and property managers efficiently.
3. Create custom communication plans with stakeholders to optimize collaboration.
4. Use concise, straightforward language with landlords to maintain a willingness to participate long-term.

Next, we took an inventory of the Threats, Opportunities, Weaknesses, and Strengths of our client through a sustainability lens, also known as an sTOWS analysis. We grounded our extensive research and recommendations into a project plan. Our client's main strengths and opportunities focus on the network of property managers within the organizational framework of Gannett Fleming and the open communication, education, and consistent engagement that can be leveraged to introduce a new communication pathway between stakeholders.

Our Plan

Finally, through our landscape analysis, best practices, and sTOWS, we planned our landlord engagement and GHG emissions calculation strategies. The strategy includes an Invitation to Participate, a Data Request sent to offices willing to participate in providing billing data, and intentional measures to ensure an effective hand-off of the project after completion.

Invitation to Participate: In this step, we will provide Gannett Fleming with a form to disseminate to their landlords. This form will assess landlords' availability and interest in sharing building data and allow them to engage with our project voluntarily. An additional data sheet will be created for the company to map out who is in contact with the landlords/property managers.

Data Request: Once we identify who the available property managers are, they will be sent a data request. The request form will be concise and easy to complete. There will be a field to fill out natural gas and electricity consumption for all 12 months of 2022, with suggestions on where to find this information. Other questions include utility providers, sustainability goals, and future collaborations.

Hand-off: We will then develop a set of deliverables to ensure this project can be useful to Gannett Fleming long-term. The plan addresses emissions calculations, including using equations for Leased Upstream Assets, combining mixed data sets, and compiling all calculation information in a spreadsheet for our client to use as a foundation for future emissions reporting. One of the deliverables is a GHG Roadmap that Gannett Fleming can follow to collect emissions data in the future. The flowchart will aid in understanding the level of communication

between the leased office and the company and the next steps that should be taken in order to get information from the landlord/property manager when information is not already available. The other deliverable addresses additions that can be made to contracts and leasing language to add further communication pathways between Gannett Fleming and landlords.

Leased Upstream Assets: Applying calculations from the GHG Protocol, precisely Scope 3, Category 8 (Leased Upstream Assets), we were able to begin calculations for our client's leased office spaces.

GHG Spreadsheet: Once all consumption data available is collected, it will be assembled into a master spreadsheet to begin emissions calculations. We will use the average-data method to calculate emissions for all leased offices. This step will use EPA and IEA data for the natural gas and electricity emission factors. We will use the asset-specific method for the spaces that provide us with electricity and natural gas data. The spreadsheet covers the groundwork needed to calculate emissions so that Gannett Fleming can focus on gathering future emissions numbers for years to come.

Our first semester was spent understanding our client, identifying the central problems, and developing a plan to strategize effective and thorough solutions. Our second semester was spent putting these plans into action and developing our main deliverables, as will be discussed further below.

Methodology

To execute a greenhouse gas assessment, it is critical to first set the boundaries of the system that will be measured. For this project, the organizational boundary of the system will be determined using the equity share approach (Ranganathan et al., n.d.). This was decided because Gannett Fleming has no ownership or financial control over the leased assets ("Categorizing GHG Emissions Associated with Leased Assets.", 2006). Due to this, the emissions from leased offices were categorized under Scope 3, Category 8: Upstream Leased Assets. Additionally, emissions associated with energy lost to the grid during transportation will be listed under Scope 3, Category 3. Overall, the emissions we are calculating are under Scope 3.

According to the WRI GHG Protocol, three pieces of data are required to calculate emissions for leased offices: activity data, emissions factors, and conversion factors (Ranganathan et al., n.d.). Activity data informs how much of a process or material was used within a given year to calculate emissions. These can be sourced from primary sources or using estimates. Activity data corresponds to meter readings or average intensities for electricity, natural gas, and purchased heating. Emission factors convert the activity data into respective emissions (CO₂, CH₄, N₂O). Emission factors will be constant for some activity data (natural gas, for example), while other activities, such as electricity, will significantly vary due to variations in energy mixes

from region to region. Lastly, conversion factors convert all GHGs into a single unit (CO₂e), allowing for better activity comparability. These calculations were structured and organized within a GHG Master Spreadsheet to consolidate all the data in one place. The master spreadsheet is available for Gannett Fleming access only but is referenced in this report. A template of the spreadsheet can be found here: [GHG INVENTORY TEMPLATE](#)

Activity Data

Activity data for Scope 3 Category 8 was divided into leased assets Scope 1 and 2—following the definition from the GHG Protocol. Scope 1 accounts for natural gas used in heating, while scope 2 includes purchased electricity, heating, and cooling. Additionally, as mentioned before, Scope 3 Category 3 was used to determine emissions related to electricity grid loss.

Two methods were used to source the activity data: asset-specific and average data methods. The GHG Protocol advises that although the asset-specific method is more accurate than average data, the latter can still be used whenever asset-specific data is unavailable (WRI, n.d.).

Average Data Method

Average data for electricity and natural gas was sourced from the Energy Information Administration's (IEA) 2018 Commercial Building Energy Consumption Survey (CBECS)—the most recently updated data available (US EIA, 2022). This survey provides average consumption intensities for various building types based on various factors. [Tables](#) (C15) and (C25) were used to source average office energy intensities for electricity and natural gas, respectively. For electricity, columns J (Northeast), K (Midwest), L (South), and M (West) in row 26 (Office) were used to narrow down the average intensity per square foot based on the subregion the office is located within. For natural gas energy intensity, we looked at columns J (Northeast), K (Midwest), L (South), and M (West) in row 26 (Office). Besides the United States, Gannett Fleming also has an office in Canada. Data from Statistics Canada (Statistics Canada, 2022) was used to find emission intensities for Canadian offices. Once average intensities per square foot were identified for each region, these were multiplied by each lease's square footage depending on the region the office was located in.

Asset-specific Method

The average-data method was used to calculate estimates for all leases. However, in the pursuit of more accurate estimates, primary, asset-specific data was sought out. Although Gannett Fleming has direct access to many of the offices' utility bills—providing primary data on electricity, heating, and natural gas—these were not accessible throughout the project due to legal barriers. Instead, property managers were contacted to access utility data. To do so, we received a list of all of Gannett Fleming's leased offices alongside their respective office administrators (Gannett Fleming staff). In coordination with the Gannett Fleming sustainability team, we drafted an introductory email alongside an Invitation to Participate (ITP) survey for the office administrators to send to their respective property managers. The goal was to simplify the

engagement process for office administrators while leveraging their pre-existing relationships with property managers.

The ITP was a 5 question survey aimed at gauging the interest and availability of property managers in providing primary utility data. The survey asked for the property managers' interest and availability to participate in the data request, name, email, phone number, and office they represent. In case they were not interested, the survey also asked why they were not interested and/or available and what could be done to increase their likelihood of collaborating with the project.

Following the ITP, [Data Request](#) forms were sent out to those that accepted to participate. The survey requests electricity and natural gas consumption data and A/C refrigerant use data. Respondents were asked to provide building size, occupancy rate, and electric and natural gas utility bills for all 12 months of 2022 for the metered building/area. Respondents were also asked whether the electricity for GF's leased office space was independently sub-metered. The survey then provided different options to submit the sub-metered electricity data. Finally, the survey requested information about the building's electricity data for metered buildings. The survey emphasized that the information collected would be kept confidential and that no specific information per office would be published. This Data Request was drafted based on GHG Protocol guidelines to ensure all data needed for calculations were collected (WRI, n.d.).

Once data was collected from property managers, activity data was calculated. Following guidance from the GHG Protocol (WRI, n.d.), yearly use was calculated for electricity (kWh), natural gas (SCF), and purchased heating (therms).

Emissions Factors & GWP

Emissions factors were required for all three activity data types: electricity, natural gas, and purchased heating. The EPA's Power Profiler Tool (US EPA, 2021) was used to source E-GRID emission factors for each subregion. Emission factors for natural gas are constant and were sourced from the EPA (US EPA, 2022). Purchased heating emission factors are utility-specific and must be sourced directly. Lastly, global warming potentials were sourced directly from the GHG Protocol document on "Global Warming Potential Values" (Greenhouse Gas Protocol, 2014).

Calculation Methods

Having all the data needed to calculate emissions, a spreadsheet was created to facilitate the process. We used the EPA's Power Profiler tool as the foundation of the spreadsheet because it already included all subregion emission factors and many of the equations needed to calculate emissions (US EPA, 2021). Office ID, city, state, zip code, and square footage were collected internally from Gannett Fleming's sustainability team for all leases. To calculate activity data for submetered utility information, we got the sum directly from reporting property managers or did the sum ourselves based on all 12 monthly bills received for 2022. These methods were applied

for electricity, natural gas, and purchased heating. For leases with primary utility data but not submetered from the rest of the building, the following equation from the GHG protocol (formula 8.2) was used to allocate the entire building's energy use to Gannett Fleming's lease (WRI, n.d.).

Calculation formula [8.2] Allocating emissions from leased buildings that are not sub-metered

energy use from leased space (kWh) =

$$\begin{aligned} & (\text{reporting company's area (m}^2\text{)}) / (\text{building's total area (m}^2\text{)}) \\ & \times \text{building's occupancy rate (e.g., 0.75)} \\ & \times \text{building's total energy use (kWh)} \end{aligned}$$

For average-data methods, multiplying the square footage by the CBECS intensity provided us with the estimated activity data.

After collecting all activity data, these data points had to be multiplied by their respective emission factors to calculate GHG emissions for the selected gases (CO₂, CH₄, N₂O). CO₂e, or CO₂-equivalent, of data points is also identified. This metric compares the global warming potential of different greenhouse gases, including CO₂, CH₄, and N₂O. To calculate CO₂e, the amount of each greenhouse gas emitted is multiplied by its global warming potential (GWP) factor, representing how much more effective the gas is at trapping heat in the atmosphere than CO₂ over a specified period.

Electricity emissions

After inputting the city and state of each office, the Region column automatically fills itself with the region that the office is located in (Northeast, Midwest, South, and West) based on the census. The E-GRID correlated to the specific region automatically populated in the E-GRID Subregions column. Each E-GRID subregion has different output emission factors. In order to calculate emissions excluding grid loss, the estimated electricity use of each office was multiplied by the E-GRID subregion output, emission factors, and .001 to convert megawatts to kilowatts. In order to calculate emissions associated with grid loss, which was 5.1% for each subregion, the estimated electricity use of each office was multiplied by the emissions output rate based on the greenhouse gas, then multiplied by the grid loss percentage as a decimal (.051), before all being divided by 1 minus the grid loss percentage over 100 (.949). The total emissions were calculated by adding the emissions excluding grid loss and emissions associated with grid loss. After finding emission rates for all three gases, these were converted into CO₂e.

Natural Gas Emissions

After calculating the activity data by asset-specific or average-data methods, this number is multiplied by natural gas emission factors sourced from the EPA. Because natural gas has a constant emission factor, only this number was used for all leased offices. After finding emission rates for all three gases, these were converted into CO₂e using the IPCC's GWP and added together.

Purchased heating (steam)

Purchased heating was only observed in one location. The units of consumption on the bills were in the traditional unit of mass for steam, Mlb. This was converted into pounds (1000 lbs/Mlb), pounds were converted into British Thermal Units or Btu (1194 Btu/lb), and Btu was converted into MMBtu (1000000 Btu/MMBtu). Then, the results in MMBtu were multiplied by the emission factors for steam. For CO₂, the emission factor is 66.33, for CH₄, the emission factor is 1.25, and for N₂O, the emission factor is 0.125. These were then converted into CO₂e.

Limitations

- Accuracy of data: The accuracy of the emissions data relies on the accuracy of the activity, emission, and conversion factors used. The average data method was used for some activity data, which may reflect something other than the actual energy consumption of specific leased office spaces. Additionally, some primary data sources, such as utility bills, were not accessible due to legal barriers. Therefore, the accuracy of the emissions data may be limited by the availability and accuracy of the data sources used.
- Variability of energy mixes: The energy mixes used to calculate emissions factors for electricity vary by region, and these factors may change over time. Using outdated emission factors may result in an over- or underestimation of emissions. Furthermore, the emissions associated with the energy lost during transportation on the grid may vary depending on the location and infrastructure of the energy grid. Therefore, the emissions associated with electricity consumption may be subject to variability and uncertainty.
- Lack of control over leased assets: Gannett Fleming has limited operational control over the hardware and efficiency of the leased assets. This means emissions from leased office spaces are categorized under Scope 3, Category 8: Upstream Leased Assets. Therefore, the accuracy of the emissions data may be limited by the availability and accuracy of data from third-party property managers.
- Potential biases: The survey method used to collect primary data from property managers may be subject to response bias, as some property managers may be more likely to respond than others. Additionally, the sample of property managers who responded may only represent some property managers for Gannett Fleming's leased

office spaces. Therefore, the accuracy of the emissions data may be limited by potential biases in the data collection process.

Results

The ITPs were open for responses beginning on January 25th. Responses were received from January 25th through February 10th, all between the timeframe of 6 am to 4 pm. EDD received 15 responses total to the Invitation to Participate. One was a test from Jessica to ensure that the ITP was functional and a selected test office. Two of the responses were duplicates, with two offices each filling out the form two times, and the answers were the same in both forms. This resulted in 12 authentic responses, a 31% response rate out of the 39 ITPs sent out.

All of the respondents selected 'Yes' to be willing to participate in volunteering building and utility data for 2022.

Data Requests were sent to the offices that agreed to participate on February 16th. Two property managers emailed back to inform us that they do not use natural gas or alternative fuel for heating. The Data Request was adjusted so that the natural gas section could be skipped if non-applicable.

After receiving completed data requests, we calculated asset-specific electricity and natural gas. As of April 26, 2023, we received four completed data requests and three emails to James with the needed data. One office directed us to Gannett Fleming, as the company is billed with electricity directly, and invoices were received from Gannett Fleming. As a result, we obtained complete office data from eight offices, resulting in a 66.67% response rate for the 12 data requests sent out. Responses came almost entirely from the east coast, though associated eGRIDs differed. Three had their electricity submetered, and five did not. Two offices used natural gas, one used district steam, and the rest used electricity for heating.

Emissions calculations were done on the aforementioned spreadsheet. The following results are from the spreadsheet and further, explain calculation methods.

Total Emissions tab

Emissions results were calculated through a mixed method consisting of subbing in the asset-specific method data for the 8 offices we have data from and the average method data for the other 31 offices. Natural gas produced 410 tonnes of CO₂e, electricity produced 1950 tonnes of CO₂e, and steam produced 30 tonnes of CO₂e for a total of 2390 tonnes of CO₂e. This is the emissions for Gannett Fleming's 2022 39 leased offices and is compared to the emissions data available for 2021 from the company's sustainability report, which are Scope 1 owned office emissions.

	FY2022	FY2021
	Mixed-Method (Metric tons CO2e)	Asset Specific (Metric-tons CO2e)
Scope 1 & 2		1636.0
Scope 3 Category 8		
Natural Gas	410.3	
Electricity	1950.9	
Purchased Steam	30	
Total	2390	1636

Calculations tab

This tab explains the average data, identified data (average method calculation for the 8 offices that sent in Data Requests), asset-specific data, and mixed method calculations of electricity and natural gas in consumption and emissions.

Comparison tab

Within the Comparison tab, the emissions and activity data for electricity from the 8 offices that responded to the Data Request are present. The emissions calculations were performed using the average data and asset-specific methods, and the percent difference between the two was directly compared. The average percent difference for both emissions and activity data was found to be 23.55%, indicating a consistent variance between the two calculation methods. This information provides insights into the accuracy of the emissions calculations.

Average Electric tab

The Average Electric tab contains the office location name, zip code, leased square footage, average intensity, associated eGRID subregion, emission factors, and emissions in kg. Including Canada, with an intensity of 15 and grid loss of 0%, the total CO2e for leased offices is 2,000,000 kg.

The Asset-specific Electricity tab contains the office location name, zip code, leased square footage, if the office is submetered or not, building square footage, occupancy rate, building electricity use, actual electricity use, associated eGRID subregion, emission factors, and emissions in kg. For submetered offices, we used the total electricity use in 2022 that was given. For non-submetered offices, we used the calculation formula [8.2]. The CO2e of all eight offices was 300,000 kg.

Average Natural Gas tab

The Average Natural Gas tab contains the office location name, zip code, square footage, associated intensity, and emissions in kg. The spreadsheet provides emission factors for CO₂, CH₄, and N₂O. The total consumed by each office was multiplied by the emissions factors, resulting in a number for each gas. The total CO₂e for all of the leased offices is 400,000 kg.

Asset-specific Natural Gas tab

The Asset-specific Natural Gas tab contains the office location name, zip code, square footage, total consumed, emission factors, and emissions in kg. The leased office space is divided by the building's total space multiplied by the occupancy rate to calculate emissions. The total natural gas emissions of both offices were 57,000 kg of CO₂e.

Asset-specific Steam tab

Using the consumption data, the emissions from district steam totaled 27,000 kg of CO₂e.

Discussion

Calculations

Since the asset-specific electricity CO₂e was, on average, 23.55% different than the estimated electricity CO₂e, we suggest that Gannett Fleming gather as much asset-specific data as possible to ensure the most accurate calculations of their carbon emissions. There are several reasons for such significant differences between average and asset-specific results. Asset-specific and average data carry national differences among leased offices, such as variations in occupancy levels or energy management practices. These operational differences can affect energy consumption patterns and emissions. Having a majority (62.5%) of respondents use only electricity as a utility skews the accuracy of the average data calculations as they assume electricity and natural gas usage as recommended by the GHG Protocol.

One of the office's asset-specific natural gas calculations was about 6x higher than the average calculations. We cannot determine an evidence-backed reason for such a significant difference, though it may be due to increased heating being necessary for the climate. We can conclude that it would be beneficial for Gannett Fleming to work with the office space's landlord to reduce their natural gas use, especially since the natural gas meter is sub-metered for Gannett Fleming's leased space and usage is specific to the company.

The second office that provided asset-specific natural gas data had emissions that were 35% lower than the average emissions calculated. This is the opposite enigma of the first office, but similarly could be attributed to the region's climate requiring less heating.

Due to the error gap between asset-specific and average data calculations, we discourage Gannett Fleming from setting baselines for emissions reduction targets using a majority estimated inventory. Setting baselines with estimated data can skew the real impact of the carbon reductions year over year. If electricity estimates are, on average, higher than asset-specific calculations, a reduction in CO₂e emissions could be derived solely by gathering

more accurate data. However, this is an unethical manipulation of the numbers. In reality, leased office space emissions have not decreased, and their negative impacts will persist regardless of what is reflected in spreadsheets. Some companies separately report their asset-specific and average data emissions so that baselines can be adjusted to account for the most relevant information.

We obtained a decent respondent size for these claims, as our asset-specific calculations represent 21% of Gannett Fleming's total leased office spaces. The offices associated with the asset-specific calculations span all 4 US regions, with 75% being from different E-GRID regions. This is a strength in supporting our overall claim that Gannett Fleming's asset-specific electricity calculations are lower and more accurate than average data calculations because the comparison pool is dispersed across multiple factors, including E-GRID and CBECS subregions.

Landlord Engagement

We avoided most participant confusion in the data request based on submission results and landlord correspondence. We had to overcome a few data request logic obstacles to get there. After the initial data request was distributed, a few landlords reached out concerning natural gas/alternative fuel heating. Three participants stated that they did not have natural gas or alternative heating in their buildings; it was all electric. Due to the data request logic, which required participants to fill out the natural gas/alternative fuel heating section, these individuals could not complete the request. Our solution to this problem was to collect the information provided by the participants via email and then include "No" to our "Does the building have natural gas or alternative fuel heating?" The "No" answer would then skip the natural gas/alternative fuel section and move on to complete the form. The victory in reducing time used in clarification correspondence can be attributed to the team's time dedicated to ensuring straightforward, specific questions and instructions on the data request.

The most significant limitation to our team's landlord engagement strategy was the legal barriers preventing us from viewing Gannett Fleming's utility bills, forcing us to send Invitations to Participate to every landlord. Because of these barriers, we could not send out data requests strictly to the targeted landlords from whom we needed more information from. This was a significant limitation since 37.5% of the respondents have sub-metered billing data that Gannett Fleming can access through their bills, meaning that 37.5% of the asset-specific data collected for this project could have been acquired without the Data Detectives' landlord engagement efforts. When Gannett Fleming conducts emission calculations, their method will vary from our specific engagement strategy (including the invitation to participate) as they have access to all billing data.

Next Steps and Recommendations

While our strategy was fairly successful, there is room for improvement in future engagements for Gannett Fleming's GHG inventory. Looking forward, there are actions that Gannett Fleming can take in the landlord engagement process to be more efficient with time and increase landlord participation.

- **Use already available data:** Compiling and categorizing utility data that Gannett Fleming can access through bills can be a valuable starting point for emissions calculations. This data can provide insights into energy consumption, allowing Gannett Fleming to identify the gaps in data that will require additional information for accurate emissions calculations. Since we did not have access to the bills, we had to conduct landlord engagement to get all the data we could work with. Gannett Fleming having access to the bills is a huge head start that will immediately allow for asset-specific calculations for submetered and non-submetered offices, of which there is a significant portion.
- **Utilize follow-up emails:** Our findings support that a simple follow-up email (just before the deadline) to the participating landlords yielded a 60% increase in Data Request submissions. When we did not send a follow-up email for the Invitation to Participate, we only had a 31% response rate. In addition to serving as reminders, follow-up emails can provide an opportunity to address any questions or concerns landlords may have regarding the data collection process. This can help clarify uncertainties, provide additional guidance or resources, and build trust and rapport with landlords. Follow-up emails can also serve as a means of ongoing communication, keeping landlords informed of the progress of the greenhouse gas assessment and updates on Gannett Fleming's sustainability initiatives. It is important to ensure that follow-up emails are timely, professional, and tailored to landlords' specific needs and preferences. They should respect their time and busy schedules and clearly convey the value and importance of participating in the data collection process. Personalizing the emails with relevant information, addressing landlords by name, and using a courteous tone can further enhance the effectiveness of the follow-up emails.
- **Set reduction goals with ASU:** Once Gannett Fleming consistently calculates its Scope 1, 2, and 3 emissions, the company can start setting emission reduction goals. Working to reduce leased office emissions has benefits, including reducing operational costs, enhancing the company's reputation as a responsible and sustainable organization, and attracting environmentally-conscious clients and partners. Several frameworks can be utilized to set goals, including the Science-based Targets Initiative and the Net Zero Initiative. Gannett Fleming may want to collaborate with Arizona State University to help set goals and create the most updated baselines to compare emissions year over year. ASU's students can work closely with Gannett Fleming to understand the company's current emissions profile, identify areas of improvement, and develop customized

strategies to set ambitious yet achievable emission reduction goals. By involving ASU students in goal-setting, Gannett Fleming can benefit from their innovative ideas and enthusiasm while contributing to future sustainability leaders' professional development.

- Take actionable steps to reduce emissions: Meeting emission reduction targets can be achieved through meaningful collaboration with the leased offices. Gannett Fleming can work collaboratively with its offices to reduce emissions through energy efficiency measures, using renewable energy sources, green building practices, and other efforts (more specific practices are listed in the Leasing Policy below).

Our recommendations are reflected in several deliverables, including a Leasing Policy and a Greenhouse Gas Roadmap. These documents outline specific actions and strategies that Gannett Fleming can adopt to improve its leasing practices and calculate its greenhouse gas emissions.

The Leasing Policy is a guiding document outlining the principles and criteria for leasing new office spaces. It includes additions to the Request for Proposals (RFPs), a sustainability scorecard with criteria such as energy-efficient building certifications, renewable energy sources and submetering, and landlord engagement requirements for emissions data collection. By incorporating sustainability considerations into the leasing decision-making process, Gannett Fleming can ensure that future office spaces align with the company's emissions reduction goals.

The Greenhouse Gas Roadmap provides a strategic plan that outlines the steps for achieving emissions calculations. This includes understanding the types of data needed to do the calculations, organizing and understanding the bills the company already has access to, suggestions for utilizing office administrators to reach out to landlords, and doing the calculations. The roadmap can serve as a comprehensive guide for Gannett Fleming to acquire the data needed for asset-specific and average data method calculations for emissions and changes over time.

Leasing Policy

To engage the governance side of Gannett Fleming's organizational structure, we also came up with additional language to the client's Request for Proposal, a Sustainability Scorecard, and Contract Language Recommendations. These deliverables will help ensure that future leases have emissions reduction expectations built into the agreement (Green Lease Leaders, n.d.). As previously discussed in our Background and Methodology, current landlords were under no obligation to participate in this project which reduced our ability to compile solidly accurate results for emissions. Our team is working towards making Gannett Fleming more sustainable and fostering collaborations with like-minded partners by developing tools that facilitate connections between buildings with available resources and eagerness to reduce emissions.

These tools also ensure landlords are held accountable for upholding sustainability standards through leasing contracts. The leasing policy is presented in an [infographic](#) in Appendix A.

1. Request for Proposal (RFP)

An RFP is a business tool used to gauge compatibility between tenant and landlord. Since sustainable amenities are an interest of our client with future partnerships, we added language that states their goals and an opportunity for buildings to share information about renewable energy sources, submetering, certifications, etc. (Green Leasing Questionnaire, n.d.) so that this information can be considered.

2. Sustainability Scorecard

We then created a scorecard to help weigh the impact of features such as renewable energy sources, submetering, certifications, etc., gathered in the RFP based on their contribution to the reduction of Gannett Fleming's overall emissions. These features were ranked out of five points based on their:

- Achievability (Is it reasonably within landlord control?)
- Impact (Does this reduce office GHGs?)
- Usability (Will this be engaged with in order to be impactful?)
- Resilience (Is this long-term?)
- and Usefulness (Is this a practical goal?).

This system is flexible to client priorities changes but serves as a starting point. Weighting sustainable features based on their alignment with Gannett Fleming's current goals will help them digest the information gathered from the RFP more effectively and prioritize sustainable landlords for future contracts.

3. Contractual Language Recommendations

Finally, we developed contract language recommendations to legally bind a new standard of collaboration between future landlords and our client, Gannett Fleming. This language will ensure that new contract agreements will have the previously absent communication pathway for conversations about GHGs and the sharing of specific utility information built-in. Recommendations include language regarding

- Designing a sustainability contract
- Requiring minimum energy efficiency fit-out
- Tracking tenant space energy use
- Requesting whole-building ENERGY STAR scores from landlords
- Purchasing on-site renewables if offered and competitively priced
- Accepting cost recovery clauses for energy efficiency upgrades benefiting tenants.

Combined, these tools will help ensure our clients can effectively include sustainability considerations in their decision-making processes to meet their emissions reduction targets.

Greenhouse Gas Roadmap

The recommendations included in this document include a landlord engagement strategy that Gannett Fleming can use to gather the most relevant information to calculate emissions and the specific calculations to be used. Our experiences over the past two semesters, including leveraging office administrators to obtain specific data, helped shape the roadmap's recommendations. The roadmap was broken down into eight specific steps in an [infographic](#) found in Appendix B.

1. Understand necessary data for calculations:

This step highlights the types of data that Gannett Fleming will need to do asset-specific and average data method calculations. Equations are provided in the Calculations Method section. In order to do asset-specific calculations, multiple pieces of data are needed, including utility consumption (kWh, cubic ft, etc., if it is sub-metered or not, and data from bills or meters), total office square footage, occupancy rate, refrigerant leakage (optional, but can be included if data is available), leased office space square footage, emission factors, and global warming potentials. In order to do average calculations, a different set of data is needed, including average consumption data, leased office space square footage, emission factors, and global warming potentials.

2. Collect and organize bills:

Gannett Fleming can leverage its existing database of bills with utility consumption data from landlords to further enhance the accuracy and efficiency of its emissions calculations. By organizing the data based on relevant points, such as submetered consumption data for individual offices, Gannett Fleming can streamline the asset-specific calculation method for these offices without the need for additional landlord engagement. This can result in more accurate emissions data for these offices and potentially reduce the time and effort required for data collection.

3. Identify gaps in data:

By looking thoroughly at the bills, missing information necessary for asset-specific calculations can be identified. For example, an office's bills may include utility consumption and total office square footage, but the occupancy rate is missing. Therefore Gannett Fleming would need to engage with that office to obtain the occupancy rate. Looking closely at the bills may also help to identify any discrepancies or anomalies that may impact the accuracy of the emissions calculations. For example, significant variations in energy consumption between similar offices or buildings could indicate potential issues with equipment efficiency, building performance, or other operational factors that may need to be addressed to optimize energy use and reduce emissions.

4. Engage with office administrators:

Gannett Fleming should leverage the office administrators as a direct point of contact for the landlords. Office administrators can aid in increasing the likeliness of response rates from landlords and push for the company's sustainability goals in the future. The office administrators can be engaged in various ways, including through emails, one-on-one meetings, or general

meetings with multiple office administrators at a time. In this engagement, Gannett Fleming can inform them about this strategy of obtaining data for GHG emissions calculations.

5. Establish a landlord tracking form:

Create a landlord tracking form that has the name and contact information of the office administrator and the name and contact information of the landlord or other point of contact. An optional additional column can include the level of relationship (strong, neutral, weak) between the office administrator and landlord. This information can help Gannett Fleming better understand their relationships' dynamics and tailor communication strategies accordingly. Overall, this will help in being able to hold the administrators or landlord/point of contact accountable for the potential lack of responses in the future.

6. Office administrators reach out to landlords:

Once office administrators are informed of Gannett Fleming's emissions calculation goals, they can proactively reach out to landlords to gather the necessary data. This communication can take various forms, depending on the specific information needed and the preferred mode of interaction.

For instance, if Gannett Fleming only requires one or two specific pieces of data, office administrators can send targeted emails or inquiries to landlords, asking for the required information. This could involve requesting data on energy consumption, utility bills, or other relevant details missing from the existing records. Office administrators can clearly articulate the purpose of the data request, explain the importance of accurate emissions calculations for Gannett Fleming's sustainability efforts, and emphasize the company's commitment to reducing its carbon footprint.

Alternatively, Gannett Fleming can create a general data request form to share with landlords if a more comprehensive data collection process is required. The form can include fields for energy consumption data, utility bills, building specifications, and other relevant details needed for the emissions calculations. The Data Request sent out this semester can serve as a template for future data collection efforts. The form should be clear, easy to understand, and tailored to the specific requirements of Gannett Fleming's greenhouse gas assessment.

In addition to formal data requests, office administrators can establish regular communication channels with landlords to facilitate ongoing data collection and address any questions or concerns that may arise during the process. This can involve setting up periodic meetings, email updates, or other means of communication to keep landlords informed of Gannett Fleming's sustainability goals and the importance of accurate emissions data. Building positive and collaborative relationships with landlords can help streamline the data collection process and foster a cooperative approach toward achieving emissions reduction targets.

7. Use available data to do calculations:

When data has been collected, the asset-specific calculation method can be used. The average-data calculation method can be used for offices that still do not have specific, accurate data. The asset-specific method should be prioritized whenever possible, as it allows for a more accurate assessment of emissions and provides a better foundation for targeted emissions reduction strategies. However, suppose specific data is still unavailable despite efforts to collect

it. In that case, the average method can be used as an interim solution to estimate emissions and identify areas for potential emissions reductions.

8. Track annually and create goals:

Gannett Fleming should track response rates year-over-year to ensure that the requested data is submitted to Gannett Fleming. This may help identify the engagement methods failing to produce responses, and a new strategy can be used. Once data is collected, the most accurate emissions calculations can be done. Leased office emissions can be included in the company's sustainability reporting under Scope 3 alongside the Scope 1 emissions that are already being reported. Gannett Fleming can create achievable emissions targets based on collected and reported data. By setting measurable and time-bound emissions reduction goals, Gannett Fleming can demonstrate its commitment to sustainability and track progress over time. To ensure robust and credible goal-setting, this can be aligned with relevant emissions reduction frameworks and initiatives, such as the Science Based Targets Initiative (SBTi), Net Zero Initiative, or the Carbon Disclosure Project.

In addition, Gannett Fleming should stay informed about relevant emissions reporting policies and regulations, such as the Federal Suppliers' requirement to report carbon emissions and other future policies that may affect emissions reporting. This can help the company stay ahead of changing reporting requirements and proactively adapt its emissions tracking and reporting practices accordingly.

Conclusion

In conclusion, the greenhouse gas assessment conducted for Gannett Fleming provided valuable insights into the company's carbon footprint and helped identify areas for potential emissions reductions. The assessment was based on the equity share approach, which categorized emissions from leased offices under Scope 3, Category 8: Upstream Leased Assets, and emissions associated with energy lost to the grid during transportation under Scope 3, Category 3. Activity data, emissions factors, and conversion factors were used to calculate emissions, and both the average data method and the asset-specific method were used to source activity data. While the average data method provided estimates for all leases, primary, asset-specific data were also sought for more accurate estimates.

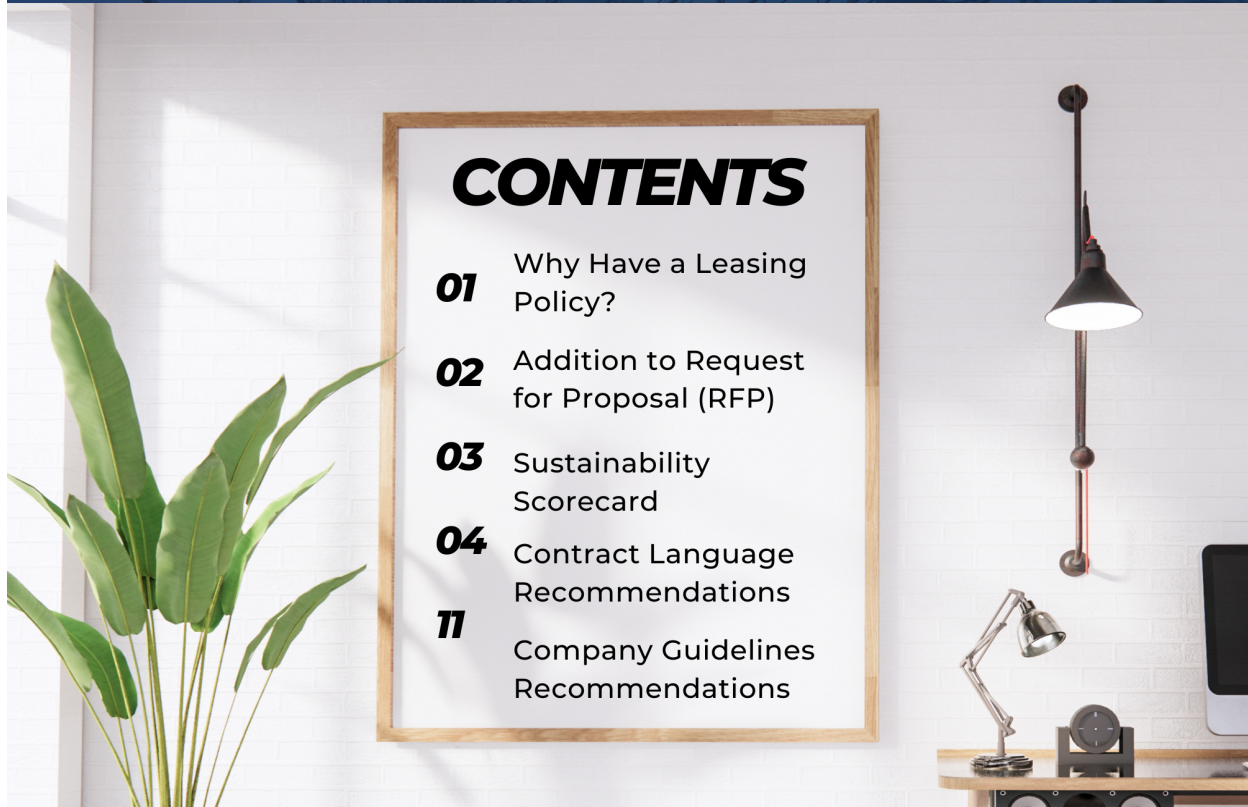
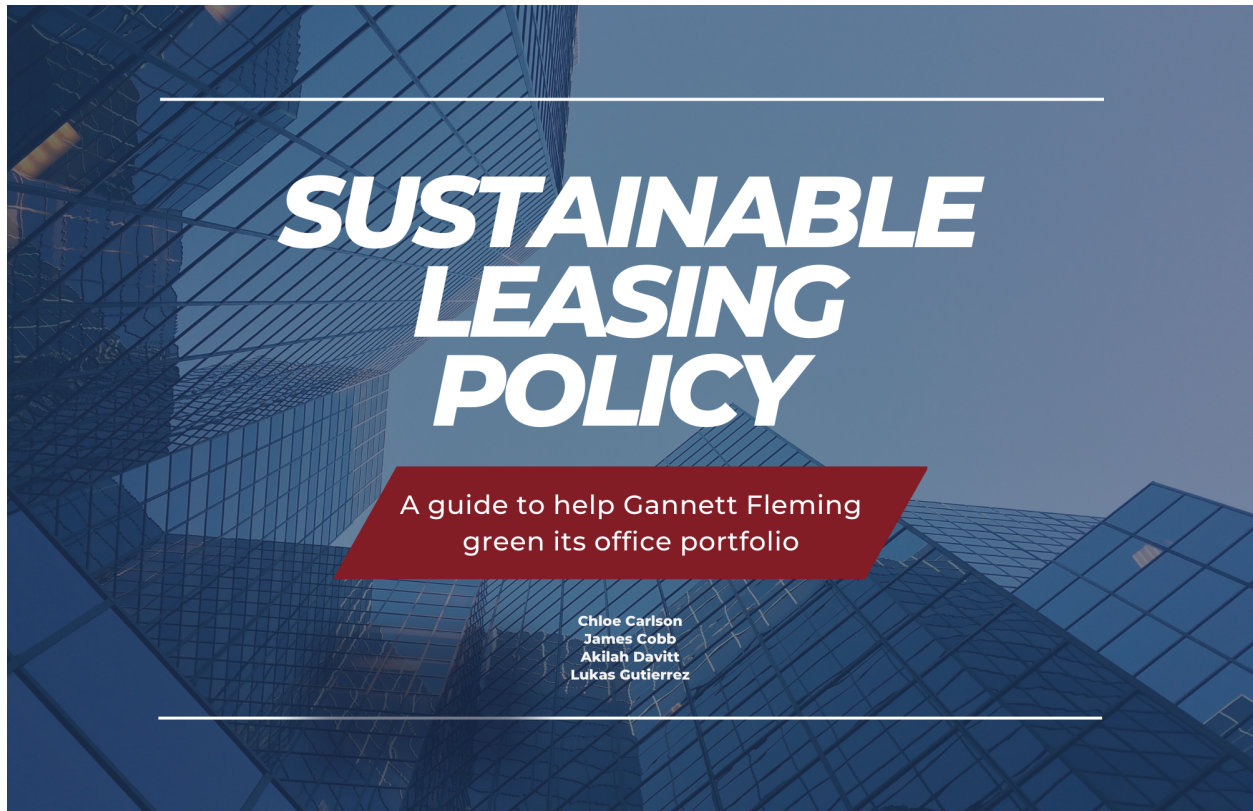
Overall, this assessment provides a strong foundation for Gannett Fleming to continue tracking and reducing its carbon footprint in the future. We found some significant differences in the results from the two calculation method types and highly recommend Gannett Fleming to aim for future asset-specific emissions calculations. The findings of the greenhouse gas assessment can also serve as a benchmark for Gannett Fleming to track its progress over time and compare its performance with industry peers. By setting emission reduction goals based on the assessment results, Gannett Fleming can demonstrate its commitment to sustainability and environmental stewardship and potentially gain a competitive advantage in the market. Through this analysis, we aim to set a strong foundation for Gannett Fleming to expand their data collection processes and acquire increasingly complete and accurate consumption data.

The greenhouse gas assessment conducted for Gannett Fleming has provided valuable insights into the company's Scope 3 carbon footprint and set a foundation for ongoing efforts to track and reduce its environmental impact. By leveraging the findings and recommendations from the assessment, Gannett Fleming can continue its journey toward sustainability leadership and contribute to a more sustainable future.

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Appendix A – [Leasing Policy](#)



WHY HAVE A LEASING POLICY?

A sustainable leasing policy is becoming increasingly important for businesses, as the use of office space is a material and significant source of environmental impacts. For Gannett Fleming, as a company whose majority of impacts come from its leased offices, real estate is a critical area of focus. By implementing a sustainable leasing policy, Gannett Fleming can reduce their environmental impact and improve their overall sustainability performance.

The Sustainable Leasing Policy compiled by the ASU team provides critical sustainability solutions in real estate and outlines what should be included in existing RFPs to ensure that environmental considerations are incorporated into leasing decisions. It also includes sample sustainability-related contractual language, internal policy recommendations, and resources that might be useful in greening Gannett Fleming's leasing policies.

1

ADDITION TO REQUEST FOR PROPOSAL

A Request for Proposal, or an "RFP," is a tool used to inventory building features of office spaces that could potentially be leased by companies like Gannett Fleming. In order to ensure future partners are committed to our client's sustainability goals, adding additional language to their RFP in order to gauge commitment to goals, sustainable features, and carbon reducing amenities and initiatives are key

"Gannett Fleming is making an **active effort** to reduce its contributions to climate change by inventorying its **Carbon Footprint**. We will be holding possible future partners to these **criteria**:

- Previous history or future plan to share energy consumption and intensity with Gannett Fleming
- Previous history or future plan to share annual energy data
- Enthusiasm to collaborate to mitigate net landlord-property manager Carbon Footprint
- Contact information for a designated sustainability liaison

Future partners with Gannett Fleming should expect to engage with sustainable practices."

2

SUSTAINABILITY SCORECARD

This tool simplifies sustainability initiatives included in the RFP that directly reduce the Carbon Footprint of Gannett Fleming. These weightings serve to help Gannett Fleming prioritize new contract opportunities based on GHG reduction impact.

Wishlist	Score
Submetering	5
Renewable Energy	4
LED Lighting	4
Motion Sensor Lights	4
LEED Certification	3
Energy Star Score	3
Shuttle Service	2

Weighting

Wishlist items were scored out of 5 based on

1. Achievability
2. Impact
3. Usability
4. Resilience
5. Usefulness

Scores and reasoning are flexible depending on client priorities for reducing Carbon Footprint

(intended for internal use only)

1. Is this reasonably within landlord control?
2. Does this reduce office GHGs?
3. Will this be engaged with in order to be impactful?
4. Is this long-term?
5. Is this a practical goal?

Categories

GOLD: 19-25
SILVER: 9-18
BRONZE: 0-8

Current Rankings

GOLD: 0
SILVER: 4
BRONZE: 3
Out of 7 participating offices in 2023

CONTRACT LANGUAGE RECOMMENDATIONS

- 1 Designating a Sustainability Contact
- 2 Require Minimum Energy Efficiency Fit-out
- 3 Track Tenant Space Energy Use
- 4 Request Whole-Building ENERGY STAR Score from Landlord
- 5 Purchase On-site Renewables if Offered and Competitively Priced
- 6 Accept Cost Recovery Clause for Energy Efficiency Upgrades Benefiting Tenant:

At Gannett Fleming, sustainability and resiliency are core values. To align your real estate practices with these values, we recommend implementing mandatory and enforceable policies in your leasing agreements and contracts moving forward.

Using contractual language to access utility data and promote energy efficiency can help achieve sustainability goals and strengthen relationships with landlords--while also saving on costs.

To draft sustainable contractual language, we are using the Green Lease Leaders Reference Guide, a standard developed by the US Department of Energy and the Institute for Market Transformation.



1. ESTABLISH A SUSTAINABILITY CONTACT:

Description:

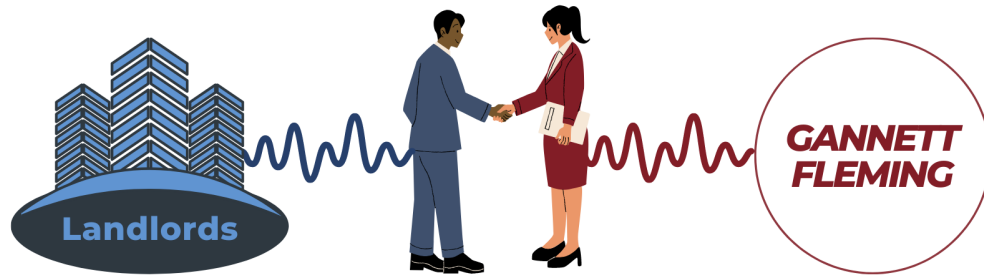
The aim is to enable landlords to effectively communicate with the appropriate individual within a tenant organization concerning energy efficiency, retrofits, billing issues, etc. Here, Gannett Fleming could insert a clause in the standard lease or develop corporate guidelines that specify the landlord's sustainability/energy contact(s).

Example:

"Landlord and tenant shall provide a point of contact for issues related to sustainability and energy. Issues include, but not limited to retrofit projects, billing issues, energy efficiency upgrades, and data access.

- Tenant sustainability contact:
 - Email: _____
 - Phone: _____
- Landlord sustainability contact:
 - Email: _____
 - Phone: _____"

5



2. REQUIRE MINIMUM ENERGY EFFICIENCY FIT-OUT:

Description:

The aim is to ensure that the systems installed or modified as part of a fit-out, such as lighting and supplemental cooling, promote lower energy costs and greater visibility to energy use for the tenant throughout the lease term.

Gannett Fleming must require leased space fit-outs to meet the Environmental Protection Agency's ENERGY STAR Tenant Space criteria, which includes estimating tenant space energy use, metering tenant energy use, lighting efficiently, installing efficient equipment, and sharing meter data with the landlord on an annual basis. Alternatively, other criteria that are equally or more stringent may be used.

Example:

"Any and all Tenant Improvement Work and/or Alterations will be performed in accordance with Landlord sustainability practices that the Tenant has accepted as part of the lease agreement, namely the leased space fit-out must meet EPA ENERGY STAR Tenant Space criteria."

6



3. TRACK TENANT SPACE ENERGY USE:

Description:

The aim is to track energy use across a portfolio of leased spaces as the first step towards managing energy performance and reducing waste. By measuring energy consumption, landlords can manage it over time and assess the effectiveness of energy-saving improvements. The requirement is to create corporate guidelines stating that energy use in leased spaces must be recorded at least monthly. Additionally, Gannett Fleming should record energy use monthly for as many leased spaces in the portfolio as possible.

Example:

"The Landlord and Tenant agree to regularly share their Environmental Performance Data regarding the Premises and/or Building with each other, the Managing Agent, and any agreed third parties. If shared with third parties, they must also keep the data confidential and only use it for specified purposes. The data can only be used for monitoring and improving the environmental performance of the Premises and/or Building and measuring it against agreed targets. The Managing Agent will also be bound by similar confidentiality obligations."



Benefits

- Improved Energy Management
- Cost Savings
- Enhanced Corporate Sustainability

7

4. REQUEST WHOLE-BUILDING ENERGY STAR SCORE FROM LANDLORD

Description:

The objective is to use an ENERGY STAR score, a 1-100 rating that compares a building's energy performance to that of other similar buildings, to improve tenants' understanding of their energy performance in the context of the whole building. This enables them to make more informed decisions when leasing a new space.

Example:

"Landlord shall provide the tenant with the building's ENERGY STAR score annually. To the extent Tenant obtains electricity independently of the building, Tenant shall give Landlord access to Tenant's data on energy use for inclusion in Landlord's annual reports, ENERGY STAR annual rating, and similar purposes."



8

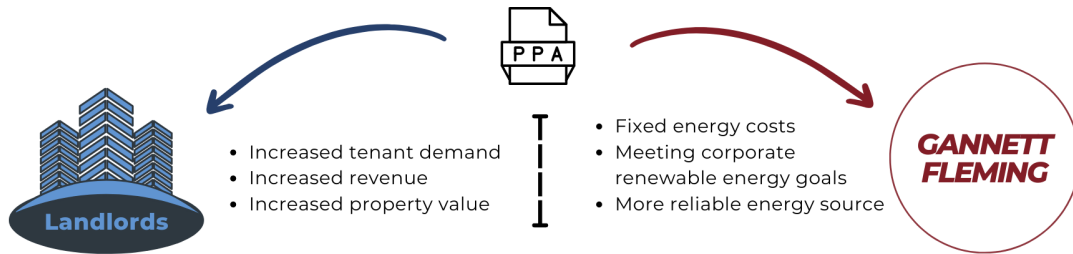
5. PURCHASE ON-SITE RENEWABLES IF AVAILABLE AND COMPETITIVE

Description:

Building owners are increasingly incorporating on-site renewable energy sources as a means of attracting sustainability-minded tenants and safeguarding against potential energy price fluctuations. Tenants can benefit from this by agreeing to purchase the renewable energy generated on-site, which can provide long-term price stability and contribute to their own sustainability goals. A Power Purchase Agreement (PPA) between a tenant and a landlord with renewable energy sources allows for the purchase of sustainable energy at a fixed rate, creating financial incentives for both parties while promoting the adoption of renewable energy practices.

Example:

Tenants will buy energy from on-site renewables provided by the landlord through a fixed-rate Power Purchase Agreement. The landlord will install, own, and maintain the on-site generation and sell power directly to tenants at or below the local utilities' electricity rate. The provider may acquire low or zero greenhouse emission power sources at any time. If the customer pays additional utility costs besides the Base License Fees, the cost of renewable energy certificates, carbon offsets, and environmental sustainability credits will be included in determining the payable utility costs.



9

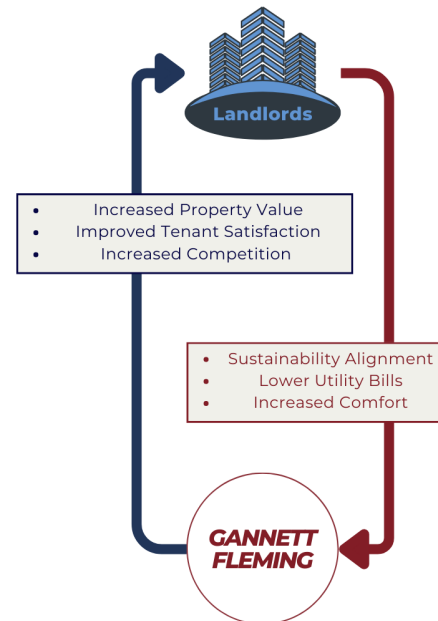
6. ACCEPT COST RECOVERY CLAUSE FOR ENERGY EFFICIENCY UPGRADES BENEFITING TENANT:

Description:

The split-incentive problem arises when landlords make energy efficiency improvements to their buildings and tenants receive the financial benefits from decreased energy consumption. To address this problem, tenants can agree to a cost recovery clause allowing landlords to recover capital costs for energy efficiency improvements. Recommendations include establishing guidelines or a clause in the lease accepting the cost recovery clause.

Example:

"Landlord may include the costs of certain capital improvements [intended to] [that] improve energy efficiency in operating expenses of tenant space. The amount passed through by Landlord to Tenant in any one year shall not exceed the prorated capital cost of that improvement over the expected life cycle term of that improvement [and shall not exceed in any year the amount of operating expenses actually saved by that improvement]. Interest/the cost of capital can be included."



10

COMPANY GUIDELINE RECOMMENDATIONS

A company guideline for sustainability is a set of internal policies or procedures developed by a company to guide its employees and stakeholders towards sustainable practices and driving down emissions. These guidelines are developed to provide guidance to our employees and stakeholders on how to conduct sustainable lease negotiations and reduce emissions in our buildings. They are sourced from the Green Lease Leaders Program, a national recognition program that distinguishes property owners, tenants, and brokers who are effectively using leasing strategies to improve energy efficiency and sustainability in buildings. Although not legally binding, these guidelines reinforce our dedication to sustainability and reducing our environmental footprint, while also having the potential to greatly influence our company culture and reputation

11



TRAINING LEASE NEGOTIATION TEAM

Description:

The purpose of this best practice is to ensure that real estate decision-makers are trained in sustainability to enable them to negotiate and execute energy-aligned lease contracts. You should keep a record of the name, date, duration, and source of training completed by each member of the transaction management team.

Acceptable training includes obtaining current LEED Green Associate, LEED Accredited Professional status, or completing "The Business Case for High Performance Buildings" training from the US Department of Energy

Example:

"All transaction management team members shall complete at least one hour of sustainability training covering the fundamentals of energy efficiency in commercial buildings."

12



IMPLEMENT ENERGY-SAVING BEST PRACTICES

Description:

The Green Lease Leaders Reference Guide provides a comprehensive set of 13 office best practices designed to reduce energy waste and promote sustainable practices. These guidelines offer a range of options, many of which are easily achievable and require minimal additional costs or effort. By adopting these practices, companies can make significant strides in reducing their environmental impact while also improving their bottom line.

1. Restricted HVAC hours
2. Prohibit the use of space heaters
3. Schedule janitorial work during regular business hours
4. Clean and replace air filters as recommended by manufacturers
5. Use programmable thermostats to adjust heating and cooling during unoccupied periods
6. Install lighting controls such as occupancy sensors and timers
7. Train occupants to turn off or unplug electronics and appliances when not in use
8. Obtain regular inspections of HVAC equipment and exhaust fans
9. Conduct an annual tenant space energy audit
10. Conduct retro-commissioning periodically to optimize energy consumption
11. Prohibit vending machines or place timers
12. Monitor supplemental air-conditioning units and refrigerators for leaks
13. Continuously optimize chilled and hot water temperatures/flows in the central plant

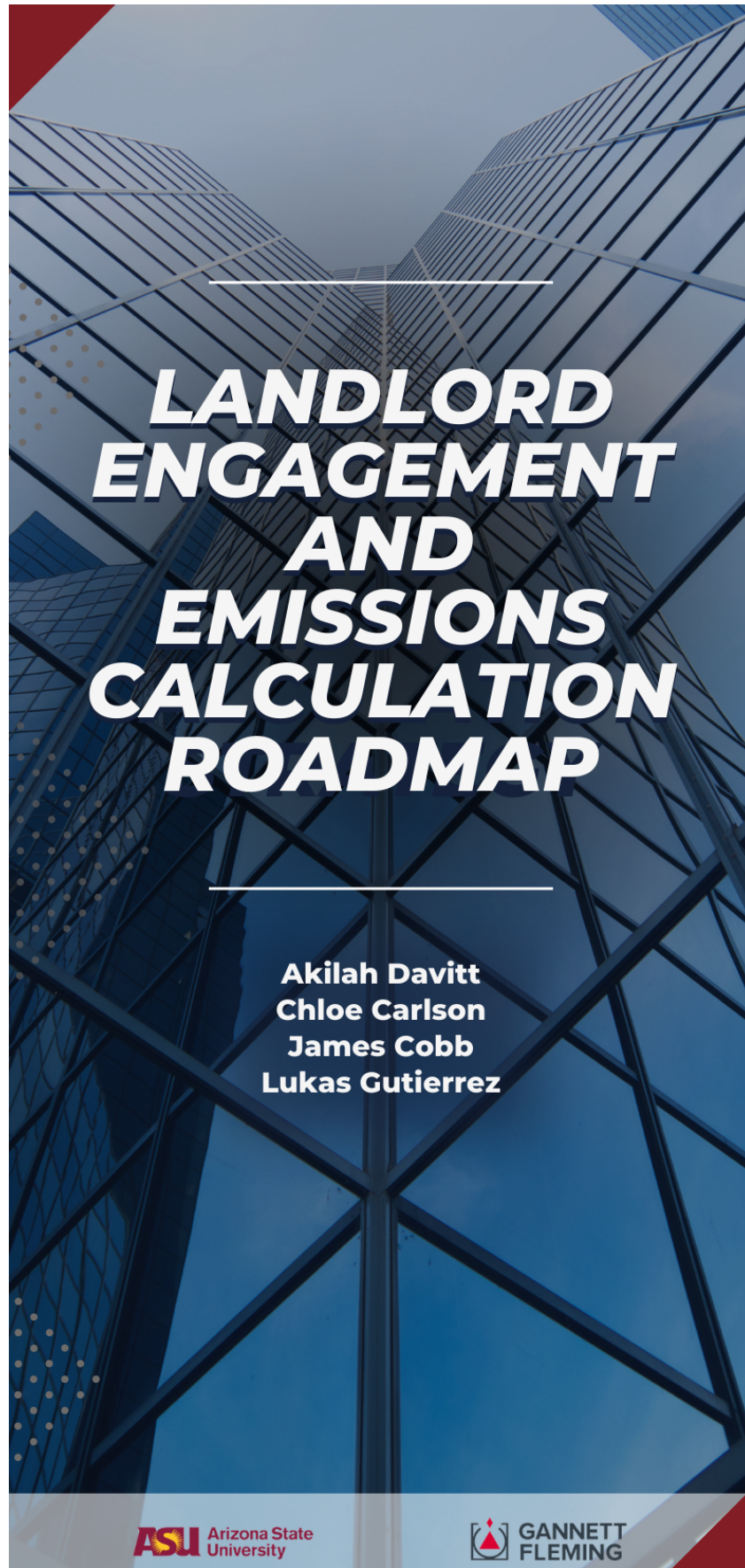
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ADDITIONAL RESOURCES

- [IMT Green Lease Language Examples](#)
- [BOMA Green Lease Guide](#)
- [Dept. of Homeland Security Integrating Sustainability into Lease and Build Agreements](#)
- [Green Lease Leaders Tenants Reference Guide](#)
- [ENERGY STAR Tenant Space](#)
- [IBM Green Lease](#)

14

Appendix B – Greenhouse Gas Roadmap (Landlord Engagement and Emissions Calculation Strategy)



**LANDLORD
ENGAGEMENT
AND
EMISSIONS
CALCULATION
ROADMAP**

**Akilah Davitt
Chloe Carlson
James Cobb
Lukas Gutierrez**

LANDLORD ENGAGEMENT AND EMISSIONS CALCULATION STRATEGY





Understand necessary data for calculations

There are two methods to calculate GHG emissions of leased office spaces.

Asset-specific uses utility usage from bills or meters, while **average data** uses regional average consumption. Below is a list of information that may be needed to be gathered for calculations.

ASSET-SPECIFIC

UTILITY CONSUMPTION
(KWH, CUBIC FT, ETC.)
(SUB-METERED OR NOT)
(DATA FROM BILLS OR METERS)

TOTAL OFFICE SQUARE
FOOTAGE

OCCUPANCY RATE

REFRIGERANT LEAKAGE

LEASED OFFICE SPACE
SQUARE FOOTAGE

EMISSION FACTORS

GLOBAL WARMING
POTENTIAL

AVERAGE DATA

AVERAGE CONSUMPTION
DATA

LEASED OFFICE SPACE
SQUARE FOOTAGE

EMISSION FACTORS

GLOBAL WARMING
POTENTIAL

*factors in yellow are required
regardless of method selected



Collecting & organizing bills

Compile all the bills received from properties into a digital database or utilize an existing one designed for managing bills. Additionally, compile relevant information regarding LEED-certifications, sub-metering, and other information about the offices that could

influence calculation data into a tracking sheet. This information may be present in Requests for Proposals (RFPs) (see Sustainable Leasing Policy for more information).

When applicable, correlate the RFPs with the bills. RFPs may have relevant information missing from bills. For example, properties that are LEED-certified already have sub-metering in place, allowing for more specific data requests in future steps.

Categorize the bills based on different criteria of interest, such as whether the property is sub-metered or not, square footage, type of utilities used, or region of the property, for example. This helps to establish a baseline of available data.



Identify Gaps in Data

To identify any gaps in data, review the information provided on the bills. This includes taking note of the **building's total area, occupancy rate, and utility consumption data**. By examining these factors, you can determine if there are any limitations in the existing data for emissions calculations by ensuring that accurate data is available for reporting.

Utility Consumption	Total area	Occupancy Rate
1500 kWh	?	95%
?	2550 sq ft	64%



Engage with the office administrators

Compile a list of office administrators (OAs) for each leased office, or utilize an existing contact sheet. OAs are key points of contact between Gannett Fleming and landlords.

Meeting or corresponding via email with OAs is crucial for **building relationships** and communicating the **sustainability goals** of obtaining billing data.

Clear and effective communication with OAs is a critical component in encouraging buy-in.



Establish landlord tracking form

A tracking form can be created for OAs to facilitate data collection and relationship assessment with landlords. The form may include fields for **OA name and contact information**, and **landlord name and contact information**, which can be filled out by the OA.

Additionally, a column can be added to assess the relationship strength between the OA and the landlord, with options such as strong, good, neutral, weak, or none for the OA to provide feedback. This information can help Gannett Fleming to better understand the dynamics of their relationships and tailor communication strategies accordingly. If applicable, another column can include the years that the office participated in GHG collection efforts to keep track of communication patterns.



Office administrators reach out to landlords

OAs reaching out to landlords to request specific data can increase the likely hood of landlords responding. This involves determining the proper wording for the request ([example here](#)).

The data request can be specific questions included in an email with Gannett Fleming CCed, or an online form (such as Microsoft of Google) that landlords can fill out which would then go to Gannett Fleming for review. Exploring potential incentives to encourage landlord responses can be considered.

If landlords do not respond within a designated timeframe, follow-up messaging may be necessary to ensure data collection is completed effectively.



Use available data to do calculations

First, you need to determine which methodology and equations will be used for each leased office space. Once they are determined, use the [GHG INVENTORY TEMPLATE](#), or another calculation spreadsheet. The two calculations introduced in [Step 1](#) are pulled from the GHG Protocol Category 8.

Asset-specific Data Method

For this calculation method, you will need [specific utility consumption](#) data presented below:

UTILITY CONSUMPTION
(KWH, CUBIC FT. ETC.)
(SUB-METERED OR NOT)
(DATA FROM BILLS OR METERS)

TOTAL OFFICE SQUARE FOOTAGE

OCCUPANCY RATE

REFRIGERANT LEAKAGE

LEASED OFFICE SPACE SQUARE FOOTAGE

EMISSION FACTORS

GLOBAL WARMING POTENTIAL

sub-metered leased office spaces

$$\text{leased office space utility usage} \times \text{regional emission factor} \times \text{global warming potential} = \text{CO}_2\text{e emissions}$$

If a building is not sub-metered, but the data on the entire building's utility usage is available, use the NOT sub-metered equation below:

NOT sub-metered leased office spaces

$$\left(\frac{\text{leased office space (ft}^2\text{)}}{\text{total building (ft}^2\text{)} \times \text{occupancy rate}} \right) \times \text{building's total utility usage} \times \text{regional emission factor} \times \text{global warming potential} = \text{CO}_2\text{e emissions}$$

If no utility usage data is available, or it is unreliable, the Average Data method should be used.

Average Data Method

The average data method uses average utility consumption data. Since it is an estimate using average data from other buildings, it is the least accurate way to calculate emissions (out of the two calculations presented in this roadmap).

Data needed for the Average Data calculation method:

AVERAGE CONSUMPTION DATA
LEASED OFFICE SPACE SQUARE FOOTAGE
EMISSION FACTORS
GLOBAL WARMING POTENTIAL

Average Data Equation

$$\left(\text{leased office space (ft}^2\text{)} \times \text{average intensity (unit/ft}^2\text{)} \right) \times \text{regional emission factor} \times \text{global warming potential}$$

Where to find average data, emission factors, global warming potentials, and other relevant information:

BUILDING AVERAGE CONSUMPTION DATA

United States average consumption data for commercial buildings can be found in the [Commercial Building Energy Consumption Survey \(CBECS\)](#).

The CBECS has a variety of characteristics for determining the average consumption data of a building. When using the tables provided by the CBECS, choose the two characteristics that best represent the leased office buildings (including their differences).

Example: If multiple buildings are located in different regions and they all are being used for generic office activities, using the "region" and the "office" building type categories would be a good fit for determining average consumption.

REGIONAL EMISSION FACTORS

The type and amount of emissions vary based on the electricity generation of the region, so look at the eGRID provided by the Environmental Protection Agency (EPA) emission rates which are equivalent to regional emission factors. The [Power Profiler Tool](#) gives specific subregion rates.

Natural gas emission factors are the same across the country at 0.05444 kg CO₂ per cubic foot of natural gas consumed. Because the same fuel, natural gas, is being burned for heat production, there is not variation in emission factors.

GLOBAL WARMING POTENTIAL

Global warming potentials are used to covert GHGs into a comparable unit of carbon dioxide equivalent, most commonly referred to as CO₂e.

The Greenhouse Gas Protocol provides a [Global Warming Potential Values table](#) adapted from the IPCC. These conversions should be used to calculate the total CO₂e that the company will then report in their annual disclosures. The most commonly used measurement of CO₂e is metric tonnes.

STEAM HEATING

For the year 2022, Gannett Fleming had one office space that used district steam heating. The consumption units were billing in MLBs, which is an unusual unit of measure. For this reason, we wanted to provide the conversions and calculations. The emission factors provided by the EPA for steam are per mmbtu, there for converting MLB to mmbtus is necessary. Here are the steps:

1. Convert MLBS into pounds
(1000lbs/MLB according to the utility)
Be sure to check the specifications the utility provides on their
2. Converted lbs into btu
(1194 btus/lbs according to [Energy Star](#))
3. Converted btu into mmbtu
(1,000,000 btu/mmbtu)
4. Multiply the total mmbtu by emission factors for steam:
66.33 of CO₂/mmbtu
1.25 of CH₄/mmbtu
0.125 of N₂O/mmbtu
(according to the [EPA Emission Factors](#))
5. Convert the totals into CO₂e, using the global warming potentials listed above.



Track annually, create goals

Establish a process for tracking response rates year over year to ensure you are capturing emissions data from all relevant sources and identify any areas where additional engagement is needed. Utilizing recommendations in the Sustainable Leasing Policy may be a vital step in improving the data retrieval process.

Once emissions calculations are completed, this data can be included in Gannett Fleming's sustainability reports in accordance with selected frameworks and relevant policies.

Policies may include:

- State-specific
 - California's Mandatory Reporting of Greenhouse Gas Emissions (MRR)
- National
 - U.S. Federal Supplier Greenhouse Gas Accounting and Reporting Requirements
 - May require Significant Contractors (\$7.5-50 million) to report Scope 1 & 2 emissions
- International
 - European Union's Sustainable Finance Disclosure Regulation (SFDR)

Emissions reduction goals and improving greenhouse gas management systems are the final step in the process. Regularly monitor progress toward your reduction goals and adjust strategies as needed. Make sure to celebrate successes along the way and recognize individuals and teams for their contributions to emissions calculations and achieving reduction goals.

EMISSION REDUCTION TARGET SETTING	REQUIRED INVENTORY
<u>Science Based Target Initiative</u>	Scope 1, 2, & 3
<u>Net Zero Initiative</u>	Scope 1, 2, & 3
GHG Protocol (Chapter 11)	Self-determined
<u>Carbon Disclosure Project</u>	Self-determined

Referenced resources

[GHG Protocol Scope 3 Category 8](#)

[Commercial Building Energy Consumption Data](#)

[Environmental Protection Agency Power Profiler Tool](#)

[Global Warming Potential Values](#)